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CIRCLE 145 ON READER SERVICE CARD

POPULAR COMMUNICATIONS

November 1998 VOLUME 17, NUMBER 3

FEATURES

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COLUMNS

DEPARTMENTS

ON THE COVER: *This 1,390-foot tower in California supplies TV, FM, and public service for San Francisco. The FM broadcast band from 88 to 108 MHz is an ideal listening post for meteor scatter signals. To find out more, check out this month's "Radio Resources" column on page 24. (Photo by Larry Mulvehill)*

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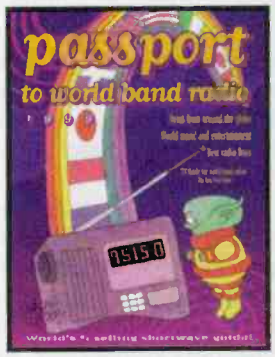

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Tuning In

AN EDITORIAL

BY HAROLD ORT, N2RLL, SSB-596

Time To Budget: Do You Buy A New Car, Put A New Roof On The House, Or Replace Your Ancient TVs?

Nothing lasts forever, or so they say. Take for example that new TV that mom just picked up a couple of months ago for about $180. Not a bad price, I thought. And this marvel of modern technology has everything from a sleep timer to automatic channel programming at the push of a remote button. Trouble is, in a couple of years — and no, I didn't tell mom — it will be obsolete.

I'd love to be an observer in these high-powered water cooler meetings where the suits concoct all sorts of schemes. High-Definition TV (HDTV) is just such a deal!

While the new HDTV supposedly boasts CD-quality sound and a vastly improved high-resolution picture, what you probably haven't been told is that using a converter with your analog set won't give you any better picture or audio than you already get. Hmmm, do you smell something burning? Sure enough, it's your wallet!

And now for more strange news in this convoluted mess. I'll bet you also didn't know that in all likelihood your cable TV company isn't anywhere near ready to go digital. Most of the USA's nearly 70 million cable TV subscribers will be required to use an old-fashioned rooftop antenna or rabbit ears to receive the new digital signals. Hmmm. That smell is getting more intense.

Nearly a year ago, I wrote to Senate Majority Leader Trent Lott's office about the Billy Tauzin fiasco and H.R. 2369. The letter, on *Pop'Comm* letterhead didn't discuss HDTV. But my response from Senator Lott thanked me for my letter "regarding the allocation of spectrum for digital television." Strange, I thought that I could write to the Senate Majority Leader about one topic, and receive a reply about a totally unrelated issue. But thanks to Senator Lott's letter, I started digging into this HDTV situation. His letter continued in part, "Every television station across the country will begin the expensive conversion from an analog system to a digital system. A portion of the process involves providing each existing station a new spectrum allocation because the laws of physics prevents the transmission of both an analog and a digital signal on the same frequency." It continued, "The next step in the process involves the public. They must go out and buy a new television set. It will take time for both the public and the stations to make their purchases (I'll say!) so a period of time is necessary for two-frequency transmission to avoid disruptions. When the process is complete, the TV station will return the analog frequency assignment to the government for auction or reallocation. There is no give away. The government through its public policy is requiring the conversion to digital and this in turn requires each station to spend millions. And when the conversion is complete the station will actually be using a smaller segment of the spectrum's frequency."

> ***"The next step in the process involves the public. They must go out and buy a new television set."***

Beginning this month, the CBS Television Network is scheduled to begin broadcasting about five hours of HDTV programming weekly. Apparently the reason is to gauge consumer reaction. But it seems to me this whole HDTV thing has a snowball's chance in hell of passing muster with John Q. Public who isn't ready to spend money on a converter box much less thousands of dollars on a new TV. I believe it's a gamble that Uncle Sam is destined to lose. And it's all about the almighty dollar and a budget balancing act by the non-inhaling D.C. folks who are so good at putting up smoke screens they'd rather fight than switch.

Too bad the industry hasn't been very clear in communicating to the public the

(Continued on page 76)

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CIRCLE 131 ON READER SERVICE CARD

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>.

Three Cheers For "The Pirate's Den"

Dear Editor:

I can rest easy knowing that your magazine appreciates the time and effort that your readers put in sending in loggings of what they hear in the shortwave spectrum, so I say three cheers to *Popular Communications* and "The Pirate's Den" for not forgetting who buys your magazine.

Dean Burgess
Massachusetts

Dear Dean:

Thanks for your letter. We, too, rest easy when we get all those reader-submitted loggings. Our columnists consider them the lifeblood of their columns. We know that you're out there reading, and we can always use more loggings, ideas, and suggestions for all columns. Thanks again, Dean!

If You Just Love CW, Use It

Dear Editor:

I found it interesting, in the June issue, the comparison of CW with a crank starter on a car. The crank starter was replaced by a more efficient method — today's computers can be said to have replaced CW in much the same way. But, there has never been a more spectrum efficient mode, in this day of modern communication, than good old CW. I was licensed in 1977, wasn't particularly happy with having to learn CW, but sure got a kick out of that first contact. Some people have a genuine problem learning CW, and that should be a consideration when requirements for a ham license are developed. Some people just want a license without having a hassle, a sort of instant gratification if you will. I think there is a place in ham radio for everyone, after all isn't that why the hobby appeals to so many people from so many walks of life? If you just love CW, use it. If you hate it, don't use it.

