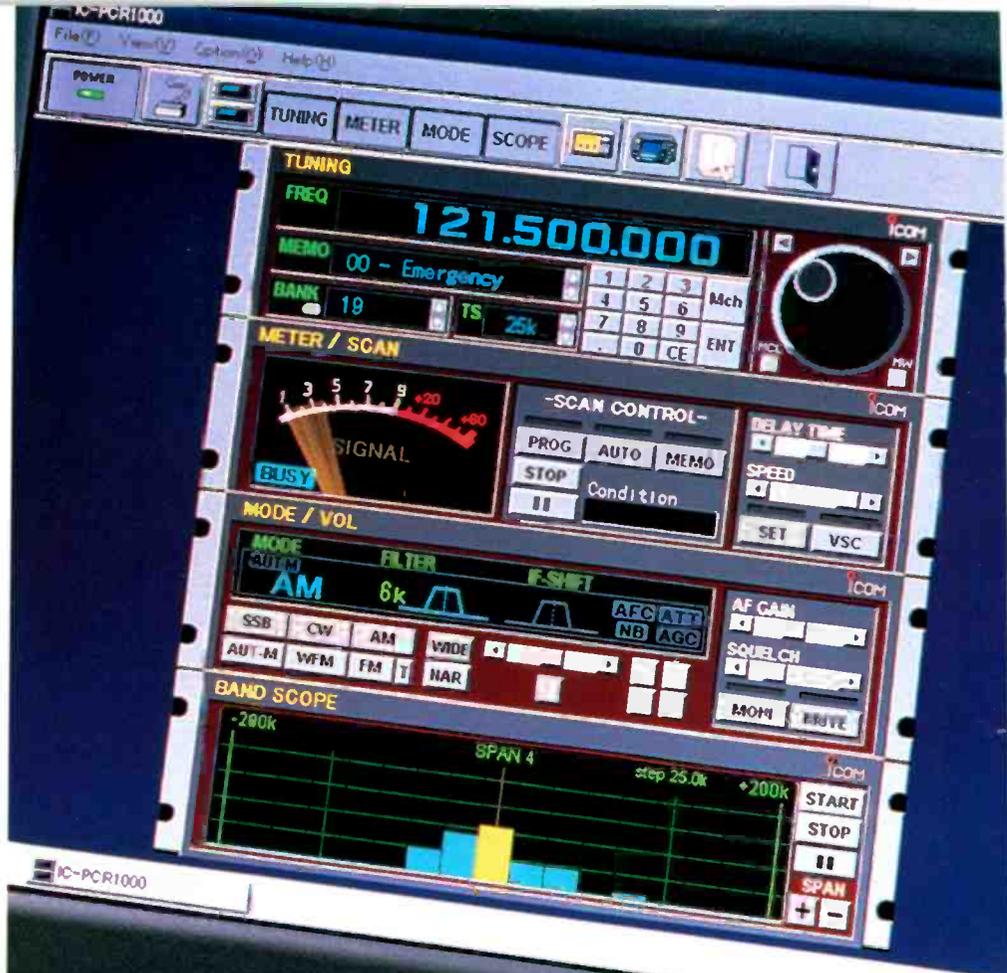




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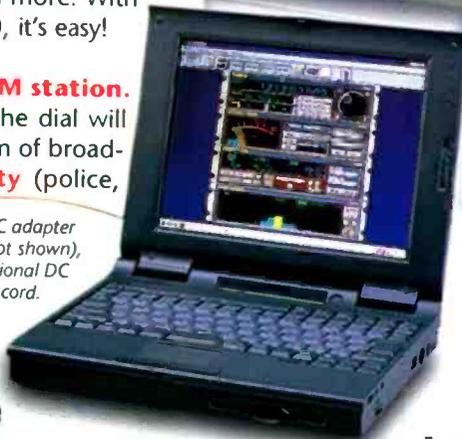
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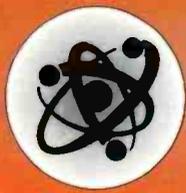
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# POPULAR COMMUNICATIONS

JULY 1998

VOLUME 16, NUMBER 11

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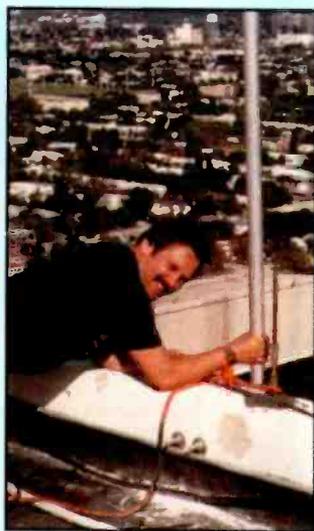
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**ON THE COVER:** Here's on-air personality, Robin Shannon of public radio station WJB-FM 90.5 at Brookdale Community College in Lincroft, New Jersey. The FCC is considering petitions which would permit low power FM broadcasting that could put you on the air legally. Read about the fascinating possibilities in "Here Comes Low Power FM Broadcasting" on page 8. (Photo by Larry Mulvehill)



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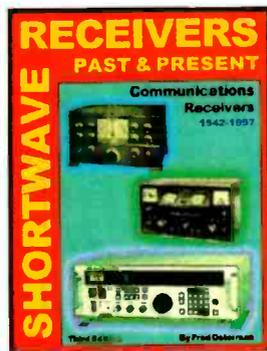
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AN EDITORIAL

## Microstation Broadcasting: The Long-Overdue Service

What would you say if we told you that the FCC is finally giving serious consideration to a proposal that could revolutionize radio broadcasting and put the dream of operating a legitimate radio station within the average person's reach? It isn't a dream: the FCC has indeed placed petitions on Public Notice. Of those petitions being considered by the FCC for such a service, the one submitted by J. Rodger Skinner, of Pompano Beach, Florida, is officially designated RM-9242. Let's check out his petition.

### What It's All About

At first look, and reported in Fred Maia's *W5YI Report*, you'd get the impression that microbroadcasting "... could legalize pirate radio." Actually, the truth is, while *Pop Comm* fully supports each petitioner's visionary, open-minded, and well-thought-out proposals, it isn't all about legalizing pirate radio per se—it's about giving local communities the long-overdue ability to reach out to their prospective audiences with information, entertainment, news, and programming that only a grassroots broadcaster with ties to the local community can provide. If approved by the FCC, and down the road it reduces pirate activity, all the better.

Skinner, a communications consultant and broadcaster himself, has written a special feature titled "Here Comes Low Power FM Broadcasting" on page 8 that gives you an exclusive in-depth look at the proposal we hope will be given the FCC's OK. Rodger told us as this issue went to press that "... for less than the price of a new car, the dream of owning and operating a community radio station could become a reality...."

His petition was presented to the FCC on February 19, and, although the comment filing dates have recently passed, you can still send a letter to the FCC, addressed to: Office of the Secretary,

*"The creation of a low-power FM broadcast service would give ordinary folks the ability to own and operate their own small radio station...."*

Room 222, Federal Communications Commission, 1919 M Street, NW, Washington, DC 20554. Note on the top of your letter "Comments on RM-9242," and tell the FCC that you've just found out about the proposal, and would like them to consider your submission to be part of the record. While your comments might not end up being part of the "official" considerations, they will still go a long way toward convincing the FCC we're serious about microstation broadcasting. Be sure to emphasize the need for high enough power, as requested by Skinner, to make LPFM work. Flea power and a mere half-mile coverage doesn't cut it.

Skinner has proposed three classes of stations. Specifically, they are:

- LPFM-1 — Stations with power from 50 watts to a maximum of 3000 watts.
- LPFM-2 — Stations with power from 1 watt to 50 watts.
- LPFM-3 — Stations with power from 1 watt to 20 watts, and only serving as "Special Event" stations with a 10-day operating permit.

Without getting too technical, if the FCC, or currently licensed full-power FM broadcasters react negatively to the requested "3000-watt maximum" in RM-9242, they should be reminded that the 3000 watts would give a maximum range of **up to 15 miles**. So if broadcasters are concerned about competition from these proposed microstations, that doesn't wash with us, and it shouldn't influence the FCC. Remember, FM transmitters, under current regulations, are

(Continued on page 77)

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LETTERS TO THE EDITOR

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## Receiving Cellular, But . . .

Dear Editor:

Cellular transmissions are inadvertently received too, right? In Canada we can and do listen to the cellular frequencies, but we also have other interests. Peel Regional Police recently moved to 800 MHz and the cell call images are driving me nuts. I don't want them when I'm chasing cops, but I can't avoid them.

Is it any wonder that many analog users think they have digital phones? The most famous and popular analog cell phone has "Digital Personal Communicator" etched on the fold down flip!

Mo Janes, Ontario, Canada

Dear Editor:

A special congratulations to Chris Smolinski on his excellent article on Spy Numbers stations. Chris' well-written article and his excellent research have made "spy monitoring" an organized possibility for the shortwave listener. No longer is it an accidental encounter.

Winston Sweeney, VE3WFS, Ontario

## A Touching Article

Dear Editor:

In the March issue, Alice Brannigan's article "Small Voices For Freedom Were Heard" was one of the best I've read in a long time. It was about fighting against the odds, and trying to get their country back from a dictator. She made me have a good feeling for the radio people.

Please thank Alice for a touching article. I enjoy your magazine.

Jake Helms, PA

## Been There, Done That!

Dear Editor:

This letter is being sent for only one reason: To warn all radio owners about theft. I recently became a victim of our lower side of society. Two of my most prized possessions, a Kenwood 2-meter mobile radio, and a Motorola 440-MHz mobile radio, were stolen from my car as I slept just a few feet away in my house.

Of course I thought that either my car insurance or my homeowner's insurance would cover me, right? WRONG. Because I did not have comprehensive coverage on my vehicle, my car insurance did not cover me. Also, because the radios were mounted on the transmission hump (as the insurance company said, PERMANENTLY), my homeowner's insurance did not cover me. Now I am out approx. \$700 of radio equipment.

My only hope is that by writing this reminder, someone will avoid the experience that I had to go through. Whether CB, ham, or commercial radio, PLEASE insure those radios. The few dollars spent to purchase this insurance will save many hours of frustration and depression. Trust me, I know what I'm talking about. As my 16 year-old daughter would say, "Been there, done that."

Brad T. Gass, N3JPL, PA

## Changing With The Times

Dear Editor:

After reading "Harold's One Accurate Statement" and Mr. Smith's response, I feel compelled to enter my two cents worth. I agree with both sides of this issue — both present excellent arguments. For me personally, it all started with a need for effective emergency communications while exploring old ghost towns. Cell phones are very limited in the boondocks and mountainous terrain regions, unless you're at very high elevation.

Back in 1994, my wife and I both studied for, and received, our ham licenses. I am presently a Tech, and she a Tech Plus. My wife passed the 5 WPM with no problems whatsoever, as she is also very musi-

cally inclined. As for myself, I have studied countless hours, and for some reason still get lost midway through the five minute copy. Here's my main point to the code argument, using my own wife — "the teacher" with an outstanding GPA, as an example — and myself as compared to her, a C+ student in college. She could continue to master the upper levels of written, as well as the code test if she were to apply herself to this task. And she may, but as for her being able to, or having the practical hands-on skills to access various repeater sites with phone patch capability, changing frequencies and or PLs in her handheld, or even just using my Yaesu 5200 in my truck, my wife can't. Even though I have shown her numerous times, she still gets lost. If we are going to utilize ham radio, I set the agreed frequency and that's it.

Back when our new-found communication hobby began, I tried unsuccessfully several times to teach her how paging and tone code squelch worked, all to no avail. She now carries a tiny C-phone in her purse and only uses our base station when I am out in the boondocks, or camping, etc. So you see fellas, here's the big kicker: The ham tests in general are a farce for beginners all the way up the ladder. They really don't teach anybody how to operate these more-often-than-not, complicated pieces of communications equipment with any real, world practicality! The manufacturers of these little complicated monstrosities should have their heads examined. Group paging, to my knowledge, has never been utilized by anyone I've communicated with on the air. And the push of one wrong button while traveling down the road can put the unit into some mode you can't remember.

Mr. Wayne Green said it very factually back a while ago over nationwide talkradio. If the big boys don't change with the times, we hams will continue to lose our privileges and bandwidth. I don't buy that hogwash about having too many operators out there clogging up the airwaves. In my area of the San Joaquin Valley, the UHF/VHF is wide open with numerous repeaters, with no one monitoring the frequencies. If what the head

(Continued on page 38)

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CIRCLE 160 ON READER SERVICE CARD

# Here Comes Low Power FM Broadcasting

## Will YOU Own An LPFM Radio Station?

By J. Rodger Skinner, Jr., W4FM

If you're like me, or any of the other 13,000 people who call the Federal Communications Commission (FCC) each year wanting to know how to start their own low power radio station, this could be your lucky day! Like many others, I started in broadcasting at age 16 by building a mini-radio station in my basement. I built the console, and my friend Jack Hurray, who was more skilled in electronics, built the small homebrew transmitter. The three summers we spent "on the air" were some of the most exciting times of my life, and they led to my 35-year career in broadcasting. In fact, several friends were still talking about that radio station at my 35th high school class reunion last summer.

### Timing Is Right For LPFM

Several events have transpired over the last several years that work together to make this the perfect time for the creation of a Low Power FM (LPFM) broadcast service nationwide. A crucial part of this plan is the ability to broadcast on 2nd and 3rd adjacent channels to existing stations without causing interference. Current FCC rules, written decades ago, prohibit use of these channels; however, vast improvements in receiver design over the years now make these 2nd and 3rd adjacent channel restrictions unnecessary, thus making available several channels in each market for use by LPFM stations. Comments filed by many engineering firms in the grandfathered short-spaced FM proceeding at the FCC in 1996 proved this point. Another factor was the Telecommunications Act of 1996, which removed the previous ownership limit of 12 stations by any one company, and resulted in the most massive consolidation ever witnessed in broadcasting history, with some companies now owning hundreds of stations. The result of this merg-



Author Rodger Skinner, Jr., already has some of the equipment he plans to use for his Fort Lauderdale, Florida, LPFM station. (Photos by Loren Matthews, W4YU)

er-mania is that in most markets today there are three or four companies that own nearly all the radio stations, forcing the price of stations beyond the reach of all but the wealthy, and the large corporations. Localism that was once the cornerstone of broadcasting has been lost. Local entry-level announcing positions are almost a thing of the past, replaced by syndicated "sound alike" homogenized programming delivered via satellite. Concerned only with maximizing profits, these Wall Street-type station owners cut jobs and eliminated programming like local news and announcements of school closings during winter storms.

Another element that calls out for change is the spread of unlicensed so-called "pirate radio stations" across the country, which are found in virtually every city. With the removal of local broadcast service by the mega-corporation owners, the void is being filled by

the pirates. In acts of civil disobedience, which remind me somewhat of those of the civil rights movement of the 1960s, pirates are taking to the airwaves, risking fines, confiscation of equipment, and possibly even imprisonment. Many of these local broadcasters have a desire to serve their local community, but there is nothing in current regulations permit these stations.

The last element needed for this change was the recent appointment of the new FCC Chairman, William Kennard, who is very sensitive to the problems created by consolidation. His remarks in various trade publications show his sincerity in lowering the barrier to entry into broadcast station ownership for individuals, small business, minorities, women, and others of limited financial means. The pendulum of change has swung too far to one side in radio and the time is right for it to swing back with the creation of a

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## LPFM Station Classes

Class of Station	Power (ERP) Min. – Max.	Max. Antenna Hght/Ft (HAAT)	1 mV/m Contour Max. Range (Miles)
LPFM-1 Primary Service	50 W–3000 W	328	15
LPFM-2 Secondary Service	1 W–50 W	150	3.6
LPFM-3 Secondary Service Special Event Station 10-Day Only Permit	1 W–20 W	100	2.3

Note: Three classes of stations are proposed in RM-9242, allowing something for each type of low power broadcaster.

local LPFM radio service. Sensing all of these changes, I began two years ago preparing a “petition for rulemaking” which I filed at the FCC on February 20, 1998, seeking creation of a Low Power FM broadcast service nationwide. My petition has been assigned rulemaking number RM-9242 by the FCC, and serves as a plan for implementation of the LPFM service, allowing for the ownership of your own LPFM station for *less than the price of a new car*.

### Petition To Create The LPFM Service — RM-9242

The petition calls for the creation of *three classes* of LPFM stations, filling the needs of a broad range of stations.

Starting at the bottom would be a class **LPFM-3** station authorization, a 10-day-only temporary permit for “**Special Event**” stations to broadcast at events such as automobile races, boating regattas, tennis matches, etc.

Next is a class **LPFM-2** station, which I believe **can satisfy the majority of the “pirate broadcasters,”** giving them an opportunity to broadcast legally and provide useful service to their local communities. The LPFM-2 would have a **minimum of regulations**, and could be upgraded at any time to a LPFM-1 license, if desired. Many LPFM-2-type stations will desire to broadcast with volunteers in a less restrictive environment serving a community or part of an urban area.

Lastly, the highest class **LPFM-1** license will allow many people who have

worked in the broadcast industry for years a **chance to finally own their own radio station**. These stations will abide by the majority of Part-73 FCC rules that apply to full-power FM stations, and will serve a larger area of up to 15 miles range. LPFM-1 stations will be a “primary service” and have contours protected by all stations, LPFM and full-power FM alike.

The following chart shows the limits for power, antenna height, and coverage to the 1 mV/m (60 dBu) contour of each class of LPFM station.

### Plans To Keep It A Local Service

Bearing in mind the problems created by the massive consolidation of radio stations by large corporations, and wanting to restore localism lost in this shuffle, I wanted to keep the LPFM service for “locals only.” Out-of-towners and large corporate broadcast interests need not apply. For this reason, I came up with what I call “**the 50-mile rule.**” Simply, any applicant for an LPFM license must prove primary local residence, for at least one-year prior within 50 miles of the proposed station’s antenna site. If the applicant is a corporation, partnership, or other entity, all stockholders, partners, or parties of interest must meet the 50-mile limitation. In addition to this application restriction, I proposed that new entrants, those owning no other media interests (radio/TV/newspaper, etc.), be given a 4-to-1 preference over those owning other media, excluding Low Power TV stations, which are “secondary service.” Hundreds of small, local “mom and pop owned” LPTVs, including mine, are being bumped off the air by the digital television roll-out.

### Where To Find The RM-9242 Petition

Anyone interested in reading the entire 25-page RM-9242 petition can find it on the Internet at my Web site at <<http://www.concentric.net/~radiotv>>, and also at the FCC Internet Web site, <<http://www.fcc.gov/rmb/asd>>. Anyone lacking access to the Internet can get a copy of RM-9242 by sending \$2 to cover postage/copying costs to me at the address at the end of this article.

There are also two other petitions dealing with LPFM on the FCC Web site: RM-9246 deals with only “Special Event” type stations; RM-9208 calls for a very



*Here's the view from the rooftop of a 400-foot-tall building overlooking Fort Lauderdale — a great LPFM antenna site!*

low power radio service of only 1-watt (one-half-mile-range) with only one channel per city. Also on my Web site, you will find a FAQ (frequently asked question) that describes in detail the reasoning behind RM-9242.

## Technical Considerations Of An LPFM Application

As President of TRA Communications Consultants, Inc., I have prepared and filed applications for new Low Power Television stations and new full-power FM stations for clients nationwide since 1980. Many have asked me why they need an engineering study to be attached to an LPFM application, as proposed in RM-9242. "Can't I just find a clear spot on the dial myself?" they ask.

I proposed using desired-to-undesired signal ratios to justify non-interference for LPFM stations, since this method will allow more stations to be accommodated than would be under a mileage separation method. This desired-to-undesired signal ratio method of predicting interference has been used successfully in the Low Power Television service. Since I participated in the rulemaking that created the LPTV service years ago, I have borrowed many of the ideas from that service to create the Low Power FM service. Some channels that may sound fairly clear may not meet FCC interference requirements, which is a mandatory prerequisite to allow any channel to come on the air. I have proposed that the signal of the interfering (undesired) co-channel station be at least 20 dB below the protected (desired) station's protected contour at that protected contour. Likewise, an interfering (undesired) 1st-adjacent station must be at least 6 dB below the protected (desired) station's protected contour. These are the same rules already being used to predict interference for grandfathered short-spaced FM stations. It should be pointed out that hundreds of these grandfathered short-spaced full-power FM stations have operated for many years on 2nd and 3rd adjacent channels without any interference complaints. This subject is dealt with in detail in RM-9242, another thing that sets it apart from any other petitions on file. Although, I won't be able to quote rates for LPFM application preparation until the FCC determines what will comprise the service, I know that they will be far below what we have charged for full-power FM application preparation. I have also called for use of FCC type-accepted equipment

to prevent any interference from harmonics and other spurious emissions that could otherwise affect broadcast or other services. I believe that once this large new market for LPFM opens, there will be many manufacturers rushing in with lower price type-accepted equipment, designed especially for LPFM, that meets all FCC specifications.

## How To Get Started

First, you must realize that the LPFM service has not yet been created, but is

*under consideration at the FCC now.* Although the comment filing deadline of April 27 and reply-comment filing deadline of May 26 has passed, you might still want to file informal comments at the FCC. Although these late-filed comments will not be part of the official record, they may show the FCC just how many people want this new service to be created. Mark the top of your letter with "Comments on RM-9242" and mail an original and nine copies in one envelope to: Office of the Secretary, Room 222, FCC, 1919 M Street NW, Washington,

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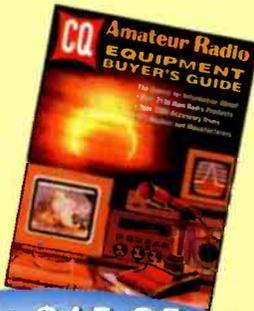
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## Chart Showing Coverage To 1 mV/m (60 dBu) Contour In Miles

Antenna Height in Feet (HAAT)

	50	100	150	200	250	328
1 watt	.6	1.1	1.4	1.6	1.8	2.0
20 W	1.6	2.3	2.8	3.3	3.7	4.2
50 W	2.1	2.9	3.6	4.1	4.6	5.3
100 W	2.4	3.5	4.3	5.0	5.6	6.4
250 W	3.0	4.4	5.5	6.3	7.1	8.1
500 W	3.5	5.3	6.5	7.6	8.5	9.7
1000 W	4.1	6.3	7.8	9.0	10.1	11.5
2000 W	4.8	7.5	9.3	10.8	12.0	13.7
3000 W	5.3	8.3	10.3	11.9	13.2	15.0

Notes: Distances calculated from FCC F(50/50) Distance to Contours Chart / Figure 1 of Section 73.333 of FCC rules  
HAAT= Height Above Average Terrain  
ERP= Effective Radiated Power (in watts)

DC 20554. You may wish to emphasize that the half-mile coverage proposed in RM-9208 is insufficient, and that you want to see the power levels described in RM-9242 enacted into the rules for LPFM. Having worked for several radio stations and having sold radio advertising for years, I know that inadequate coverage can doom an LPFM station, preventing it from being able to support itself with commercial advertisers. Any store owner will want your station's coverage area to at least match his business trading area of 10 to 15 miles. Anything less, and you will find yourself unable to pay the bills at your new LPFM station. That's why the old full-power Class-A station owners wanted, and got, an increase from 3000 to 6000 watts. If you want to operate with less power and cover a substantially smaller area, as in some very small markets, that is fine, and RM-9242 allows for that; however, in some larger markets, the higher power will be necessary to cover even half of the market.

In addition to writing the FCC, you should also write and call your Congressional representatives to enlist their support for RM-9242 and the creation of an LPFM service. The National Association of Broadcasters (NAB) is opposing the creation of LPFM because they don't want any additional competition for their stations, and they are pushing this point to all those in Congress who will listen. It is important that we remind our Congressional representatives that under

Section 257 of the Telecommunications Act of 1996, the FCC has a statutory obligation to promote competition and help small businesses enter the broadcasting field. Make your views known to your elected officials today. Remind them that, come election day, we will remember those who helped us create LPFM and those who did not.

So start scouting around for an existing tower on which you might lease space, and be prepared to give an engineer the tower registration number and the coordinates in degrees-minutes-seconds of the antenna site to begin a frequency search and the preparation of your own LPFM application.

Get ready, LPFM is coming! ■

*Editor's Note: Rodger can be contacted at the following address or phone number if you would like more information on LPFM. As Rodger and I have discussed over the past few weeks, the time has come for a worthwhile LPFM service.*

J. Rodger Skinner, Jr., W4FM  
TRA Communications Consultants, Inc.  
6431 NW 65th Terrace  
Pompano Beach, FL 33067  
Phone: 954-340-3110  
E-mail: radiotv@cris.com

# The Mystery Station On "Island X"

## Two Secret Anti-Castro Stations!

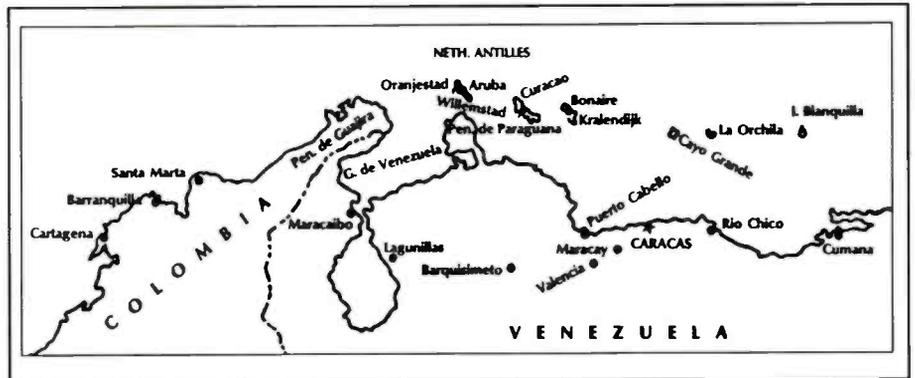
By Alice Brannigan

The year was 1962 and the Cold War was in full swing. The Soviets were shipping missiles to Castro's Cuba. President John Kennedy's legendary confrontation with the Soviets about this, and his naval blockade of Cuba, appeared to bring the world one step closer to the brink of armed conflict.

The Cold War was more a war of ideologies, espionage, dirty tricks, subversion, nerves, words, and propaganda than anything else. So-called "black" (deep undercover) fronts and operations abounded, especially in the area of broadcasting. One that became quite famous was Radio Swan (also known as Radio Americas), a powerful anti-Castro CIA AM and shortwave station located on Swan Island, southwest of Cuba. It began operating just about the time of the Bay of Pigs invasion in 1961. Much has been written about Radio Swan. Another anti-Castro mystery station of the era was Radio Libertad.

Very little has been published about yet a third undercover anti-Castro broadcaster, one hurriedly established by the U.S. Navy in response to the 1962 Cuban missile crisis. According to James F. Pinkham, one of the engineers who worked on the project during its initial deployment, Navy Communications (Navcom) Systems Headquarters had engaged two broadcast engineers to quickly and secretly ready a very old 50-kW transmitter and towers for portable operation at a secret island site in the Gulf of Mexico. The engineers were Jim Pinkham's former employer, the late John H. Mullaney, PE, and Phil Nesbit.

The transmitter Navcom Systems wanted operational was a Westinghouse 50G, a gigantic 20-year-old relic that had long been mothballed. They worked round the clock to restore this huge piece of equipment to operating condition at a Rockville, Maryland, site. It required extensive restoration and repair. Restoration was made difficult because Westinghouse was unable to furnish an adequate set of manuals or blueprints for



*Radio Libertad seemed to be located in Venezuela. At least that was what the CIA was speculating in a confidential monitoring report. Some DXers, however, thought it was more likely in the Netherlands Antilles.*

the transmitter. A week was lost trying, and then replacing, wires.

The power supply portion of the station was worked on in Alexandria, Virginia. This consisted of two 200-kW, 208-volt three-phase diesel generators. Then, they had to figure out how to install the transmitter and all other equipment required for the station's operation in large semi-trailers.

This included a 20-ton air conditioning system, a studio and workshop, spare parts and diesel fuel, diesel generators, and a roof and side shutters to protect the electrical equipment from the elements. In all, the radio station was to occupy five semi-trailers.

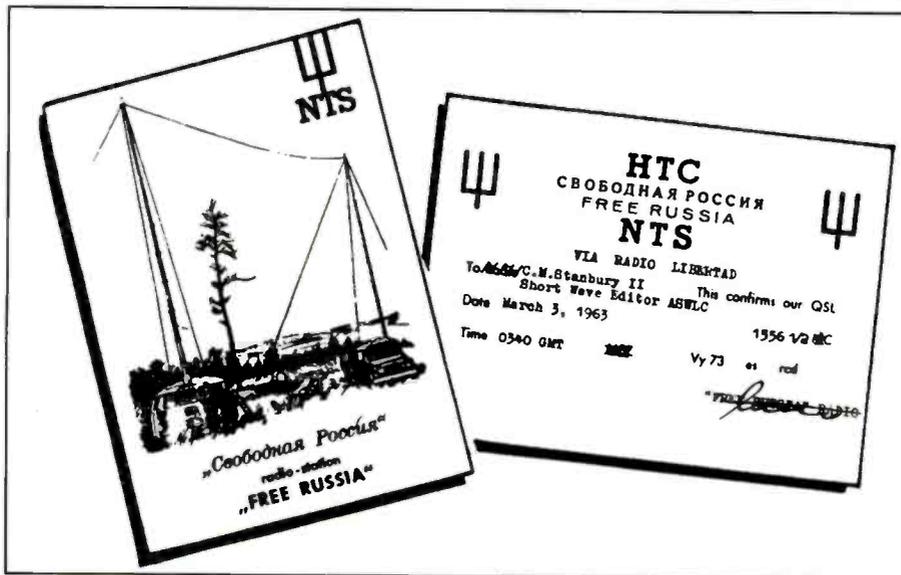
### Convoy Time

Wiring was still in progress when the Navy started the truck convoy on its way to Key West, Florida. The idea was to complete everything on site. Not long after the trip started, they learned that the tires on one van weren't strong enough. All of the tires blew out on the van carrying the heavy transformers. When they arrived in Miami, the project was carrying six engineers with secret clearance. Twenty-one broadcast trainees from a Miami school were sent over to help get the station finished.

At dusk, under cover of darkness, the semi-trailers left the naval base at Key West aboard two Army Transportation Corps LCMs (mechanized landing craft) for a classified destination referred to only as "Island X." At 4:30 a.m., before sunrise, they arrived at a sandy beach in the Dry Tortugas where they were met by a contingent of Navy SEALs.

Located 70 miles west of Key West, the Dry Tortugas are a group of seven small, uninhabited coral islands at the entrance to the Gulf of Mexico (approximately 24-38-36N, 82-52-00W). Declared a National Park in 1992, the Dry Tortugas lie within the territorial limits of Florida. They were named Las Tortugas (The Turtles) because of the abundance of turtles found there when discovered in 1513 by Spanish explorer Ponce de Leon, and mariners later added the word Dry because of the lack of fresh water. Lighthouses were constructed on two of the keys in the 1800s. They are the site of the ruins of Ft. Jefferson, an unfinished Civil War era fortification used as a prison until 1873. Legends of pirates and sunken gold abound in these islands.

One problem after another arose as they started to deploy the broadcast equipment, often relating to rush-modifications made to the transmitter. The transformer oil that had been stored for trans-



QSLs from the mysterious Radio Libertad were not forthcoming from any of their many announced mail addresses. But QSLs from the Free Russia NTS underground relays over Radio Libertad came through readily. This NTS veri was received in 1963 by the late Ontario DXer, C.M. Stanbury, II.

port in an auxiliary tank had become contaminated from residue of welding scraps and paint particles in the tank. The insulators substituted for the specified high-voltage fiberglass types exploded when RF was applied to the antennas. Florida Power and Light provided an oil filtering system and fiberglass insulators.

## Operating

The station was set up on 1040 kHz. The antenna was configured as a two-tower directional with a dumbbell-shaped pattern having a large back lobe towards the central U.S. mainland that created some interference. It was beamed towards Havana.

Program feed was a problem because they couldn't get the microwave link from Key West to work, even with the dishes as high as possible at each end. Worse yet, an error at Navcom System HQ in calculating nautical miles versus statute miles had placed the stations 13 miles beyond the radio horizon.

Rack-mounted communications receivers were brought in by helicopter. These were used to pick up and relay the VOA's Cuban programming from the new VOA station on 1180 kHz that had also just gone on the air from Marathon, Florida. The VOA Marathon station was then still operating on low power (about 900 watts) while completing its antenna tune-up. Broadcasts of some Radio Americas programming was also relayed by the Navy station. The Navy station's 1040-kHz signals were heavily jammed

by Cuba. So were signals from Marathon (making the Navy's off-air pick-ups difficult). The White House sent a dispatch to the Officer in Charge, VOA, Marathon, stating: "Continue operating at present experimental power level to act as relay to the Navy installation on Island X for the Duration of the emergency. JFK."

## Moved From Island X

Three months after first being set up on Island X, the station was moved to a new location near the Key West Naval Air Station (NAS), announced as Sugar Loaf Key. Jim Pinkham did not participate in this relocation. At the new site, it used three towers for better pattern control. It continued in operation there for about four years until damaged by a hurricane which took down the towers. The transmitter was then placed in mothballs. When Pinkham and Mullaney visited the NAS a decade later to survey the stored transmitter for the Navy, it was still serviceable. An FCC inspector from Miami later advised Pinkham that it had been reactivated for use on 1040 kHz by the anti-Castro Radio Marti.

Pinkham told us that because the operations on Island X were deemed secret at the time, no photos were permitted. So secret was this station's status and location that a VOA official didn't specifically acknowledge it until 1969. In response to a direct inquiry, he answered "I understand that a transmitter located temporarily on Dry Tortugas in connection with the military build-up at that time did relay

VOA programs for several weeks." It took nearly 30 more years for someone who had actually worked at the temporary island station to step forward and provide any details!

We'd like to thank James Pinkham for his help and cooperation in presenting the material about this station. We'd also like to thank IMAS Publications, Alexandria, Virginia, for permitting us the use of some of their (Copyright 1997) material here. James Pinkham is presently a control systems designer and consultant associated with Multronics, Inc., Mullaney, Inc., and other manufacturers. His e-mail address is <JimPink@aol.com>.

## Radio Libertad, Another Mystery

Perhaps second in fame only to Radio Swan/Americas as a 1960s anti-Castro station, Radio Libertad, La Voz Anti-Communista de America, stayed deeply hidden. DXers went batty trying to find out who financed and operated it, its exact purpose, or even its specific location.

It first appeared on the shortwave scene in October of 1961, shortly after the Bay of Pigs fiasco, and nearly simultaneously with Radio Swan's metamorphosis into Radio Americas. At first, two frequencies were used, 7318 and 6999 kHz, the latter having been used by Radio Escambre Libre, a one-shot transmission aired by the CIA at the end of the failed Cuban invasion. A third outlet on 15050 kHz was added in December. Then a year later, when the worst of the Cuban missile crisis was over, they were running a full sked on 4005, 5067, 7318, and 15050 kHz, with mediumwave on 1556 kHz (later changed to 1404 kHz).

During that period, Radio Libertad's anti-Communist propaganda operations were in full swing. After that, the station appeared to have hit the skids. By March of 1967, the outlets had been cut to two shortwave transmitters, and, as of late 1969, they were only on 15050 kHz. At best, the signals had never been particularly strong and appeared to be coming from transmitters running between 5 and 10 kW. By 1969, the 15-MHz signals had become so bad they were barely readable.

## Intentionally Mysterious

That Radio Libertad was a mystery is an understatement. Intensive digging by the news media and members of the DX hobby were unable to turn up the slightest wisp of information. A number of attempts (via printed leaflets and through

private contacts) were made throughout the Miami area, where there is a high concentration of Cubans, to find out about Radio Libertad. Not one person with information came forward.

In June of 1962, the station claimed it was broadcasting from the studios of Eugenio Fernandez Ortega, but no location was given. In November of 1962, the station announced its first mailing address, which was a P.O. box in Miami. Soon after, this was changed to 2113 Ocean View Drive, Miami Beach. A check determined that there is no such street. Other addresses were also provided, including two more P.O. boxes in Miami, a P.O. box in Caracas, Venezuela, and a Caracas street address. DXers reported receiving no QSL cards or letters from those addresses, except one listener who claimed to have gotten a Radio Libertad QSL from Caracas.

Interestingly, QSL cards were received for NTS transmissions relayed over Radio Libertad. NTS was an underground station of the Free Russia movement. It was anti-Communist and operated using mobile facilities from somewhere in Europe. The relationship between the two stations was never clear,

although NTS programs may have been broadcast over Radio Libertad for the benefit of Soviet missile technicians stationed in Cuba.

In fact, Radio Libertad carried its own Russian language programming, along with additional broadcasts in Spanish, English, and German. These broadcasts were very hard-line anti-Communist, far more militant than the CIA-inspired programs of Radio Americas.

### Who/Where?

There were many theories held by hobbyists as to who ran and financed Radio Libertad, some, of course, connecting it to the CIA. Yet a confidential CIA monitoring report guessed that the station was located in Venezuela and being operated by a group calling itself "The Eleven." It's doubtful that such information would have been distributed to government agencies if the CIA were running the station, although some other U.S. intelligence operation, such as the Defense Intelligence Agency, still might have been behind it. In any event, it was certainly located somewhere in the Caribbean area, or Venezuela, the Netherlands Antilles,

another island, or possibly a ship.

It could well have been that Radio Libertad was essentially anti-Communist in general, and not specifically anti-Castro. If so, it could well have been a totally independent operation financed from outside of the Americas and staffed by non-Cubans. That could explain its ties to NTS in Europe.

For whatever it might prove, it's interesting to remember that, while Fidel Castro made a number of violent tirades against Radio Swan/Americas (including one in the United Nations), he never took on Radio Libertad. Nor did he attempt to jam its signals. Possibly Castro wasn't quite as impressed by the mysterious Radio Libertad as were the many DXers that the station managed to tantalize throughout the 1960s.

