

POPULAR COMMUNICATIONS

MARCH 1999

Making Your Shortwave Antenna Better page 35

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FEATURES

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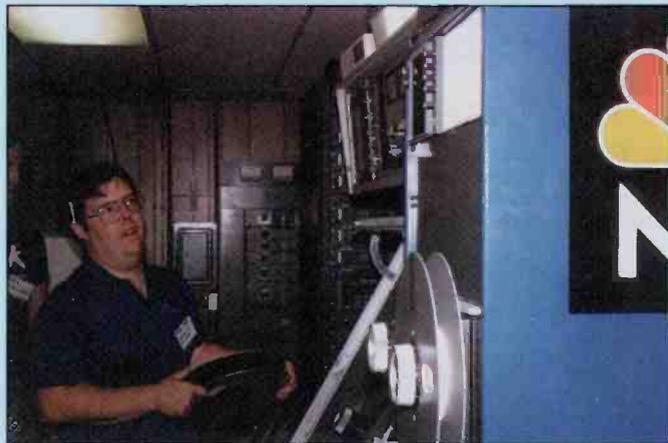
Planning the big trip? Bring your scanner and have a ball!
By Ed Decker, Jr.

America's Most Powerful Wireless Station 14

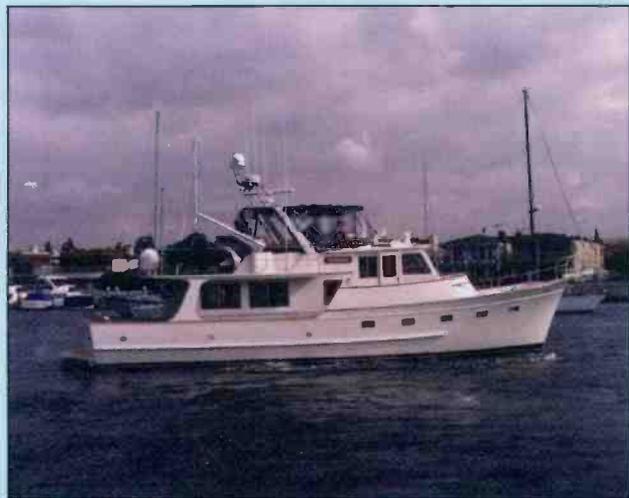
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By Alice Brannigan

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ON THE COVER: A look at the telephone cell site on Castro Peak, Malibu in Southern California. While the ECPA makes it illegal to listen in on cellular calls in the U.S., our sources in New Zealand tell us that in that country you can listen, but can't use or rebroadcast any transmission without permission. This month Ed Decker, Jr. has rounded up some great frequencies and information on the "City of Sails" on page 10. (Photo by Larry Mulvehill)

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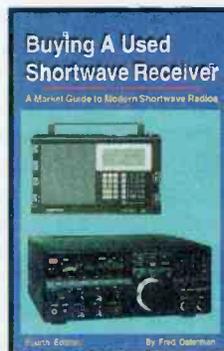
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Tuning In

AN EDITORIAL

BY HAROLD ORT, N2RLL, SSB-596

Senator Feingold Goes To Kingston

No, we're not talking about Mr. Rogers moving into your neighborhood. This is more like the Gestapo stopping by for a friendly visit, then deciding to stay for dinner — and the weekend — all at *your* expense.

You'll recall Wisconsin's Senator Russell Feingold's anti-CB legislation, S. 608, which at this writing has been combined with S. 1618, Senator John McCain's anti-slammng legislation. I don't have a problem with anti-slammng legislation, but leave it to politicians to continue doing what they've done for years; tack a bill that's totally unrelated, and certainly one with less impact, onto a bill that's sure to pass muster. Something smells mighty fishy again, doesn't it?

In January's "CB Scene" column, writer Ed Barnat reported on how some local communities are taking it upon themselves to be the radio police — specifically Kingston, New York. Kingston is a quiet community of about 23,000 folks, about 90 miles north of New York City. There are more fishy smells coming from Kingston than the Big Apple's Fulton Fish Market!

You see, Kingston is just one more in a growing list of American communities that's flexing its bureaucratic muscle — just what folks need — more "do's and don'ts" at a time when most Americans are fed up with politicians. But, like those in our Nation's capitol, Kingston's politicians would rather enact a bad law than think things through and do the right thing in the first place.

It's no secret that there are far too many laws and city codes in our lives. And people that know me know that I'm pretty much a law-abiding person — probably more so than most people. I'll set the cruise control at 65 m.p.h. in the 65 zone, but push it to no more than 70 if the "No Fear" drivers are zipping by me like I'm standing still. I look at it this way: if the cop pulls me over he's obviously having a really bad, slow day.

Even at home, we don't have 25-foot high fences with barbed wire around our

property or a yard full of camels or llamas spitting at the neighbor's kids. There are just a couple of poles from Radio-Shack supporting a discone and my ham and CB antennas.

But our neighborhood, like many others across the country has a spy. Perhaps Kingston has a few too. We're lucky that our "spy" lives two doors down. Pity the folks next to her. If it isn't "their" leaves blowing into her driveway, it's the kids playing basketball in the street.

I'm sure there's a city ordinance against "structures" like my antenna poles taller than 22.5 feet within a certain distance of buildings, trees, or power lines. In some cases, these city laws are good laws designed to keep ordinary folks from killing themselves or their neighbors because of falling antennas, wires, or other things only a bureaucrat or attorney could envision. I'm sure that if our "spy" ever took the time to poke around my yard, I'd get a notice from the city scolding me for my antennas, the Sears badminton net, retractable clothesline, hanging flower baskets, and wind chimes (they drive *everybody* crazy, that's why I like them!).

Be that as it may, the point is that Kingston is probably no different than my town or yours, except for a new ordinance (No. 189) that regulates CB antennas. I got a first-hand look at the ordinance and it states that "... It shall be unlawful for any person to install, construct, or increase the height of any antenna (specifically addressed in the legislation as any device or equipment that receives or sends electromagnetic waves for the purpose of citizens band radio communications) or antenna support structure . . . without first obtaining a building permit, except that no permit shall be required if the height of the antenna or antenna support structure, excluding the height of any building or object to which it is attached, is less than 12-feet in height . . ." The ordinance specifically addresses "providing for the maximum protection of the health, safety, and aesthetic sensibilities of the residents."

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The mumbo-jumbo gets better. The ordinance states, "No more than one (1) antenna or antenna support structure per residence shall be located on any lot and shall be located in the rear yard at ground level." Problem here. Did anyone think — key word "think" — for a moment, that there are those folks with asphalt backyards — parking lots for residents of the apartment complex? And what's this hogwash about "at ground level." I'm confused. We should probably call Andy Rooney, 'cause I'll bet he'd be wondering how you can have any CB antenna at ground level. I suppose you could get Mayor Gallo to hold the darned thing while he sits in a lawn chair. That's pretty ground level.

I was befuddled, so I called the folks in Kingston and spoke with Michael Schupp, Chairman of The Laws and Rules Committee, and asked him if what precipitated the ordinance was a reported case of interference. Sure enough it was. He said, "When it was brought to our attention that there were problems, we were informed the problem was due to CB interference . . . how that was tracked/traced, I'm not certain." He continued, "My frustration in Laws and Rules has been with the enforcement when adopting these ordinances . . . I don't want an arbitrary ordinance on the books . . . and have an agency going out to try to enforce it and miss the boat on something . . ." He hit that one on the head!

Legal advisors from the American Radio Relay League (ARRL), not wavering from their unfortunate attitude toward CBers, got hams exempt from the law. No surprise there. True, there wasn't any representation at any of Kingston's meetings from any organized CB group. But that's no excuse for the League to undermine the radio hobby in general. Why is it that you and I know that the general population doesn't know the ARRL from an organized group of CBers at a July Fourth jamboree, yet the ARRL hasn't grasped that concept yet? To the public that we supposedly serve, one radio looks and behaves like any other radio. One antenna is just like another antenna — big, ugly, and certainly not as pretty as a sprawling rose garden. But it's puzzling to me why, in the face of continuing threats to all hobby radio bands, the ARRL didn't say, "Hey, wait a minute, Kingston, these are our brothers and sisters you're talking about regulating. Maybe we should pull together, behave like adults, and all start rowing the boat in the same direction." Of course, that will never happen, and that,

my friends is part of the reason the new Kingston ordinance — and countless others that are sure to follow — gain support in the first place. One day in the not too distant future, all these local ordinances and city codes will bite at the amateur radio community's heels. Then, and only then will the light go on at the ARRL.

What's That Noise?

Perhaps the most disturbing part of Kingston's new ordinance is the decision of who's going to be on antenna patrol. Mayor Gallo, can you say "City workers wouldn't know a CB antenna from a garden hose if it hit them in the head?"

Listen carefully. It's the sound of footsteps of the Kingston Buildings Department Antenna Police marching down the street. They know who's guilty and who's not. But do they? I'll bet a CBER could hang a long fishing pole out a window in Kingston and get a ticket for an unauthorized CB antenna. And what will they do about those amateur operators who use their 10-meter antenna on Channel 19? When are they guilty of violating Code 189?

It seems to me that in an effort to end the problems of radio interference — notice that I didn't say *CB* interference — the city has taken a step backward. A \$15 building permit to put up a CB antenna? And a \$100 fine for violation? You've got to be kidding, Mayor Gallo. Your city doesn't require the folks using TV antennas to get it. And, according to Schupp, although there is an ordinance/code that addresses improperly installed TV antennas he said, "Here again, regarding enforcement, unless there's a complaint or it jumps out at you, I don't know that there is any real enforcement."

The fault here doesn't just lie with Kingston's bureaucracy. Unfortunately for all of us, the FCC has all but given up tracking interference complaints. I understand there are thousands of cases of reported interference every year, but for the more serious ones, doesn't it seem like the federal government (at this writing they still regulated radio) should step in and do what they get paid to do? The FCC is comprised of lots of well-intentioned folks, but, nonetheless, bureaucrats who are real good at tracking down pirate broadcasters and issuing fines when licensed broadcasters complain, but fall short when it comes to investigating other complaints that are less "serious." No wonder folks feel frustrated and call City Hall. No wonder the over-powered, loud-

mouth radio operators thumb their noses at the feds. And of course, when federal rules and regulations don't work, state and local laws and ordinances are drafted to fill the gap.

Holding equipment manufacturer's feet to the fire by requiring them to make home entertainment equipment and phones more tolerant of locally-generated radio signals, and computer and monitor noise is a step in the right direction. If the industry would *voluntarily* do a better job shielding those FM radios, TVs, CD players, and phones — essentially build better equipment — then those radio hobbyists running *legal* — hams and CBers alike — wouldn't be under as much unfair scrutiny.

By the FCC's own admission, from the bulletin on radio interference, they say, "Presently, only a few telephones sold in the United States have built-in interference protection. Thus, hearing radio through your telephone is a sign that your phone lacks adequate interference protection. This is a technical problem, not a law enforcement problem. It is not a sign that the radio communication is not authorized, or that the radio transmitter is illegal." The FCC bulletin even went on to say problems of radio interference begin at the factory.

Using legal-to-the-letter CB transceivers, in most cases my own radios interfere with most of our home entertainment equipment and phones. The radio antennas are a distance from the TVs and antennas, and my CB system is grounded. There are, of course, filters available for the family's electronic equipment and phones. I use MFJ's Low-Pass Filter (MFJ-704) on my transceiver and it certainly helps. There's negligible signal loss. Other operators should do the same, and if you're causing interference to a neighbor's TV or phone, help them identify the problem. And be sure to point them to the FCC's Website at <<http://www.fcc.gov>> or phone number (888-225-5322) for information on curing radio interference. If your neighbor isn't connected to the Internet and you are, go to the site and print a copy of the appropriate documents. It's what Kingston should have done last year.

No discussion of interference to our neighbor's home entertainment and phone systems would be complete without talking about the jerks running gallons of power on the radio bands, cursing and raising all manner of hell. We say to

(Continued on page 77)

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Pop'Comm P.O.

LETTERS TO THE EDITOR

Each month, we select representative reader letters for our "Pop'Comm P.O." column. We reserve the right to condense lengthy letters for space reasons and to edit to conform to style. All letters submitted must be signed and show a return mailing address or valid E-mail address. Upon request, we will withhold a sender's name if the letter is used in "Pop'Comm P.O." Address letters to: Harold Ort, N2RLL, SSB-596, Editor, *Popular Communications*, 25 Newbridge Road, Hicksville, NY 11801-2909, or send E-mail via the Internet to <popularcom@aol.com>.

Let's Beef Up NOAA!

Dear Editor:

I'm a reader of your braille edition and have been enjoying it since the spring of 1992. I wholeheartedly agree with your August '98 editorial concerning NOAA Weather Radio. For many years I've been trying to educate everyone about this valuable service, but often it seems that some people pay about as much attention as my cat Tibby.

I think that NOAA was aptly named because, if you remember, not many people listened to the original Noah before the Big Flood many years ago!

In my rural area of south-central North Carolina, we have an additional problem which no one except myself seems to be very concerned. Our little town is "served" by four international and three regional airports, but they're all located between 60 and 120 miles away from us in all directions. I've had two weather radios and a scanner, all from RadioShack, and have lived here for 11 years. I've found that the reception of all NOAA stations has been abysmal at best.

RadioShack personnel have told me that they sold a lot of these weather radios, but with this generally lousy reception, I can't imagine that many of them are being used much.

While visiting my sister in Pittsburgh, I bought one of the new seven-channel models. I worked to get the best because I told them I lived in a very poor reception area. I brought the radio back here and after testing it, found the predictable results and brought it back to my local

RadioShack for a refund. The clerk looked at it and said, "Yeah, these don't work around here."

My point is that it's hard to promote a program where it isn't being heard, and there is, as you pointed out, much need for NOAA expansion in many ways, not only in terms of availability to the general public and in consumer electronics, but also perhaps some sort of power increase in hard-to-reach areas like ours. It's truly amazing that today my daughter can instantly communicate with someone across the world via the Internet, but her daddy can't even get a local weather warning from NOAA.

Fourteen years ago, there was a huge tornado about 40 miles from here. A lady recalled to me that when the tornado struck, her small daughter was several miles away staying with friends and that she frantically drove to reach her. She said the biggest problem was that there was no local radio station on the air. She told me that there was total confusion and panic about what was happening and where. Because of that, the FCC allowed one local station which had always been a daytimer, to operate until 10 p.m. Things have also improved since that time with the addition in 1991 of an FM station which operates 24-hours-a-day.

However, as you said, that's not much help when they've been knocked off the air as happened in 1989 when Hurricane Hugo came through. We went to bed that night wondering if we would wake to the sound of our house being torn apart. A few folks did. The next morning our local stations did their best, but information-gathering was spotty, and the cable TV was out for half that day, and wasn't running right again for weeks.

Anyway, all this is to say that we should do all we can to promote NOAA Weather Radio. It's a great service that can be better. Keep up the good work.

Keith Wigglesworth, North Carolina

Doing The No-No

Dear Editor:

I was just watching TV an hour ago. The show I was watching is a very popular late Saturday night program. One

poorly made commercial caught my attention. A mail order company was selling a handheld Bearcat scanner. First thing they say is, "You can listen to your neighbor's cordless phone from a half-mile away." Then they show a person listening to a conversation on the scanner. Not once did they mention that it is illegal to listen to cellular or cordless phones.

As a hobbyist, I was greatly appalled. Companies like this are pushing politicians to pass laws against scanners. Unfortunately, I did not write the phone number down. I would have loved talking to a customer service representative. I think they should be informed at how poor that marketing tactic was. I also hope it catches up with them in the end.

Thank you,
Jon Rohde

Dear Jon:

Unfortunately for us, the company will skate on the issue like a politician on greased lightning, and as you correctly observed, we'll be the ones to be tarred and feathered.

The Technology Leader?

Dear Editor,

I have had enough! John Glenn returned to space — a great moment to be sure. As I tried to monitor on 14.295, some amateur jerk, emphasis on JERK, tuned up and asked if the frequency was in use. I wish I had heard his callsign. When the shuttle goes up 14.295 becomes active. It's no secret. Every ham knows this. One station was 2.1 kHz below, and another who didn't identify in this cacophony was 2 kHz above. Both signals were loud and from my observations were over 3 kHz wide. My opinion was these signals were intentional jamming. Nobody bothered to find out if they were interfering. Both stations were receiving 40+ signal reports. Did they turn down the power? No. If CBers are jerks, what are amateur operators?

I have been unable to learn CW. But amateurs want to keep up the quality of the jammers and be spoiled brats about sharing their spectrum with people who

are every bit as good or better than they. CW doesn't make them better operators. CW doesn't make them turn the power down when they can continue a QSO with less power.

I am so angry . . . sell the band space to the highest bidder. Take the money and use it to lower taxes or save Social Security for those old codgers. You can train a monkey to operate a transmitter. Use community service volunteers to man radios in emergencies. What about radio experimentation? A real good lie. Very few are experimenting in new modes. Most are holding on to their keys. Let them tap on the wall in the john, because their whole reason to exist on the radio is a lie.

If CW is the only way, then I say "no" to amateur radio as a whole . . . as the rest of the world gives up its CW keys for computer technology, America is still holding on to its keys and saying we are the technology leader. Bah Humbug.

Stuart Lent

Who's Responsible And Who Isn't?

Dear Editor,

This is in reference to your article in the September 1998 issue of *Popular Communications* titled "S. 608 is Dead, But . . ." I think that the CB service should not be expanded any more than it already is. I say this because I live in an area that is really hard to operate on 10 meters because of inconsiderate 11 meter operators. Many are running hundreds of thousands of watts of power. You can tell who they are when they drive down the street because of their huge CB antennas that are made to handle thousands of watts of power. In the article it says most of CB's best and most responsible operators have gone to the "freeband" to escape the problems on the legal 40 channels of the CB band. Well in my eyes, they are not responsible because they are operating outside the band. I am a ham radio operator and so you're saying that if I think that the band I am operating in is getting bad that I should operate outside of the ham bands to escape the bad operators. Well you are wrong. The FCC has made rules stating that I am authorized to operate on certain frequencies and CB is no different. The rules for CB state you can not run more than four watts AM or 12 watts SSB from the radio and that you must operate on the 40 channels provided. To sum this up, I think that this law

should pass and maybe CB will get cleaned up so that the "responsible" operators will not have to operate out of band.

73 de Greg Thompson
DA2GNM/KC7GNM
Heidelberg, Germany

P.S. The area I am talking about is in Sierra Vista, Arizona. In Germany, CB is regulated better than in the U.S. and does not interfere with anyone else.

Been There, Done That

Dear Editor,

Your feature on Radio London sure brought back many memories of my "pirate" days. Back in 1964, I was working for RCA Great Britain Ltd. in Sunbury-on-Thames, UK, when the Galaxy dropped anchor off the coast of England. I soon found myself on the train to Ipswich and on a "tender" destination — Radio London. Getting Radio London

on the air would be my next "pirate" project, for I had just left TV-Noordzee, a TV and radio pirate facility which operated for about four months from a manmade platform affixed to the seabed off the coast of Holland. I remember spending several weeks on the Galaxy — including my 27th birthday — before the transmitter would finally operate at 50 kW into the shunt-fed mast.

We went through several re-designs of the antenna matching network. And components were just not readily available to us. As luck would have it, one year later, I found myself off the coast of Scotland getting Radio Scotland on the air by New Year's Eve 1965/66. I hope to find some of the books Peter Hunh lists at the end of the article, especially the books by Paul Harris and Chris Elliot.

Best regards,
Tony Uyttendaele
Senior Advisor
Science & Technology
ABC, Inc. NY, NY



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CIRCLE 60 ON READER SERVICE CARD

Changing Amateur License Class Structure And Testing

Dear Editor:

I support the proposed revision of the license structure, and to simplify the test requirements. Calling the license classes A, B, C, and D also quickly identifies the privileges one has. But I hereby request to keep my class license as "EXTRA." It shows when I got to that level, and it means more to me than "A." All currently licensed hams should have the prerogative of keeping their current "class names." But, for example, should an Advanced class licensee upgrade under the new structure, he or she should be assigned class "A." The "old" class names should be allowed to remain on all current Extra class renewals, or for any other licensee that doesn't upgrade. And I feel any class licensee should also have the option of assuming the new A, B, C, or D class that applies.

I am also in favor of reducing the Morse Code requirement to 12 wpm. I'll have to tell you that 20 wpm is hard to get, even for those wanting that Extra as bad as I did.

I am very dead-set against releasing any more of our precious frequencies to businesses. FCC — money isn't everything. Look at what we handle when hell breaks loose in some faraway place due to war or acts of nature. Many times we are the only communication. Cell phones ain't everywhere, ya know!

Ham radio is nearly dead with the advent E-mail, textpagers, cell phones, fax machines, and computers. Any resuscitative measures necessary — shy of just handing out licenses and handhelds to strangers on the street — may be what's needed to keep amateur radio alive, and keep businesses from stealing the rest of our spectrum. Thanks for listening.

Fred Davis, N3FD

A Question For Law Enforcement

Dear Editor:

Let me start off by saying that *Popular Communications* is the best around. I look forward to the newest issue every month. I have a question for your readers who are in law enforcement. How do they feel about commercial radios, such as Motorola radios programmed for receive only? I certainly understand the opportunities for abuse, but it has been said all

technology is good or bad, and that it just remains up to the user for the proper use of that technology.

Thanks again for a great publication, and I wish your staff all the best.

Sincerely,
Jon Morris

Sigmund Freud — Alive And Well In Indiana

Dear Editor:

Very eloquent editorial regarding CBers ("Changing Face," page 4, September '98 *Pop Comm*). Perhaps the "few hundred doofuses" out there, as well as the serious operators, might have a different idea of CB service if fewer "toys" were available to them. Going beyond linear amps and ultra-directional antennas, why on earth would anyone want a microphone with built-in digital echo?

That bogus "southern twang" everybody spoke with in 1976 was lame enough. I'd much rather have clean, well-modulated, easy-to-copy audio than endure '60s-era Boss Radio, echo and all, on a service band.

Alan Peterson

SBE Chapter 37, Washington DC & Technical Editor/Radio World newspaper

What You See Is What We Get

Dear Editor:

Is *Popular Communications* on a mission to eliminate the code requirement from the ham license? In the June issue, there were more anti-code letters from readers preferring the soft and comfortable to challenge and growth. Pro-code letters are conspicuously absent from your magazine, which maybe is not surprising. The radio hobby is filled with guys who stand to benefit financially from opening the floodgates to new codeless hobbyists. Ham radio itself has seen a proliferation of con men who have sprung up to exploit the weak or unmotivated applying for their so-called codeless "ham license."

I am tired of the lazy and incapable whining about the requirement to learn Morse code to get a ham license. They probably have spent their entire lives looking for easy ways out rather than stretching, even a little, to learn, to improve or better themselves in any field of endeavor. This may be tied to bigger problems and all those complainers need

do is look as far as their professional, social, marital, or ethical lives and they may see an uncomfortable pattern of fault-finding everyone and everything else but themselves. Maybe if they showed a little initiative, their lives wouldn't be in the state they are in. Perhaps the critics of the Morse requirement should stop looking at the ham radio licensing requirements and turn their focus more to the faults that lie within themselves.

Vern A. Weiss, W9STB
Michigan City, Indiana

Dear Vern:

No, we're not on a mission to eliminate the code from ham licenses. Now I'm not a rocket scientist, but perhaps if you re-read your own letter you'd see just why there are so few pro-code letters. Simply put: There just ain't that many. Fully 75 percent of the letters I receive are for either reducing the code requirement, eliminating it altogether, and restructuring the licenses to bring amateur radio successfully into the millennium.

You also mentioned "floodgates." Newsflash, Vern — the so-called "floodgates" were opened a few years ago with the No-code license and while there certainly was substantial growth, that which was originally viewed as the way to bring 'em in by droves, it just didn't happen.

I'm leaving your assertion that folks are lazy or have personal problems and that they should look to their professional lives for some sort of deep-rooted psychological problems up to our readers to comment on. They'll have much more fun writing a response to your letter. I presume you won't mind getting a couple of letters from readers and hams who have worked many years and have no more social, marital, or ethical problems than you.

Turning Off Cell Phones In Public

Dear Editor:

Here are a few more ideas on your editorial in January's *Pop Comm*. You could:

A. Hang signs on all public buildings saying "No cell phones allowed."

B. Ask that all customers turn off their cell phones before entering the building. (They do have an OFF button on the phones don't they?)

(Continued on page 79)

Scanning New Zealand

Bring Your Scanner, And A Camera And Enjoy!

By Ed Decker, Jr.

When I sat down to plan what I would write about in this article, I knew I didn't want to write another one of those generic scanning articles that we've all seen before. How many times do you want to read about scanning New York City, LA, or Atlanta? So I set out to write about something exotic.

It then hit me that the international stage, specifically Auckland, New Zealand would be quite interesting! While I realize this may be going out on a limb, I hope you will find this enjoyable, if not useful.

Auckland, on North Island, is reported to have a wonderful, mild year-round climate. This "City of Sails" is the country's most visited region and largest urban area. It's an outdoor paradise with hiking, sailing, windsurfing, fishing, and skiing, along with lots of breathtaking scenery. So bring your scanner and some extra batteries, and enjoy your vacation!

To learn more about scanning in New Zealand, I communicated via E-mail with my friend Noel Jones. Here is what he had to say:

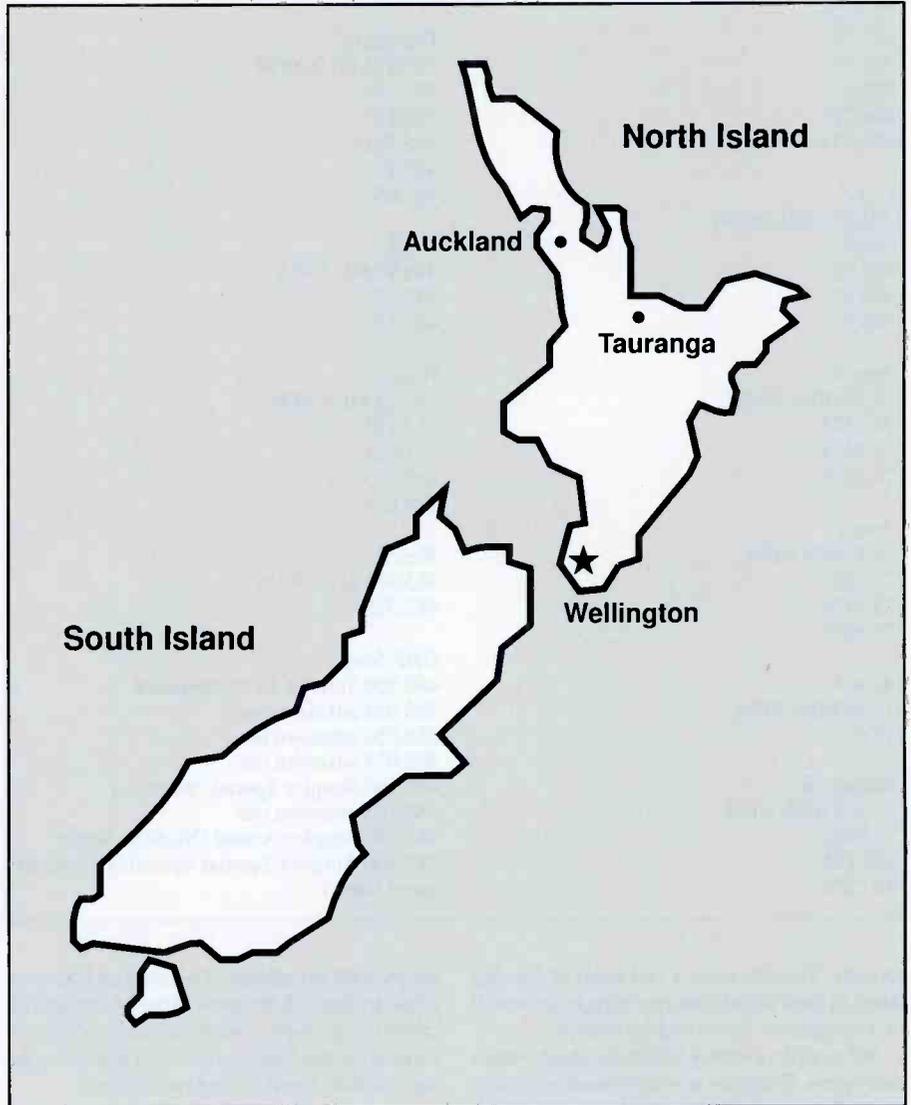
I don't know the exact wording regarding scanning law in New Zealand, but generally we can listen to anything we want. What we do with this information may be deemed illegal. This opinion is from a police friend who also has a scanner.

It is illegal to use, record, distribute, or rebroadcast any transmission without permission. This includes TV rebroadcasting, recorded radio or cell phones, and conversations in news broadcasts.

Scanners and radio DXing is no longer a large hobby in New Zealand. The Internet is having a small impact here, although some blame the Internet too frequently. The Internet should be used as a tool for encouraging the hobby instead of a scapegoat.

There are no organized scanner enthusiast clubs that I am aware of. Many police agencies are moving their operations to digital systems.

A scanner costs as little as NZ \$200 secondhand, or a secondhand Japanese imported vehicle radio can be used; broadcast FM in



New Zealand is near the International Dateline, southeast of Australia.

Japan overlaps the NZ Police ESA band. Since New Zealand imports a lot of used cars from Japan, these radios are plentiful.

Expect Auckland Police to introduce digital trunked radio in mid-'99 (APEC and Americas Cup ops will certainly use Digital Trunked Radio (DTR) for comms). An educated guess is that the system could use the European TETRA protocol on freqs in the

380-383, 390-393 MHz "ESC" band. This will still leave fire and ambulance transmissions in the analog format.

Crime in Auckland is down except for the "petty criminal" kinds. And car theft, along with theft from cars and houses, is on the rise. Tourists think NZ is nearly crime-free, which is only correct in the country areas, as Auckland has a reputation of stealing from

New Zealand Frequencies

Auckland Police

Central 1

75.650 MHz NFM
75.475
485.25
485.375
485.95
485.975
486.05

City 2

75.275 MHz NFM (City 2 also Motorway units)
75.9125
485.35
486.55
486.6
486.725
486.775

City 3

485.325 MHz NFM
486.0
486.625
486.65
486.7

Area 1

75.35 MHz NFM
76.1125
76.1375
76.1625

Area 2

75.4 MHz NFM
75.625
75.8375
75.8625

Area 3

75.45 MHz NFM
75.6

Manukau

75.375 MHz NFM
75.9625
485.275
487.275

North 1

75.25 MHz NFM
75.3
75.9375
76.0875
485.2
485.4
485.425

North 2

485.3 MHz NFM
487.25

Papakura

75.7875 MHz NFM
75.8125
76.0375
486.575
487.3
487.85

South

485.9 MHz NFM
487.325
487.35

West 1

75.325 MHz NFM
75.7125
76.0625
485.225
486.675

West 2

485.925 MHz NFM
487.375

UHF Simplex

488.000 Simplex Laser operators
488.025 unknown use
488.050 unknown use
488.075 unknown use
488.100 Simplex Special operations
488.125 unknown use
488.150 Simplex Armed Offenders Squad
488.200 Simplex Special operations (usually speed lasers)

Callsign Format

Callsigns of units operating under CAD control are made up as follows: Two letters indicating the unit home station (for example, AK Auckland Central, TN Takapuna, WN Wellington Central, etc.). A letter indicating the unit type. One or two digits to indicate the specific unit identity; AKX3 is an Auckland Central CIB (Detective) unit SVH13 is an Auckland Motorways Traffic unit.

Unit type codes (third letter) are as follows:

A Commissioned officer (inspector)
B Beat Unit
C Crime Car (CIB patrol for initial attendance at serious crimes)
D Dog patrol
E Uniform Enquiry unit
F Fingerprints/Photographs
G Logistics
H Highway/Motorway traffic unit
I Incident Patrol (Uniform)
J Combined investigative unit
K Scene of Crime officer
L Police Launch
M Mounted patrol (Horses/Bicycles)
N Senior Sergeant
O Community Constable
P Team Policing Unit
Q Single crewed unit attends historic incidents
R Rural Constable
S General Duties Sergeant
T General Traffic unit
U Air Support Unit
V Traffic Sergeant
W Misc. Traffic units
X Misc. CIB units
Y Youth Aid/Education
Z Diplomatic Protection Squad

tourists. Tourists have a bad habit of leaving items in their rental cars, resulting in too much of a temptation for would-be thieves.

NZ is still a country where the police don't carry guns. Weapons are easily available when needed. Crimes with guns are low; most aggravated robberies are committed with knives.

Life here has its good and bad, but I am

happy with my choice of country and have no plans to leave. Like most cities in the world, crime is a problem unless there is a policeman on every corner, then you live in a police state and have no freedom and no scanners.

The accompanying radio system information has been derived from Noel's

Website. To view his entire Website, which also includes aviation, maritime, and military frequencies, go to: <<http://homepages.ihug.co.nz/~njones/auckland/index.html>>.

I hope you have found this journey an enjoyable one. And remember, it's OK to take your scanner to New Zealand, just don't pass on what you hear to a third party. Cellular phone monitoring is legal, too! Again, a special thanks to Noel Jones, without whom this article would not have been possible.

New Zealand Monitoring Websites

<http://www.radioinfo.co.nz>
<http://www.navigator.co.nz/nzrdx/>
<http://www.voyager.co.nz/~highway/scanner.html>
<http://homepages.ihug.co.nz/~kenwood/>
<http://www.nzart.org.nz/nzart/http://www.voyager.co.nz/~mikey/scanner.htm>
<http://homepages.ihug.co.nz/~Sbarnes/>
<http://www.geocities.com/CapeCanaveral/Launchpad/7769>
<http://www.freeyellow.com/members4/crowther>



New Zealand police logo.

Your concept of the word "scanner" is obsolete.

AOR introduces Advanced Technology Receivers™

AR 8200B Wide Range Receiver

The AR 8200B is an all-new receiver, not an update of a previous model.

- 500 KHz~2040 MHz *coverage
- 1,000 memory channels (20 banks)
- Computer control and programming. (requires optional connection cable)
- Download free control software from AOR web site!
- "All Mode" reception includes "super narrow" FM plus wide and narrow AM in addition to USB, LSB, CW and standard AM and FM modes
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- BNC antenna connector
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These are but a few of the features of the new **AR 8200B**. Visit your dealer or the AOR web site for more information!

*Cellular frequencies blocked in compliance with USA regulations. Continuous coverage model available for authorized users/agencies, documentation required. AOR engages in ongoing efforts to improve its products. As such, design and performance parameters may change without notice or obligation on the part of the manufacturer and/or distributor(s).

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CIRCLE 56 ON READER SERVICE CARD



America's Most Powerful Wireless Station

Its 40-Year Career Included Piracy, Intrigue, And Naval And Commercial Traffic!

By Alice Brannigan

In the early days of wireless telegraphy, the world's major powers realized the strategic values of the medium. Germany began constructing powerful stations in all of its colonies and at certain other sites before 1914, looking toward a worldwide communications system. The powerful Telefunken wireless station at Sayville, New York, (see *Pop'Comm*, August 1996, page 15) was to be a vital wireless link to Germany, but even while that station was still under construction, the Germans began building a second station in Tuckerton, New Jersey. This station was to have an even more powerful alternator-type CW transmitter.

Fancy Financing

To finance the construction of this behemoth, a German company worked out an unusual arrangement with a French corporation, Compagnie Universelle de Telegraphie et de Telephonie sans Fils (CUTT). The agreement stipulated that the French outfit would put up the money — about two million Francs — to build the German-designed station. Then, after the station was finished and proven to be reliable, the French company would assume full ownership. The German company agreed it would then lease this facility from the French company. You may have heard what they often say about the best-laid plans of mice and men. More about that later.

A Spectacular Station

In 1912, the German company, Hochfrequenz-Maschinen Aktiengesellschaft fur Drahtlose Telegraphie (The High Frequency Machine Corporation for Wireless Telegraphy), or HOMAG, purchased a marshy 200-acre site on Hickory Island, near Tuckerton, New Jersey.



HOMAG's wireless station at Tuckerton, New Jersey was the most powerful in the U.S.

HOMAG owned the patent rights in all nations except for Germany and her possessions for the reflection alternator invented by Dr. H.G. Goldschmidt. One such device, which generated 12.5 kW in RF current, had been successfully installed in 1910 by another company in Berlin. HOMAG wanted to build one with a 100 kW power rating in Tuckerton.

Part of HOMAG's agreement with its French associates was that, in addition to the cash the French agreed to spend for construction of the physical plant, they kicked in another 2.5 million Francs. The extra funds were needed because, upon assuming station ownership, CUTT was also to acquire all of HOMAG's lucrative patent rights to the Goldschmidt alternator transmitter.

By May of 1912, construction had begun. Towards summer, all of the land had been cleared, the surveying had been completed, and most of the foundation pits



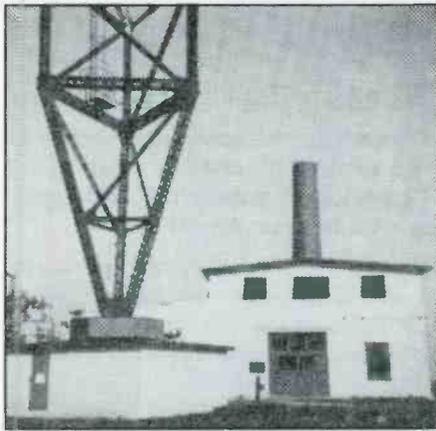
The tower at Tuckerton rose to a height of 865 feet, and supported a massive umbrella-type antenna system.

were dug. Later in the year, work began on the antenna support tower. As of August, 1913, the triangular steel tower had risen to 520 feet. Later that year, station manager Emil Mayer arrived from Germany with his crew of technicians and the 100 kW alternator, plus whatever else was required to complete the station.

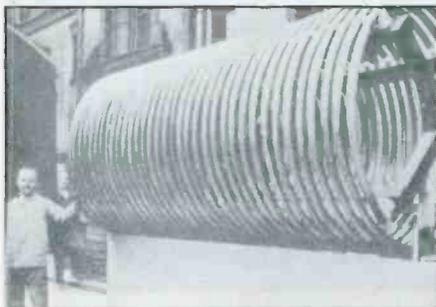
The Antenna

By then, the tower had been completed to its full 825-feet. It rested on a large steel ball that was supported on glass insulators. The tower was used to support the actual antenna.

At the top of the tower, there was a 600-foot wooden mast that extended the structure to 865 feet tall. From the top of the mast, 36 copper cables slanted down 600 feet, umbrella style to huge insulators. From there, steel cables connected the insulators to the tops of 36 poles mounted all around the base of the tower at a distance of 1,500 feet from its base. The natural resonance of the antenna was at 107 kHz. Leads from the antenna wires



Though this is actually a photo of the antenna's base at Telefunken's Sayville station, it's the same construction used to support the 865-foot tower at Tuckerton.



The antenna loading coil (shown before installation). Note the man standing at the left for size comparison. Just imagine how long they had to eat Quaker Oats to finish the contents of a container large enough to wind that monster!

ran down through the steel tower to the transmitter building, located at the tower's base.

Keep in mind that in the early days of wireless, commercial long distance communications normally used frequencies below 100 kHz. Frequencies above 1600 kHz were considered territory best left to experimenters and ham operators.

The Rest Of The Station

All of the buildings were fully constructed by the time the antenna was completed. The station first showed up in 1914 station directories under the call letters WGG, though no frequencies were given.

In 1914, the 100 kW Goldschmidt rig was one of the most powerful CW generators. One terminal of the alternator went to ground, the other directly to the antenna through a loading coil the size of a small bus. This lowered the resonant frequency of the antenna to that of the alter-

nator, which was the station's operating frequency, 40 kHz. Communication was achieved by keying the DC exciting current to the alternator.