The International Amateur Radio Union will eventually get rid of the requirement, and then so will the United States and other countries as well. Some countries in the past (I am not sure if they still do) required hams to use CW only, as they had no voice privileges. If you don't have much money, CW rigs are pretty inexpensive. But there doesn't need to be all this animosity about CW, pro or con. There's enough diversity in the hobby for everyone. Do what you like, don't do what you don't like. Entry level codeless licenses exist, sooner or later there will be no requirement, I use CW and I use SSB, there is a place for both. Why does it have to be either/or?

Albert Bowers, KA6FDBB
Apple Valley, California

Voting Against Crime Prevention?

Dear Editor:

Is it possible we are approaching the HR 2369 problem in the wrong way? Perhaps instead of calling it a vote for privacy, it should be pointed out to Congress that what they are actually doing is voting *against* crime prevention. What I mean is if a scanner listener hears about a crime that has been committed or is going to be committed, they will not and legally cannot report it or they will be arrested for invasion of privacy (and the criminal will probably not even be touched). If, on the other hand Congress, leaves the law alone, people will still be able to report criminal activity without being worried about being arrested for it. Of course, this is probably what Congress is trying to prevent as they are the ones mostly likely to get caught this way.

My other thought concerns the amateur radio service and code. I am somewhat ambivalent about removing the code requirement. I am currently studying to get my license and I agree that the code is a large pain. But, on the other hand, I am planning on using it when I get my license, and it is possible that I might enjoy it. I don't think we ought to get rid of the code frequencies and we ought to use these frequencies. One of course must know the code and pass a test for the same. Also, it should be that with every hobby there is something you must learn that may not be fun to learn, but you might find useful at some point.

Tom Masterson
Bremerton, Washington

Once A CBer, Always A CBer

Dear Editor:

I would like to address a problem I see between hams and CBers. I am a CBer and proud of it. I have been in CB off and on . . . since 1977. I got my license and bought a President Washington CB. I've talked skip all over the U.S., and don't swear on the CB. I hold a job, pay taxes, and help people out on CB when I can. I continue to study for the test (ham).

The ham people I have met are usually good people, but they have one problem: They classify CBers as Chicken Banders, welfare cases, big mouths, no-goods, and worthless people. I grant you that people on CB usually . . . cause trouble on the CB, but has anyone ever tuned into 3.950 LSB to hear the arguing and name calling of the higher ham boys? It sounds an awful lot like 27 MHz, 11 meters.

Let's get real. People on 11 meters are the same as people on 10 meters, 6 meters, 40 meters, and so on. Most hams started out on 11 meters, and I'll tell you this: When their car is stalled on Interstate 80 in rural Nebraska, let them try to get assistance from 6 meters or some such frequency. They'll be there 'till hell freezes over. But let them get on Channel 19 and probably within five or 10 minutes, somebody will have phoned the police for help. The point: If I ever decide to get a ham radio, I'm also going to be found on 11 meters and GMRS. This Chicken Bander will talk to anyone.

D. Sawyer, Iowa

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DXing From Sarawak — Land Of The Hornbills

Lush Rainforests And The Jungle's Symphony Of Birds And Insects Are Etched In Your Memory . . .

By Bob Padula

It is 11 a.m. in mid-June, and I am standing on a plankway in the Borneo jungle, Bako National Park, 35 km north of Kuching, Sarawak. Here on one of the two eastern states of Malaysia, it's 35 degrees Celsius and the humidity is 90 percent. I know that there are countless ears and eyes listening and watching from the thick foliage, but all I see are large colorful butterflies, exotic birds, a giant lizard in the river, and some playful long-tailed macaque monkeys. In my backpack I have my Sangean ATS-808 radio, my notebook, a half-empty bottle of "Borneo" mineral water, my swimming gear, passport, travel documents, money, and my Canon Sureshot Owl camera. My T-shirt, cap, and shorts are soaked with perspiration. I am a couple of minutes ahead of other trekkers who will catch up with me shortly. I photograph them as they come 'round the bend towards me.

So, welcome to Borneo, a total contrast to the mid-winter Australia that I had left behind two days previously! Sarawak State still evokes romance rather than reality, conjuring up old memories of white Rajahs and headhunters. It occupies about 125,000 square km of hills, jungle, and swampland just north of the Equator.

Since 1963, Sarawak has been a member of the Federation of Malaysia and is undergoing dramatic change. The end of colonialism marked the acceleration of the oil industry, the beginning of logging disputes, and its ventures into tourism.

One travels in Sarawak mainly by boat, canoe or small aircraft. A road has been built between the State capital Kuching, and Sibu, some 400 km to the north, but it's much faster to travel by express boat or by plane. It's about 1000 km from one end of the State to the other — Kuching is located at the southern tip; at the very north lies the town of Miri, near Brunei and the northern Malay State of Sabah. There's not much in between except jungle, rivers, mountains, and logging trails!