This is your section of the magazine. We are always pleased to hear from readers with comments, suggestions, personal anecdotes, news clippings, and other items relating to radio and wireless of bygone days. Write in care of the magazine, or you can send a direct e-mail to us here at: <Radioville@juno.com>. See you on the road to Radioville. ■

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# The 11th Annual Shortwave Listener's WinterFest!

*A Report On The Annual Gathering Of Radio Enthusiasts In Kulpsville . . .*

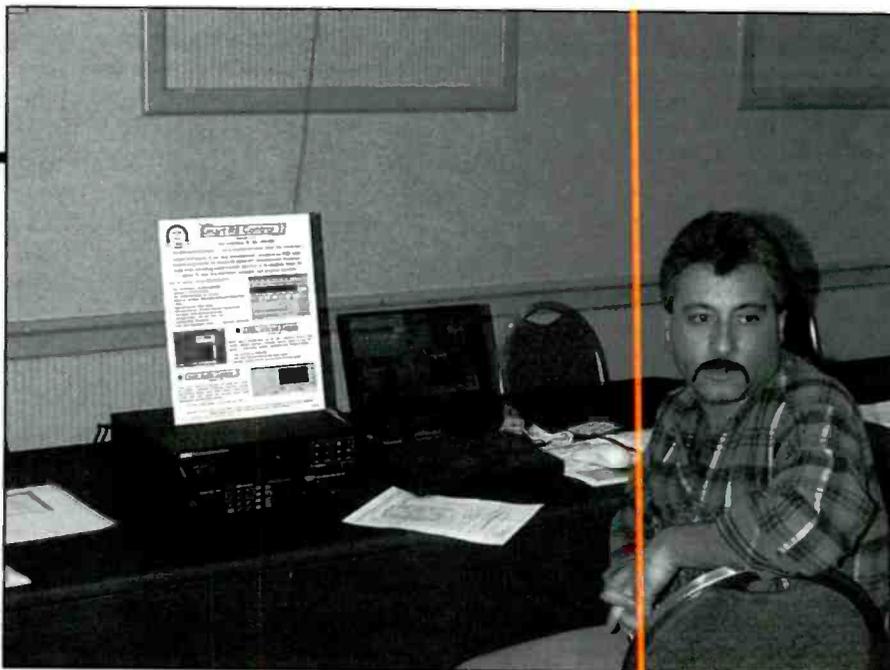
By Ken Reiss

“There was a lunar eclipse last night, and a full moon tonight. Today is Friday the 13th, what better time to kick off a WinterFest?” With this announcement, “Dr. DX” — Harold Cones, Ph.D., in real life — kicked off the 11th annual Shortwave Listener's WinterFest in the Holiday Inn at Kulpsville, Pennsylvania. It's truly impossible to appreciate the depth of this conference without attending, but I'll try to give you an overview. It's helpful, however, to have a little history.

Every year, approximately 200 radio nuts gather for a long weekend to “just talk radio.” At least, that was the original idea as hatched by Dr. Cones and Bob Brown. Soon, they were joined by Chris Fields, and the first WinterFest was well on its way. These folks would soon become known as “The Gang of Three,” and are responsible for putting all 11 of the WinterFests together, although in recent years they have had a few “helping hands.”

The first WinterFest, which I did not have the privilege of attending, is somewhat legendary. It was held in the pink and purple “Pancho Villa” room at the Willow Grove motel just a few miles from its present home. The premise was to just get together and talk about radio, so no formal presentations were organized.

One evening on the local news channel, a feature discussed a murder that had occurred in a local hotel. WinterFest participants were a bit shocked to arrive in the hotel dining room the next morning for breakfast, and find the police outline of the body on the carpet. But the fest continued, since it wasn't a member that had been killed, and generally a good time was had by all. The following year, after



*Several displays lined the outside of the main convention room. Here's Mark Fine of FineWare, demonstrating his excellent shareware control program for the Drake R8 family of receivers. Mark can be found on the Web at <<http://www.crosslink.net/~mfine>>. Numerous clubs were also represented, including CIDX, ACE, and NASWA.*



*Good food and great conversations about all facets of radio were available at the banquet.*



Estelle Winters from the Voice of Russia was this year's banquet speaker. Estelle related several interesting stories about the Voice of Russia and life in general in the young country after the transition.

this "event," it was decided to move the fest to its present location, the Holiday Inn in Kulpsville.

The fest has come a long way in 11 years. From take-out pizza the first year, to a formal banquet catered by the motel. There are now forums on all sorts of topics throughout the day on Friday and Saturday. And there is a hospitality suite where refreshments are provided, as well as an open forum to just chat about radio. And there are raffle prizes, funded by the raffle itself, and lots of prizes donated by all sorts of radio stations, organizations and commercial vendors. But every year, the "Voice of Pancho Villa" returns for a visit.

At the stroke of midnight, on Saturday night, Pancho makes a mysterious broadcast on 6955 kHz, as well as a few FM frequencies. Most of the broadcasts from year to year make fun of DXing as a hobby, or poke at prominent DXers themselves. Nobody seems to know who is responsible for these transmissions, or even if they will occur. By asking around, you can find out various information about the time and frequency of the broadcast, but the information is always accompanied by the phrase "If one were to know such things" because, of course, only Pancho himself can know for sure.

This year, at least to my knowledge, "a good time was had by all." There were numerous forums on topics as diverse as antennas, pirate radio, longwave, easy listening, equipment, and, of course,

scanning with the "scanner scum" — all of which were presented by well-known experts in their field.

Saturday evening's festivities brought the event to a close with a catered banquet, remarks by Voice of Russia's Estelle Winters, and drawings for the raffle prizes. Finally, at midnight, Pancho did not disappoint the waiting crowds in the hospitality suite.

Dates for next year's WinterFest have been selected. Further info can be obtained courtesy of Tom Sundstrum's Web site at <<http://www.trsc.com/winterfest>>. This site will be updated as plans for next year's event come together. Of course, there's no guarantee that Pancho will return next year, but I'll be listening to 6955 at midnight next year... if one were to know such things. ■



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# The Radio Connection

BY PETER J. BERTINI  
<RadioConnection@juno.com>

A LOOK BEHIND THE DIALS

## Using The Voltmeter

To understand troubleshooting techniques, you need to know what your test equipment can and cannot do. This month, we are going to take a look at voltmeters.

At this point, I'll assume you know how to make basic voltage or ohmmeter readings with your meter. Voltage and resistance measurements are the two most common measurements used in vintage radio restoration. Chances are your voltmeter is actually a multipurpose test instrument, and has several ranges to measure AC and voltages, resistances, and current. My shop instruments include several service and lab-grade Fluke digital meters, a Heath IM-13 VTVM (vacuum tube voltmeter), a Simpson 260 analog meter, and two Tektronics oscilloscopes. (Gosh, I built that IM-13 back when I was in high school — how time flies!) Which test instruments do I use the most, and which remain unused? If, for some reason, I were allowed to keep only one piece of test gear, it would be my Tektronics 465 scope — hands down. A good scope is the most valuable tool a technician or service person can own. How to use a scope for service work is good fodder for several future columns.

### A Look At Voltages

Several months ago, I mentioned that the tube voltages shown in tube manuals are always referenced to the tube cathode. A sharp-eyed reader questioned my statement, asking: "What about the voltage readings given in the Rider manuals for some sets? Are these voltages taken from ground or the tube cathodes?"

They're good questions! Those voltage readings shown in the Rider manuals are always measured from the chassis to the point being metered, unless it's stated otherwise. The voltages given are for general troubleshooting, and are not for determining the actual operating parameters of the tubes in the set.

### Ohms-Per-Volt

So, can you use a fairly recent vintage VOM (volt-ohm-meter), such as the ven-



Here's Peter's Fluke 77 being used to do some basic troubleshooting in this Philco chassis.

erable Simpson 260, to take voltage measurements based on those shown in the Rider's voltage tables? It depends! Look at the schematic that shows a simple voltmeter. The values of the resistors determine the full-scale voltage reading. The resistors are called "multiplier" resistors: the more sensitive the meter movement, the larger the resistor value needed for a given voltage range. The "sensitivity" specification for voltmeters is given in "ohms-per-volt." A sensitivity of 1000 ohms-per-volt means that the resistance of the voltmeter is 1,000 times the full-scale voltage reading. Thus, for the 0- to 10-volt range, our meter will present a 10,000-ohm load to whatever circuit it is connected across. Ohm's law shows that a 1000 ohm-per-volt voltmeter is using a 1-mA meter movement.

Any voltmeter, analog or digital, will draw current from the circuit it is measuring! The exception to this rule is the null-meter circuit that uses a special 0-center reading meter — when the reference voltage is set to equal the measured voltage, the 0-center meter is at center and is drawing no current.

Most schematics giving voltage readings will also show the "ohms-per-volt" rating of the voltmeter used to make the voltage measurements. Early service meters used relatively high-current meter movements, and the early Rider voltage readings will often note that the meter used had a 1000- or 5000-ohms-per-volt rating. Suppose you used a 1000-ohm-per-volt meter on its 0- to 100-volt scale to measure a screen voltage on an i.f. stage. Let's say the designer was using a 90-K resistor to drop the plate voltage from 240 volts to 85 volts for the screen. The meter on the hundred volt range is going to load the circuit with 100,000 ohms resistance — substantially lowering the screen voltage. How much effect would be hard to say. There's a bit of "see-saw dynamics" involved here: As the screen voltage is lowered, the screen current would also change, causing the voltage drop across the dropping resistor to lessen (screen voltage increases). The meter load changes constantly with varying voltage, but don't be surprised to see a voltage reading that is 20 or 30 percent lower than it actually is!

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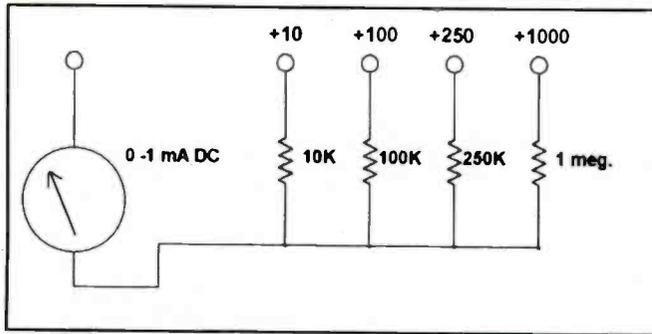
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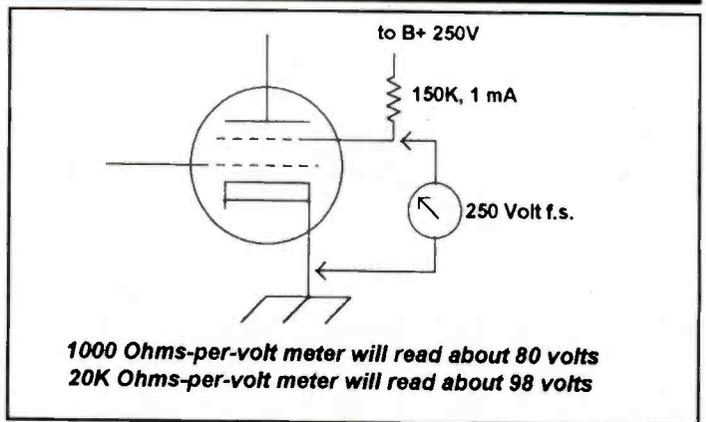
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A simple 1000-ohm-per-volt voltmeter can be made from a 1 Ma meter movement and some common value resistors. Note that the internal resistance of the meter is part of the multiplier resistance value. In practice, it is such a small percentage of the total, so it's to be ignored.



Screen voltage measurements vary greatly, depending on the impedance of the feed voltage and the sensitivity of the voltmeter.

Using a more modern meter with a 20,000-ohm-per-volt rating, such as the Simpson 260, greatly reduces the error. These newer meters use extremely sensitive 50-microamp full-scale movements. On a 250-volt scale, a 20,000-ohm-per-volt meter will present a mere 5-megohm load to the screen circuit, and your voltage reading will be entirely accurate for this sort of service work. So, as you can see, this is sort of a "Catch 22" situation. Using a vintage meter to service old sets will produce readings that match those shown on the schematics, while heavily loading the circuit. A more modern meter will likely give truer voltage readings, but they may not agree with those shown on the schematics.

## VTVMs And Digital Meters

A VTVM is a vacuum-tube-voltmeter. The VTVM uses a vacuum tube to present a very high-impedance load to the circuit being measured. On the DC voltage scales, this is normally an 11-megohm load. Digital meters, such as my Fluke 77, also present a very high 11-megohm resistance load. While the basic VOMs suffice for most general voltage measurements, the digital and VTVM meters are best for measuring AGC voltages. The AGC voltage is usually produced by a diode detector after the last i.f. stage, and is fed to the i.f. (and, if present, the r.f. stage) grid. A 1-megohm, or higher, resistor is often used to help "filter" the audio components from the AGC voltage.

If the set is delivering 2 volts of AGC to the i.f. stage, and you attempt to measure it using a 20,000 ohms-per volt meter on the 10 volt range, you will be shunting the AGC voltage with 200,000-ohms. Since it is being fed from a 1-megohm

resistor, the circuit will be severely loaded. The meter and AGC impedance will combine to form a 5:1 voltage divider! Again, there is some "seesaw dynamics" at play: the AGC will attempt to compensate by increasing the detector output, but it will probably "saturate" long before the desired AGC voltage is reached at the grid. As you can see, an 11-megohm VTVM or digital meter would have minimal effect on AGC voltage readings. VTVMs have two drawbacks: The cabinet is not isolated from the ground terminal of the meter probe, and the meter requires AC power.

## Peter Poser

OK, here's a quick test. You wish to measure a 410-volt test point in a receiver, and your choice is a digital meter, or your 20k-per-volt analog meter with a 1000-volt scale. Which instrument would yield the most accurate measurement? Check the end of this month's column for the answer.

## Reading Ohms

My favorite meter is the autoranging Fluke 77. I can't imagine life without it. But, when it comes to measuring inductances, such as transformer windings or chokes; or resistances, such as the leakage of an old wax capacitor, it has its share of problems. What happens is this: When measuring a large inductance, such as a power transformer winding, the meter supplies a small voltage to the winding. Depending on the current the meter "sees," the ohmmeter will autorange to the appropriate scale. But, as the voltage builds in an inductor, it generates a counter EMF voltage. This counter

EMF upsets the apple cart! The meter senses the current change, and it autoranges; the current changes again, and the meter again autoranges. This will go on forever! You're left with a flashing display, and no ohm reading.

Note that when reading a similarly large inductance with a VOM, the meter needle moves to the final resistance reading ever so slowly, as compared to when measuring a carbon resistor with an equal value. This is due to counter EMF produced by the changing magnetic field in the transformer core caused by the minuscule ohmmeter currents.

## The Same For Capacitors

The autoranging digital meter will have the same problem trying to measure the "leakage" resistance of a large value capacitor. The cap slowly charges, the current changes, the meter again autoranges, etc. The maximum resistance that can be measured by most digital meters is 20 or 30 megohms. Resistances higher than this will show as being open.

## Aligning Radios

Most service folks prefer an analog to a digital meter for alignment. The analog meter rapidly responds to small tuning changes, while the digital meter may display some lag or ambiguity on very small voltage changes. Some digital meters now include a bargraph display to offset this problem, but it is still hard to beat a good analog meter when aligning a radio.

## The Debate Continues

The debate over whether changing all wax capacitors in a vintage set is good

practice or wasteful seems to continually crop up on the vintage radio news-group. Two or three megohms leakage will probably "fly" in a bypass capacitor.

One with 20 megs of leakage would be marginal in an AGC circuit, and may not show on a digital ohmmeter check. A cap used between the plate and grid in audio stages darn well better have more than 200 megohms of leakage. From the AC to the chassis, I want a capacitor with a modern UL AC service bypass rating — my life depends on it. I rarely find vintage wax capacitors that don't have some degree of leakage. I would be hard pressed to identify one that has 200 megs of leakage. Don't waste your time trying to prove that old wax caps are good. Do the job right the first time and replace them with modern mylars. Changing old wax capacitors is not a substitute for good troubleshooting techniques, but it is nonetheless, good restoration practice. We will be using the ohmmeter to find some difficult service problems in an upcoming column.

## Wrapping It Up

Well, I hope this column has cleared up those mysterious ohms-per-volt volt-meter specs. We saw that the common 20,000-ohm-per-volt multimeter is adequate for most voltage measurements in our vintage tube radios. AGC or other high-impedance, low-voltage measurements are best done using an 11-megohm VTVM or digital meter or an oscilloscope. Remember that the voltages shown as references on vintage schematics were taken with meters with 5,000-ohm-per-volt specs. You may have readings showing higher voltages when using more modern 11-meg or 20,000-ohm-per-volt meters — the lower the voltage, the more pronounced the loading effect will be! To complete your workshop, you will probably want to have a good used VTVM, analog and digital meter on hand.

## A Grain Of Salt

Those voltage readings shown in Riders are typical readings. Tube age, normal component tolerance variations, line voltage, and other factors may yield voltages that differ from those shown. Will an i.f. stage still work properly with 75 or 95 volts on the screen when the schematic shows a nominal 80-volt reading? Of course it will.

Oh! The answer to the poser. I'm

afraid there is no easy answer to this one. True, the analog meter load on the circuit is 20 megohms, which is better than the 11-megohm load presented by the digital meter. But, is 9 megs really going to make a difference? More importantly, how accurate is the calibration of the digital and analog meters, and to what

resolution can the readings be made on the analog scale?

Until next month, 73s and, remember, if you've got any questions or comments, send them to "The Radio Connection" c/o Pop'Comm, 25 Newbridge Road, Hicksville, NY 11801 or to me via e-mail at <radioconnection@juno.com>

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# Antennas & Things

BY JOE CARR, K4IPV  
<carrjj@aol.com>

SIMPLE ANTENNAS AND ACCESSORIES FOR SIGNAL IMPROVEMENT

## Where Do Natural Radio Signals Come From?

If you've been reading this column for awhile, you know I have a penchant for receiving natural radio signals. I even coined a term for it — *RadioScience Observing* — when I wrote a series for a British magazine. This term does not mean "radio astronomy," but includes radio astronomy. The reason I felt a new word was needed is that the field takes in a lot of territory. For example, "whistlers" and "spherics" are VLF signals, probably originating in lightning strikes. The maelstrom on the planet Jupiter produces a lot of signals in the 18- to 30-MHz band. The 18- to 24-MHz band is particularly good listening. There are also other signals from outside the Earth's atmosphere, with originations ranging from the sun, to the rest of the galaxy, and beyond.

***"Early radio astronomers, such as Grote Reber (an amateur) and Karl Jansky, discovered during the 1930s that there were radio sources outside the Earth's atmosphere."***

Early radio astronomers, such as Grote Reber (an amateur) and Karl Jansky, discovered during the 1930s that there were radio sources outside the Earth's atmosphere. Early British radar operators noticed these signals in an indirect way. They noticed that the detection range and apparent sensitivity of their receiving equipment tended to drop whenever the Milky Way was above the horizon. Similarly, antennas pointed in the direction of the sun also picked up a strong noise signal. You can see this effect in the VHF bands by pointing a beam antenna at the eastern horizon. Just before dawn there will be plenty of noise, but as the sun slips above the horizon, the noise level climbs to a much higher level.

Figure 1 shows the approximate distribution of energy across the "DC-to-daylight" spectrum. Two basic forms of radiation are noted: thermal and non-thermal sources. The thermal sources

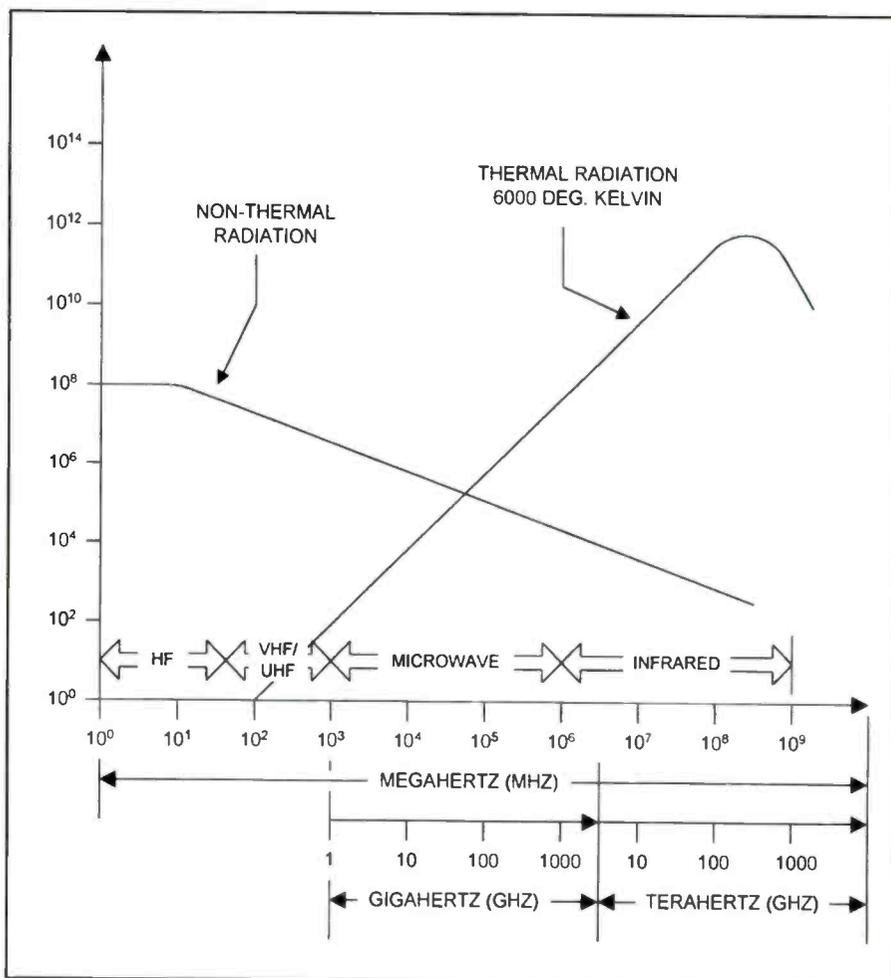


Figure 1. Approximate distribution of energy across the spectrum.

generate radio signals when electrons are deflected by heavier particles in very hot (1,000 to 40,000 Kelvin) clouds of ionized gas. The incident electron will have a certain amount of energy ( $E_i$ ) when it encounters a heavy nucleus (Figure 2). The nucleus deflects the electron to a different path, causing a reduction in energy ( $E_d$ ). The emitted radiation has an energy level of  $E_i - E_d$ . The frequency and wavelength of the emitted energy is a function of the energy level.

This mechanism is the way that medical X-rays are generated in X-ray machines. In that case, the phenomenon is

called Bremstrahlung (German for "braking radiation"). In the case of the X-ray machine, the electrons are emitted by a thermionic cathode, accelerated through a high-voltage electrical field, and then smashed into a metallic target. The metal nuclei cause the kinetic electrons from the cathode and electric field to deflect, releasing radiation.

The emitted braking electromagnetic radiation frequency is a function of both the initial and final speeds of the kinetic electron, as well as how close it comes to the heavy nucleus.

Sources of thermal radiation are the sun

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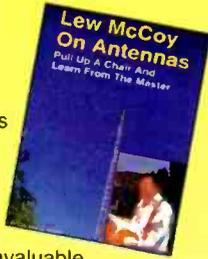


# CQ Books

## McCoy on Antennas

by Lew McCoy,  
W1ICP

This is truly a unique antenna book that's a must read for every amateur. Unlike many technical publications, Lew presents his invaluable antenna information in a casual, non-intimidating way for anyone!



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## W6SAI HF Antenna Handbook

by Bill Orr, W6SAI

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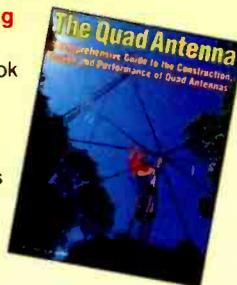
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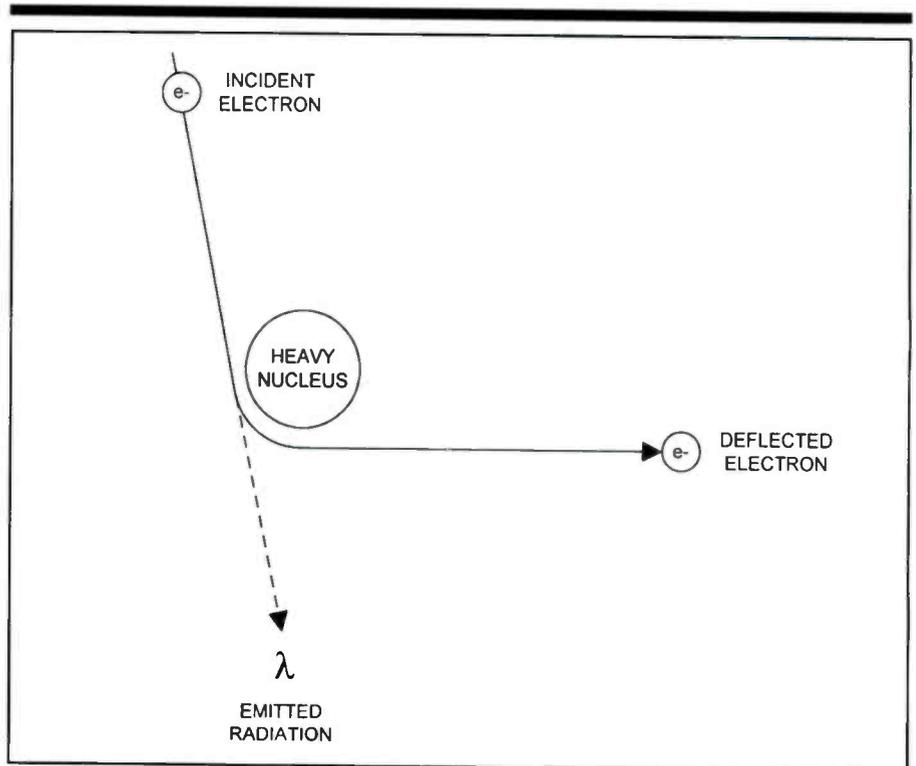


Figure 2. The incident electron encountering a heavy nucleus.

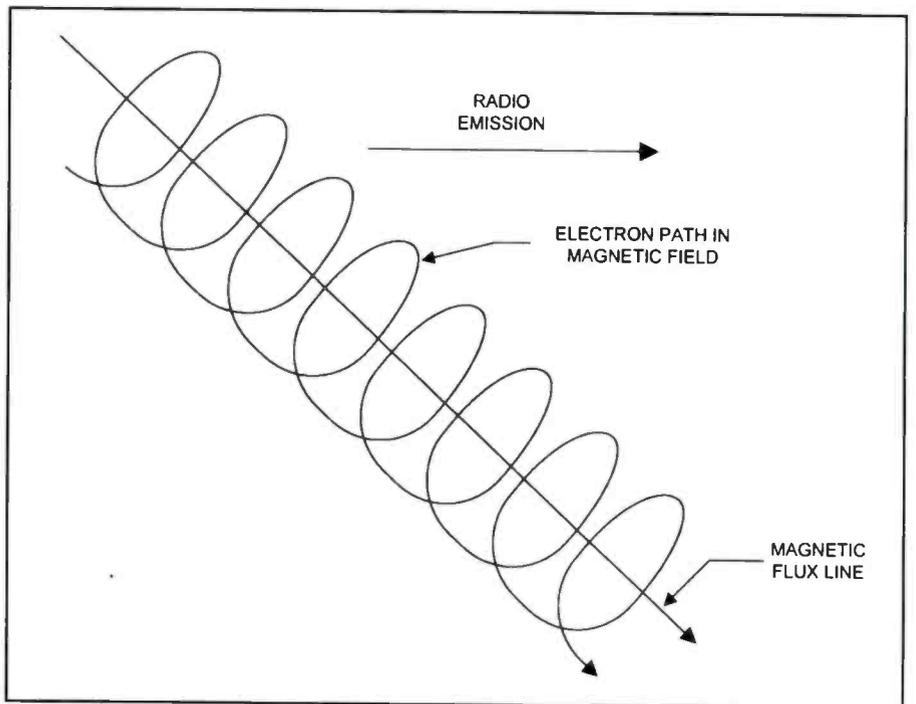


Figure 3. Electrons entering the magnetic field are deflected into a spiraling path.

when it is in a quiet period, some stars, and a "birthplace of stars" in the constellation Orion.

Non-thermal radiation occurs when electrons in motion close to the speed of light encounter a strong magnetic field. When these electrons enter the magnetic field they are deflected into a spiraling

path (Figure 3) causing a change of velocity, which (by a mechanism like thermal radiation) causes emission of electromagnetic waves. This mechanism is called *synchrotron radiation*.

The frequency of the emitted synchrotron signal is a function of the strength of the magnetic field and the initial speed of

the electron. The higher the speed and stronger the magnetic field, the higher the emitted frequency. X-rays, light waves, infrared waves, and radio waves are generated in this manner. Sources of non-thermal radiation include the active sun, the Milky Way, and exploding stars.

***"The equipment needed for RadioScience Observing (RSO) is similar to the equipment required for your normal radio hobby."***

## What You Need For RadioScience Observing

The equipment needed for RadioScience Observing (RSO) is similar to the equipment required for your normal radio hobby. Directional antennas are highly recommended for HF, VHF, and UHF pursuits. Also, if you need a preamplifier, then a low-noise, high-dynamic range model will make the receiver perform better. Also, you might want to buy a book on astronomy to learn the coordinate system by which telescopes are pointed. It's the same for radio antennas.

## My New Book

If you want to follow up and learn more about RSO, then you might be interested in my new book *RadioScience Observing*, published by Howard W. Sams/PROMPT. It deals with a wide range of RSO topics, and includes a CD-ROM for use on Windows™ machines (it contains antenna calculation software, plus wave files of natural radio signals). You can order it over the Internet from Amazon Books at <<http://www.amazon.com>>, or from radio dealers, such as Universal Radio. Alternately, you can order it directly from the publisher at PROMPT Publishing, 2647 Waterfront Pkwy East Drive, Suite 300, Indianapolis, IN, 46214-2041; Phone 800-428-7267.

## Connections

You can contact me if you'd like a list of further reading. I can be reached via snail mail at P.O. Box 1099, Falls Church, VA 22041, or via e-mail at <[CARRJJ@AOL.COM](mailto:CARRJJ@AOL.COM)>. Please type my e-mail address correctly, as at least one variant misspelling is someone who really doesn't want to get my e-mails. ■

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## Sources Of Information And Supplies

In addition to the sources listed below, readers are also directed toward short-wave and scanner receiver dealers.

*Hamtronics, Inc.*, 65-D Moul Road, Hilton, NY 14468-9535

*Advanced Receiver Research*, P.O. Box 1242, Burlington, CT 06013

*Radio Astronomy Supplies*, 180 Jade Cove Drive, Roswell, GA 30075; Phone: 770-992-4959; E-mail: <[jmlras@juno.com](mailto:jmlras@juno.com)>; Web site: <<http://www.nitehawk.com/rasmit/jml0.html>>

*Society of Amateur Radio Astronomers*, Membership Services, 247 North Linden Street, Massapequa, NY 11758

*National Radio Astronomy Laboratory*, P.O. Box 2, Green Bank, WV 24944

*Pico Technologies, Ltd.* (A/D converters; USA readers see Allison below), Broadway House, 149-151 St. Neots Road, Hardwick, Cambs CB3 7QJ, UK; Phone: 44-1954-211716; Fax: 44-1954-211880; E-mail: [post@picotech.co.uk](mailto:post@picotech.co.uk); Web site: <<http://www.picotech.co.uk/>>.

*Allison Technology* (sells Pico A/D converters that work with PCs), 8343 Carvel, Houston, TX 77036; Phone: 713-777-0401, 800-980-9806 (Orders only); Fax: 713-777-4746; BBS: 713-777-4753; Web site: <<http://www.atcweb.com>>.

# Radio Resources

INTERESTING THOUGHTS AND IDEAS FOR ENJOYING THE HOBBY

## New Battery Technology Requires Special Chargers

**G**ot batteries? Tired of tossing those AA alkalines after just one full day of pocket scanner use? Do you need longer playing time than what you get on rechargeable nickel cadmium batteries (NiCds)?

Nickel cadmium batteries are your first source for dependable, rechargeable energy, and are not real fussy about how you recharge them. NiCds thrive on working a handheld radio from full charge to depletion, and then receiving a slow or quick-charge back to their original starting voltage. The more you exercise your nickel cadmium battery pack from full to empty, the closer it will approach three years of service for your scanning and communication requirements.

"I have three different Optoelectronics frequency counters and test receivers, and all of them continue to perform well on their internal nickel cadmium batteries, even though the equipment is over five years old," comments Bill Alber, WA6CAX, an emergency radio technician who uses his Optoelectronics equipment at least twice a month up at remote repeater sites.

"If more manufacturers like Opto would choose premium nickel cadmium battery packs, and supply the right kind of wall charger that won't cook the batteries, we could all get a lot more playing time for the NiCd cells," adds Alber. He also raises some good issues about NiCd and communications equipment:

- Use and recharge periodically, but never leave a pack completely discharged or on a constant recharge.

- Never fast-charge a nickel cadmium battery pack to the point where the cells get hot to the touch and continue to stay in the high-charge mode.

- Don't trickle-charge your nickel cadmium batteries for more than three days. If you can't remember to take them off charge, buy a cheap timer and give them only a two-hour charge in the morning, and a two-hour charge in the evening.

- Regularly exercise your nickel cadmium batteries by turning on your radio



*How long will your radio play?*

or test receiver, and allowing the equipment to pull the batteries down to a point where your equipment begins to stop operating. Then charge them up, and repeat this cycle at least once a month.

### Long Life Alkalines!

Most handheld scanner receivers, portable GPS receivers, and portable two-way transceivers have an included or optional battery holder that takes the common AA cells. If you need the *absolute longest operating time and don't have the capability of a quick fast-charge, select long-life, name-brand alkaline batteries*, and run your equipment until you begin to see it slowly brown out. I recently tested long-life alkaline cells from "the bunny" as well as the ones with a "copper top," and performance was almost identical. The test involved running a scanner at medium volume, squelch wide open, and measuring the battery voltage after a full day of uninterrupted service. Nothing beats the name brand batteries, but coming in close to the

performance of the big battery companies was a set of AA cells purchased from a local RadioShack store. These were the premium cells, and they had about the same weight as the name-brand AA cells.

"Give me a postage scale and a selection of eight AA batteries from different manufacturers. I can easily tell you which set of cells will run my scanner the longest by simply looking at their weight. Those that weigh the most will last the longest," claims Julian Frost, N3JF.

A big advantage of alkaline batteries is their extended shelf life. You can store a pack of AA alkaline batteries for up to five years with almost no loss of operating life, which is good news for emergency communicators.

Conversely, a set of freshly charged nickel cadmium batteries will self-discharge by about *10 percent per week*. And even your *best* set of nickel cadmium batteries, fully charged just hours before use, will only provide approximately 70 percent playing time compared to AA alkaline batteries. But, a 70 percent play time on nickel cadmium batteries compared to alkaline batteries is a big improvement over the usual 50 percent play time we've seen in the past. Some of the best nickel cadmium batteries come from these well-known radio-friendly battery companies:

- E.H. Yost & Company, 2211-D Parkview Road, Middleton, WI 53562; Phone: 608-831-3443

- W & W Associates, 800 S. Broadway, Hicksville, NY 11801; Phone: 800-221-0732

- Advanced Battery Systems, Inc., 300 Centre Street, Holbrook, MA 02343; Phone: 781-767-5516 or 800-634-8132

- DC Ace Electronics, P.O. Box 364, Lincolnshire, IL 60069

"If you can't regularly exercise your nickel cadmium batteries, get a professional charger/conditioner that can pull the batteries down, and then bring them back up automatically for improved performance," comments Bob Davis, K7IY, a Reno, Nevada-based land mobile radio technician. "Many of my customers are



The NiMH battery on the left has almost twice the capacity as the NiCd on the right.

operating two-way radios on their original set of nickel cadmium batteries that are over four years old, thanks to new base-charger technology that may incorporate battery conditioning," adds Davis.

## New Batteries Need Precise Charging

The latest in new battery technology is called *nickel metal hydride (NiMH)*. The nickel metal hydride AA cells are ideal for portable scanner radios, portable test receivers, and handheld transceivers because of their longer playing time, faster charging time, and improved performance in cold weather without "memory effects" that plague NiCd batteries.

The cost per cell of the new nickel metal hydride batteries isn't that much more than comparable high-quality nickel cadmium batteries, and where a NiCd might only play 50 to 70 percent as long as an alkaline battery pack, the new nickel metal hydride packs can last almost as long as an alkaline pack.

The nickel metal hydride batteries have been around for over eight years, but it wasn't until the cellular portable phone revolution that we saw them in the communications industry. And it wasn't until about a year ago that we saw any of the traditional NiCd battery sellers beginning to cautiously sell the new nickel metal hydride cells. Why do I say "cautiously"? "Here at Yaesu, we warn our customers not to run nickel metal hydride batteries in our equipment because of the problems

that could be associated with rapid charging them," commented a Yaesu service technician at a recent ham radio show. "If you were to recharge a nickel metal hydride battery pack in some of our rapid-chargers, you have the potential for fire or cell meltdown," added the tech. This is an extremely important point: Nickel metal hydride batteries must not be rapid-charged with conventional nickel cadmi-



The new MFJ Quick Charger is compatible with both NiCd and NiMH battery packs. This model is for Kenwood radios. (Photo courtesy MFJ Enterprises, Inc.)

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The new breed of smart chargers for any type of battery — except alkalines.

um fast-charger circuits. What occurs is that the batteries go from warm to hot in just a few seconds when they hit their charging limit, and this could cause the cells to rupture or melt down the plastic charger holder, possibly resulting in fire.