Goldschmidt's induction-type alternator was just a big wound-rotor induction motor. Its rotor was three feet in diameter and weighed five tons. The rotor and stator each had 300 poles. It operated at 4,000 r.p.m. from a special 250 h.p. 200 volt DC motor.

The power plant was located in the transmitter building. There were two boilers supplying steam to drive a 400 h.p. engine powering two 120 kW 220 V DC generators. Other steam-driven generators were required to power the station's auxiliary systems.

This station, of course, needed a receiver. Its detector was a new type adapted to the reception of undamped waves. The station manager claimed that he was able to use the receiver to regularly copy POZ in Germany, day and night. This was a 4,000-mile hop.

The Tuckerton station was equipped with a new magnetic recording device made in the U.S. by the American

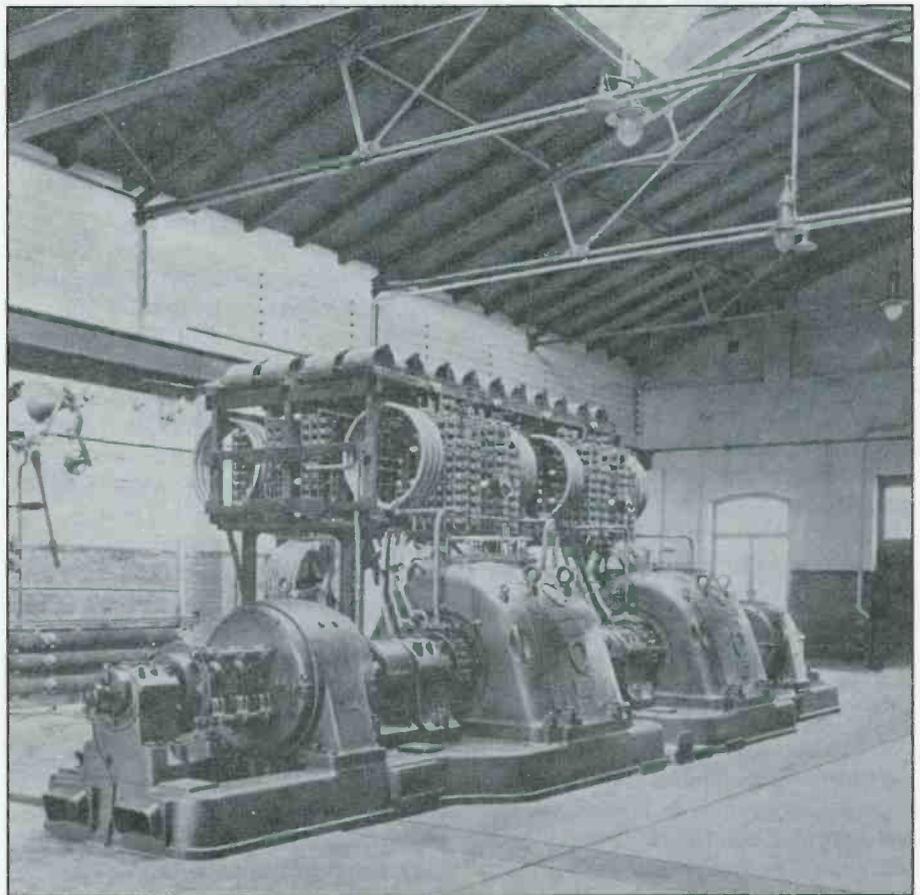
Telegraph Company. This was the ancestor of a modern tape recorder.

A Question Of Motive

HOMAG needed to prove to its French bankrollers that the station really worked before ownership was officially transferred. That meant it had to be able to send a total of 3,000 words of traffic with station POZ in Germany, within a single 24-hour period.

The station began informal transmitter testing with POZ in May, 1914. But just before the formal acceptance transmissions were made for turning it over to the French company that had paid for it, a curious thing happened. In Europe, the assassination of Austrian Archduke Franz Ferdinand by a Serbian on June 28, 1914, was the pretext for war. A system of alliances made the conflict Europe-wide. Germany immediately went to war with France. The German company said it would therefore retain ownership of the Tuckerton station!

This put the U.S. in a peculiar position, in as much as we had not yet entered the



Two Goldschmidt 100 kW alternator transmitters. The Tuckerton station ran 100 kW with an alternator of this design built by HOMAG.

war. In order to maintain our nation's position of neutrality, in August of 1914, our government notified the Tuckerton station that its temporary call letters for experimental use were cancelled, and since it no longer had a license, it could not transmit. In fact, the government said it also decided that neither HOMAG, nor its French associates, would be entitled to hold a license because the companies weren't owned by U.S. citizens, as required by U.S. regulations.

The Tuckerton station was the only station in the U.S. able to contact Germany directly during warm weather when there was a lot of static. Other U.S. stations could accomplish this only via intermediate relay stations. This gave the station an enormous strategic and espionage potential. This, and the circumstances surrounding the timing of events, gave rise to suspicion regarding the motives for its construction and intended purpose. Indeed, it was revealed that Telefunken secretly company-owned HOMAG. Moreover, the German government had surreptitiously pushed the construction of both the Tuckerton and Sayville stations.

Things Get Gnarly

A month after Tuckerton had been formally ordered off the air by the government, the U.S. Navy discovered that the unlicensed station was brazenly operating day and night in full commercial service to Germany, complete with its cancelled former call letters, WGG. The nation's most powerful wireless station was an outlaw! To avoid further threat to U.S. neutrality, on September 10, the Navy was ordered to take over control of the station's commercial transmitting and receiving operations. The Navy assigned Tuckerton the Naval call letters NWW. Existing German staff members were permitted to remain at the plant only to maintain and service the facility, though they were not allowed to operate its transmitting or receiving equipment.

Not So Fast!

The French company, CUTT, was most unhappy about HOMAG's refusal to turn over ownership of the station. They went to court to try to gain its possession. The court decided that HOMAG would continue as the *de facto* owner for the duration of the war. HOMAG agreed that, under those terms, each month it would reimburse the U.S. Navy for all expenses

incurred operating the Tuckerton facility. The Navy said that at the end of the war it would turn over to HOMAG all of its income from handling commercial traffic, less the operating expenses.

As luck would have it, the day after the Navy moved in, the stator winding of the alternator failed and the station went dark. A month later, the Navy had moved in its own arc transmitter while repairs were being made, but it ran a mere 30 kW and reached Germany only at night. Then the Navy brought in a 60 kW rig. But by January, that transmitter was also having service problems.

The Navy told HOMAG that the 60 kW arc transmitter was needed at another military facility. That required HOMAG to go to the Federal Telegraph Company and purchase a replacement transmitter for \$15,000, plus a royalty of three cents per word transmitted. That transmitter went online in October 1916.

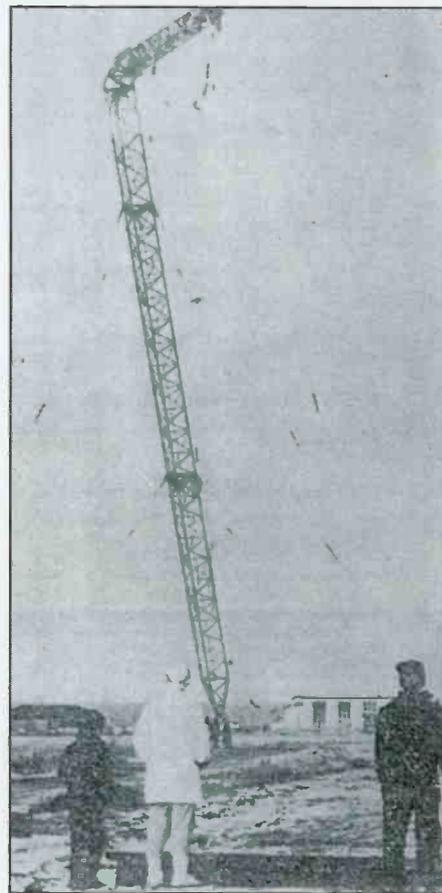
Also in 1916, the receiving point for this station was relocated to a newly built facility in Deering, Maine (a suburb of Portland). This was done to avoid interference from numerous wireless stations in the New York City area. The Navy also ran the receiving site.

War On The Horizon

The war in Europe progressed, and public reaction to it in the U.S. increased to such an extent that on February 8, 1917, all German personnel were told to discontinue their maintenance activities and leave the Tuckerton station. All operations were then taken over by the U.S. Navy.

Upon the U.S. declaring war on Germany (April 6, 1917), the former Tuckerton German staff members were arrested and sent to a POW camp in Virginia. The Tuckerton station's ownership was transferred to the Alien Property Custodian for the duration of the war. The Navy then handled only official government traffic through the station, though it had to install a new 100 kW arc transmitter due to continuing failures of the existing station unit. The U.S. Navy's official operations at the Tuckerton station were on 32.6 kHz.

WSL, the German station at Sayville, was seized by the Navy in February, 1917 after it was discovered that its Telephon magnetic recorder had been in use to exchange traffic with POZ at such high speeds that it became virtually encrypted. Mixing in with its routine traffic, there had been German espionage messages,



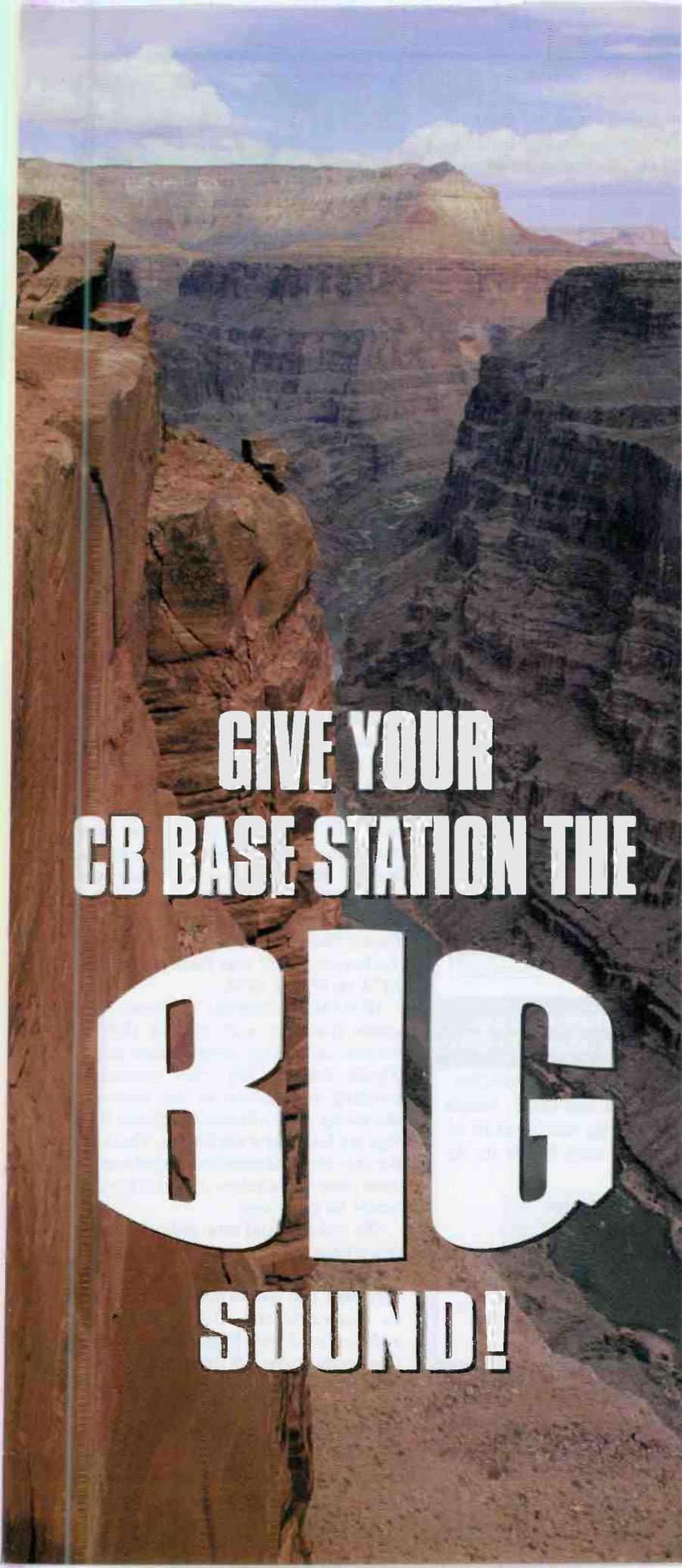
In December of 1955, the legendary Tuckerton tower was razed. Described as the world's eighth highest structure, the 800-ton steel behemoth broke in two, and in six seconds, toppled. It was cut up and sold for scrap.

including the one that helped U-boats torpedo the British passenger liner *Lusitania*, on May 1, 1915. One can speculate on why such a unit had also been installed at Tuckerton.

When the war ended, courts decided that the Tuckerton station rightfully belonged to CUTT, the French company. CUTT then formed an U.S. subsidiary known as the American Radio Company (ARC), in order to obtain a U.S. radio license. In February, 1917, the Navy signed a lease with ARC, allowing the Navy to continue operating the station until April, 1920, paying ARC \$5,500 per month. These rentals, plus profits due under HOMAG ownership, amounted to more than a half-million dollars.

New Owners

But what ARC proved was history by the time the Navy's lease ended. By the end of February, 1920, ARC must have figured they'd quit while they were ahead. That's when they sold the



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Tuckerton facility to RCA, reportedly for a million dollars. RCA was happy to have the station because of the tall antenna and high performance 100 kW arc transmitter. Still, they soon upgraded the station by increasing its power to 200 kW with a new Alexanderson alternator, and even obtaining a second Alexanderson 200 kW arc transmitter for standby use.

RCA found that the Alexanderson units were so reliable that they added a second large flat-top multiple-tuned antenna, and put the standby transmitter into full-time use. This doubled the traffic-handling capability of the station. The earlier German alternator had been put in storage for possible future use, but several years later was deemed so trouble-prone and obsolete, it was junked.

Under RCA ownership, the transmitter using the old umbrella antenna was re-assigned the station's original WGG call letters, and operated on 18.4 kHz. The other transmitter was licensed as WCI and assigned to 18.2 kHz. The receiving facility for both stations was in Belmar,

New Jersey. This transmitting facility handled a sizeable portion of RCA's traffic to Europe until 1940. By 1940, however, improved shortwave technology caused the old Tuckerton facility to be placed in standby status.

War Arrives — Again

When the U.S. entered World War II in early December, 1941, the Tuckerton transmitters were again used by the U.S. Navy for sending orders to the fleet. VLF transmission was the only effective medium for penetrating the oceans to reach submarines. Furthermore, it was found to be the most reliable mode for transmission through the auroral zone to our vital base at Thule, Greenland. The Tuckerton plant continued in this service until 1948, when it was again put on standby.

FCC records of 1945 indicate that this facility was licensed as WGG (200 kW) and WGG2 (250 kW) on 22.1 kHz, also WCI (250 kW) and WCI2 (200 kW) on 18.4 kHz.



Some of the old tower's steel guy anchors imbedded in concrete footings are still found near the houses built on the site 43 years ago. The original transmitter building is there, too.

In April, 1953, the former WGG alternator was operated by RCA for the last time with the call letters WEV60 on 18.4 kHz. The former WCI alternator was fired up for 25 minutes in June with the call letters WEV80 on 18.2 kHz. In 1955, these transmitters were scrapped and the tower was razed.

In 1924, RCA had moved their marine telegraph station WSC (as of 1945, on 125 and 143 kHz, plus shortwave) from Siasconset, Massachusetts, to Tuckerton. Before the longwave antenna was scrapped in 1955, WSC was moved again, this time a few miles north to West Creek, New Jersey, though still listed as Tuckerton. WSC was finally closed by RCA on May 8, 1978.

HOMAG's original 200-acre real estate purchase was sold in 1956 to become a housing development called *Mystic Islands*. The 1913 transmitter building and several of the steel guy anchoring rings affixed to concrete footings are found near the houses. Those are the only physical remains of what was the most powerful wireless station in the U.S. nearly 90 years ago.

We welcome old time radio and wireless photos, picture postcards, QSL cards and letters (good copies are OK), news clippings, and station directories, as well as comments and ideas. Our postal address is Alice Brannigan, Popular Communications, 25 Newbridge Road, Hicksville, NY 11801. Or you might wish to send an E-mail directly to me at <Radioville@juno.com>. Be with us next month!

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How I Got Started

Congratulations To Sergey Kolesov Of The Ukraine!



Here's Pop'Comm reader Sergey M. Kolesov of Kiev in the Ukraine.

Popular 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.

Our March Winner

Pop'Comm reader, Sergey Kolesov of the Ukraine says, "I was a cadet of Marine Nautical School in Russia when I discovered the world of radio. It was a time when listening to foreign broadcasts in

the USSR was prohibited. The VOA, Deutsche-Welle, and Radio Free Europe/Radio Liberty were jammed in every major city of the country. I had a small mediumwave receiver and one night I could hear Russian-language broadcasts from Stockholm. I was so excited that I listened every night at 2 a.m. One night, on a Tuesday, I heard a DX show. From that time, I dreamed about buying a short-wave receiver.

"Using this opportunity, I would like to thank Radio Sweden for introducing me to the fascinating world of DXing."

Finally, I decided to borrow money from the School's Political Officer (certainly if he found out why I needed it I'd have to wait longer). My first receiver was a Quartz 303 and my first QSL card was from Radio Sweden. I could not believe it when I saw the letter from Sweden in my P.O. box!

Using this opportunity, I would like to thank Radio Sweden for introducing me to the fascinating world of DXing. Now I have more than 350 confirmed stations, but when I switch on my receiver, I feel like I did many years ago when I had listened to the radio under a blanket." ■

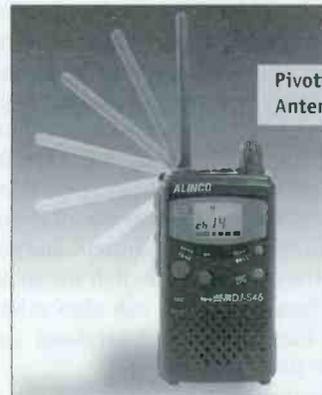
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Radio Resources

INTERESTING THOUGHTS AND IDEAS FOR ENJOYING THE HOBBY

This Is The Operator — What Number Were You Calling?

If you have been tuning in ship-to-shore radiotelephone communications, you are no doubt aware that this service still remains “operator assisted,” and both VHF short-range, plus high-frequency, long-range radiotelephone marine calls are still handled “the old-fashioned way.” And most mariners don’t want to see any change.

“When I’m out on the high seas, weather conditions can be so bad that just holding onto the microphone is next to impossible,” comments Captain Tollman Geffs of the sailing vessel *Sunset*. “It is reassuring to me and everyone onboard during extremely heavy seas when I can pick up the mic, call for the high seas marine operator, and a few seconds later hear the reassuring voice of the AT&T technical operator analyzing my signal and suggesting we switch to an alternate band for improved communications,” adds Geffs. He continued, “These high seas radiotelephone technical operators know all about worldwide radio band conditions, and not only can they manually switch me to an alternate band, but they can also select different base stations throughout the country to tune me in.”

And for boaters who may only use a handheld VHF transceiver, and venture no more than five miles out of the breakwater, operator-assisted telephone calls are sometimes easier than trying to use the cell phone.

“Down off the Florida Keys, I can make phone calls a lot further on marine VHF than I can on cellular,” comments Brian Stamm, a diver who often goes out to ancient wrecks and brings home gold doubloons. “When the weather gets rough, my VHF radio is completely waterproof, and I don’t need to fish around trying to push a tiny keypad — I just wait for the operator to come on line and tell her the number I am calling. It’s that simple,” adds Stamm.

Big Changes Loom Ahead!

If you regularly tune into VHF and high frequency, 3 MHz–30 MHz, ship-to-



Each circle represents VHF telephone coverage along the oceans, lakes, and rivers.

shore and shore-to-ship phone calls, you will begin to notice some changes in how the ship station makes contact with shore. During this transitional period, you may also hear the bonus reception of ship station signals automatically being retransmitted out on the shore-side frequencies, giving mariners crystal-clear reception of both sides of the conversation.

Q. Which duplex pairs of frequencies on marine VHF carry ship-to-shore FM radio calls?

- A. 46 MHz/49 MHz
- B. 152 MHz/158 MHz
- C. 157 MHz/162 MHz
- D. 464 MHz/469 MHz

Cordless telephones are down on 46 MHz and 49 MHz. The old land mobile car phones were found down in the 152 MHz/158 MHz range. The correct answer on where to tune in marine VHF phone calls is 157 MHz/162 MHz.

Here’s the scoop:

| Channel Number | Ship Transmit | Shore Transmit |
|----------------|---------------|----------------|
| 24 | 157.200 MHz | 161.800 MHz |
| 25 | 157.250 MHz | 161.850 MHz |

| | | |
|----|-------------|-------------|
| 26 | 157.300 MHz | 161.900 MHz |
| 27 | 157.350 MHz | 161.950 MHz |
| 28 | 157.400 MHz | 162.000 MHz |
| 84 | 157.225 MHz | 161.825 MHz |
| 85 | 157.275 MHz | 161.875 MHz |
| 86 | 157.325 MHz | 161.925 MHz |
| 87 | 157.375 MHz | 161.975 MHz |

Q. What is the duplex shift on marine VHF telephone service, and why is it a duplex shift?

- A. 5 MHz for safety monitoring
- B. 4.6 MHz for talk and listen
- C. 600 kHz for talk and listen

The set duplex split between ship transmit and shore transmit is exactly 4.6 MHz. This is an *international* standard. All over the world VHF marine telephone stations operate on this shift.

The idea of the “shift” between transmit and receive is to allow certain pieces of commercial radiotelephone equipment to simultaneously monitor the 162 MHz receive portion of the band while transmitting on 157 MHz. About 1 kHz of ship station transmit is fed back out on shore transmit, so the ship station can



Ship stations may soon have a new way of calling home on marine SSB and VHF.

hear their own voice coming back out of the telephone handset receiver, much like a home phone.

Today's modern marine VHF transmitter, selling from \$100 to \$400, does not have capabilities for full duplex radiotelephone communications. Even though the channels could support full duplex, the boater's marine VHF goes silent on transmit until the radio's mic button is released.

Throughout the United States, the VHF marine radiotelephone service is easy to pick up with a simple marine VHF handheld, a marine VHF 25-watt, fixed-mount radio, or a handheld or mobile scanner. The shore-side transmitters are usually located high on buildings or mountains next to oceans, rivers, and lakes. If there is water anywhere around you, chances are you have heard some of the radiotelephone calls. The VHF FM marine radio service operates at a +/- 5 kHz deviation level, so picking up marine VHF FM radio calls is just like tuning into a 24-hour VHF weather transmitting station slightly higher in frequency.

But five years ago, cellular telephone coverage all but killed off marine VHF communications. In fact, most companies throughout the United States that held a marine VHF public coast station license were losing bucks big time. Most of their customers found it easier to make their ship-to-shore and shore-to-ship calls on cellular, rather than operator-assisted marine VHF.

About four years ago, a marine VHF company called MariTel began buying up marine VHF public correspondence stations. MariTel is now the largest marine VHF phone service throughout the United States, offering almost uninterrupted service from Bangor, Maine, all the way down to Key West; all over the Great Lakes, the Gulf, Hawaii; and all over the Washington seacoast. Right now, they're negotiating to take over about 20 independent stations along the Oregon and California coastlines. To receive a free MariTel VHF marine telephone coverage area color map, write MariTel, 452 Courthouse Road, Gulfport, Mississippi 39507, or phone 888-MARITEL (888-627-4835).

Mariners no longer need to call MariTel by voice on their local working channel. They simply consult the chart to see what channel is in use in their area, dial into that public correspondence channel, double check that it is free of traffic, and then transmit a continuous carrier for five seconds. This carrier activates the synthesized voice that announces they have enough signal strength to reach the MariTel phone company. Transmit again for five more seconds with a steady carrier. After this procedure, a delightful LIVE voice comes on the air, ready to take the incoming phone call.

Subscribers may pay a low annual subscription price, or pay a considerably higher fee for a one-time-only phone call as a non-subscriber. MariTel subscription

policy has no long-distance charges anywhere in the U.S. And unlike cellular, there are no roaming fees to any one of its shore-, river-, or lake-based telephone base stations. MariTel also assures "privacy" saying, "All transmissions from the boat to shore are now encrypted, providing privacy on your calls and secure subscriber information." Absolutely not true. The only thing they do is mask the incoming ship signal from being retransmitted out on shore station transmit. Anyone with a scanner needs only to monitor 4.6 MHz lower than the published shore station frequency and the ship station (if close enough) should come in loud and clear. There is no "encryption."

But MariTel is staying absolutely silent about its future plans to serve marine radio users on land. That's right, *on land!* The Federal Communications Commission may soon allow marine telephone stations to serve land stations in areas where there is no present marine radiotelephone service due to the lack of water. This *could* allow a system like MariTel to provide thousands of additional subscribers with tractor-to-farmhouse telephone service and make better use of frequencies that would ordinarily be unused in the all-land area. When asked about their plans for expansion to the land phone area, MariTel makes it loud and clear they have NOTHING to say on the record. In fact, trying to get any kind of information about the expansion of MariTel phone service is next to impossible.

AT&T High Seas Having Rough Times

One of the largest high-frequency marine radiotelephone systems is operated by AT&T, called "AT&T Maritime Services." Here are some good questions.

Q. How many stations does AT&T have on high frequency?

A. Three — KMI, WOM, and WOO

B. Two — KPH and KSL

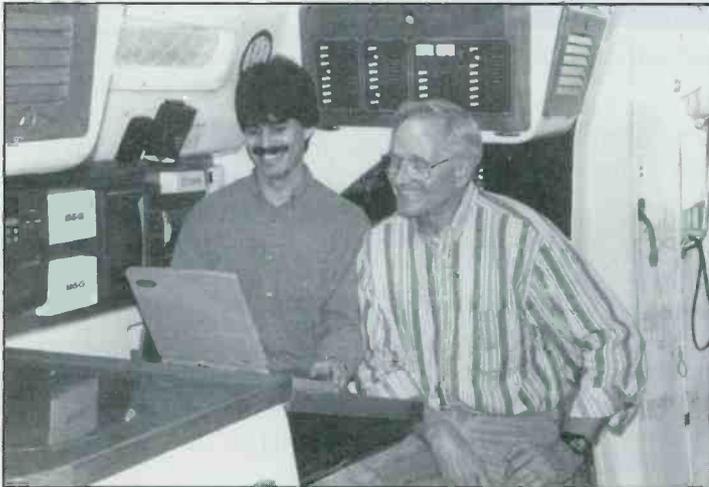
C. Four — KVG, WND, KFI, and WABC

D. One — KOU

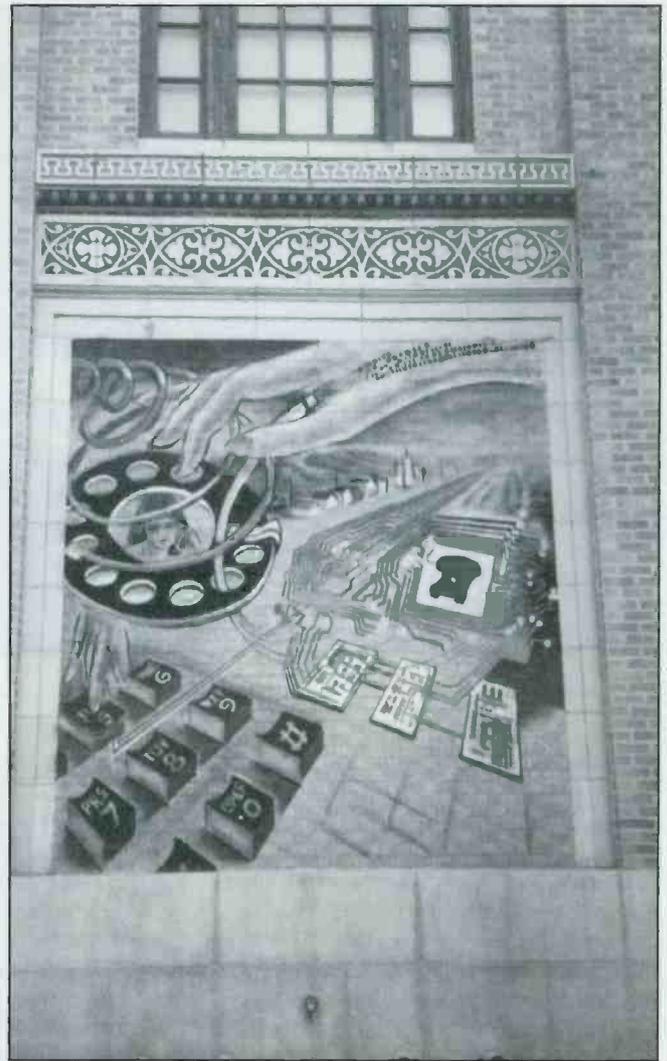
AT&T Maritime Services operates three high seas radiotelephone stations, KMI, Inverness, California; WOM, Ft. Lauderdale, Florida and WOO, Manahawkin, New Jersey. These three stations are on the air, 24-hours-a-day, on designated international channels from 2 MHz to 22 MHz. Station KMI has 20 high-frequency voice allocations. Station WOM, serving all the cruise ships in the



Boaters may soon need more than a microphone to call the phone stations on shore.



Marine E-mail is cutting into the long-range radio phone calls.



AT&T's operating center murals in Florida depicting operator-assisted dialing.

Caribbean has 30 voice channels, and station WOO, serving the Atlantic has about 25 voice channels. KMI serves the Pacific region, WOM the Caribbean and South Atlantic, and WOO the North Atlantic all the way to Europe. These three AT&T stations operate full duplex, but most ship station SSB transmitters only offer half duplex capability — the receiver goes silent when the transmit button is depressed. Depending on how the technician adjusts the equipment, some ship stations can be heard retransmitted by the shore station, yet other times tuning into the shore-side conversation will only yield audio from the station on land, not the boat at sea on an alternate frequency. There is no set duplex shift, so you will need to contact AT&T to get a listing of all of the ship-to-shore channels and ship/shore transmit upper sideband frequencies. All transmis-

sions are 2.8 kHz nominal bandwidth.

The high seas marine radiotelephone service, relying on single-sideband communications and the cooperation of the ionosphere, has been a popular service among private yachts, commercial boats, and cruise ships. Most cruise ships employ full-duplex equipment, giving passengers full-duplex “talk and listen” capabilities, just as if they were on a telephone landline. But the maritime satellite services have attracted many former HF SSB customers. In fact, INMARSAT-A, INMARSAT-M, AMSC, and satellite mini-M full-duplex phone systems are providing an alternative to the static encountered on the HF SSB service. About the only hassle with satellite communications are higher equipment costs, and one other big problem that you just can't get around when working through

the geostationary “birds.”

Q. What is the big satellite phone problem?

A. The voice isn't always crystal-clear
B. A chirping sound is always encountered

C. Ten-minute hook-up time with the geostationary satellite

D. Voice delays and echoes

The delay and echo is probably what throws most cruise ship customers off during their fast-paced discussion with the office. When a mariner operates from a geosynchronous satellite, there is always that half-second delay, plus digital-to-analog delays, plus processing delays, so sometimes an annoying echo and a noticeable delay will make a fast-paced conversation next to impossible. On marine SSB, this is not a problem.

But the big problem facing AT&T is

lack of customers. When Iridium gets in full swing, even more customers will drop their SSB systems and go for the sky phones. Electronic E-mail from INMARSAT-C, as well as SSB E-mail shore stations, is also taking its toll.

AT&T has just centralized its bank of hardworking technical operators in a facility in Ft. Lauderdale, Florida. The technical operators are no longer at each one of the coastal stations. These technical operators, many who are active amateur radio operators, are beginning to sense there are some ominous changes ahead. You can tell this in their voice when you connect to them getting a new station on the air.

Most recently, I hooked up with one AT&T station, and brought the technical operator on line for some radio performance checks. In the background, I overheard another technician say, "... hope we are around for your next radio check ..." When I asked the AT&T technicians about possible automation of their jobs, everyone made it loud and clear they had absolutely no comment on this subject, and I should contact an AT&T PR person for further information. This was a job within itself. AT&T's Guy Ram (973-326-4285) indicated he is top management at AT&T Maritime Services, but declined to comment on the outlook of live operators being able to take incoming ship-to-shore, high seas SSB radio calls. We were referred to Ms. Janice Berenga (609-397-4880) who indicated there was absolutely no statement from AT&T about turning off the high seas marine radiotelephone system. When I further pushed my questioning to ask whether or not she was indicating there would be no CHANGE in the high seas service, her comment was, "... I did not say that ..." — which leads me to think that the technicians may be right and the HF marine radiotelephone service may soon be destined for a shutdown.

What about the thousands of mariners who have marine SSB equipment on-board, preprogrammed for AT&T long-range radiotelephone stations? What about all of the commercial boat operators who rely on AT&T to pass their voice ship-to-shore traffic? What about the hundreds of wives and children who have loved ones out at sea and their only contact with them is through the high seas AT&T service?

And while there are a handful of other ship-to-shore providers, most have already gone digital, and none offer near

the signal capabilities as AT&T. For several years, AT&T has tried to promote an imported handset signaling device that hooks into an existing voice SSB for "AT&T high seas direct" dial-up from any vessel to virtually any phone in the world. Making calls using the AT&T high seas direct device requires inputting your assigned five-digit personal identification number and the area code and number of the party you are calling. Everything else happens direct without the need of a live operator. The handsets were expensive — \$1,000 — but it did lower the price per phone call to about half. In fact, I'm told that about a year ago there was even a greater savings in phone call rates by using the AT&T high seas direct handset device, but the marketing of this device never seemed to get much attention by the thousands of voice AT&T users. Now I'm told

the \$1,000 device is no longer available, and if the operators indeed go away, there might be little chance of getting a direct dialer to input your HF SSB phone call.

If AT&T high seas were to do anything in the cost reduction area now, you would think they would market the heck out of these direct dialers and give their customers fair warning that, for example, after six months, anyone without a dialer won't be able to make an AT&T high-frequency SSB phone call. That would certainly get some sales!

So if you are a regular on the marine bands as a user, technical repairperson, or listener, stand by for some big changes. Contact AT&T for more information, and write MariTel for their color frequency chart. Then stand by and see what's next for terrestrial ship-to-shore and shore-to-ship analog phone calls. ■

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A LOOK BEHIND THE DIALS

The Marvelous Red Lion Crystal Radio

Do you remember your first radio? I'm talking about the first radio that was yours alone to own and use? I do. I was about seven years old, and the radio in question was a bright yellow Remco crystal radio kit. I don't remember the reason I was given the radio — maybe it was a birthday or Christmas gift. Or, perhaps it was just a bribe to keep me from tearing apart what few radios remained unmolested in the local neighborhood. Through a child's eyes, it was quite a piece of equipment. There was a large wire-wound slider coil for tuning, an earphone, and of course a magical "crystal diode" to snag distant signals from the ether for my listening pleasure.

The radio needed an antenna. Erecting a suitable longwire was an engineering challenge for a seven-year-old. At least 20-feet of wire had to be sneaked out of mom's kitchen window, and tied at the far end to a very tall 15-foot tree. The ground was easy. Back then radiators were large exposed pieces of iron, connected to real steel pipes and finally to the city water system. The little Remco kit was finished, the antenna wire strung, and the ground connected. Holding the earpiece tightly against my ear, I carefully adjusted the slider over its tuning range until the faint sounds of WDRC in Hartford, Connecticut could be heard! From that day on, I was hooked on radios.

While my original Remco crystal set is long gone, I was lucky enough to find one, new in the box and unassembled, at a toy show auction. These little sets are still kicking around, and I have since learned they came in both red and yellow models. The yellow model is more common. I must confess the radio looks much smaller than it did 40 years ago! I am still fascinated by crystal sets, and have quite a few in my collection. Several years ago, I was visiting with a friend (his name and location I will carry to my grave!). Let's just call him "Mr. X." Mr. X is retired, and is rather elderly, but he is also a rather active fellow. His knowledge of vintage radio is limitless. Mr. X is also rather talented, and has the uncanny abil-

ity to make "new" things look like "old" things. During my visit, I learned Mr. X was engaged in a project, building a replica of a boy's early crystal radio kit. Everything looked as if it came from the early 1930s, and I suppose many of the components did. It was a rather plain looking device, with interconnecting metal straps used between the various components — slider coil, detector stand, etc. It was a rather generic combination of several crystals set designs from that era, but "something" was missing, and I wasn't quite sure what it was.

The next week I stopped by again, and there it was, a marvelous Red Lion screened onto the board, a cartoonish looking character befitting a child's toy crystal set! Even a newly "manufactured" company name accompanied the Red Lion. The illusion was complete — one-of-a-kind mass-produced 1930s crystal radio kit. It would have been the pride and joy of any red-blooded American boy back then!

Years later, I was walking the aisles of a major New England radio show, and there it was, the Marvelous Red Lion matched my glaze. I didn't recognize its new owner. I inquired about the price. "Is it original?" I asked.

"You bet! \$125, and that's a bargain! It was made in 1929!"

"I think not" I replied.

Two years later, I visited another radio show. Again fate intervenes and I am face-to-face with Mr. Red Lion, only this time he's with another new owner who is anxious to sell. The exchange continues.

"How old?" I ask.

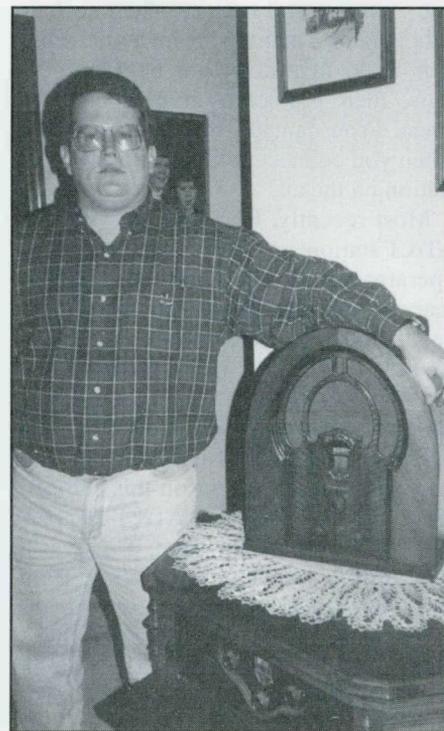
"It was made in 1923 and it's a rare find."

"How much, sir?"

"\$300, and my price is firm!"

"Wow" I reply. Just as I'm ready to walk away, the Red Lion winks at me. I almost wink back, catching myself in time. His mane looks a little prouder, and his grin is definitely growing wider.

It's been a while since I've crossed paths with Mr. Red Lion, but I haven't given up hope. I anxiously scan each issue of ARC and the aisles of radio



Reader Bill Moore with some of his radios. Note the handsome Philco cathedral.

shows awaiting his resurrection. I am sure it will happen. The moral of this tale? There is none. But, if you happen to see the Marvelous Red Lion Crystal Set, I would like to know.