Radio TV Malaysia, Sarawak Headquarters in Kuching.

Sarawak's population is estimated to be 1.7 million. The Ibans and Chinese make up almost equal numbers, contributing to about a third of the total. The Malays are about another third, followed by the Bidayuhs, the Melanaus, and the Orang Ulus. The other group — Indians, Eurasians, Javanese, and Europeans make up the balance. The Orang Ulu is the collective name given to 21 groups of upriver people living in the interior, mainly the Kayans, Kenyahs, and Kelabits.

Getting There From Australia

I had flown from Melbourne to Kuala Lumpur in a Malaysian Airlines Jumbo, an eight-hour all-night flight, then to Kuching across the South China Sea in a 737. My base is the luxurious Santabong Resort hotel at Damai Beach, 39 km north of Kuching. Occupancy at all Damai hotels is very low, with only nine guests staying at Santabong — factors cited are the World Cup, disinterest by tourists, and the poor Malaysian economy. I meet several Australians working in the region as part of their "Australian Volunteers Abroad" assignments. It is an hour into town by shuttle bus, operated by the Holiday Inn group, costing 10 Ringgits each way (about $3 U.S.), which leaves every two hours.

My week in Sarawak includes overnight bungalow-accommodated trips to the Bako National Park (35 km north of Kuching) and to the spectacularly rugged Mulu Caves' National Park (in the far

north), close to Brunei. Wild pigs forage under the Bako bungalow at night!

I travel by boat, canoe, plane, off-road vehicle, bus, and foot — and fall off a jungle plankway and gash my leg, am bitten by large red ants and the mosquitoes take large pieces out of me. At the end, my backpack rots due to the humidity — my notebooks are waterlogged and my gym shoes are in tatters!

Broadcasting In Sarawak

Radio TV Malaysia (RTVM) operates a complex network of medium wave, VHF-FM, shortwave, and TV services, headquartered from Kuching. There are six radio networks: Radio 1 — Malay Kuala Lumpur News (24 hours), Radio 2 — Musik, Radio 3 — Local Programs, Radio 4 — English Kuala Lumpur, Radio 5 — Chinese Kuala Lumpur and Radio 6 — Iban/Bidayuh/Kayan/Kenyah. FM programming is available from 16 locations, most of which offer all six networks.

Mediumwave services operate from Kuching, Miri, Sibu, Limbang, and Sri Aman. In Kuching, a commercial FM network "Cats Radio" offers programming in English, Chinese, Malay, and Iban. "Kuching" is broadly translated as "cat" in Malay, and Kuching is dominated by many splendid statues of cats of all shapes and sizes!

Shortwave Broadcasting

Over the past two years, SW broadcasts from Kuching have been substantially reduced, due to technical breakdowns of transmitters which are decades old. At present, only three transmitters are in use, between 2200–1500 UTC on 4895 kHz, 5030 kHz, 7130 kHz, and 7270 kHz. Operations on 4835 kHz, 7145 kHz, and 7160 kHz have been phased out. A new 100 kW transmitter is in storage at Kuching, but antennas are not available for it! (See "Shortwave from Kuching.")

Regional SW transmitters are at Miri (6060 kHz) and Sibu (5005 kHz and 6050 kHz), operating generally from 2200–1300 UTC, offering local and Kuching programming. There are no longer any Malay, English and Chinese services on shortwave. The State is well served by an extensive network of microwave links, operated by Malaysia Telekom, allowing interconnection of MW, SW, VHF–FM, and TV services, supplemented by satellite delivered feeds. A feature of broadcasting is the daily evening news relay in

Shortwave From Kuching

4895 kHz — 2200–0100 UTC and 0800–1000 UTC Iban; 0100–0300 UTC Iban Schools; 0800–1000 UTC Kayan/Kenyah

5030 kHz — 2200–0100 UTC and 1000–1500 UTC Bidayuh

7130 kHz — 0100–0300 UTC Iban Schools; 0400–0600 UTC Bidayuh

7270 kHz — 2200–0100 UTC, 0300–0500 UTC and 1000–1500 Iban; 0100–0300 UTC Bisayah; 0500–1000 UTC Kayan/Kenyah

Malay from Kuala Lumpur, which is heard on all stations — MW, SW, and FM at 1300–1310 UTC, known as "Berita Radio Satu." All services include local news segments — "Berita" — for various communities throughout the day as well as extensive telephone call-in features, such as in the Iban network where they are known as "Titbits/Phone-in/Lagu-lagu."

The School's Broadcasts are vital segments of programming, on the air each morning from 0100–0300 UTC, Mondays to Saturdays on MW, SW, and FM. Sarawak schools open from 7:30 a.m. – 1:30 p.m. Mondays to Saturdays.

Reception Patterns

Put frankly, Sarawak would appear to be a DXers paradise! Sunrise in June in Kuching is at about 2200 UTC and sunset is at 1100 UTC (6 a.m. and 7 p.m. respectively). About 1000 km to the north is Vietnam, and the southern region of the Philippines is some 60 km to the north east of Miri. Miri itself is about 800 km north of Kuching. To the west of Kuching is Singapore (about 600 km) and to the South is Kalamintan (Indonesia).