"Our Maha nickel metal hydride battery packs can work with any radio and scanner manufacturer's slow-charger/wall-charger. Any charging method with a charge rate less than C/10 or 1/10 of battery capacity can safely recharge our packs," comments Charles Chueh of Maha. Maha was one of the first to bring nickel metal hydride battery technology to the scanning and hobby radio industry. "But we caution you on using a rapid-charger on a nickel metal hydride battery pack. We recommend that everyone use our MH-101 series rapid-charger for the best performance of the battery pack. We do not recommend fast-charging our nickel metal hydride battery packs on a charger that delivers its current over a specific period of time," adds Maha.

Take for instance a popular ham radio manufacturer fast-charger that delivers 400 milliamps for 20 minutes, and then shuts down to 50 milliamps after this period of time. If you just dropped your handheld into this fast-charger, everything would be OK for the time being. But at minute 18, you pull your handheld out of the fast-charger, make a quick transmission, and then drop it back into the fast-charger, *restarting the countdown*. Another 15 minutes goes by, you pull it out of the charger for a quick call, and then drop it back in again. Get the idea of what's

happening? It's like continuously charging those nickel metal hydride cells at 400 milliamps for up to an hour, and chances are they're getting down right hot after all this time at this fast charging rate. But, lucky for you, most Maha battery packs are equipped with a built-in temperature cut-off termination. You notice this by pulling your handheld from the fast-charger, and realizing that there is absolutely nothing on the LCD display. This is because the series thermistor has opened up, creating an open circuit within the battery supply. After about 40 minutes on cool down, the thermistor closes, and everything is back to normal. You came dangerously close to ruining that brand new battery pack, and close to plastic meltdown on your scanner or handheld amateur transceiver.

### Doing It The Right Way

To properly fast-charge nickel cadmium and nickel metal hydride cells, as well as the brand new technology of lithium ion cells, requires temperature and voltage monitoring throughout the fast-charging process. New integrated circuit chips from battery charging specialty companies like Semtech Corporation (Newbury Park, CA: 805-498-2111) may incorporate an integrated circuit that can sense the slight variations of top-off voltage when the battery pack needs to be shut down from the fast-charging current. This is sometimes called -dV (minus delta V detection). The chip is built into a battery fast-charger using a peak voltage timer,

maximum temperature cutoff, maximum voltage cutoff, and a safety timer cutoff. The actual integrated circuit is in an 8- or 14-pin surface-mount package, and sells for less than \$5 through battery charger manufacturers. This integrated circuit may guard against nickel metal hydride over-charging by detecting the millivolt drop in terminal voltage under constant current when the battery pack enters the over-charging region. The cell voltage actually decreases in the over-charge region. This drop in voltage indicates that a serious or potentially damaging over-charge is beginning to occur. The integrated circuit has a pre-set shut off as it calculates the voltage slope value to determine the dynamic inflexion point. The point where the voltage slope stops increasing in value and starts decreasing in value is referred to as the voltage inflexion point. Soon after the inflexion point, with charging current unrestricted, cell pressure and temperature begin to rise sharply as over-charging occurs. The dynamic inflexion point method terminates rapid-charge just before entering the over-charge region using this proprietary "smart charger" chip. You can imagine what might happen if a simple fast-charger mistakenly identifies the drop in terminal voltage as a need for more continuous charging: Meltdown!

Unlike nickel cadmium rechargeable batteries, nickel metal hydride cells won't tolerate over-charging and instantly get red hot. This is why you see all the warnings to never run nickel metal hydride cells in a conventional nickel cadmium rapid-charger.

### What It All Means

So, does this mean that the switch from older to newer technology batteries may require an extraordinarily expensive minus delta V super-smart battery charging system? And then, if you do make an investment, is there a chance that this charging system may only fit one particular type of radio receiver that you may own and operate.

Well there is good news. W & W Associates offers the Master Charger<sup>®</sup>, which has the "brains" to safely charge your NiCd batteries and NiMH cells and also has charging cups that can take almost any type of two-way handheld radio, as well as some scanners that have the appropriate charging pick-up tabs on the bottom of the battery pack. But we still don't see any of the scanner or radio manufacturers coming up with their own



The battery pack sits flat on the charger to pick up the gold pin contact points. A strong magnet inside the charger holds the pack in place, while a sensor to detect heat sits on top of the battery.

name brand type of nickel metal hydride battery chargers. We DO see Yaesu with a new VX-1 handheld with a special charger specifically for the single internal lithium ion battery system on the inside. Good for Yaesu!

So, your best bet is to invest about \$50 in a device called a "smart charger," sold by Advanced Battery Systems, Maha, and private-labeled under several other names. I have tested several of them, and their specifications are so close that I really don't see any difference between any of these similar-looking smart-chargers.

This little smart-charger is specifically designed for the new battery technology. It has the built-in chip that measures the minus delta V. The Maha MH-C777 is a good example of all the neat things that are happening with these little chargers.

First of all, they operate on both 12 volts DC and 110 Vac, and will take any battery pack configuration. They pump in a rapid-charge current of over 500 milliamps, and then taper off to 40 milliamps for trickle. The charger can also condition discharge a battery at 400 milliamps.

The little Maha universal charger takes any battery pack from 4.8 to 12 volts, and will charge it up in less than a half hour. The only exception is when you're running the smart charger off 12 volts DC; it can only charge up to a 9.6-volt battery. Keep this in mind if you have a 12-volt battery pack and want to run it on the charger from the car, because it won't work without an inverter.

The tricky part of using this charger is the two gold pins that stick up from the base. The pins must contact the charging points on your scanner or portable radio battery. If you're going to be simply charging up a battery pack that goes inside a scanner, little alligator clips will

do the job quite nicely off the two battery pick-up points.

Getting the sealed battery charging contacts positioned right onto the little gold spring-loaded pins is a trial and error process. The pins can be moved around in just about any width, but you've got to find the right contacts on your battery pack that allow charging. Some of the contact points on the charger are not necessarily intended for charging. So you will need to play around until you come up with just the right combination. This means you are regularly fiddling around with the contact points if you have more than one type of battery pack. But if you're just charging a certain type of battery pack, you're all set.

Most of the time, you'll need to remove the battery from your portable scanner or handheld radio in order to make contact with the gold spring-loaded pins. This is slightly inconvenient because now you must constantly slide the battery off, and then slide it back on each time you want to go to fast-charge.

You need to fiddle around with the movable gold pick-up points until they make positive contact on the battery pack. If you get the contacts reversed, the smart charger will just beep at you, and you throw a switch to get the polarity correct. Or you can turn the battery pack around.

To confirm that you have made proper contact, the smart charger will then illuminate a light-emitting diode, and flash a right light-emitting diode from one to five

times indicating what voltage it will achieve on charge. You'll see two flashes for a 6-volt pack, three flashes for the common 7.5-volt sealed pack, and five flashes for a 12-volt pack of sealed or individual AA batteries. Then the unit begins to charge at the maximum rate. Little light-emitting diodes will display the relative progress of the charge. The charger will conclude the rapid-charging process with an audible tone, and the red light will be the only light illuminated. It now goes to automatic trickle-charge.

If you haven't used the battery for several months, push the discharge button, and the unit will pull it all the way down to a safe low-voltage without chance of cell reversal, and then automatically rapid-charge it up to full. The little smart charger has a temperature sensor in case something should go wrong. So far, I haven't cooked a battery; but, remember, the nickel metal hydride does get warm when the charger automatically cycles off of fast-charge, as it's supposed to do.

But for under \$50, these smart chargers are a great way to rapid-charge that new battery pack, whether it's a traditional NiCd or the new breed of nickel metal hydride. Maha suggests that you call them at 800-376-9992 with any questions you may have concerning their universal charger/conditioner. They claim that their charger is slightly different from all of the others, but I've tried all of the others and performance among all of them is terrific! ■

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## Watch What You Say

“Our thoughts create our attitude, our attitude becomes our behavior, our behavior is how we treat others, how we treat others is what we think of ourselves.” So says Kaylan Pickford, as quoted on a leaf of an inspirational calendar.

Perhaps you know who Kaylan is. I don't, but that is OK. Those few words quickly communicate a great deal about WHAT Kaylan is. Among other things, it appears that Kaylan is a communicator.

Like it or not, the same holds true for you and me. Whenever we use our radios, we too are communicators. Communication, as the name of this magazine indicates, is the very essence of our hobby. We spend a great deal of time, money, and effort building our stations. We peak our transmitters, tune our antennas, and tweak our mics.

All of the advertisements in this (or any other) magazine hawk hardware. Hardware, after all, is where the money is. Nevertheless, hardware, by itself, is useless. It is not until you key the mic and

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*“There are operators like Dean and Marquis in almost every CB and on-line community.”*

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speak that CB sparks to life. Often, what we say is blurred out with little or no thought about how it will be received or interpreted by those who hear us. At other times, spurred on by a false feeling of anonymity, we give a great deal of thought to what we say and how we say it. We carefully craft our communication to project a false image of who and what we are.

But, who are we really fooling? First, there is no such thing as anonymity on the radio. Somebody knows who you are, and if somebody does, anybody can find out! Second, any illusions we attempt to project probably, as Kaylan's quote points out, expose more about what we think of ourselves than most of us would care to show. When we, as a community, can recognize that fact — when we can look beneath the bluster, initial shock, and irri-

tation — we can expose the most troublesome among us for what they are: the most troubled. When the illusion is destroyed, the incentive for their antics will be gone. The return to reality would be good for everyone concerned.

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### Another Quote

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For example, here is another quote, one probably much more familiar to us than Kaylan's: “I'm gonna kick your sorry ass all over the place . . . YOU DON'T KNOW WHO YOU'RE DEALIN' WITH.” Here again, you might not immediately know the WHO, but I'll bet you have pretty well figured out the WHAT.

While this could be a quote from just about any CB channel, it is actually from the Internet. Surprised? You shouldn't be. It is the same game, same players, just a different field. Growing numbers of CB enthusiasts are using the Internet and the World Wide Web as an extension of their hobby — sometimes, with tragic results.

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### The Players

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Case in point: Christopher Marquis of Fairhaven, Vermont, and Christopher William Dean of Pierceton, Indiana. You may not know either by name. You should recognize each by style. There are operators like Marquis and Dean in almost every CB and on-line community.

It's easy to imagine either of them transmitting that “kick ass” message. It's hard to imagine anyone arguing that a good dose of reality, a long time ago, wouldn't have been good for both of them, not to mention their on-air neighbors. Separated by hundreds of miles, they were brought together by their mutual love of CB and computers. Their association culminated in mid-March, with one dead and the other arrested, facing numerous charges, possibly murder.

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### Christopher Marquis

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Chris Marquis, a 17-year-old who hadn't been to school in months, spent

much of his time on the CB. Some say that CB was his life. Around home, in rural Vermont, he was known on the radio as “CB Psycho.” He also loved surfing the World Wide Web. There he went by “Taz.” Chris particularly enjoyed the chat rooms (IRC) and newsgroups where he swapped used radio equipment.

Chris lived at home with his unemployed mom, and spent a lot of time with her. Sometimes the two of them worked as DJs at local dances.

In person, Chris was well-mannered and polite. On the radio, however, the best that can be said is that he did a lot of goofing around. He was “a little mouthy” says one of his radio pals. Another admitted that occasionally Chris made other radio operators mad. Most of Chris' on-air neighbors, however, found him rude and annoying. When the increasingly frequent and severe barrages of vulgarity and harassment started, they either sat there and took it, or turned off their radios.

What else could they do? Here, in what one writer describes as “The folksy world of Citizens Band Radio,” the CB community in Fairhaven and surrounding areas Vermont and New York were at the mercy of this on-air thug.

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### Christopher William Dean

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Hundreds of miles to the west of Fairhaven, in Pierceton, Indiana, lives 35-year-old Christopher William Dean. Reportedly on his second marriage and behind in his child support, even his first wife describes him as likable. Dean is a contentious, hard-working truck driver who enjoys golf, guns, computers, and CB radio.

He runs a large linear and big antennas. His most recent project was erecting a larger tower. Chris Dean really enjoys talking on the radio. He has made many contacts both near and far.

Dean has, on at least one occasion, allegedly made his presence known at a local church, by bleeding the PA system during Sunday services. When approached by the pastor, he was sheepish and apologetic.

*"We can't help but wonder whether, if help had been available for this beleaguered radio community, a tragedy could have been averted."*

On the Internet, Dean enjoyed the chat rooms and newsgroups. There, while trading CB equipment, he met Chris Marquis. Several posts to the newsgroup, allegedly made by Dean, detail a deal gone sour. "He ripped me off too . . . I am posting ads about that crook all over the Internet . . . but the address I have is Washington St., Fairhaven Vermont . . . DON'T MAIL THIS LIAR ANY MONEY OR YOU WILL BE POORER, BUT WISER!!!!!! If I can find someone to pay the two-way airfare," the message continued, "I will go there and collect everyone's money back, and give him some severe dental problems to deal with . . . Are you listening, Chris?? When you see a six-foot, five-inch dark-haired man at your door, you better duck, 'cause I will be about to drop the maul . . . on your noggin dude . . . ." The post was signed <NCTomCat@aol.com>, a signature reportedly owned by Chris Dean.

## Watch What You Say, Or . . . KABOOM!

At about 3 p.m., on Thursday, March 19, 1998, just minutes after a UPS truck dropped off a package, a large explosion rocked the Marquis's home. When the smoke cleared, Chris Marquis was dead and his mother severely injured.

Before long, there was yet another post on the <rec.radio.cb> newsgroup from NCTomCat: "To all you pesky reporters who keep e-mailing me with questions, I do not know anything about that incident with Chris Marquis. I only found out about it today, and immediately called the FBI, introduced myself, and told them about his bad business dealings, and that I did in fact say ugly things on the newsgroups about him. But that is where it stopped. Just my telling the readers about his shady business practices. As I said, I called the FBI and said I will GLADLY answer any or all questions about this tragedy. But I will not advertise any more if I learn of someone who steals money sent to order equipment. My good intentions to warn others has now turned and



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made me look bad, so from now on I will just keep anything I learn on here to myself. Nice guys finish last . . . ."

## Dean Not Alone

It appears that Christopher Dean was not Marquis's only dissatisfied customer. UPS had begun investigating Marquis before the bombing because of complaints received that Christopher Marquis had engaged in a pattern of fraudulent activity where he obtained various CB radio parts and other items, and then frustrated the sellers by allegedly refusing to pay the money owed.

Despite his protests of innocence, on Friday, March 20, 1998, Dean was arrested. Dean's name had been found on a piece of notebook paper next to Marquis's computer, and also on a UPS receipt, found in Marquis's wallet, for a CB radio shipped to Dean.

According to one newspaper report, authorities said that a friend of Dean's who cooperated had helped their investigation. They said this person, whom they would not identify, said that Dean had

allegedly said that he "was going to send the guy a package in the mail, and boy is he going to be surprised." This person also said Dean learned off the Internet how to build a pipe bomb. "Dean indicated the directions included the use of a pipe, black powder, a clothes pin, and thumb tacks for electrical contacts."

## Lessons Learned

While Fairhaven, Vermont, is probably a much nicer place for radio today than it was earlier this year, we can't help wondering whether, if help had been available for this beleaguered radio community, a tragedy could have been averted.

Guilty or innocent, no doubt Chris Dean now wishes he had been a little more careful in his choice of words. Let us hope that the lessons he has learned are not wasted on the rest of us.

Well, that's it from here. Thanks for writing me here at the magazine or via the Internet, where my address is <edbarnat@global2000.net>. And, as always, if you can — catch me on the radio! 73

—Ed

# The Old CB Shack

BY DON PATRICK

GIVING LIFE TO YESTERDAY'S RELICS

## Wiring Old CB Microphones

We're getting many letters from readers with interesting questions and problems. And now that we're also taking your letters by e-mail, we're receiving even more, which is great! If you've written to us, our response is on the way back to you within 24 hours after your letter is received, if you enclosed an SASE (Self-Addressed, Stamped Envelope). It's becoming nearly impossible to respond to the queries that don't include an SASE. That's a real shame, since some of them include very interesting questions. Your questions provide suggestions for future articles, like this month's coverage of microphones.

So, if you've sent in a question and didn't get a response, send it in again and include an SASE for a reply, or e-mail me at <oldestimer@aol.com>. Keep in mind that if your answer required a drawing or schematic, we'll need an SASE to send it to you. My mailing address is at the end of each bi-monthly column.

### First, Those Gremlins!

Gremlins slipped into the May column in three places. One of the sources of tubes we listed was from Paul Tucker of Ft. Smith, Arkansas — not Arizona — and again, in my address where your questions are sent should be AR for Arkansas! The third error was next to the last line on page 45 where I said the Messenger 223 is simply a Messenger II turned sideways. It was mistakenly listed as a Messenger I.

### Microphone Questions

The most-often-asked question I receive from readers concerns micro-

phones, and the wiring of a replacement mic to your new or old CB. While there is no magic formula, there are some basic standards which will solve your problems. For any CB radio ever made, there is a replacement microphone available without a great cost and not much effort, in most cases.

First, let's cover the type of microphone you need. When CB first started, all radios were tube-type units; a tube being a high impedance input device. A transistor is a low- to medium-impedance device. What this means is that the input to the first audio amplifier stage in the mic circuit is either above 100,000 ohms or below 10,000 ohms. If the output of the mic doesn't match this, you'll have low, or no audio, poor audio and/or distortion.

Because there were only a few radios that used carbon mics, we're going to ignore them. The most common one was the first Polycom models, and there is an easy conversion to get away from its carbon mic — and with a substantial improvement in audio quality. You can tell if you've got that old model Polycom by checking to see if it uses a 6AL5 or a 6AV6 in the right front corner of the set. If it's a 6AL5, it's wired for a carbon mic. Contact me for the conversion if you want to change to a ceramic mic.

The design engineers of the early '60s had the choice of a carbon, crystal, or a dynamic mic. The carbon mic had poor high-frequency response and required a source of power to operate. However, it was rugged and inexpensive.

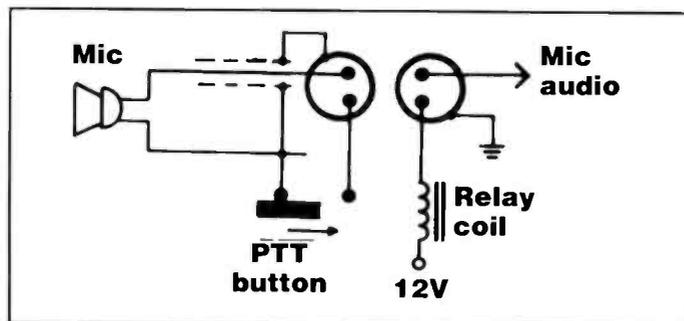
The best choice was the crystal microphone since it was inexpensive, high impedance, had good audio quality, and high output. Its main drawback was heat.

A hot summer day with the windows rolled up in your car could ruin the mic. It was also somewhat fragile.

The dynamic or "moving coil" mic had good audio, was fairly rugged, and wasn't bothered by the heat. Its limitations were the fact that it was a low-impedance device: the required extra circuitry was a bit costly. Also, the output was somewhat low and required an extra stage of audio amplification. It was because of these drawbacks that it wasn't a good choice for tube-type units.

Like Superman to the rescue, about this same time, the ceramic microphone element was developed and perfected. The ceramic element is almost a duplicate of a crystal element, but isn't affected by the normal temperatures developed in an automobile in the summer. Its output level was slightly less than a crystal mic, but it was high impedance, had about the same frequency range, was more rugged than a crystal mic, and it didn't cost much more. This became the mic of choice for almost all tube-type CB radios. If you have a tube-type unit other than the few that used a carbon mic, you'll be using one with this type of element.

Once transistors took over the market, the design engineer shifted to the dynamic mic. They had become more rugged, their output impedance "matched" the transistor's input impedance, and the cost had come down when millions were finally made. There was an exception. One of the brands of CB radios that never used a dynamic mic was the E.F. Johnson Messenger series. They used a special ceramic, high impedance, low capacity element, but you can get away with a regular ceramic mic.



← Figure 1. A relay-switching circuit.

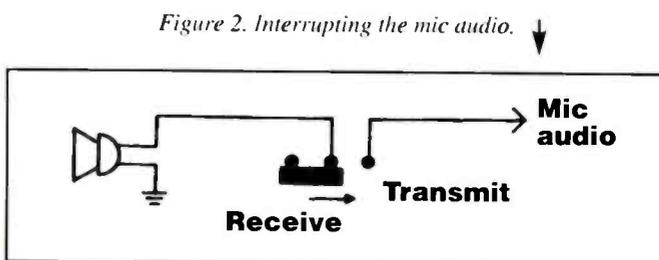


Figure 2. Interrupting the mic audio. ↓

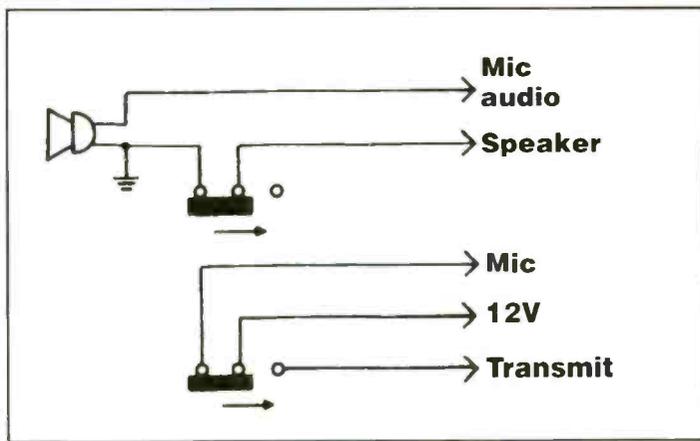


Figure 3. Providing a ground for the speaker during receive, and removing it after transmit.

The point I'm trying to make here is that you cannot take a microphone off your Cobra or RadioShack radio and use it on your old Polycom, Eico, or Heathkit CB. It will not work! The only solution is a mic with the correct type of element.

### Wiring The Mic

Now that you've got the correct type of mic, the next problem is wiring it to your radio. For this, there is no magic answer, but generally it isn't difficult to figure out.

Regrettably, there has never been a standard wiring "color code," such as white for this, red for that, and black for something else. Add to that problem that a mic plug can have from two to six pins, and that many keying/switching circuits were used. I have provided the drawings for some of the more common ones, but there were many more systems used that I don't have.

All is not lost, however. Most CB radios made in large quantity have schematics available. If you can't find the schemat-

ic, it isn't difficult to figure out the requirements, then wire the mic to match. All your replacement mic needs is a switch with enough sections (I recall that four is the most) and a coiled cord with enough wires inside to connect from the switch to the radio. Six wires is the most I remember a cord having. We stock a dynamic mic that we can use on 85 percent of the transistor CBs that come into the shop for service. All we have to do is wire it correctly and maybe move a wire or two on the switch.

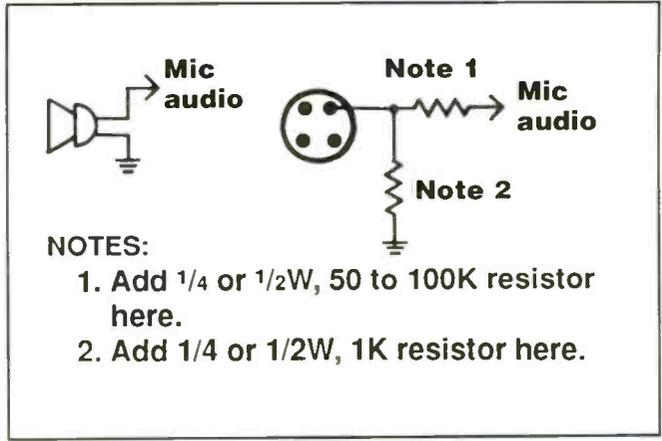


Figure 4. A voltage divider.

**NOTES:**

1. Add 1/4 or 1/2W, 50 to 100K resistor here.
2. Add 1/4 or 1/2W, 1K resistor here.

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CIRCLE 64 ON READER SERVICE CARD

The old tube-type CB radios are generally the easiest to wire because most of them used a relay-switching circuit (see **Figure 1**). The mic just keys the relay off and on, and the relay does all the switching of the radio between transmit and receive. Many of the tube and transistor units shared similar methods, so we're not going to differentiate between them. About half of the CB units have the mic

audio and received audio coming together, driving the same audio amplifier. If this is the case, the mic audio line has to be interrupted inside the mic or you'll get feedback while in the receive mode. (see **Figure 2**). The other 50 percent of the radios have the receive audio coupling in at the latter point down the audio system. In this case, the first stage is used on transmit only, and has to be shut down during receive to prevent feedback.

While the radios use many different switching systems, (switching from receive to transmit), it isn't as difficult to figure out as you might think. The reason for this is that the mic switch and wiring can only do two things. First, it can provide or remove a ground; second, it can supply or take away a voltage. Probably one of the most common systems is shown in **Figure 3**. Here, the switch provides ground for the speaker during receive and removes it during transmit. At the same time, another switch section provides voltage (usually 12 volts) to some circuits during receive, and switches that voltage off to these points and over to some of the transmitter stages during transmit. The transmitter final amplifier power is not switched by the microphone due to the high current load. It is hot all the time the radio is on, and it doesn't put out any power without drive from the lower stages.

You can generally get an idea about which type of circuit the radio uses in many cases by the number of pins on the plug. There has to be a ground and a mic audio. That's two pins. If you switch the speaker audio, that's a third pin. If the set switches 12 volts from receive to transmit, that's three more pins for a total of six pins (12 volts up one wire and back down one or another wire). Remember that some units use the metal shell of the mic plug for one of the pins. In that case, it would only have five pins, but then the plug has a screw-on or firm locking ring for good connection.

Be sure to connect the radio to a dummy load/watt meter before you start. If you switch a transistorized unit into the transmit mode by accident, you may knock out the final.

First, check for voltage on any of the pins of the mic connector. Second, note if the receiver is functional without the mic. Third, look at the speaker to see if one side of it goes to the mic plug. The answers to these questions tell you what needs to be done with that CB. The same meter you used to check for voltage will also check to see if one of the mic pins

is grounded.

Once you find one pin is grounded and perhaps goes to the speaker, that only leaves a few pins. If one pin has voltage on it, a *very* brief touch with a short piece of wire to one pin or the other will show if the unit switches into the transmit mode by either your watt meter or the transmit light on the front panel. If the speaker is switched, then a jumper with alligator clips on both ends will ground it, and you can hear the receiver come on and off as you try the jumper.

## Power Microphones

Most units don't need the extra stage of audio you gain with a power mic, plus, in many cases, they over-drive the first audio amplifier in the radio. This causes distortion and poor-sounding audio. In many cases, it will pick up lots of the sounds around you — the TV in the next room or wind noise in the car. If you insist on using a power mic and it causes squealing or over-drive, the first step would be to add a couple of resistors to the audio input which is usually just off the plug inside the radio. Generally a 50 to 100 K in series with the mic audio, and a 1 K to ground from the mic side of the 50-K resistor will do the trick. (see **Figure 4**). If it knocks the audio down too much, increase the value of the 1 K upward to suit the unit you're using. In the old tube-type units, if you try using a power mic (which is normally a low-impedance mic) into a high impedance input, you're almost sure to get squeals. The above circuit should correct this for you. Astatic microphones are available in both regular ceramic and ceramic power versions, if you need to purchase one.

The simplest method to wire a mic is to use a schematic, but finding and wiring a mic with the proper type element is not a difficult or expensive task. If you can't find the information on your unit, drop me a note, since I have data on many. I can tell you about it by e-mail sent to me at <oldestimer@aol.com>, or can show you if you send me the information and an SASE. Write with any CB questions to Don Patrick, 3701 Old Jenny Lind, Fort Smith, AR 72901.

We're considering re-building an Eico 772 and providing you with a modification that we developed and published in the late '60s that corrected low modulation. That's coming in the September issue of *Pop'Comm*. We'll also cover the Eico 770, 771 and 772. See you then! ■

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CIRCLE 62 ON READER SERVICE CARD

# The Ham Column

BY KIRK KLEINSCHMIDT, NTØZ

GETTING STARTED AS A RADIO AMATEUR

## Collecting Special-Event Wallpaper

Awards-chasing is a big attraction among hams of almost every persuasion. From Worked All States (WAS), to the DX Century Club (DXCC), and everything in between, hams tend to “wallpaper” their shacks with as many operating achievements as possible. Checking out the shack pictures in any ham magazine (or a visit to your friend’s shack) will almost always turn up something framed and on the wall, be it QSL cards, a contest award, DXCC, or whatever. This is amateur radio’s version of the “ego walls” that we usually associate with the offices of certain professionals. It’s meant to impress — and to let your fellow hams know what a great operator you are. It also serves as a way to reflect on the mileposts of your ham radio career.

This month’s column is full of tips on how to acquire Special Event wallpaper of your own. By using just a few of these tips, you’ll be knee-deep in certificates before you know it!

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*“Special-Event stations show up year-round, although the busiest months seem to be April and May, as many groups use them as a warm up for Field Day.”*

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### Special Stations

Have you ever wished you could have a couple of “nifty” pieces of paper on the wall to show to your friends and family? If you don’t have the time for dedicated awards chasing — and who does these days? — there’s an easier way to obtain attractive and interesting items for your shack . . . you can work some of the hundreds of Special Event stations that show up on the bands each year.

Special Events are on-air activities designed to generate interest in specific happenings. Clubs or groups try to contact as many people as they can in a given time period, usually the course of a weekend, and they produce special QSL cards and suitable-for-framing certificates to issue to the stations they work. Even if you’re just getting started, Special Event stations are usually easy to work, and many set up in the Novice/Technician 10-meter phone subband for easy access.

Special-Event stations show up year-round, although the busiest months seem to be April and May, as many groups use them as a warm-up for Field Day. The “events” can range from a town festival, the commemoration of special historical events, the opening of museums, club anniversaries, or even holidays, such as operating from Christmas, Florida, in December. Clubs use these opportunities to get on the air in a big way, not only to publicize these events to the ham community, but also to demonstrate ham radio to the public. Just ask anyone who has been bitten by the Special Event bug: Any excuse will do when it comes to getting on the air!

## WHAT A TEAM!



### K5OS AMATEUR RADIO AND MISS USA 1979

Sponsored by  
Miss. Coast Amateur Radio Assn.

*This QSL card and companion certificate are part of the author’s collection of Special Event memorabilia. In late 1979 (nearly 20 years ago — yikes!), Special Event station K5OS, the Mississippi Coast Amateur Radio Association, worked hundreds of hams to commemorate the Miss USA pageant in Biloxi, Mississippi. Apparently that was enough motivation for a 17-year-old wallpaper collector to spring into action!*

Regardless of their diversity, all Special Event operations have something in common: awards, special certificates or collectible QSL cards! They range from commemorative color QSL cards to full-blown, giant-size color certificates. Some are truly impressive, and they’re available just for making one contact with the station(s) involved.

### Finding Them

How do you find Special Event stations? Most ham radio magazines devote some space in each issue to publicizing the

## Pop'Comm P.O. (from page 6)

masters of ARRL say is true, then where are all these No-Codes? The other most interesting point Green brought up is about computers. Who needs a license to communicate? For only \$21.95 or less a month, you get worldwide coverage and unlimited amounts of fun, entertainment, video phone, and chat. Even now I'm writing this letter as e-mail.

So what I'm saying Mr. Smith, is go ahead and hang on to the past, because instead of ham radio being demonstrated in our nation's classrooms as it once was, it has been overtaken by computer technology. That is also why the tests themselves are out-of-date, and will continue to dissuade others like me not just from upgrading our licenses, but more importantly I think, from spending the money on such high-dollar equipment that actually has very little going for it when compared to computers. And yes, I know about the emergency communications during disasters. But I made my choice of either having a \$5,000 radio, or a hot-rod computer system, complete with all the accessories. I would venture to say that a bunch more of us No-Coders are also going with computers. And that, my friends, cannot be ignored.

Gary Bowen, CA

## Bugged In Arkansas

### Dear Editor:

I recall you said that you spent the better part of 20 years in the Army defending our right to free speech and all. So did I, but something really bugs me. Doesn't it irk you that the legislators seem to have forgotten what America is all about, and the "... of the people, by the people and for the people" foundation of our great country has eroded in the past few years?

Wilbur W., AR

### Dear Wilbur:

*It bugs me too, but when it gets right down to it, it's our own fault for letting the doofuses get away with it in the first place. The last time I checked, they worked for you and me, not corporate America.*

*You also know from experience, that doing the right thing requires common sense, a large dose of leadership, and caring about others; these required qualities, you'll recall, varied tremendously with Army leadership and your assignment. They vary even to a greater degree within D.C.'s Beltway.*

## MISSISSIPPI HARRISON COUNTY BILOXI, MS

# K5OS

### SPECIAL EVENTS STATION

CONFIRMING QSO WITH	DATE			UTC	MHZ	RST	2-WAY
	DAY	MO	YEAR				
WBØBDA	26	4	79	2023	14	5-9	SSB

*Joe*<sup>73</sup> K5OS

JOE BUTLER  
ROYAL O'BERVILLE  
3634 W. BEACH BLVD.  
BILOXI, MS. 39531

*Special Event Station K5OS issued this QSL for contact with WBØBDA a few weeks ago.*

Special Event operations occurring that month. These generally appear as brief announcements listing the sponsoring club, the reason for the event, a frequency or two, and details on how to claim your certificate. If you have access to the World Wide Web, point your browser to <<http://www.arrl.org/contests/spev.html>> for online listings. All you need to do is get on the air and begin the hunt.

Most operations will use only one or two transmitters, and antennas can range from verticals to multi-antenna beam arrays. Almost everyone operates on the 40-, 20-, and 10-meter bands, and will usually accommodate a Morse code contact, if you ask for one.

When beginning your search, remember that interference and band crowding can force the stations to move up or down in frequency, depending on the bands. If the operation doesn't list any frequencies, careful tuning of the General class subbands or the Novice/Technician 10-meter phone subband (28.300 to 28.500 MHz) should turn up what you're looking for. Some stations are even including VHF or packet operations to enable Techs to get in on the fun.

## Log 'Em!

So how hard is it to work a Special Event station once you've found one? Most Special Event stations are relatively easy to work, however, the most popular events generate a lot of interest, resulting in pileups. This merely makes the chase a bit more interesting! When you work a station, be sure you carefully mark down all the QSO information.

Some stations will give you a contact

number to help the operators track you down when it comes time for them to confirm your QSO. Many groups work upwards of 3,000 hams in the course of a weekend; if your information is more than a little off, they may not find your contact, and you'll wind up in the dreaded "not in the log" position.

## Getting Your QSLs Or Certificates

"Well, I worked one, so what do I do now?" If you first discovered the event in a magazine, it probably listed what the award was (a special QSL card, a certificate, or both), and how to obtain it. Usually, you send in your QSL card with all of the information about the contact (the day, time, the callsign you worked, the band, and the signal report you gave. If the op mentioned a contact number, make sure you display it prominently on the card, and include a self-addressed, stamped envelope (SASE).

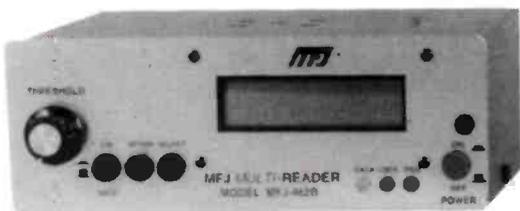
If a group says it's offering certificates, it's best to send a 9 x 12-inch SASE. Most certificates are printed on 8 1/2 x 11-inch stock, which ensures that yours will not come back folded beyond recognition. Remember that larger envelopes often require extra postage!

That's all there is to it! In a few weeks you should get your certificate in the mail, ready to be framed and displayed. Before too long, you'll have your own "wall of fame" for all to behold!

Keep your photos, questions, and letters coming to me at "The Ham Column" c/o *Popular Communications*, 25 Newbridge Road, Hicksville, NY 11801.

# Tap into secret Shortwave Signals

Turn mysterious signals into exciting text messages with this new MFJ MultiReader™



**MFJ-462B** Plug this self-contained MFJ MultiReader™ into your shortwave receiver's earphone jack.

Then watch mysterious chirps, whistles and buzzing sounds of RTTY, ASCII, CW and AMTOR(FEC) turn into exciting text messages as they scroll across your easy-to-read LCD display.

You'll read interesting commercial, military, diplomatic, weather, aeronautical, maritime and amateur traffic... traffic your friends can't read -- unless they have a decoder.

## Eavesdrop on the World

Eavesdrop on the world's press agencies transmitting *unedited* late breaking news in English -- China News in Taiwan, Tanjug Press in Serbia, Iraqi News in Iraq -- all on RTTY.

## Super Active Antenna

"World Radio TV Handbook" says MFJ-1024 is a "first rate easy-to-operate active antenna... quiet... excellent dynamic range... good gain... low noise... broad frequency coverage."

Mount it outdoors away from electrical noise for maximum signal, minimum noise. Covers 50 KHz to 30 MHz.

Receives strong, clear signals from all over the world. 20dB attenuator, gain control, ON LED. Switch two receivers and aux. or active antenna. 6x3x5 in. remote has 54 inch whip, 50 ft. coax. 3x2x4 in. 12 VDC or 110 VAC with

**\$129<sup>95</sup>** MFJ-1024 MFJ-1312, \$129.95

## Indoor Active Antenna

**MFJ-1020B**  
**\$79<sup>95</sup>**

Rival outside long wires with this *tuned* indoor active antenna. "World Radio TV Handbook" says MFJ-1020 is a "fine value... fair price... best offering to date... performs very well indeed."

Tuned circuitry *intermod*, improves selectivity, reduces noise outside tuned band. Use as preselector with external antenna. Covers 0.3-30 MHz. Has Tune, Band, Gain, On/Off/Bypass Controls. Detachable telescoping whip. 5x2x6 in. Use 9 volt battery, 9-18 VDC or 110 VAC with MFJ-1312, \$129.95.

## Compact Active Antenna

**MFJ-1022**  
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Plug this new compact MFJ all band active antenna into your general coverage receiver and you'll hear strong clear signals from all over the world from 300 KHz to 200 MHz -- including low, medium, shortwave and VHF bands.