"Radio Connection" — Under Construction

I mentioned a few issues back that the "Radio Connection" would be moving into bigger quarters by spring. I began the addition last September, and as this column is being written in early December, the new room is nearing completion. At least the rug is in, but I have yet to begin building the new workbenches and shelves! I ordered some new office furniture for the computer work area, and I am suffering with the "two, five, or maybe six weeks" dancing delivery schedule from the vendor. I am really pushing to have

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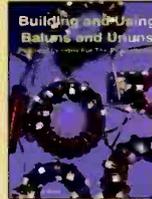


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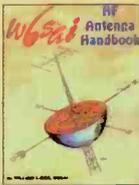
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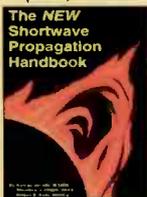


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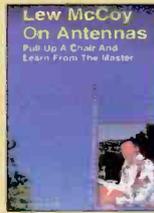


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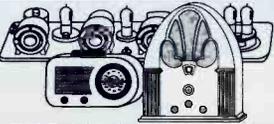
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CIRCLE 67 ON READER SERVICE CARD



More sets from Bill's collection. These are some rare and unusual sets! The only one I recognize is the Zenith "Walton" tombstone, the third radio on the second shelf.

everything done and moved in by the end of January. My old workbench has been removed, and everything radio-related is stored in boxes and scattered throughout the house.

The wife is muttering nasty comments about stringing Christmas lights over the piles of "junk." I can't even find my camera to do photos for the column. So, please bear with me a bit longer, and I'll be back into some serious restoration projects in short order! The new room is 12 by 22-feet; that's over four times the floor space we were previously squashed into.

Radio Resources — Finding Tubes

Radios and TVs stopped using tubes back in the '60s. That's 30 years ago. So we have generations of folks who have never seen or used tube-based equipment. I am often amazed by folks saying that an old radio probably needs new tubes, or that it is impossible to find replacement tubes. Fortunately, a new tube from the early '30s is as likely to test the same today as the day it was made. Tubes rarely go bad sitting unused! Indeed, most of the tubes in old radios are usually good for many more years of service! Even better, the vast majority of tube types are still available at reasonable prices. The problem is knowing where to look for old tubes! The best source is often antique radio meets.

Check The Shows

Many tube vendors offer decent discounts on tube prices at shows. Also, many vendors will test and sort used tubes, box



Most of these sets appear to be of European origin.

them, and offer them at prices considerably lower than new tube prices. For example, let's look at the 45 triode audio output tube. A good used 45 tube will probably run you at least \$80 NIB (New-in-Box). The 45 audio tube is a good example of an "expensive" radio tube, partially due to the demand for audio triode tubes by audiophiles! Many early radios also used the 45 for the audio stages. The first 45 tubes were made in "globe" (also called "S" or "balloon") shape. These are more desirable due to their rarity and can command prices well over \$100 NIB. One of my early 1930s Zenith consoles requires three globe 45 tubes in the audio section! You can bet when I play the radio the 45 globes are replaced with the less costly 45 ST (shouldered envelope) styles! These can be found used and tested "good" for as little as \$15 or \$20. If you will settle for marginal emission, the price drops accordingly. Most triode audio tubes will play quite well, even with low emission.

Some dealers will only bother testing and sorting the more expensive used tubes, while others will deal in less expensive used and tested tubes. Perhaps a better example is the venerable 80 rectifier, a tube found in 80 percent of the sets in my collection. This tube was made for many decades, and has undergone at least three styles of glass envelopes. The earliest 80 tubes were made in the globe style, and like most early globe tubes they are marked with a three-digit code. For example, a 280 or 380 is still an 80 rectifier, the first digit denotes the manufacturer. Each manufacturer, such as RCA or Cuning-ham, would use a unique first digit to identify tubes of their manufacture. Good used 280 globes can go for over \$30, while NIB later style 80 tubes in the ST or

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Tubular styles can be found for about \$10 or \$20 each, respectively.

Fortunately, most radio tubes still run in the \$5 to \$10 category. Prices vary widely between the commercial business dealers and the smaller tube sellers, so it pays to shop around! Here's a short list of tube vendors who are noted for fair and honest transactions. Besides vintage radio tubes, most also cater to the needs of CB, Amateur Radio, and audiophile enthusiasts. Vendors marked with an asterisk (*) may also offer schematic services, parts, or vintage radio supplies. Write for catalog information.

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The center shelf of this portion of Bill's radio collection appears to be devoted to some gorgeous-looking Atwater Kents!

Finally, for my overseas readers, and for those who own foreign sets, I have not completed a listing of foreign tube dealers. Many of the more common European tube types are available from U.S. distributors. Some overseas dealers can be found listed at the following Website: <<http://www.mnsinc.com/bry/mega/tubes.htm>>.

From Our Readers

This month we are featuring reader Bill Moore's outstanding collection of early radios. Bill appears to have some very fine sets in his collection. I dare say his interests are in very close alignment with my own. Here's Bill's story.

"I became interested in electronics at age eight by tinkering with components. My dad encouraged my interest and supplied me with books and parts from time to time. By age 15, I had my first tube radio. While in high school, I learned tube theory, started my own repair shop, and filled dad's barn full of very cheap radios. After high school, I went on to college to study physics, and chemical and electrical engineering. After graduating from college, I worked for a defense contractor "reverse engineering" Russian tank radios.

My interest in vintage radio collecting was rekindled after settling in Huntsville, Alabama. I went through the same evolution

as most other collectors do as their interests change. One thing that kept me interested in this hobby was the high quality of the people I have met.

I settled on collecting tombstone and cathedral-style radios of German, American, English, and Australian manufacturers about 15 years ago. A few years later, I decided to specialize in Pilot, Zenith, and Atwater Kent tombstones/cathedrals representing the top ends of each line (the bigger the better!). The Pilot sets have been elusive and required a lot of effort to acquire. I may never find all of the Pilot models I wish to add to my collection. I enjoy the chase and challenge of finding that rare set no one else has seen, and the pride in restoring these old sets. I collect to suite no one else but myself.

In 1986 I formed the Southern Vintage Wireless Association to promote antique radio in the central South. About the same time, I wrote articles for some of the smaller publications. My current collection consists of about 100 cathedrals and tombstones, with a scattering of a few others, such as a model 9 AK breadboard and some Rocket crystal sets. My job and family are still very top priority; and without the patience of my wife Becky, my radio collection would be very much different!"

Thanks Bill! That wraps up the "Radio Connection" for this month. Keep those cards and letters coming our way. And wish me luck with my renovation. ■

The Pirate's Den

BY EDWARD TEACH

FOCUS ON FREE RADIO BROADCASTING

Check It Out — It's Not All On 6955!

Off we go into Pirateland! Remember, your pirate logs are always welcome, so please send 'em along.

Scream of the Butterfly, 6955 SSB at 2310 "broadcasting from somewhere in the North Atlantic" and mentioning that Radio Eclipse was the relay. Off at 0013. (Tim Taylor, PA)

Voice of the Pig's Ear, 6955 SSB at 0003 with comedy spoofs and talk about George Burns and old-time comedy. Off at 0018. Also heard tentatively at 0001 with old and new country music. Also at 0135 with various songs — *Give It Steam*, *Sledgehammer*, *Heartbreaker*, *Roxanne*, and talks about Clinton, the government installing "permits" on your property, taxes, etc. Phonetic ID as "Victor — Oscar — Papa — Echo." (Taylor, PA) 2325 with anti-Clinton stuff and rock. Also at 0220 with anti-government talk. (William T. Hassig, IL) At 2027 with usual stuff. No drop address given. (Lee Silvi, OH)

Radio Nonsense, 6955 SSB, on monitored at 0129. Skits about the postal service, a man walking the plank, spoof on the "Safety Institute" and others, including Clinton's denial speech. DJ was "Jo Mama." Also a spoof on numbers stations, *I Love Lucy* skit, James Bond type music. Off at 0149. Also heard at 2344. (Taylor, PA)

WMPR, 6955 heard at 2323 with ID only. Heard again at 0331 with techno-pop. Off at 0351. (Taylor, PA)

Radio Free Euphoria, 6955 SSB heard at 0140 with ID and off at 0141.

Radio Metallica Worldwide on 7414 heard at 1934 with hard rock, funny Clinton comments, techno-pop. Secret Agent theme and Blue Ridge address. (Dave Jeffery, NY)

Radio Azteca, 6955 SSB at 2052 with ID, parody on DX programs, listener's letters, and off at 2111. (Jeffery, NY)

Radio Eurogeek, 11092 SSB monitored at 1756 before Radio St. Helena's special at 1900. Comments on a variety of topics, music, IDs. Gave the Providence, Rhode Island address. (Jeffery, NY) On 11092.5 from 1729–1807. Again 1808–1850 with DJ whining about being poor. (Hassig, IL)

Radio USA, 6955 at 2147 with IDs, funny commercials. (Jeffery, NY) 2135 with punk rock, funny commercials, "broadcasting from a leaky bathtub off the coast of the USA." (Hassig, IL) 2136 to 2215 with Belfast, New York drop announced. (Silvi, OH)

Radio Free Speech, 6955 at 0305 with funny bits and fake commercials. (Hassig, IL) 6955 at 0024 to 0029. (Lee Silvi, OH)

Partial India Radio, 6955 USB at 2125 spoofing All India Radio with bad accents, song *Take Me to the River*. (Hassig, IL)

WFRR, tentative, 6955 USB at 2202, but DJ was impossible to understand because of tinny audio and too many echoes. Pop and rap. (Hassig, IL)

Radio DC (tentative), 6955 USB with Black and reggae music. "Your alternative voice inside the Beltway." (Hassig, IL)

WJFK, 6955 USB heard at 2225. "Midnight at the Oasis" and slow ID at 2230. (Silvi, OH)

Radio XANAX, 6954 at 2357 with IDs, music. Stoneham mail drop. (Silvi, OH)



Tim Taylor got this QSL from K-2000.

WACK Radio, 6955 USB at 1557 to 1703 with several songs and IDs. Announced "WACK Radio — NOT Black Radio" (as some have reported). (Silvi, OH)

Rock It Radio, 6955 USB at 0027 to 0113. (Silvi, OH)

Voice of Hell on 6955 from 0117 to 0145. (Silvi, OH)

Jerry Rigged Radio heard from 0000 to 0036 on 6955 with a "special seance" program. (Silvi, OH)

BFR — Blind Faith Radio monitored on 6955 USB from 2142 to 2148. Started out strong but then had technical problems at 2148 and said they'd return later. (Silvi, OH)

Radio Bob Corn Net, 6955 USB at 2340–0008 with a program from 1993. (Silvi, OH)

We didn't get quite as many loggings from you this month, but I unexpectedly had to wrap things up a few days earlier than normal. Keep your ears tuned to 6955 and other popular pirate haunts and keep reporting on what you're hearing.

See you again next month!



Radio Azteca issued this QSL to Tim Taylor. Judging by the number of cards they've issued, this station has been heard by many people!

27-MHz COMMUNICATIONS ACTIVITIES

Damned If You Do, And Damned If You Don't

“Sure, I’d like to obey the laws,” complains PR of Pennsylvania, “but I find it hard to talk to my neighbors and nearby mobiles when the ‘Big Dogs’ start rumbling. What are you gonna’ do? Either you talk to the skip stations, and risk losing your radios, or turn the damned thing off.”

Sound familiar? Perhaps you’ve been there. I know I sure have. You’d like to use this short-range, low-power, local communications medium we call CB to talk to your neighbors down the street or across town, but what do you get? SKIPLAND! So what do you do? Peak and tweak your radio. Put up a larger tower. Install bigger antennas. Maybe you buy beefier rigs and eventually find yourself working those forbidden “extras” above channel 40. In the end, however, all you get for your efforts, aside from increased opportunities for fines and/or imprisonment, is a better copy on some distant loudmouth who is telling you to “Shut up stupid. We’re tryin’ to talk local up here.”

While at first this may not sound like an open invitation for enlightening conversation, it could be. Think about it. You really have a lot in common. Both of you are being frustrated in your efforts to talk local. Both of you probably have a great deal of time, money, and effort invested in your stations. Both of you would really like to enjoy them. And right now, both of you are about to reach through the mic and grab the other by the throat and squeeze.

Are we having fun yet? Is this why you got into radio? Is this the way you want to spend the rest of whatever time you’ve got left on the air? Wouldn’t you really rather be having a good time, engaged in stimulating conversation with a good friend, instead of foolishly blowing your top at some stranger hundreds or thousands of miles away? Well, you can. All you have to do is get a grip on reality. Step back, take a fresh look and see what your *real* problems are and where opportunities lie.

Not Always What It Seems

Citizens’ Band radio is not a short-range local medium, at least not all of the

“Am I suggesting we ignore the law? No, not at all, just to put the law in proper perspective.”

time. Oh, I know, the FCC rules say that it is. But the *real* rule makers, God and Nature, say different. Am I suggesting we ignore the law? No, not at all, just to put the law in proper perspective.

FCC regulations, though well intentioned, were ill conceived from the beginning. The passage of more than 40 years has only served to turn them from poor to irrelevant. Their declaration that CB must be only used for short-range communications is about as rational as the National Weather Service declaring that it should never snow in Minnesota. And it’s just as effective. Even if such a decree were made, I have the utmost confidence that most Minnesotians would still quit swimming, and start ice fishing when their many fine lakes froze each winter. Should we, the citizens of 11-meters, be less sensible?

We could, of course, out of respect for the law, simply pack up our rigs and quit when local conditions deteriorate. Without question, over the years, many law-abiding operators have done just that, leaving the loud and the lawless to fearlessly run roughshod over the band. Fortunately there are operators, like PR from Pennsylvania, who go with the flow of nature. Good neighbors to the core, they enjoy the various faces of our band in their season. Talking local when they can, worldwide when conditions permit, and enjoying every minute. Shouldn’t we all?

As we approach the dawn of a new Millennium, we must come to grips with the fact that, for better or worse, sooner or later, the rules will change. A time is coming when regulators will take a long overdue look at the laws governing CB radio. When that happens, it will be up to operators like you and me to see that this time, the rules make sense.

To be successful, we will have to be ready. We will need a plan and we will

need people. So, next time you hook up with some long-distance loudmouth, instead of launching a verbal assault, take a minute to make a friend. Then, both of you dare to dream.

Why Not FM?

Sean, of Amelia, Virginia, is dreaming of the day when American Cbers will be able to operate in FM mode. “I’d welcome FM to CB,” says Sean, “just as I would invite a friend for a cup of coffee.”

Sean points out that in many countries around the world, including England and the United Kingdom, FM, not AM, is the standard mode of operation. So he wonders why it is not allowed here in the USA. I wondered too, so I called the FCC to find out. My call was directed to the Wireless Division, where I got to talk with Mr. Bill Cross. In his daily duties at the FCC, Mr. Cross often hears of the problems with CB — usually from people outside the hobby who are being plagued by TVI (Television Interference). Off the job, Bill Cross is an amateur radio operator, particularly fond of 40-meters, so he really knows about the pleasures and pitfalls of hobby radio.

“You (CB),” said Cross, “are a victim of history and technology. FM was not considered for CB when the rules were written back in the 1950s because the technology of the day made it impractical. At that time, each FM channel would have required 25 kHz of space as compared with 10 kHz for AM. That would have severely reduced the number of available channels. Equipment manufacturers pushed for rules that would allow them to use the technology they had available. In other words, to fit the radios they could make.”

Cross also pointed out that technological advances now allow FM to work with 12.5 kHz of bandwidth. This is what the new Family Radio Service (FRS) uses. FRS has really taken off over the past two years and promises to become the short-range, low-power, universally available communications medium that CB was supposed to be. So, in a way, cit-

"CB is not a short-range local medium, at least not all of the time."

izens now do have access to FM, just not on 11-meters.

Where Does That Leave Us?

Unless I'm missing something here, it would appear, for all practical purposes, that 11-meter CB might just have lost its official reason, and therefore justification, to exist—at least in its present form. So, the time for change could be closer than we think.

Could FM be allowed on 11 meters? Yes, if the rules were changed. As a practical matter, you would need more space. That of course raises the question of where it would come from. CBers naturally would point to the Freeband, between channel 40 and the 10-meter amateur band. So, in addition to rule changes, frequencies would have to be reallocated. That could prove tougher than getting the rules changed. Currently,



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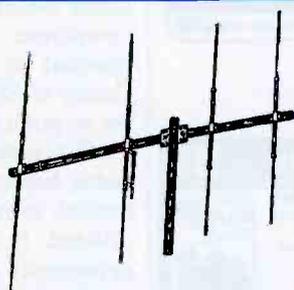
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CIRCLE 69 ON READER SERVICE CARD

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CIRCLE 11 ON READER SERVICE CARD

"Could FM be allowed on 11 meters? Yes, if the rules were changed."

the space in question is assigned to the Private Land Mobile Service (27.410-27.540 MHz) and the federal government (27.540-28.000 MHz), the latter of which is not even under the jurisdiction of the FCC.

During our conversation, the question of complaints and enforcement came up. Cross asked me to pass along that all complaints and questions should be directed to the FCC's National Call Center at 888-225-5322. He also asked me to point out that, contrary to rumor, the FCC is still enforcing the rules. He did admit, however, that their resources were limited, so enforcement has had to be prioritized. It is carried out as time and opportunity allows. Their main concern is safety of life. Operators interfering with essential services, such as airport ground-to-air communications are right at the top of the list. Other problems are occasionally addressed, especially if there has

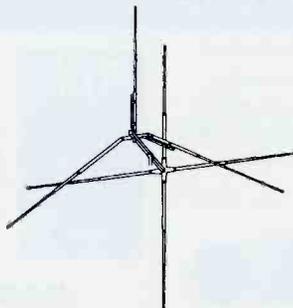
been sufficient information gathered by complainants. In other words, if you have a problem operator in your area, do your homework before contacting the Commission. Find out who it is, where they are, what they are doing, and when they are doing it. Armed with good information, a FCC enforcement team is more likely to respond to your complaint next time they are in your area.

March Mixer

Looking for a little chatter on the CB? Then plan on attending the next on-air CB Mixer. It will be on the last Saturday of March, the 27th, from 9 to 10 p.m. local time. SSB operators should work channel 36 LSB, AM operators work channel 25. For complete guidelines, see the November issue of *Pop'Comm* or drop me a note.

Well, that is it for now. 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 (especially on March 27th) . . . catch me on the radio! 73 — Ed

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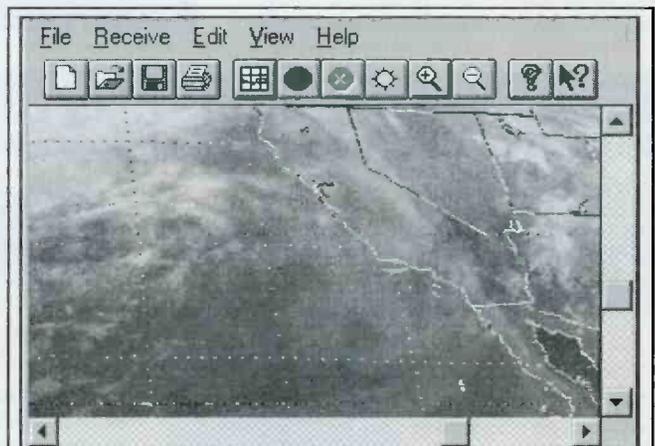
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CIRCLE 72 ON READER SERVICE CARD

Antennas & Things

BY JOE CARR, K4IPV

<carrjj@aol.com>

SIMPLE ANTENNAS AND ACCESSORIES FOR SIGNAL IMPROVEMENT

Making Your Shortwave Antenna Better

There are many antennas that shortwave listeners use — they fall into two basic classes: Hertzian and Marconi. The Hertzian antennas are balanced with respect to ground. The most common example of the Hertzian antenna is the half-wavelength horizontal dipole. The Marconi antennas are unbalanced with respect to ground. The most common examples are verticals and random length wire antennas (which is often the first antenna an SWL builds). There is one means for making all of these antennas better: **an improved ground plane**. Let's take a look at how this can be done. But first, let me set the stage by describing our reference antenna, the simple — but effective — resonant dipole.

The Dipole

Figure 1 shows the basic construction of a half-wavelength horizontal dipole

antenna suitable for shortwave use. The supports are shown here as masts, but they can be any combination of things that give the needed height, including trees, buildings, masts (commercial and homemade). The antenna is hooked to the masts through ropes. Nylon rope works best (nylon parachute cord is easily available). Cotton based "clothes line" rope stretches and causes the antenna to droop and when it gets wet, it basically begins to deteriorate (making it short-term solution). Other forms of rope tend to be too large to fit through the holes in the insulators. The ropes are tied to end insulators, either ceramic, glass, or nylon.

The wire segments are made of No. 14 AWG stranded copper wire (special antenna wire is best). Each of the element lengths (A) are a quarter-wavelength long, and the overall length is $B = 2A$. The general formula for length is that $B = 468/F_{\text{MHz}}$ and $A = 234/F_{\text{MHz}}$. The

"468" constant is an approximation of the foreshortening from the "real" half wavelength ($492/F_{\text{MHz}}$) caused by capacitive end effects and wire velocity factor. For example, if you want to make a dipole for the 31-meter international shortwave band, pick a frequency in the middle of the band (e.g. 9.95 MHz) and solve the equations: $B = 468/9.95 = 48$ -feet, or $A = B/2 = 48$ -feet/2 = 24-feet.

The height of the dipole above the Earth's surface affects its angle of radiation and feedpoint impedance. Most authorities recommend either quarter-wavelength ($246/F_{\text{MHz}}$) or half-wavelength ($492/F_{\text{MHz}}$), if you can't make it much higher than one-wavelength (i.e. "free space"). In this article, I am recommending $3/8$ wavelength ($369/F_{\text{MHz}}$).

The Ground Plane

The nature of the ground underneath

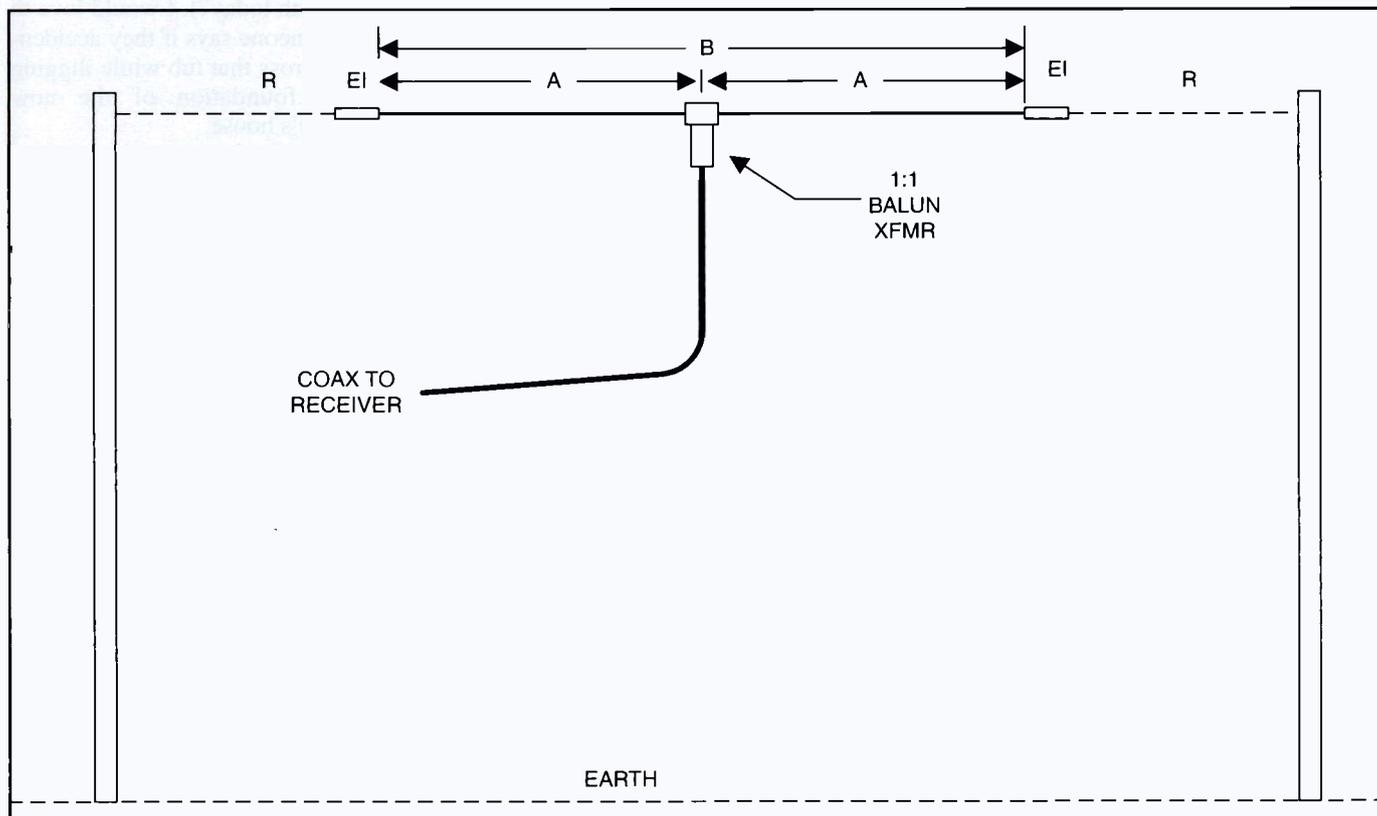


Figure 1: Basic construction of a half-wavelength horizontal dipole for shortwave use.

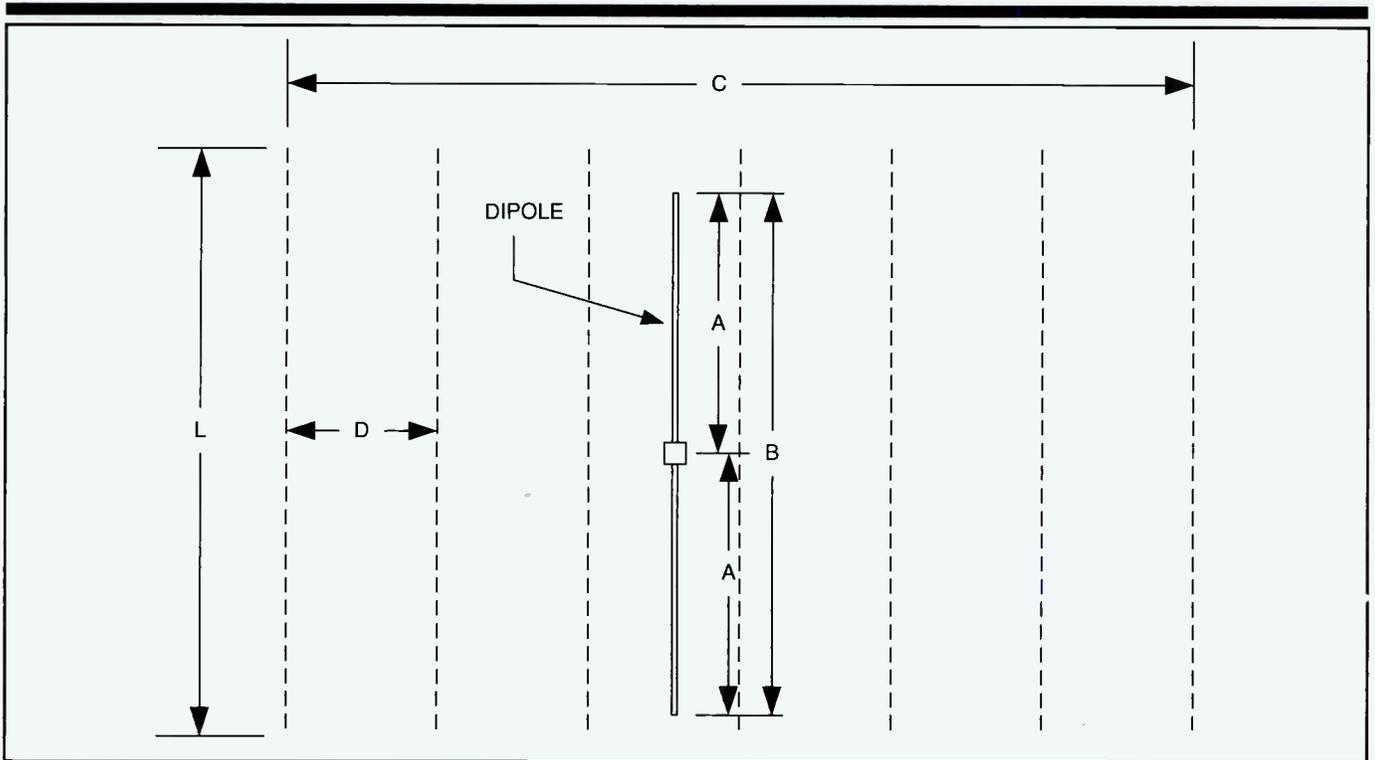


Figure 2: A ground plane of wires beneath the antenna.

an antenna profoundly affects its performance. I use the Nittany-Scientific Nec-Win Basic software to model antennas. That software allows you to pick various types of ground, including the "standard" Sommerfield ground, or make up one of your own. The conductivity of the soil is the principal issue, I suspect. When you select the various categories, the radiation pattern changes with the type of ground, with the elevation extent (including angle of radiation) being most affected. The

best performance occurs when the ground has a high conductivity. Hence, the ground plane.

I actually saw examples of a ground plane quite early in my career. One was at the home of an older ham when I was a recently minted General Class amateur radio operator (late 1950s). "Ol' Abe" (as we called him) had been around in ham radio since before World War I, and worked professionally as an electronics engineer. He had a unique ground system.

I discuss "Abe's bathtub" in some of my antenna books. He actually buried an antique copper bathtub beside his house before the backfill was done during its construction (any idea what that tub would be worth today?). I would love to hear what someone says if they accidentally come across that tub while digging around the foundation of the now deceased Abe's house.

But Abe's bathtub isn't really the point of this discussion. The other aspect of

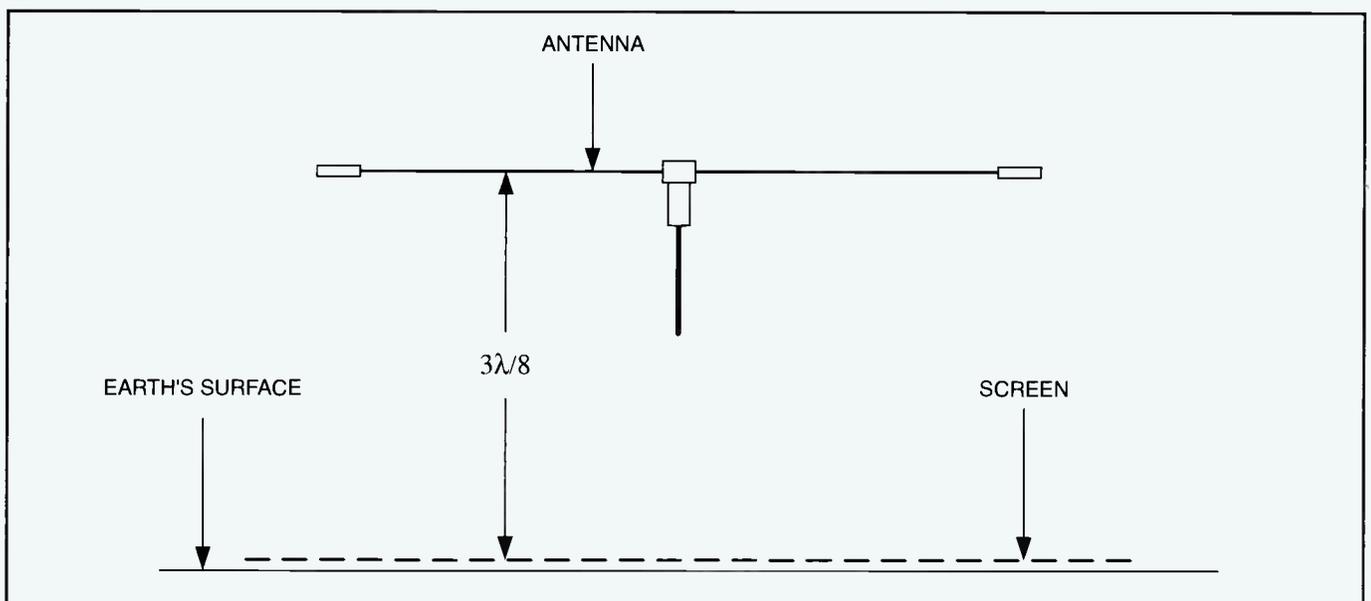


Figure 3: Side view of the ground plane installation.

Abe's ham radio ground was a ground plane screen. Before the contractor who built the house put in the grass sod, Abe and a couple of buddies went out there and laid down a grid of No.8 AWG bare copper wire. They soldered the junctions of the wire with special lead/tin solder that also contained two-percent silver.

Another friend, a broadcast engineer named "Davo," told me about a relatively low-power AM BCB station that he built. The station had an excellent signal all over the area, much more so than would be explained by the power level. The way he achieved that success was to place a ground plane of wires underneath the sod.

Still another AM BCB station had to install a new antenna tower. The station engineer used the occasion to also order an extensive ground plane installed. The sod was bulldozed up, and the wires installed. The site was then re-sodded.

In all of these cases, a ground plane underneath the antenna improved the transmitter's signal strength. One of the "laws" of antennas is the law of reciprocity; the antenna works on receive as it does on transmit. If the ground plane works well for transmitters, it will also work well for receivers.

Abe's ground plane was a little excessive. It made sense to him, but was a case of overkill. The same effect can be obtained using a ground plane such as **Figure 2**. In this type of ground plane, a number of wires, each greater than a half-wavelength, are placed beneath the antenna. The minimum length for the wires is $L = 0.6$ wavelength, so they should be longer than $590/F_{\text{MHz}}$. The wires should be spaced not more than one-tenth wavelength for the grid to be effective. The overall length of the grid should be at least $1476/F_{\text{MHz}}$. The grid can be made of No. 14 AWG bare antenna wire, and need not be connected to the antenna in any way.

Figure 3 shows the side view of the ground plane installation. The grid is on, or immediately below the ground surface, and can be in contact with the ground. There is, however, a safety issue if the antenna is on the surface. Pedestrians can trip over the ground plane wires. And you might be held liable in a civil suit even if the victim is a trespasser. That's why I recommend *buried* ground planes. If your lot is still unsodded, then it's easy. But even if it isn't, you can use the tip of a spade or other tool to cut a slit trench for the wires, in the same manner as radials for a vertical are installed.

Ground planes of this sort can be installed for almost any form of antenna. The trick is to make the ground plane a bit larger than the antenna dimensions, and place the wires more or less symmetrically around the antenna. On a vertical antenna, for example, a field of radials (16 is considered the optimum number) is placed in a symmetrical circle around the base of the antenna.

Other antennas, such as the long wire, half-delta, or Beverage, are often improved considerably by adding even a single ground return wire from the far end of the

antenna wire to the ground connection at the feedpoint.

Of course, if you want to spend a lot more money on copper and sod, and want a ground system like ol' Abe, then go for it. For lesser aspirations, however, the ground plane presented in this article is more than sufficient.

Connections . . .

I can be reached at P.O. Box 1099, Falls Church, Virginia 22041, or via E-mail at <carrrj@aol.com>.



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Why Wilson 1000 Performs Better

Many CB antennas lose more than 50% of the power put into them. The power is wasted as heat loss in the plastic inside the coil form and not radiated as radio waves.

We have designed a new coil form which suspends the coil in air and still retains the rigidity needed for support. This new design eliminates 95% of the dielectric losses. We feel that this new design is so unique that we have filed a patent application on it.

In addition, we use 10 Ga. silver plated wire to reduce resistive losses to a minimum.

In order to handle higher power for amateur use, we used the more efficient direct coupling method of matching, rather than the lossy capacitor coupling. With this method the Wilson 1000 will handle 3000 watts of power.

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So far you have read about why the Wilson 1000 performs better, but it is also one of the most rugged antennas you can buy. It is made from high impact thermoplastics with ultraviolet protection. The threaded body mount and coil threads are stainless steel; the whip is tapered 17-7 ph. stainless steel. All of these reasons are why it is the best CB antenna on the market today, and we guarantee to you that it will outperform any CB antenna (K40, Formula 1, you name it) or your money back!

*Inductively base loaded antennas
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A Division of Lockheed Corporation
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Wilson Antenna Company Inc.
3 Sunset Way, Unit A-10
Green Valley Commerce Center
Henderson, Nevada 89015

Subject: Comparative Gain Testing of Citizen's Band Antennas
Ref: Rye Canyon Antenna Lab File #870529

We have completed relative gain measurements of your model 1000 antenna using the K-40 antenna as the reference. The test was conducted with the antennas mounted on a 18' ground plane with a separation of greater than 300' between the transmit and test antennas. The antennas were tuned by the standard VSWR method. The results of the test are tabulated below:

| FREQUENCY (MHZ) | RELATIVE GAIN (dB) | RELATIVE POWER GAIN (%) |
|-----------------|--------------------|-------------------------|
| 26.965 | 1.30 | 35 |
| 27.015 | 1.30 | 35 |
| 27.065 | 1.45 | 40 |
| 27.115 | 1.60 | 45 |
| 27.165 | 1.50 | 41 |
| 27.215 | 1.60 | 45 |
| 27.265 | 1.75 | 50 |
| 27.315 | 1.95 | 57 |
| 27.365 | 2.00 | 58 |
| 27.406 | 2.00 | 58 |

**58%
MORE
POWER GAIN
THAN THE
K40**

Individual test results may vary upon actual use.

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FOR YOUR NEAREST DEALER

Wilson 1000

Roof Top Mount.....59⁹⁵ Little Wil.....29⁹⁵
Trunk Lip Mount.....69⁹⁵ Wilson 2000 Trucker .59⁹⁵
Magnetic Mount.....79⁹⁵ Wilson 5000 Trucker .79⁹⁵
500 Magnetic Mount .59⁹⁵ Call About Fiberglass!!!
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Clandestine Communiqué

TUNING IN TO ANTI-GOVERNMENT RADIO

Consistent Clandestine Broadcasts From Colombia, And Anti-Castro Broadcasts On WRMI

Clandestine broadcasters in Colombia are operating more consistently than they have been in quite some years. **La Voz de la Resistencia**, the station of the Revolutionary Armed Forces of Colombia (Fuerzas Armadas Revolucionarias de Colombia, FARC for short) now has a morning schedule, opening a few minutes before 1100 on **6240**, slightly variable. This broadcast lasts until around 1230. The station says it also operates from 2130 to 2300. All this is in Spanish, of course.

Another station, operated by the National Liberation Army (ELN), is **Radio Patria Libre**, which hangs out around **6250**, with 30 to 40-minute broadcasts more or less scheduled around 1800, and again at around 2200. Sometimes they also show up in the 1100 or 1200 period.

The **Voice of Tibet** is currently using **7465** for its broadcast from just past 1230 to closing at 1255. This frequency is via a transmitter Tajikistan. The other Tibet opposition broadcaster, Radio Free Tibet, has discontinued its broadcasts.

The **Voice of Democratic Eritrea — the Voice of the Eritrean Liberation Front Revolutionary Council** uses **9230** daily from 1500 to 1530 in local languages. Another station follows with a broadcast at 1530. This one is called the **Voice of Free Eritrea** and is operated by the Eritrean National Alliance. And there's still another, also using **9230**! The **Voice of Truth** speaks for the Islamic Salvation Movement with a half-hour broadcast Saturdays and Sundays at 1530. Ironically, the present Eritrean government — when it was fighting its long war against the previous government — had its own clandestine station with one of the all time great names — **Voice of the Broad Masses of Eritrea**. That radio station is now the official Eritrean government radio, operating separate services on **7100 and 7175**. You should be able to hear this one occasionally at their 0330 sign-on.

Rainbow Radio, beamed at Ethiopia, is currently scheduled Sundays from 1000 to 1100 on **5910**.

Brian Alexander in Pennsylvania hears

Radio Kuridat, the Nigerian clandestine, on **11540**. This one signs on at 1900 and off at 2000 and includes some English. It also uses **6205** — a more difficult frequency for us. Tricia Ziegner in Maine caught them on **11545** at 1900. As she notes, the broadcasts come from South African government transmitters. It also uses the slogan “**voice of democracy**.” Incidentally, several other broadcasters who were on the air in opposition to the Nigerian government have gone off the air, largely because of a lack of operating funds.