At around local noon in Kuching, (0400 UTC) signals on the 60 meter band include Bangkok 4831 kHz, 4845 kHz Kuala Lumpur, 4765 kHz Ujung Pandang, 4870 kHz Colombo, 4960 kHz Hanoi and 5005 kHz Sibu. During the late afternoon period, Indian regional stations broadcasting their midday services fade-in on 7 MHz, at around 0630 UTC (4.30 p.m.) including Kurseong 7230 kHz, Imphal 7150 kHz, Port Blair 7115 kHz, and Chennai 7160 kHz. Indian signals are also audible at their morning sign-on at around 0030 UTC (8.30 a.m.) on 4760 kHz and 4940 kHz.

The Radio Republik Indonesia regional outlet on 3385 kHz at Kupang is heard throughout the day and evening, and this is often mistaken for the inoperative Sarawak service listed on the same frequency from Miri. The morning English news from RRI Yogyakarta is well heard at 0030–0045 UTC on 7100 kHz. Interestingly, Brazilian signals are audible in the period 2200–2300 UTC on 4985 kHz, 6000 kHz, 6010 kHz, 6020 kHz, 6170 kHz and 6135 kHz, carrying the network program "A Voz do Brazil." European signals are very strong on 6, 7, and 9 MHz in the period 2100–0000 UTC (5 a.m.– 8 a.m.). RTVM Sabah also gives good reception on its single SW frequency 5980 kHz, from 0400–0700, 0800–1600 and 2130–2230 UTC. The 60-meter band outlet of 4970 kHz wasn't heard at any time, and it is presumed to have been closed down.

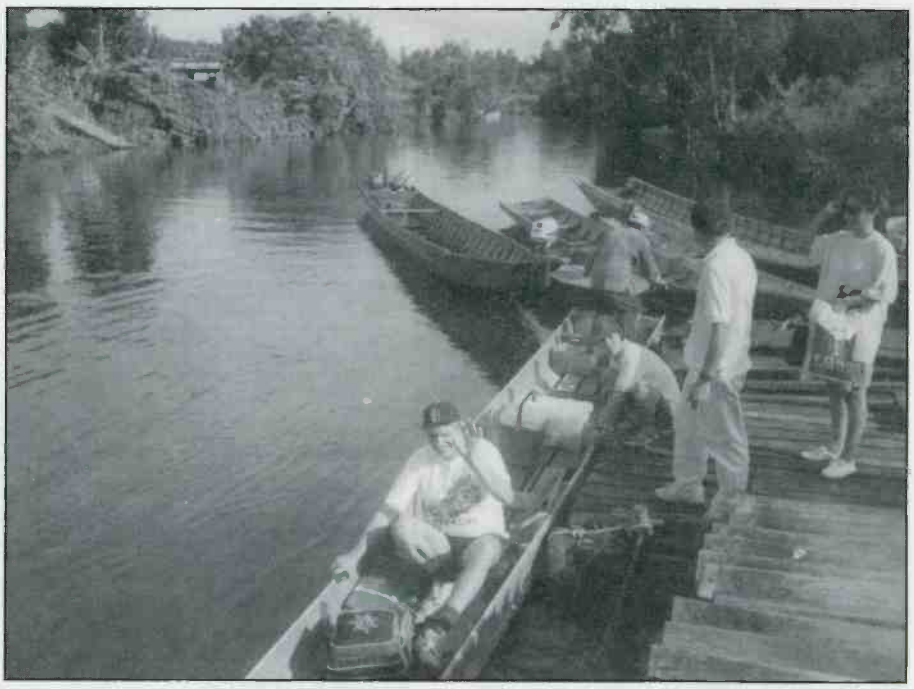
The author with his trusty Sangean ATS-808 getting ready for some great DXing, 35 km north of Kuching at Bako Beach.

Evening reception on the medium wave and LF SW bands is marked by a tremendous variety of Asian transmitters, with a multitude of Chinese regionals as early as 1000 UTC (6 p.m.) Vietnamese stations are heard at their sign-on at 2200 UTC (6 a.m.) on 4960 KHz, 5035 kHz, 5925 kHz and 6165 kHz.

My small radio survives the heat, humidity, trekking and monkeys and operates well with only a 5-meter antenna, using the same set of six "AA" alkaline cells, from diverse localities, whether forest, jungle, beach, canoe, or town!

Packing Up

This was truly an adventure, to a country which is "off the beaten track" and not a high priority for visitors from Australia, most of whom prefer the bright lights and glitz of Kuala Lumpur, Penang, or Malacca. Sarawak is a region where large tracts of virgin rain-forest remain, with strenuous efforts being made to preserve this heritage within the complex of National Parks. The travelling required reasonable fitness, an ability to get along with people, the need to be resourceful, and the capacity to "rough it" in rudimentary, overnight lodges and to assist in carrying provisions and preparing meals. It was a tremendous experience, but NOT recommended for those who prefer 5-Star hotels, air-conditioned coaches, cabin cruisers and hot showers! Salamat pagi, salamat datang, and salamat malam! ■



Bob leaves Mulu for the caves.