Also improves scanner radio reception on VHF high and low bands.

Detachable 20 in. telescoping antenna. 9 volt battery or 110 VAC with MFJ-1312B, \$129.95. 3 1/4 x 1 1/4 x 4 in.

Copy RTTY weather stations from Antarctica, Mali, Congo and many others. Listen to military RTTY passing traffic from Panama, Cyprus, Peru, Capetown, London and others. Listen to hams, diplomatic, research, commercial and maritime RTTY.

Listen to maritime users, diplomats and amateurs send and receive error free messages using various forms of TOR (Telex-Over-Radio).

Monitor Morse code from hams, military, commercial, aeronautical, diplomatic, maritime -- from all over the world -- Australia, Russia, Hong Kong, Japan, Egypt, Norway, Israel, Africa.

## Printer Monitors 24 Hours a Day

MFJ's exclusive *TelePrinterPort™* lets you monitor any station 24 hours a day by printing their transmissions on your Epson compatible printer.

Printer cable, MFJ-5412, \$9.95.

## MFJ MessageSaver™

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It's easy to read -- the 2 line 16 character LCD display with contrast adjustment is mounted on a sloped front panel for easy reading.

Copies most standard shifts and speeds. Has MFJ *AutoTrak™* Morse code speed tracking.

Use 120 VDC or use 110 VAC with MFJ-1312B AC adapter, \$129.95. 5 1/4 x 2 1/4 x 5 1/4 inches.

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Then if you're not completely satisfied, simply return it within 30 days for a prompt and courteous refund (less shipping).

Order today and try it -- you'll be glad you did.

## Receive Color News Photos, MFJ 12/24 Hour LCD Clocks, Weather Maps, RTTY, ASCII, Morse Code

**MFJ-1214PC**  
**\$149<sup>95</sup>**

Use your computer and radio to receive and display *brilliant full color* FAX news photos and incredible WeFAX weather maps with all 16 gray levels. Also RTTY, ASCII and Morse code.

Animate weather maps. Display 10 global pictures simultaneously. Zoom any part of picture or map. Frequency manager lists over 900 FAX stations. Automatic picture capture and save.

Includes interface, easy-to-use menu driven software, cables, power supply, comprehensive manual and Jump-Start™ guide. Requires 286 or better computer with VGA monitor.

## Super Hi-Q Loop™ Antenna

The Super Hi-Q MFJ-1782 Loop™ is a professional quality remotely tuned 10-30 MHz high-Q antenna. It's very quiet and has a very narrow bandwidth that reduces receiver overloading and out-of-band interference.

## High-Q Passive Preselector

**MFJ-956**  
**\$39<sup>95</sup>**

The MFJ-956 is a high-Q passive LC preselector that lets you boost your favorite stations while rejecting images, intermod and other phantom signals. Covers 1.5-30 MHz. Has preselector bypass and receiver grounded pos. 2x3x4"

## Mobile Scanner Ant.

Cellular MFJ-1824BB/BM look-a-like. Covers 25-1300 MHz. Highest gain on 406-512 and 108-174 MHz, 19 in. Magnet mount. MFJ-1824BB has BNC/UHF plug; MFJ-1824BM has Motorola plug.

## MFJ Antenna Matcher

**MFJ-959B**  
**\$99<sup>95</sup>**

Matches your antenna to your receiver so you get maximum signal and minimum loss.

Preamp with gain control boosts weak stations 10 times. 20 dB attenuator prevents overload. Pushbuttons let you select 2 antennas and 2 receivers. Cover 1.6-30 MHz. 9x2x6 inches. Use 9-18 VDC or 110 VAC with MFJ-1312, \$129.95.

## High-Gain Preselector

**MFJ-1045C**  
**\$69<sup>95</sup>**

High-gain, high-Q receiver preselector covers 1.8-54 MHz. Boost weak signals 10 times with low noise dual gate MOSFET. Reject out-of-band signals and images with high-Q tuned circuits. Pushbuttons let you select 2 antennas and 2 receivers. Dual coax and phono connectors. Use 9-18VDC or 110 VAC with MFJ-1312, \$129.95.

## Dual Tunable Audio Filter

**MFJ-752C**  
**\$99<sup>95</sup>**

Two separately tunable filters let you peak desired signals and notch out interference at the same time. You can peak, notch, low or high pass signals to eliminate heterodynes and interference. Plugs between radio and speaker or phones. 10x2x6 in.

## Easy Up Antennas Book

How to build MFJ-38 and put up inexpensive, fully tested wire antennas using readily available parts that'll bring signals in like you've never heard before.

Covers receiving antennas from 100 KHz to almost 1000 KHz. Includes antennas for long, medium and shortwave, utility, marine and VHF/UHF services.

**MFJ-107B**  
**\$9<sup>95</sup>**

**MFJ-108B**  
**\$19<sup>95</sup>**

**MFJ-105B**  
**\$19<sup>95</sup>**

MFJ-108B, dual clock displays 24 UTC and 12 hour local time *simultaneously*. MFJ-107B, single clock shows you 24 hour UTC time. 3 star rated by *Passport to World Band Radio!*

MFJ-105B, accurate 24 hour UTC quartz wall clock with large 10 inch face.

## MFJ Antenna Switches

**MFJ-1704**  
**\$59<sup>95</sup>**

MFJ-1704 heavy duty antenna switch lets you select 4 antennas or ground them for static and lightning protection. Unused antennas automatically grounded. Replaceable lightning surge protection device. Good to 500 MHz. 60 dB isolation at 30 MHz.

## World Band Radio Kit

**MFJ-8100K**  
**\$59<sup>95</sup> kit**

**MFJ-8100W**  
**\$79<sup>95</sup> wired**

Build this *regenerative* shortwave receiver *kit* and listen to shortwave signals from all over the world with just a 10 foot wire antenna.

Has RF stage, vernier reduction drive, smooth regeneration, five bands.

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# Pop'Comm's World Band Tuning Tips

July 1998

This listing is designed to help you hear more shortwave broadcasting stations. The list includes a variety of stations, including international broadcasters beaming programs to North America, others to other parts of the world, as well as local and regional shortwave stations. Many of the transmissions listed here are not in English. Your ability to receive these stations will depend on time of day, time of year, your geographic location, highly variable propagation conditions, and the receiving equipment used.

AA, FF, SS, GG, etc. are abbreviations for languages (Arabic, French, Spanish, German). Times given are in UTC, which is five hours ahead of EST, i.e. 0000 UTC equals 7 p.m. EST, 6 p.m. CST, 4 p.m. PST.

UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
0000	5055	RFO Guyane, French Guiana	FF	0230	4819	La Voz Evangelica, Honduras	SS/EE
0000	5960	Radio Canada Int'l		0230	11735	All India Radio	
0000	6055	Radio Exterior de Espana, Spain via C. Rica	SS	0245	9520	Qatar Broadcasting Service	AA; s/on
0000	7935	China National Radio	CC	0300	4780	Radio Oriental, Ecuador	variable freq.
0000	9705	Radio Mexico Int'l	SS	0300	4835	Radio Tezulutlan, Guatemala	SS
0000	9810	Radio Budapest, Hungary		0300	4980	Ecos del Torbes, Venezuela	SS
0000	9900	Radio Cairo, Egypt	AA	0300	6000	Radio Havana, Cuba	
0000	15415	Radio Jamahiriya, Libya	AA	0300	6085	Bayerischer Rundfunk, Germany	GG
0000	17820	Voice of America, via Philippines		0300	6245	Voice of Greece	Greek/EE
0030	5880	Radio Vilnius, Lithuania, via Germany		0300	7200	Republic of Sudan Radio	AA
0030	5950	Radio Vilnius, Lithuania, via Germany		0300	9650	Radio Guineenne, Guinea	FF
0030	6725	Radio Satellite, Peru	SSW	0300	9690	China Radio Int'l, via Spain	
0030	7365	Radio Marti, USA	SS	0300	9745	HCJB, Ecuador	
0030	9485	Radio Bulgaria		0330	3210	Radio Exterior de Espana, Spain via C. Rica	SS
0030	11955	Radio Nacional, Angola	PP	0330	7500	Radio Moldova Int'l, via Romania	
0030	13630	Radio Japan/NHK		0330	9820	Far East Broadcasting Assn., Seychelles	various langs.
0030	13695	Radio Thailand		0400	4775	Trans World Radio, Swaziland	unk lang.
0045	9730	Sri Lanka Broadcasting Corp.		0400	4915	Radio Cora, Peru	SS
0050	6010	RAI, Italy		0400	4919	Radio Quito, Ecuador	SS
0050	9675	RAI, Italy		0400	6030	Radio Ukraine Int'l	
0100	4830	Radio Tachira, Venezuela	SS	0400	6135	Swiss Radio Int'l	
0100	5012	Radio Cristal, Dominican Republic	SS; variable	0400	6265	Zambia Nationala Broadcasting Corp	
0100	5770	Radio Miskut, Nicaragua	SS	0400	7110	Voice of Ethiopia	
0100	5930	Radio Slovakia Int'l		0400	9730	China Radio Int'l, via French Guiana	
0100	6200	Radio Prague, Czech Republic		0400	9780	Republic of Yemen Radio	AA
0100	7115	Radio Yugoslavia		0400	9905	Swiss Radio Int'l	
0100	9737	Radio Nacional, Paraguay	SS	0400	11785	Radio Iraq Int'l	EE/AA
0100	11710	RAE, Argentina		0430	5012	Zambia National Broadcasting Corp.	
0100	11785	Radio Guiaba, Brazil	PP	0430	6165	RDF Tchadienne, Chad	FF
0100	17675	Radio New Zealand		0430	7415	Voice of America, via Botswana	
0130	7145	Radio Ukraine Int'l		0430	9590	Radio Netherlands via Bonaire, Neth. Antilles	
0200	4885	Radio Clube do Para, Brazil	PP	0445	3290	Namibian Broadcasting Corp.	vernacular
0200	4930	Radio Internacional, Honduras	SS	0500	4850	RTV Cameroon	FF
0200	5890	HRMI, Honduras	SS	0500	5030	Adventist World Radio, Costa Rica	
0200	7450	Voice of Greece	Greek/EE	0500	5077	Caracol Colombia	SS
0200	9585	Radio Globo, Brazil	PP	0500	5470	Radio Veritas, Liberia	
0200	11720	Radio Bulgaria		0500	6065	Christian Voice, Zambia	
0200	11815	Radio Brazil Central, Brazil	PP	0500	7160	BBC Ascension Island	
0200	11920	RTV Morocaine, Morocco	AA				
0200	15170	Radio Tahiti	FF/TT				

UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
0500	7255	Voice of Nigeria		1300	11705	Radio Japan/NHK	JJ
0500	7520	Radio Bulgaria		1300	11745	Radio Taipei Int'l	CC; via WYFR
0500	7645	Kol Israel					
0500	9830	Croatian Radio	various langs.	1300	11815	Radio Polonia, Poland	
0500	11900	Radio New Zealand		1300	13800	Radio Norway Int'l	NN/EE
0530	9810	Radio Kiribati	EE/vern.	1300	15125	Radio Republik Indonesia	II
0530	11900	Channel Africa		1300	15390	Radio Romania Int'l	
0600	4800	XERTA, Mexico	SS, irregular	1300	17745	Radio Romania Int'l	
0600	4915	Ghana Broadcasting Corporation		1330	9715	Radio Tashkent, Uzbekistan	
0600	5025	Radio Rebelde, Cuba	SS	1330	9840	Voice of Vietnam	//12020
0600	5047	RT Togolaise, Togo	FF	1330	11690	Radio Jordan	
0600	7185	Croatian Radio	EE/others	1330	15240	Radio Sweden	
0600	12005	RTV Tunisiense, Tunisia	AA	1400	11600	Far East Broadcasting Assn., Seychelles	
0630	6015	Radio Austria Int'l, via Canada		1400	13580	Radio Prague, Czech Republic	
0630	9660	V of the Mediterranean, Malta, via Italy		1400	15020	All India Radio	unk lang.
0630	11805	Radio Georgia, Georgia Rep.		1400	21645	Radio France Int'l	SS
0645	5840	Swiss Radio Int'l, via Germany		1430	15615	Kol Israel	FF
0700	3450	Radio Veritas, Liberia		1500	11660	Radio Australia	
0700	4832	Radio Reloj, Costa Rica	SS	1500	12085	Kol Israel	
0700	5100	Radio Liberia		1500	15395	UAE Radio, Dubai, UAE	
0700	6070	CFRX/CFRB, Canada		1500	21455	HCJB, Ecuador	USB mode
0700	11625	Radio Norway Int'l		1500	21555	Radio Vision Cristina, Chile	various langs.
0800	5865	HCJB, Ecuador		1600	11570	Radio Pakistan	
0800	11880	Radio Australia		1600	17620	Radio France Int'l, via French Guiana	FF
0830	6130	Radio Vlaanderen Int'l, Belgium		1630	13675	UAE Radio, Dubai, UAE	
0830	6155	Radio Austria Int'l		1730	11680	Radio Vlaanderen Int'l, Belgium	
0900	3290	Radio Centro, Ambato, Ecuador	SS	1730	15475	Africa Number One, Gabon	FF
0900	4755	Radio Educacao Cultural, Brazil	PP	1730	15570	Vatican Radio	
0900	4890	NBC, Papua New Guinea		1800	9200	Republic of Sudan Radio	AA
0900	6185	Radio Educacion, Mexico	SS/EE	1800	11625	Vatican Radio	unk lang.
0900	9580	Radio Australia		1800	11990	Radio Kuwait	
0930	5949	Guyana Broadcasting Corp.		1800	13780	All India Radio, Bangalore	
0930	9700	Radio New Zealand		1800	17840	BBC via Canada	
0930	11635	Far East Broadcasting Corp., Philippines		1900	15120	Voice of Nigeria	various langs.
1000	3925	Radio Tampa, Japan	JJ				via WYFR
1000	4505	Radio Horizonte, Peru	SS	1900	17760	Radio Taipei Int'l	
1000	4775	Radio Tarma, Tarma, Peru	SS, variable	1900	17830	BBC via Ascension	
1000	4870	La Voz del Upano, Ecuador	SS	1930	9022	Voice of Islamic Republic of Iran	
1000	6060	Colmundo Bogota, Colombia	SS	2000	11715	Radio Algiers Int'l, Algeria	
1000	6937	Yunan People's Bc Station, China	various langs.	2030	6285	Voice of Hope, via Georgia Republic	
1000	15270	Voice of Armenia		2030	11734	Radio Tanzania-Zanzibar	AA
1030	3280	La Voz del Napo, Ecuador	SS	2100	9780	Radiodifusao Portuguesa, Portugal	PP
1100	4887	Radio Vila Rica, Huancavelica, Peru	SS, variable	2100	9855	Radio Kuwait	AA
1100	5020	Solomon Is. Broadcasting Corp.		2100	9965	Voice of Armenia	
1100	9385	KHBI, Saipan		2100	11935	Broadcasting Svc of Kingdom of Saudi Arabia	AA
1100	9535	Swiss Radio Int'l		2100	13630	Radio Japan/NHK	
1100	9865	Radio Sweden		2130	7210	Belarussian Radio, Belarus	GG
1100	11660	KCBS, North Korea	KK	2130	9545	Deutsche Welle, Germany	GG
1100	11760	Radio Republik Indonesia	II	2130	9575	Radio Medi-Un, Morocco	FF
1100	15530	Radio Pakistan		2130	9735	Deutsche Welle, Germany, via Rwanda	GG
1100	6130	CKZN, St. John's, Newfoundland, Canada		2130	11975	Voice of America via Sao Tome	
1130	18950	Radio Denmark, via Norway	Danish	2200	9505	Radio Record, Brazil	PP
1200	11940	National Radio of Cambodia		2200	9615	Radio Cultura, Brazil	PP
1200	12085	Voice of Mongolia		2200	9950	All India Radio	
1200	17890	Radio Exterior de Espana, Spain		2200	17555	KWHR, Hawaii	
1215	11402	Icelandic National Broadcasting Service	Icelandic	2215	7105	Cyprus Broadcasting Corporation	weekends
1230	7365	KNLS, Alaska		2300	7300	Voice of Turkey	
1230	9400	Radio Moldova Int'l		2300	9725	Adventist World Radio, Costa Rica	
1230	9885	Radio Thailand		2300	9755	Radio Canada Int'l	
1230	17545	Reshet Bet home service, Israel	HH	2300	15295	HCJB, Ecuador	GG
1300	9770	Radio Australia		2330	6980	Radio For Peace Int'l, Costa Rica	
				2330	9425	Voice of Greece	Greek/EE

# Product Parade

BY HAROLD ORT  
AND R.L. SLATTERY

REVIEW OF NEW, INTERESTING, AND USEFUL PRODUCTS

## AccuWeather Purchases WeatherPage™

AccuWeather, Inc., recently announced the purchase of the WeatherPage business from Widespread Weather Services, Inc. With this business, AccuWeather now provides instant notification of severe weather warnings, watches and updates to pagers. The service is available for any alphanumeric pager from any paging company, and also provides daily forecasts and a variety of other types of information directly to the pager. Available are warnings and forecasts from the National Weather Service and those made by AccuWeather meteorologists.

AccuWeather founder and president, Dr. Joel Myers said, "This is a vital service for protection of life and property . . . clients include local and state emer-

gency management agencies, schools, churches, hospitals, the media and others with a need for instant notification of severe weather."

The WeatherPage service is customized and pinpointed to provide each subscriber with the exact information for the specific area of interest to them. As part of the arrangement, Widespread Weather Services founder and president, Gregg Potter will be working with AccuWeather as Product Manager to provide additional enhancements to this service.

AccuWeather, Inc. is headquartered in State College, PA and was founded in 1962. It now serves more than 10,000 clients worldwide. The WeatherPager by AccuWeather costs \$295 per year and includes notification to two pagers (additional pagers, \$99 each). For more information, contact AccuWeather at 800-566-6606 or write to them at 619 W.

College Avenue, State College, PA 16801. Tell them you read about it in *Pop'Comm*!

## Maxon Introduces New CB/Weather Radio

Maxon America, Inc., has introduced a new compact, lightweight portable CB to its product family. The new HCB-30C/ weather radio receives up-to-the-minute weather broadcasts from the National Weather Service on one of three separate weather frequencies. A side-mounted CB/weather switch and green "WX" LED indicator make selecting modes and weather channel identification easy and convenient.

The Maxon HCBs can be battery-powered to function as a handheld, or by using the included 12-Vdc power cord, can be

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- Just use your mouse to "arm chair" the controls. Never touch the radio once the software is running.

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- R7000, R7100 ICOM
- Most ICOMs with 10.7MHz IF

#### Features

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- Instant change of center frequency with a simple mouse click.
- Save Spectrum data to disk. Playback of Recorded Spectrum data from disk.
- Signal Averaging, PLUS our exclusive "VARI-COLOR" Analysis.
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Minimum Requirements - IBM PC 8 meg ram. - Windows 3.1 or later. - 8 meg Hard Drive

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"The Standard Against Which All Future Decoders Will Be Compared"

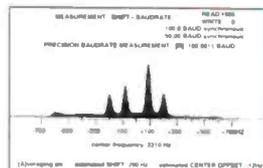
Many radio amateurs and SWLs are puzzled! Just what are all those strange signals you can hear but not identify on the Short Wave Bands? A few of them such as CW, RTTY, Packet and Amtor you'll know - but what about the many other signals?

There are some well known CW/RTTY Decoders but then there is CODE-3. It's up to you to make the choice, but it will be easy once you see CODE-3. CODE-3 has an exclusive auto-classification module that tells YOU what you're listening to AND automatically sets you up to start decoding. No other decoder can do this on ALL the modes listed below - and most more expensive decoders have no means of identifying ANY received signals! Why spend more money for other decoders with FEWER features? CODE-3 works on any IBM-compatible computer with MS-DOS with at least 640kb of RAM, and a CGA monitor. CODE-3 includes software, a complete audio to digital FSK converter with built-in 115V ac power supply, and a RS-232 cable, ready to use.

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- DUP-ARQ Artrac
- TwiNplex
- ASCII
- ARQ6-90/98
- SI-ARQ/ARO-S
- SWED-ARQ-ARO-SWE
- ARQ-E-ARQ1000 Duplex Variant
- ARQ-N-ARQ1000 Duplex Variant
- ARQ-E3-CCIR519 Variant
- POL-ARQ 100 Baud Duplex ARQ
- TDM242/ARQ-M2/4-242
- TDM342/ARQ-M2/4
- FEC-A FEC100A/FEC101
- FEC-S - FEC1000 Simplex
- Sports info 300 baud ASCII
- Hellsreiber-Synch/Asynch
- Sitor - RAW (Normal Sitor but without Synch.
- ARQ6-70
- Baudot F788N
- Pactor
- WEFAX
- Piccolo
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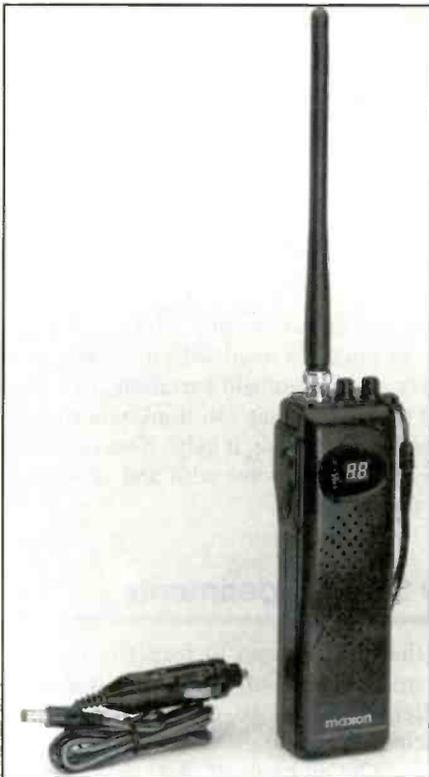
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Maxon's new HCB-30C CB handhelds offer versatility and convenience of all 40 CB channels. (Photo Courtesy Maxon America, Inc.)

converted into a mobile CB. The models each provide 40 channel CB operation. Both the HCB-30C and HCB-10C operate with the maximum legal CB RF output power, have a high/low power selector switch, a front-panel transmit, and battery low LED indicator. The Maxon units also feature last channel memory which recalls the last channel displayed.

Each HCB comes equipped with external accessory jacks which allow "hands-free" operation when used with Maxon's optional mini-VOX headset (WTA-13G). The jacks can also be used with Maxon's optional QPA-1425 lapel speaker/microphone.

Powered by nine "AA" alkaline or NiCd rechargeable batteries or with the provided 12-Vdc power cord, the handhelds measure 7 1/4 x 2 1/4 x 1 3/4 inches. Without batteries, the HCB-30C weighs 9.4 ounces. Each includes a rubber duck antenna, power cord, belt clip, carrying strap, owner's manual, and FCC rules. The HCB-30C also comes with an NOAA Weather Radio Network frequency card. Both models carry a one-year limited warranty.

The suggested retail price of the HCB-30C and 10C CB/weather radio is

\$119.95, and \$79.95, respectively.

Maxon America, Inc., also manufactures a complete line of personal electronics products, including handheld and mobile CB radios, GMRS/DOT two-way radios, 49-MHz personal communicators, FRS radios, and weather monitors. For more information, contact Maxon America, Inc., at 10828 NW Air World Drive, Kansas City, MO 64153 or call them at 816-891-6320, Ext. 399 or fax 816-891-8815.

## DX-World Guide Now Available

The completely new edition of Fran Langner, DJ9ZB's *DX-World Guide* is 354 pages long, and is full of information with maps, QSLs, QSL bureaus, grid squares, UTC, prefixes, radio clubs for each DXCC country and much more. It's available for \$25 (includes airmail postage) directly from the publisher, DL8HCZ, Joe Kraft, Gruetzmuehlenweg 23, D-22339 Hamburg, Germany.

For additional information, contact them online at [FUNK-TELEGRAMM@t-online.de](mailto:FUNK-TELEGRAMM@t-online.de).

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TRUNKING, TIPS, TECHNIQUES, AND MODS

## Handheld Skyhooks!

When I was first getting hooked on this radio stuff, shortwave was the lure. In fact, a friend of mine had found an old receiver in his garage and wanted to know what it was. I wasn't sure, but I volunteered to take it home and see if I could get it working. I did. And here I am all these years later. Time flies whether you're having fun or not.

One of the first things I learned about the radio was that you had to have an aerial — an antenna — a skyhook. That always seemed like such a good name to me because, with shortwave reception, it seemed to catch the signals as they were passing by. It turned out that you could afford lots of antennas based on the money you saved on the heating bill. Not much need for heat in the room if you had one of those old tube receivers.

Well, times have changed a bit. The frequencies I was interested in got higher (actually, they just expanded at one end) and the radios don't make good space heaters any more. But the need for a good 'ol skyhook hasn't changed much — they just got shorter. And the radios got more portable.

I thought that we'd take a look at some of the myriad of antennas available for handheld radios, since that's one of the topics I get asked about very often. We'll do base antennas another time.

---

***“Just don't expect your handheld to receive transmissions from 75 miles away on a portable antenna.”***

---

Handheld radios have all sorts of handicaps conveniently built right in. They have to operate off batteries, which only supply a limited amount of power. The net effect of this is that they are not as immune to interference as their base counterparts, if all other design factors are equal (they usually aren't).

Handhelds also are not expected to have a super whiz bang antenna attached to them as are base units. So the manufacturers try to compensate by adding extra amplification, etc. so that the handheld will receive about the same as a base unit. The fly in the ointment with this is that when you start hooking your handheld to base type antennas, you are likely to experience overload much more quickly than you would otherwise. It's just the nature of the beast.

This is not to say that your handheld won't benefit from an external base antenna when you're using it at home. But if you're in a metropolitan area, you may find that it works better with just the rubber antenna that came with it, or possibly another “handheld” antenna. This is mostly due to strong signal overload in metro areas and a phenomenon called “desensitization.” Experimentation is the best advice here, but start small and easy, and work up. It doesn't make any sense to put

up a base antenna with lead-in cables, guy wires, and lightning protection if you're going to overload your radio with just a whip antenna. Try a few handheld variations first, and then if you're still not receiving what you think you should, think about larger antennas. Of course, it helps if you can find someone in your area to compare notes with and make sure your expectations are reasonable.

### Let's Try Some Experiments

One of the things that people tend to forget is that the VHF/UHF spectrum involves line-of-sight radio transmissions. The higher in frequency you go, the more likely it is that the signal is bouncing off buildings and other things, and so it may fade in and out a bit all by itself. Add to this natural “flutter” characteristic of radio the fact that you're moving the radio around, and you have an equation that is just not meant for rock solid copy of anything but the strongest signals. Of course, you may only want to listen to the strongest, and therefore closest, signals. Just don't expect your handheld to receive transmissions from 75 miles away on a portable antenna — at least not on a regular basis. Strange things can happen in the atmosphere, or at the top of hills.

Having said all that, let's take a look at what the antenna is; a hunk of wire. In fact, in the good old days (which I mentioned earlier), RadioShack, on some of their handheld models, used to provide a piece of wire that would plug into the antenna jack in addition to the rubberized antenna. This wire antenna worked great on the VHF high band, and could easily be concealed in a pocket or down the sleeve of a jacket. Of course, hiding the radio was a bigger problem because it was about the same size as some of the larger synthesized radios today with 1,000 channels. We got to listen to a whopping four (yes, four!) channels — and you had to carry extra crystals in another pocket to change channels!

That old wire trick will still work great, but you'll have to supply your own. Ideally, a single piece of wire connected to the center pin of a BNC connector would work great. It is helpful if you cut the wire to the length equal to  $1/4$  wavelength of the frequency range you are interested in monitoring. Bear in mind that this is not a particularly wide band antenna, but will perform OK if you use the lowest frequency that you are interested in for the calculation. I'll spare you the complications of the math, but  $2832$  divided by the frequency in MHz will give you the length in inches. It may not be exact for transmitting purposes, but it will be very close, and should work fine for receiving. This antenna is the classic  $1/4$ -wave whip antenna.

Having read all that, perhaps you're not quite willing to have this wire dangling around when you carry the radio. Welcome to the club. Because of that, all sorts of variations of antennas

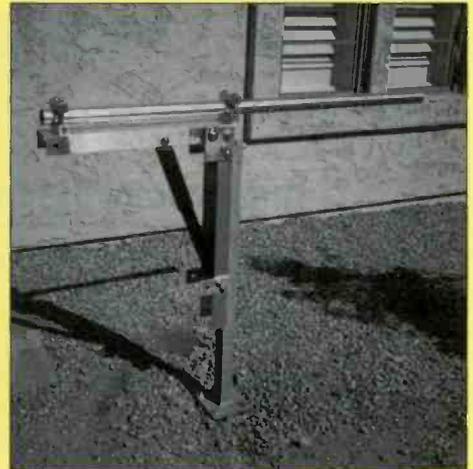
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Telescoping antennas come in all shapes and sizes. Shown are the RadioShack telescoping antenna (a great antenna to have around for experimentation), MFJ-1712, ARS RH775, and a generic VHF 1/4-wave. These provide reasonable performance when collapsed, and better performance on VHF high frequencies when extended. They are also easy to break if you hit them the wrong way.

have come along. The simplest is the 1/4-wave whip that I just described, which is made from harder wire so it will stand up on its own. In fact, many of them will telescope so that you don't need to have the full length extended all the time. Of course, it will work best at full length on VHF high-band frequencies. On higher frequencies, the "wire" or length of the telescoping sections should be shorter, so you can drop it down a bit. This saves you from being poked in the shoulder if you're wearing the radio on your belt.

### The Proverbial Rubber Duck

Here's where the rubberized antenna comes into play. Wouldn't it be nice if we could get the length of wire we need, but in a shorter format. The rubberized antenna, or rubber duck as it is sometimes called, is exactly that. In law enforcement and other commercial applications, they don't want to spend time putting a telescoping antenna up and down every time they want to transmit. They also don't want to have telescoping antennas broken off every week, so something was done to fix the situation. The something was to wind the wire around in a circle and put the whole thing in a rubber sleeve. It's a compromise antenna, to say the least, but most commercial equipment operates with strong signals, and they can happily live with the compromise. So can we, most of the time.

Another compromise that most of us will gladly make is to get a multi-band antenna. The 1/4-wave antenna we just discussed really only works well on the exact frequency that it's

cut for. The further away you go from that "center" frequency, the more the performance falls off. So if you have a 19-inch wire for the VHF bands, by the time you get to 800 MHz, it's not very effective at all. By adding coils and other antenna design tricks, it's possible to get the antenna to have good performance on more than one band. An excellent source of multi-band antennas is your nearest ham radio store. Since hams have transmitters in the VHF and UHF bands, they need antennas designed to handle both. These work great as scanner antennas for those bands.

Getting good 800-MHz performance is a bit trickier. To say the least, 800 is a bit more difficult to predict, and can use all the gain in signal that it can get. One of the properties of 800-MHz signals that makes them effective for city communications is that they bounce off of lots of solid objects. But if you're very far away from the transmitter, having a tuned antenna with even a little bit of gain is a good idea. I've had the best luck with a cellular antenna. I just happened to find one with a BNC connector on it at a local electronics store, but these are not very common. You may have to settle for an adapter or two if you listen to the



When reduced performance is acceptable, or shorter range is desirable, these short antennas are easy to hide and carry. Shown are the Maldol Active Hunter AH-209S, a UHF-only antenna (sorry, I can't identify the manufacturer) which provides great performance on UHF (and reduced sensitivity on VHF and 800), and the Comet DB-32, the ultimate small antenna. Check your favorite radio dealer for these, or similar antennas for your handheld.

---

*"One of the things that people tend to forget is that the VHF/UHF spectrum involves line-of-sight radio transmissions."*

---

800 bands a lot. Of course, a trunktracker scanner will benefit greatly from a good 800-MHz antenna. That same antenna however, makes the trunktracker a poor scanner on VHF. You'll almost have to carry two antennas if you want any kind of performance in other frequency ranges.

### Specialty Antennas

---

Sometimes, maximum signal-grabbing performance doesn't make for the ideal antenna. We've already discussed problems with overload and intermod, but there may be other reasons you don't want to grab every signal you can. A good example might be at an event or other confined area where the only communications you're interested in hearing are local ones. In that case, particularly if the frequency you're using is shared with other users, having a good antenna will force you to listen to all sorts of things you're not concerned with hearing.

Here is where reduced performance antennas can actually be desirable. There are several antennas on the market, for each of the main bands, that emphasize size and convenience over performance. An excellent example of this philosophy is the DB-32 2M/440 ham antenna. It's not much more than two-inches long including the BNC connector. It really looks cool on top of the radio. But it's designed specifically for size, not performance. Hams can use it in local areas (like at a convention, for instance) quite effectively, but its performance falls off pretty quickly with distance. There are several other examples of this kind of antenna available. I use one on my portable scanner because I only care about listening to things in the immediate area, and would prefer not to listen to the static and squawking of the radio trying to pull out more distant signals.

### Have fun!

---

One of the cool things about antennas is that they tend to be relatively inexpensive. Even rubber duck antennas aren't all that expensive. And what works best in my situation may not be at all good for you. So I encourage you to experiment. Talk to friends, and try various antennas on your radio when you get together and see what works best. You won't hurt the radio, and you may discover something that allows you to enjoy the hobby a lot more!

### Picture Perfect

---

We're looking for pictures of your listening setup for an upcoming article on designing a listening post. If you've got a good picture of your listening post that you can spare (sorry, pictures won't be returned without an SASE), send it in! Got an opinion on how to design a good listening post? Send that in, too. Of course, your comments and questions, as well as any scanning related, pictures are always welcome at <armadillo1@aol.com> or via snail mail at 9051 Watson Rd. #309, St. Louis, MO 63126. Until next month, good listening. ■

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# Scanning The Globe

BY CHUCK GYSI, N2DUP  
<SCAN911@aol.com>

MONITORING THE 30 TO 900-MHZ "ACTION" BANDS

## Summer Is Here! Time For Chuck's Tips For Cool Scanning Action . . .

The summer is upon us, and I'm sure many of you are traveling with your scanners. The nice thing about traveling is that you have the opportunity to hear new systems you may not have monitored before. For instance, if you live in the city and head out to a rural lake for rest and relaxation, you certainly won't hear all the big-city hubbub on the airwaves while you sit back and contemplate putting your feet up on the lodge's porch railing. In fact, you'll be lucky if you actually hear anything at all! In the region I like to cool my heels, the most chatter I'll hear on the police channel is the police chief himself reporting that he's out checking the folks parked along the side of the road watching moose in the woods.

If you live in a rural area and visit a big city this summer, you'll have the chance to hear exciting communications that might even make you cringe. Imagine hearing reports of gunshots, fights, stabblings, robberies, and more — almost every hour. On a hot summer night in the big cities, you'll hear plenty of this kind of stuff. It can be downright scary, so be thankful you have your scanner to let you know what's going on out there.

### Trunked Systems

I'm sure many of you will be traveling around this summer with your newer scanners capable of monitoring trunked 800-MHz systems. That will prove to be a lot of fun. But don't forget that while you can follow the public safety trunks in the 851 to 861 and 866 to 869-MHz ranges, there's plenty of commercial activity in the 861 to 866-MHz band. And, in some areas, public safety agencies may be using commercial trunked systems in the 861 to 866-MHz band because the system already is in place for commercial customers, and the public safety agencies only have to invest in mobile communications equipment, not towers and 800-MHz trunked repeaters.



*There's a good chance dear 'ol dad is off getting some cool ones or getting ready to launch the boat. Either way, staying in touch the right way — with new Family Service Radio (FRS) radios — will easily provide the family with a mile or so communications range at a campsite like this one at Pasesco Lake, New York.*

If you're headed off to the usual summer resorts, like amusement and theme parks, national parks, state parks, shopping malls, entertainment meccas, ballparks — wherever two-way radios are used — be sure to take a lot of notes on the frequencies you find, and then send them in via mail or e-mail, and we'll do our part to let fellow readers know of your finds. Plus, we'll tell everyone who sent in the generous helping of frequencies and notes, making you famous (well, among radio hobbyists).

Keep in mind that your scanner may not always be welcome everywhere. In some states, it may be illegal to operate a scanner in a motor vehicle. Some amusement and theme parks have rules that forbid the use of scanners inside their parks, too. And if you walk around a shopping mall with a scanner, you may be interrogated by a security guard. Just exercise caution, try to be discrete, and no one should bother you.

For those looking to disguise their scanning activity, I recommend this tip from a reader who liked to keep low-key while scanning the action around him. Put your handheld scanner on your belt or waist and use one of the personal stereo-type headphones to do your monitoring. Most people will think you're just tuned into some rockin' tunes (little will they know you're really plugged in!) One additional tip for those who try this: Use the shortest scanner antenna you can to remain even more inconspicuous. If the activity you're monitoring is all nearby, you may find that you can even remove the antenna and still hear the two-way radios around you with no difficulty. Obviously, if you have a long rubber duck antenna on your scanner, it will tip people off that you have some type of communications radio. Using a UHF stubby duck works great for close-in communications monitoring. Experiment and see what works best for you on your "stereo."



The small rubber duck antenna on scanners like this RadioShack unit will provide good reception: in some areas, if you're close to the action, you might even want to remove the antenna to be more inconspicuous.

One last note: Some of my favorite listening targets in the summer include amusement parks (especially those business frequencies used by security) and shopping malls (which become refuges from the heat on hot summer days). You'll find plenty of action on the business frequencies between 151.625 and 151.955, 154.515 and 154.625, and 461 and 465 MHz. Be sure to tune around. You're bound to hear something on these bands just about anywhere in the nation. Have fun with summer scanning and let us know what you hear!

## Getting Low

Summer is the time when VHF low-band signals from 29 to 54 MHz really come bouncing in some days. I always keep a few frequencies like 33.70 or 33.90 in my scanners here in the Midwest because, when the signals start skipping

on low band, I'll hear fire dispatches for the area of the East Coast where I used to live. It's always exciting to hear dispatches for my home county a good 1,000 miles away.