A new Sudan opposition station is (take a deep breath here) the **Radio of the Voice of Freedom and Renewal, Voice of the Sudan Alliance Forces, Voice of the Popular Armed Uprising**. This one operates on behalf of the Sudan Alliance Forces, a guerrilla army made up of former government soldiers. The station operates on **variable 7000** and is on the air in Arabic from 1600 to 1700 and also occasionally from 0400 to 0500. The group has an office at 37 Cassidy St., #228, Kingston, Ontario K7K 7B3, Canada.

The much older other Sudanese clandestine, the **Voice of Sudan**, is operated by the National Democratic Alliance and is on slightly **variable 8000** at 1600 and 0400, also in Arabic. The Alliance is made up of a number of groups that oppose the present Sudanese government. The station's transmitters are believed to be in or near Asmara, Eritrea. The Alliance has an office at 16 Camaret Court, Lorne Gardens, London W11 4XX, United Kingdom.

The U.S. government's **Radio Free Iraq** broadcasts are using **6130, 9540, 9850, and 11915** between 1600 and 1700, and **5965, 7110, 7275, and 9740** from 0300 to 0330. It's likely that the schedule will have been expanded by now, reflecting the Administration's increasing desire to see Sadaam's departure. Radio Free Iraq is a part of Radio Free Europe/Radio Liberty.

Here's the most recent schedule for the **Voice of National Salvation**, which broadcasts from North to South Korea.

It's in operation from 0030 to 0100 (English) and in Korean from 0300 to 0700, 1000 to 1700, and 2000 to 0300 on **3480, 4450, and 4557**. It's also on **4120** from 1000 to 1700 and **6010** at 1000 to 1400. This one is occasionally heard during our early morning hours (1000–1200).

The **Voice of the People** airs from 0300 to 0700 on **6518 and 6600**, 1100 to 2100 on **3912**, and 2300 to 0100 on **6600**, all in Korean. It claims to broadcast from North Korea, but it's actually a South Korean government operation.

Echo of Hope (from the South to the North) is on **6348** from 0300 to 0600 and **3985** from 0900 to 2100, all in Korean.

East Timor, trying to gain some sort of independence from Indonesia, is supported in its cause by the **Voice of East Timor**, a program that's aired daily over **Radio Portugal** from 1200 to 1400, weekends from 0900 to 1000 on **17740**. Broadcasts are in Portuguese and the local Tetum language.

The **Democratic Voice of Burma** now airs from 1245 to 1345 on **13820 and 15330**, and from 1430 to 1455 on **11850, 13820, and 15635**.

The **Voice of the Palestine Islamic Revolution** is scheduled from 0400 to 0500 on **6020 and 9670**; 1830 to 2030 on **6025, 6145, 7190, and 9695**.

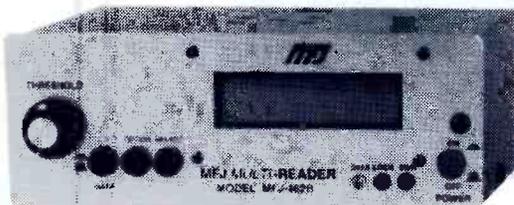
Anti-Castro **La Voz de Fundacion** continues to be heard via WRMI on **9955** from 1100 to 1400 Monday to Sunday. Other Cuban clandestine programming over WRMI includes “30 Minutos con el CID” Monday to Friday from 2330 to 0000 and Saturdays at 1430 to 1500. Foro Militar Cubano broadcasts Saturdays at 2000–2100, Sundays from 1200 to 1600. **La Voz de la Disidencia** is on Saturdays and Sundays from 2230 to 2300. Reports on any of these may be sent to WRMI, P.O. Box 526852, Miami, Florida 33152.

That does it for this time. As always, we appreciate your logs, QSL news, copies of QSLs, and any other information on the clandestine broadcasting scene which you care to share with your fellow readers.

Until next month, good hunting! ■

Tap into secret Shortwave Signals

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

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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 34 inch whip, 50 ft. coax. 3x2x4 in. 12 VDC or 110 VAC with

\$129⁹⁵ MFJ-1024 MFJ-1312, \$119.95.

Indoor Active Antenna



MFJ-1020B 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 minimizes 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 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™

You can save several pages of text in 8K of memory for re-reading or later review.

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MFJ's high performance *phaseslock loop* modem consistently gives you solid copy -- even with weak signals buried in noise. New threshold control minimizes noise interference -- greatly

Eliminate power line noise!



MFJ-1026 \$169⁹⁵

New! Completely eliminate power line noise, lightning crashes and interference before they get into your receiver! Works on all modes -- SSB, AM, CW, FM, data -- and on all shortwave bands. Plugs between main external antenna and receiver. Built-in active antenna picks up power line noise and cancels undesirable noise from main antenna. Also makes excellent active antenna.

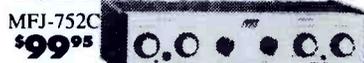
MFJ Antenna Matcher



MFJ-959B 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.

Dual Tunable Audio Filter



MFJ-752C 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.

High-Gain Preselector



MFJ-1045C 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.

Receive CW, RTTY, ASCII, Weather Maps, News Photos



MFJ-1214PC Use your computer and radio to receive and display brilliant full color FAX news photos and incredible WeFAX weather maps. 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 saver.

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.

High-Q Passive Preselector



MFJ-956 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 inches.

Super Passive Preselector



MFJ-1046 **New!** Improves any receiver! Suppresses strong out-of-band signals that cause intermod, blocking, cross modulation and phantom signals. Unique Hi-Q series tuned circuit adds super sharp front-end selectivity with excellent stopband attenuation and very low passband loss. Air variable capacitor with vernier. 1.6-33 MHz.

Easy-Up Antennas Book

How to build and put up inexpensive, fully tested wire antennas using readily available parts that'll bring signals in like you've never heard before. Antennas from 100 KHz to 1000 MHz. **\$16⁹⁵**

improves copy on CW and other modes.

Easy to use, tune and read

It's easy to use -- just push a button to select modes and features from a menu.

It's easy to tune -- a precision tuning indicator makes tuning your receiver easy for best copy.

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 12 VDC or use 110 VAC with MFJ-1312B AC adapter, \$12.95. 5 1/4 x 2 1/2 x 5 1/4 inches.

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Order an MFJ-462B MultiReader™ from MFJ and try it in your own setup -- compare it to any other product on the market regardless of price.

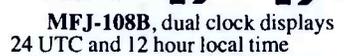
Then if you're not completely satisfied, simply return it within 30 days for a prompt and courteous refund (less shipping).

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

MFJ 12/24 Hour LCD Clocks



MFJ-107B \$9⁹⁵



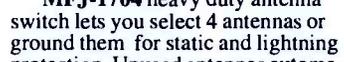
MFJ-108B \$19⁹⁵

MFJ-105C \$19⁹⁵

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

MFJ Antenna Switches



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.

MFJ-1702C for 2 antennas.

World Band Radio Kit



MFJ-8100K \$59⁹⁵ kit
MFJ-8100W \$79⁹⁵ 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

March 1999

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 | 6055 | Radio Exterior de Espana, | | 0230 | 5990 | REE, Spain | SS |
| 0000 | 9630 | Voz Cristiana, Chile | SS | 0230 | 9495 | Radio Sweden | |
| 0030 | 5950 | Radio Vilnius, Lithuania, via Germany | | 0230 | 9605 | Vatican Radio | FF |
| 0030 | 6120 | Radio Vilnius, Lithuania, via Germany | | 0230 | 9765 | RDP, Portugal | PP |
| 0030 | 6331 | Radio Arcangel, Peru | SS | 0230 | 13750 | Adventist World Radio, Costa Rica | SS |
| 0030 | 7160 | Radio Tirana, Albania | | 0250 | 7305 | Vatican Radio | |
| 0030 | 7345 | Radio Prague, Czech Republic | SS/EE | 0300 | 3240 | Trans World Radio, Swaziland | |
| 0030 | 9685 | VOIRI, Iran | | 0300 | 3300 | Radio Cultural, Guatemala | SS |
| 0030 | 9935 | Voice of Greece | GG | 0300 | 3380 | Malawi Broadcasting Corp. | vern |
| 0030 | 11815 | Radio Gaucha, Brazil | PP | 0300 | 4800 | XERTA, Mexico | SS |
| 0030 | 15395 | Radio Thailand | | 0300 | 4819 | La Voz Evangelica, Honduras | SS |
| 0100 | 4945 | Emisora Rural, Brazil | PP | 0300 | 4980 | Ecos del Torbes, Venezuela | SS |
| 0100 | 5011 | Cristal Int'l, Dominican Republic | SS | 0300 | 5840 | Croatian Radio | Croatian |
| 0100 | 5770 | Radio Miskut, Nicaragua | SS | 0300 | 7110 | Radio Ethiopia | vern; variable |
| 0100 | 5930 | Radio Slovakia, Slovak republic | | 0300 | 7255 | Radio Botswana | vern |
| 0100 | 6020 | Radio Ukraine Int'l | | 0300 | 9200 | Radio Omdurman, Sudan | |
| 0100 | 7250 | Voice of Vietnam, via Russia | | 0300 | 9475 | Radio Cairo, Egypt | |
| 0100 | 9737 | Radio Nacional, Paraguay | SS | 0300 | 9745 | HCBJ, Ecuador | |
| 0100 | 9840 | Radio Budapest, Hungary | | 0300 | 9755 | Radio Monte Carlo, via Canada | AA |
| 0100 | 9925 | Croatian Radio | EE/Croat | 0300 | 9820 | Radio Havana Cuba | |
| 0100 | 11900 | YLE/Radio Finland | Finnish | 0300 | 9865 | Voice of Russia | |
| 0130 | 4779 | Radio Coatan, Guatemala | SS | 0300 | 11665 | Radio Sweden | Swedish |
| 0130 | 6220 | Radio Tirana, Albania | variable freq. | 0300 | 11785 | Radio Iraq Int'l | EE |
| 0130 | 6798 | Radio Ondas del Rio Mayo | SS | 0300 | 12040 | Radio Ukraine | |
| 0130 | 9665 | Voice of Russia | | 0330 | 5905 | Voice of Vietnam, via Russia | |
| 0130 | 9870 | Radio Austria Int'l | EE/Croat | 0330 | 7115 | Radio Sweden | |
| 0150 | 11765 | RAI, Italy | II | 0330 | 7500 | Radio Moldova Int'l | |
| 0200 | 3210 | Radio Exterior de Espana, Spain via C. Rica | SS | 0330 | 9165 | Radio Dada Gordud, Azerbaijan | vern |
| 0200 | 4940 | Radio Amazonas, Venezuela | SS | 0400 | 3330 | Christian Voice, Zambia | |
| 0200 | 6155 | Radio Romania Int'l | | 0400 | 4919 | Radio Quito, Ecuador | SS |
| 0200 | 7130 | Radio Yugoslavia | | 0400 | 4930 | Radio Internacional, Honduras | SS |
| 0200 | 7450 | Voice of Greece | GG/EE | 0400 | 6265 | Zambia National Broadcasting Corp | |
| 0200 | 9475 | Radio Cairo, Egypt | | 0400 | 9580 | Radio Yugoslavia | |
| 0200 | 9780 | YLE — Radio Finland | | 0400 | 9730 | China Radio Int'l, via French Guiana | |
| 0200 | 11720 | Radio Bulgaria | | 0400 | 9885 | Swiss Radio Int'l | |
| 0200 | 11785 | Deutsche Welle, Germany | GG | 0430 | 5019 | Voix du Sahel, Niger | FF |
| 0230 | 2460 | Radio Alvorada, Brazil | PP | 0430 | 9525 | Channel Africa, South Africa | FF |
| 0230 | 4835 | Radio Tezulutlan, Guatemala | SS | 0500 | 4850 | Radio Cameroon | EE/FF |
| 0230 | 4955 | Radio Nacional, Colombia | SS/EE | 0500 | 7520 | Radio Bulgaria | |
| | | | | 0500 | 9580 | Africa Number One, Gabon | FF |

| UTC | Freq. | Station/Country | Notes | UTC | Freq. | Station/Country | Notes |
|-------------|-------|---|---------------|-------------|-------|---|------------------|
| 0500 | 9790 | Radio France Int'l | FF | 1500 | 11635 | Trans World Radio, Monaco via Albania | |
| 0530 | 6110 | Radio Japan/NHK | | 1500 | 11695 | Vatican Radio, via Kazakstan | various |
| 0600 | 4783 | RTV Malienne, Mali | FF | 1500 | 15460 | Voice of Russia | RR |
| 0600 | 5047 | Radio Lome, Togo | FF | 1500 | 15550 | Vatican Radio | FF |
| 0600 | 6100 | Radio Liberia Int'l | SS | 1500 | 15640 | Kol Israel | |
| 0600 | 9600 | Magadan Radio, Russia | RR | 1500 | 17680 | Voz Cristiana, Chile | EE |
| 0630 | 6015 | Radio Austria Int'l, via Canada | | 1500 | 21551 | Voz Cristiana, Chile | SS (var. freq) |
| 0630 | 9340 | CPBS, China | CC | 1530 | 11585 | All India Radio | Baluchi |
| 0630 | 9575 | Radio Medi-Un, Morocco | FF | 1530 | 11600 | FEBA, Seychelles | |
| 0630 | 9835 | Radio Japan/NHK | | 1530 | 11660 | Radio Australia | |
| 0700 | 5850 | Sunrise Radio, via Germany | | 1530 | 11690 | Radio Jordan | EE |
| 0700 | 7170 | ORTV, Senegal | FF; irregular | 1600 | 11780 | Broad. Svc. Kingdom of Saudi Arabia | AA |
| 0800 | 3290 | Guyana Broadcasting Corp. | | 1600 | 12015 | Radio France Int'l, via Gabon | |
| 0800 | 5865 | HCJB, Ecuador | | 1600 | 15084 | Voice of Islamic Rep. of Iran | Farsi |
| 0800 | 11880 | Radio Australia | | 1630 | 15340 | Radio Denmark, via Norway | DD |
| 0800 | 13730 | Radio Austria Int'l | | 1700 | 13705 | Radio Rossi, Russia | RR |
| 0800 | 13745 | BBC, via Canada | RR | 1700 | 15505 | Radio Kuwait | AA |
| 0830 | 13685 | Swiss Radio Int'l | | 1715 | 17545 | Reshet Bet, Israel | HH |
| 0900 | 4890 | NBC, Papua New Guinea | | 1730 | 15475 | Africa Number One, Gabon | FF |
| 0900 | 6185 | Radio Educacion, Mexico | SS/EE | 1730 | 15735 | Radio Sweden | |
| 0900 | 12080 | Radio Australia | Pidgin | 1800 | 11990 | Radio Kuwait | |
| 0930 | 4875 | Radio Roraima, Brazil | PP | 1800 | 15200 | Merlin Network One, England | |
| 0930 | 9640 | HCJB, Ecuador | | 1800 | 17870 | Channel Africa, South Africa | |
| 0930 | 9700 | Radio New Zealand | | 1830 | 12085 | Radio Damascus, Syria | AA, others |
| 0930 | 9710 | Radio Australia | Pidgin | 1830 | 15705 | Radio Denmark, via Norway | DD |
| 1000 | 3340 | Radio Altura, Peru | SS | 1830 | 17735 | HCJB, Ecuador | |
| 1000 | 4830 | Radio Tachira, Venezuela | SS | 1900 | 9510 | Trans World Radio, via S. Africa | vern |
| 1000 | 5035 | Radio Aparecida, Brazil | PP | 1900 | 9560 | Voice of Turkey | TT |
| 1030 | 4935 | Radio Tropical, Peru | SS | 1900 | 9855 | Radio Kuwait | AA |
| 1030 | 6070 | Voz Cristiana, Chile | SS | 1900 | 9940 | Radio Denmark, via Norway | DD |
| 1030 | 6100 | Radio New Zealand Int'l | | 1900 | 11620 | All India Radio | |
| 1030 | 11715 | Radio Korea Int'l | | 1900 | 15120 | Voice of Nigeria | various langs. |
| 1030 | 15240 | Radio Sweden | Swedish | 1900 | 21590 | Radio Netherlands via Bonaire | DD |
| 1100 | 5020 | Solomon Islands Broadcasting | | 1945 | 11402 | Icelandic National Broadcasting | Icelandic. (SSB) |
| 1100 | 6010 | Radio Mil, Mexico | SS | 2000 | 9665 | Voice of Armenia | EE |
| 1100 | 6105 | XEQM, Mexico | SS | 2000 | 11605 | Kol Israel | |
| 1100 | 6937 | Yunan PBS, China | CC | 2000 | 11715 | Radio Algiers Int'l, Algeria | |
| 1100 | 7295 | Voice of Malaysia | | 2000 | 11734 | Radio Tanzania — Zanzibar | Swahili; var. |
| 1100 | 9795 | Far East Broadcasting Corp., Philippines | EE/various | 2000 | 11955 | Radio Nacional, Angola | PP |
| 1130 | 4725 | Voice of Myanmar, Burma | EE/BB | 2000 | 15160 | Radio Algiers Int'l, Algeria | |
| 1130 | 9845 | Voice of Russia | Mongolian | 2015 | 13610 | Radio Damascus, Syria | |
| 1130 | 15125 | Broadcasting Corp. of China, Taiwan | CC | 2030 | 15415 | Radio Jamahiriya, Libya | AA/EE |
| 1200 | 4750 | Xizang PBS, Tibet (China) | CC/TT | 2100 | 9900 | Radio Minurca, Central African Rep. var., not daily | |
| 1200 | 9505 | Radio Veritas Asia, Philippines | EE/others | 2100 | 11700 | Radio Budapest, Hungary | |
| 1200 | 11940 | National Voice of Cambodia | | 2100 | 11915 | Merlin Network One, England | |
| 1200 | 15485 | China Radio Int'l | | 2100 | 21740 | Radio Australia | |
| 1230 | 9810 | Radio Thailand | | 2130 | 9965 | Voice of Armenia | |
| 1300 | 6020 | Radio Australia | | 2130 | 15575 | Radio Korea Int'l | |
| 1300 | 11705 | Radio Japan/NHK | JJ | 2130 | 17765 | Voice of Greece | |
| 1300 | 17545 | Reshet Bet, Israel | HH | 2200 | 21470 | Radio Australia | |
| 1330 | 17790 | Radio Romania Int'l | | 2230 | 4870 | ORTB, Benin | FF |
| 1400 | 5995 | Radio Australia | | 2230 | 13670 | Radio Vlaanderen Int'l, Belgium (via Bonaire) | |
| 1400 | 7405 | China Radio Int'l | | 2300 | 6040 | Radio Clube Paranaense | PP |
| 1400 | 9625 | CBC Northern Service, Canada | | 2300 | 6135 | Radio Aparecida, Brazil | PP |
| 1400 | 13580 | Radio Prague, Czech Republic | | 2300 | 9485 | Radio Bulgaria | |
| 1430 | 7115 | Radio Thailand | TT | 2300 | 9645 | Merlin Network One, England | |
| 1430 | 15220 | BBC, via Canada | | 2300 | 9725 | Adventist World Radio, Costa Rica | |
| 1430 | 15265 | Swiss Radio Int'l | | 2300 | 11885 | Voice of Turkey | TT |
| 1430 | 15275 | BSKSA, Saudi Arabia | AA | 2330 | 4985 | Radio Brazil Central, Brazil | PP |
| 1430 | 21605 | RDP, Portugal | PP | | | | |
| 1500 | 9465 | Adventist World Radio via Czech Rep. | RR | | | | |

Product Parade

BY HAROLD ORT
AND R.L. SLATTERY

REVIEW OF NEW, INTERESTING AND USEFUL PRODUCTS

MFJ-259B HF/VHF SWR Analyzer

With many new added features, the MFJ-259B gives a complete picture of your antenna's performance. You can read antenna SWR and Complex Impedance from 1.8 to 170 MHz. The unit has a built-in frequency counter, side-by-side SWR and Complex Impedance meters, and smooth reduction drive tuning.

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MFJ's 259B HF/VHF SWR Analyzer gives you a complete picture of your antenna's performance.

distance to a short or open in feet, read SWR, low-battery warning, and much more. The unit is powered by 10 "AA" batteries (not included) or 110 Vac with MFJ-1315, \$14.95. Housed in an all-metal cabinet, the MFJ-259B measures 4 inches x 2 inches x 6 3/4 inches and costs \$249.95 from MFJ, P.O. Box 494, Mississippi State, Mississippi 39762. Call 800-647-1800 or FAX the company at 601-323-6551. The MFJ E-mail address is <mfj@mfjenterprises.com> and their Website is at <http://www.mfjenterprises.com.>

Cobra Electronics New Six-Band Radar Detector

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

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- Instant change of center frequency with a simple mouse click.
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in performance. In addition to alerting drivers via audible tones and a high-visibility text LED display, the user-friendly ESD-6700 offers separate voice identifiers of each of the unit's bands.

Designed to alert drivers of all four speed monitoring systems in use — X, K, Superwide Ka, and Laser — the extra sensory six-band Cobra detector is equipped with VG-2 Alert™ technology and a band for Cobra's Safety Alert™ Traffic Warning System.

John Pohl, Vice President of Marketing for Cobra said, "By bringing the human touch of voice alerting to our text display six-band radar detector, we are offering the most comprehensive alert system in the industry . . . the combination of audio, visual, and voice alerts gives drivers a higher level of awareness of their environment which translates to increased roadway safety."

The Safety Alert Traffic Warning System band warns motorists of a variety of potential driving hazards including nearby emergency vehicles, stationary road hazards, and even railroad intersections equipped with the Safety Alert transmitter. For example, if a fire truck or ambulance is approaching at high speed, the

unit's text display will read "Emergency Vehicle" and its Voice Alert will say: "emergency vehicle approaching."

For optimum detection, the ESD-6700 detector is equipped with a VG-2 band, invisible to radar "detector detectors." According to Pohl, "Drivers have told us they feel more comfortable when they are aware of the presence of law enforcement officers. That's where our VG-2 Alert™ technology comes in. Not only does it alert drivers to the presence of VG-2, it is also completely undetectable. In other words, you can see the VG-2 gun, but it can't see you."

Other significant benefits of the Cobra ESD-6700 include the LaserEye™ 360-degree laser detection, which provides multi-directional protection from increasingly popular laser guns; a Memo-Set function that remembers the settings of dim, muting and city/highway modes; and, both auto and manual muting. For added convenience, users have the option of selecting tone-only alerting instead of voice alerting.

The unit comes with an adjustable windshield mounting bracket, coiled power cord with cigarette lighter plug, fasteners for dashboard mounting, and a



Cobra's ESD-6700 Six-band radar detector is a state-of-the-art detector with 360-degree laser protection.

limited one-year warranty. The Cobra ESD-6700 carries a suggested retail price of \$239.95. For more information, contact Cobra Electronics Corporation, 6500 W. Cortland Street, Chicago, Illinois 60607 or call 773-889-8870 or check out the Cobra Website at <<http://www.cobraelec.com>>. And be sure to tell them you read about it in *Popular Communications*!

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The ICOM R-8500 Or R-9000?

Some time has passed since ICOM introduced the R-8500 as their new top-of-the-line consumer receiver. Many of you may remember the R-9000, it's predecessor. When the 8500 was introduced, it touted that it employed many of the same technologies as its older cousin, but at a fraction of the cost. The 9000 retail price is up around \$6,800 in the U.S. these days. The 8500 can be purchased for about \$1,500. To say the least, these are not "casual" receivers that you'll see often. But if you ever get the chance to play with either one, jump on it. They're both fine pieces of communications equipment, and well worth your time. Whether or not either of them is worth the asking price to *you* is another issue completely. Since it won't cost us anything to look, let's take a gander at these two dream receivers and see just how they compare.



The ICOM R-8500 is a complete wide-coverage receiver with many new and old technologies combined. The well-spaced control panel makes operation easy for even the largest fingers, although a few keys have multiple functions. The LCD is used for all display information.

The R-9000

Technically speaking, the R-9000 is still available to government agencies, and other professionals who can qualify under the ECPA, as well as from dealers outside the United States where the laws of physics are not mandated by Congress. This takes it out of contention as a top-of-the-line unit for most of us, although our Canadian friends can still get one.

There are 9000s floating around on the used market, although they seem to be pretty rare. The people who own them recognize what an excellent piece of equipment they have and don't want to let them go. The few that do sell in the used marketplace still command quite a price. Most recently, I have seen them advertised from \$3,500 to around \$5,000, depending on condition and how quickly the owner wants the sale. Once again, this is not a casual receiver.

The R-8500

The 8500 is widely available as a current model. There is a U.S. version with the appropriate frequencies deleted, and

a "European" version with full coverage. Besides the restricted areas, coverage on both units is 100 kHz to 2000 MHz. The 9000 was never built in a "blocked" version, so it should be full coverage. My understanding is that it was impossible from a technical standpoint to block the required frequencies without deleting the entire 800-900 MHz range, and ICOM chose to withdraw the receiver from the U.S. consumer market.

Size Comparison

From a physical standpoint, the 8500 is considerably smaller, but it is not a *small* radio by any means. The 8500 is just shy of 11 1/2 inches wide, 4 1/2 inches high, and 12 1/2 inches deep. If you happen to drive a Kenworth, or some equally large vehicle, there is a mobile mounting bracket available as an option. It would probably require the removal of a passenger seat in most normal vehicles, or at least the complete sacrifice of any leg room on that side of the car.

The 9000 is huge. It is meant to be rack-mounted by government agencies in a full 19-inch rack, and it covers all of it. It is

just shy of 17 inches wide, six inches high and 14 1/2 inches deep. It does not have a mobile mounting bracket available, but does come with "rack ears" that can be used to attach to the sides for rack mounting. With these attached, it fills a 19-inch rack slot nicely. The "ears" have built-in handles to facilitate pulling it in and out of the racks — in case you have to move it in a hurry, or for service, I suppose. Both radios are built like a tank, so I can't imagine them needing service often.

There is a five-inch CRT display (TV screen) in the center of the radio which is its most prominent feature. On the CRT, is displayed all of the operating menus and frequency information necessary to operate the 9000. There is even a built-in spectrum analyzer, although at most it will only sweep 200 kHz. This is quite useful on HF, but not quite enough spectrum for the scanner enthusiast where 500 kHz to 1 MHz would be more useful. Still, the 200 kHz can be handy from time to time. There is a facility to attach an external monitor to the 9000 so that the CRT display can be positioned somewhere else away from the radio, or in a more convenient location. Of course you can also use

a larger screen, which does make it easier to read from any distance.

A Look At The Features Of Each Receiver

The 8500 has a standard LCD display where all of its operating information is displayed. The LCD is quite easy to read from almost any angle and the essential information, like frequency display, is large enough to be read from some distance. Neither radio has remote control capabilities (as in a handheld remote like a TV and the earlier R-71/7000 series. Both have computer control capabilities, which we'll discuss in a bit).

Both units feature 1000 memory channels, and 20 programmable scan-edge channels. The 8500 also features one additional priority channel. Both radios can store eight-character alphanumeric names on all memory channels, however the 8500 can also store a five-character bank description. Both radios reserve 100 memories for the auto-write function, however these can be used as regular memories if you won't be using the auto-write function.

In addition, the 8500 reserves 100 memories for the scan skip function. This is a function that really didn't exist on any radio when the 9000 was engineered, so it's not surprising that it's not there. The 8500 also has a unique floating bank structure. You can allocate 50 channels to one bank and five to another if you like. The process to do this is a bit tedious, but it does make for some very flexible programming, and the option to make much better use of the available memory.

Both radios also have a copy-and-paste function associated with memory to make moving data much easier. With the 8500, one memory at a time can be stored to a temporary location and then pasted into the new location. With the 9000, you can select contiguous blocks of memories and move, copy or clear them. It makes short work of reorganizing banks.

The 9000 features a dual-purpose meter that can be used either for signal strength, or for signal center. The older 7100 has this feature as well, but it is not available on the 8500.

On the other hand, the squelch of the 8500 operates in a dual mode. As the squelch control is rotated from zero towards the top, the squelch operates in a noise squelch mode in narrow FM. This increases your chances of hearing weak signals as the radio is only looking for



The large CRT display in the center is the most prominent feature on the R-9000 receiver. The CRT clearly shows the current use of the multi-function buttons below. All other controls are widely spaced and easy to operate. This radio is equally at home in the HF bands or as a VHF/UHF communications receiver.



As you can see, the R-9000 dwarfs the PRO-2035 for comparison. You'll need a fairly large area on a desk, or a rack system, to find a home for this receiver.

“noise.” As the control is rotated past the top, the squelch converts to a signal strength mode, used for all modes and basically blocking all signals below the set signal strength level. The 9000 squelch operates only in the signal strength mode, like most radios.

One thing missing from the 8500, which seems a bit odd, is the RF gain control. There are attenuators, but as any shortwave enthusiast knows, having a genuine RF gain control is downright handy from time to time. For this reason, as well as a couple of other omissions from the 8500, it has been largely overlooked by the shortwave community. The

9000 has almost all of the controls of any shortwave receiver including RF gain, and performs very well in that frequency range. The 8500 performs well on HF, but does not offer all the flexibility of a dedicated shortwave receiver, or the 9000.

Neither receiver is equipped with synchronous detection. It wasn't terribly popular when the 9000 was being designed, and it's simply not there on the 8500. I realize there is some debate over the relative importance of this feature for shortwave broadcast listeners, but if you're in the camp that likes this feature, you're out of luck. Both receivers have independent SSB settings, so exalted car-



That's a RadioShack PRO-2035 on top! As you can see, these are not small radios, but are solidly built for years of trouble-free performance.

rier reception is possible.

Both Can Be Computer-Controlled

It's also worth pointing out that both radios can be computer controlled, so loading memories does not have to be a troublesome task. Both use the ICOM Standard CI-V interface, however the 8500 also has a built-in RS-232 connector. With the 9000, you have to use an optional level converter device, such as ICOM's CT-17, or one of the third party options like the Optolinks from Optoelectronics. If you have other radios that you'll be controlling, one of these devices makes more sense than the dedicated connection on the 8500. Devices like the Optolinks can also support other devices, including the AR-8000 handheld, and a number of special features like data slicing for ACARS and pager decoding with the correct software. Of course, the advantage to this system overall is that it only requires one serial port on the computer for all of the CI-V compliant devices you may have.

To my knowledge, ICOM has never released any dedicated control software for the 9000. They did just release RS-R8500 which is an excellent control package for the 8500. It allows the user to scan multiple banks, upload and download memories, and provides a unique "spectrum display" feature that can be tuned by

pointing and clicking on a signal. The radio must step through each of the frequencies being examined, so it's not quite the same as the spectrum display on the CRT of the 9000, but it can sweep up to one MHz at a time, making it more useful for scanner enthusiasts.

Both radios are well supported by other software, however. Programs that we're all used to, including Scanstar and ScanCat, support both radios completely. I have used ScanStar to some extent both to control the radio as a scanner, and to assist with the shortwave listening environment — it works quite well in both areas, and can also assist in uploading and downloading memories.

Ease Of Use

There have been a few complaints about the 9000's menu system, which is quite sophisticated. By using the group of keys below the CRT display, many functions can be accessed. My feeling is that the complaints are arising from unfamiliarity, much like the early complaints we saw regarding the AOR-7030. Anyone that owns a 9000 quickly gets comfortable with navigating the menus, and can find things easily.

The 8500, being a bit newer and not having the advantage of the CRT available, has its command set mostly available on front panel buttons. But there are a few places where buttons have to be held for a

brief time to access a secondary function. The Audio Peak Filter is a good example of this. Pushing and releasing the button activates or deactivates this feature. But pushing the button and holding it for one second or longer will switch between wide and narrow modes. If you don't use these features on a regular basis, you tend to forget these secondary functions. Maybe this is also a familiarity issue.

Having said all that, both radios are a joy to use. The controls are well spaced and easy to access. The radios are built solidly, and the dials and controls operate very smoothly. They should in this category of radio. For shortwave reception, both work admirably well, although as mentioned previously, in marginal signal conditions, the 9000 offers a few more controls to help extract a usable signal from the speaker.

As a scanner, neither radio is exactly what we're used to from a scanner. They are *communications* receivers. You might take a look back at our article regarding high-end receivers for a refresher about the basic differences and anomalies that you'll have to contend with in operation of these receivers (*Pop'Comm*, June 1998). However, the 8500 wins by a nose here based on scan speed and flexible bank size. However, without software control, the 8500 can not scan more than one bank at a time.

The 9000 can do this, although it essentially turns all the banks off and treats all memories as belonging to a single bank. Within this large collection, you can turn on and off individual memories using the SEL function, or using the mode scan so that all NFM channels are scanned at once, for instance.

A Trick With The 9000 And Some Specs

The SEL function on the 9000 does have one other trick up its sleeve to help with scanning. Each memory channel can be designated with a SEL number from 1-9. Then the scan can be performed on only a particular SEL group, thus giving the effect of nine "soft banks" by programming the appropriate numbers in memory channels that should be scanned together. In addition, this selected memory scan function can be used within a bank, effectively creating "sub-banks" that can be used for special purposes instead of scanning an entire bank. It's a bit awkward to set up, but very flexible once you catch on to it. I told you these didn't make great scanners.

Arlington County, Virginia Trunked System

Note: The Arlington County, Virginia trunked radio system has a hybrid configuration a combination of Motorola Type I and Type II equipment (officially called a Type II system). The 15 radio frequencies for this trunked system are listed below.

857.4375
859.4375
860.9375
859.9375
858.9375
857.9375
856.9375
856.4375
858.4375
860.4375
860.7625
859.7625
858.7625
857.7625
856.7625

A fleet map that works well for this system:

Block 0 S-12
Block 2 S-12
Block 4 S-0
Block 5 S-0
Block 6 S-0
Block 7 S-4

Some of the ID numbers include:

000-1 Fire 1A
000-2 Fire 1B
000-3 Fire 1C
000-4 Fire 1D
000-5 Fire 1E
000-6 Fire 1F
000-7 Fire 1G
000-8 Fire Admin
000-9 Fire Prevention
000-10 Fire Special Use

200-1 All County
200-2 Equipment
200-3 Dispatch 1
200-4 Dispatch 2
200-5 Snow Removal
200-6 Exec

200-7 Alexandria PD Patch
200-8 Animal Control

32944 Hospital
32976 Arlington Hospital
33008 Columbia Pent City Hosp
33040 Vencor NVA Doctors Hospital
33072 Medevac
33104 Fairfax Hospital
33136 Hospital Med 6
33168 Hospital Med 7
33200 Jail Ops
33296 Sheriff Admin
33552 Sheriff
33616 Special Ops Field
33648 Special Ops
33680 Sheriff Court
33232 Police Dispatch 1A
33744 Police Tactical 1 1B
33712 Police Dispatch 1C
34064 Police Tactical 2 1D
33776 Police Admin 1E
33808 Police Parking 1F
33936 Police Dist 1 1G
34032 Police Dist 2 1H
34128 Police Dist 3 1I
34160 Police Dist 4 1J
33840 Police SOS 1 1K
33872 Police Tactical 1L
33904 Police CID 1M
32264 Police ERU 1 1N
33912 Fairfax Fire Patch 3A
32784 Fairfax Fire Patch 3B
32816 Fairfax Fire Patch 3C
32848 Fairfax Fire Patch 3D
32880 Fairfax Fire Patch 3E
33360 Emerg Comms Ctr (PMARS)
33392 Emerg Comms Ctr Ops

700-1 Parks
700-2 Water
700-3 Trash Pickup
700-4 Highway Engineering
700-5 Traffic
700-6 Equipment
700-7 Supervisor 1
700-8 Supervisor 2
700-9 Building Inspection
700-10 Engineering
700-11 Maintenance
700-15 Help

From a specification standpoint, the published specs are probably quite conservative on both radios. ICOM claims .5 microvolts in the VHF/UHF region, but both radios appear much more sensitive than this. One interesting fact is that the 8500 is a triple conversion receiver, while the 9000 is quadruple. This would tend to lead us to the conclusion that the 9000 is more immune to interference, but I simply have not found anywhere on the 8500 where this is a problem either, so I can't comment. I wouldn't place any bets on

which radio was more or less sensitive in any particular range — they are both excellent performers. In these price categories, they should be.

The Bottom Line?

So which one's better? Well, that of course depends entirely on what you want to do with the radio. Perhaps neither is for you. I can easily imagine situations where you'd be better off with a dedicated scanner and shortwave receiver, and probably

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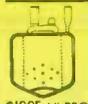
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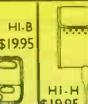
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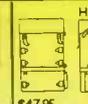
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CIRCLE 65 ON READER SERVICE CARD

have money left over to boot. On the other hand, if you want an all-in-one receiver, and shortwave isn't necessarily your primary interest, the 8500 will offer excellent performance. Customers who might have bought the R-7100 (ICOM's VHF/UHF-only communications receiver that pre-dates the 8500) will find the 8500 not only a great improvement, but the added coverage of the HF frequency range.

The 9000 is unfortunately consigned to the used market at this point. There are people who say that they want to own one at some point just to have the best of the best. I can understand that too. You'll have to keep your eyes peeled on the used market to find one, or have access to one through the available channels. For most of us, and especially for casual "hobby" listening that most of us do, both of these radios are overkill. But they sure are a lot of fun to play with.

Scanning The Mail

Mr. Harold W. Cornelius of Arlington, Virginia, writes "I'm enjoying your columns in *Popular Communications*. Having just acquired trunktracking scan-

ners (RadioShack PRO-2050 and PRO-91), I've found a shortage of information about the Arlington and Alexandria, Virginia trunked systems.

One Internet site, "Stormbringer" <<http://206.156.18.79/strmbrgr>> had considerable information. I've monitored the trunked systems and revised the information to produce the enclosed sheet. Hope it helps . . ."

Harold, I'm sure it will. Be sure to check out the fleet map, frequency information, and ID numbers that Harold has provided. Great info! And I'm glad you're enjoying the column.

Harold also suggests that to provide for experimentation without disturbing the normal listening setup, program the same trunked radio frequencies into two different banks. One bank can then be changed without affecting the other. That's a great idea, particularly if you have a large trunking system, or only are experimenting on part of the system. I

have done this in my base trunktracker so that I could use the extra 50 stored IDs for different parts of the system that I don't normally listen to.

Experimental Antennas Revisited

Hugh Boyd of Capistrano Bay, California, writes "I ordered a brand new fiberglass-wound antenna for 'all' scanner frequencies but it didn't even cover all the ones I listen to. It was poor on the 460 range and received none of the marine boats at 157.000. The other ones I use in my car are 42, 130, 146, and 162.

After playing around for a few weeks with various type homemade and modified antennas, I ended up with the best antenna I've ever had.

As shown in the photo, I soldered a short one (set at 12 inches) to a standard antenna with an epoxied piece of insulation at the top. The long one is set at 30 inches. The two antennas are 3/4-inch apart. If I run into anything simple, I'll let you know."

Sounds great Hugh! What you've created is essentially a multi band dipole — the car acts as the ground plane and the radiators (center vertical sections) are each tuned to specific frequencies. There have been some commercial base antennas built on this same principle, although I must admit, I've not seen it done mobile. Glad to hear it worked out so well for you. Keep experimenting! We're anxious to hear about your next success.