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Everybody Wanted To Get Into The Act!

In Broadcasting's Early Years, Unwanted Intruders Filled The Band!

By Alice Brannigan

Radio broadcasting in the U.S. was largely experimental until the fall of 1921. Until then, there were a number of individuals, colleges, and companies experimenting with radio telephony in 1920 and 1921, but relatively few members of the general public had receivers. In September of 1921, WBZ in Springfield, Mass., and WJZ in Newark, N.J. of the Westinghouse Company, WDY in Roselle Park, N.J. of RCA, and WCJ, New Haven, Conn. of the A.C. Gilbert Company, were the first broadcasters licensed.

WJZ was opened on October 12, 1921, and the radio boom began. In October, WBL was licensed in Detroit, WJX was licensed in the Bronx, N.Y., and KQL received a license in Los Angeles.

"During the 1920s and much of the early '30s, it almost seemed as if there were nearly as many intruders operating in the mediumwave band as there were broadcasters."

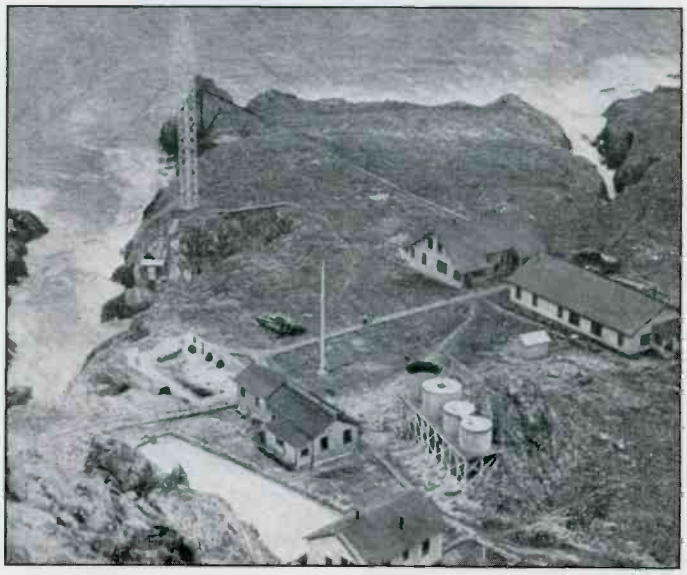
November saw broadcast licenses issued to Westinghouse's KDKA in Pittsburgh and KYW in Chicago. By December, five regularly licensed commercial broadcasters were on the air, all using 360 meters (833 kHz) without interference. With special permission, some stations could occasionally use 485 meters (619 kHz), but usually only for weather, market, and other reports.

Oh, yes, on November 4, 1920, experimental station 8XK had election results, running 100 watts power. By August of 1921, the station was using 500 watts, and in October it went to 1 kW. This station later became licensed commercially as KDKA. Other very early broadcasters that had first operated with Experimental Radio Service call letters included KQW, WHA, and WGY.

In December of 1921, 16 stations received commercial broadcast licenses. By 1922, the race was on, and, by April, there were 200 stations licensed, and a 400-meter wavelength (750 kHz) was added for use by the "better" stations. But crowded 833 kHz, where most stations operated, was beginning to feel the pinch as broadcasters and listeners alike com-

← *Ships at sea commonly used 1000 kHz for telegraphy long before broadcasting began, and continued to use it for several years afterwards.*

Every lighthouse along the North American coast had long used frequencies in the broadcasting band to transmit fog warnings to ships. This continued after broadcasting began. ↓



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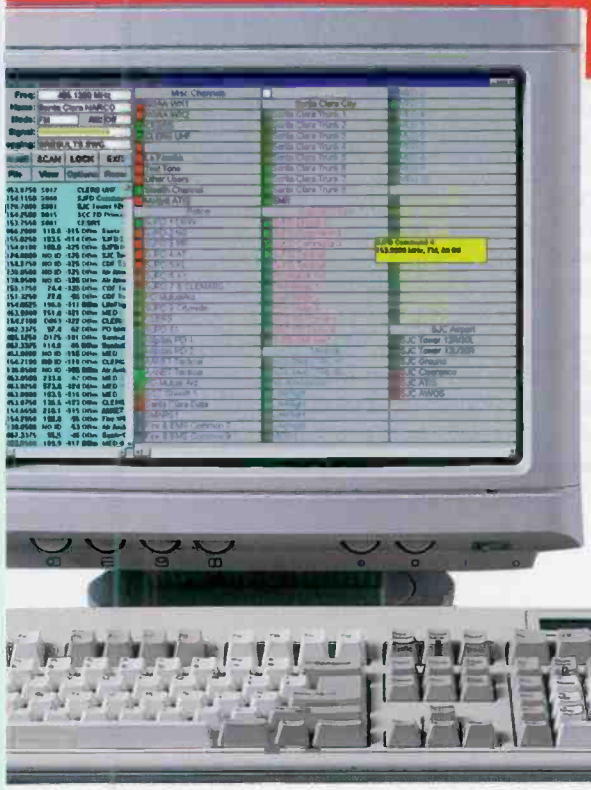