There's plenty of other good stuff to hear on low band, too, if you're patient. I've heard military communications from all over the United States on low band, not to mention the national park in Caracas, Venezuela on 39.18 and Radio Cadena Nacional on 40 MHz (a remote link).

Jim Wico of Benton Harbor, Michigan, wrote in recently asking how he can increase his VHF low-band receive capability. He uses a RadioShack magnetic-mount mobile antenna for his older Realistic PRO-2005 scanner. He asks how he can rectify the situation quickly and easily without much expense.

There are two approaches to finding a remedy here; which to use depends on your listening habits. What segment of the VHF low band are you primarily interested in monitoring? If you're interested in the lower end, say 30 to 40 MHz, a 10-meter ham antenna or VHF low-band antenna, such as a professional two-way antenna, would help your reception. If your interest is in the higher part of the band, say 40 to 50 MHz, a 6-meter ham antenna or a two-way antenna designed for that segment would help. Keep in mind that amateur antennas usually cost less than two-way professional versions, and often are of the same quality. The amateur versions may need minor cutting or adjusting for the frequency band you are interested in receiving.

However, if you want to be able to monitor other bands, having the VHF low-band antenna won't help on VHF high band or UHF, including 800 and 900 MHz. What you need is a good antenna, regardless of what you buy. Check the gain on the antenna. See how the gain compares to other models. Go with the antenna that offers the better gain factor. And don't forget to send in your loggings of long-haul DX on the VHF low bands.

## Family Communications

I like to travel, and one thing I have noticed more and more over the past few years is an increasing number of "family communications," for lack of a better phrase, on business frequencies such as 151.625 and 154.600. I've heard parents keeping track of their kids and similar communications. Have you ever heard these communications and wondered if

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The Midland 75-510 is a really neat half-watt FRS transceiver and is ideal for families who want to stay in touch while on vacation.

they're legal? The increasing use of business radio by families is happening just about everywhere. This is especially true on the itinerant frequency of 151.625 and the low-power handheld channels of 154.570 and 154.600. Some-times, you'll hear these communications on 464.500 and 464.550, too. The primary reason for this is that walkie-talkies on these fre-

quencies are readily available through many retail operations.

You can buy these radios in department stores, auto parts sales outlets, and even drug stores! They are designed to be used in small businesses that have a need for just a few handheld radios, however, there's nothing to stop a sales clerk from selling a family these radios. In fact, there even is a family in one town where I lived that uses 151.625 with voice inversion scrambling on their radios. It's amazing that they can get away with it!

Families interested in using two-way radios *should* purchase UHF radios capable of operating in the General Mobile Radio Service (GMRS) at 462 and 467 MHz. Families can be licensed on these eight full-power channels and seven low-power frequencies. In addition, there is the newer Family Radio Service at 462 and 467 MHz that's good for short-range communications for families.

If they just need radios to find each other at the shopping mall, the Family Radio Service (FRS) is the way to go — and it's the cheapest, too. I've seen FRS radios selling for as little as \$80 each. That's certainly less expensive than many of the VHF high-band radios that some families are buying. The UHF radios used for the General Mobile Radio Service may cost a little more than the VHF business radios, but at least the operators would be legitimate. The FCC tolerates minimal use of business radios to facilitate the personal needs of a radio user, but not on a daily basis.

## Metro Trick

A *Pop Comm* reader recently asked me online about any tricks to monitoring a busy big-city police department that has many busy channels — and to do so with-

out missing much of the action. I recalled another reader who had come up with a method of doing such in the past and I'll pass it along for those hot summer nights of city scanning.

If you want to hear the hottest dispatches on your scanner, but don't want to monitor routine communications, such as vehicle stops, here's how to go about it: If your scanner contains at least 20 channels, program the first channels (such as channels 1 through 13) with the corresponding radio zone numbers (such as if there are 13 radio zones). Channel 1 would be programmed with the frequency of Zone 1, Channel 2 with Zone 2, etc. Channels 14 through 20 would be programmed with the citywide frequencies. Typically, citywide channels are used for bulletins in most cities, for reports of major crimes, and all-points bulletins.

Then, lock out channels 1 through 13, or whatever channels have the zone channels programmed in them. By doing this, you are only checking and stopping on active citywide frequencies while scanning. On the citywide channels, you may hear something like: "Units on citywide, report of shots fired, man down, at (address or intersection), this the 5th District, Zone 9 radio." If you wish to hear the radio traffic of the responding units, you would only have to manually go directly to channel 9 and just listen there until you've heard what you wanted to know.

You could, of course, modify this to suit personal preferences. If you want to keep track of all activity, all the time, within a particular district or districts, you might want to "unlock" the channel containing the zone number for the district of interest. If your scanner has a priority function, you could still leave the channel "locked out" and just make the channel number of importance a "priority" channel and then engage the priority function.

## Write In

This is *your* magazine! What are your favorite frequencies? Do you have any scanner-related questions? Do you have any listening tips worth passing along to your fellow readers? How about sending in a photo of your listening post or antenna farm? Write to: Chuck Gysi, N2DUP, "Scanning the Globe," *Popular Communications*, Box 11, Iowa City, Iowa 52244-0011, fax to 516-681-2926, or e-mail to <SCAN911@aol.com>. Make sure you indicate in your e-mail that you are writing regarding this column. ■

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# How I Got Started

## Congratulations To Luis Vega Of Florida!

**P**opular Communications invites you to submit, in about 150 words, how you got started in the communications hobby. Entries should be typewritten, or otherwise easily readable. If possible, your photo (no Polaroids, please) should be included.

Each month, we'll select one entry and publish it here. Submit your entry only once; we'll keep it on file. All submissions become the property of *Popular Communications*, and none will be acknowledged or returned. Entries will be selected taking into consideration the story they relate, and if it is especially interesting, unusual, or even humorous. We reserve the right to edit all submitted material for length and grammar, and to improve style.

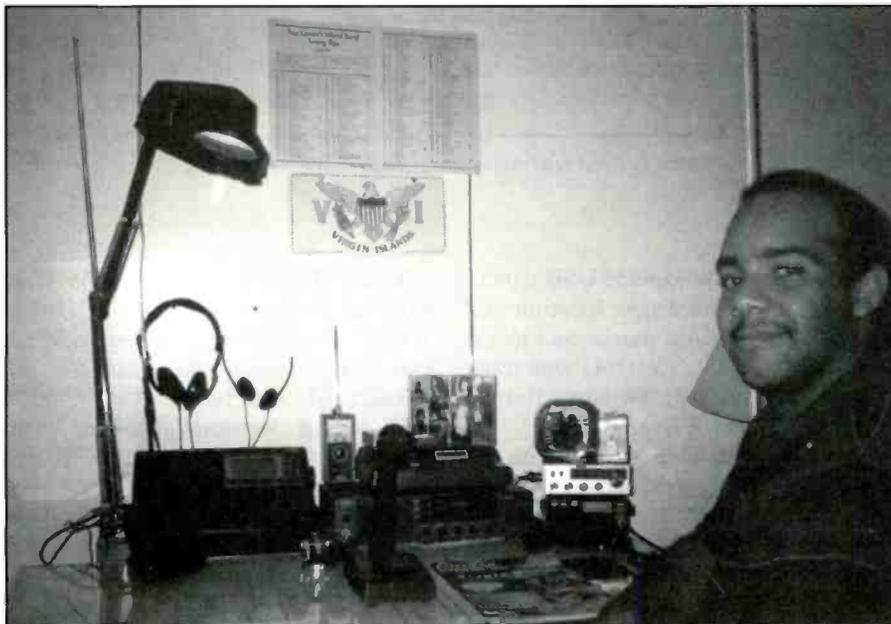
The person whose entry is selected will receive a one-year gift subscription (or one-year subscription extension) to *Popular Communications*. Address all entries to: "How I Got Started," *Popular Communications*, 25 Newbridge Road, Hicksville, NY 11801 or e-mail your entry to <popularcom@aol.com>. Letting us know if you're sending photos.

*"My dad bought me a tube-type shortwave receiver at a yard sale."*

### Our July Winner

Luis Vega, Jr.'s radio hobby began when he was 12 years old living in St. Croix, U.S. Virgin Islands. "My dad bought me a tube-type shortwave receiver at a yard sale. I strung a wire from my bedroom to an avocado tree. I received interesting broadcasts and military communications. A couple of months later, I received a CB radio from my uncle. Living on a mountainside, I communicated with CBers from all over the island.

My family and I later moved to Florida in 1990, which is when I received my first scanner. Since then I've obtained a shortwave radio (DX-390), four CBs — two base and two mobile — a marine radio and two scanners. I'm also currently studying for my amateur radio license. I work for a two-way radio shop, so I'm around radios all day and I love it!" ■



Luis Vega, Jr. at his monitoring post in sunny Pompano Beach, Florida.

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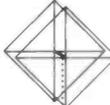
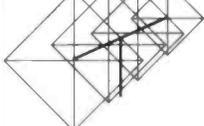
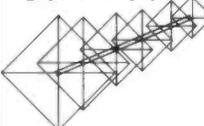
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# The Pirate's Den

BY EDWARD TEACH

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## Fire Up Your Radio For Another Journey Through Pirateland . . .

**G**et ready, here we go again on another wild trip through a ton of great reports!

**Betty Boop Radio, 6955** at 1800 with "Good Ship Lollipop" and songs by everyone from Popeye to Carmen Maranda. Relay by WREC (Dean Burgess, MA) 2340. (William Hassig, IL) 2151 with repeat of first program. (Lee Silvi, OH) 1715 to 1730 sign off with Providence, Rhode Island address. (Michael VonDerLieth, NY) To 2212. (Jerry Coatsworth, ON)

**Reefer Madness Radio** came on after Betty Boop, also a WREC relay, (Burgess, MA) 2220 with talk against marijuana. (Tom Delfratte, PA) 1730 with a DJ named Harry. Belfast address; off at 1746. (Burgess, MA) to 2310. (Coatsworth, ON)

**WRYT, 6955** at 1850 with Jukebox Aero, Belfast address. (Delfratte, PA)

**WRNR, 6955 USB** at 2317. They said they'd been on 6250 10 years ago and now were "here to stay." (Silvi, OH) 2318 saying they hadn't been on since 1989. (Coatsworth, ON)

**Voice of Anarchy, 6955** at 0002 with Leonard and Linda Longwire with local musicians from Chicago. (Brandon Artman, PA)

**Lounge Lizard Radio, 6955.66** at 0017 with their program #3. James Bond movie music and other. Off with "Volare." (Hassig, IL) 1521. (Coatsworth, ON)

**WKND, 6950.25** at 2240 with Radio Animal and Moody Blues. Also 2150 with Spike Jones. (Hassig, IL) 2312 sign on with laughter. (Coatsworth, ON)

**Radio Eclipse, 6955** at 2325 with talks about Clinton and close with "Shadows on the Wall." (Hassig, IL)

**Radio Free Speech, 6955** at 1508. Address given but not copyable. (Dave Jeffery, NY)

**WREC — Radio Free East Coast, 6955 USB** at 1720 with pirate song, ID, hard rock, pop song parodies. Blue Ridge address. Later on **6850 USB** at 2003. (Jeffery, NY)

**Up Yours Radio, 6955 USB** at 1644 with sudden close at 1708. (Jeffery, NY)

**RADIO**

6955 kHz  USB-AM

**ECLIPSE**

TO: William Flagel

QSL # 48

DATE/TIME: 7-19-97 0211 - 0228 UTC

FREQ./MODE: 6955U / Drunken Mode!!

RADIO ECLIPSE uses an old Heathkit HW-101 (aprx. 95 watts) for sideband, and I also use a very old Johnson Viking Valiant for AM (150 watts) when the old beast wants to work!!! The antenna is an inverted V mounted 30 ft. above the ground at the apex. I also use some old commercial broadcast station compressor/limiter/audio phase scrambling devices. While transmitting, I monitor the entire program thru another radio enabling me to adjust the EQ to keep the audio relatively clean.

FFFR!!!

73—  
Stay Cool, Be Yourself,  
  
STEVE MANN

*Radio Eclipse sent this confirmation to William Flagel.*

**Take It Easy Radio, 6955 USB** at 0431 with comments on a new location and antenna tests, various music, and jokes. (Andy MacAllister, TX) 0541 with tests, sympathetic towards farmers. Belfast address. (Vincent P. Everett, NY)

**Radio Azteca, 6955** at 1858 with listener mail and commercial spoofs. (Burgess, MA) 6955.68 at 2345 with fake news bits. WREC relay. (Hassig, IL)

**Anteater Radio, 6955 USB** at 2255 doing a radio check, couple of tunes, "matching the antenna" and off at 2300. (Burgess, MA)

**Voice of South Dublin, 6955 USB** with talk about Ireland. (Silvi, OH) Via WREC at 2345 with e-mail address <vosc@usa.net>. (Coatsworth, ON)

**Voice of Shortwave Radio, 6955 USB** heard at 0008 opening with "Dagnet" theme. (Silvi, OH) 0010 sign on. (Coatsworth, ON)

**WMFR on 6955** at 1600 with over-modulated music. (Coatsworth, ON) 2304, over modulated. (Silvi, OH)

**WNFR, 6955** at 2110 with Dance Party show — techno dance and many IDs. (Delfratte, PA)

**Rocket Radio, 6955 USB** at 1130 with offbeat '50s music. Gave a Web site, too.

**WLIQ, 6955 USB** at 2000 with offbeat music and talks. (VonDerLieth)

**Voice of Communism USSR, 6955** at 1730 with political humor. (Everett, NY)

**One Voice Radio, 6955** heard at 1815 with talk on health. (Everett, NY) 1818 with "Joe." (Burgess, MA) 1600. (Coatsworth, ON)

**Radio Metallica, 6955** at 1605 with "Dr. T." Also 1415 in USB. At sign off, said would be back with high power AM in a couple of hours and was, at 1600. (Silvi, OH) 1457, frequency varying. (Coatsworth, ON) **6950** closing with "Secret Agent Man" at 1854. (Christopher White, MA)

**WMOM, 6955 USB** at 0018. Several IDs sounding like WMLM and WMOM. (Silvi, OH)

**Voice of Green Acres, 6955 USB** at 2314 with Green Acres theme played over and over and talk. (Coatsworth, ON)

**Radio Trans Atlantic, 6955** at 2328. (Silvi, OH) 2328 with mention of new QSL, e-mail, and address in Rotterdam. (Coatsworth, ON)

**Radio Nonsense, 6955 USB** at 0133 with "Lost in Space." (Silvi, OH) 2315 with children's music and comedy bits. (Hassig, IL) 0200 "broadcasting from MIR space station." (Coatsworth, ON)

**Mystery Radio, 6955 USB** heard at 0517 with "So Fine," "Black Is Black." (Silvi, OH) 0215. (Hassig, IL) 0505 with woman talking in the background. (Coatsworth, ON)

**Radio Erotica, 6955 USB** with slow speed IDs between man and woman. Also 1918. (Silvi, OH)

**Montana Audio Relay Service (MARS), 6955 USB** at 1848. Merlin address. (Silvi, OH) **6954.9 USB** at 2100. Off with "I like corn." (Hassig, IL) 2117 with comedy songs, anti-Clinton. (Jeffery, NT) 1553 to 1600 sign off. (Coatsworth, ON)

**WPUP, 69850 USB** at 21943 via WREC with dogs Ralph and Herbie. (Artman, PA)

**Radio Raven, via WREC, 6850 USB** at 2020. Address c/o SRS. Ostra Porten 29, 44254 Ytterby, Sweden. (Artman, PA) 2022 saying broadcast was from Sweden. (Jeffery, NY)

**Radio Three, 6955** at 2207 telling people to report via Joe Philikowske at the ACE. DJ called himself "Salamonic." '30s tunes. (Burgess, MA)

**Munchkin Radio, 6950** at 1918 hosted by "The Wizard" playing various comedy songs along with the "Dr. Who" theme. (Burgess, MA)

**Argosy Magazine, 6956** at 1758 with replay of a 1938 Ray Bradbury radio drama. Merlin address. (Burgess, MA) 2032, Ray Bradbury story from 1938 Argosy Magazine. (Coatsworth, ON)

**Laser Hot Hits, 6955 USB** with many songs, Merlin drop. Also heard at 1355. (Silvi, OH)

**Radio Indiana, 6955** at 2313 opening with "Andy Griffith" theme. (Silvi, OH)

**WMPR, 6955** at 2142 with abrupt start with techno pop, computerized male voice gave call letters. (Sue Wilden, IN)

**Radio Titanic International, 6955** at 2309 with programming related to the Titanic. (Silvi, OH)

**WLIS, 6955 USB** to 0528 close with backwards talk. (Coatsworth, ON)

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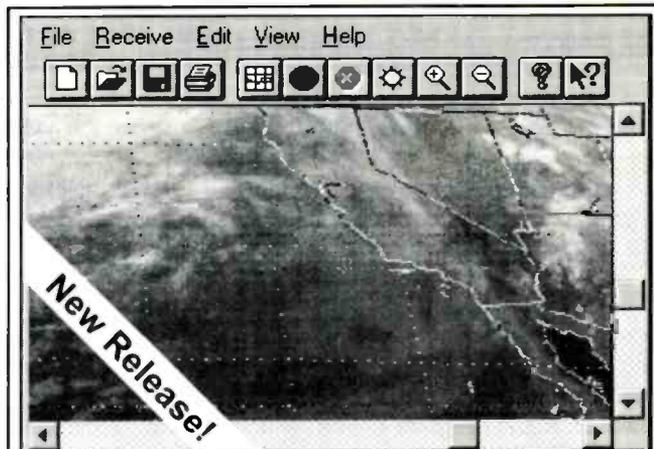
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# Product Spotlight

BY KEN REISS  
<armadillo1@aol.com>

POP'COMM REVIEWS PRODUCTS OF INTEREST

## RadioShack's PRO-2050: Base TrunkTracker™ Scanner

RadioShack has once again provided us with a mid-year surprise scanner. It didn't appear in the 1998 catalog, but is in the stores now. This newest offering is a base version of the TrunkTracker™ similar to the PRO-90 handheld radio.

The 2050 is built in the small base cabinet, very similar to the 2040 and the rest of the family, and could easily be mounted mobile with the addition of a bracket (which is not supplied). It is 2 3/4 x 8 1/16 x 7 11/16 inches, so it will fit in the most crowded shack. The unit operates on 12 Vdc, and comes with the typical wall transformer for base operation.

The 2050 is a 300-channel scanner, like all of the TrunkTracker units to date. Its 10 banks of 30 channels each make for a convenient fit with trunking systems, and nice sized banks in the conventional scanning mode, too. The PRO-2050 features a triple conversion design so that it is more resistant to intermod and image reception problems, although it isn't completely immune.

As a conventional scanner, it is pretty much what you'd expect in a small base unit, and has all the features we've come to know and love from RadioShack scanners. Per channel scan delay, individual lockouts, switching banks in and out quickly are all present. One noticeable omission from the 2050 keypad, however, is the program button, which most RadioShack units have featured until recently. You simply move to the channel you'd like to program, enter the numbers, and press enter.

One channel in each bank is a priority channel, for a total of 10 priority channels that are checked at regular intervals in the conventional mode only. The scanner automatically selects the first channel in each bank as the priority channel, but you're free to move it with a relatively painless procedure. Priority operation does not function in the trunked mode.

One feature that will be appreciated by many is the ability to turn the keypad beep on and off. When the unit ships from the factory, there is a tone present each time



*The 2050 is housed in a small cabinet, making a nice, compact unit for either home or mobile operation (the mobile mounting bracket is not supplied).*

a key is pressed. By pushing and holding the LO/SKIP button and turning the scanner power on, the keypad beep will be disabled, or enabled if it was off.

### Searching

The scanner also contains five preprogrammed search banks for various services. These are Police, Fire/Emergency Services, Public Service, Air, and Weather. It is a simple matter of pressing the SVC button, and the name of the preprogrammed service will appear on the display. By pressing SVC again, you can scroll through the available search services until you find the one you want. After a two-second delay, the service search will begin. You can turn on the Data Skip feature during a Service Search if you like.

The 2050 also features "Limit Search." In this mode, you program a starting and stopping frequency for the search, allowing the scanner to run between them. This is the search mode that most scanners have had for years. The 2050 does allow you to lockout frequencies from the search, so that annoying signals can be skipped on subsequent passes through the range. You can lock out up to 50 frequencies in a Limit Search and 20 in a service search. It's a very convenient fea-

ture for anyone who does a lot of searching for new frequencies.

### Handy Gizmos

The 2050 has a nice easy-to-read backlit display. It also will tell you when you're about to program a frequency that has already been programmed. For those of you with no memory of your own, this is a convenient feature (trust me). Memories will be maintained for an extended period of time even without power, so the unit can be moved safely from the house to the car if desired, without fear of having to reprogram the radio. And, finally, any memory location with a "0" in it will be skipped during the scan process so you don't waste time scanning empty channels.

### The 2050's Audio

Probably the only complaint I've had on the unit is the audio. For a base station, the 1.1-watt audio amplifier is adequate, but not powerful. I hesitate to comment on the sound quality because it is such a subjective topic. One person's "bright" is another person's "hissy." On the 2050, the audio is, in my opinion, a bit "bassy" through the built-in speaker. Both of these problems can be overcome considerably by



The rear panel of the 2050 is straight to the point. Note the 12-Vdc connector for use with the included wall transformer, or mobile power source.

using an external speaker, but it might be a concern for a unit in mobile service. An amplified external speaker might be necessary in a noisy environment.

## Trunking

While the PRO-2050 makes an excellent conventional scanner, you'll most likely be using it in the trunked mode. Like all TrunkTrackers so far, the 2050 will only follow Motorola type I, Type II and Type III systems. This is good news for most of you with a public safety trunking system in your area, but there are a few areas where other systems are used, and the TrunkTrackers are simply not able to follow them any better than a conventional scanner.

Just like with handheld TrunkTrackers, it is important to remember that you have to be in the trunking mode before you can begin to program the memories for a trunked system. You enter the trunk programming mode by pressing and holding the TRUNK button until it beeps twice. Then you can select any of the scanner's 10 banks to use for a trunked bank. Also remember that while you can scan a trunked bank in conventional mode, any conventional frequencies that you might have put in the bank earlier will be ignored by the trunking system. You must operate in the trunk mode or the conventional mode, but you can not mix them. In addition, you can only trunk one bank at a time, so your scanner will be tied up pretty much full time if you are using it for trunking (which is probably why you bought this radio). You may need another scanner to listen to all those non-

trunked frequencies, even though you have memories available in the 2050.

The trunking mode will only accept frequencies in the 800-MHz trunked range, specifically from 851.0000 to 868.9875 in 12.5-kHz steps. If you try to enter a frequency outside this range while in the trunked programming mode, an ERROR message will appear on the display. As of this writing, there are no TrunkTracker scanners that will follow 900 MHz or the federal 400-MHz systems, although third party adapters and software for other radios may be available.

In addition to the users manual, the PRO-2050 comes with the *National Public Safety Trunked System Frequency Guide*. This small format 60-page booklet contains frequency information by state for many of the trunked systems in use around the country. This is very convenient if you are unfamiliar with your local area's frequencies. For the St. Louis area, the guide seems fairly complete, listing the Convention Center system and local universities, in addition to the public safety system for the city of St. Louis. I hope that it is as thorough for your area.

Once you've entered the frequencies, you're ready to find talkgroups that are of interest. Pressing the search mode will start the scanner looking for IDs. As it finds an active talkgroup, the display will indicate the number of that group. You can write them down for later reference, or you can choose to store them into a scan list. Like all TrunkTrackers, the 2050 allows 50 IDs (five groups of 10 each) to be stored for each trunked group. You can also enter IDs manually if you have a list.

IDs act like channels in the convention-

al mode. You can lock them out, hold on one, etc. This is the basic conversation-channel that the folks using the trunked radios are also monitoring. As you listen, you'll quickly figure out which ID numbers are of interest and which are not.

One final note on ID numbers. The 2050 also uses "Fleetmaps" to determine how to process the ID numbers. The default fleetmap is that all of the ID numbers will be in the type II category; for most public safety trunking systems around the country, this probably works quite well. However, if you hold on a talkgroup ID and then don't hear the reply to the conversation, you just may have a fleetmap problem. The December '97 issue of *Popular Communications* featured a lengthy discussion on programming and discovering fleet maps. You may also be able to find information from your local RadioShack store, or from other scanner users in your area who are more experienced with TrunkTrackers. There is also some basic information and steps for programming a fleet map in the user's manual that comes with the scanner. Ask around, or do the homework yourself. It is worth the extra effort in the end due to the increased performance of the trunk-following capabilities.

The PRO-2050 features 30 channel-busy indicators on the display, so that each square corresponds to one frequency. After you've programmed in the frequencies and are scanning, these indicators will light up to display other activity on the system. When a talkgroup that you are interested in becomes active, the indicators will show the data channel and the channel representing the frequency that the transmission is actually taking place on. These indicators simply show where in the 2050's memories the frequencies are located, so that you can figure out (if you care) what channels are in use.

## Summary

The PRO-2050 is a good scanner and is capable of trunking in both the home and mobile environments. At the list price of \$299, it represents the least expensive of the base units available, and no doubt will be on sale from time to time. If you mention that you read about it in *Popular Communications*, it will still be \$299, but somebody will know you're reading this stuff. On sale, this unit could represent not only a good value in a TrunkTracker, but also a nice triple conversion conventional scanner for mobile or base use. Check it out at a RadioShack near you. ■

# Broadcast DXing

BY BRUCE CONTI  
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DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

## FCC Reconsiders Deregulation

The FCC, concerned about the impact of the radio mega-mergers that have been taking place since the 1996 relaxation of ownership limitations, is revisiting deregulation policies. The Clinton administration and the FCC are concerned about potential monopolies. In response to Department of Justice anti-trust inquiries, the FCC has started looking into the economic consequences of these mergers, as there are now broadcast organizations reported to be controlling up to 70 percent of the revenue in some markets. This may be what prompted CBS to decide to sell-off WRKO-680, WEEI-850, and WEGQ-93.7 in the Boston market, acquired through the recent merger with American Radio Systems. CBS will hold onto WBZ-1030 and TV4, WNFT-1150, WBMX-98.5, WZLX-100.7, WODS-103.3, and WBCN-104.1 in Boston.

### Digital Radio Update

The battle continues in the United States over implementation of digital radio. USA Digital Radio and Lucent Technologies have paired up to engineer an in-band, on-channel (IBOC) solution to problems that occurred with earlier versions. But the Consumer Electronics Manufacturers Association (CEMA) has already filed a report with the FCC endorsing the European Eureka-147 system which operates in the L-band. The IBOC system uses existing AM and FM facilities, in an attempt to make the transition to digital radio easier for consumers. IBOC was first demonstrated by USA Digital on 1660 AM in Las Vegas during the 1995 National Association of Broadcasters (NAB) convention. However, since then, Europe and Canada have been proceeding with the implementation of the Eureka-147 system, leaving the United States behind in the development of digital radio. The BBC has been operating a digital audio broadcast (DAB) network with about 60 percent coverage in the UK carrying Radio 1, 2, 3, and 4 in stereo and Radio 5 live in mono. And



The "Great Ice Storm of 1998" in Maine.

independent stations, like Virgin Radio, Talk Radio, and Classic FM, are to be licensed to a single multiplex this year by the Radio Authority (the UK equivalent of the FCC). Melody, Kiss, Sunrise, WRN, and Capital Radio are currently operating an experimental digital radio multiplex in London. In addition, a number of manufacturers, including Alpine, Becker, Clarion, Delco, Grundig, JVC, Kenwood, Sharp, and Sony, are queued for release in Europe of digital radio receivers for home and auto.

In Canada, a consortium of 15 Toronto broadcasters and the CBC has announced plans to construct four digital radio transmitters on the top of the CN tower. Meanwhile, here in the U.S., much of the emphasis at the NAB Convention this year was on digital television (DTV), with a preview of new HDTV receivers from Panasonic, Sharp, and Zenith, along with studio and transmission equipment.

### More Radio News/Talk

Maine state officials are reviewing the Emergency Alert System in the aftermath of last winter's "Great Ice Storm of '98." The Emergency Alert System, which

replaced the old Emergency Broadcast System in 1996, relays information via Maine Public Radio. However, all six of Maine's public radio stations were knocked off the air by the storm, thus cutting off the system. A coating of as much as six inches of ice during the storm caused significant damage to transmitter towers across the state. On the opposite end of the spectrum, WVOM, "The Voice of Maine," received several commendations for their continued service during the storm. The Army National Guard and a local snowmobile club helped keep WVOM alive during widespread power outages with an airlift of propane tanks to power generators at the Passadumkeag Mountain transmitter site, providing darkened homes across the state with what was perhaps their only link to the latest news of the storm damage and restoration of power.

A check of the ratings from Portland, Maine, has the relatively new Top 40 WJBQ-97.9 gaining for the second ratings period in a row, jumping from sixth to fourth place. Classic rocker and longtime ratings leader WBLM-102.9 continues to hold the lead though, with country WPOR-102.7 and AC WMGX-93.1 hang-

ing on to second and third. News/talk WGAN-560 is the first AM station to show up in the ratings, at number six.

Boston University is adding WRCP Providence, Rhode Island, on 1290 to their collection of stations, bringing public radio and WBUR-FM programs to the Ocean State. Boston University operates flagship WBUR Boston on 90.9 and WBUR West Yarmouth, Massachusetts, on 1240, along with TV stations WABU-68 in Boston, WNBU-21 in Concord, New Hampshire, and WZBU-58 in Vineyard Haven, Massachusetts. In an unrelated story from the smallest state in the union, public radio has expressed an interest in WCVY-91.5, the Coventry High School station. Rhode Island does not have its own full-time NPR outlet. The islands off Cape Cod, Massachusetts, will also soon be enjoying local public radio. WGBH in Boston has nearly completed construction of two new stations: WCAI Martha's Vineyard on 90.1 and WNAN Nantucket on 91.1 FM. WGBH broadcasts at 89.7 from the Great Blue Hill, located just south of Boston, with 100 kW of power, and is a favorite target of FM DXers.

A small station in South Dakota is giving the big guns a run for the money. 1520 in Sioux Falls recently changed to all sports KSFS "The Zone" when Christian station KCGN moved to FM. And despite daytime-only operation with a mere 500 watts, the station has become a big success by addressing the need for local sports events coverage that other media have ignored. Riding high on their local success, KSFS has obtained the rights to broadcast University of Nebraska Cornhuskers football beginning this fall. The next step for tiny KSFS is to obtain permission from the FCC to operate until midnight. Congratulations to KSFS, proving that local community radio is alive and well in this era of mega-mergers.

## News From Canada

Patrick Martin spoke with an engineer at CBC-Vancouver and learned that all MW LPRTs are not running the prescribed 20 to 40 watts. As the CBC replaces the old tube models with solid-state, they can run up to 400 watts. Most are still running 40 watts, but about half a dozen run more power. CBRU in Squamish, British Columbia, on 1260 is running 200 to 250 watts. CBKY Keremeos, British Columbia, is running near 400 watts on 1350. CBUU Clinton, British Columbia, on 1070 is running in

the 200- to 300-watt range, as is CBRJ Grand Forks on 860 relaying CBU-690. There are no plans to move CBU, CFPR, CBX, CBK, CBR, or CBW to FM, as they cover many remote areas that FM can't handle. In time, most of the stations will be going to the digital band. Originally, CBL went to FM because the AM coverage wasn't that good, according to the CBC engineer.

Here are a few of the stations that are expected to abandon AM in exchange for FM frequencies this year in Canada. Most are simulcasting on AM and FM during a transition period, giving listeners plenty of opportunity to make the switch, and giving DXers a last chance to log them before they're gone.

- ☛ CBF Montreal, PQ, from 690 to 95.1
- ☛ CBL Toronto, ON, from 740 to 99.1
- ☛ CBM Montreal, PQ, from 940 to CBME-88.5 (CBM-FM remains on 93.5)
- ☛ CFNL Fort Nelson, BC, from 590 to 102.3
- ☛ CHNR Simcoe, ON, from 1600 to 106.7

- ☛ CHOW Welland, ON, from 1470 to 91.7
- ☛ CHSJ St. John, NB, from 700 to 94.1
- ☛ CJCY Medicine Hat, AB, from 1390 to 96.1
- ☛ CJEM Edmunston, NB, from 570 to 92.7
- ☛ CJOK Fort McMurray, AB, from 1230 to 93.3
- ☛ CJTT New Liskeard, ON, from 1230 to 104.5
- ☛ CKLY Lindsay, ON, from 910 to 91.9

## X-Band Files

Another new X-bander is on the air and interested in reception reports. Engineers recently finished tuning up the new expansion band station in the Portland, Oregon, area, KKJY Lake Oswego, on 1640. It relays the programming of KKSL-1290. KKJY is diplexed into one tower of the three-tower KKPZ-1330 array. The biggest problem in tuning things up was restoring the 1330 pattern after the diplexing filters were installed. The engineers are most interested in

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### Applied for Permits to Construct New FM Stations

AK	Fairbanks	96.9 MHz	10 kW
AR	Harrison	91.9 MHz	6 kW
AR	Lakeview	93.5 MHz	
AR	Texarkana	89.3 MHz	
CA	Arvin	91.7 MHz	
CA	Fremont	105.7 MHz	(KARA booster)
CA	Lenwood	104.5 MHz	
CA	Needles	107.1 MHz	50 kW
CA	Pleasanton	102.9 MHz	(KBLX booster)
CA	Templeton	100.3 MHz	1.2 kW
CA	Wasco	91.7 MHz	
CO	Canon City	89.1 MHz	160 watts
CO	Silverton	103.7 MHz	
CO	Vail	88.5 MHz	
FL	St. Catherine	89.3 MHz	
FL	Sebastian	95.9 MHz	25 kW
GA	Cordele	90.3 MHz	250 watts
GA	Cuthbert	100.7 MHz	
IA	New London	97.3 MHz	
ID	McCall	106.7 MHz	
ID	Rathdrum	90.3 MHz	900 watts
IL	Gridley	90.3 MHz	
IL	Kankakee	88.1 MHz	1 kW
IL	Lynwood	89.1 MHz	
IL	Petersburg	88.1 MHz	
KS	Dearing	98.1 MHz	
KY	Benton	88.1 MHz	600 watts
KY	Middlesboro	90.1 MHz	2.5 kW
LA	Ball	105.5 MHz	
LA	Buras	91.1 MHz	3 kW
LA	Grand Isle	104.5 MHz	
LA	Norco	91.1 MHz	
LA	Port Sulphur	91.5 MHz	
LA	Sulphur	89.1 MHz	
MA	New Bedford	88.1 MHz	300 watts
MI	Baldwin	91.1 MHz	
MI	Baldwin	91.9 MHz	
MI	Newaygo	92.5 MHz	
MN	Nisswa	93.3 MHz	
MN	Pillager	95.9 MHz	
MO	La Monte	97.1 MHz	
MO	Poplar Bluff	88.7 MHz	
MO	St. Joseph	91.9 MHz	1.2 kW
MO	Savannah	91.9 MHz	1.2 kW
MO	Shell Knob	97.7 MHz	
MO	Troy	89.7 MHz	
MT	Billings	89.9 MHz	
MT	Butte	88.3 MHz	
MT	Kalispell	88.7 MHz	
MT	Missoula	88.3 MHz	
MT	Superior	107.5 MHz	
NC	Lumberton	89.5 MHz	
NJ	Beach Haven West	88.3 MHz	
NM	Cloudcroft	97.9 MHz	
NM	Gallup	101.5 MHz	
NM	Raton	96.5 MHz	
NM	Raton	97.7 MHz	
NV	W. Wendover	89.7 MHz	10.5 kW
NY	Malone	90.1 MHz	
NY	Watertown	90.1 MHz	1 kW
OH	Delphos	91.5 MHz	
OH	Waverly	88.5 MHz	
OK	Idabel	102.9 MHz	
OR	Bend	88.1 MHz	
OR	Cave Jct.	88.7 MHz	

OR	Florence	88.1 MHz	300 watts
OR	Roseburg	88.3 MHz	
OR	Selma	88.7 MHz	
PA	Coatesville	89.3 MHz	
PA	Wrightsville	88.7 MHz	
PA	York	88.7 MHz	
SC	Dillon	90.5 MHz	10 kW
SD	Sioux Falls	90.1 MHz	
TN	Brownsville	88.3 MHz	
TX	Abilene	90.5 MHz	50 kW
TX	Bay City	89.5 MHz	
TX	Beeville	91.3 MHz	
TX	Bluffdale	90.5 MHz	
TX	Brownfield	88.5 MHz	4.5 kW
TX	Brownwood	89.3 MHz	6 kW
TX	Callisburg	91.9 MHz	300 watts
TX	Cuero	89.9 MHz	
TX	Eastland	91.1 MHz	
TX	Gonzales	88.1 MHz	
TX	Harlingen	89.9 MHz	300 watts
TX	Midland	89.1 MHz	
TX	Midland	90.9 MHz	
TX	New Boston	105.1 MHz	
TX	Stephenville	89.1 MHz	
TX	Stephenville	89.7 MHz	
UT	Blanding	92.1 MHz	
UT	Levan	99.1 MHz	
VA	Jonesville	99.1 MHz	
WA	Asotin	88.1 MHz	
WA	Millwood	88.1 MHz	
WI	Cuba City	89.7 MHz	9.9 kW
WV	Princeton	90.1 MHz	
WV	S. Charleston	89.5 MHz	
WV	Vienna	106.1 MHz	(WRZZ booster)
WY	Casper	89.3 MHz	
WY	Gillette	88.9 MHz	
WY	Lost Cabin	99.1 MHz	
WY	Sheridan	88.1 MHz	
WY	Thermopilis	98.3 MHz	