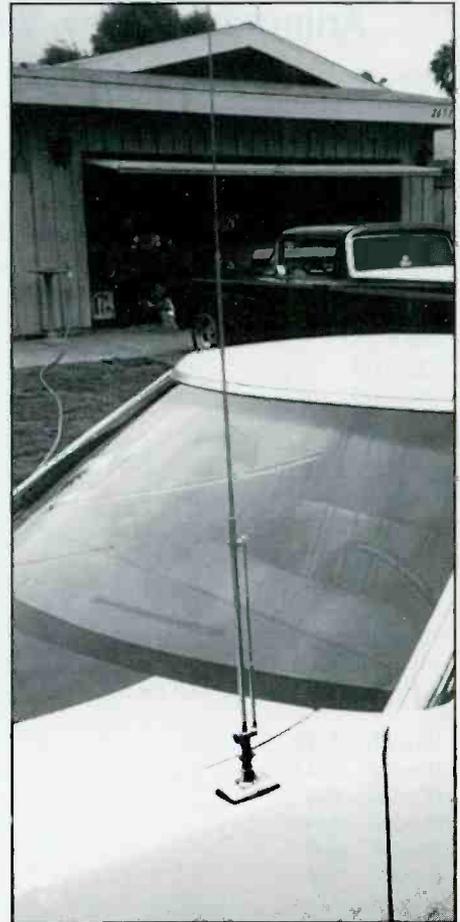
Info Needed

We've got two requests for information on older radios this month. Unfortunately, I'm not able to provide either manual. Can anyone else help?

Klaus Spies of Prospect, Illinois, writes "Does anyone there at *Pop'Comm* know where I could find any information (schematic, service information, etc.) for a Unimetrics Reporter 153-155 receiver? It's an old six-channel crystal radio."

Boy, Klaus, you've sure got that right — it's old! Can anyone help Klaus with a service manual on this receiver?

Richard Lowery of Akron, Ohio, writes "I purchased a great little police/public service scanner, but have no owner's manual. The brand name is J.I.L., manufactured by Nissand Denshi Company, Ltd. The model number is SX-200. This scanner has 16 programmable channels, but the neat thing is it will scan from 26 through



Here's Hugh Boyd's multi-band mobile antenna. He says "After playing around for a few weeks, I ended up with the best antenna I ever had." (Photo by Hugh Boyd)

514 MHz with no gaps! It's great for searching new channels. It would be great if you or any of your readers could help me find a copy of the owner's manual."

I remember the SX-200, but never owned one. If you can help either Klaus or Richard, let me know and we'll put you in touch, or if you'd prefer to send info directly to me at *Pop'Comm*, we'll see to it that it gets forwarded.

Your Input Needed!

"ScanTech" is your column. Oh sure, Harold (the editor dude, not Mr. Cornelius) takes credit for it, but it's really yours. Send in questions, comments, and suggestions. Complaints can go to Harold. Of course, we're always interested in pictures too! E-mail to me at <armadillo1@aol.com>, or regular mail at Ken Reiss, 9051 Watson Rd, #309, St. Louis, MO 63126. Until next month, Good listening!

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CIRCLE 63 ON READER SERVICE CARD

The Old CB Shack

BY DON PATRICK

GIVING LIFE TO YESTERDAY'S RELICS

Tuning The Old Polycom 23

Before we return to the Polycom 23 project and finish it, I would like to invite you to do something. Chances are you either have an old CB or have one in mind that you are looking to purchase at a yard sale or flea market. Contact me with the model number (and a picture if you have one) and I will give you a personal response, and I will also include the most interesting, unusual or most frequently asked about ones in the next column. We will give you good and bad points, special features if any, popularity, and probability of future antique value.

Since we started accepting letters by E-mail, it has become more popular than regular mail, but either is fine. Write me and enclose an SASE for my reply at 3701 Old Jenny Lind Rd., Fort Smith, Arkansas 72901 or E-mail me at <oldes-timer@aol.com>. You need to do this quickly because of the long lead-time for the columns. I'm doing this project for the May 1999 issue, so we must submit our material to the editor by mid-March! Therefore, you only have about a two-week window. If we get enough questions, we might do two similar columns, so you can save them and take with you while "shopping." The answers just might tell you if you really want to buy that particular model.

Finishing The Polycom 23 And SR-23

We are going to repeat one figure from the January issue — the test socket pin-out — **Figure 1**. This socket provides you with most of the test points you will need to fully tune both the transmitter and the receiver. It would be great if all units had such a test plug.

Use an analog volt-ohm meter, NOT a digital meter! While a digital meter is as good or better for most measurements (and *required* for a few things), they are not suitable for tuning a radio. Inexpensive analog meters are rated 5,000 ohms/volt and good ones (like a Simpson 360) are rated 20,000 ohms/volt.

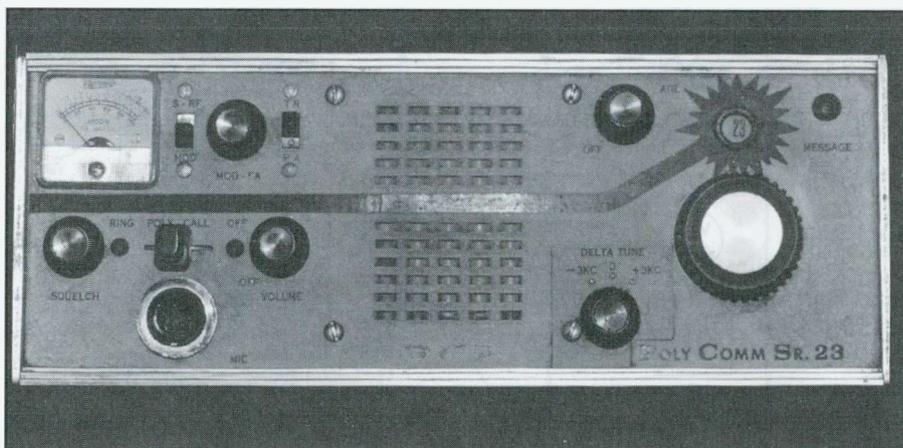


Photo 1: The PolyCom SR-23.

You can use a 5,000 ohms/volt unit, but a higher rating of at least 20,000 ohms/volt is recommended. I won't go into all the reasons why you should use an analog meter and one of 20,000 ohms/volt or better. It has to do with many things, including circuit loading by the meter. Just trust me on this matter. You can buy such a meter from any of the mail order electronics firms, your local radio and TV supply or RadioShack. Price will vary from \$25 to \$90, depending on the ratings and quality. Polytronics would like you to use an even better meter — what was called a "VTVM," but few of you will have one of these.

The radio we have at hand and are rebuilding for this series has been provided by one of our readers, Bill H./WRHU. He is out the freight, parts, and labor and gets back a unit returned to original specifications. It's a good trade. And I get a unit for use in the series. (I have a Polycom SR-23, but it is not in as good condition as Bill's). And you, the Polycom owner, get invaluable useful information! Also, the procedures we use work with other brands in general. We all win!

As I pointed out in January, from this point onward, be careful, as there is lethal voltage present all over this radio. If you don't know what you are doing, find someone that does to help you proceed.

You'll recall that we got to the point of applying power to the radio with undersized fuses in the fuse holder. The unit lighted, didn't smoke or blow a fuse — but also didn't make any noise. We found that the second conversion crystal (M-6), located just in front of the modulation/audio output transformer T-2, was missing and the S/R/F meter was sticking at midscale. We installed a used meter and second conversion crystal, which we got off of the SR-23. This completes all the obvious repairs/replacements on this unit. We are ready to fire it up and see what we have. During the past months, we cleaned all of the controls and switches.

When you are working on this unit, you can place it on its bottom or turn it completely over and set it on its top. But much of the time, you will need the unit sitting on one end in order to get to the top or bottom easily. BE SURE to stand the radio on the end which places the power transformer down or nearest the tabletop. This will also have the meter next to the table or bench top. If you don't place it this way, it will be very unstable and it will fall over with the slightest bump or push on a tuning tool. And when it is falling, you will grab for it and get a handful of high voltage and a severe shock. Please don't ask how I know!

To tune this unit, you will need a few

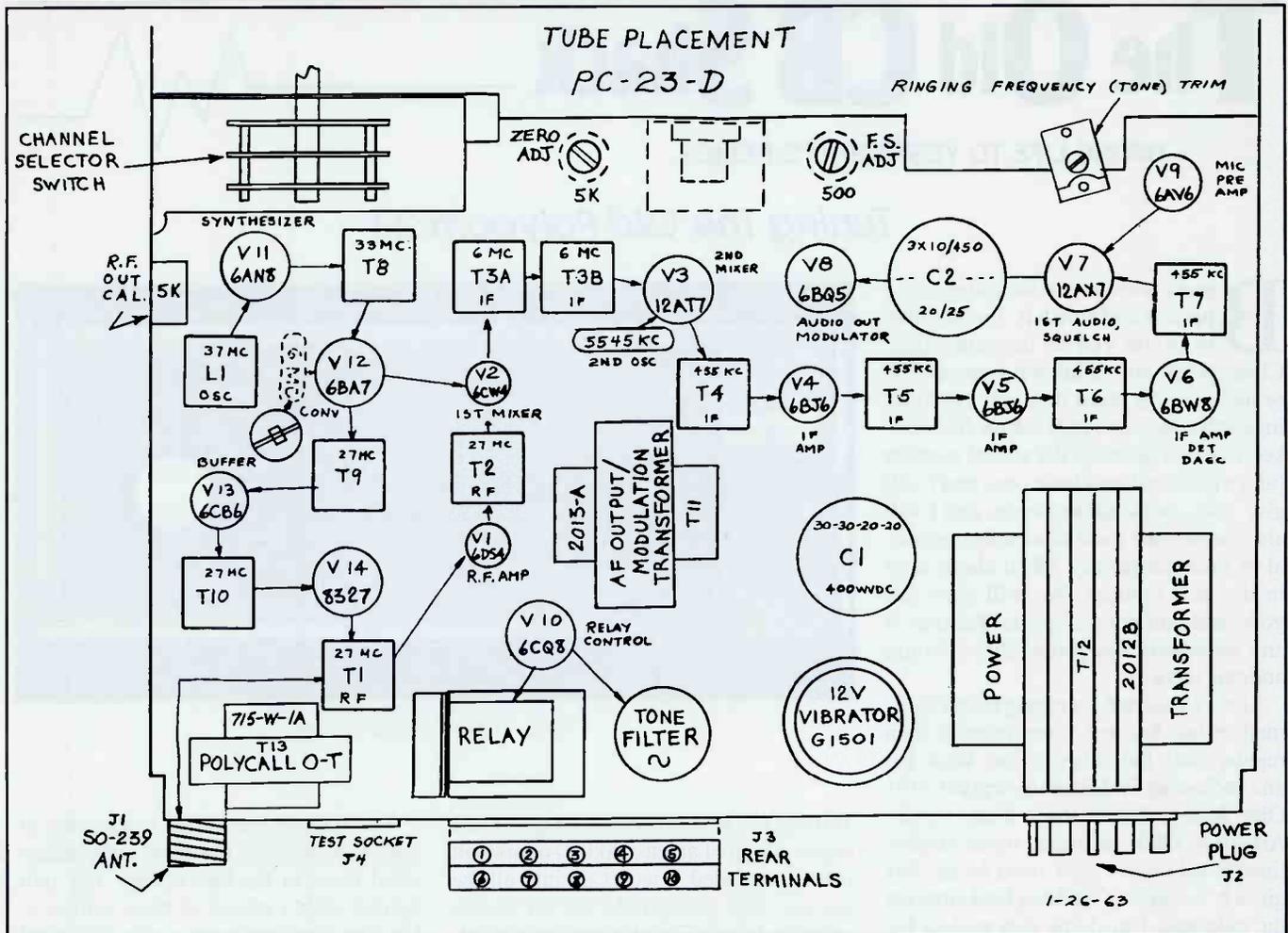


Figure 1. Pin-out for the test socket plug.

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inexpensive tuning tools you can obtain from your local electronics supply house or RadioShack store. They are made of nylon or plastic. One is a "hex" tool and the other has a recessed metal insert. Don't try to use a screwdriver or anything other than the correct tool. Take the radio into the store with you to be sure you're getting the right tool.

While you can use the ground pin on the test socket, it is easier to use the chassis for the ground point for the meter. When the voltage is negative, put your red meter lead to ground so that the meter "moves" in the correct direction.

Keep in mind that I am tuning this unit with a shop full of professional test equipment which most of you will not have. Other than taking your radio to a shop for its alignment, I don't know what to suggest, as you cannot use someone's signal "off the air" to tune the receiver. You will have no problem with the transmitter, but the receiver requires more equipment.

Turn the unit on, placing the volume control at less than one-half, set the

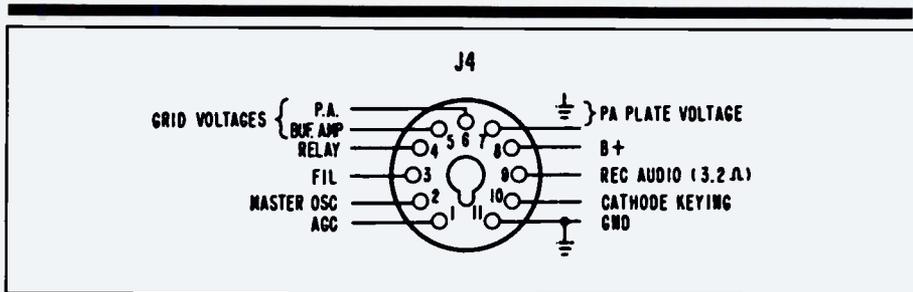


Figure 2: Top view of the SR-23 showing tube locations, tuning transformers, and adjustment points.

sqelch control open letting the noise come through, put the delta tune switch on "zero" and if it's a SR model, put the Polycall switch to "off," the meter switch to "S-RF," and the other slide-switch to "tran." First, generate a signal at 455 kHz and feed it into the radio through a .001 condenser to pin 7 of V4. Connect your meter to ground and pin No. 1 of the test socket. Tune all the 455 kHz transformers (top and bottom slugs) for maximum. (See **Figure 2**) That's T-4, 5,6, and T-7. Then generate a 6 MHz signal and inject it into pin 4 of V-2 with your meter connected as before, and tune top and bottom of T-3A and T-3B for maximum. Connect your generator to the antenna socket and set both your radio and signal generator to channel 11 with your meter still connected as before. Tune both T-1 and T-2 for maximum. This completes your receiver tune-up.

Tuning The Transmitter

The transmitter tuning is even easier. A dummy load or a good antenna should be connected to the antenna connector. If the dummy load has an output meter, you can tune using that, otherwise set the front-panel meter to the "S-RF" position and tune the transmitter while taking the reading. Set the channel selector to channel 11 and tune L-1, T-8, T-9, and T-10 for maximum output. Note that L-1 has only a top slug, while the other three have both a top and bottom one. While I'm tuning for maximum output, I always have my VOM connected to the test socket Pin No. 5 for L-1 and T-8 and pin No. 6 for T-9 and T-10. The tuning is pretty broad when watching the power output, but you can see a pretty good peak looking at the voltage on those two test points. Now adjust, looking for peak on both the wattmeter and the VOM at the same time.

Once you have peak power (it should be at least 3.5 watts) on the unit, you need

to check the frequency of the transmitter. There is only one adjustment and it affects all 23 channels at the same time. Check all 23 channels and see if any are more than 1,300 Hz off of center frequency. The transmitter frequency adjustment is a variable condenser that swings the 6 MHz crystal up and down, raising or lowering all the channels at the same time. If four channels in a row are off more than 1,300 Hz, then one crystal in the four-channel bank would be at fault. On the other hand, if every fourth channel is off too far, then a crystal in the quarter channel bank is at fault. So you may or may not be able to adjust the tuner and set it to where none of the channels are more than 1,300 off, keeping you legal. Newer units don't have this problem with the phased-lock-loop system in use today.

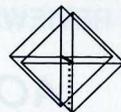
Adjust the meter circuit with the two controls near the front edge of the chassis shown in **Figure 2**. With the antenna off, adjust the zero adjustment for zero meter reading. Then using a 100-microvolt signal, adjust the field strength control for S-9 on the meter. If you don't have a calibrated signal generator, adjust it with the antenna connected and receiving a real strong, noise-free station for a reading of about 5 to 7.

If the squelch control is out of range and will not open up or squelch out, there is a range control adjustment. Carefully remove the squelch knob and use a small screwdriver to reach through the hollow-shaft. This is a two-section control and the knob turns one section. Reach the rear control and set it with the screwdriver.

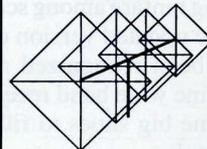
That wraps up the rebuild of the Polycom 23 unit. If you have any specific questions on this unit (or any other) write me a letter or send an E-mail. Until the May issue, keep looking for those old CBs — they are a lot of fun and may be valuable in the future. Until then, this is Don "Oldestimer" Patrick saying 73! ■

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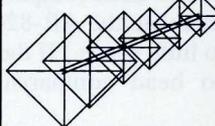
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Product Spotlight

POP'COMM REVIEWS PRODUCTS OF INTEREST

BY KEN REISS

<Armadillo1@aol.com>

AOR AR-8200 Wide Range Receiver

AOR has recently introduced the AR-8200, which has been generating fanfare among scanner enthusiasts. The AR-8200 is the updated version of the highly regarded AR-8000 which has been recognized as one of the leaders among the top of the line wide band receivers for portable use. The AR-8200 has some big shoes to fill. Let's take a look at this new kid on the block.

Rather than do a head-to-head comparison of the two radios, I've chosen here to evaluate the AR-8200 on its own merits. (So many features, so little space.) If there's interest, we may do a more head to head comparison in an upcoming "ScanTech" column.

On the surface, the 8200 is just another run of the mill super receiver. One thousand channels in 20 banks, all mode reception, coverage from 500 kHz through 2040 MHz (less cellular, of course in the U.S.), signal strength indicator, alpha numeric display with alpha tagging of both banks, and individual memory channels. The list goes on. The AR-8200 also features a "band scope" feature that will display signals in a graphic form up to 10 MHz wide and has a computer interface to boot, so you can program the receiver in a hurry, or control it with appropriate software. It has all the features you'd expect in a top of the line handheld scanner.

First Impressions

When you first take this receiver out of the box, it makes an impression. If nothing else, it's an impression that "this is like nothing else I've worked with." The radio has a large LCD display at the top, capable of four lines of text and frequency display, and another two lines of annunciators for various options and settings above. There's a lot of information available just on the display.

On the side of the receiver, there are a variety of unusual controls. A dial rotates up and down and is used for stepping through frequencies and other options. A four-way joypad, similar to those used on several game-type controllers is below that, and used for selecting various options from menus and stepping through choices. It takes a bit of getting used to, as it is easy with my big fingers to want to go "up," yet end up "left," but I did eventually manage to master it. And I must say, that it makes stepping through the myriad of settings available on this radio much easier than many other methods I can think of using. Also on the left side is a Function button, used in combination with many of the front panel controls, a key lock button, and a monitor button used to override the squelch control for momentary listening.

The case is a high impact plastic, which is fairly typical for scanners. It appears to be fairly solid, but with a radio this expensive, I wouldn't want to put it to the test. No doubt leather cases will be available shortly. Another nice feature on the exterior of the radio is that all of the openings for connections, (includ-



The AR-8200 is a completely redesigned unit. Notice the computer connection on the side panel. The AOR Computer Connection kit (CC-8200) includes the cable and software for your Windows-based computer.

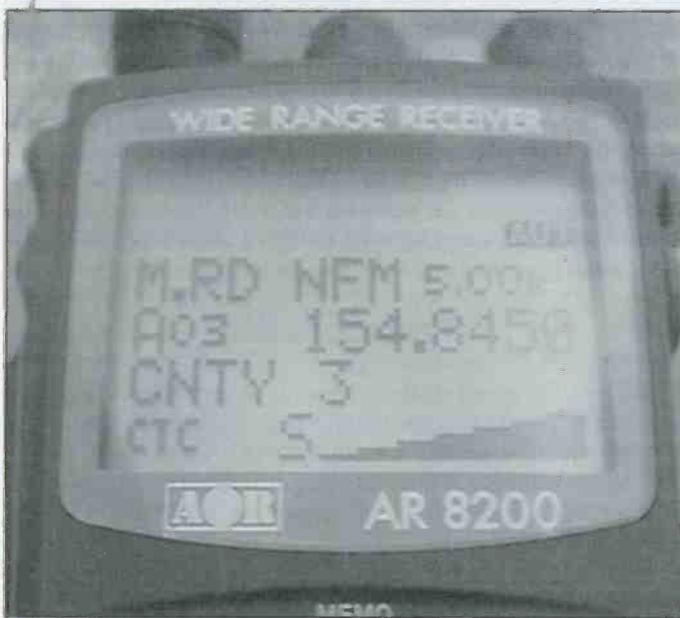
ing the computer connection, which has been moved to the lower right side) are covered by rubber or plastic covers.

Two new connections appear on the AR-8200. The first is a connector for a mediumwave ferrite bar antenna, which is included with the receiver. While not a real AM DX machine, it does make reception of local signals during the day quite comfortable to listen to if you choose to use the receiver for this purpose.

The second is a "slot card." This allows you to purchase various options and add them to the receiver much like the PCMCIA cards for laptop computers. These slot cards are much smaller than a PCMCIA card, and of course, must be purpose built for the 8200. Several cards are currently available, and more are in the works from what I understand. The cards include options to expand memories, digital recording and playback, and CTCSS.

Operation

Like most communications receivers, and the AOR products in particular, you'll have a much better time with this receiver if you can forget everything you know about traditional scan-



The four line alphanumeric display is easy to read under most lighting conditions. And the built-in lamp takes care of the rest. Note the CTC indicator at the bottom indicating this memory channel has a CTCSS tone stored, and the signal strength indicator on the bottom row.

ners. The commands and functions are just completely different. The AR-8200 offers complete control over the scanning process, and features a variety of commands that simply aren't there on a more traditional scanner.

Having said that, I was pleasantly surprised at how easily I was able to maneuver through a lot of the basic commands after I got the batteries in. Yes, I actually had to get the manual out to figure out how to open the battery compartment. Now you don't have to stop reading right here, thinking if I'm not smart enough to put batteries in the thing, how qualified am I to review the product? Actually, I had the right idea, but the battery door opens in a clamshell fashion, which I hadn't expected. It's easy to do, but I didn't want to break something right out of the box, so I figured I'd better look it up.

There are a few places where keypress actions change depending on how long a key is held. The manual makes a distinction between "PUSH," a momentary push and release, and "PRESS" which is push and hold for more than one second. While these functions are generally things not used often, they are difficult to remember when the time comes. Perhaps with more extensive experience, they would become more familiar.

One of the more unusual features on the AR-8200 is the bank arrangement. There are 1,000 channels arranged in 20 banks of 50 channels each from the factory. These banks are lettered A-J and then a-j again. The capital "A" and small "a" form a "bank pair" that allow you to dynamically allocate channels back and forth. So if you need 75 channels in bank "B," you can borrow 25 extras from bank "b." Of course, then bank "b" only will have 25 left, but I'm sure you can find something to do with 25 channels. As a side note, you cannot take any bank below 10 channels, so the maximum split would be 90 and 10.

As a receiver, the AR-8200 is terrific. In my day to day scanning operations, I had little difficulty with interference, and found the sensitivity and selectivity even with the supplied antenna to be quite good. I did not do any extensive testing on HF, although it seemed adequate with a suitable antenna. Most of the handheld broad range receivers tend not to be great shortwave receivers

because they lack a lot of the controls, such as RF gain and synchronous detection that shortwave listeners are used to. The AR-8200 is in this category, and I would not recommend purchasing any of these radios if your primary interest is shortwave listening. If you want a scanner that also has shortwave capabilities, the AR-8200 will shine, particularly if you can keep in mind that there is no such thing as one antenna to cover all of the frequency range involved.

I did a lot of my scanning with the CTCSS card and it works like a charm for what it does. It covers CTCSS great, but does not do DCS. That wasn't a problem here in the St. Louis area, as most of the stations I listen to use CTCSS, but in other areas it could be a significant problem. For years, we've complained that manufacturers didn't offer CTCSS and now here's a radio that does, and does it well, and I'm complaining again . . .

Computer Connections

Like its predecessor, the AR-8200 has a computer interface available. I wouldn't want to even think about programming 1,000 channels with alpha tags without one. The connection for the interface is located on the right side of the radio behind one of those rubberized covers we mentioned earlier, rather than inside the radio. It is not a standard computer connector, so if you choose to use software other than the AOR CC-8200 (which comes with the appropriate cable), you may have a problem locating the cable. No doubt other suppliers will come on board as this radio gains in popularity.

The CC-8200 kit also contains software for use with the AR-8200. It emulates most of the functions available on the radio, but the most important one is uploading and downloading memories. Unfortunately, with the supplied software, you can only work with a bank full of memories at a time, although multiple "bank windows" can be open at once.

At first, this seemed like a major inconvenience. There was no way to upload or download all of the memories of the radio at once for safekeeping or editing. However, as I began to work with the software, it became apparent that this wasn't such a bad scheme after all. It allows one to set up banks that are ready to go at a moment's notice. You can even use the software to reset the size of the banks (with the same restrictions that we mentioned above) so that memory plans with larger or smaller banks can be accommodated.



One of the most exciting and promising features of the AR-8200 is the ability to add features with plug-in cards. Several cards are already available to add features such as CTCSS, memory storage, and audio recording.

The software also allows configuration of most of the radio's settings. This is much faster in most cases than doing it directly on the radio. While there's not a lot of need to readjust most of the settings after they are configured the way you like them, it was very convenient to use the software to set them initially.

There was only one "glitch" that I noticed with the AOR software. If the radio is not connected when the software is run, there is an error message displayed that the AR-8200 is not found. However, for some reason, when you try to exit the program, it hangs (at least on my Windows 98™ computer). Let's hope this is addressed in a future revision.

ScanCat SE

For those of you who are unfamiliar with this program, it has been around for quite some time, and is a computer assist/control program that works with most of the radios on the planet that can have computer interfaces connected to them. ScanCat recently added support for the AR-8200 to their extensive array of supported radios.

ScanCat SE (Surveillance Enhanced) offers an extensive array of features. In fact, there are so many features that we'll take a look at ScanCat by itself in an upcoming issue. When used with a handheld such as the AR-8200, many of these features will be unnecessary, but remember that this same program can be used with almost any other computer-controlled radio that you have.

One of the major advantages to using a program like ScanCat is that the data files can be transferred easily from one radio to another. So if you have more than one radio, or have friends with other radios, exchanging frequency files becomes a piece

of cake. ScanCat also features extensive import/export support for working with FCC data and other forms of information.

ScanCat does support data files up to the entire 1,000 channels of the AR-8200, so it is possible to upload and download the radio in one pass. One slight disadvantage is that the channels are numbered from 0 to 1,000 rather than the "A-00" to "j-49" scheme that the radio uses to store the memories. You almost will need a lookup table to figure out where channel D-38 is located in the list.

The Bottom Line

So how does it all stack up? This is clearly a top-of-the-line handheld. The feature list simply goes on and on, with many settings and features that we simply didn't discuss here. This is an impressive radio. It does take a while to get comfortable navigating the various features and menus, so be prepared to spend some time with the manual.

With a street price of nearly \$600, it's not intended for the novice. And if your primary focus is shortwave listening, you'll probably want to consider a dedicated receiver and adding another scanner on the side. However, if you're looking for a does-it-all scanner, this one is worth consideration. It's certainly on my wish list!

The AR-8200 and the AOR CC-8200 software/cable kit is available from AOR dealers nationwide, or contact AOR for more information at AOR U.S.A., Inc., 20655 S. Western Ave., Suite 112, Torrance, CA 90501, or call 310-787-8615. ScanCat SE retails for \$159.95 and is available from Computer Aided Technologies, P.O. Box 18285, Shreveport, LA 71138 or at (318) 687-4444. ■

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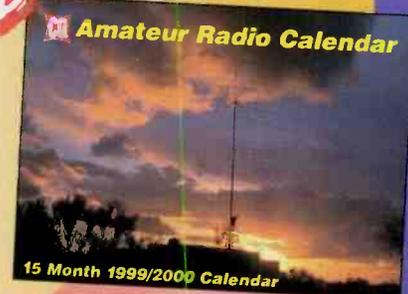
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Broadcast DXing

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

BY BRUCE CONTI
<BAConti@aol.com>

Seeing The World Via Radio

Broadcast DXing is a popular hobby among the blind and sight-impaired. The blind are avid readers of *Popular Communications*, which is made available in Braille every month. Thanks to a group of highly dedicated volunteers, the blind are maximizing their enjoyment of the radio listening hobby with the help of the National Radio Club's DX Audio Service.

Fred Vobbe, W8HDU, Director of Engineering at WLIO TV in Lima, Ohio, is the executive producer of the DX Audio Service monthly magazine on cassette tape. Volunteers produce program segments covering AM radio station call letter/facility changes, AM/FM market air checks, sports networks, radio history, station ID collections, and of course DX. Vobbe is also the owner of Great Northern Broadcasting, which provides programming to radio and television stations around the world. It's there where Fred's been putting together the magazine every month since 1985. Although the DX Audio Service primarily serves the blind community, many station owners and engineers subscribe to the service to hear what other listeners are receiving across North America.

Segments of the DX Audio Service are often picked up for replay on shortwave by media programs, such as HCJB's DX

Partyline. For more information on the service via the Internet, simply type "DX Audio Service" into your search engine to find the National Radio Club's Website. (The National Radio Club is in the process of changing their URL.) The Web site contains audio clips from past magazines. Or send an SASE to Fred Vobbe, DX Audio Service, P.O. Box 5031, Lima OH 45802-5031. The DX Audio Service is a prime example of what makes the radio hobby so great. Whether a broadcast DXer, amateur radio operator, scanner enthusiast, CBER, utilities specialist, or shortwave listener, the unselfishness and camaraderie of our hobby transcends all barriers. We should all be proud to be a part of the radio communications hobbyist family.

Hearing The World Via AM Radio

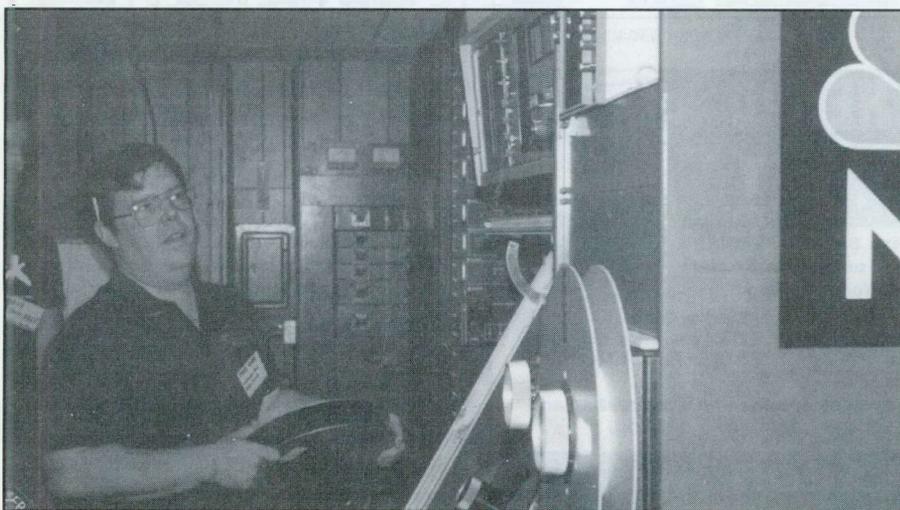
DXpeditioning is another segment of the hobby that brings people from all walks of life together. Newfoundland is where many of the top MW DXers convene every couple of years for one of the world's premier DXpeditions. The location is about as far east as one can go in North America, with clear sea-gain paths to Latin America, Africa, and Europe. High-power Europeans can be heard like locals on the car radio. DXers often spend

days battling the raw horizontal rains of late autumn north Atlantic weather, erecting and maintaining Beverage antennas directed toward Brazil, Africa, and Europe for some rare catches. A record 130 countries were heard on MW during the 1996 Newfie DXpedition. Host Jean Burnell writes, "I will long remember the seventh DXpedition at Cappahayden, Newfoundland, for a lot of good DX and the company of friends who are also excellent DXers, but my wife recently discovered that the event was also memorable for the populace of Cappahayden and Renewes. They were convinced, without a shadow of doubt, that in October their quiet community was crawling with spies, coming and going in rental cars at all hours, setting up sophisticated listening equipment, stretching long wires in all directions, and activating all the phones to ring non-stop in the DX Inn."

The spies/DXpeditioners and receivers were: Mark Connelly, Massachusetts (Drake R8A), Neil Kazaross, Illinois (AOR 7030), Jean Burnell, NF (Drake R8A and ICOM R71A), Werner Funkenhauser, ON (ICOM R71A), Alan Merriman, Virginia (AOR 7030 Plus), and John Fisher, AB (ICOM R71A).

In addition to renewed friendships, DXpeditions are where DXers share and compare the latest receivers and technology. Jean Burnell writes, "It seems that at every Newfoundland DXpedition some new piece of DX hardware is introduced that we adopt on subsequent DXpeditions. This year was no exception. Al Merriman brought his version of the K9AY Terminated Loop, and this antenna system certainly impressed me. Although for southern stations the loop did not perform as well as the 1-km Beverage we aimed at eastern Brazil, the loop out-performed the common garden variety Beverages we used for Europe, even in the direction of those Beverages. Furthermore, Al took only 30 minutes to get the loop system set-up, and it required only a 30-foot square of real estate."

The total antenna complement at the DXpedition was "The Brazilian Beverage" 1-km twin-lead with Bryan ter-



Fred Vobbe, producer of the DX Audio Service monthly magazine in the control room at WLIO-TV in Lima, Ohio.

WILM Conducts Special DX Test

WILM Newsradio 1450 kHz is conducting a special DX test on Sunday morning, February 21, 1999. Program Manager Allan Loudell said, "Since Delaware is one of the more elusive states, and 1450 kHz one of the more elusive frequencies, we delight in conducting this test each winter."

DXers should monitor 1450 kHz from 0606 to 0800 UTC when programming will consist of frequent IDs, tone, code, and recognizable rock cuts (a departure from the station's regular format). The station will be running its usual 1,000 watts non-directional. Loudell continued, "Since we're on a graveyard frequency, a report correlating one or two programming elements with an exact time will be eligible for verification." WILM will also take phone calls from distant DXers at 302-656-9800. Reception reports go to Allan Loudell, Program Manager, WILM Newsradio, 1215 French Street, Wilmington, DE 19801. The station will verify with full-data QSL cards and letters. Please note this DX test will be on Sunday morning in the Eastern time zone, NOT Monday morning!

mination aimed at eastern Brazil, 500 m unterminated wire aimed at Venezuela, a 600 m unterminated wire paralleling the Brazilian Beverage for phasing and back-up just in case the Brazil Bev was lost to moose or hunters, "Europe 1" 600 m of terminated wire aimed at northern Europe, 550 m unterminated wire paralleling "Europe 1," and the K9AY Loops; Al Merriman's system of north-south and east-west delta loops. Antennas were split four ways using ICE splitters. The Beverages were at various times fitted with Kiwa broadband amplifiers. We used a variety of phasing units including a modified MFJ-1026. (The MFJ-1026 is designed for shortwave reception. Filters have to be modified for operation at lower frequencies.)

With all that ammunition, new DX was inevitable. DX highlights included hearing first-time country Yemen on 760, making 27 new Brazilian loggings, listening to sub-kilowatt British stations like Classic Gold on 954, and catching Jerusalem-1404, Paraguay on 840 and 1020, Argentina on 830, All India Radio on 1566, and tentative reception of Mozambique on 1206 kHz.

Congrats on another successful DX-pedition! For more information on AM radio DXpeditioning, check out *The*

DXpedition Handbook by Shawn Axelrod, and *Season of DXpeditions* compiled by Mark Connelly, available through Universal Radio and the National Radio Club.

X-Band Files

More new X-banders are on the air. On 1630 kHz, KCJJ Iowa City, Iowa, is being heard across the nation, IDing as eastern Iowa's most powerful station. Also in Iowa, KBGG Des Moines is on with business news in a battle with WCMQ Miami Springs, Florida, on 1700 kHz. And yet one more from Iowa, KDNZ Cedar Falls-LaPorte City-Waterloo brings ESPN to 1650 kHz. WQSN Kalamazoo, Michigan, has signed on at 1660 with One-On-One Sports parallel 1470 kHz, competing with WBAH from New Jersey carrying Radio Unica in Spanish on 1660 kHz. WJNZ is broadcasting the urban contemporary sound to the world on 1680 from Ada-Grand Rapids, Michigan. On 1620, you might find Radio Hollywood WHLY South Bend, Indiana, if your local TIS isn't clogging the frequency. Keep an ear to the X-band as more newbies are on the way.

QSL Information

1010 KIQN Salt Lake City, Utah, letter with coverage map in 23 days for taped report. Heard with night power of 13 watts. Signed Christopher Wilde-PD. Address: Eagle Gate Plaza, 60 East South Temple #120, Salt Lake City UT 84111 (Martin, OR)

1341 Beijing, Peoples Rep. of China, received card in 23 days, signed Ying Lian. Address: China Radio International, Beijing, China 100866. P. China #31. (Martin, OR)

1640 KDIA Vallejo California, received in 6 days after follow-up report with SASE. Signed Clifford Brown Jr.—PD. Address: 3267 Somoma Blvd, Vallejo CA 94590. (Martin, OR)

1700 KBGG Des Moines, Iowa, verie letter received in 97 days for a taped report signed Eldon L. Schlenker—Director of Engineering. Address: Two Rivers Broadcasting, 5161 Maple Drive, Pleasant Hill, IA 50317. (Martin, OR)

Broadcast Loggings

As solar cycle 23 kicks into high gear, Mark Connelly reports some interesting auroral logs. Some of the best Caribbean and Latin American DX occurs during transmitter sunset and sunrise enhance-

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CIRCLE 11 ON READER SERVICE CARD

ment periods, and can be further enhanced by aurora as indicated by Mark's logs. Jacob Helms kicks off this month's selected loggings, hearing the BBC on AM in Pittsburgh. All times are UTC.

540 WWCS Canonsburg, Pennsylvania, heard every morning with world radio coming from London, England and IDing as WRN. (Helms, PA) World Radio Network is a service that provides a variety of English shortwave programs for rebroadcast. The CBC carries the service overnight, inserting its own IDs. Fred Vobbe's WLIO TV also carries the service via subcarrier.

540 XEWA San Luis Potosi, Monterrey, Mexico at 1109 romantic Spanish female vocal parallel XEW-900; over WQTM-Florida. (Connelly, MA)

560 HJPF Maicao, Colombia at 0004 parallel CARACOL-810 with "goool!" shout as Cali team scored; good with WGAN phased. (Connelly, MA)

620 ABS, St. John's, Antigua at 2315 most likely this with Carib-EE talk, soul vocal; initially dominant, then it sank into a total jumble with Cuba, Colombia, and other SSLatin Americans. (Connelly, MA)

710 CKVM Ville Marie, PQ at 2255 a pop music countdown with Canadian artist Bryan Adams number one,

announcements in French, in WOR null. (Conti, NH)

770 HJJX/RCN Bogota, Colombia heard at 2304 parallel 760 with RCN ID, Spanish talk about Cali versus Cartagena 'futbol' match, totally over WABC! (Connelly, MA)

810 ZNS3 Freeport, Bahamas at 1100 anthem that sounded a bit like a variation on the Canadian one, then Caribbean-EE announcer said "This is the Bahamas Radio Network . . . now it's time for the Amazing Grace broadcast," into a gospel vocal followed by preaching; excellent with loop pointed south. (Connell, MA)

1280 VSB2 Hamilton, Bermuda at 2324 religious talk, soft instrumental music; good, well over WADO. VSB3 on 1160 was huge at the time. (Connelly, MA)

1370 WMJT Moundsville, West Virginia heard at 0900 good with talk on the United Broadcasting Network, and "The talk of the Ohio Valley" IDs, local WFEA was off. (Conti, NH)

1370 WSPD Toledo, Ohio at 0903 with local news and "the exclusive forecast from the 24-hour 1370 WSPD weather center" in WMJT null. (Conti, NH)

1410 CIGO Port Hawkesbury, Nova Scotia was noted on 1410.5 kHz (500 Hz high of its normal 1410 channel assign-

ment). The signal here (near Boston) was quite strong. Late '70s and early '80s hits by Van Halen, Styx, and Journey were played and a CIGO ID was clearly heard at 2311 UTC. I'd suspect that listeners of WPOP Hartford, Connecticut, will be bothered by the 500 Hz unless they're listening from very close to the WPOP transmitter site. The CIGO split should make for an easy Nova Scotia log throughout eastern sections of Canada and the U.S., at least if you've got a selective receiver. (Connelly, MA)

1530 WVBF Middleboro, Massachusetts daytime only, carries the Massachusetts Reading Service for the blind, heard with readings from the local newspaper, Time Magazine, and the Bible. (Conti, NH)

1710 VOA. The last few mornings Dan Sys has been picking up a very loud and clear VOA in Spanish. (Dan Sys/Ted Wendland via Martin, OR) This could be in response to recent Radio Habana Cuba activity on the X-band.