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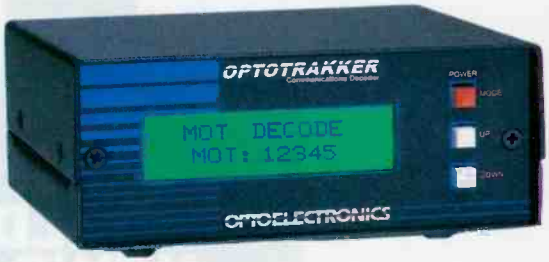

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plained about the interference. The early receivers were crystal sets and regenerative types, offering poor selectivity. Everyone called upon the government to find a solution.

Patchwork Quilt

By 1923, when there were 500 stations in the U.S., a new plan was announced in Washington for the rapidly growing broadcast service. Obviously, more frequencies were needed for broadcasters, but they couldn't simply be created at will. That's because frequencies we now know as the mediumwave broadcasting band (535–1705 kHz) were in use by other services long before broadcasting began.

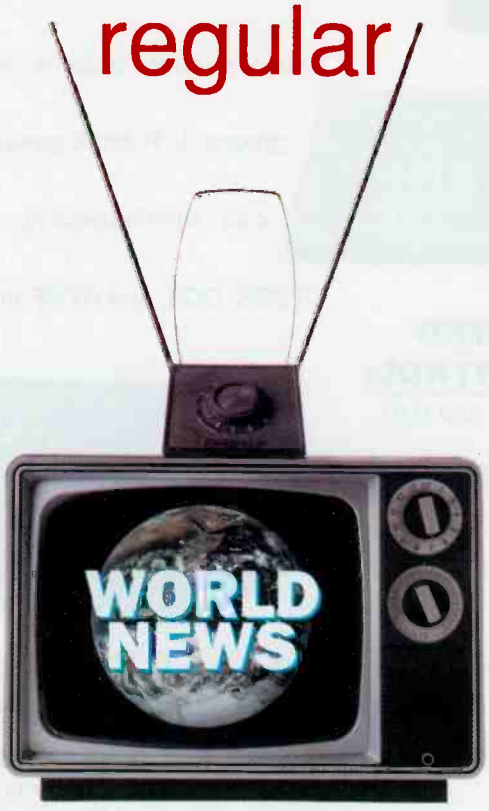
So, in 1923, the U.S. Department of Commerce announced a plan of 10 kHz channel separation for the broadcast service, and this band was to extended from 550–1350 kHz. Some stations began shifting from 833 kHz to other frequencies. There was a slight hitch: broadcasters were not authorized between 980 and 1040 kHz. That was because 1000 kHz was still a very active frequency used for telegraph communications between ships and hundreds of commercial and military coastal stations. The fact was that 630 and 794 kHz remained in use by maritime interests, particularly by dozens of lightships for sending out fog warnings.

Frequency 1040 kHz was eventually opened to broadcasters in late 1924, and by 1925 the entire spectrum of 550-1500 kHz had finally been designated for broadcasters. In late 1941, in an effort to bring order to the chaos on the broadcasting channels, the NARBA agreement expanded the band from 540–1600 kHz. The band is presently in the process of being extended to 1700 kHz (officially, 1705 kHz).

Yet, it was one thing to make such designations, and quite another to actually reserve the specified frequencies exclusively for broadcasters. Notwithstanding that, until 1925, broadcast listeners had to put up with unwanted maritime CW chatter every time they tuned past 1000 kHz. It's interesting to note that, in fact, for years there were many intruders, squatters, and mystery stations occupying broadcast frequencies. Moreover, even the most comprehensive official broadcast station listings published didn't list them!

The Federal Radio Commission (FRC) was created in 1927, as an effort to reorganize, standardize, and bring under control the chaos that had become the broadcast service. In 1927, there were 733 stations licensed, all elbowing their way onto the 90 available channels without regard or coordination as to limitations on power,

Popular radio station directories published for early DXers never listed any of the hundreds of intruder stations that could also be heard on the band.



and hours of operation, frequency coordination. Even published and frequency listings weren't very useful because the FRC found that at least 129 licensed broadcast stations were operating on illegal split frequencies between the authorized channels. Some were still on the long-discontinued 833 kHz "360 meter common wavelength." Another 41 stations were either on, or bleeding over into, the six channels reserved for exclusive Canadian use. Other stations had simply selected a channel of their own preference and assigned it to themselves, though their licenses showed them authorized elsewhere. Several competing local stations were battling it out on frequencies separated by as little as 2 to 5 kHz. Between this and the intruders, in some areas it meant a cacophony of interference.

In November of 1927, the FRC made the first of its many attempts at cleaning up and reorganizing the broadcasting band. But they never got rid of all the intruders.