### Granted Permits to Construct New FM Stations

AR	Batesville	99.5 MHz	
CA	King City	91.3 MHz	400 watts
CO	Montrose	88.3 MHz	
IL	Geneso	88.1 MHz	
LA	Arcadia	92.5 MHz	
IL	DeRidder	91.1 MHz	
MN	Rochester	88.7 MHz	
NM	Albuquerque	97.7 MHz	(KLVO booster)
NM	Albuquerque	106.3 MHz	(KDNR booster)
NY	Truxton	88.7 MHz	
OK	McAlester	88.7 MHz	
SD	Lead	94.3 MHz	
TX	Big Spring	91.5 MHz	
TX	McCook	91.5 MHz	
TX	Paris	89.3 MHz	
UT	Logan	89.5 MHz	

### Cancelled

WNJW	Franklin Lakes, NJ	88.9 MHz	Not renewed
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### Requesting AM Facility Changes

WGLB	Port Washington, WI	1560 kHz	Seeks move to Elm Grove
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### Changed AM Facilities

WACB Taylorsville, NC 860 kHz Changed power & hours  
 WREN Topeka, KS 1250 kHz Changed day power  
 WWSR Charleston, WV 1240 kHz Changed community of license

### Requesting FM Frequency Changes

KCLI-FM Clinton, OK 106.9 MHz Seeks move to 106.7 MHz  
 WYOO Springfield, FL 101.3 MHz Seeks to change frequency

### Changed FM Frequency

WMKX Brookville, PA 95.9 MHz Changed frequency

### Pending AM Call Letter Changes

New	Old	
KKWK	WKBQ	St. Louis, MO
KNWZ	KPSL	Thousand Palms, CA
KXPS	KNWZ	Thousand Palms, CA

### Changed AM Call Letters

New	Old	
KBKK	KFXD	Nampa, ID
KDIA	KXBT	Vallejo, CA
KKEN	KRHD	Duncan, OK
KKGM	KBZS	Grand Jct., CO
KKSC	KROP	Brawley, CA
KLDZ	KIST	Santa Barbara, CA
KMKY	KDIA	Oakland, CA
KMRI	KRGO	W. Valley City, UT
KQOR	KOQO	Clovis, CA
KTLS	KKNG	Holdenville, OK
KWBK	KJUS	Beaumont, TX
KXCA	KSWO	Lawton, OK
KZSF	KKSJ	San Jose, CA
KBZA	WSTL	Glens Falls, NY
WDOT	WZBZ	Plattsburgh, NY
WGNR	WHUT	Anderson, IN
WMML	WBZA	Glens Falls, NY
WUBR	WEFG	Whitehall, MI
WWKL	WCMB	Harrisburg, PA

### New FM Call Letters Issued

KBAB Kerrville, TX  
 KBAH Plainview, TX  
 KBAW Zapata, TX

KCYM Bastrop, LA  
 KGFJ Markham, TX  
 KHPU Brownwood, TX  
 KPCG Plains, MT  
 KSRZ Omaha, NE  
 KTYX Jonesville, LA  
 WAXG Mt. Sterling, KY  
 WAXJ Frederiksted, VI  
 WAXR Geneseo, IL  
 WDDA Elberton, GA  
 WJIC Zanesville, OH  
 WPCN Pt. Pleasant, WV  
 WWGF Donaldsonville, GA

### Changed FM Call Letters

New	Old	
KCCG	KAXH	Ingleside, TX
KCMG	KIBB	Los Angeles, CA
KDDJ	KHOT-FM	Globe, AZ
KEJJ	KKYY	Gunnison, CO
KFXJ	KFXD-FM	Nampa, ID
KHOT-FM	KBUQ	Paradise Vly., AZ
KKEN-FM	KRHD-FM	Duncan, OK
KKKK-KXXL		Crane, TX
KKYK-FM	KMZX	Lonoke, AR
KLDZ-FM	KLDZ	Santa Barbara, CA
KLJT	KSIZ	Jacksonville, TX
KMCM	KQIP	Odessa, TX
KOCV-FM	KABH	Shawnee, OK
KOZN	KYY5	Kansas City, KS
KSRZ	KESY-FM	Omaha, NE
KTLS-FM	KTLS	Holdenville, OK
KUMX	KHOM	Houma, LA
KYY5	KLPH	Kansas City, MO
KZJM	KXCC	Rockport, TX
WAMJ	WTHA	Roswell, GA
WBBS	WKIX	Raleigh, NC
WBUL-FM	WKQQ	Lexington, KY
WGNR-FM	WXXP	Anderson, IN
WJCU	WUJC	University Hts., OH
WKFX	WHQK	Marysville, OH
WKIX	WKTC	Goldsboro, NC
WKQQ	WWYC	Winchester, KY
WKTC	WEQQ	Pinetops, NC
WKXU	WOCM-FM	Burlington, NC
WMBY	WGNR	Monee, IL
WMOV-FM	WFYZ	Ravenswood, WV
WPCM-FM	WPCM	Burlington, NC
WWKL-FM	WWKL	Harrisburg, PA
WXFG	WLCB-FM	Ft. Pierce, FL
WXXS	WNHT	Lancaster, NH
WYPC-FM	WCLX	McArthur, OH
WYXX	WJDK	Morris, IL

receiving reports about the station's nighttime coverage, and the level of interference to/from KDIA Vallejo, California, on the same frequency, and where this interference is located. Please make your reports brief. Reports can be sent to Telecommunications Engineering, Gray Frierson Haertig & Associates, 820 North River Street, Suite 100, Portland OR 97277. E-mail reports can be sent to Cris

Alexander at <CBCENG@aol.com>. Thanks to Patrick Martin for this update. WJDM Elizabeth, New Jersey, on 1660, the first X-band station to sign-on, has now been officially granted a license by the FCC. WJDM was previously operating under an FCC special temporary authorization. *Pop Comm* reader Dino Davila asks, "Why are they calling the new AM broad-

cast band 'The X-band' when there already IS an X-band? The X-band has always been in the microwave region along with the L-band and the S-band. What's up with that?" The X-band is short for the expanded band, or the expansion of the AM broadcast band to 1700 kilohertz. DXers gave it the X-band nickname, perhaps unaware of the microwave X-band designation.

## QSL Information

**530 Radio Vision Cristiana**, Turks & Caicos, signed copy of QSL card on the back of an Atlantic Beacon customer order form, direct from Turks & Caicos instead of New Jersey. Address: Wendell Seymour, South Caicos, Turks & Caicos Islands. (Johns) The stateside address is P.O. Box 2908, Paterson, NJ 07509-2908. (Conti)

**560 WGAI**, Elizabeth City, NC, card and coverage map received in 7 days for

a report on reception of DX test with code IDs heard through WHYN, WJLS, and others. Address: 179 Lovers Lane, Suite D, Elizabeth City, NC 27909. (Conti)

**1300 KKOL**, Seattle, WA, in 10 days after several follow-ups to the chief engineer. Finally sent my last report to Richard Harris, Corporate Engineer along with other info on the network (KLFE-1590, KGNW-820, & KKOL-1300). Address: 2815 Second Avenue, Seattle, WA 98121. (Martin)

**1620 KYIZ**, Renton, WA, received a

veri letter in 25 days for a taped report. (Martin) Veri letter with KRIZ-1420, KZIZ-1560, & KYIZ-1620 letterhead. Address: Frank P. Barrow, Program Director, Kris Bennett Broadcasting Inc., 2600 South Jackson, Seattle, WA 98144-2499. (Schivo)

**1670 WHI-392**, Midlothian Information Radio, Midlothian, TX, veri letter indicating power of 3.5 watts, heard by DXers in California, Iowa, and Oregon. Signed: David N. Schrodt, Fire Chief, Midlothian Fire Department. (Jackson)



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## This Month's Loggings

Selected loggings this month are courtesy of Mark Connelly in Massachusetts, Robert Lewis in North Carolina, and Patrick Martin in Oregon.

**530 Radio Vision Cristiana**, Turks & Caicos, at 0130 UTC in Spanish, 0200 ID in English as 1330 from New Jersey and 530 from South Caicos Island. (Lewis)

**910 KKSJN**, Vancouver, WA, exchanged formats with KFFX-1520. 910 is now sports, and 1520 is adult standards. "I phoned the CE at Entercom after the two stations switched formats, but not call letters. I was told they weren't sure when they would switch calls as they hadn't gotten the OK from the FCC as of yet." (Martin)

**1550**, Tindouf, Algeria, formerly at 1544 and 1548 kHz, heard at 2247 UTC with an Arabic male vocal & drumming; very good, no domestic QRM at all. Signal was 10 dB stronger than adjacent WQEW-1560. (Connelly)

**1640 KKJY**, Lake Oswego, OR, fair with lots of QRM from KDIA, relaying KKSL with a Black Gospel program at 0300 UTC, many KKSL IDs. Only could log with three-foot Sanserino Loop, as KDIA was too strong off all my other antennas. Taped report sent. (Martin)

It was another great column this month, thanks to these contributors: Mark Connelly, Dino Davila, Bob Gilbert, Don Hallenbeck, Gary Jackson, Andy Johns, Terry Jones, Robert Lewis, Patrick Martin, and Walter Schivo.

Remember, your broadcast band loggings are always welcome either directly to me online at <BAConti@aol.com> or to "Broadcast DXing," *Popular Communications*, 25 Newbridge Road, Hicksville, NY 11801. Until next month, 73! ■

# Clandestine Communiqué

TUNING IN TO ANTI-GOVERNMENT RADIO

## *La Voz del CID On The Air!*

**A**nti-Castro broadcaster *La Voz del CID* has been off shortwave for quite awhile, as we've noted in previous columns. Earlier, it had been reported that Cuba Independiente y Democrática, the organization which funds the broadcasts, had been having trouble raising money, so it was assumed an insufficient bank account was probably the reason for the silence. But a recent issue of WRMI's shortwave schedule not only announces the return of *La Voz del CID* but (rather offhandedly) provides an explanation for the disappearance. According to the WRMI notes, *La Voz del CID* transmitted from El Salvador and had gone off the air due to "political problems in that country." Most of those who follow and research clandestine broadcasting had believed that the transmitters were in Guatemala. At any rate, *CID* is now airing on WRMI's 9955 from 2330 to 0000 and Saturdays from 1430 to 1500.

There are several new entries for your **Ethiopia/Eritrea** scrapbook. One is the **Voice of Democratic Eritrea – Voice of the Eritrean Liberation Front Revolutionary Council**, which broadcasts against the Eritrean government daily from 1500 to 1530 on 9230. Another one, on the air at 1600 to 1629, is the **Voice of Truth** which is operating on 9230. This one speaks for the Eritrean Islamic Jihad Movement. There's a burst of gunfire sound effects near the close of the broadcast. Still another one is **The Voice of Free Eritrea**, operated by a group called the Eritrean National Alliance, an umbrella group which includes several organizations opposing the current Eritrean government. This one broadcasts on 9230 from 1415 to 1445 in Arabic and Tigrigna. This one can be addressed at ELF-RC Foreign Information Department, P.O. Box 200434, 53134 Bonn, Germany. All three of these broadcasts are believed to be hosted by Sudanese government transmitters.

The Voice of Palestine — Voice of the Palestinian Islamic Revolution is now scheduled in Arabic from 0400 to 0500 on 6020 and 9670 and at 1930 to 2030 on 7230.



*Radio of the Provisional Government of the National Union and Salvation of Cambodia has returned to the air to do its part to keep things stirred up in that nation, which has suffered decades of war and civil strife.*

One of the very few South American-based clandestines, **Radio Patria Libre**, continues to make irregular appearances in the area around 6250, usually around 2200, which is a trifle early for good reception in many areas of North America during most of the year. It used to be on around 0000 or 0100 which made for more regular reception. The station is run by Colombia's ELN guerrillas. A second Colombian clandestine, even less frequently heard, is **La Voz de la Resistencia**, also operating on only an occasional basis. As near as can be told, both stations are actually in Colombian territory. Check around 2300 in the area on or near 6280.

**Nigeria** continues to be a very active target for opposition broadcasters these days. One such station is **Radio New Nigeria**, which broadcasts via German

government transmitters. It is on the air from 0600 to 0630 Saturdays on 11670, and Sundays at 1500 to 1530 on 6175 and 0100 to 0129 on 5900, to Nigeria/West Africa, Europe, and North America, respectively. The station announces itself as "**The Voice of the Nigerian Advocacy Group of Democracy and Human Rights**," a group based in Boston.

**Iranian** clandestine, the **Voice of the Mojahed**, has been showing up occasionally on such frequencies as 5650, 5670, 5680, 5780, 6270, 6280, signing on around 0250 and continuing for an hour or so. They sometimes have more than one frequency in operation at the same time, and are often chased by a "bubble" type jammer.

**The Voice of the Islamic Revolution**

*(Continued on page 77)*

# The Listening Post

BY GERRY L. DEXTER



WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

## Voice Of Nigeria Being Heard, And Radio Australia QSLing Again!

**B**roadcasts from the new, or rather, rejuvenated, **Voice of Nigeria** outlet on **15120** continue to be widely heard. Michael Miller has been picking them up quite well, even at his Washington State location. The broadcasts are in several languages over a multi-hour period which runs through our morning and afternoon hours (0500 to 2300). There have, however, been technical problems, which have created hum and distortion in the audio, but hopefully that has been fixed by now. You can send reception reports to P.M.B., 40003 Falomo Post Office, Ikoyi, Lagos, Nigeria. The studios are in the new capital, Abuja.

Sue Wilden of Indiana sends word that there's a scam ring based in Indianapolis which is asking for investors in "excess" oil profits. One of the programs broad-

cast in opposition to the current Nigerian government also has an Indianapolis address. In addition, *Passport to World Band Radio* carries a warning about Nigerian-related confidence scams. Somehow, names of people who send reports to Nigerian stations get into the hands of those who would like to separate you from a lot more than your IRCs.

### New Site Chosen For AWR

Adventist World Radio has announced the purchase of 133 acres of land near the small town of Argenta in northeastern Italy. This site will eventually be the location for a large AWR shortwave station featuring four powerful transmitters and six highly directional antennas to beam to Central and Southern Asia, Africa, and

the Middle East. Plans are to have the station on the air in July, 2000.

### Cutbacks At Radio Portugal

The black cloud making its way around the world and raining bad news on shortwave stations here and there passed over Portugal recently. Radio Portugal has had to discontinue its foreign language programming. Now all you can hear from Portugal is Portuguese, and even that will be on a restricted schedule.

The **National Radio of Cambodia**, silent for several weeks late this past winter, has returned to the air, and apparently is now broadcasting closer to its listed **11940** frequency than in the past. It's still plenty tough to hear, though. There are English broadcasts at 0000 and 1200.



MUSIC DIVISION 4<sup>TH</sup> March 1998

Ms Tricia Ziegner,  
Westford, Ma. 01886 USA.

Dear Ms Ziegner,

I am glad to inform you that on Saturday, January 31, 1998, you've been listening to Cy.B.C. We are transmitting on shortwaves every Friday, Saturday and Sunday from 00.15 to 00.45.

Yours sincerely,

  
[Elli Korai-Yerole mou]  
A\* Programme Officer  
Music Department

← Tricia Ziegner got this brief QSL letter from the Cyprus Broadcasting Corporation.

Andy Johns in Texas received this QSL for his reception of Radio Polonia on 9525.



29.3. - 25.10.1998		UTC/Weltzeit		ROI via KURZWELLE																					kHz/Meter Band									
Zielgebiet		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24								
EUROPA		6.155/49m										5.945/49m												Deutsch										
		Südost					Nord					Südwest					13.730/22m							English										
AMERIKA		9.655/31m										6.015*/49m										13.730/22m												Français
	Nord	9.870/31m										9.870/31m										13.730/22m												Español
	Mittel	9.870/31m										9.870/31m										13.730/22m												
	Süd	13.730/22m										13.730/22m										13.730/22m												Esperanto
AFRIKA	West	13.730/22m										13.730/22m										13.730/22m												dimañçe (Sonntag)
	Süd	13.730/22m										13.730/22m										13.730/22m												0405, 1405, 2305 UTC
NAHER OSTEN		15.410/19m					17.870/16m					11.855/25m					13.730/22m							عربي										
ASIEN	Süd & Südost	15.455/19m										13.710/22m										13.710/22m												الإحد (Sonntag)
	Ferner Osten	15.455/19m										13.710/22m										13.710/22m												0610, 1810 UTC
AUSTRALASIEN		17.870/16m										17.870/16m										17.870/16m												
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24								
All times are UTC/Universal Time Coordinated		CEST/Central European Summer Time = UTC + 2 hour										* via Relais Radio Canada International																						
Alle Zeitangaben in UTC/Weltzeit		MESZ/Mitteuropäische Sommer Zeit = UTC + 2 Stunde																																

Radio Austria International's time/frequency schedule, good through late October.

The Mexican. **XERTA on 4800**, which operated briefly last year, is back on the air as this is written, heard at various times in the evening and into the wee hours. Let us know if you hear this one!

**Radio Finland International** has made some changes in the scheduling of its half-hour program beamed to North America. The daily evening slot is now at 0200 on **9780** and **11900**. The morning airing — at 1230 on 11900 and **15400** — is now heard Sundays only.

WBCQ will be the call letters of the new shortwave station operated by former pirateer Allan Weiner. The station, to be built at Weiner's farm in Maine, is scheduled to go on the air late this summer and will provide time for hire to free broadcasters. The transmitter will run 50 kW. No times or frequencies have been announced yet.

No signals are being heard yet from **WWBS, Macon, Georgia**. Keep checking **11910** around 0000, which is the initial time block they expect to use.

Here's some good news! Radio Australia once again welcomes reception reports and responds with QSLs, thanks to the convincing efforts of the Australian Radio DX Club, which will check the reports, fill out the cards, and return them to Radio Australia for mailing. Reports go to Radio Australia, GPO 428G, Melbourne, 3001, Victoria, Australia.

By the way, the fate of the now silent Radio Australia Darwin transmitters remains undecided. One faction of the group advising the ABC wants them to be

put back into the service of Radio Australia. What a radical idea!

Reports say that long-absent **Radio Kisangani** in the **Democratic Republic of the Congo** has returned to the air. At least they ran some tests on **11455** earlier this year, operating **in upper sideband**. They were being heard around 1800. The frequency 11455 was one of the last frequencies they used before their long night arrived, so this is where regular programming would likely be found. This station was never heard really well in North America, though, and there's no reason to expect that to have changed.

It looks like things are going to get real busy for the engineering department of the Voice of America. The VOA has ordered 84 new shortwave transmitters for delivery over the next 18 months!

Remember, we always welcome your informational input. Log reports should be listed by country, double-spaced between items, and tagged with your last name and state abbreviation. Besides your loggings, we're always in need of such things as info about station address changes or QSL policies, photographs of shortwave stations or personalities, photos of you and your shack (or, if you're the shy type, of just your shack), spare/sample QSL cards, station brochures, schedules and any other informative or illustrative items that you care to send. Thanks so much for your continued interest in and support of this column! It is very much appreciated!

Here are this month's logs. All times

are in UTC, which is five hours ahead of EST, i.e. 0000 UTC equals 7 p.m. EST, 6 p.m. CST, 5 p.m. MST and 4 p.m. PST. Double capital letters are language abbreviations (FF = French, AA = Arabic, SS = Spanish, etc.). If no language abbreviation is included, the broadcast is assumed to have been in English.

**ALASKA** — KNLS, **7365** at 1243 in Japanese; then English to Asia. (Silvi, OH)

**ASCENSION ISLAND** — BBC world service, **7160** to Africa at 0531 and **17830** also to Africa at 1932. (Jeffery, NY)

**BELARUS** — Belarussian Radio, presumed, **7210** at 2128 in presumed German. Much interference from ham operators. (Silvi, OH)

**BELGIUM** — Radio Vlaanderen Int'l, **11680** at 1743 with "Brussels Calling." (Jeffery, NY) 1730 sign-on, then "Radio World" at 1735. (Alexander, PA)

**BOTSWANA** — Voice of America relay, **7415** at 0433 with "Daybreak Africa." (Jeffery, NY) **12080** at 2202. Also here in FF at 2123. (Harris, TN)

**BRAZIL** — Radio Globo, **9585** at 0237 with fast PP talk, mentions of Sao Paulo. (Paszkievicz, WI) Radio Brazil Central, **11815** at 0203 in PP. Fair on a fairly good 25-meter band opening. (Paszkievicz, WI)

**BURKINA FASO** — Radio TV Burkina, presumed, **4815** in FF at 2248 with African music. (Silvi, OH)

**CAMBODIA** — National Radio of Cambodia, presumed, **11940** monitored at 1302 to 1314 sign-off. Several Far Eastern-style songs to closing. (Silvi, OH)

**CAMEROON** — Cameroon Radio TV, Yaounde, **4850** heard at 2325 with FF talk, mentions of Cameroon, music, anthem. (Paszkievicz, WI)

**CANADA** — Radio Canada Int'l, **9805** at



LeSea Broadcasting's KWHR sent this QSL for reception of its station in Hawaii.  
(Thanks Andy Johns, TX)

2137, **11945** at 2138 and **17820** (in RR) at 1806. (Harris, TN) **11945** at 2200 Saturday with news, comedy show. (Salzman, VA) **11855** at 1325. (Northrup, MO) BBC via Sackville. **6175** to the Americas at 0400. (Jeffery, NY) **17840** at 1800. (Harris, TN)  
**CHINA** — China Radio Int'l, via Spain, **9690** at 0349. (Harris, TN)  
**COLOMBIA** — Caracol Colombia, **5076.8** at 0422 in SS with Latin music. (Harris, TN)  
**COSTA RICA** — Adventist World Radio, **9725** at 2357 with "It Is Written." (Harris, TN)  
**CUBA** — Radio Havana, Cuba, **6000** at 0411. Also **9820** at 0414 and **9830 USB** at 0412. (Harris, TN) 6000 at 0338, 9820 at 0336. (Jeffery, NY) **11760** heard at 1325 in SS. (Northrup, MO)

**CYPRUS** — Cyprus Broadcasting Corp., **7105** at 2215 to 2244 close. Mostly music. (Silvi, OH) (weekends only — Editor) BBC relay, **21470** at 1544. (Jeffery, NY)  
**ECUADOR** — HCJB, **9640** at 0747 with Salvation Army program. (Hill, ID) **9745** at 0443 with "Ham Radio Today." (Jeffery, NY) 0356. (Harris, TN) Radio Quito, **4919** at 0417 in SS with Latin music. (Harris, TN) La Voz del Upano, Macas, presumed, **4870**, 1110 with talk by man and woman with EE/SS lesson. Also at 2355 to 0153 sign-off in SS. Also on **5040** at 1110 with local folk music, talks by man and woman in local language, mentions of Ecuador. (Alexander, PA) Radio Oriental, Tena, **4779.8** at 0315 to past 0630. Rarely heard in the evening, and never this late. Ecuadorian folk music, SS pops and announcements. Gone at 0715. Also heard at 1033. (Alexander, PA)  
**ENGLAND** — BBC, **11760** at 1325 with QRM from Havana. (Northrup, MO) Voice of America relay, **7170** at 0430 and 0517 to Africa. (Jeffery, NY)  
**ETHIOPIA** — Voice of Ethiopia, presumed, **7110** at 0358 with Eastern Africa pops, news in unidentified language. (Paszkievicz, WI)  
**FRENCH GUIANA** — RFO Guyane, **5055** at 2356 with mostly music, U.S. pops, FF announcer. (Silvi, OH) Radio France Int'l relay, **9715** at 2355 in FF and **9800** in FF at 0412. (Harris, TN) **17620** in FF at 1614, off suddenly at 1616 and **17630** in FF at 1821 to 1830 close. **21645** at 1358 with sign-on, news in SS for South America. (Salzman, VA) Radio Japan relay, **11895** at 0500 with "Date-line Japan," "Top News Asia," and "Tokyo Pop-In," ID and off at 0530. (Jeffery, NY) China Radio Int'l relay, **9730** at 0353 in CC. (Harris, TN) 0412 in EE. (Jeffery, NY)  
**GABON** — Radio TV Gabonaise, Libreville, **4777** at 2246 with music and announcements

in FF. (Silvi, OH) Africa Number One, **15475** at 1748 in FF. (Jeffery, NY)  
**GEORGIA REPUBLIC** — Voice of Hope, **6285** at 2055 to 2103 close. Contemporary Christian music, UK address. ID. Ex-6290. (Alexander, PA)  
**GERMANY** — Bayerischer Rundfunk, **6085** at 0259 with instrumental music, announcements, local time check, news in German. (Paszkievicz, WI) Sudwestfunk, **7265** at 0225 with GG talk, pops. (Paszkievicz, WI) Deutsche Welle, **9545** in GG heard at 2145. (Harris, TN)  
**GREECE** — Voice of America relay, **15205** at 1754 with live call-in program. (Harris, TN)  
**GUINEA** — Radio Guineenne, **7125//9650** in FF at 0240 with talk, hi-life, IDs, phone number, guitar IS. (Paszkievicz, WI)  
**GUYANA** — Voice of Guyana, **5959.4**, 0730 to past 0900 with EE talks, local pops and choral music, ID. QRM from WYFR on **5950** until "Okee" closes at 0800. (Alexander, PA) 0931 with odd subcontinental/tropical music, man with passing ID, woman talking about women's equality, back to odd music. Created by WYFR's 0955 sign-on. (Quaglieri, NY)  
**HONDURAS** — Presumed HRMI, **5890** at 0205 in SS with religion. Lost to wideband QRM. (Paszkievicz, WI)  
**INDIA** — All India Radio, Bangalore, **11620** at 1800 to 1940 in EE. Also **15020** (Delhi) at 1350 to 1500 in unidentified language. **13780** (Bangalore) at 1801 to past 1905. (Silvi, OH) **11735** at 0255 with subcontinental vocals, talk, tabla drums, snake charmer music. **13620** at 0248 with Hindi. (Paszkievicz, WI)  
**IRAQ** — Radio Iraq Int'l, **11784.95** at 2150 with open carrier, then Mideast music at 2154, talk in language at 2156. Strong carrier, but poor, weak modulation. Totally covered by unidentified carrier at 2158 on **11785.1**. Also at 0410 on **11785** again strong but with poor, distorted audio. EE music, commentary, ID "This is Baghdad, Radio Iraq International" and more music. Frequency and address given at 0430 and into unidentified language. Covered by Deutsche Welle's 0457 sign-on. (Alexander, PA)  
**ISRAEL** — Kol Israel, **7465** at 0501 with news, ID, weather. (Jeffery, NY)  
**JAPAN** — Radio Japan/NHK, **11705** at 1305 in JJ. Also **11785** in JJ at 1315. (Northrup, MO) Also on **13630** at 2100 to 2158 and 0058 to 0154 fade-out with English to WCNA. (Silvi, OH)  
**KUWAIT** — Radio Kuwait, **9855** in AA at 2131. (Harris, TN)  
**LIBERIA** — Radio Veritas, **5470** in EE and vernacular at 0518 with religious talk in local language. EE ID "This is Radio Veritas, the radio stations of the Catholic Media Centre, broadcasting to you from Monrovia, Liberia." Frequencies, canned promo "For complete coverage of news and events, topics of national concern and religious radio programs, no one features the diversity of programming like we do. Radio Veritas, broadcasting from Monrovia on 97.8 FM, 5 point 4-7-0 mega-

#### Abbreviations Used in Listening Post

AA	Arabic
BC	Broadcasting
CC	Chinese
EE	English
FF	French
GG	German
ID	Identification
IS	Interval Signal
JJ	Japanese
mx	Music
NA	North America
nx	News
OM	Male
pgm	Program
PP	Portuguese
RR	Russian
rx	Religion/ious
SA	South America/n
SS	Spanish
UTC	Coordinated Universal Time (ex-GMT)
v	Frequency varies
w/	With
WX	Weather
YL	Female
//	Parallel Frequencies

# RADIO AFRICA

THANK YOU FOR YOUR RECEPTION REPORT OF

DATE JANUARY 30, 1994  
 TIME 0530 UTC - 0600 UTC  
 FREQUENCY 7190 KHZ

RADIO AFRICA BROADCASTS EVERY DAY FROM 6:00 PM TO 11:00 PM LOCAL TIME IN BATA (1700-2200 UTC).

FREQUENCY FROM MAY 14, 1989 ONWARDS 7190 KHZ 41 METERS.

LISTEN ALSO TO RADIO EAST AFRICA, 9585 KHZ 31 METERS, 0500-1400 UTC SATURDAY & SUNDAY

FOR MORE INFORMATION AND A PROGRAM SCHEDULE PLEASE WRITE:

RADIO AFRICA  
 10201 TORRE AVE., SUITE 320  
 CUPERTINO, CALIF. 95014 USA

*Radio Africa, in Bata, Equatorial Guinea, sells religious programming through an office in California. (Thanks Andy Johns, TX)*

hertz in the 90-meter band and 3 point 4-5-0 megahertz in the 60-meter band shortwave. Listen to Radio Veritas! We are the voice of truth!" (Notice they got their meter bands mixed up.) At 0534 cock crows, then woman into EE news. (Quaglieri, NY) 3450 at 0645 to past 0710 with EE news about Liberia and other African countries. ID and Afro-pops. (Alexander, PA)

LITHUANIA — Radio Vilnius, 5950 (ex-5905) at 0030. Also Announced 5880 and 5950 and both heard at good level. EE news, comment, local pops. ID. (Alexander, PA)

MEXICO — Radio Educacion, 6185 at 0907

with tourist show in DD, EE/SS ID at 0913 and into SS. (Quaglieri, NY) Radio Mexico Int'l, 9705 at 2355 in SS. (Harris, TN)

MONGOLIA — Voice of Mongolia, 12080 at 1130 to 1220 in presumed JJ, then into EE. (Silvi, OH) 1202 with EE discussion about housing. (Ziegner, MA)

MOROCCO — RTV Marocaine, presumed, 11920 at 0157 to 0305 with music and announcer in AA. Also 15335 from 1403 to 1459 sign-off in AA with mostly continuous music. (Silvi, OH) (15345 is supposed to be back on the air — Editor) Voice of America relay, 15410 at 1757 with call-in. (Harris, TN) Radio

Medi-Un, 9575 in FF at 2156. (Harris, TN) NEW ZEALAND — Radio New Zealand Int'l, 11905 at 0500 with National Radio news, weather, report on the power failure in Auckland. (Jeffery, NY) 17675 heard at 0153. (Hill, ID)

NICARAGUA — Radio Miskut, presumed, 5770 at 0145 to 0201 sign-off with SS talks, pops, ballads. Occasional CW/RTTY QRM. Suppressed carrier USB. Staying on the air later than usual. (Alexander, PA)

NETHERLANDS ANTILLES — Radio Netherlands Bonaire relay, 9590 heard at 0438 with "Newsroom" segment. weather. (Yanosik, PA)

NIGERIA — Voice of Nigeria, 7255 at 0531 with news. (Jeffery, NY)

PERU — Radio Andina, Huancayo, 4995.58 at 0958 past 1030 with morning programming of local music and many announcements including a PSA by crazed-sounding woman. Station had usual poor audio. (Quaglieri, NY) Radio Huancabamba, Huancabamba, 6535.75 at 0005 to 0018 close. Irregular with SS announcements, IDs, Peruvian folk music. Off with national anthem. (Alexander, PA) Radio Peru, San Ignacio, 5637.32 at 0145 to 0206 close with Peruvian folk music, SS announcements, ID at 0203 and anthem. Weak, irregular. (Alexander, PA) Radio Villa Rica, Huancavelica, 4886.75 at 1101 with SS talk, canned ID by woman at 1102, Peruvian folk music. (Alexander, PA) Radio Ondas del Rio Maranon, 6675.53, 0045 to 0107 close with

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### RADIO BUCHAREST ROMANIA QSL

This confirms your report of 19.3.87 concerning our transmission of 13.00 UTC on 15250 kHz

Your remarks are of great interest to us and your further reports will be much appreciated.

Mr. Andy Johns  
 USA

BUCHAREST  
 Central Pavilion of the Exhibition Compound in "Sinteia Square"



*A Radio Bucharest QSL from 1987 when the country was still communist. The station is now called Radio Romania International. (Thanks Andy Johns, TX)*

### At-a-Glance Programme Guide

(Valid : March 29th 1996 - October 25th 1996)

SUBJECT TO REVISION! Attention: The days shown for the broadcasts to North America are local days in that target. According to the UTC clock, it may already be the next day!

UTC	Frequencies (kHz) Satellites	Target	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
0030	M9855, M11655, F12090 (Eutelsat HB1, Astra RNW1/2 (AsiaSat 2/Intelsat 707)	South Asia (Europe, Middle East) (Asia & Pacific/Africa)	News, Sincerely Yours Sounds Interesting Four Minutes	News, Newline Research File Programme Info	News, Newline Music 52-15 Programme Info	News, Newline Documentary	News, Newline Media Network Programme Info	News, Newline A Good Life Press Review	News, Newline Weekend, Insight
0130	M9855, M11655, F12090 (Astra RNW 2) (AsiaSat 2/Intelsat 707)	South Asia (Europe) (Asia & Pacific/Africa)	News, Wide Angle Siren Song Four Minutes	News, Newline Aural Tapestry Programme Info	News, Newline A Good Life Programme Info	News, Newline Sounds Interesting Programme Info	News, Newline Research File Programme Info	News, Newline Documentary Press Review	News, Newline Roughly Speaking Insight
0230	M9855, M11655 (Astra RNW 2) (AsiaSat 2/Intelsat 707)	South Asia (Europe) (Asia & Pacific/Africa)	News, Sincerely Yours Sounds Interesting	News, Newline Research File	News, Newline Music 52-15	News, Newline Documentary	News, Newline Media Network A Good Life	News, Newline Weekend, Insight	News, Newline Weekend, 4 Minutes
0730	B9720, B9820 (ASTRA RNW2)	Pacific (Europe)	News, Newline Research File, Info	News, Newline Music 52-15, Info	News, Newline Documentary, Info	News, Newline Media Network, Info	News, Newline A Good Life, Info	News, Newline Weekend, Insight	News, Sincerely Yours, Sounds Int Four Minutes
0830	B9720, B9820 (ASTRA RNW2)	Pacific (Europe)	News, Newline Aural Tapestry	News, Newline A Good Life	News, Newline Sounds Interesting	News, Newline Research File	News, Newline Documentary	News, Newline Roughly Speaking,	News, Wide Angle Siren Song
0930	F12065, I 13710	Far East & Southeast Asia	News, Newline Research File, Press	News, Newline Music 52-15, Press	News, Newline Documentary, Press	News, Newline Media Network, Press	News, Newline A Good Life, Press	News, Newline Weekend, Insight	News, Sincerely Yours, Sounds Int Four Minutes
1030	F12065, I 13710 (ASTRA RNW 2)	Far East & Southeast Asia (Europe)	News, Newline Aural Tapestry	News, Newline, A Good Life	News, Newline, Sounds Interesting	News, Newline, Research File	News, Newline Documentary	News, Newline, Roughly Speaking	News, Wide Angle Siren Song
1030	J6045, W9860 (ASTRA RNW 2)	Europe	News, Newline Aural Tapestry, Press	News, Newline, A Good Life, Press Rvw	News, Newline, Sounds Int, Press Rvw	News, Newline, Research File, Press	News, Newline, Documentary, Press	News, Newline, Roughly Speaking, Insight	News, Wide Angle, Siren Song, 4 Minutes
1130	J6045, W9860 (ASTRA RNW 2)	Europe	News, Newline Research File	News, Newline Music 52-15	News, Newline Documentary	News, Newline Media Network	News, Newline A Good Life	News, Newline Weekend	News, Sincerely Yours, Sounds Interesting
1330	M9890, M15585	South Asia	News, Newline Research File, Press	News, Newline Music 52-15, Press Rvw	News, Newline Documentary, Press	News, Newline Media Network, Press	News, Newline A Good Life, Press Review	News, Newline Weekend, Insight	News, Sincerely Yours, Sounds Int, Four Minutes
1430	M9890, M15585 (ASTRA RNW 2 sat Sunday)	South Asia (Europe)	News, Newline Aural Tapestry	News, Newline A Good Life	News, Newline Sounds Interesting	News, Newline Research File	News, Newline Documentary	News, Newline Roughly Speaking	News, Wide Angle Siren Song
1730	M6020, M7120 F11655	South East & West Africa	News, Newline, Research File, Press	News, Newline, Music 52-15, Press Review	News, Newline Documentary, Press	News, Newline, Media Network, Press Review	News, Newline A Good Life, Press	News, Newline, Weekend, Insight	News, Sinc Yours, Snds Int, 4 Minutes
1830	M6020, M7120, B15315, B17605, F9895, F11655 (Eutelsat HB1) (AsiaSat 2/Intelsat 707)	South East & West Africa (Europe, Middle East) (Asia & Pacific/Africa)	News Newline Aural Tapestry Press Review	News Newline, A Good Life, Press Review	News, Newline Sounds Interesting Press Review	News, Newline Research File Press Review	News, Newline Documentary Press Review	News, Newline Roughly Speaking Insight	News, Wide Angle Siren Song, Four Minutes
1930	M6020, M7120, B15315, B17605, F9895, F11655 (Eutelsat HB1, Astra RNW2) (AsiaSat 2/Intelsat 707)	South East & West Africa (Europe, Middle East) (Asia & Pacific/Africa)	News Newline Research File	News Newline Music 52-15	News Newline Documentary	News Newline Media Network	News Newline A Good Life	News Newline Weekend	News Sincerely Yours Sounds Interesting
2030	W0 1512 kHz mu: (ASTRA RNW 2)	Europe	News, Newline Research File, Press	News, Newline A Good Life, Press Rvw	News, Newline Documentary, Press	News, Newline Media Network, Press	News, Newline Roughly Speaking, Press	News, Newline Weekend, Insight	News, Sincerely Yours, Sounds Int, 4 Minutes
2130	W0 1512 kHz mu: (ASTRA RNW 2)	Europe	News, Newline Aural Tapestry	News, Newline Music 52-15	News, Newline Sounds Interesting	News, Newline Research File	News, Newline Documentary	News, Newline Roughly Speaking	News, Wide Angle Siren Song
2330	F6020, B6165, B9845 (Eutelsat HB1, Astra RNW1)	North America (Europe, Middle East)	News, Newline Aural Tapestry Press Review	News, Newline A Good Life Press Review	News, Newline Sounds Interesting Press Review	News, Newline Research File Press Review	News, Newline Documentary Press Review	News, Newline Roughly Speaking Insight	News, Wide Angle Siren Song, Four Minutes
0030	F6020, B6165, B9845 (Eutelsat HB1, Astra RNW1)	North America (Europe, Middle East)	News, Newline Research File	News, Newline Music 52-15	News, Newline Documentary	News, Newline Media Network	News, Newline A Good Life	News, Newline Weekend	News, Sincerely Yours Sounds Interesting
0430	B6165, B9590, (Eutelsat HB1, Astra RNW2) (AsiaSat 2/Intelsat 707)	North America (Europe, Middle East) (Asia & Pacific/Africa)	News, Newline Research File	News, Newline Music 52-15	News, Newline Documentary	News, Newline Media Network	News, Newline A Good Life	News, Newline Weekend	News, Sincerely Yours Sounds Interesting