Many thanks this month to Jean Burnell, Mark Connelly, Jacob Helms, and Patrick Martin. I'll be looking forward to reading your broadcast loggings and news next month. So as Fred Vobbe might say, "Get out there and support radio!" 73

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Applied For Permits To Construct New FM Stations

| | | | |
|----|----------------|-----------|-----------|
| AK | Palmer | 88.5 MHz | |
| AL | Heflin | 89.1 MHz | |
| AL | Heflin | 91.7 MHz | |
| AR | FT. Smith | 90.7 MHz | 20 kW |
| AR | Hampton | 88.1 MHz | |
| AR | Texarkana | 89.3 MHz | |
| AZ | Globe | 91.9 MHz | 720 watts |
| CA | June Lake | 90.9 MHz | 3.3 kW |
| CA | Lompoc | 88.1 MHz | |
| CA | Pescadero | 89.3 MHz | 100 watts |
| CA | Point Arena | 102.3 MHz | |
| CA | Santa Maria | 88.1 MHz | |
| CO | Strasburg | 97.7 MHz | |
| CO | Vail | 88.5 MHz | |
| CO | Walsenburg | 90.9 MHz | |
| FL | Key West | 89.1 MHz | |
| FL | Stock Island | 89.1 MHz | |
| GA | Thomson | 89.9 MHz | 8.5 kW |
| IA | Creston | 90.9 MHz | |
| IA | Dubuque | 88.5 MHz | |
| IA | Dubuque | 88.9 MHz | |
| IA | Earlham | 90.9 MHz | |
| ID | Kuna | 88.1 MHz | 28.5 kW |
| ID | Pocatello | 90.1 MHz | |
| ID | Pocatello | 92.1 MHz | |
| IL | Elgin | 88.1 MHz | |
| IL | Princtin | 88.3 MHz | 500 watts |
| IN | Columbus | 91.1 MHz | 500 watts |
| IN | Plymouth | 89.3 MHz | 400 watts |
| IN | Valparaiso | 91.1 MHz | 230 watts |
| KS | Manhattan | 88.7 MHz | 25 kW |
| KY | Glasgow | 88.3 MHz | |
| KY | Morehead | 88.5 MHz | |
| MI | Albion | 91.1 MHz | |
| MI | Alpena | 90.9 MHz | |
| MI | Benton Harbor | 89.9 MHz | |
| MI | Coldwater | 91.1 MHz | |
| MI | Gaylord | 88.1 MHz | |
| MI | Glen Arbor | 93.3 MHz | |
| MI | Grand Rapids | 90.9 MHz | |
| MI | Harbor Springs | 88.3 MHz | |
| MI | Harbor Springs | 89.7 MHz | |
| MI | Pinconning | 104.1 MHz | |
| MI | Port Huron | 90.3 MHz | |
| MI | Rogers City | 89.7 MHz | |
| MI | Schoolcraft | 89.7 MHz | |
| MO | Cabool | 89.9 MHz | |
| MO | Cuba | 91.9 MHz | |
| MO | Kennett | 88.9 MHz | 1kW |
| MO | Poplar Bluff | 88.7 MHz | 6 kW |
| MS | Bude | 104.3 MHz | 25kW |
| MT | Billings | 90.1 MHz | |
| MT | Billings | 90.7 MHz | |
| MT | Billings | 90.9 MHz | |
| MT | Park City | 89.7 MHz | |
| NH | Conway | 91.9 MHz | |
| NM | Espanola | 89.5 MHz | |
| NM | Roswell | 91.7 MHz | |
| NM | Ruidoso | 91.3 MHz | |
| NM | Socorro | 91.9 MHz | |
| NY | Middletown | 88.1 MHz | |
| NY | Montgomery | 88.1 MHz | |
| NY | Remsen | 90.3 MHz | |
| OH | Eden | 88.7 MHz | 6 kW |
| OH | Grove City | 88.1 MHz | |
| OH | Monroe | 88.3 MHz | |
| OR | Lebanon | 88.1 MHz | |
| OR | Oakridge | 92.1 MHz | |
| OR | Salem | 90.3 MHz | |
| OR | Welches | 90.3 MHz | |
| PA | Carbondale | 90.9 MHz | 200 watts |
| PA | Mifflin | 88.5 MHz | 1.2 kW |
| PA | Patton | 91.1 MHz | 200 watts |
| PA | Warwick | 88.1 MHz | |

| | | | |
|----|------------------|----------|-----------|
| SC | Chesterfield | 89.3 MHz | |
| TX | Bay City | 89.5 MHz | |
| TX | Beaumont | 88.5 MHz | |
| TX | Big Spring | 88.3 MHz | |
| TX | Big Spring | 89.3 MHz | |
| TX | Bryan | 91.9 MHz | |
| TX | Bushland | 91.5 MHz | 1 kW |
| TX | Comfort | 91.5 MHz | |
| TX | Dripping Springs | 91.9 MHz | |
| TX | Hereford | 88.9 MHz | |
| TX | Midland | 90.9 MHz | 500 watts |
| TX | San Angelo | 89.3 MHz | 6 kW |
| TX | Selden | 90.5 MHz | |
| TX | Stephenville | 90.5 MHz | |
| UT | Logan | 90.5 MHz | 6 kW |
| VA | Chase City | 90.1 MHz | |
| VA | Mappsville | 90.1 MHz | |
| VA | Nassawadox | 90.1 MHz | |
| VA | Spotsylvania | 89.5 MHz | 380 watts |
| WI | Adams | 89.1 MHz | |
| WI | Fond du Lac | 91.3 MHz | 500 watts |
| WI | Kiel | 91.3 MHz | 1.2 kW |
| WI | Platteville | 88.9 MHz | |
| WI | Plymouth | 91.3 MHz | 10 kW |
| WY | Casper | 88.3 MHz | |
| WY | Centennial | 90.9 MHz | |
| WY | Cheyenne | 90.7 MHz | |
| WY | Chugwater | 90.9 MHz | |
| WY | Laramie | 88.5 MHz | |
| WY | Laramie | 90.1 MHz | |
| WY | Laramie | 90.9 MHz | |

Granted Permits To Construct New FM Stations

| | | |
|----|-----------|-----------|
| IN | Mitchell | 88.1 MHz |
| KS | Bronson | 88.3 MHz |
| NM | Lordsburg | 105.7 MHz |
| TN | Middleton | 100.7 MHz |

Cancelled

| | | |
|-------|-------------|-----------------------|
| KAGJ | Ephriam, UT | 89.5 MHz |
| KLUA1 | Umikoa, HI | 93.9 MHz 40 W booster |
| KYDZ | Cody, WY | 90.1 MHz |
| WGYJ | Atmore, AL | |

Changed AM Facilities

| | | | |
|------|-------------|----------|-----------------------|
| KEYY | Provo, UT | 1450 kHz | Became non-commercial |
| KLMS | Lincoln, NE | 1480 kHz | Reduced power |

Changed FM Facility

| | | | |
|------|------------------|-----------|---------------------------|
| KBAE | Marble Falls, TX | 104.7 MHz | Changed freq. & community |
|------|------------------|-----------|---------------------------|

Seeking Changed FM Facilities

| | | | |
|------|-------------------|-----------|------------------------------|
| KCZO | Carrizo Spgs., TX | 92.1 MHz | Seeks move to 92.3 MHz |
| KUYI | Hotevilla, AZ | 89.1 MHz | Seeks changes freq. |
| KZZX | Alamogordo, NM | 105.3 MHz | Seeks changed freq. |
| WCMK | Bolton, VT | 91.7 MHz | Seeks move to 91.5 MHz, 1 kW |

New AM Call Letters Issued

| | |
|------|---------------|
| KBIV | El Paso, TX |
| KBJE | Monroe, LA |
| WBHD | Ada, MI |
| WBHE | Charlotte, NC |
| WBHO | Bayside, VA |

Pending AM Call Letter Change

| | | |
|------|------|----------------|
| New | Old | |
| WKEA | WBTS | Bridgeport, AL |

Changed AM Call Letters

| New | Old | |
|------|------|--------------------|
| KAVA | KRRU | Pueblo, CO |
| KDAV | KLLL | Lubbock, TX |
| KIQN | KYUR | Tooele, UT |
| KKDD | KMRZ | San Bernardino, TX |
| KLNT | KDOS | Laredo, TX |
| KOWS | KHSP | Texarkana, TX |
| KQOL | KSPW | Casper, WY |
| KSMM | KKCM | Shakopee, MN |
| KTMS | KQSB | Santa Barbara, CA |
| KTSP | KSGI | St. George, UT |
| KTUB | KWFT | Wichita Falls, TX |
| KZJZ | KKWK | St. Louis, MO |
| KZXR | KARY | Prosser, WA |
| WAKV | WQXC | Otsego, MI |
| WALC | WJCM | Sebring, FL |
| WGFY | WTLT | Charlotte, NC |
| WGMN | WROV | Roanoke, VA |
| WHAN | WPES | Ashland, VA |
| WJBZ | WIOL | Knoxville, TN |
| WKDA | WQDQ | Lebanon, TN |
| WLTA | WVNF | Alpharetta, GA |
| WNWZ | WRCV | Grand Rapids, MI |
| WRPN | WCWC | Ripon, WI |
| WTKJ | WBEL | S. Beloit, IL |
| WUGR | WNVL | Nicholasville, KY |
| WVGM | WJJS | Lynchburg, VA |
| WXBH | WLAL | Cobleskill, NY |
| WZUM | WPLW | Carnegie, PA |

New FM Call Letters Issued

| | |
|---------|-----------------|
| KBHX | Shingletown, CA |
| KDFM | Falfurrias, CA |
| KEUL | Girdwood, AK |
| KPBE | Brownwood, TX |
| KREO | Superior, MT |
| KUUY | Glendo, WY |
| KEJG | Kasilof, AK |
| WBGJ | Pensacola, FL |
| WBGY | Naples, FL |
| WEJC | White Star, MI |
| WNGE | Negaunee, MI |
| WSTN-FM | Mt. Olive, IL |
| WWHW | Jefferson, NY |

Pending FM Call Letter Changes

| New | Old | |
|------|---------|---------------|
| KQZT | KWAN | Gualala, CA |
| KZSL | KLFA | King City, CA |
| WLFF | WELV-FM | Brookston, IN |

Changed FM Call Letters

| New | Old | |
|---------|---------|------------------|
| KCZN | KXBS | Santa Paula, CA |
| KEBN | KCAA | San Diego, CA |
| KFJO | KZWC | Walnut Creek, CA |
| KFQX-FM | KHXS | Abilene, TX |
| KHSP-FM | KOWS | Ashdown, AR |
| KIXO | KFXT | Tooele, UT |
| KKLQ | KXXM | Vancouver, WA |
| KKYC | KWUA | Clovis, NM |
| KLQV | KUDE | San Diego, CA |
| KLVN | KSKD-FM | Livingston, CA |
| KMUL-FM | KKYC | Muleshoe, TX |
| KMXH | WNAX-FM | Yankton, SD |
| KOFR | KPOS-FM | Post, TX |
| KOOK | KAHO | Junction, TX |
| KOSS | KAVC | Rosamond, CA |
| KPWW | KTHN | Hooks, TX |
| KPZA | KXJW | Jal, NM |
| KQMQ | KBIP | Shell Knob, MO |

| | | |
|---------|---------|---------------------|
| KQOL-FM | KBGO | Las Vegas, NV |
| KRSK | KKRH | Salem, OR |
| KSGI | KRFD-FM | Richfield, UT |
| KSKD-FM | KLVN | Chowchilla, CA |
| KSTJ | KQOL-FM | Boulder City, NV |
| KUST | KCEY | Huntsville, TX |
| KVJM | KHRN | Hearne, TX |
| KZEW | KYCN-FM | Wheatland, WY |
| KZXR-FM | KZXR | Prosser, WA |
| WBZJ | WISS-FM | Berlin, WI |
| WBRO | WLRT | Kankakee, IL |
| WBTJ | WRBP | Hubbard, OH |
| WBZV | WBNK | Christianburg, VA |
| WCCL | WWWD | Punta Rassa, FL |
| WDTJ | WCHB-FM | Detriot, MI |
| WDZN | WJJB | Romney, WV |
| WFJO | WILV-FM | St. Petersburg, FL |
| WGTS | WGTS-FM | Takoma Park, MD |
| WILK-FM | WWSH | Pittston, PA |
| WILP-FM | WWFH | Freeland, PA |
| WJBZ-FM | WJBZ | Seymour, TN |
| WJRV | WSMJ | Richmond, VA |
| WKFS | WAQZ | Milford, OH |
| WLTJ | WJKZ | Cayce, SC |
| WMSR-FM | WFRQ | Collinwood, TN |
| WORC-FM | WXXW | Webster, MA |
| WPPG | WMKS | Macon, GA |
| WWLV | WOLL | Riviera Beach, FL |
| WWWD | WKZY | Labelle, FL |
| WWZB | WJDJ | Burnside, KY |
| WXMG | WZAZ-FM | Upper Arlington, OH |
| WZAZ-FM | WKFX | Marysville, OH |

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The Listening Post

BY GERRY L. DEXTER



WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

A New Central African Republic Broadcaster, And The UN Is Getting Into Shortwave

The Central African Republic is home to a new shortwave broadcaster! **Radio Minurca** has come on the air, using 12 kW from the country's capital, Bangui. The station is part of the United Nations peacekeeping effort in the Central African Republic. (The station's name is an acronym for "Mission des Nations Unies en Republique Centrafricaine.") They're in the country to promote peace and security, provide educational programming, and an outlet for women's and other non-government groups. But for us, ah there's a catch. The UN mission is scheduled for completion at the end of February, which means there's a fair chance the station won't continue beyond that date. Obviously, you should try to hear 'em right now!

Radio Minurca is operating **24-hours-a-day on 9900**, plus 0600 to 1600 on **9500**, and 1600 to 0600 on **5900**. There are a couple of locally produced programs in English, aired from 0500 to 0600 and 1745 to 1900. Relays of the BBC and broadcasts in French and the local Sango languages use up the rest of the clock. Reception reports go to Radio Minurca, P.O. Box 2732, Bangui, Central African Republic.

The UN is getting into the shortwave act in ways other than setting up and operating the occasional station to broadcast to a troubled area, and the brief programs it broadcasts on a few stations here and there. UN Radio broadcasts are to be relayed on shortwave on a far more extensive basis than has been the case in recent years. (For many years, UN Radio aired a full schedule of programming over Voice of America transmitters.) Now, **UN Radio** is set to again air via VOA facilities, as well as those of the BBC and Deutsche Welle. Things weren't fully ready to roll at this writing, but at least if you stumble across United Nations Radio programming, you'll have a clue as to what's going on. We can tell you that the schedule via Germany should be 0400 and 0500 on **11795**; 0600 on **5990**, **11675**;

Merlin Network

One QSL

November 1, 1998
0000 UTC
9560 kHz

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To: Edouard S. Provencher

With thanks for your support

Edouard S. Provencher in Maine got this QSL from Merlin Network One, operated by Merlin Communications, a commercial company which operates transmitters for the BBC and uses the spare hours for its own programming.

1700 on **13800**; 1800 on **11840**; 1900 on **5970**, **6025**, and **11735** (all one half-hour in length). You can send reports to United Nations Radio, R/S-850, United Nations, New York, NY 10017.

Lonesome Rhodes! The Voice of America has discontinued shortwave use of its relay station at Rhodes, Greece. Two-250 kW transmitters there are being moved to the VOA site at Kavala. What's left of the Rhodes site will be used only for mediumwave.

Don't hold your breath waiting for a reply to your letter from the Voice of Russia. It seems that the money crunch there is so bad they can't afford to pay for the postage to reply. Just the same, though, they want letters from their audience.

Another new station is **Radio Baltic Waves**, based in **Lithuania** and beaming to Belarus in the Belorussian language. Power is a tiny 2.5 kW, but the station hopes to bump that up to 20 kW. Initial programs were being aired at 1700, then repeated at 1900 and 2100, but only on the weekends — expansion of that sched-

ule will depend on how funding goes. The first frequency used was **6235**, then **6240**. Look for them to settle down somewhere in this area.

Here's another entry in the endless parade of relay arrangements. **Radio Australia** is to start broadcasting to **mainland China via government transmitters in Taiwan**. That should just delight the heck out of Beijing! No times or frequencies have been announced.

Here are a few schedules for English language broadcasts to North America: Radio Tirana at 0330 on **6115**, **7160**. Radio Austria International at 0030 on **7325**; 0130 on **7325**, **9495**, **9870**; 0530 on 6015 (and to other areas on **6155**, **13730**, **15410**, and **17870**). Radio Bulgaria at 0000 and 0300 on **7375**, **9485**. China Radio International on 0300 on **9690**, 0400 on **9730**, 0500 on **9560**, and 1400 on **7405**. Radio Netherlands at 2330 on **6165** and **9845** and 0430 on **6165** and **9590**. Radio Sweden at 1230 on **7280** (or **9455**),



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FRECUENCIAS: 6.080 - 11.710 - 15.345 KHz.

RAE in Argentina has offered English weeknights at 0200 on 11710 for about as long as anyone can remember.

1430 on **15240** (or **17870**), 0230 on **7280** (or **9455**), 0330 on **7135** (or **9435**).
Voice of Turkey at 0400 on **6010, 7240, 21715**, 2300 on **7280, 9655**.
Radio Ukraine International at 2200 on **7150**, 0100 and 0400 on **6030, 7150**, and 1200 on **9870**.
Radio Yugoslavia at 0100 on **7115** and 0200 on **7130**.

WRMI in Miami is now carrying a half-hour English broadcast from **Radio Prague**, in the Czech Republic — but maybe not on a long-term basis. “Check” **9955** at 0400–0430.

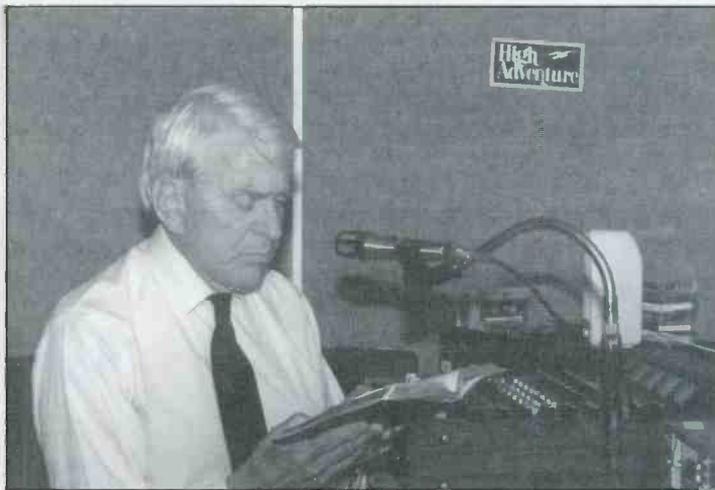
Radio Denmark broadcasts 25-minute programs to **North America, via Norway, and in Danish only**, on this current schedule: 1730 and 1830 on **18950**,

1930 and 2030, on **11635**, 2330 0030, 0130 and 0230 on **9945**, 0330 on **7480**, 0430 on **7560**, 0530 on **7480**, 1230, 1330, 1430 on **18950**, 1530 on **15735** and 1630 on **15705**. Reports go to Radio Denmark, Rosenorns Alle 22, DK-1999, Frederiksberg C. One IRC or \$1 is appreciated for return postage.

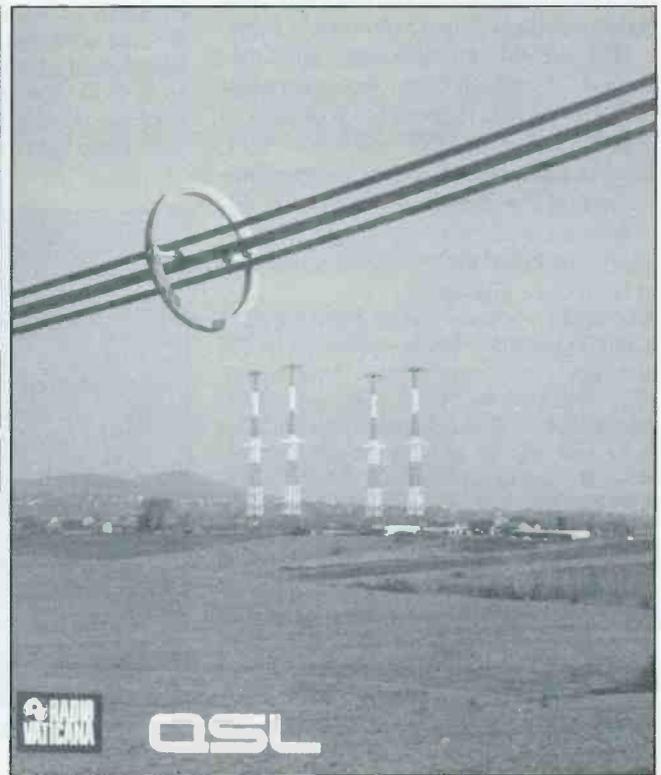
Thanking You For Your Support!

Beginning this month, we’re going to go beyond just giving an in-the-magazine “thank-you” for your effort, support, and loyalty as regular “Listening Post” reporters. We’ve made arrangements to award a shortwave-related book to one reporter each month as an appreciation prize. There won’t be any hard and fast rules by which we decide the monthly winner. It’ll be based partly on the quality of the logs or other material you send in, partly on how regularly you report, and partly on “intangibles.” But we’ll also keep it balanced, so one person doesn’t win four or five free books every year.

That said, the first winner is **Michael J. Miller of Issaquah, Washington**, who will receive a copy of Fred Osterman’s superb door-stopper of a book — *Shortwave Receivers Past and Present* from Universal Radio. Universal has a



George Otis is president of High Adventure Ministries, which operates the Voice of Hope stations in California (KVOH), Lebanon, and Palau (KHBN).



Vatican Radio towers at their Santa Maria di Galeria site in Italy.

huge catalog filled with radio stuff. It's available from them at 6830 Americana Parkway, Reynoldsburg, Ohio 43068, or call 614-866-4267 and request a copy. Their Website is located at <http://www.universal-radio.com>.

And another new thing for this column — beginning with this issue, each regular reporter will receive an Official Pop'Comm Listening Post Reporter Certificate to tack up on the wall over the receiver — or frame if you're really impressed! We plan to issue a new certificate each year. Thanks to John Herkimer of Next Wave Graphics in Caledonia, New York, for designing these great-looking certificates!

So, after all that, you don't need much encouragement to start (or continue) checking in each month, right? Remember the sacred Three Rules For a Well-drafted, Useable Set of Logs: (1) they must be **listed by country**, (2) they must be **double-spaced** (at least) and (3) must **include your last name and state abbreviation after each log**. Double-check them before you stuff the envelope. We find a few logs every month that are missing time or frequency, which means we can't use 'em. Other stuff we welcome with open arms includes spare QSL cards, station schedules, photos and other literature, notes about changes in QSLing policies or station addresses, and other shortwave station news. We also encourage you to show us your shack! Don't be shy. Get out the camera and fire away. Step right up and get your 15 minutes of fame!

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.

ALBANIA — Radio Tirana heard on 6115 from 0330 to 0357. This is a new time for EE with news, ID, press review, local music. //7160 and both very good. (Alexander, PA)
ALGERIA — Radio Algiers Int'l, 15160 at 2000 with EE ID and several others later. News about Algeria. (Linonis, PA)
ANTIGUA — BBC World Service relay, 5975 at 0200; 15220 at 1301 and 17840 at 1600. (Jeffery, NY) Deutsche Welle relay, 15105 at 2337 in SS with music, ID. (Jeffery, NY)
ASCENSION ISLAND — Voice of America relay, 7105 at 0330 with news. (Jeffery, NY)
AUSTRALIA — Radio Australia, 5995 at 1237, 6020 at 1310 and 9500 (Vietnamese service) at 1310. (Miller, WA) 9580 at 1130. (Linonis, PA) 0917. Also 1159 with IS and

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 |

news. (Jeffery, NY) 1100 with "Asian Pacific." (Taylor, PA)
AUSTRIA — Radio Austria Int'l, 9870 at 0150 to 0200 with announcements, E-mail address. (Linonis, PA)
AZERBAIJAN (tentative) — Radio Dada Gorgud, 9165 heard at 0315 to 0359 close. RR classical music at tune in. Also indigenous music with a Mid-East type sound, talks by man and woman in unidentified language. (Alexander, PA)
BOTSWANA — Radio Botswana, 7255 at 0247 sign-on with barnyard animals and cowbells, choral anthem at 0258, multi-lingual sign-on announcements, including EE. Then local choral music and talk in unidentified language. //4820, both fair. (Alexander, PA)
BRAZIL — Radio Missoes da Amazonia, 4865.14 at 0904 in PP with lively music, definite canned ID at 0910. Seemed to go off the air at 0914. (Quaglieri, NY) Radio Gaucha, 11815 in PP from 0015 tune. Faded at times and nearby QRM but clearer later. (Linonis,

PA) Radio Club do Para, presumed, 4885 in PP at 0230 to past 0345 with both EE and non-EE songs, brief talk in between. (Silvi, OH) Radio Nacional Amazonia, 11780 in PP at 0153. (Miller, WA)
BULGARIA — Radio Bulgaria, 9485 at 0228 in EE, off at 0300. (Taylor, PA)
CANADA — BBC via Sackville, 6175 at 0200 and 9515 at 1255. (Jeffery, NY)
CHILE — Voz Cristiana, 6069.96 at 0130 to past 0305. Latin music, contemporary Christian music, ID at 0159. SS talks. Poor, with a lot of adjacent channel QRM. //11690.02 which was good, but RTTY QRM on the high side. Best on //9630.41, which was in the clear and very good. (Alexander, PA) 11690 at 0237 with programs originating in Miami. (Miller, WA)
CHINA — Central People's Broadcasting Station, unknown location, in CC at 1305. (Miller, WA) 9340, site unlisted, in CC at 0657. (Foss, AK) China Radio Int'l, 9560 (via Canada, editor) at 0435 with various talks and features. 9730 (via French Guiana) at 0454. (Taylor, PA) 9690 (via Spain) at 0315. (Linonis, PA)
COSTA RICA — Adventist World Radio, 5030 from 0120 in SS with religious music and talk. (Linonis, PA) (This has probably closed down by now. AWR is moving the facility to the Dominican Republic — Editor)
CUBA — Radio Havana Cuba, 9820 at 0330 with talk about the Mexican state of Chiapas. (Linonis, PA) 0446 with interview and news on Clinton. (Jeffery, NY)
DENMARK — Radio Denmark, via Norway, 9940 at 1923 in DD. (Miller, WA)
DOMINICAN REPUBLIC — Radio Cristal Int'l, (presumed) 5011.68 at 0045 to 0236 close. Mostly continuous SS talk, some religious and classical music. Sign-off with national anthem. (Alexander, PA)
ECUADOR — Radio Popular de Cuenca, 4800 at 1230 in SS with personal messages. (Miller, WA) HCJB, 9640 at 0949. (Taylor, PA) 9745 at 0210 with "DX Party Line." (Linonis, PA)

STAMPS

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The Qatar Broadcasting Station isn't as widely reported as some of the other Arabic shortwave broadcasters.



Fiji Broadcasting Commission

The Voice of The Islands



Dear Listener

Thank you for your report on the reception

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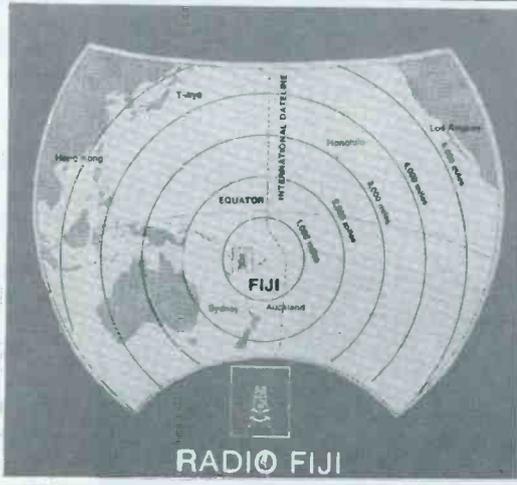
at _____ GMT on (date) _____

We are pleased to confirm your report

Unfortunately there is not enough information for us to confirm your report

General Manager

Broadcasting House
Box 334 Suva, Fiji.



One nice thing about being a real "old timer" — you could hear and QSL stations like the Fiji Broadcasting Commission!

ENGLAND — BBC, **9515** (via Canada — Editor) at 1403, //17640. Also **9915** at 0200 and **15220** (via Canada) at 1500. (Taylor, PA) **11680** with "Calling the Falklands," at 2130. (Jeffery, NY)

FINLAND — Radio Finland Int'l, **11900** at 0200 with news on global stock markets. (Linonis, PA)

FRANCE — Radio France Int'l, **5925** in FF at 0631. (Foss, AK) **11620** in EE at 1627. (Miller, WA)

GERMANY — Deutsche Welle, **6140** monitored at 0644 with female vocals and '30s style music. (Foss, AK) **6185** (via Antigua — Editor) at 0535 and 11810 (Bonaire — Editor) (Taylor, PA) New **11785** at 0215 in GG. (Alexander, PA) **11810** at 1948; sign-off in EE. (Miller, WA)

GREECE — Voice of Greece, tentative, **6185** at 0152, Greek music. (Miller, WA) **7450** at 0200 with ID, EE news, Greek music. (Linonis, PA) **9420** at 0652 and **9935** at 0047 in Greek. (Foss, AK)

GUATEMALA — Radio K'ekchi, **4845** at 2350 to past 0130 with SS ballads and pops, ID at 2356 — "TGVC — La Voz Evangelica de las Casas" followed by a short radio drama in SS. (Alexander, PA) Radio Coatan, San Sebastian, **4779** in SS at 1220 with personal messages. (Miller, WA) Radio Tezulutlan, Coban, **4835** with SS music at 1226. (Miller, WA) Radio Buenas Novas, San Sebastian, **4799** at 1234 in Quechua. (Miller, WA)

GUYANA — Voice of Guyana, **3289.93** at 0940 with Hindi-type music interrupted every measure for an EE translation by woman. Ended at 0950, then a hyper car dealer commercial and ID: "You are tuned to the Voice of Guyana." (Quaglieri, NY) 0745 with VOA programming, ID at 0800 with mention of **3290** and **5950**, as if they were being used in parallel. Station went into local EE programming at 0800 with DJ chatter, big band music. (Alexander, PA)

INDIA — All India Radio, **11620**, Bangalore, at 2328 in EE. Also **11735** at 0245 with Hindi music. (Miller, WA)

INDONESIA — Radio Republik Indonesia, Jakarta. **21525** at 1913. (Miller, WA)

IRAN — Voice of the Islamic Republic of Iran, **11690** heard at 0301 with Farsi, music. (Miller, WA)

ISRAEL — Kol Israel, **11605** at 2012. (Miller, WA) 0410. **17535** at 1500. (Taylor, PA) Reshet Bet, **17545** at 1716 in HH with classical music. (Jeffery, NY)

ITALY — RAI, **6010** at 0100 with news in EE. Into FF at 0110. (Linonis, PA) New **11715** at 2025–2045 in EE with news, local pops, ID. Parallel **7115, 9670**, both of which were poor. (Alexander, PA)

JAPAN — Radio Japan/NHK, **6110** (via Canada, editor) at 0555 with talk on astronomy, invited letters, off at 0559. (Taylor, PA) **9665** (via Ascension) at 0155. (Linonis, PA) **9835** at 0650. (Foss, AK)

JORDAN — Radio Jordan, **11835** at 0752. Arab music and vocals. (Foss, AK)

KUWAIT — Radio Kuwait, **9855** at 2130 in AA with news. (Linonis, PA) 1901 in AA with music. (Miller, WA)

LITHUANIA — Radio Vilnius, **6120** (via Germany) with EE sign-on, ID, EE news, commentary, local music. (Alexander, PA)

MEXICO — Radio XERTA, **4800.7** at 0918 in SS with non-stop Mexican music, canned ID at 0927 "... banda internacional de 760 metros, 4800 kHz. X-E-R-T-A..." No mention of Radio Trancontinental. Back into non-stop music to past 0940. (Quaglieri, NY) Radio Mil, **6010** in SS with news at 1241. (Miller, WA)

MOLDOVA — Radio Moldova Int'l, on 7500 from 0330 to 0355 close. EE news, commentary, ID, address. Brief breaks of local music. Very poor, with distorted audio and hum. Back into unidentified language at 0400. (Alexander, PA)

MOROCCO — Voice of America relay, **15205** at 1500 with Mideast news and weather. (Taylor, PA) Radio Medi-Un, **9575** at 0643 with AA music. Into FF at 0646. (Foss, AK)

MONACO — Trans World Radio, Monte Carlo (via Albania) at 1518 on //63.5 with religious broadcast. (Miller, WA)

NETHERLANDS — Radio Netherlands, **6020** and **9845** at 2355. (Taylor, PA)

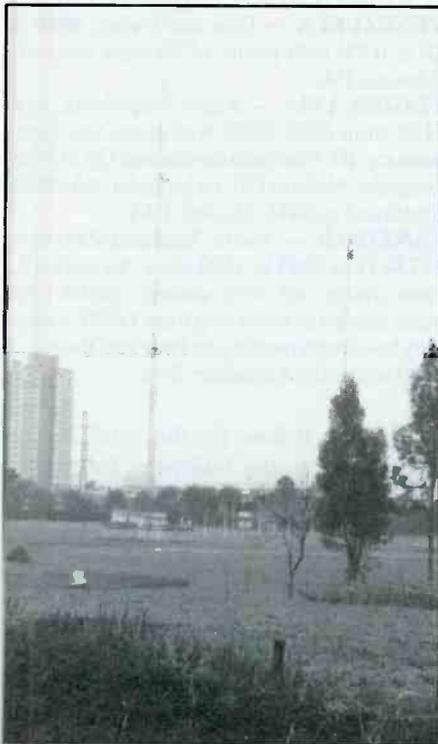
NETHERLANDS ANTILLES — Radio Netherlands via Bonaire, **9590** at 0110. (Taylor, PA) **15315** at 2328 in SS. (Jeffery, NY) **21590** at 1919 in Dutch. (Miller, WA)

NIGERIA — Voice of Nigeria, **7255** heard at 0500 in EE. (Jeffery, NY) 0634, //15120, both good. (Alexander, PA) **15120** at 1900 with talking drums IS, "Who Are the Nigerians?" (Linonis, PA)

NEW ZEALAND — Radio New Zealand Int'l, **9700** at 0900 with news, weather, then "National Radio's Saturday Night." **11905** at 0500 with news, "Into the Night." **17675** at 0037 with "Cadenza," frequency info, news, "In Touch With New Zealand." (Jeffery, NY)

NORTH KOREA — Korean Central Broadcasting Station, **9665** heard at 0705 with long choral number. (Foss, AK) Radio Pyongyang, **13760** at 0043 in SS. Distorted signal. (Foss, AK)

PAPUA NEW GUINEA — NBC, **4890** at



These towers belong to Radio Cultura, Sao Paulo, Brazil, which uses 6170, 9615, and 17815.

Radio Japan via Canada

Relay via Sackville, New Brunswick : Special Verification Card



Radio Japan issued this special card for reception of their Sackville, Canada, relay.

1208 in EE with music. (Miller, WA)

PERU — Radio San Ignacio, **7040.57** at 2340 to past 0015 in SS with talk, commercials, jingles, promos, Peruvian folk music. Clear ID at 2348. (Alexander, PA) Radio Cristal, **7745.8** at 2345 to past 0200. SS talks, Peruvian folk music. (Alexander, PA)

RUSSIA — Magadan Radio, **9600** at 0637 with woman in RR; sounded like a dramatic reading. (Foss, AK)

SAUDI ARABIA — Broadcasting Service of the Kingdom of Saudi Arabia, **11780** at 1618 in AA. (Miller, WA)

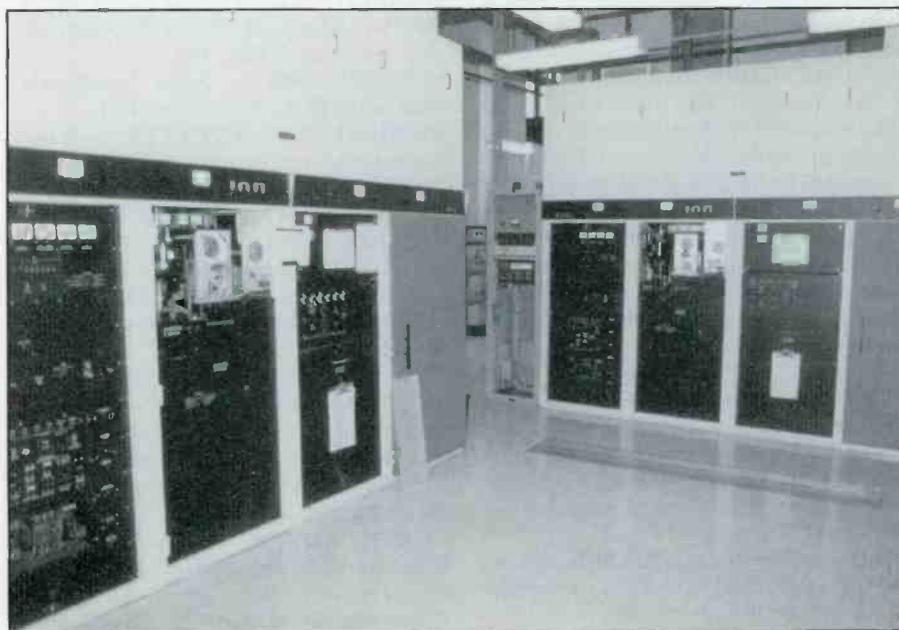
SLOVAKIA — Radio Slovakia Int'l, **5930** at 0100 with EE to North America. (Linonis, PA)

SOLOMON ISLANDS — Solomon Islands Broadcasting Service, **5020** at 1121 with news. (Miller, WA)

SOUTH AFRICA — Trans World Radio via Meyerton, **9510** at 1850 in unidentified language. (Miller, WA)

SOUTH KOREA — Radio Korea Int'l, **11715** (via Canada — Editor) at 1059 to 1100 sign-off. (Taylor, PA)

SPAIN — Radio Exterior de Espana, **6055** with EE news. (Jeffery, NY)



Here's part of the transmitter facility at Sackville, New Brunswick.