An Intruders' Who's Who

Prior to June 24, 1910, there were no regulations governing radio communications in the U.S. On that date, the first radio laws of the U.S. were formulated. On July 23 and August 13 of 1912, and July 8 of 1913, the laws governing radio were passed. One of the clear stipulations in those laws was that amateur operators were not permitted to operate on wavelengths above 200 meters (that is to say, frequencies below 1500 kHz).

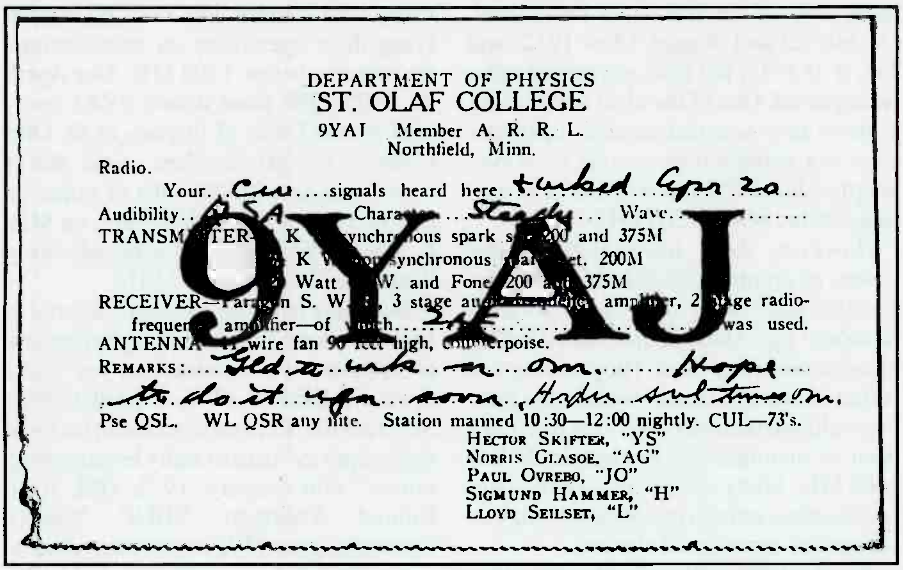
However, there have always been scores of commercial broadcasters who proudly trace their roots back to their founders' ham stations that started out by broadcasting music, etc. The presumption is that in order to be received by the public, such ham transmissions may well have been on unauthorized frequencies below 1500 kHz. Many heirs to those early ham broadcasters remain in operation today as successful commercial stations.

Some of the early broadcasters that began as ham radio operations include (to cite just a relative few) 1ZE/WBBG, 2EL/WGBB, 2IA/WNO, 5RK/WREC, 6ADZ/KNX, 6ZW/KFWO, 8CR/WLW, 8AQO/WMAC/WSYR, 8MK/WBL/WWJ, 8ZAE/KQV, 9APK/WTAP/WHBF, 9DFC/WBBM, 9BY/WOC, 9YA/WSUI, 9YB/WBAA, 9YD/WCAJ, 9YK/WEW, and 9ZAF/KLZ.

Curiously, ham broadcasters didn't appear to upset anyone at the time and many ham stations sent out QSL's verifying their operations on unauthorized frequencies below 1500 kHz. Our April, 20, 1922, QSL from station 9YAJ, operated by the Dept. of Physics at St. Olaf College, Northfield, Minn. notes that it could operate with 20 watts of voice on 800 kHz. Only a few days later, on May 6, 1922, 9YAJ received a broadcasting license as WCAL on 833 kHz.

But some hams never even bothered to seek broadcast licenses. Long before any broadcaster was licensed in his home town, Joe Fairhall, 9VV, of South Gilbert St., Danville. Ill., was reported in his local newspaper as "occasionally broadcasting music." Our January, 1922, QSL from Roland Anderson, 9DUP, Wahoo, Nebraska, goes 9VV even better. Anderson's 10-watt ham station on 1333 kHz boldly states right on the QSL card that 9DUP was scheduled to "transmit music every evening from 8:15 until 10:00."

Of course, in Canada, amateur broadcasters were sanctioned by the government and received special licenses. More than a dozen of them flourished, running low power on 1200 kHz. For the most part, by the early 1930s these stations had evolved into commercial stations running higher power. In any event, broadcast sta-



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Northfield, Minn.

9YAJ

Radio.
Your ... [illegible] ... signals heard here ... [illegible] ...
Audibility ... [illegible] ... Character ... Steady ... Wave ...
TRANSMITTER— [illegible] K [illegible] synchronous spark s[illegible] 200 and 375M
[illegible] K [illegible] synchronous [illegible] set. 200M
[illegible] Watt [illegible] W. and Fone 200 and 375M
RECEIVER—Paragon S. W. [illegible], 3 stage audio frequency amplifier, 2 stage radio-frequency amplifier—of which ... [illegible] ... was used.
ANTENNA— [illegible] wire fan 90 feet high, counterpoise.
REMARKS: ... [illegible] ...
Pse QSL. WL QSR any nite. Station manned 10:30—12:00 nightly. CUL—73's.
HECTOR SKIFTER, "YS"
NORRIS GLASOE, "AG"
PAUL OVREBO, "JO"
SIGMUND HAMMER, "H"
LLOYD SEILSET, "L"

Amateur station 9YAJ had a 20-watt transmitter for unauthorized operation on 800 kHz, according to this QSL. Amateurs were not allowed to operate below 1500 kHz. Yet, a few days after this QSL was issued, 9YAJ received its commercial broadcast license.

tion directories didn't list American or Canadian amateur broadcasters, although they were plentiful.