Key to transmitter locations: F=Flevoland, M=Madagascar relay, B=Bonair relay, A=Alma Ata, I=Irkutsk, J=Jülich, P=Petropavlovsk Kamchatskiy, T=Tashkent, W=Wertachtal, Wo=Wolvertem.  
Key to satellite transmissions: Astra RNW1/2 = Astra 1E, 19.2° East, Transponder 102, 12.641 GHz/V, MPEG2/DVB. Eutelsat HB1 = Eutelsat 11 F6, 13° East, Transponder 11, 11.431 GHz/H, Audiosubcarriers: 7.56 MHz TBC  
AsiaSat 2: 100.5° East, Transponder 10B, 4.000 GHz/V, MPEG2/DVB (European Bouquet), Intelsat 707, 1° West, Transponder 23B, 3.9115 GHz/RHC, MPEG2/DVB  
For more information about World Radio Network please consult [www.wrn.org](http://www.wrn.org) (Note: All WRN transmissions via Europe are pre-emptible) © nfy/rw 09 feb 96

*Here's the program and frequency schedule for Radio Netherlands for the summer broadcasting period.*

SS announcements, huaynos, many IDs. Vocal version of national anthem. (Alexander, PA) Radio Tarma, Tarma, 4775 at 1004 in SS with music. (Ziegner, MA)  
**POLAND** — Polish Radio, 11815 at 1321 with news, humor, talk. (Ziegner, MA)  
**PHILIPPINES** — VOA relay, 17820 at 0028. (Paszkievicz, WI)  
**RUSSIA** — Radio Maryja, 9905, 0600 to 0815 with religious programs in Polish. (Alexander, PA) Voice of Russia, 9905 on with test tones at 0815, covering Radio Maryja. Into EE programs at 0830. Believe this is a new frequency for V. of Russia in EE. (Alexander, PA)  
**RWANDA** — Deutsche Welle relay, 9735 monitored at 2132 in GG and 9765 in GG at 2348. (Harris, TN)  
**SAO TOME** — Voice of America relay, 11875 at 2153 with sports report. (Harris, TN)  
**SAUDI ARABIA** — Broadcasting Service of the Kingdom of Saudi Arabia, 11935 at 2135 in AA. QRM from a jammed Radio Marti on 11930. (Harris, TN)  
**SLOVAKIA** — Radio Slovakia Int'l, 5930 at 0113 with feature on how the Communists took over in 1948. (Yanosik, PA)

**SOUTH AFRICA** — Channel Africa, 11900 heard at 0556 with IS, ID, news and feature. (Jeffery, NY)  
**SUDAN** — Republic of Sudan Radio, 7200 at 0258 with IS mixing with ham transmission. (Paszkievicz, WI)  
**SWITZERLAND** — Swiss Radio Int'l, 6135 at 0403 with news, ID, "Newline." (Jeffery, NY) 0404 Also 9885 at 0408 and 9905 at 0410. (Harris, TN) 9905 at 0410. (Yanosik, PA)  
**TAIWAN** — Radio Taipei Int'l, 7130/9610 at 1234. (Silvi, OH) 11745 via WYFR at 1320 in CC. (Northrup, MO) 17760 via WYFR at 1919 in CC. (Jeffery, NY)  
**TADJIKISTAN** — Radio Netherlands via Tadjikistan, 7305 at 0031 with EE to Asia. Fairly audible against co-channel Vatican Radio but faded by 0102 as Vatican became stronger. (Silvi, OH)  
**THAILAND** — Radio Thailand, 13695 at 0040 with news in EE, mentions of meetings, phone numbers. (Paszkievicz, WI)  
**TOGO** — Radio Lome, presumed, 5047 at 2304 in FF with mostly U.S. pops, music and announcer in presumed FF. (Silvi, OH)  
**UKRAINE** — Radio Ukraine Int'l, 6030 at

0408 with regional news. Parallel 7150. (Paszkievicz, WI)  
**VATICAN** — Vatican Radio, 11625 at 1800 in unidentified language to Africa. Off at 1828. (Silvi, OH)  
**VIETNAM** — Radio Voice of Vietnam, 9840/12020 at 13095 in FF, 1330 in EE. (Silvi, OH)  
**YEMEN** — Republic of Yemen Radio, 9780 at 0409 in AA. (Harris, TN)

That's it, except for giving three cheers for the folks who came through for you this month:

Robert Salzman, Lynchburg, VA; Thomas W. Hill, Mountain Home, ID; Dave Jeffery, Niagara Falls, NY; Brian Alexander, Mechanicsburg, PA; Tricia Ziegner, Westford, MA; Paul Yanosik, Sinking Spring, PA; Paul Harris, Columbia, TN; Al Quaglieri, Albany, NY; Sheryl Paszkievicz, Manitowoc, WI; Mark Northrup, Gladstone, MO, and Lee Silvi, Mentor, OH. Thanks to each one of you!

Until next month, good listening! ■

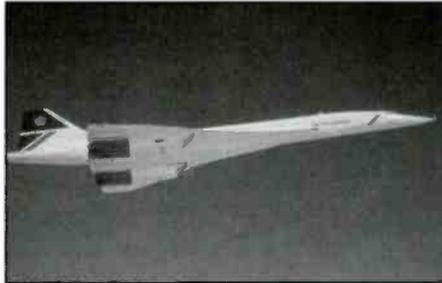
# Communications Confidential

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

## Civil Aviation Primer

A very popular area of the "utility station" umbrella is civil aviation. You can listen to flights crossing the Atlantic or Pacific, or flying across Africa or Australia. As in maritime communications, by international agreement, all aviation communications take place in upper side band (USB). Also, with some exceptions, English is the primary language of the international aviation community.

To keep things from getting confused, the world is split up into regions, known as **Major World Air Route Areas (MWARA)**, which readers will sometimes see noted on a civil aviation log. These regions or areas are designated as follows: **AFI** (Africa); **CAR** (Caribbean); **CEP** (Central East Pacific); **CWP** (Central West Pacific); **EA** (Eastern Asia); **EUR** (Europe); **INO** (Indian Ocean); **MID** (Middle East); **NAT** (North Atlantic); **NCA** (North Central Asia); **NP** (North Pacific); **SAM** (South America); **SAT** (South Atlantic); **SEA** (South East Asia); and **SP** (South Pacific). These areas are often sub-divided into smaller areas. For example, the North Atlantic has NAT-A (includes the south central part of the North Atlantic, from Paramaribo and Piarco to the south, to Canarias to the southeast, northwest to New York and Gander, and to the northeast to Shanwick); NAT-B (for aircraft west of 30 degrees west in flight over the North Atlantic); NAT-C (for aircraft east of 30 degrees west in flight over the North and Central Atlantic); NAT-D (for aircraft flying over the most northern part of the North Atlantic, including the north polar region and most of Canada); NAT-E (for aircraft in flight between New York and Santa Maria (Azores)); and NAT-F MWARA (for aircraft in flight between Gander and Shanwick) groupings. As you see, each has a specific area of airspace they are responsible for. There are certain groups of frequencies used within each NAT area, and there are certain ground stations responsible for aircraft entering these areas on these frequencies. What you will hear most often on these



Aircraft like this British Airways Concorde can be heard on MWARA frequencies. (Photo courtesy British Airways)

frequencies are aircraft reporting **waypoint** positions. **Waypoints represent an exact spot, no matter if it's on land or over the ocean. Waypoints can have either a five-letter name or be latitude and longitude.** These position reports come rapid fire in a specific order. For example, Air France 594 might pass to New York "Air France 594, 43N/50W, 2255, 250, estimate 43N/45W 2324, 42N/40W next." He flew past the first position at 2255 UTC. His flight level is 250 (25,000 ft), the next position he estimates he should arrive at 2324 UTC, and then radios what his next position report will be. Optionally, they may add fuel status, weather and speed. It's hard at first, but with some practice, you can follow the flights fairly easy. **Table 1** is a list of ICAO/MWARA areas, frequencies, and stations that can be heard.

In certain parts of the world, special regional areas, known as **Regional And Domestic Air Route Areas (RADARA)**, have been established. These mostly domestic air routes are within Africa and parts of the Pacific and Indian Oceans. These are often notable exceptions to the English language use.

**Long Distance Operational Control (LDOC)** centers are another exception. It makes sense for Air France to speak in French to their own aircraft. LDOC's frequencies are allocated for carriers so they can maintain contact with their aircraft. Companies that cannot afford their own system will use companies that provide phone patch and other services, such as

Stockholm Radio, Berne Radio, and ARINC. There can be several LDOCs on a single frequency.

One last type of aviation station is the **Volmet**. Volmet comes from the French words for "flying weather." Frequencies represent areas as in the MWARA/RADARA assignments. Anywhere from two to six stations may have time slots for their weather reports. Typically check at the top of each hour (H+00) and every 10 minutes.

Now, to help you along, you may want to obtain some aviation charts in order to follow your flights. The North Atlantic Route Chart for example, shows fixed route waypoint locations. I ordered mine from a company called The Outer Marker, 521 Spirit of St. Louis Blvd., Chesterfield, MO 63005; Phone: 800-441-2072. They also have a Web site where you can order online. Among the charts they offer are U.S. IFR/VFR Low Altitude, Planning Chart, Gulf of Mexico/Caribbean; Planning Chart, Northern Pacific/Atlantic; Route Planning Chart; Visual Navigation Charts; Sectional Charts; Terminal Area Charts; World Aeronautical Charts; U.S. Gulf Coast VFR; Instrument Navigation Charts; Supplementary Charts, such as Airport/Facility Directory; North Pacific Route Charts; North Atlantic Route Charts; Chart Supplement Pacific; and the NOAA Aeronautical Chart. I'm sure other aviation supply firms offer a similar selection.

### Useful Web Sites

Last, we have some Web sites that may be useful if you have Internet ability. Airnav at <<http://www.airnav.com/>> provides free access to detailed aeronautical information on airports and navigational aids in the U.S. with database searches. Tony Orr's Northern Virginia HF/VHF/ACARS page at <<http://patriot.net/~jet-set/>> offers a lot of info and some great links. The AR Group ICAO/IATA Airport Locator at <<http://www.ar-group.com/icaoata.htm>> is from Air Routing

## Table 1. MWARA HF Frequency/Station List

<b>NAT-A:</b> 3016.0 5598.0 8906.0 13306.0 17946.0 Stations: Canarias, Gander, New York, Piarco, Santa Maria, Shanwick	Windhoek, Yaounde
<b>NAT-B:</b> 2899.0 5616.0 8864.0 13291.0 17946.0 Stations: Gander, Iceland, New York, Santa Maria, Shanwick	<b>INO-1:</b> 3476.0 5634.0 8879.0 13306.0 17961.0 Stations: Antananarivo, Beira, Bombay, Cocos Islands, Colombo, Dar es Salaam, Harare, Jeddah, Johannesburg, Kigali, Lilongwe, Lusaka, Madras, Mahajanga, Male, Mauritius, Moroni, Nairobi, Perth, Seychelles, St. Denis, Toamasina
<b>NAT-C:</b> 2872.0 5649.0 8879.0 13306.0 17946.0 Stations: Gander, Iceland, Shanwick	<b>MID-1:</b> 2992.0 4669.0 5667.0 6631.0 8951.0 11375.0 17961.0 Stations: Aden, Amman, Ankara, Baghdad, Basrah, Beirut, Cairo, Damascus, Jeddah, Kuwait, Manama, Odessa, Sanaa, Simferopol, Tehran, Tbilisi, Yerevan
<b>NAT-D:</b> 2971.0 4675.0 8891.0 11279.0 13291.0 17946.0 Stations: Baffin, Bodo, Churchill, Gander, Iceland, Montreal	<b>MID-2:</b> 3467.0 5658.0 10018.0 11300.0 13288.0 17961.0 Stations: Abadan, Almaty, Ashkabad, Bishkek, Bombay, Delhi, Dushanbe, Kabul, Karachi, Kathmandu, Kuwait, Lahore, Male, Muscat, Odessa, Samarkhand, Seychelles, Tashkent, Tehran, Tbilisi, Urumqi, Yerevan
<b>NAT-E:</b> 2962.0 6628.0 8825.0 11309.0 13354.0 Stations: Canarias, New York, Santa Maria	<b>MID-3:</b> 2944.0 4669.0 6631.0 8951.0 11375.0 17961.0 Stations: Aktyubinsk, Almaty, Bishkek, Dushanbe, Kuybyshev, Kzyl-Orda, Moscow, Samarkhand, Tashkent, Uralsk, Yerevan
<b>NAT-F:</b> 3476.0 6622.0 8831.0 11336.0 13291.0 Stations: Gander, Shanwick	<b>EUR-A:</b> 3479.0 5661.0 6598.0 10084.0 13288.0 17961.0 Stations: Arkhangelsk, Beirut, Berlin, Kiev, Lvov, Minsk, Moscow, Murmansk, Odessa, Riga, Simferopol, Sofia, St. Petersburg, Syktyvkar, Tunis, Velikiye, Vilnius, Vologda
<b>CAR-A:</b> 2887.0 5550.0 6577.0 6649.0 8918.0 11396.0 13297.0 17907.0 Stations: Barranquilla, Boyeros, Guatemala City, Merida, New York, Panama, Piarco, San Andres Island, San Jose, Tegucigalpa	<b>NCA-1:</b> 3019.0 5646.0 13315.0 17958.0 Stations: Ivdel, Khanty-Mansiysk, Moscow, Syktyvkar, Sverdlovsk, Vologda
<b>CAR-B:</b> 3455.0 5520.0 6586.0 8846.0 11330.0 17907.0 Stations: Barranquilla, Boyeros, Cayenne, Georgetown, Maiquetia, New York, Panama, Paramaribo, Piarco, San Andres	<b>NCA-2:</b> 2851.0 4678.0 6592.0 10096.0 17958.0 Stations: Barnaul, Irkutsk, Khanty Mansiysk, Kirensk, Kolpashevo, Krasnoyarsk, Novosibirsk, Podkamennaya, Surgut, Yeniseysk
<b>SAM-C:</b> 3479.0 5526.0 8855.0 10096.0 13297.0 17907.0 Stations: Belem, Bogota, Brasilia, Iquitos, Leticia, Manaus, Maiquetia, Porto Velho, Rio de Janeiro	<b>NCA-3:</b> 3004.0 5664.0 10039.0 13303.0 17958.0 Stations: Chita, Chulman, Ekimchan, Irkutsk, Kirensk, Khabarovsk, Pyongyang, Ulaanbaatar, Ulan Ude
<b>SAM-NE:</b> 3479.0 5526.0 8855.0 10096.0 13297.0 17907.0 Stations: Belem, Cayenne, Georgetown, Maiquetia, Paramaribo, Piarco, Recife	<b>EA-1:</b> 3016.0 6571.0 8897.0 10042.0 17958.0 Stations: Beijing, Guangzhou, Hailar, Irkutsk, Jinan, Kunming, Lanzhou, Pyongyang, Shanghai, Shenyang, Taegu, Ulaanbaatar, Urumqi, Wuhan, Zhengzhou
<b>SAM-NW:</b> 2944.0 4669.0 6649.0 10024.0 11360.0 17907.0 Stations: Barranquilla, Bogota, Maiquetia, Lima, Quito, Panama	<b>EA-2:</b> 3485.0 5649.0 5655.0 8942.0 11396.0 13309.0 17907.0 Stations: Guangzhou, Irkutsk, Pyongyang, Ulaanbaatar
<b>SAM-SE:</b> 3479.0 5526.0 8855.0 10096.0 13297.0 17907.0 Stations: Asuncion, Belem, Brasilia, Buenos Aires, Campo Grande, Curitiba, La Paz, Montevideo, Lima, Porto Alegre, Porto Velho, Recife, Resistencia, Salvador, Santa Cruz	<b>SEA-1:</b> 3470.0 5670.0 6556.0 10066.0 13318.0 17907.0 Stations: Bali, Bangkok, Colombo, Calcutta, Dhaka, Guangzhou, Jakarta, Kathmandu, Kuala Lumpur, Kunming, Madras, Male, Singapore, Yangon
<b>SAM-SW:</b> 2944.0 4669.0 6649.0 10024.0 11360.0 17907.0 Stations: Antofagasta, Asuncion, Bariloche, Comodoro Rivadavia, Cordoba, Ezeiza (Buenos Aires), La Paz, Lima, Mendoza, Pascua (Easter Island), Puerto Montt, Punta Arenas, Resistencia, Salta, Santa Cruz, Santiago, Talara, Ushuaia	<b>SEA-2:</b> 3485.0 5649.0 5655.0 8942.0 11396.0 13309.0 17907.0 Stations: Bali, Bangkok, Guangzhou, Hanoi, Ho Chi Minh, Hong Kong, Jakarta, Kuala Lumpur, Kota Kinabalu, Manila, Seoul, Singapore, Tokyo, Vientiane
<b>SAT-1:</b> 3452.0 6535.0 8861.0 13357.0 17955.0 Stations: Brasilia, Canarias, Cayenne, Dakar, Manaus, Paramaribo, Recife, Rio de Janeiro, Sal	<b>SEA-3:</b> 3470.0 5733.0 6556.0 10066.0 11396.0 13318.0 17907.0 Stations: Bali, Cocos Islands, Jakarta, Male, Perth, Singapore, Ujung Pandang
<b>SAT-2:</b> 2854.0 5565.0 11291.0 13315.0 17955.0 Stations: Canarias, Cayenne, Dakar, Johannesburg, Manaus, Paramaribo, Recife, Rio de Janeiro, Sal, Salvador, Windhoek	<b>CEP-1/2:</b> 2869.0 3413.0 5547.0 5574.0 8843.0 11282.0 13261.0 17904.0 Stations: Honolulu, San Francisco
<b>AFI-1:</b> 3452.0 6535.0 8861.0 13357.0 17955.0 Stations: Abidjan, Bamako, Bangui, Bissau, Bobo Dioulasso, Bouake, Casablanca, Conakry, Canarias, Dakar, Freetown, Kano, Niamey, Nouadhibou, Nouakchott, Ouagadougou, Roberts (Monrovia)	<b>CWP-1/2:</b> 2998.0 4666.0 6532.0 6562.0 8903.0 11384.0 13300.0 17904.0 Stations: Guam, Hong Kong, Honolulu, Manila, Naha, Port Moresby, Seoul, Taipei, Tokyo
<b>AFI-2:</b> 3419.0 5652.0 8894.0 13273.0 17961.0 Stations: Algiers, Kano, Gao, Niamey, N'Djamena, Tamanrasset, Timimoun, Tripoli, Tunis	<b>NP-3/4:</b> 2932.0 5628.0 5677.0 6665.0 8915.0 10048.0 13294.0 13339.0 17904.0 17946.0 21925.0 Stations: Honolulu, San Francisco, Tokyo
<b>AFI-3:</b> 3467.0 5517.0 10018.0 11300.0 13288.0 17961.0 Stations: Addis Ababa, Aden, Asmara, Bahrain, Benghazi, Bombay, Bujumbura, Cairo, Comoros, Dar es Salaam, Entebbe, Hargeisa, Djibouti, Jeddah, Khartoum, Kigali, Kisimayu, Male, Mogadishu, Nairobi, Port Sudan, Sanaa, Seychelles, Tripoli	<b>SP-6/7:</b> 3467.0 5643.0 8867.0 13273.0 17904.0 Stations: Auckland, Brisbane, Honolulu, Nandi, Pascua (Easter Island), Port Vila, Rarotonga, Tahiti, Wallis
<b>AFI-4:</b> 2878.0 5493.0 8903.0 13294.0 17961.0 Stations: Accra, Bangui, Brazzaville, Douala, Entebbe, Franceville, Garoua, Goma, Harare, Johannesburg, Kano, Kinshasa, Kisangani, Lagos, Libreville, Luanda, Lubumbashi, Lusaka, Maroua, N'Djamena, Niamey, Niamtougou, Port Gentil, Roberts, Salazar,	



The Control Center of Cedar Rapids LDOC.  
(Photo courtesy Rockwell-Collins)

International. They maintain a multitude of data on airports around the world, including airport identifiers. You can retrieve airport location information here. At [http://www.landings.com/\\_landings/pages/search.html](http://www.landings.com/_landings/pages/search.html) we find the Landings Search Engines for aviation search databases. You can search aircraft registrations and much more. Daily North Atlantic Tracks can be found at <http://www.dave83.simplenet.com/747/html/natracks.html>. This information is provided courtesy of Marc Brodbeck. Mark Zee's Irish Aviation Web site at <http://www.iol.ie/~markzee/> is another offering great information and links. Steve's Downunder Hidaway at <http://www.ozemail.com.au/~sirsteve/steve%27s.htm> has great information from the South Pacific. At Boeing's site, <http://www.boeing.com/commercial/info/orders/>, you can see what aircraft Boeing have delivered to whom and when. Last, there are several Internet lists where this part of the hobby is discussed. The Worldwide UTE News Club list, at <http://www.geo.net/~berri/wun>, includes HF aviation worldwide. The North Atlantic mailing list covers aviation over the North Atlantic A thru Z including ACARS, HF, and VHF info. To subscribe, send e-mail to [Majordomo@qth.net](mailto:Majordomo@qth.net) with the following command in the body of your e-mail message: subscribe Atlantic.

While I was surfing the Web, I came across this site of interest to military fans: Defense Switched Network (DSN), <http://dsnbbs.ncr.disa.mil/>, where there is a downloadable copy of the DSN directory previously available only from the Government Printing Office.

The *Air Force News Service* reports the 89th Airlift Wing's historic aircraft 62-6000 (SAM 26000) is being retired. First brought into the Air Force inventory on October 10, 1962, this specially selected C-137 became President John F. Kennedy's "Air Force 1" and was used as

such up until the Nixon administration. It was on 26000 that Vice President Lyndon B. Johnson became President of the United States after Kennedy was assassinated in Dallas. Indeed, logs coming in this month may well be the last for the aircraft before it begins its journey to the Air Force Museum in Dayton, Ohio.

## Reader Mail

Regarding the information on Rome Labs in my May column, Frank Reynolds (NY) was kind enough to send a press release concerning the Forestport site we mentioned. The 1,218-foot antenna was due to come down April 21, 1998, and should be gone by now. The Air Force no longer used the Forestport site for research and didn't have a continued need for the LF (low frequency) site. There were no interested buyers. A demolition team from the 10th Mountain Division, Fort Drum, New York, was to blow the cables, and the antenna will be sold for salvage "on-the-ground." The Forestport Research Facility straddles the municipal boundary between the Oneida County town of Forestport and the Herkimer County town of Ohio.

When it was constructed in the foothills of the Adirondack Mountains in the summer and fall of 1950, the LORAN tower was the second tallest manmade structure on Earth, overshadowed only by the Empire State Building. LORAN, or long-range navigation, was developed during World War II and used LF radio stations to guide bombers. The Air Force erected the tower to test LORAN, hoping to improve it and other wartime navigation systems. But technological advances soon made LORAN obsolete and the tower became integral to the development of a host of LF, long-range navigation systems. Rome engineers have not used the aging site since the early 1990s.

Also, the Ava site that was mentioned has been inactive for a while. Its future will be decided soon.

Reader Joe Olig (WI) passed along the information that some time later this year the *USCGC Mackinaw*, the "Mac" as she is known on the Great Lakes, will be painted red, as will all other icebreakers for the USCG.

Tim Tyler notes that the March 1998 issue of *Avionics Magazine* is reporting ARINC's GLOBALink HF data link started operation January 26, 1998. Initial service began after installation of the first ground station in San Francisco, California, to be followed by stations in

Hawaii and other locations. GLOBALink uses existing HF radios modified for the data link function to support airline operational control and ATC services. Ground stations are connected with a ground packet data network to a central processor and network management center at ARINC's base in Annapolis, Maryland.

Allan Stern checks in with some logs from Florida this month. Allan's shack can be described as awesome. Although it's not all HF equipment, it includes equipment set up for every day in a permanent location, such as a PRO-2006: Mil VHF/UHF (including Patrick AFB UHF); PRO-2002 #1: VHF: Patrick Tower, Appr/Dep, POL. Trans Alert; PRO-2024: Parked on Patrick Tower 24/7; PRO-2036: Avon Park Range, W-157, -497 Areas UHF, JSTARS; PRO-2032 #1: NASA KSC Ops, Customs; PRO-2032 #2: Misc: Disney World, Media, News Helos; PRO-2022: Police, Fire including Patrick Security; BC450A: USCG/Marine Service Search 24/7; BC590: Air Band Search; BC800XLT: (Bedside) Police, Hwy Patrol, Fire, Ambulance; BC2500XLT: Auto-Search "fishing" expeditions; Yaesu FRG-7: Parked on 11175; DX-390: GHFS, Coast Guard. Others, used mobile, occasionally include: BCT7 in his truck, always on Aircraft Service Search; PRO-43: duplicates "Best" of PRO-2006 for mobile use; PRO-39 #1: Indian River/Osceola Counties (weekend jaunts); PRO-39 #2: At malls, public areas (his smallest scanner); PRO-28: searches (has Search Skip); BC200XLT #1: searches (alarms on frequency duplicate); BC200XLT #2: Ditto; BC210 #1: BC210 #2: Ditto; PRO-2002 #2; PRO-2021 #1; PRO-2021 #2; Fox BMP10/60; and two PRO-2026's still in the box!

Chuck Sayers (PA) also checks in for the first time and has been a *Pop'Comm* reader since the magazine started. Chuck monitors the Utes and some shortwave broadcasts. The equipment there is for

 <b>NAYM</b> USCGC MATAGORDA (WPB-1303)
THIS WILL VERIFY YOUR RECEPTION OF RADIO STATION NAYM ABOARD USCGC MATAGORDA (WPB-1303) ON 24OCT94 AT 0217Z ON 4134 KHZ USB.
TRANSMITTER POWER: 125 W VESSEL'S APPROX. LOCATION: 25°42'N 080°01'W REMARKS: CORRECTING LOCAL L/E PROLOG.
 SIGNED

PFC from the collection of Jim Pogue.

## Abbreviations Used For Intercepts

AM	Amplitude Modulation mode
BC	Broadcast
CW	Morse Code mode
EE	English
GG	German
ID	Identification/led/location
LSB	Lower Sideband mode
OM	Male operator
PP	Portuguese
SS	Spanish
tfc	Traffic
USB	Upper Sideband mode
w/	With
wx	Weather report/forecast
YL	Female operator
4F	4-figure coded groups (i.e. 5739)
5F	5-figure coded groups
5L	5-letter coded groups (i.e. IGRXJ)

VHF/UHF; a PRO-2026, two PRO-2006s, an R7100 and an FT50R and for HF an R2000, Sony 2010 and an R8A, "with the usual wires and pointy things up there." Chuck, WA3GSI, has been a ham since 1957.

Another longtime reader, Web Williams (SC), says "I finally decided to start sending in some of my loggings." Glad to hear it, Web!

Then we have Thomas W. Johnson (WI) also checking in. Thomas especially enjoys aeronautical beacons using a DX-394. So far he has logged about 140.

Last, but not least, we have Claude "Danny" Stewart in Louisiana, who has been chasing down some ute stations for a few weeks and shares his logs with us.

Thanks gang. Now, on with the show.

### UTE Logging's SSB/CW/DIGITAL

**221:** RCK, Rockdale, TX at 0334. (BF)  
**340:** YY, NDB Mont-Joli, PQ, CAN at 1141, 1060 miles. (TW)  
**351:** YKQ, NDB Waskaganish, PQ, CAN at 0502, 659 miles. (TW)  
**365:** "AA," Kenie NDB, Fargo, ND at 0804, 308 miles. (TW)  
**371:** SOA, Sonora, TX, at 0317. (BF)  
**395:** XEN, Xenia NDB, Ohio, at 0418, 548 miles. YL, NDB Lynn Lake, MB, CAN at 0332. (TW)  
**400:** CI, Sault Ste Marie, MI heard at 0304. HIV, Punta Caucedo, Dominican Republic at 0305. (BF)  
**407:** RXW, NDB Watersmeet, MI at 1158, 61 miles. (TW)  
**420:** CEK, NDB Crete, NE heard at 0403, 493 miles. (TW)  
**1608.5:** SPA, Gdynia Radio, Poland w/ARQ idler at 2203. (HOOD)  
**1740.5:** Mystery station beacon about an honest S4 around 1200 & about an honest S8 around 0300. (WP) (*thought we would have some more info by now — Ed.*)  
**1930:** LFI, Rogaland Radio, NOR at 2224 in CW w/marker & ARQ bursts. (AB)  
**2226:** Aberdeen CG, Scotland, w/sea area forecasts in USB at 2026. (HOOD)

**2311:** Net for Arklow Shipping Co. sea-river cargo vsls (between 2181 and 4289 DWT, company address is North Quay, Arklow, Co. Wicklow, Ireland) at 2100 in USB. (HOOD)  
**2582:** M/V Senneville (Misener Transportation Lines, ON) at 0200 in USB w/kg St. Johns CG Radio, CAN, re two men found on ice flow who were suffering from extreme hypothermia. St. Johns called rescue chopper fm u/i stn to pick men up, to 0240. (RK)  
**2620:** UCW4, North West Shipping Company's St. Petersburg station w/CW msgs to Volgo-Balt 122 (UCGU) and Volgo-Balt 207 (UAPQ) at 1706. This station also uses call RJFY — freqs as 2620/4223/6380 at this hr., Company address is ul. Bolshaya Morskaya 37, 190000 St. Petersburg. (HOOD)  
**2840:** Poss NATO exercise at 2111 in USB w/various nationalities heard. Stations E, D, G, F in tracking net. (AB)  
**2872:** Shanwick, Ireland w/kg HB-IKJ in USB was at 55N/10W & Selcal QR-GH. (HOOD)  
**3023:** Valentia Radio, Ireland at 1146 in USB w/rdo checks w/Kinloss Rescue, UK. (AG)  
**3035:** Cuban CW net here throughout night lately. (AWH)  
**3039:** At 1506 to 1546, GULF WHISKEY w/kg unid adv stay clear of track 1462, other simulated battle comms in USB. (BS) (*this was the USS Abraham Lincoln battlegroup in PAC JTTEX 98-1, the 1st Pacific fleet Joint Exercise of the year — Ed.*)  
**3180:** UAQK, vsl Ladoga 9 w/posn rpt to UCW4 St. Petersburg. (HOOD)  
**3322:** U.S. Navy MARS at 2349, caught end of FEC "NNN0GCB DE NNN0NVH" then KKKK & off. (AWH)  
**3345:** ZKBY, Mountain Radio Service, Taupo, New Zealand at 0740 in USB w/OM waiting for calls. (IJ)  
**3451.5:** "0A," Irish Navy Dublin, IRL monitored at 2214 in ARQ w/msg to PT79 for relay to PT71. (AB)  
**3825:** LOLO, M4 numbers station at 2100 in CW, in progress, probably 3rd repetition of 80769 msg. (AB)  
**4048:** NATO, "Strong Resolve" exercise at 0001 in USB, tactical comms by various nationalities. (AB)  
**4065:** TBO, Turkish Navy Izmir, TUR at 2203 in CW w/TBDJ DE TBO (calling any/all Turkish naval vessels). (AB)  
**4086:** Unid vessels at 0011 in USB, newscast for & by Philippine sailors. At least 10 vsls joining the group. Callsigns LSL, PMT, EMD, EWG, RDF, RNB, LGE, JGG, GTL, EPP. Does anyone have a clue about the callsigns? (AB) (*usually the initials of radio op's who are known to each other although not sure about SSB net — Ed.*)  
**4092:** 9H4811, M/V Dana, w/kg Portishead Radio in USB at 0908 for pp which was in RR. Vsl posn given as 45.47N 03.35W. (HOOD)  
**4106:** The Bored Man Vuban spook stn at 1325, OM/SS then YL/SS w/ longcounts, "hola hola" stuff //6868 which was very strong. (AWH)  
**4170:** Unid in 75/850 RTTY, w/foxes, count, several pages to 0153 off. (FH)

**4179.5:** YCTG, vsl Sonbai w/ARQ msg to PCH at 0850 login was 22902 YCTG. (HOOD)  
**4214:** IGJ41/42/43, Augusta, Italy in 75/850 RTTY availability data at 0320, when last logged was on 4227.0 kHz. (FH)  
**4268:** CKN, Vancouver Military, CAN in RTTY 75/850 w/wx at 0915. (TS)  
**4283:** ZSJ, South African Naval w/CW ID tape at 2208. (HOOD)  
**4318:** NMG, USCG New Orleans w/FAX 120/576 from Tropical Prediction Center, New Orleans at 1220. (FH)  
**4360:** SYN, Mossad, ISR at 2148 in AM w/ID SYN2. (AB)  
**4366:** FFL, StLys Radio at 1910 w/USB taped msg in FF/EE/SS "Operators & technicians express their sadness" at the closure of St. Lys Radio. (HOOD) (*so do we Robin — Ed.*)  
**4400:** Cuban Voice net at 1313 in USB, C861 clg M090, R1065, L890, short counts. Usual "6589" format w/master station telco-fed & on continuously, while other stations replied in background. (AWH)  
**4417:** UBF2, St. Petersburg Radio w/CW t/c list at 0905 & freqs as 8451/4417, a speech channel being used for CW. (HOOD)ZHM35, Tauranga Coast Guard, New Zealand heard at 0235 in USB w/WX forecasts & NAV warnings. (IJ)  
**4442.4:** RGC72, Kiev Meteo, UKR at 1843 in 50 bd RTTY Synops. (AB)  
**4472:** TREASURER w/kg WAR46 for pp to COMMAND CENTER at 0448 in USB. (JJ)  
**4552.5:** Unid Vanuatu Sms at 0810 in USB, sounded like they were Radio Technicians setting up Radiophone links on the remoter Islands. One of them mentioned "How do you read me over on our new channel." (IJ)  
**4616:** Dept of Conservation Stations, Great Barrier Island, New Zealand & Raoul Island, the Kermadecs at 0745 in USB w/OM heard w/kg YL. (IJ)  
**4675:** At 0215 British Airways 9697 heard w/kg Gander, posn 52N50W FL340, selcal EK-JQ. (TO)  
**4716.6:** SHARK 28 w/kg Group Key West (USCG) at 2225 in USB re submerged boat that had taken its mooring with it on the end of a piece of rope, drifted out to sea, and sank. Also investigating radar contact that turned out to be SHARK 28's own dumped garbage (sensitive radar!) Hadn't noted this freq previously. (AWH)  
**4721:** U9P, Italian Navy, Rome, I at 1805 in USB w/4UG, tactical stuff. (AB) Golf Uniform & Uniform Juliet French Military stations, French Polynesia at 0900 in FF w/radio checks. (IJ)  
**4868:** Cuban CW net at 1320, 1 station warming up, first time this freq noted in a few months. (AWH)  
**4880:** ULX, Mossad, ISR at 2200 in AM w/ULX2 broadcast. (AB)  
**4967:** INW & ED0, New Zealand Army at 2100 in USB w/radio checks. (IJ)  
**4982:** SAM 375 w/kg Andrews VIP at 1628 in USB, departed 1545z, ETA 2005z. (JJ)  
**4992:** SAM 683, DV-2 & 19 pass, w/kg Andrews VIP w/periodic signal checks around 0640 in USB. (JJ)

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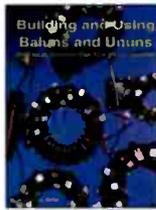


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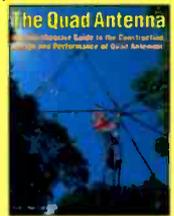


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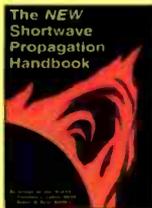


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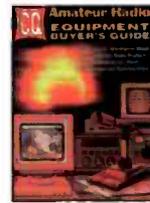