SUDAN — Sudan National Broadcasting, **9200** at 0247 sign-on. IS, national anthem at 0259, time pips at 0300 and talk in language. Koran at 0302. (Alexander, PA)

SWEDEN — Radio Sweden, **9495** at 0230 in EE. (Linonis, PA)

SWITZERLAND — Swiss Radio Int'l, **13685** monitored at 0840 with press review. (Foss, AK)

TAIWAN — Radio Taipei Int'l, **5950** (via WYFR) heard at 0213 in EE; **17805** at 2321 in SS. (Jeffery, NY) **5950** at 0300 opening with national anthem. (Walleesen, IL) **11745** at 0247. (Miller, WA) **15600** monitored at 2200. (Linonis, PA)

THAILAND — Voice of America relay, **11920** at 1907 with news. (Foss, AK)

TURKEY — Voice of Turkey, **9560** at 1856 with TT music. (Miller, WA)

UKRAINE — Radio Ukraine Int'l, **6020** at 1131 with news, ID, sports. (Jeffery, NY) 0100-0125 with EE news, commentary, ID, classical music, and local pops. Killed by Radio Netherlands sign-on at 0125. // **5905**, **7205**. Also heard on **6020** from 0400-0430. (Alexander, PA)

UNITED STATES — WBCQ — The Planet, **7415** heard at 0100 with announcements about upcoming programs. (Linonis, PA) 0151 with "Radio Free New York." (Jeffery, NY) AFRTS, **4278** monitored at 0135, **6458** at 0131 and **12689** at 2336. All in SSB mode. (Jeffery, NY) (These transmissions may well have ended by now. — Editor)

VATICAN — Vatican Radio, **6020** at 1310 in unidentified language. Religious service, IS. (Miller, WA) **9605** at 0230 in FF with IS, FF ID. Into news at 0235. (Linonis, PA)

VENEZUELA — Ecos del Torbes, **4980** in SS at 0300 with plenty of SS pops and talk. (Linonis, PA)

YUGOSLAVIA — Radio Yugoslavia, new **7130** from 0200-0228 with news and commentary, ID. Poor with co-channel QRM from Deutsche Welle in GG. (Alexander, PA) **9580** monitored at 0441. (Taylor, PA)

ZANZIBAR — Radio Tanzania-Zanzibar, **11734.11** at 2045 to 2100 close. Swahili talk, local music, off with anthem. ECSS-LSB mode needed to avoid slop from 11735. Lately they have been running an hour past the usual 2000 sign-off. (Alexander, PA)

That gets it done for this time. A roar of approval to the following folks who came through for you: Brian Alexander, Mechanicsburg, Pennsylvania; Marty Foss, Talkeetna, Alaska; Dave Jeffery, Niagara Falls, New York; Michael Miller, Issaquah, Washington; Lee Silvi, Mentor, Ohio; Al Quaglieri, Albany, New York; Elmer Walleesen, La Grange Park, Illinois; Tim Taylor, Erie, Pennsylvania, and Jack Linonis, West Middlesex, Pennsylvania. Thanks to each one of you!

Until next month — good listening! ■

The book you've been waiting for...



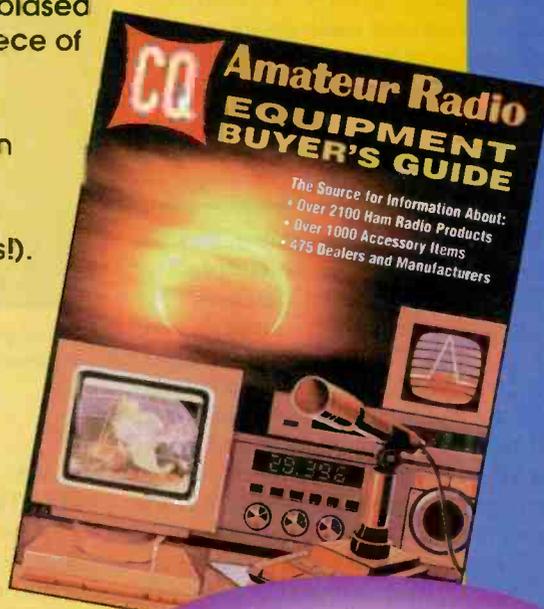
Amateur Radio Equipment Buyer's GUIDE

This information-packed book is your most reliable, unbiased source for detailed information on practically every piece of Amateur Radio equipment and every accessory item currently offered for sale in the United States. From the biggest HF transceiver to Ham computer software, it's in the CQ Amateur Radio Equipment Buyer's Guide, complete with specs and prices. There are over 2100 product listings (3100 including transceiver accessories!).

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YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

Will The Real KAWN Please Stand Up?

A lot of confusion arises when someone logs a baudot (RTTY) transmission being sent that contains the header "KAWN." I started some research, however some details need to be confirmed or proven wrong—and still do. Not deterred, we will try and lift the veil of mystery a bit this month.

History

The U.S. Air Force Global Weather Center (AFGWC) was established at Offutt AFB, Nebraska on March 15, 1949 to support the former Strategic Air Command (SAC). Originally, AFGWC was established to perform weather surveillance and forecasting over the targets and routes that U.S. bomber and tanker aircraft would be flying over en-route to any target. Weather over these targets and routes was of strategic importance to SAC so these aircraft could "get through" and perform their ultimate Cold War mission, if needed.

AFGWC originally used SAC computer resources, but in 1959 SAC decided it could no longer share its IBM 704 computer, so AFGWC got funds for their own IBM 7090 from Air Weather Service (AWS), and became operational on Oct. 24, 1960. Also in 1959, the USAF Strategic Facsimile Net was established, connecting AFGWC with other weather facilities and centers in the continental United States (CONUS). By July 1969, AFGWC became its own squadron-level organization, no longer operated by a numbered weather wing or squadron and reassigned to 6th Weather Wing in June '72. In August 1975, AFGWC was reassigned directly to the AWS. October 1, 1969 saw the dedication of the Automated Digital Weather Switch (ADWS) at Carswell AFB, shutting down the network hub at Tinker AFB. By early 1970, AFGWC had assumed the mission of all severe-weather forecasting and warning functions. In early 1982, the AWS announced that AWS Short Wave Fade (propagation) network, used since the mid-1960s, would be terminated. The



HF monopole used at McMurdo Station with ice runway operations in far background.

network was shut down on January 1, 1983. This led to the HF Regional Broadcast System, to be used for transmitting weather data to users beyond the reach of the normal fixed-weather-communications circuits. This system was planned to use high-powered HF transmitters at eight regional broadcast facilities around the world. Harris Corp. was awarded the contract in April 1987. The first site, Elkhorn, Nebraska (Offutt GHFS transmit site) went online in September 1988. The Elmendorf, Alaska site came online near the end of 1989, and other sites were to be online in the '90's. During Hurricane Andrew in 1992, one location was destroyed at Homestead AFB, Florida, taking them off the air never to return in this role.

Not A Callsign!

KAWN is an ICAO code, not a callsign. It was (and may still be) the routing code to the Air Force Automated Weather Network at Carswell AFB, Texas, from any weather teletype or Autodin location in the world. Carswell collected and disseminated the info and AFGWC analyzed it and did the maps and forecasts. It was a bit primitive by today's standards, but a very good system at the time. Carswell AFB was one of the first

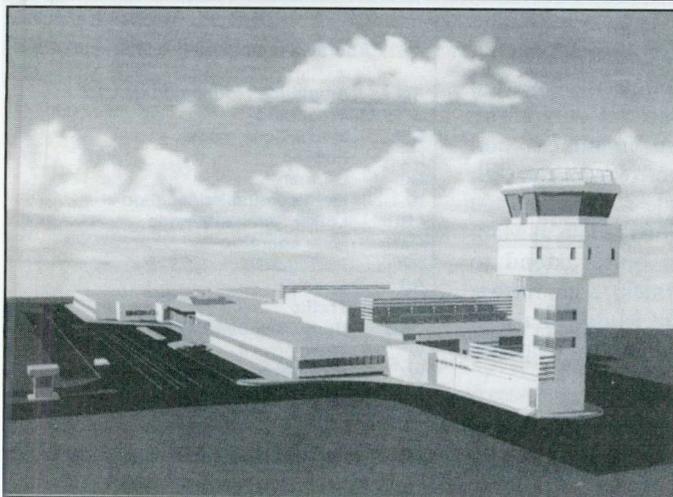
Strategic Air Command bases, hosting B-29, B-36, B-58, and B-52 bombers from the 7th Bomb Wing during the Cold War. Trivia fans will also recall that Carswell was one the sites seen in the James Stewart classic movie *Strategic Air Command*. Who could forget that one?

As part of the Department of Defense's (DOD) 1991 consolidation efforts, the decision was made to relocate the 7th Bomb Wing from Carswell. During a 1992 Air Force-wide reorganization, the famed Strategic Air Command was officially disestablished. On October 1, 1993, the Air Force Reserve 301st Fighter Wing assumed base responsibilities, establishing Carswell as an Air Reserve Base. Also in 1993, Congress directed the establishment of the nation's first joint reserve base under the Base Realignment and Closure authority. Today Carswell is officially known as NAS Fort Worth, Joint Reserve Base (JRB), Carswell Field.

Since KAWN is not a callsign, even when Carswell AFB was open, it was where the data was collected and routed out, not transmitted. No "transmissions" were ever made from Carswell, so the correct ID of any KAWN broadcast would never be "Carswell AFB" as identified in many reference books and logs



Off-duty monitoring post and computer desk of Bruce Blackburn at McMurdo Station. Bruce uses a Yaesu FT-50R handheld (AIR, VHF, UHF), Transworld RT7000 HF Transceiver, Harris R-2368/URR HF scanning receiver, and a Compaq Presario laptop.



New home for the Santa Maria Aeronautical Center opening soon. Visit their great site at: <<http://www.terravista.pt/aguaalto/2010/>>.



DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

ALLEN RENNER

is commended for

A Special Achievement

Utilization of communications equipment for reception of FAA Non Directional Beacon, Station Identification FRT on 248Khz. This facility is located in Spartanburg County, South Carolina, and its verbal reference by air traffic is "Fairmont"

W. E. Greer ATSS.
Allen Renner ATSS.

DOT / FAA / AFSSC
 2000 GSP DRIVE, SUITE 5
 GREENSBORO, NC 28601-9202

Allen Renner of Pennsylvania received this QSL from the FAA's Greer, South Carolina beacon.

to this day. However, it now appears possible that today at Fort Worth JRB there may still be some feeds to Offutt and possibly Puerto Rico which key HF transmitters. It is intriguing that the facility may still play a role.

As reported in my September and October 1997 columns, one group of frequencies was positively identified as coming from NAR, NAS Key West, Florida, via their Saddlebunch Key transmitter site. These are **7784.0** and **9830.0** kHz days, **5915.0** and **6397.0** nights, and is a 75/850 baudot KAWN feed for the Southeastern United States and the Caribbean.

The original broadcast from AFS, Offutt AFB, Nebraska still exists via their Elkhorn transmitter site on **3230.3**, **5905.3**, **11119.2**, and **19325.2** kHz. This KAWN broadcast covers CONUS. The correct ID for these frequencies is callsign AFS, Offutt AFB (Elkhorn), Nebraska.

Then we have our remaining mystery contender. This unidentified site is widely believed to be from Isabela, Puerto Rico. It is on **3393.7** (sometimes **3398.7**) nights, **10998.7** kHz days. It also carries position reports of commercial aircraft in the Caribbean and Atlantic regions. Weather coverage is limited to the Caribbean basin only. The exact site has been never been confirmed, but is in Puerto Rico. It's thought to be from a site associated with Fort Allen and located at Isabela, Puerto Rico rather than from NAS Roosevelt Roads. So although these last two KAWN frequencies are from Puerto Rico, it's unclear as to the exact "owner" or callsign of the transmitter being used.

Another group of frequencies coming out of Hawaii has not been heard in some

time, and their status is not known. Another ICAO code seen was KGWC, which is Offutt AFB (USAF Global Weather Center) Omaha. Most often, it was seen on facsimile charts.

In doing research, it was found the Navy's NAVLANTMETOCEN (Navy Atlantic Meteorological and Oceanographic Center) has Detachments assigned to NTMOF (Naval Training Meteorology And Oceanography Facility) Pensacola, Florida. One of these, NTMOD Fort Worth, is at NAS Fort Worth, JRB. Interesting enough, there is a NLMOD Key West, at NAS Key West and there is also a NLMOD Roosevelt Roads. I am continuing to research this. Unfortunately, I did not hear back from any official sources by deadline. Meanwhile, I would be very interested in any updated information readers may have.

Other News

While doing research on the Web, I came across a Website that will be a big help to you aero fans. Check out <<http://home.att.net/~airjet/>>. This is the Airjet Airline World News site. It has tons of helpful data and links.

Also for those who surf the Net, check out the site on Santa Maria Aero at <<http://www.terravista.pt/aguaalto/2010/>>. Pictures, FIR map, frequencies, and other interesting tidbits including an on-line QSL request!

Speaking of the Net, I was pleased to run into Bruce Blackburn (NONHP) who works at McMurdo Station, Antarctica. We met on IRC # monitor on <irc.stealth.net>. Bruce does get to do some DXing,

and his pictures seen this month are from his Website at <<http://www.gmra.zorg/n0nhp/antarctica/index.htm>>. Bruce should be getting home about now, as this is the start of winter in Antarctica. Winter is a period of reduced activity there, with only three stations remaining open for those few people who will "winter-over."

The world has a new international airport at Rafah, Gaza Strip. Gaza International Airport opened in late November. Markus Buttinger, Salzburg, Austria was kind enough to forward this NOTAM (Notice to Airmen): INFO REF ISRAEL AIP GEN PART, TEXT: NEW INTERNATIONAL AIRPORT ESTABLISHED AT GAZA, NAME: GAZA INTERNATIONAL AIRPORT, ICAO LOCATION INDICATOR: LLGZ, IATA LOCATION INDICATOR: GZA, ARP: N3114.883 E03416.367, AFTN: LLBGZSZX, END.

Reader Mail

Allen Renner of Ambler, Pennsylvania, gives us an update on his beacon QSL efforts. Allen reports logging 665 different beacons over a five-year period. Of these, he was able to get verification for 270 of them.

Mike Smith of Houston, Texas, checks in this month for the first time. Mike uses a Sony 2010 and a DX-390 for HF along with a Uniden BC-9000 and a BC-895 for FM in his area of interest, which is maritime communications. Most of his ships are logged on HF, while he uses FM mostly to monitor the Coast Guard and harbor pilots. You've got an excellent location for maritime monitoring, Mike!

Another first-timer is longtime reader Lupo Alberto, of Italy. Lupo had not seen any logs from Italy in the column and thought he would help solve that. He uses an ICOM IC-R71, with a 10-meter long antenna. Thanks Lupo, we appreciate seeing what you hear.

John Doe, UK, sent some information about station MKL, frequently logged sending weather in Morse code (CW). The station was formerly part of a joint HQ at Pitreavie Castle, Scotland. It was the control center and also possibly the transmitting site for "Edinburgh Rescue." Pitreavie was the administrative part of the near-by Rosyth Naval Dockyard. Rosyth was closed down and sold off to private industry a year or two ago; at about the same time, Edinburgh Rescue ceased to exist, and was replaced by Kinloss Rescue. John does not know for sure what happened to Pitreavie, but he would guess that it has also closed.

MKL is now operated by MARTELO (Maritime Telecommunications Organization). It is operated from Northwood, near London. Northwood is a Joint Forces place; it has Navy, RAF, and probably Army personnel as well. As to those logging MKL as Kinloss, John speculates that since RAF Kinloss is a busy RAF station, it is unlikely to be a transmitting site. It may be a receiving site for "Architect" and also for "Coastal Control" (which seems to have ceased operation since the end of last year). According to various sources, the associated transmitters are at Milltown, about 10 miles east of Kinloss, which John has seen. So Kinloss may well act as a receiving station for MKL as well, and Milltown as a transmit site, but the actual operation is done from Joint Forces Northwood. So scratch Pitreavie Castle, Scotland off your lists and make it MARTELO, British Joint Forces, Northwood, England.

Alan Gale, UK, has noticed a lot of aircraft on 5680 (International SAR) asking for listening watch on 5680 while crossing the Irish Sea, or travelling over the Scottish and Welsh Mountains. Alan discovered that according to the latest RAF 'FLIP' (Flight Information Publication), Lower Airspace radar cover is a bit thin over parts of Scotland and Wales (mainly due to the large numbers of mountains and valleys). In the event of an aircraft having to pass through these areas, Kinloss, which monitors the HF frequency 24-hours-a-day, is the most convenient to call. Stations usually call in and identify themselves (type of aircraft, number of POB, etc.) and then give radio checks

every 20 or 30 minutes. This produces lots of interesting call signs there from time to time. The same problem exists over the Irish Sea, where aircraft travelling between the British mainland and Northern Ireland have to pass through areas where no reliable radar coverage exists (there is a radar on the Isle of Man, but coverage doesn't quite extend to British and Irish coastlines). Alan further reports that due to the Middle Eastern jammers, Kinloss Rescue now watches both **5680 and 4718 kHz**.

New Products

Readers may recall Chris Smolinski's *Pop'Comm* article *Numbers Stations: Have You Heard Them?* last year. Well for numbers stations fans, Chris has now released a CD-ROM called *The Numbers Racket*. This CD-ROM features over 10 hours of recordings of Spy Numbers Stations, along with text describing stations, their format, frequencies used, schedules, background information, and more. All stations are available from a complete ENIGMA listing and many of the stations are also listed using their popular name. The CD-ROM is organized as a Website, so it is viewable by any computer with a CD-ROM drive and modern Web browser, including both Macintosh and Windows. I personally enjoyed the many recordings of numbers stations, which are hard to hear here in the United States. Cost of the CD is US \$25, including worldwide shipping and handling. Those online can view ordering information by visiting: <<http://www.blackcatsystems.com/numbers/cdrom.html>>. Or, it may be ordered directly from the author by payment in U.S. dollars via a money order or U.S. bank draft. Send to: Chris Smolinski, 4708 Trail Court, Westminster, MD 21158, USA. (*Editor's note: As RD observed, this is one heck of a CD-ROM! Chris also sent Pop'Comm HQ a copy and, believe me, if you're into numbers stations, this is for you!*)

Digital News

Dave Wright, Texas, has discovered a **U.S. Coast Guard net** using the GTOR mode. Logged frequencies so far include **6964.4 NMC**; **7442.3 NRUO**: USCGC *Polar Star* (WAGB-11) with NMC; **8315.0** possible; **9302.7 NOJ**; **13950.2 NMC1**; **13953.3 NMC**. Call signs noted so far have been: (Coast) NMC CAMSPAC; NMC1 CAMSPAC; NOJ

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) |

COMSTA Kodiak; (Cutters) NAQD USCGC *Jarvis* WHEC-725; NBTM USCGC *Polar Star* WAGB-10; NDWA USCGC *Morgenthau* WHEC-722; NLVS USCGC *Rush* WHEC-723; NMAG USCGC *Hamilton* WHEC-715; NMEL USCGC *Mellon* WHEC-717; NRUC USCGC *Storis* WMEC-38; NRUO USCGC *Polar Sea* WAGB-11; NYCQ USCGC *Boutwell* WHEC-719; and NZVE USCGC *Alert* WMEC-630.

We've got lots of good stuff this month, so on with the show . . .

UTE Loggings SSB/CW/DIGITAL

212: UCF, NDB Cienfuegos, Cuba monitored at 0629. (AR)
216: YFA, NDB Fort Albany, ON monitored at 0636. (AR)
239: LHX, La Junta, CO at 0139. (BF)
248: FRT, NDB Spartenburg, SC monitored at 0710. (AR)
250: SVM, Salem, MI at 0134. (BF)
257: SQT, NDB Melbourne, FL monitored at 0421. (AR)
300: ABL, NDB Ambalema, Colombia heard at 0413. (AR)
301: LAP, La Paz, Baja, Mexico monitored at 0312. (BF)
326: BHF, NDB Freeport, Bahamas heard at 0407. (AR)
330: CZM, NDB Cozumel, Mexico heard at 0343. (AR)
338: RYN, Tucson, AZ at 0144. (BF)
341: SG, Santa Fe, NM at 0147. (BF)
344: ZIY, NDB Georgetown, Cayman Islands at 0415. (AR)
350: ROT: NDB Rotterdam, HOL 2152 (AB)
353: HOT, NDB Higverote, Venezuela at 0505. (AR)
359: SDR, Snyder, TX at 0150. (BF)
366: ADT, Atwood, KS at 0151. (BF)
369: PS, Locator Heenvliet, HOL monitored at 2152. (AB)
376: ZIN, NDB Great Inagua, Bahamas at 0422. (AR)
382: UPA, NDB Punta Alegre, Cuba at 0423.

PÖS, NDB Port of Spain, Trinidad and Tobago at 0543. (AR)

386: STD, NDB Stad-aan-het-Haringvliet, HOL at 2156. (AB)

389: MEJ, Meade, KS at 0156. (BF)

391: DDP, NDB San Juan, PR at 0436. (AR)

394: ENZ, Nogales, AZ at 0157. (BF)

397: LLJ, Challis, ID at 0328. (BF)

399.5: ONO, NDB Oostende, BEL monitored at 2156. (AB)

404.5: RR, NDB Rotterdam, HOL monitored at 2154. (AB)

414: SKX, Taos, NM at 0201. (BF)

415: CBC, NDB Cayman Brac, Cayman Islands at 0316. (AR)

423: DXE, NDB Dexter, MO at 0453. (AR)

450: PPA, NDB Puerto Plata, Dominican Republic at 0334. (AR)

526: ZLS, NDB Stella Maris, Bahamas at 0455. (AR)

621: North Korean/YL nbrs in AM at 1500 // 657// 702// 720// 855// 3250// 6400kHz. Able to find out a lot of North Korean nbrs in MW BC band at East Asian midnight. These are famous R. Pyongyang's and Korean Central Broadcasting's freq. (TY)

1643.5: South Carolina MEDFER "ABC" Hilton Head, monitored at 1500 Morse beacon, 100 mw. (AWH)

1644: Unid coastal stn, Spain, at 0350 in USB first heard callup on 2182 w/mention of "44" so returned here, found OM/SS tfc list. (AWH) (poss *Arrecife Radio, Canary Islands — Ed.*)

1659: Jersey Radio, Channel Islands at 2034 in USB w/nav wng. (HOOD)

1704: OXZ, Lyngby Radio at 1755 in USB w/nav wngs. (HOOD)

2182: Stornoway Coastguard, UK at 1810 w/Mayday relay "spoken word Mayday" heard at 1755. (HOOD) VCO, CCG, Sydney CG Radio, NS, CAN at 0626 wkg vsls including unid VCIQ, LAFP4, *Sternberg* (Norwegian-flagged bulk carrier) diverting for F/V *Atlantic Pride* sinking in Atlantic. VTFF, M/V *Maratha Mission* (bulk carrier), wkg VCP, CCG, St. Lawrence CG Radio, also diverting for same. At 0708 ASCOT 2269, RAF VC-10, wkg Sydney re is on-scene, has lights in water, with distress signal on 121.5 MHz, but only has fuel for one more orbit. Crew later rescued safe. (Ed.) All in USB.

2591: ARCHITECT w/airfield wx forecasts at 0422 In USB, not regular H+00/+30 schedule. (RP)

2642: Genoa Radio, I at 2039 in USB w/nav wng in EE and Italian). (HOOD)

2656: 'Lima' wkg various single letter c/s in USB at 0728 w/USN Link-11 coordination and tracking net. (TS)

2749: Canadian CG stn in USB at 0745 w/WX in EE and FF. (TS)

2820: Tenerife Radio, Canary Islands at 2353 in USB w/SS phonecon. (AWH)

3090: Abnormal Mossad best hrd, Mossad lady Rptng "CIO2" in phonetics in USB at 1745 for more than 120 mins // 5170. (TY)

3235.5: RMP, Kaliningrad Naval, Russia at 1800 in CW; plain-language Russian wx forecasts best to REO (including one for the



Inside view of Santa Maria Air Traffic Control Center, Azores. Assigned the NAT-A and NAT-E frequencies, CSY is most often heard on 8906, 6628, 3016, and 2962 kHz. (Photo courtesy Luis Santos)

"Anglijskomu Kanalu" // 3235.5 // 3264 // 4079 kHz. (JD)

3373: RMP, Kaliningrad Naval, Russia at 1945 in CW wkg RLA88 same freq; code msg from RLA88. (JD)

3658: Channel marker "V" (Khiva) Russian Navy single letter HF CW mkr at 1540. This stn QSY'ed from 7002 kHz in amateur band to this freq exactly at 1400. (TY)

4033: Unid three-letter callsigns in accented EE, some kind of tracking exercise, probably Dutch, at 1000 in USB. (JD)

4057: CMD34, Havana, Cuba at 0203 in USB wkg unid vessel. (AWH)

4079: RMP, Russian Navy Kaliningrad, RUS at 1725 in CW Wx and msgs for REO. (AB) Same, sent "RFN63 de RMPQSU1 QXS 2797 QWH 4387 fm RJD85 ar." (JD)

4175: At 0331, YL/SS in AM w/5FG's in progress. (DB)

4268.5: SAB23, Goteborg Radio, S at 1708 in ARQ clg MQAQ. (AB)

4295: FUE, French Navy, Brest, F at 2138 in RTTY 75bd test tape. (AB)

4396: Someone in USB at a base station giving directions to a ship upon arriving in port. The ship was 70 miles from port at that time. Base station directed the ship to let no one board at anytime, even in port. (BF) (*WLO Mobile Radio radiotelephone call, w/ship on Ch.414 QSX 4104.0 — Ed.*)

4402: KMI, AT&T High Seas Radio Point Reyes at 0257 in USB w/ann and tfc list. (DW)

4405: At 0332, AT&T High Seas Operator wkg "Fantasy" in USB w/one-sided conversation. (DB) (*Vsl is Carnival Cruise Lines 70,367 GWT M/S Fantasy, c/s ELK16 on Ch.417, ship would be on 4113.0 — Ed.*)

4417: Ships discussing rides when arriving in port at Cameron, LA tomorrow. One ship ID'ed itself as "Candywagon" monitored at 0340 in USB. (BF)

4426: At 0337, USCG in USB w/marine forecast, synopsis for weekend and extended outlook for waters south of Nantucket in automated voice. (DB)

4464.5: VG6Q, Czech Border Guards, CZE at 2015 in RTTY 50bd w/VG6Q RYRYRY.

Another day monitored at 1845 w/DPF2 RYRYRY. (AB)

4466: Massachusetts Civil Air Patrol, PATRIOT 721 checking into net at 0035 in USB. (RP)

4474: "IHFE", Italian Navy, wkg unid sta in Italian, spelling of marine meteo text w/"slend" as space at 2030. (LA) (*IHFE is the Italian Navy aux vsl Saturno A-5330 — Ed.*) ICT, Italian Navy, Taranto, I at 2041 wkg "DI", prob IGDI, Italian Navy auxiliary vsl *Capri* (A-5353). (Ed.)

4583: DDK2, Hamburg Meteo, D at 2143 in RTTY 50bd test tape. (AB)

4627: TEXAS CAP 4 at 0003 in USB wkg TEXAS CAP 1612 w/check-in for Texas CAP Net. (DW)

4640: "The Counting Station w/" 924 . . . 1-10" // 5046. (RP)

4665: Abnormal Mossad callsign hrd. Mossad lady Rptng "KPA5KL22Z2KD" in phonetics in USB at 1745 for more than 60 mins // 5230// 6745. (TY)

4670: YL/EE, The Counting station in AM at 0240. Switched to USB on both freqs at 0245 // 5238. (TS)

4718: Kinloss Rescue, UK, wkg "Rescue 131" re ETA and contact freq on VHF) and posn at 2202. (LA) Kinloss Rescue at 2146 w/Rescue 12 (NIMROD MR2), at 2208 Kinloss w/Rescue 13 (NIMROD MR2) passing wx report. (RP) All in USB.

4721: REACH 019 wkg Offutt on this discrete for pp to HILDA WEST re: 0500z ETA Los Alamos (or Alamitos sounded like) at 0216 in USB. (JJ)

4724: McClellan Global clg REACH 0456 w/an all-frequency call. No joy at 0517. (JJ) US Army vessel AAEE (LSV-3, USAV Gen. Somervell) at 1122 w/Hickam w/pp to Charlie-2 (AAC2, Harbor-master, Ft. Eustis, VA). (RP) Both in USB.

4742: ARCHITECT (RAF) w/ASCOT 337 in USB reporting inbound to RAF Brize Norton, is passed latest wx. (RP)

4765.2: Unid French Mil at 1715 in 200 bd ARQ-M2; very strong; one msg was "de RFFDBC" so presumably in France; cct ID of Channel B is FDXA; despite the strength,

copy was very poor, so no further details. Klingenfuss says it's wkg RFFVAY, Sarajevo. (JD)

4770: North Korean/YL nbrs at 2200 in AM //5873 kHz. (TY)

4948: RMP, Navy Kaliningrad and RMZW clg ea other on the same freq, but apparently not hearing each other although both were strong here. Lots of these unfamiliar Q and Z codes but no actual traffic heard, still trying at 1130. (JD)

5007.9: Unid FAX 120/576 at 1545, strong but not clear enough to read the ID in the corner of each chart. Still there at 1630 but gone by 1730. (JD)

5120.7: Unid at 1521 to 1540 in USB, SS/OM repeating live "78601" continuously to 1523, then "999" about every minute to 1540, then gone. (AWH)

5213: RMP, Kaliningrad Naval, Russia at 1810 in CW; plain-language Russian wx forecasts addressed to RKW95, no connection w/the above transmission which was going on at the same time; in fact, this RMP was apparently in QSO with RKW95 on some other frequency. (JD)

5236: SHARES Coordination Net in USB, East sector activity w/AFAINY (Pennsylvania) as net control w/WGY911 (FEMA, Maynard MA); and AARIDD (Hartford, CT). (RP)

5270: "G631", Italian mil a/c, wkg "IGJ" (Navy Augusta), take-off from Catania directs on "IAIQ" at 1800 in USB, in EE/IT. (LA)

5277: HUNTER 08 (British Nimrod) in extensive op's w/Panther (DEA, Bahamas), OMAHA 314 (Customs P-3) and OMAHA 79 Alpha (Piper PA 42-70R) starting at 2241 in USB. Target is located near Lima 8. HUNTER 08 is patrolling at 3,000ft while OMAHA a/c are positioned 2,000 ft higher, a/c are maintaining contact on UHF frequency Blue 3 (336.6 MHz). Later 32 CHARLIE tells PANTHER he will land at PANTHER 400 (Georgetown, Bahamas). (RP)

5282: Stockholm Radio w/pp in GG from unid a/c at 2015 in USB. (LA)

5343: RIT, Moscow Naval Radio, Russia monitored at 1910 in CW w/nav wngs to RKZ in progress. (JD)

5385: C4U, 5EY, 1HY, L5A, L1F, and R1H Italian Military net at 0605 in USB w/tracking co-ord comms. (IJ)

5393: RCV at 2010 in CW clg RBIZ. (JD) (*Have seen this as Bliava Naval Radio, Russia and as Moscow — Ed.*)

5414: Cuban CW net heard at 1455, station testing. (AWH)

5607: Unid, Cuba at 1529 in USB, OM/SS w/5LGs 1x, ended w/FINAL, then into "LEON 341 LEON 341 LEON 341 FINAL" a couple of times. At 1530, Cuban tx tune-up pulses heard followed by OM/SS w/short counts, back again 1532 but encrypted audio-freq-hopping Russian vocoder w/100bd digital key-stream accompanying. Noted again at 1640 recheck w/test counts in clear and crypto. (AWH)

5680: Kilo 475 at 1420 wkg Kinloss Rescue, PLB Exercise at Moray Firth. Stavanger Rescue (NOR) at 1201 in r/chk w/Kinloss. Sabre 51 (Norwegian helo) at 1202 in r/chk w/Kinloss. IAOA at 1558 wkg IAOE. IAOE at 1558 wkg RCC Malta. IAOE at 1630 wkg ICI (MRCC Roma). DRLF (FGS Fehmarn A1458) at 1949 clg Glucksburg Rescue. Lima Mike X-Ray at 1510 wkg Longyear Radio (Longyear referred to a/c as LN-OMX). DRBP (FGS-56 Dommel) at 1655 in Ops Norm w/Glucksburg Rescue. Malin Head Rdo (IRL) at 1525 clg Rescue 110. DRAH (FGS Brandenburg F-215) at 1444 in r/chk w/Glucksburg Rescue. DREQ (FGS Cuxhavn M-1078) at 1808 clg Glucksburg Rescue. Zephyr 90 at 1446 wkg Kinloss, "Chinook helo a/b from Isle of Mull to EGAA. Charlie 253 at 1306 wkg Valentia Radio (IRL), is in search area 5147N/1335W. DREY (FGS Frankenthal M-1066) at 1657 clg Glucksburg for r/chk. Stavanger Rescue at 1756 in r/chk w/Bodo Radio. (AG) (*I logged RCC Malta a few hours earlier wkg many of those same units; IAOE is the Italian Navy corvette INS Driade (F-555); IAOA is the Italian Navy corvette INS Minerva (F-551); ICI is the Guardia Costiera Italiana, or Italian Coast Guard, Rome — Ed.*) Wellington RCC and RNZAF KIWI RESCUE 02 (P3) at 0750 re rescue of the American 11M sloop Salacia. OM was finally rescued by the container ship Kookaburra Direct. (IJ) All in USB.

5687: German Air Force 141 at O112 in USB clg DHM91 (Hq, Air Transport Command, Muenster). (RP)

5708: French Navy, Charlie 8 w/Charlie Echo and Charlie Brave at 0603 in USB re rdo cks, mention of "3457" (poss freq). At 0615 Armor (Brest-Loperhet) calls Charlie 2. (RP)

5872: DISNEY and LONGBOW, New Zealand Military at 1935 in USB w/Alpha Numeric Msgs, at 2200 LONGBOW and ROCKY 02 Passing METARS and mentioned sortie was heading for DISNEY. Probably RNZAF Tactical comms as Aeromacchi MB339s have been deployed in Christchurch to take part in an exercise. (IJ)

5881: RMP, Navy Kaliningrad, Russia at 1030 in CW w/"RMZW de RMP QRR3 QDW 4948 ar" Well, I didn't know what QDW meant but guessed QSY so checked 4948 and found them. (JD)

6215: Unid Spook noted briefly 1132-1133, unid Asian lang like Thai or Khmer, YL repeating 2-3 groups in blocks, sounded like. VERY strong on AM, pulled plug without fanfare. (AWH)

6285: UYHH, TKH Volga at 0840 in RTTY 50/170 admin to USO5. (HOOD)

6319.5: UCE, Arkhangelsk Radio at 0835 in ARQ w/msg to UBISO, TKH *Ivan Ryabov* (6083dwt gen cargo vs!). (HOOD)

6370: Abnormal Mossad best hrd. Mossad lady Rptng "SYN2" in phonetics in USB monitored at 1715 for more than 120 mins //7605//8641. (TY)

6379: At 1958, 4XZ, Haifa Naval Radio, ISR w/CW channel marker. (EW)

6380: UCW4, St Petersburg Radio at 0830 w/CW msgs to UBMO, TKH LADOGA 2 and UAOR, TKH LADOGA. (HOOD)

6382: At 2002, TBA, Ankara Naval Radio, TUR w/CW channel marker. (EW)

6388: EBA, Madrid Naval Radio at 0908 in CW w/drilling rigs summary notice. (HOOD)

6389: At 2008, CTP, Oeiras Naval Radio, POR w/CW channel marker. (EW)

6470: At 2027, SXA24, Spata Attikis Radio, GRC w/CW channel marker. (EW)

6485: At 1945, Lincolnshire Poacher stn in USB. (EW)

6550.3: Unid CW "D" beacon again at 0328. (AWH) (*Becoming widely heard — Ed.*)

6604: New York Volmet at 1208 in USB w/aviation wx //3485 // 10051. (DW)

6625: Cuban Babbler at 1723 YL/SS tfc, still going 2120 re-check. (AWH)

6676: Sydney Volmet at 1203 w/aviation wx. (DW) Karachi Volmet at 1848 w/wx for Lahore and Karachi and ID at sign-off. Singapore Volmet at 1850, ID and significant wx wrng. (HOOD) All in USB.

6679: Auckland Volmet at 1220 w/aviation wx. //8828. Hong Kong Volmet at 1215 w/aviation wx. Tokyo Volmet at 1210 w/aviation wx. //8828. All in USB. (DW)

6683: Andrews VIP clg EXECUTIVE-1-FOXTROT with no joy at 0230 in USB. (JJ)

6692: Petropavlovsk ATCC at 0453 in USB wkg Yuzhnyj ATCC (Sakhalinsk). Both YL/RR. (DW)

6693: K7V, U.S. military at 0658 in USB wkg poss (?) BLUESTAR w/ANDVT troubleshooting. At 0708, BLUESTAR QSLs receipt of ANDVT tfc from K7V. (DW)

6697: MKL, RAF w/5 Quebec Tango at 0306 in USB w/readability check. (RP)

6712: French AF a/c 308 w/Circus Vert (CFAP Hq, Villacoublay) re ETA at Managua, Nicaragua at 0630 in USB. (RP)

6727: YL/GG nbrs, w/SFG' s in AM at 2010. Ended at 2015. First time I've ever encountered GG nbrs on this freq, this is a well-known Japanese Navy freq. (TY)

6745: KPA2, Mossad at 0419 YL/EE w/KPA2 ann; at 0425 up w/ULX x 2 and off; at 0515 back up w/KPA2 ann. (Ed.) Abnormal Mossad best hrd. YL rptng "KPA2" in phonetics in USB at 1335 for more than 60 mins. //8127. (TY)

6751: CHARLIE WHISKEY wkg WILEY FOX at 2015 in USB, adv Wiley Fox to break 3 and 4 from Steel 71 (KC-135, PA ANG). Wiley Fox asks for five more minutes for "full drink" before break. (RP)

6754: Trenton Military at 0623 in USB w/aviation wx. QRT at 0632. (DW)

6761: RAID 61 (KC-135, Grand Forks) wkg REACH 7041 setting up air-to-air refueling (A/R) details. RAID 61 will do A/R under "EMCON 3" conditions until hook-up. (RP)

6779: "COM," Italian mil a/c, wkg "Rubert" (base station) in EE re data on fly situation, posn in South Adriatic Sea between Italian and Albanian coasts for watch against clandestine unloading from Albania at 1000 in USB. (LA)

6840: Mossad, ISR at 2000 in USB EZI and 5LG. (AB)

6865: YL/EE in AM at 0132 w/5F msg.