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- 5054:** Open carrier 2250-2300, then YL/SS w/ "Atecion" "354" x3r then SFGs till 2330, off w/ "finale" x2 AM mode. (RK)
- 5142.6:** USCG Group Key West, FL at 0237 in USB, clg Group Miami, G8G, QSO re vessel salvage ops. (AWH)
- 5156.5:** 19C, FOO & STALLION 16, U.S. Military Stations at 0655 in USB, lot of static, only caught occasional word: RTB, AIRBORNE, NEXT CONTACT. (IJ)
- 5160:** TELSTRA, Sydney Skycomm, NSW, Australia w/Qantas 69 at 0835 in USB w/pp to Qantas Control. Due to deteriorating WX conditions in Japan they were talking about diverting to Nagoya or Hanida (IJ)
- 5180:** Cape Radio net at 1935 on in USB w/KING 01 wkg USCGC Vigilant, DUTY CAPE, also USS McInerney. 4856 up also w/THE ENFORCER, WHITESOX, RALPH. Shuttle SAR exercise. (AWH)
- 5225:** ZME, Joint WX/Dept of Conservation Station, Raoul Island, the Kermadecs at 0730 in USB, YL w/phone call to New Zealand. (IJ)
- 5284:** Golf Kilo at 2130 in USB w/ID 550 & 5FG in German. (AB)
- 5287.5:** RETXX, MOI Madrid Spain at 0730 in ARQ 100/400 w/Msgs CONDUCTO VEHICULO QUEDO EN PODER. (IJ)
- 5376.5:** OST, Oostende Radio, BEL at 2307 in FEC w/QTC list. (Ed.)
- 5377:** 40, 41, 41A & 42, New Zealand Army, at 0800 in USB w/exercise Msgs. Units had captured Purple Force casualties, had them in MED tent, confiscating weapons & preparing to question them. Also coordinating the next days Drop Zone activities (IJ)
- 5415.5:** SS/YL numbers station starting 0730 to 0745 in AM, ended w/"000". (CDS)
- 5430:** Unid stn in ARQ-E3 192/390 monitored at 0300. (FH)
- 5431.5:** P7X in CW at 0246 w/120 grp 5L msg. (TS)
- 5547:** Qantas 12 at 0725 in USB wkg San Francisco (ARINC), USA/est MALET 0724 FL 290, selcal QR-AE. (TO)
- 5550:** At 0028 N125AC (selcal KR-BD) in USB wkg New York reporting posn PRUITT, FL 330. (TO)
- 5574:** Qantas 100 at 0510 in USB wkg San Francisco (ARINC), USA/FL 310 est 30N/120W 0521-datalinked (GQ-EM). (TO)
- 5575:** Unid Russian military station at 0950 in LSB, OM in RR w/test count. (IJ)
- 5598:** At 0105 United Flt. 906 in USB wkg New York w/selcal ck AR-EM on the ramp at EWR. (TO)
- 5616:** At 0251 Canforce 105 wkg Gander in USB, dep. Greenwood 0129, FL 270. (TO)
- 5637:** Cuban Babbler at 2031 in USB OM/SS t/c. (AWH)
- 5643:** Qantas 3 at 0738 in USB wkg San Francisco (ARINC), USA, posn ELLMS, FL 370 (selcal EG-FK). (TO)
- 5649:** At 0037 Viking 878 wkg Gander, 61N/40W FL 370, selcal CF-DJ. (TO)
- 5673:** Beijing Volmet, China at 0950 in USB, YL/EE w/WX. (IJ)
- 5680:** Gotland Rescue (Sweden), at 1351 in r/check w/Sweden Air Rescue. Rescue Vessel 107(?) at 1306 in r/check w/Gotland Rescue. Tartan One (helo) at 1618 wkg Kinloss, enrt to Campbeltown. Rafait 2J08 at 1145 wkg Kinloss, enrt to Cork, Ireland. Valentia Radio (MRSC), Ireland at 1124 wkg El-MES (S61N helo), at 1128 w/Rosslare Radio (IRL); at 1136 w/Falmouth Coast Guard (UK); 1137 w/Kinloss Rescue; 1224 w/Finisterre Maritime Rescue Centre (Spain). Topic 36 (RAF Chinook) at 1134 in r/check w/Kinloss. Malin Head Radio (MRSC), Ireland at 1358 wkg Rescue 177, enrt to SAR of Donegal. Rescue XF (believed to be a French "Atlantic" a/c) at 1242 wkg Kinloss in SAR operation. KIN400 clg Kinloss for r/check, enrt to Aberdeen EGPD. Rescue 339 (Puma helo) at 0856 wkg Kinloss Rescue, assisting in SAR caused by major flooding over parts of Southern UK (AG)
- 5687:** ZKX, RNZAF Auckland, New Zealand & BANANA at 2055 in USB w/exercise msgs & arrival times for Palmerston North. (IJ)
- 5696:** At 1625, KING 63 heard clg any Coast Guard Station, CAMSLANT answered, KING 63 asked them to relay to CG Station Panama City FL that they were complete w/training & dropping pyros, now enrt back. At 1326 CG 6558 wkg CG Air Station Savannah, unusual to hear them on HF, 6558 is one of the local HH65's. (RM)
- 5714:** ARCHITECT, RAF Strike Command, G at 0302 in USB w/wx broadcast. (Ed.)
- 5745:** MRC15, RAF Cadets, G at 1950 in USB, stations on the net: MRC15, MRW34, MRC32, MRS53, MRW97, MRC44. (AB) SESEF Mayport, FL at 1455 to 1615 on wkg NBHR, USS Bonhomme Richard testing multiple transceiver banks on USB/AM/CW/RTTY, only one LSB tx. RTTY was 75/850R w/2 KHz center above window freq, used 3 lines of quick brown fox for test. At 1512 attempting to test multiple ANDVT units. (AWH) (*interesting, this is a new SESEF, Ships Electronic Systems Evaluation Facility, freq — Ed.*)
- 5748:** Swedish Rhapsody at 2300 in USB, Music Box, 10-count, 5FG in German. Id 46594. (AB)
- 5762:** SS/YL numbers station in progress in USB, off 0245. (CDS)
- 6371.4:** GYA, London? in 75/85 RY's, then VMGTCNJ BH at 0124. (FH) (*VMGTCNJ is a Royal Navy synchronization string, NATO in general, has after ea msg a string of 16 RY's followed by a synchronization string, both in plain text, and then precedes ea new msg, GYU, RN Gibraltar is on 6371, not sure if same — Ed.*)
- 6483:** PBB, Dutch Navy Den Helder, HOL at 1659 in RTTY 75bd CARB. (AB)
- 6487:** GXH or NST possible, 75/850 RTTY w/woodles of YYYYYY the encryption monitored at 2245. (FH)
- 6501:** CAMSLANT at 0445 in USB wkg cutter Bramble w/pp re crew member is a new father. (CDS)
- 6535:** Unid a/c at 0537 in USB wkg Dakar, ARP DEMOL 37, FL 290, est GUTAV 0555, BKO next. QSY Bamako CTL 119.1 for coordination. (TO)
- 6577:** At 2213 Guyana 715 in USB wkg New York reporting PRUITT, FL 370, selcal DE-AK. (TO)
- 6586:** At 2230 MUSS 01 wkg NY in USB w/oceanic clearance to Brindisi, USAF EC135K. (TO)
- 6628:** Canarias (NAT-E MWARA) at 0232 wkg Air France 3452 w/posn (0228 FL330), selcal ck EK-DJ. Santa Maria (NAT-E MWARA) heard at 0237 wkg Air Force 1 reporting on frequency, selcal AK-FP. Both in USB. (Ed.)
- 6640:** At 0012 United 952 wkg Ny req selcal ck AG-HR. (TO)
- 6647:** WATCHDOG 91 wkg MAFF Base in USB at 1143. A simplex channel for fishery protection vessels/aircraft & the UK Ministry of Agriculture, Food and Fisheries (MAFF). Location of this a/c was near the Isle of Man in the Irish Sea. (HOOD)
- 6665:** R5J, unid Cent/S. American Military station at 0545 in USB OM/SS clg Control Alpha. (IJ)
- 6691.3:** Martinique, French Forces, first noted 2135, audible 24 hours here, ran ARQ-E 96/170 mode, seems to be tactical link from RFLIA COMSUP FORT DE FRANCE to so-called CONTACTER MARIEGALANT with no indicator, possibly a deployed unit of some sort, supporting EXERCISE CARAIBE 98. Marie Galant is an island in the Guadeloupe group, separated from the two main ones, Basse-Terre and Grand-Terre, by 43 km. (AWH) RFLIA, Fort de France in ARQ-E 96/170 to RFLID (no C.I.) at 1600 & 2200. (FH) (*RFLID may be Marie Galant — Ed.*)
- 6701:** H7S in USB at 0150 sending numerous EAMs. (TS)
- 6730:** NAVY 50515, VP-3A BurNo 150515, a/c of CinCAFSE at 0101 in USB wkg Andrews w/radio cks on F267. (Ed.)
- 6758:** MKL, RAF Pitraevie, G at 1700 w/CW TAFS. (AB)
- 6761:** Tactical comms at 1523 in USB w/RENEGADE clg VIPER, also carrier on channel that went into wideband data bursts of some sort, probably not related. (AWH)
- 6768:** SS/YL numbers station starting 0430 to 0445 in LSB, ended w/"000". (CDS)
- 6786:** SS/YL numbers station in AM in progress reading groups, off at 0745. (CDS)
- 6802:** KGD34 & KGW3 (Fed Highway Admin?) in PACTOR & CW to 2319. (FH) (*KGD34 is the Nat'l Coordination Ctr of the Nat'l Communications System, Arlington, VA, no record of the KGW call — Ed.*)
- 6834:** CW stn sending 5FG's at 0137. Sent 2 msgs & signed down w/ BT BT 21 21 38 38 000. (TS)
- 6836.7:** FDZ (RFFVA) Paris, F in ARQ-E3 200/425 to 0028 on C.I. FDZA, w/RFTPA de RFFVA. (FH)
- 6866:** Cuban Bored Man Spy stn monitored at 1500, began w/OM/SS w/long counts to 30, alternating w/classical piano mx!, then into "sen~al R447" msg rather than usual atencion. Alternated mx entire bcst, swapped announcers 1518. Slight occ wobble on carrier freq. (AWH)

- 6936:** RMP/P. Russian Navy Kaliningrad. RUS at 2130 w/CW Marker "P" followed by "RMP" & 5FG. Ended w/2 P's. (AB)
- 6972:** YOG59. ROMPRESS Bucharest. ROU at 1712 in RTTY 50bd nx in FF. (AB)
- 6983:** Cuban YL/SS in AM at 0210 trying to send 5F msgs. Stopped after sending a few groups, never sent complete msgs. (TS)
- 6993:** SAM 203. DV-2 & 6 pax. ETA Andrews 0500z. at 0415 w/kg Andrews VIP for pp to BLADERUNNER (703-693-46xx) re: SAT-COM failure. Air Force 2 w/kg Andrews VIP for pp to SAM Command at 1917 re: arrival Moffett Field, followed by an inquiry to Moffett tower, on 119.55 VHF, about SIERRA-DELTA-MIKE 9002's (Russian Prime Minister Victor Chermomyrdin's a/c) arrival at Moffett. SDM landed about 10 min later. Both in USB. (JJ)
- 7532:** GK German Intel Numbers Station at 2135 in USB YL repeating GK followed by a musical tone, then into numbers. (IJ)
- 7631:** VLT. School of Distant Education, Charters Towers. QLD, Australia at 2140 in USB YL w/lessons & every so often would say "Well Done." (IJ)
- 7672:** Cape Radio. USAF Eastern Test Range. Cape Canaveral AFS. FL at 1555 in USB w/kg KING 01 passing that it's a go for 1200 (local) "launch" during a mode 8 shuttle bailout SAR exercise. (Ed.)
- 7776:** COY851 Russian Intelligence, Cuba at 0305 in CW rptg "COY851 COY851 COY851 QSY 7338 7338" hand-keyed. 0310 changed to "QSY 6798," 0315 finally got reply there, weak/flutery CW "NIL NIL." presumably the "mother" station in Moskva. Some FSK morse noted on 7776 a little earlier. (AWH)
- 7995:** McMurdo. South Pole. Scott, Casey & Davis Bases Antarctica 0930 UTC USB having an inter-base darts tournament. Passing scores to each other & cracking a few jokes. Ended up the Aussies at Davis Base won. (IJ)
- 8008:** Unid stn in USB heard at 0234 sending EAM. (TS)
- 8015.5:** DIVISION MAIN w/kg 1st LAR and 1st Tank Battalion in clear voice and ANDVT comm re: ops schedule at 2358 in USB. (JJ)
- 8020:** G6K in USB at 0248 w/EAM. (TS)
- 8031.5:** NNN0CTB. MARS stn USCGC Venturous (WMEC-625) at 0049 in USB clg "any MARS stn stateside." (Ed.)
- 8038.5:** FARLY, SMILEY. & others passing date-time stamped, non-classified msgs to SLEDGEHAMMER at 2344 in USB. Several players mentioned a convoy. (JJ)
- 8073.8:** Callsign SOQK at 1500 in CW w/several pieces of tlc for various callsigns. 4 fg's in text. (WP2)
- 8122:** DFZG, MFA Belgrade at 2155 in RTTY 75/425 w/RYRY/DE between encrypted msgs. (Ed.)
- 8145:** Shanwick meteo. Ireland, presumed, at 0245 in RTTY 50/850 w/ "DE EIAYHYX" & RYRY. (AWH)
- 8178.5:** U.S. Mil tactical heard at 1827 in USB, FIREBALL 2 clg FIREBALL 1, no response. (AWH)
- 8181.7:** RFFXCC Favieres. F, 2220 to 0300 on in ARQ-E 96/400, turned out to be ckt XXI to Bangui down from normal 8510.7, CdV noted 0150, r/l on 7841.7 as usual. (AWH)
- 8219:** LENA3. M/S Song of America at 0413 in USB. Royal Caribbean cruise ship. clg/wkg KMI (on 8743.0) for R/T tlc. (Ed.)
- 8240:** NABD. USCGC Grand Isle (WPB-1328) at 0105 in USB w/kg NMN w/posn report, 21-38.2N/074-04.7W course 145 at 15 kts. (Ed.)
- 8300:** "New Star" YL/CC 4F numbers stn in AM at 1207. (TS)
- 8316:** RNZN Auckland, New Zealand. w/HMNZS Tarapunga (Survey vsl) at 0650 in USB w/routine Msgs. HMNZS Tarapunga was involved in some survey work of the South Island coast & having problems w/some gauges. HMNZS Monowai (Hydrological/Oceanographic Survey Ship) came up and offered them some spare gauges. (IJ)
- 8320:** "Cherry Ripe" YL/EE numbers stn in USB at 1207 w/ 5F msg. (TS)
- 8344.5:** ULDF, vsl Ishim, a sea/river cargo vsl sending msg to London w/ETA for Goeteborg carrying cargo of steel bars, in CW at 0828. (HOOD)
- 8381:** 3FKZ3, M/S Carnival Destiny at 0250 in ARQ. 111,112 DWT/3,400 passenger Carnival cruiseship w/tlx to M/S Splendor of the Seas, login 70442 DEST, this is one of the largest cruiseships in the world. (Ed.)
- 8391.5:** UBUT. Tsemdolina, a 5885 DWT sea/river cargo vsl (ex "Libern") sending psn rpt to UFN in ARQ at 0746. (HOOD)
- 8557:** SPB. Szczecin Radio, POL w/ARQ tlc, then monitored at 2240 w/ARQ ready signal, CW ID. (FH)
- 8642:** GYA. London heard at 2220 in 75/850 RTTY availability of channels data, use to sign MGJ. (FH)
- 8719:** Capetown Radio, RSA, w/sea wx forecasts & traffic list USB at 1750. (HOOD)
- 8803:** Helsinki Radio monitored at 1758 in USB w/kg M/V Capricorn (C6LN5) for pp traffic. (HOOD)
- 8843:** NOAA 42 at 0356 in USB w/kg San Francisco (ARINC). USA w/ARP 32N/138W, FL230-F270, selcal LM-BF. (TO)
- 8846:** At 2212 FORCE 39 heard in USB w/kg NY reporting posn FLANN est 2250 mach .85. (TO)
- 8861:** Air France 6851 at 0124 w/kg Dakar for ARP NULET, FL330, PE 41 selcal FM-BL. ZS-ZBB at 0148 w/kg Johannesburg Oceanic, RSA posn 5N/10E 0146, FL350, est Meridian 0319. Cargolux 760 at 0222 w/kg Recife for selcal check CS-KL. Speedbird 2245 at 0228 w/kg Sal posn EDUMO, FL 310, selcal BP-CJ, QSY 128.3 next rpt. Iberia 6830 at 0237 w/kg Canarias, w/ARP EDUMO, FL 390, selcal HS-MR. All in USB. (TO)
- 8894:** Air France 845 at 0006 in USB w/kg Niamey for selcal check AK-GJ. (TO)
- 8933:** Springbok 279 at 0030 in w/kg Springbok Radio LDOC (S. African Airways. Johannesburg, RSA) @MOMTA est 0100, FL 350. (TO)
- 8965:** DHM91, GAF Munster, Germany at 0810 in USB clg GAF 970. (IJ)
- 8968:** KINGPIN w/kg SPEED BUGGY w/lots of rdo checks at 2250 in USB. (RK)
- 8971:** At 1933 DD8 in USB req 8TJ relay report to SIERRA 4 JULIET GULF. (MF)
- 8974:** RAAF Sydney, NSW, Australia at 0630 in USB passing WX to HUDSON 618 (HS78). At 0715 w/BRONCO 060 (DHC4) wanting to pass a msg to Amberly base Ops. (IJ)
- 9017:** Columbia Aero voice net monitored at 2245 in USB UNID clg BUCARAMANGA, also heard NEIVA and BOGOTA on channel, fair. (AWH)
- 9027:** CASEY 01, DV-4 plus 17 pax, departed Colorado Springs 1933z ETA Oifutt 2048z. w/kg Andrews VIP for pp to RAYMOND 21 at 1935 in USB. (JJ)
- 9034:** Kinloss Rescue at 1243 in USB w/kg Rescue X-Ray Foxtrot (French a/c) in SAR operation to find missing crewmen from cap-sized yacht. (AG)
- 9130:** GYA. London, in 75/350 RTTY at 2320 w/availability of channels data, use tp sign MGJ. (FH)
- 9166.5:** HBD20. MFA Berne, Switzerland at 0650 in ARQ w/5Lgs. (IJ)
- 9215:** ARIA 1 w/kg ABNORMAL 20 re: Iridium launch data in LSB also heard on 7929.0 and 13899.9 at 0531. (JJ)
- 9251:** Lincolnshire Poacher, CYP at 1900 in USB. Id 93551 & 5FG. (AB)
- 9335:** MKK. London (to 9341) w/many VFT channels 50/160 each, a very wide VFT system, 1 RF carrier. (FH)
- 9725:** New Star stn heard at 2203, CH mx intro into CH W 4FG tlc, poor through BCB splatter. (AWH)
- 10057:** Northwest 545 at 0320 in USB w/kg San Francisco (ARINC). USA w/ARP 28N/150W 0319, est ZIGIE 0348. (TO)
- 10103.7:** RFFTD. Villacoublay, F in ARQ-E3 192/356 at 2140 on C.I. IGU to RFLIG Comair. Cayenne (ZAH UGI). (FH)
- 10301.5:** RAPID TRANSIT w/kg MUX TEAM 1 and NIGHTOWL at 2334 in USB re: MUX 1 headed home. (JJ)
- 10564:** SVR. Cuba "Fast CW" spook at 2247 in 30wpm CW w/5FGs 2x. T for 0. (AWH)
- 10897.2:** Presumed Japanese Consulate, Penang, Malaysia at 1010 in ARQ w/RYRY's/BROWN FOX JUMPS OVER THE LAZY DOG. Selcalling OQQP then RYRY ET (KV) RY ET (KV) RY ET (KV) 1234567890 NNN YOJI PENANG\$3LF. (IJ)
- 11050:** DINER w/kg 1-TANGO in ANDVT & clear comms at 0015 in USB. (JJ)
- 11061.7:** Dept of Sea Transport, Jakarta, Indonesia at 0950 in ARQ w/Msgs. (IJ)
- 11080:** VKP28. Damascus in 50/405 RTTY SANA nx in FF. (FH)
- 11175:** BEAK 90, Fairchild KC-135 at 1736 w/kg MacDill radio check. YUKLA 23, Elmendorf 3rd Wing, 962 AACs E-3 a/c at 1803 w/kg MacDill w/pp to Tinker Metro, then pp to Raymond 24. BATON 63, PA-ANG 193 SOG EC-130, at 1808 w/kg Andrews w/pp. re ETA NAS Brunswick 1902z. Will call back re US Customs info. (AS) TEAL 22 w/pp to Miami Monitor thru MacDill, w/wx data at



Remember, it's spelled Qantas, and you can hear their aircraft on HF. Thanks to Steve Bottom of Steve's Downunder Hideaway Web site for his "Oop's" Qantas 767 picture.

1300 again at 1330. (CS) (Congrats, 1st Hurricane Hunter log of the year, TEAL calls are WC-130's from 53 Wx Recon Sqd, Kessler AFB, Ms, Miami Monitor is the Nat'l Hurricane Center, Coral Gables, Fl — Ed.) SLAM 23 clg GIANT TALK for a signal ck at 0035. (RK) All in USB.

**11217:** DHM91, GAF Munster, Germany at 0655 in USB w/WX forecasts for EDDM, EDDK & LPBJ. (IJ)

**11220:** SAM 26000. SD-SAM C-137C tail 62-6000, heard at 0130 in USB w/kg Andy Presidential w/pp Elmendorf base op's to pass ETA. (Ed.)

**11228:** DHN66, NATO Geilenkirchen AFB, Germany at 0620 in USB clg MAGIC 55. (IJ) **11235:** RAAF Darwin, NT, Australia at 0735 in USB clg SHEPHERD 787 (P3). (IJ)

**11240:** LDOC Damascus, SYR at 1731 in USB w/Syrianair 352. (AB)

**11247:** Architect. G at 1804 w/ALF 6030, selcal ck on AJ-BM. Dept LPBJ to EGD. (AB) VIPER, RAF MT Pleasant, Falkland Islands at 0545 w/ASCOT 3220, req wx for SBRF (Recife Brazil). (IJ) Both in USB.

**11282:** Canadian 133 at 0419 in USB w/kg San Francisco (ARINC), USA w/Selcal check HJ-BD. (TO)

**11285:** Colombo aeradio, CLN at 1608 in USB w/unid a/c, selcal ck on LM-RS (whoiz-it?). TSE 5272 (Transmile) at 1610 in USB w/unid for posn report. (AB)

**11288:** LDOC Riyadh, ARS at 1622 in USB w/Saudia 003. (AB)

**11300:** Sanaa Air Yemen at 0440 in USB passing a/c flt plans to Addis Ababa. (IJ)

**11345:** SDJ, Stockholm Radio, S at 1527 in USB w/Northwest 58 & Berlin 7315. (AB)

**11351:** LDOC Paris, F at 1718 in USB w/various Air France flts. (AB)

**11387:** Sydney Volmet, AUS heard at 1530 in USB. (AB)

**11455:** Zaire, "The Drummer" at 1635 & throughout day running tambour test loop, weak. Supposedly ute tx at Kisangani. (AWH)

**11537:** CW stn sending 5FG's at 1338, signed down w/BT BT 169 169 48 48 00000. (TS)

**12140:** HWN, French Navy, Paris monitored in 150/850 RTTY RY's to FAAA. (FH) (FAAA is a collective callsign for "all French warships" — Ed.)

**12566:** XU7BU, M/V Dibson 1 w/50Bd

RTTY at 1040, msg from Km Strelnikov to "Radio SPB Kornilov" (is one of several cargo vls owned by the Altex Co of St Petersburg, but which are Cambodian flagged). (HOOD)

**12583.5:** CBV, Valparaiso Radio Chile at 2200 w/ARQ ready signal, signing CW. (FH)

**12588:** UFZ, Vladivostok Radio, RUS at 2204 in 50/170 RTTY RY's, then msg to ship, to tone at 0025 then RY's again. (FH)

**12903:** VTH9, Indian Navy, Mumbai, India at 1400 in 50/850 RTTY w/"VTH5/7/9 RBSL BNR" RY's & SG's. (FH)

**12947:** UUI, Odessa Radio, w/very high speed CW at 1050 sending crew msg to T/Kh Lev Tolstoy (ELSH8). (HOOD)

**13155:** At 0230 in USB unid stn (military?) w/phonetic text string: E2MW4....at 0245 This is scope-door, scope door. (Maybe Sculptor?) E2WHEZ stand by E2WHEZ stand by...(WW) (Probably an E-6B w/an EAM msg on this USN freq, watch for my up-coming Pop'Comm article on military HF monitoring for more info — Ed.)

**13205:** Unid BAW flight in USB w/kg Gander LDOC w/pp, using HF LDOC because satcom on board a/c not w/kg. (TS)

**13247:** SAM 26000, DV-2 plus 37, inbound Barbados for refuel then on to Andrews AFB, ETA 0730z w/kg Andrews VIP at 0120 in USB for clarification of orders regarding incentive flight. (JJ)

**13311.5:** MFA Pyongyang N.Korea at 0910 in RTTY 50/500 w/5Lg's. (IJ)

**13354:** Fedex 1800 at 0304 in USB w/kg San Francisco (ARINC), USA w/Selcal check BM-DS. (TO)

**13386.7:** Egyptian embassy either Cairo or Rome w/ARQ msg in new AA monitored at 1445. (FH)

**13865:** Cuban CW cut # stn w/ 5F msg heard at 1215. (TS)

**14935:** Spook "Boris Badanov" at 1413 OM/EE w/5FGs 2x, poor through co-channel BCB spur probably from HCJB. (AWH)

**15821.8:** SAM, Stockholm in SWD-ARQ 100/400 monitored at 1457 to "GENERAL KONSULATAT JERUSALEM" then 5LG msg. (FH)

**16185:** CLP1, MINREX Cuba, presumed 1820-1832 in RTTY 50/500, crypto t/c to Tanzania, 5FGs, weak. (AWH)

**16260:** P6Z MFA Paris France at 1110 in

FEC-A 192/400 w/RVRY QTC TRES LONG JE TE LA 150 DIM De 6 SIX INT ZBZ INT QTC. (IJ)

**16351.7:** RFFA Paris, F in ARQ-E3 192/400 on C.I. IGU to RFLIG Cayenne at 1510. (FH)

**16900:** LSD836, Buenos Aires w/Maritex S ARQ at 1922. (FH)

**18268:** HBD20, MFA Berne, Switzerland at 0820 in ARQ w/5Lg's. (IJ)

**18401:** Russian FAPSI, Lourdes, Cuba monitored at 2102 in RTTY 75/500 w/5LG's on link 00128. (Ed.)

**18597.5:** EAE220, Madrid in ARQ w/encryption at 1830. (FH)

**18801.7:** MFA Jakarta Indonesia at 0145 in RTTY 50/250 w/Msgs & Passport info. (IJ)

**18986.7:** RFHJ, Papeete in ARQ-E3 100/400 on C.I. HJI to RFHI Noumea w/CdV monitored at 1630. (FH)

**19011.7:** PCW1, MFA Den Haag, HOL at 1109 w/CW Marker. (AB)

**19498.7:** Papeete or Noumea in ARQ-E3 100/400 at 2000, have logged both here before, C.I. HJI for Papeete, HIJ for Noumea. (FH)

**19726:** A9M, Hamala, Bahrain at 1600 w/ARQ ready signal, CW ID. (FH)

**20044.1:** CLP23, Embacuba Lagos in 50/385 RTTY at 1630 clg CLP1. (FH)

**22015:** GTK76, Portishead Radio, G at 1028 in USB w/pp. (AB)

**22376:** NMO, USCG Honolulu in FEC w/strong signal, off 2245. (FH)

**22785:** RETJCX in 100/850 RTTY on C.I. JTA to RETJCT Fm CECOMENA, SS nx sent, then to USB fone, RETJCT is callsign of Hesperides, poss a ship. Next day heard at 1613 RETH in 100/850 to sev ships, then USB fone. (FH)

**23337:** Rockwell w/kg Lajes for comms test at 2016 in USB re: "finally got the problem fixed." (JJ)

**23461:** Cherry Ripe No. Station at 2320 in USB, YL w/numbers. (IJ)

**25900:** Radio Neige, France at 1500 in NBFM weak w/music service for French ski lifts, also 26070, both faded quickly. (AWH) (I think that counts as a ute stn...nice snag — Ed.)

This month's contributors: (AB) Ary Boender, The Netherlands; (AG) Alan Gale, UK; (AS) Allan Stern, FL; (AWH) Albert W. Hussein, FL; (BF) Bill Farley, NM; (BS) Bill Smith, CA; (CDS) Claude D. "Danny" Stewart, LA; (CS) Chuck Sayers, PA; (FH) Fred Hetherington, FL; (HOOD) Robin Hood, UK; (IJ) Ian Julian, New Zealand; (JJ) Jeff Jones, CA; (MF) Mike Fink, FL; (RK) Richard Klingman, NY; (RM) Roland R. "Mac" McCormick III, GA; (TO) Tony Orr, VA; (TS) Tom Severt, KS; (TW) Thomas W. Johnson, WI; (WP) Walter Petersen, FL; (WP2) William R. Phillipson, CA; (WW) Web Williams, SC; and (Ed.) ye editor in Ohio. Thanks to all contributors for another great turn out. ■

## Tuning In (from page 4)

allowed 250 watts! And even low-power television stations are allowed power levels providing coverage of 15 to 20 miles. Microstations should not receive anything less in order to be effective.

Remember too, that if approved, this would be an FCC-approved service; Ronnie Radio wouldn't be permitted to come up on any frequency he wishes; an engineering analysis would be done, complete with a report showing no interference to the co-channel and first adjacent channels above and below the channel being studied.

## This Is The FCC's Chance To Do The Right Thing!

The creation of a low-power FM broadcast service would give ordinary folks the ability to own and operate their own small radio station as a lucrative business, creating "small business" opportunities,

which is the cornerstone of our great Nation. I believe that if we could look forward five or 10 years from now, we'd see this as the Commission's "Kodak Moment" when the opportunity presented itself to greatly reduce the FM pirate problem that plagues many areas of the country, and is a continuing headache for the understaffed and under-budgeted FCC.

The FCC can, and should, get on with business by approving his proposal. To do less would be a slap in the face to potential small station owners nationwide. Uncle is at the turning point — they can do the right thing, or they can fail to see the importance of their impending decision, and approve other LPFM proposals, or worse yet, reject RM-9242.

The other microstation proposals before the FCC fall short of providing a worthwhile service; therefore, it's our position that Skinner's proposal, *RM-9242 has something for everyone — and at a respectable power level to make owning such a station worthwhile.*

Essential to the success of RM-9242 is

to let your Congressional representatives know that you want this petition approved in its present form, and that competition from a microstation with under 15 miles coverage simply won't significantly impact a full-power station's revenue or audience. After all, haven't larger broadcasters become all-too-powerful in most areas of the country, turning our Nation's airwaves into a repetitious landscape of the same voices and programs? You and I know that what's missing from radio is the good old-fashioned local news, local happenings, interviews, and advertising dollars. How many *Pop'Comm* readers agree? You know darned well that if the broadcasting industry feels threatened by this, they'll use everything at their disposal to squash Skinner's petition. Let's give this one the attention it deserves! And, while you're at it, let us know your thoughts on RM-9242.

Here's a intriguing thought: I wonder if Reps. Billy Tauzin or Markey would champion *this* fight? After all, RM-9242 is *also* good for America. ■

## Clandestine Communique (from page 63)

in Iraq is being noted on a lengthened schedule (from 0330 to 0530) on **6195, 7115, 7295 and 9610** with Arabic language programs.

Again active is the **Cambodian clandestine, the Radio of the Provisional Government of the National Union and Salvation of Cambodia** (remember when clandestine station names used to be short?). The station is (more or less) back on its old spot of **5407**. The Khmer language broadcasts are scheduled from 1130 to 1330 and 2330 to 0130. For North American listeners, the morning segment is the best opportunity.

The **Democratic Voice of Burma** is now operating on **15330**, signing on at 1245 and running until 1345. The program is transmitted from Germany.

The station that's been broadcasting against the Taliban-run government in Afghanistan, and calls itself "**Radio Afghanistan**," now uses **7085** from 0730 to 0830 and 1230 to 1330. We suspect this one may be using very low power.

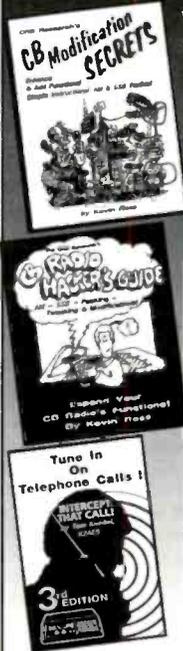
The **Voice of Tibet** program is now scheduled from 1200 to 1258 on **11570**.

The ever-mysterious **New Star Broadcasting Station** was recently noted on a new frequency of **13750**, in addition to its

normal channels of **8300, 9725, 11430, and 15388**. These strange broadcasts (mostly music and number groups and messages in Chinese) have been around for many years. They're not easy to hear in North America, but it's certainly not an impossibility. One reason for the difficulty is the irregularity of the schedule. The broadcasts may appear at almost any time from 2200, and have been noted as late as 1630. The broadcasts usually begin on the hour, but sometimes start on the half hour, and are of lengths varying from five minutes to half an hour, occasionally even longer. Logging this one will very likely require a lot of persistence. The most often reported frequency is **8300** and, in North America, the hours from 0900 on are most likely to produce results. There seem to be equally logical arguments for the station's location being on the mainland, as well as Taiwan. It's doubtful anyone but the operators, the governments involved, and certain other agencies know for sure. Needless to say, no one has ever QSLed this station, nor located a mailing address.

That covers things for this time. If you have loggings, comments, or other information relating to the clandestine broadcasting scene, please know that they would be very welcome.

Until next month, good hunting! ■



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# The Loose Connection

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RADIO COMMUNICATIONS HUMOR

## Life On The Farm Is A Mooving Experience

In case my life wasn't enough of a source of ridiculous things (having Norm for a friend, climbing on things which I *know* are too steep, and trying to build silk radios out of a sow's ears), I might as well admit that I've added one more abnormal thing. I now reside among some 80 cows.

My wife always wanted to live in a big old farmhouse. They are hard to find, expensive, and require endless work to modernize and maintain. We now rent one, smack in the middle of a dairy farm whose owners live in a lovely, modern house a mile or so down the road. Cows live here. They're steers, really, but they look like cows to a radio person. Spayed bulls, I think they are. Gelding heifers. Anyway, the place is nice, the family is happy, and the cows are pretty good neighbors. They leave us alone; we leave them alone, and I have lots of giant trees where I can string antennas. I had just strung over 400 feet of wire from my first-floor ham shack to the top of the silo (easier to climb than a tree) and was wallowing in signals. Even this unmeasured spool of fence-wire had more capture area than anything I've ever used before, and the performance was particularly good as I got down toward the broadcast band.

As all those seeking my QSL can tell you, I'd rather listen than transmit. Naturally, the first night of great reception keeps a person up later than normal, and it was about 4 a.m. when I noticed an increase in the mooing from the normal rate of about one every half-hour or so, to about one a minute — and some of them sounded a lot like cows saying "whoopie," and "yahoo," or whatever it is that cows say when they get loose.

I had been listening to a station west of the Mississippi — probably Kansas or Missouri, and I was waiting for an ID when this mooing frenzy made me stop and investigate. A cow doesn't have to exert much effort to push its nose right through a window screen, tearing the

fiberglass screen from its frame. It's not that they're malicious, but I was glad we didn't own a china shop. I called our landlord who said he'd be right over, but asked if we could sorta keep an eye on the strays, and try to keep them from heading down the long driveway to the highway. "Sure," I said. I woke my wife and son.

I expected two groggy cowhands, but instead got two enthusiastic herdspersons joining me in the backyard, where my wife's 24-hour-old strawberry garden had been. The fertilizer would probably have done it some good if the offending bovines hadn't flattened every one of the 24 plants. Our landlord had told us they always headed for a garden first, but we thought we'd be an exception.

"Like, moo and stuff," my son said, waving his arms and turning a few cows away from the driveway and back toward the barn. My wife was whistling and calling "Here, cows, c'mon cows — that's a good cow," while I resorted to the classic "Hyaaaah!" and "Gettemup!" and, to our collective surprise, we were able to move quite a few cows right to where we wanted them.

We quickly learned that cows will walk away from you if you yell and wave your arms. The trick is getting onto the other side of a cow that's running away from you, which is why horses were invented. We had no horses.

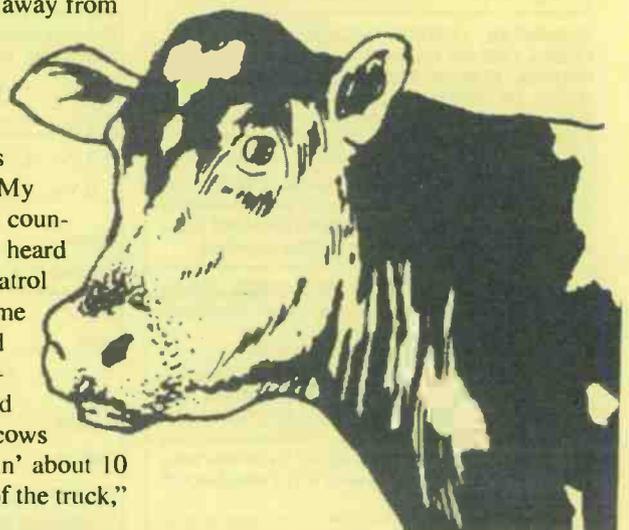
I went into the house for some flashlights, (a cow's eyes shine like a deer's). My scanner was locked onto the county sheriff's frequency, and I heard the dispatcher sending two patrol cars to slow traffic around some 20 cows on the road. I used our landlord's two-way business radio in the barn, and called to warn him about the cows on the road. "Yup. I'm drivin' about 10 of them along here in front of the truck,"

he told me. I could hear his brother yelling cow-words from the cab of the truck. "I need one of you to go to the end of the driveway and make them turn up toward the house." My son took the challenge, and headed off to do the quarter-mile on foot.

There was a whole lot of laughing, cow-counting, and bad jokes till the sun peeked over the horizon. We were late for church, and I later found that one of our wandering neighbors must have pushed on my new longwire, which was no longer attached to the top of the silo.

The lawn is now much greener in a few spots. We have been granted honorary degrees in cow-herding from our landlord, and my dear wife has replanted her strawberries. That silo's a long, hard climb, but I'll probably put my antenna back up soon. I'd thought about electrifying it with a fence-charger, but I doubt it'd be any good for my receiver.

You don't live on a farm and ignore the goings-on, even if you are just an observer. We keep an eye on the gates, talk to the cows, and maintain regular radio contact with our landlord whenever something isn't quite right. I'm thinking about a mount to put a tri-band beam on top of that silo, and a little cow-watching is a small price to pay. Moooo.





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