Signed down w/547 547 128 128 0000. (TS)
6870: "English man and family" nbr stn heard in AM at 1315. OM/EE w/SFG's, ended w/"00000" at 1317. Able to confirm using the Cornet Project CD. (TY)
6899: LIMA TANGO NOVEMBER, Army net, New Zealand at 2250 in USB wkg unid re person coming from Waiouru (main army base) to Taupo. (IJ)
6946: MKK RAF Bampton at 2100 until after 0000, in Piccolo wkg unk station, on air at same time as 9242.5 but not in parallel so NOT working MTS. (JD)
6959: Lincolnshire Poacher at 2042 in USB w/5FG's in progress. (DB) Same, YL in EE w/5F x 2 at 2140 in USB, follow multi-tone x 3 and music ID. 2200 same tx w/group "25096," strong signals. (LA)
6970: Unid Italian mil in IT, tx test on dual frequency simplex circuit, QSY on ch 19, hrd 1320 in USB. (LA)
6972: Mexican Navy at 2330 several stations on voice and CW incl "RJ," radiograms. (AWH)
7305: JMH2, Tokyo Meteo at 0803 w/FAX 120/576 chart. (DW)
7439: NNAS, USCGC *Escanaba* (WMEC-907) at 0439 in USB wkg H3K after they were adv by CAMSLANT to contact *Escanaba* here, referred to as "HF night primary," into ANDVT. (Ed.)
7442.3: NRUO, USCGC *Polar Star* (WAGB-11) at 0803 in GTOR 100/170 wkg NMC, USCG CAMSPAC Point Reyes (on 6964.4) w/end of transmission. QRT with call signs and disconnect. (DW)
7686: Cuba, CON8 clg CON67 at 1545 in USB, no reply. (AWH)
7692: Telecom Russia at 0550 in USB w/2 OMs in RR. (IJ)
7770: Telecom Suva Fiji at 1905 in USB w/YL in Fijian. (IJ)
7811: CIO2, Mossad at 0515 in AM, YL/EE repeating CIO2. (DB)
7850.2: Venezuela, unid at 0250 in PACTOR 100/200 passing e-mail, most ven.net addresses, looks like commercial BBS or something running BSD unix. (AWH)
7967: Unid, Colombian voice net at 2220 on incl BASE 2, BASE 6, CENTRAL, others, passing "color coded" msgs, like "blanco, negro, naranja, verde . . ." etc. Ments Cartagena and Santa Marta, one def mention of coca, not sure what context. (AWH)
8025: MIW2, Mossad, Israel, hrd in USB at 1515. First time I've ever encountered Mossad lady on this freq. (TY)
8032: SAM 201, ETA Andrews 0305z, wkg Andrews VIP at 0212 in USB. Also found on 6730.0, 9120.0, and 378.1 (UHF). (JJ)
8108.2: RFQP, FF, Djibouti, DJI in 200 bd ARQ-M2 at 2000; QRG on ch. A, QPF on Ch. B. (JD)
8122: EXMOUTH CONTROL, RAN NAV-COMSTA Harold E. Holt at 1033 in USB wkg WVN, unid RAN. (DW)
8127: Abnormal Mossad best hrd, YL reptng "KPA2" in phonetics in USB at 1335 for more than 60 mins. //6745. First time I've ever

encountered Mossad lady on this freq. (TY)
KPA2 Mossad at 0520 in AM, YL/EE repeating KPA2. (DB)
8158: Cuba? 1545 to 1610, OC to ToH, then intermittent 1 KHz tone, then gone w/out tfc. Favorite daytime SVR test freq. (AWH)
8240: USCGC *Decisive* (WMEC-629) wkg CAMSLANT Chesapeake (on 8740) at 2052 establishing uplink/downlink frequencies and modem speeds. (RP)
8291.3: 6YX, Kingston, Jamaica at 1334 w/marine wx in progress, ann freq as 8291.1, sked 1330 and 1830, weak. 2738 unheard and unment'd. Also gave sked for VHF Ch. 13 broadcasts. (AWH)
8297: LYL, Klaipeda Radio, LITH at 0633 in USB wkg various mv w/simplex pp's. (DW)
8361: UUYS, TKH VOLGO-BALT 236 at 1620 w/CW msg to Orimi, St. Petersburg from Km Opokin. (HOOD)
8372: UCNA, TKH Vasilij Musinskiy at 0810 in FEC relaying crew TGs for UCE to unid vsl then USB to confirm receipt. UCOQ, TKH *Mekhanik Yatrsev* at 0814 in CW clg 9HIA5, TKH Inzhener Plavinskiy for QTC 1, looks like a net freq for Northern River Shipping Co. vsls. (HOOD)
8375: CC/YL nbrs, Beijing, China, hrd in powerful AM at 1400. This isn't New Star Broadcasting reported previously by myself, the carrier starts at 1255, then Rptng "All stations, This is Beijing speaking." and numbers in Mandarin at H+59 and H+29 for six mins. w/o characteristic CC music at beginning of best. Ending the nbrs, carrier is still on w/dirty hum until 1615, Rptng ID and nbrs mirror every 30 mins. Sunday is a holiday. (TY)
8382.5: URMA, TKH Skvortsov-Stepanov at 1758 in ARQ w/psn rpt to USU. (HOOD)
8405: UVOF, TKH Enakievo at 1623 in RTTY 50/170 crew TG to USU. (HOOD)
8448: At 2047, A9M, Bahrain, UAE w/CW channel marker. (EW)
8453: HWN, French Navy, Paris, F at 0040 in RTTY 75/850 w/le brick. (RC)
8469.5: ZRH, South African Navy Silvermine at 0427 in CW w/call-tape. (DW)
8478.5: FUF, French Navy, Fort de France at 0015 in RTTY 75/850 test tape. (RC)
8515: 5AT, Tripoli Radio. LBY at 0048 w/CW marker. (RC)
8565: At 2127, D3E51, Luanda Radio, ANG w/CW channel marker. (EW)
8582: XSN, Ningbo Radio at 0932 in CW w/ID marker. (HOOD)
8589: At 1130, HPP, Panama Radio, PAN w/CW channel marker. (EW)
8602: ZLO, RNZN Waiouru at 0448 w/CW ch mkr. (DW)
8605: UIW, Kaliningrad Radio at 1920 in RTTY 50/170 crew TGs to UIMQ, BATM Armenak Babayev. (HOOD)
8682: EAD, Madrid Radio, E at 0026 w/CW marker. (RC)
8710: HEB, Berne Radio at 0745 in USB wkg YKHK: M/V Wahib M (2445 dwt gen cargo vsl). (HOOD)
8725: HLS, Seoul Radio at 0644 in USB w/Ode to Joy marker. (DW)

8737: 5BA42, Cyprus Radio, CYP at 2227 in USB w/voice mirror/marker in EE/Greek, "this is Cyprus Radio radiotelephone maritime service . . ." repeated. (Ed.)
8749: WOO, Ocean Gate Radio, USA, w/EE instructions on "direct dial call" use for automatic p/p, tx schedule w/synthesized voice and Wx for Atlantic coasts cities at 2200 in USB. (LA)
8776: NEW GUARD at 0344 in USB w/EAM broadcast. (Ed.)
8825: At 2132, New York Radio, USA in USB clg KLM flight, gave thunderstorm info. (EW)
8828: Tokyo Volmet at 1112 in USB w/aviation wx //6679. (DW)
8894: Algiers ATC in FF and EE at 0228 in USB w/Alitalia 821 and other a/c (MWARA AFI-2). (RP)
8903: Maiduguri Aero, NIG at 2335 in USB wkg N'djamena. (IB)
8918: Merida, Mexico ATC in SS w/Mexicana 010 and other a/c over the Caribbean at 0232 in USB (MWARA CAR-A). (RP)
8980: STINGRAY 33, USCG HU-25 #2133 at 1600 in USB wkg CAMSLANT w/pp D-7 re vessel being covertly followed, two surface playmates in area, will try and get assist from OPBAT asset. (Ed.)
8992: NYRW, USNS *Prevail* (T-AGOS-8) monitored at 0126 in USB, Stalwart-class ocean surveillance vsl wkg Andrews w/pp to "NOPF Dam Neck", Naval Ocean Processing Facility, Dam Neck, VA, re monthly HF connectivity test. (Ed.)
8998: Auckland Aeradio, New Zealand and PIRATE 03 (LC-130) at 2310 in USB wkg McMurdo suggests turn back re WX. PIRATE 03 decided to continue, then after a further 20 mins. they RTB back to Christchurch. (IJ)
9007: St. Johns Military wkg Razor 24 (E8C JSTARS) w/pp Raymond 19 asking that times 1912/1923 be relayed to Dragon Op's, St. Johns adv Razor 24 that Trenton Military is having maintenance done on their transmitter. (RP)
9025: McClellan wkg Yokota w/data at 1702 in USB. (JJ)
9043: Cape Radio wkg NIYJ monitored at 2241, adv range is Go, Vehicle is Go. Now minus 40 minutes and counting. Cape Ops says he will be ann launch events on this channel for Liftoff, Engine Cutoff, Nose Fairing Jettison. (AS) (*This was USNS Invincible (T-AGOS-10), a Stalwart-class ocean surveillance ship wkg in support of launch of Delta II rocket — Ed.*)
9120: SAM 203, out of Nellis for Barksdale, at 2330 in USB wkg Andrews VIP re: a 0005z ETA. (JJ)
9130: EZI, Mossad, ISR at 1630 in AM w/EZ12 ann. (AB)
9242.5: MKK, RAF Bampton, 2100 until after 0000, in Piccolo wkg MTS (who was on 11514). (JD)
10057: Airways 621 at 0228 in USB wkg San Francisco ATCC. (DW)
10206: Air Europe 9901 at 1834 in USB wkg Stockholm LDOC for pp to Milan. (HOOD)
10223: The CIA Counting stn hrd in powerful AM at 1200 //13518. (TY)

- 10315:** DHN66, wkg Magic 67 at 1220, have not logged that frequency before. (JD) (*GAF Geilenkirchen, D — Ed.*) AJE, Croughton GHFS, UK at 2026 in LSB wkg Incirlik coordinating PSK send on 10316.7. (Ed.)
- 10319:** Unid mil tfc, "mission 0480" w/posn and data on passenger and bulk carrier ship which follow phrase "... authentication is CE ...", in USB at 1645 to 2205 in EE. In this period posns are 5820N/550W (between Lewis Island and Scotland). (LA)
- 10378:** ANDVT noted here monitored at 0355 shortly after GANTSEC made reference to freq. (RP)
- 10384.8:** Heard at 2154, Tianjin Meteo, CHN in RTTY 50/850 wx info for Chinese locations. (EW)
- 10400:** "Family" QSO between Spanish fishermen (in Northwest Atlantic I presume) and his wife in Spain at 2145 in USB in SS. This out-band activity on 10400 KHz is very frequent at 2100-2200. (LA)
- 10423:** At 2201, YMA20, Bursa Meteo, TUR in RTTY 50/850 meteo info, sked. Very rare here. (EW)
- 10617.5:** ZLO, RNZN Irirangi, New Zealand at 0900 in VFT 6028 75Bd w/all channels encrypted. (IJ)
- 10750:** CC/YL nbr, w/4FG's, each sent twice, in powerful AM at 1610. First time I've ever encountered CC/YL nbrs on this freq. (TY)
- 10780:** Cape Radio at 2031 in USB wkg USCGC *Mohawk* (WMEC-913) who asks DoD Cape for clearance for his helo CG 6530 to refuel at Patrick after STS-88 Shuttle launch, adv to coordinate w/Range Control via 10780 or 20390. (AS)
- 10895:** Unid Piccolo: two channels, idling on Ch 1, crypto on Ch 2; watched Ch 1 for a couple of hours (1600 to 1800) but no traffic, no ID. (JD)
- 11000:** RIW, Navy Kaliningrad, RUS at 1300 clg RAG43 and RJQ55 in CW, no contact. (JD)
- 11053:** SAM 202, DV-2 (Secretary of Defense William S. Cohen) plus 8, at 0343 in USB outbound Wake for Hickam, wkg Andrews VIP re: a 0600z ETA. (JJ)
- 11155:** RIT, Russian Navy, Moscow at 1205 in CW w/QSO w/unknown station. (JD)
- 11175:** American Airlines flight 2161 (id as B-727 at 0145 w/Andrews w/pp Howard AFB Metro receiving weather for Howard and Tocumen, Panama. NASA 931 in radio checks w/Andrews at 2058. Both in USB. (RP)
- 11181:** Hickam wkg SAM 505 at 0635 in USB w/pp to Andrews CP. (IJ)
- 11205:** Japanese Military at 0515 w/WX forecasts. (IJ) FOXTROT XRAY w/FOXTROT 50 at 0001 reporting that they have a/c under their control. (RP) Both in USB.
- 11214:** BANDSAW HOTEL wkg Trenton at 1915 in USB for pp to AWACS OPS re: getting the complete set of RMAs (?) off of tail #0138 at Nellis AFB. (JJ)
- 11220:** TROUT 99 wkg Andrews VIP w/signal checks at 0130 in USB. (JJ)
- 11232:** Trenton Military and CANFORCE 2825 at 0635 in USB w/WX forecasts. (IJ) 11247: Brasilia clg station w/callsign Tacha 1 at 2158 in USB, Brasilia also makes same calls on 11245. (RP)
- 11255:** KINGFISH BRAVO (Christchurch) New Zealand at 2350 in USB clg ICE 17 (C5) w/no joy. (IJ)
- 11267:** SAMURAI w/9 character AKAC-369 message at 2210 in USB. (RP)
- 11297:** Kiev Volmet at 1552 in USB, YL giving wx for Odessa. (HOOD)
- 11396:** At 0936, Speedbird 10 in USB clg Bali Control. (EW)
- 11460:** SAM 375 wkg Andrews VIP for a pp to SAM Command at 1548 in USB. (JJ)
- 11476:** HMF52, KCNA Pyongyang, N. Korea at 0030 w/FAX 60/288 w/wire photo of lady standing in courtyard, Korean text down side. // 13580. (Ed.)
- 11524:** Atencion/V2 spook, Cuba at 1524 in AM, usual format. (AWH)
- 11801:** At 1138, TAH, Istanbul, TUR w/CW channel marker. (EW)
- 12290:** C6BG9, M/V Clipper Arita, 17523 DWT Bahamas flagged Dry Cargo Carrier heard at 0139 in USB clg unid "radio," "with traffic." (MAS)
- 12477.5:** PJOX, M/V Tineke at 0838 w/ARQ msg to Zodiac, London via GKE (10510 dwt reefer). (HOOD)
- 12568:** UAYO, BMRT *Dmitriy Pokramovich* (MB-0019) at 0804 in RTTY 50/170 admin from Km Mokhov to UDK2 re transfer of fish to TR Plutonas. (HOOD)
- 12615:** USU, Mariupol Radio at 1700 w/ARQ msg to UVSE, TKH Zlatoust for Km Pakhnits. (HOOD)
- 12691:** FUX, French Navy, Le Port, Reunion at 0038 in RTTY 75/850 w/le brick. (RC)
- 12709:** At 1140, A9M, Bahrain, UAE w/CW channel marker. (EW)
- 12780:** D3E61, Luanda Radio at 1817 w/CW ID marker (with D3E51). (HOOD)
- 12857:** 6WW, French Navy, Dakar, SEN at 0031 in RTTY 75/850 w/le brick. (RC)
- 12887.5:** EAD44, Madrid radio, E at 0026 w/CW marker. (RC)
- 12925:** RFA, Astrakhan Radio at 1553 w/CW msg to UHZV, TK Volgoneft 125 (is ex UNFE). (HOOD)
- 12952.5:** VIP, Perth Radio at 0143 in CW w/call-tape. (DW)
- 13031.2:** FUF, French Navy, Fort de France at 0015 in RTTY 75/850 w/le brick. (RC)
- 13060:** UFJ, Rostov Radio at 0718 w/CW ID and answering UDPP, TKH Volgo-Balt 248. (HOOD)
- 13069.5:** JOS, Nagasaki Radio at 0130 in CW w/call-tape. (DW)
- 13158:** UTQ, Kiev Radio at 1535 in USB w/ID by YL. (HOOD)
- 13206:** Trenton Military wkg RAZOR 33 (E8C JSTARS) at 2206 in USB trying pp to RAYMOND 19, 33 reports posn as in sector 8 and is told to switch to 11214. (RP)
- 13211:** EXECUTIVE-1-FOXTROT, (SAM 682) w/Hillary Clinton and DV-2 (Senator Barbara Boxer)+21, outbound San Francisco, for Los Angeles, wkg Andrews VIP at 2224 in USB re: a 2315z arrival at KLAX. (JJ)
- 13217:** SAM 201 wkg Andrews at 1806 in USB w/pp SAM Command Post. (RP)
- 13257:** Trenton Military wkg ASCOT 581 (RAF) at 1818 in USB w/wx Goose Bay, Newfoundland. (RP)
- 13285:** Bradley Air Service or Wardair International, Ontario at 1912 in USB w/Royal 258 bound for Manzanilla and Puerto Valletta. (RP)
- 13330:** 'New York' LDOC in USB at 1738 wkg 'Relief 219.' (TS)
- 13370:** English Man Spook at 1330 w/"789 789 000" rptd. (AWH)
- 13375:** Lincolnshire Poacher, YL/EE 5F numbers station in USB at 1743. (TS)
- 13387:** Poss IPG20, Italian MFA, Rome at 1508 in ARQ-E 96/810 w/5FGs and plain text chatter. QRT at 1511 w/"ok grx at next by by ar va." (DW)
- 13518:** The CIA Counting stn hrd in AM at 1200//10223kHz. (TY)
- 13542:** ZRO3, Pretoria Meteo at 2056 in RTTY 75/425 w/wx tfc. (DW)
- 13591:** At 1125, unid Australian mining company in USB. (EW)
- 13750:** New Star broadcasting, Taiwan, hrd in powerful AM at 0830. The carrier is on w/distinctive hum 24 hours a day. Start at H+00 and/or H+30 w/CC transitional music, then into YL/CC 4FG's, ea sent twice, for app. 10 mine. Similar activities noted on 8300, 9725, 11430, 15388 kHz. (TY)
- 13927:** REACH 106 at 2259 in USB wkg AFA1EN, USAF MARS Indiana w/personal pp's. (DW)
- 13986:** WRD719, Sailmail Inc, Palo Alto at 2240 in PACTOR-4 200/200 w/callsign id and occasional CW ID. Second PACTOR signal slight off freq (vessel?). (DW)
- 14686:** ATLAS at 1416 in USB adv 20 CHARLIE that SHARK 721 (Cutter Gallatin, WHEC 721) is in the area. (RP)
- 14739:** The CIA Counting stn hrd in powerful AM at 1100 //10529. (TY)
- 14848:** Unid Piccolo, three channels; 1615 to 1815; became too faint to copy. (MKK was on 18057, MTS was on 14593 at 1815, so it was neither of them). (JD)
- 15027:** SHARK 43, 310th ALS C-130, Howard AFB at 1756 in USB clg LOBO no joy, passes "op's normal top of the hour" msg in the blind. This freq and 9120 in use by LOBO since Albroom GHFS closed. (Ed.)
- 15034:** Trenton Military at 1920 in USB w/aviation wx report. QRT at 1933. (DW)
- 15460:** The CIA Counting stn hrd in powerful AM at 1200 //14577 kHz. (TY)
- 15682:** Polish MFA, Warsaw at 0836 in 100Bd POL-ARQ w/economic nx bulletin (in Polish). (HOOD)
- 15821:** Unid 64 clg 61 for a radio check at 0030 in USB. (JJ)
- 15956.5:** Unid Spanish or Danish embassy net maybe at 1530, TWINPLEX 100/400, tlxs addressed to EMBPA and EMBDA sites incl BER MCA RR and PAD. Offline crypto w/one 17LG and 2x 4FG on ea line. Some SS opchat at s/off. (AWH)
- 16000:** VNG, Australia TSS at 1340 in AM w/voice. (AWH)

16129: M4W, Israeli intel., ISR monitored at 0826 in RTTY 75bd w/FAPSI Moscow on 15247 kHz. (AB)

16247: RK2, FAPSI Moscow, RU'S at 0829 in RTTY 75bd w/Israeli intel on 16129 kHz. (AB)

16528: KAQP, Research Vessel *Atlantis* at 1450 in USB w/kg KXC713: Woods Hole Oceanographic Institute w/INMARSAT A problems. The *ATLANTIS* is a 247-foot, 3304 gross ton research vessel built for Woods Hole in 1997. (DW)

16800.5: UALX, RTMS Volnyy Veter monitored at 0848 in RTTY 50/170 w/crew TGs to UIW. (HOOD)

16809.5: EDJ6, Madrid Radio at 1301 w/FEC t/c list. (HOOD)

16834.5: WNU, Slidell Radio in FEC at 2206 w/WX. (TS)

16945: XVG7, Haiphong Radio at 1058 w/CW ID marker for t/c list. (HOOD)

17074: LGX, Rogaland Radio, Norway at 0825 in CW w/Traffic list. (IJ)

17090: At 2312, UAI3, Nakhodka Radio, URS w/CW channel marker. (EW)

17138: LYL, Klaipeda Radio at 0753 in RTTY 50/170 msgs to BMRT Windrose for Km Minin and to BMRT Sniegynas for Km Oleynikov. (HOOD)

17940: Houston Radio at 1617 in USB w/Continental and USAir a/c w/en route wx forecasts. (RP)

18006.7: Egyptian Embassy, Washington monitored at 1650 in ARQ carrier breaks between packets, 5LG offline crypto, signed in clear EE "Ahmed Maher ElSayed, Ambassador" from BOUSTAN Washington to KHARGIA Cairo. (AWH)

18018: ASCOT 402 w/kg ARCHITECT monitored at 1440 in USB w/pp, reminds a/c that he is on HF and in the clear, not to use name or rank. (RP)

18032.8: CLP1: Cuban Ministerio de las Relaciones Exteriores (MINREX), Havana, Cuba 2010 RTTY 50/500, w/EE press releases. (Ed.)

18036: The CIA Counting stn hrd in powerful AM at 0000. Unable to find out parallel freq. (TY)

18242: ZRO4, Pretoria Meteo, RSA at 2256 in RTTY 75/380 w/wx t/c. (DW)

18350: Unid CW at 1608 auto-keying 15wpm "137" continuously, then gone. (AWH)

18560: At 0925, BMF, Taipei Meteo, TAI w/FAX 120/576 wx map of S.E. Asia. (EW)

18755.8: At 0930, JPA, INTERPOL, Tokyo, Japan in ARQ encr msgs. (EW)

19635: RFGW/P6Z, MFA Paris, F at 0815 in FEC-A 192 Bd/400 w/5Lg's. (IJ)

19969: WCY950 (FEMA MERS Det, Bothell, WA) monitored at 1839 in USB w/voice and data checks w/WGY912 (FEMA Hq Net Control, Berryville, VA) on FEMA Foxtrot 57. (RP)

22299.5: LAKW2, M/V Swan River heard at 1838 in ARQ w/plain text t/c to Goteborg Radio. (DW)

22350: EOPN, RTMA Leninogorsk at 1357 in CW signing off w/URL. (HOOD)

22407.5: UAT, Moscow Radio at 0759 w/ARQ msg from Vladivostok to UGDS, TKH Topaz (possibly ex USFJ?). (HOOD)

22459: XSX, Chi-Lung Radio, Taiwan at 0810 in CW w/CQ DE XSX. (IJ)

22461: At 0455, FUM, French Navy Noumea, NCL in RTTY 75/850 RY and line test. (EW)

22554: LZS, Bourgas Radio at 0750 w/CW sign-off with ID. (HOOD)

22610.5: CLA50, Havana Radio, Cuba at 1642 w/CW marker. (AB)

22768: 3AC, Monaco Radio w/voice mirror by OM in EE, FF, and Italian at 1519 in USB, then into FF traffic at 1520. Brief musical interlude between each voice segment. (DG)

23389: NMO, USCG COMSTA Honolulu heard at 1848 in ARQ w/sitor-free signal and CW id. (DW)

25350: U.S. Customs enciphered speech (Parkhill) at 2103. (RP)

26320: MKK, RAF Bampton in Piccolo between 1830 and 1930, changed down first to 20436 (a known freq but not used recently) then to several other freqs, ending on 11584. (JD)

28219: Amateur beacon KB9DJA, Mooresville, IN 39.36N 86.23W at 1622. (BF)

28239: Amateur beacon AB8Z, unk loc, at 1613. (BF)

This months contributors: (AB) Ary Boender, Netherlands; (AG) Alan Gale, UK; (AR) Allen Renner, Pennsylvania; (AS) Allan Stern, Florida; (AWH) Albert W. Hussein, Florida; (BF) Bill Farley, New Mexico; (DB) Dean Burgess, Massachusetts; (DG) Dan Greenall, ON, Canada; (DW) David C. Wright, Texas; (EW) Eddy Waters, Australia; (HOOD) Robin Hood, UK; (IB) Ian W. Baxter, UK; (IJ) Ian Julian, New Zealand; (JD) John Doe, UK; (JJ) Jeff Jones, California; (LA) Lupo Alberto, Italy; (MAS) Mike Smith, Texas; (RC) R.D. Carter, North Carolina; (RP) Ron Perron, Maryland; (TS) Tom Severt, Kansas; (TY) Takashi Yamaguchi, Japan; and (Ed.) ye editor in Ohio. Thanks to all for a great turn out. ■

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The Ham Column

BY KIRK KLEINSCHMIDT, NTØZ

GETTING STARTED AS A RADIO AMATEUR

Old-Fashioned Information

In this age of electronic automation, signal processing, and computerized logging, you might expect every modern ham to have a flood of information constantly available via the Internet, specialized ham software, or CD ROM databases. And while these high-tech helpers are available, they may not always be a more useful substitute for old-fashioned information — the kind that's written on paper! Besides, as handy as they are, not every operator has a computer, and few hams want to fire up a PC every time they get on the air.

“For many hams, the experience of amateur radio is a visceral, heart-felt experience that cannot be enhanced or aided by computer technology or extraneous electronic gadgets.”

For many hams, the experience of amateur radio is a visceral, heart-felt experience that cannot be enhanced or aided by computer technology or extraneous electronic gadgets. Although keeping a computerized log makes it easy to tally previous contacts, by relying on technology we lose the tactile feeling and experience of writing log entries and making notes by hand. But even if we want to keep our radio pursuits “one-on-one,” we still need to manage a lot of details and information — a personalized collection of amateur radio “post-it” notes, so to say. Because our operating habits and our need for information vary considerably, I’ll leave the mechanical details of organizing and managing specific sets of “handy operator information” up to you. This month’s column takes a look at some of the information you might want to keep at your operating position, and why.

The Basics

Six Yankee! Yikes, where’s that? And what about Nine Alpha? If you’re a DXer, you’ll find yourself asking that question before long. Some day you’ll be scouting

the DX bands, hear an exotic-sounding callsign, and frantically try to determine what country is on the hook. Do you need to work this station for DXCC or for some other award? Need to find out fast?

Perhaps you’re on the road to earning Worked All States and are concentrating your effort on stateside QSOs. Sooner or later — it just *seems* like later — that elusive 50th state will fall, first in the log, and then in your QSL card file. Operating an amateur radio station requires access to a lot of discrete information, and if you have the right tools within easy reach, keeping track of everything will be a piece of cake rather than a chore.

Let’s start our information quest with Q signals. Most of us know, or soon learn, a few of them: QSL, QTH, QRM, and QRN are four of the best-known. You hear them on both CW and voice, even though they’re meant for CW only. But do you know them all? Quick, how about QRA, QRU, QRL, or QSK? They save tons of time, but only if they’re understood. The solution? Post ’em! That’s right, photocopy the list of Q signals from a radio book, magazine, or Website and tack it on the wall of your shack where you can see it. You’re not in the dark anymore. You might also want to post the frequency privileges chart, phonetic alphabet, and a UTC time-conversion chart. All of these charts appear in *The ARRL Operating Manual* and many other publications.

Make A List

We started out wondering what a Six Yankee was. Well, have you heard hams talk about DX? “The Vee Kays were in last night, and I heard some Zed Els, too.” They mean, of course, VK, Australia, and ZL, New Zealand. They’re talking *prefixes*, the first part of an amateur callsign that indicates its country of origin. You probably know some by heart already. But I’ll bet you don’t know them *all*. Few amateurs do, by the way, because there is no need.

Prefixes come in two varieties, and posting quick aids in the shack for each can speed things up. The first variety is the

regular prefix. For instance, VK is the standard prefix for Australia. Make sure you have a copy of the latest *ARRL DXCC Countries List* at hand. It lists every DXCC country in alphanumeric order by its standard prefix. The Countries List also has boxes to check off countries worked and confirmed on each band and mode.

Then there are the not-so-common prefixes. The ITU (International Telecommunication Union), the United Nations agency in charge of worldwide telecommunications, assigns blocks of callsign prefixes to each country, and then lets each country assign callsigns within those parameters. For example, the ITU has assigned WAA-WZZ, KAA-KZZ, NAA-NZZ, and AAA-ALZ to the U.S. That’s why our amateur call signs start with W, K, N, or A. You can find a complete list of all international callsign prefix allocations in *The ARRL DXCC Countries List*, *The ARRL Operating Manual*, and in many other ham publications. Posting the international list can make your DX activities easier.

Let’s take our Six Yankee. You hear a station identifying as 6Y5EE and glance at your DXCC list or your international prefix list, which you have cleverly posted on the wall. There it is: 6Y, Jamaica! Holy smokes — you need Jamaica for DXCC! You hit him with your call immediately, because you identified him before the crowd did. Now, with the 6Y safely in your log, you listen to the pile-up build. Because you had the information, you acted fast and first.

What about Tango Oscar? While patrolling the band one day, you come across TO6EZV. Where is he? Check the DXCC list. No? Then it’s not a common prefix. Quick, scan the allocation list. Eureka! Tango Oscar falls between TOA and TQZ, which the ITU has allocated to France. Sure enough, it’s an F6 near Paris running a special prefix. Perhaps you want a new prefix, so you give him a call. But if prefixes aren’t your bag, and France is already confirmed, you can save yourself time that might otherwise be wasted by calling a station you don’t need. If you have Web access, point your browser to

<<http://www.arrl.org/awards/dxcc/index.html>> for DXCC and prefix lists.

Other Handy Postings

OK, so you found out where Six Yankee is. Where do you point your beam? Rather than blindly turning the antenna until the DX station peaks, why not post a list of beam headings to different parts of the world? This information is available in *The ARRL Operating Manual* and from suppliers who advertise in ham radio magazines.

We'd like to hear your ideas for managing your shack. For now, here are a few ideas for you.

- Quick band changes and tune-ups can be critical. If you use an antenna tuner, make a card of knob settings by band and tape it to the front of the tuner.

- Once you start filling up your log with contacts, you'll want to send QSLs. Plan ahead and have some self-addressed envelopes, IRCs (international reply coupons), and some stamps.

- Metric conversion references are especially handy for international ragchewing, considering that most of the world uses the metric system. If you have an outside thermometer handy with a Celsius (centigrade) scale, you're in business. If not, a conversion chart can be helpful.

- Too many local repeaters to keep track of in your head? Post the input and output frequencies where you'll easily be able to find them.

- With several hundred amateur radio nets to participate in, you'll be completely overwhelmed if you don't jot down a few favorites in your desktop "information bank."

- Now that Solar Cycle 23 is starting to cooperate, as we head toward another propagation peak your DX efforts will definitely improve if you check out the propagation charts in the ham magazines and Websites and translate them into a simple chart compiled for your part of the country.

The list of information to keep handy goes on and on, limited only by your operating habits and your amateur radio goals and activities. So, whether your shack sports a modern supercomputer or is filled with beautiful vacuum tube radios, gather the radio information you need, organize it in a way that makes sense, and refer to it often. You'll be glad you did!

Keep your photos, letters, and column suggestions coming to "The Ham Column," *Popular Communications*, 25 Newbridge Road, Hicksville, NY 11801.

Tuning In

(from page 6)

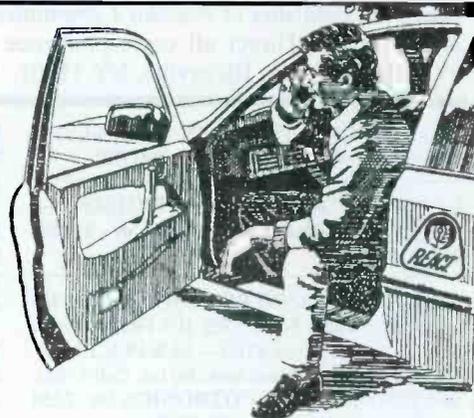
you, "Get a life!" That includes hams who abuse their radio privileges. If you're guilty, clean up your act or get out of town — and yes, take your radios and antennas with you.

As for the City of Kingston, I don't know if we should feel sorry for you for enacting such legislation, or feel sorry for your good, law-abiding radio enthusiasts. Probably both. Rest assured though, that the same radio folks you might need during the tough times when the police radios are down for the count might be a

thousand miles away enjoying their radio hobby where there are no antenna police or ridiculous ordinances.

My litmus test for laws is actually quite simple: If the law books were put in the incinerator at 9 a.m. on Monday, come Tuesday morning, would the world remember what all the fuss was about? If not, ditch 'em.

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Wanted: Early Military Radars Aviation, Marine, Fire Control Bombing, Missile. Also Parts Training Courses, TM's, Radar Box 10215, Bloomfield, PA 15232.

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Pop'Comm P.O. (from page 10)

C. You could buy one of the blockers and if it has it's own power supply, wear it on your belt. You would have a 20-foot circle of peace and quiet around you.

Letter "C" is my choice because it also might drive the owner nuts trying to figure out what's wrong with his phone. The blocker being such a small size, no one would know what it is — they would think it is a pager or something.

This sounds like something the major car makers should hide in all their new cars. If you are driving and need to make a call, you would have to pull safely off the road, and turn the key off and also shut the blocker down freeing the phone. I

Lorad Hi-Band 50 channel programmable mobile transceiver, \$99.00 excellent. Realistic DX200 receiver, \$49.00 excellent. Cobra 19XS mobile CB, \$19.00 good. Regency R-106 base-mobile scanner, \$49.00 excellent. Pyramid 25 amp. regulated supply \$49.00 new. Add \$10.00 shipping. Postal money orders only. R.D. Carter, Box 418 Vass, NC 28394.

The Dayton Amateur Radio Association (DARA) is now accepting applications for their annual scholarship awards. The DARA Scholarship Program is open initially to any FCC licensed amateur radio operator graduating from high school in 1999. There are no restrictions on the course of study planned by the student, nor does he/she need to be planning on a four year baccalaureate degree. However, schools awarding associate degrees or any technical institution selected must be accredited. The awards will be made on a non-discriminatory basis and will be based on a combination of factors, including, inter alia, financial need, scholastic achievement, contributions to amateur and community involvement. The decisions of the DARA Scholarship Committee are solely at the discretion of the Committee and are final. The number of awards made and the amount of an award shall be at the sole discretion of the Scholarship Committee and the Trustees of the DARA Scholarship Fund but will not exceed \$2,000.00 per scholarship. Applications can be had by sending a SASE to: DARA Scholarships, 45 Cinnamon Ct., Springboro, Ohio 45066. The deadline for the submission of applications is June 15, 1999.

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drive a truck five days a week and have seen some very dumb things drivers do when try to talk and roll down the highway at the same time.

KBOJ6187, Blue Thunder

Dear Blue Thunder:

I too like your idea "C" but too bad it's not available here in the U.S. Talk (pun intended!) about a market for a neat gadget! Some days I'd swear that it's almost worth the trip to Japan, but then again Customs wouldn't be amused.

Of course folks still need to make "all" calls from their cars. Blue!

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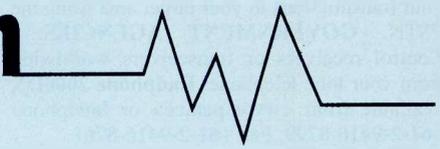
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The Loose Connection

RADIO COMMUNICATIONS HUMOR

BY BILL PRICE, N3AVY



Another One Not To Try At Home

Just when I think Norm's hit his peak — done something that will get him voted into the Cheapskates' Hall of Fame, he outdoes himself. Most recently, I had talked him out of having a "transformer unwinding party," at which he'd buy some outdated potato chips and generic cola and ask all his friends to unwind miles of fine wire from his transformer collection and wrap it neatly onto spools. This was worse.

"Old man," he said to me, "do you know how to get rid of warts?" I told him of several methods — one particularly interesting one which involved a bean cut in two, a graveyard stump, and a dead cat. I had personally dug one out of my hand over the course of a year using a penknife, but he balked at the potential for pain.

"I was thinking about laser surgery," he said. I knew he had no medical insurance and would never pay the bill for such a procedure out of his pocket. His next line proved me right.

"You know that laser-pointer I got at the electronic shop in the mall?" I did. "I've been talking to some people who understand lasers," (I doubted he'd found any real experts), "and they tell me it's just a matter of increasing the voltage. I mean, you can't put 100 volts on them, but within reason, you can make them pretty effective."

"Do you know that surgeons go back to school to learn laser surgery?"

"C'mon, old man — how hard can it be to burn off a wart?"

I got a visual of James Bond strapped to a table while the sun's power was focused to a thin line, moving to slice him in half — the hard way. "Norm, I'm sure my doctor will freeze it and take it off painlessly. I'll ask him if he'll give you a break on the cost — he's got a heart of gold."

"Old man — you *know* how I hate knives and getting cut."

"You won't see it."

"But I'll *know* he's doing it."

"Maybe you could sort-of kill it with an RF burn. Touch it to an antenna with a 50-watt CW signal. Maybe it'll stop growing and shrivel up."

"We'll try that if this doesn't work, OK, Norm?"

Here I was, being asked to practice medicine — *surgery*, actually — without a *hint* of a license. On the other hand, if I didn't help, he'd do it himself or get one of his more lunatic friends to help. I knew I was the only chance he had of keeping this procedure "safe." I thought that if I ended up in prison, at least he couldn't talk me into more ridiculous things there, but then I realized he'd be trying to sneak me some clandestine ham gear into Alcatraz (or wherever they sent wayward surgeons) and I wondered if convicted felons could keep a ham license — or if they had "/CF" added to their call signs.

"Just where is the wart?" I asked him.

"On the back of my neck, old man," he said. I now knew I'd be the primary surgeon on this job, since he couldn't see back there.

"Norm, how do you know it's a wart? You can't even see back there. Y'know surgeons perform biopsies on things like this. Did you get a biopsy kit at the mall? How 'bout we have the thing dowsed by a psychic? In fact, how 'bout we get a psychic surgeon to remove it?"

"You know that stuff is fake — didn't you see the expose' on TV?" He had me.

"How about we do the John Candy method?"

"What's that?"

"I give you a quarter and you go downtown and have a rat gnaw it off."

"That's disgusting. You gonna help me or not?"

Here was the point where the jury would turn on me. "Of course I'll help you — I don't want you to hurt yourself."

"Good. Saturday morning — nine o'clock." I agreed and searched for some dark safety glasses. While I looked, my plan to save Norm's neck came together in what was left of my mind.

"What'd you bring her for," Norm asked. My wife, Shannon (not her real name) had been a nurse, had trained in the operating room, and was in on my plan. She gritted her teeth when Norm wasn't looking.

"In case something goes wrong. If I cut your head off with the laser and pass out, she can call 911, then run away and hide."

Norm told me he'd been experimenting with plants — cutting through their leaves. He said he had to hold the laser really close, and really still, but it eventually burned through the leaf.

"Don't you think it'll hurt?" I asked. "Don't you think burning your skin — whether with a laser or a soldering iron — will hurt?"

"They say laser surgery doesn't hurt," he said.

We sat Norm in a kitchen chair, with his back to a sunny window ("I need lots of light," I said). I opened the window wide. There was no screen. Norm had thoughtfully "trimmed" the hair on the back of his neck. I know that in the grand scheme of things, man was not intended to see the back of his neck. His was no exception. Norm's "haircut" proved that nature was kind — if he could see what he'd done, he'd stay in the house 'til it grew back.

"OK, old man — you gonna sterilize it now?"

"Yup." I poured alcohol on his neck and waited for it to dry. The sun was perfect. Norm handed me the laser, and I handed it to my wife, who turned it on and aimed it at the ceiling, just in case it hummed, so Norm could hear it. I slipped the magnifying glass from my pocket and focused the sun on Norm's wart.

"Hey! That hurts. You better stop," he said as the wart began to smoke. Shannon switched off the laser; I put away the lens.

"Burn?" I asked.

"Yeah — more than I'd have thought."

"C'mon," I said. My doc's standing by at his office. Let's go finish the job before your hair grows back. I'll buy."

Was it kind to trick Norm? Yeah — I'd do it again. What if I cut my friend's head off? How would *that* make him feel? When this hits the newsstand, Norm will call me. Collect. We'll talk. Yell a little. Calm down. I could do worse than have a friend like Norm. If he weren't around — I'd have to make stuff up. ■

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