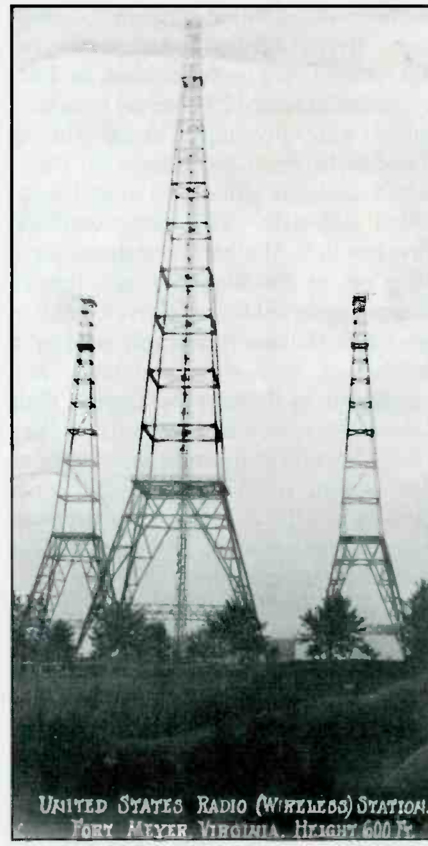
Government Intruders

Perhaps the most well-known non-broadcast intruder in the broadcast band was the U.S. Navy's powerful station NAA, Washington, D.C. Operating on 690 kHz several times daily, NAA transmitted voice weather forecasts, also precise Naval Observatory time pips. Prior to NAA going online on 690 kHz, lower powered NAL, at the Washington Navy Yard, sent out similar broadcasts on 690 kHz. NAL transmissions were ongoing at least as early as 1930, and NAA continued until June, 1936.

As late as 1930, the U.S. Department of Lighthouses' Crescent City Light Station, Calif., was operating station KCH on 561 kHz. What was that all about?

Odd military stations also kept popping up in the band, too. Like WUCN, at Fort Rodman, Massachusetts. In 1924, this U.S. Army station was operating on 560 kHz. DXers of 1932 reported tuning past both 640 and 1275 kHz and hearing live band music coming from a station GZ7. This turned out to be the 182nd Field Artillery of the Michigan. National Guard, broadcasting from the armory at Brush and Larned Streets, Detroit.

In 1937, DXers reported hearing stations EQ7 and EW7 contacting one another by voice several times each day and night on 750 kHz. EQ7 was revealed to be the 50-watt station at the Regional Headquarters, 119th Field Artillery, Lansing, Mich. Station EW7 was the 119th Field Artillery, Headquarters Battery, 2nd Battalion, at Jackson, Mich., also running 50-watts.



The U.S. Navy's powerful station NAA, near Washington, D.C., sent out daily time signals in the broadcast band well into the 1930s.

Intruders With Licenses

In 1924, government records showed an active license on 666 kHz for station KUVS, operated by the New York City Police Dept. There was a license on the same frequency for coastal telegraph station WAX, Miami, Fla. The C.E. Davis Packing Co., Fairport, Va. was licensed there, too, using the call letters KDAH. Over on 1050 kHz, the Pennsylvania State Police were operating stations WBR in Butler, and WBAK in Harrisburg.

By 1928, these stations had been moved out of the band. Yet government records still revealed a few non-broadcast commercial land stations authorized on 733 kHz. These included KUXM in Cheboygan, Michigan, KUVQ in Johnswood, Michigan.

As late as 1931, the 50kW WGY on 790 kHz, GE's pioneer station in Schenectady, N.Y. retained its old 10kW Experimental authorization on 790 kHz with the call letters W2XI. More than that, under the Experimental service call letters W2XAG, they were also authorized to operate using a withering 200 kW on 550, 660, 790, 1150, and 1500 kHz! Bell Labs in New York City, in 1930, had a 5kW Experimental license (W2XB) for 710, 860, and 1000 kHz.

In 1930, the Los Angeles County Department of Forestry's station, W6XBO, was authorized to operate on any frequency between 1200–1500 kHz.

None of these stations appeared in the usual broadcast station directories.

Intruders Without Licenses

The 1920s and 1930s saw many unlicensed broadcasters, or, as they were commonly called at the time, "outlaws." Outlaws were not satirical in nature, as are so many of today's entertaining shortwave pirates, nor were they motivated by political or social considerations, like modern unlicensed FM microcasters. Old-time outlaws were, more or less, counterfeit broadcasters. Most often, they sought to represent themselves as licensed stations. Very often they succeeded, even though they usually ran low power. They operated in the open, announced their phone numbers and actual locations over the air, sent QSLs, ran contests, and attracted local advertisers.

Outlaw station RXKR, which appeared

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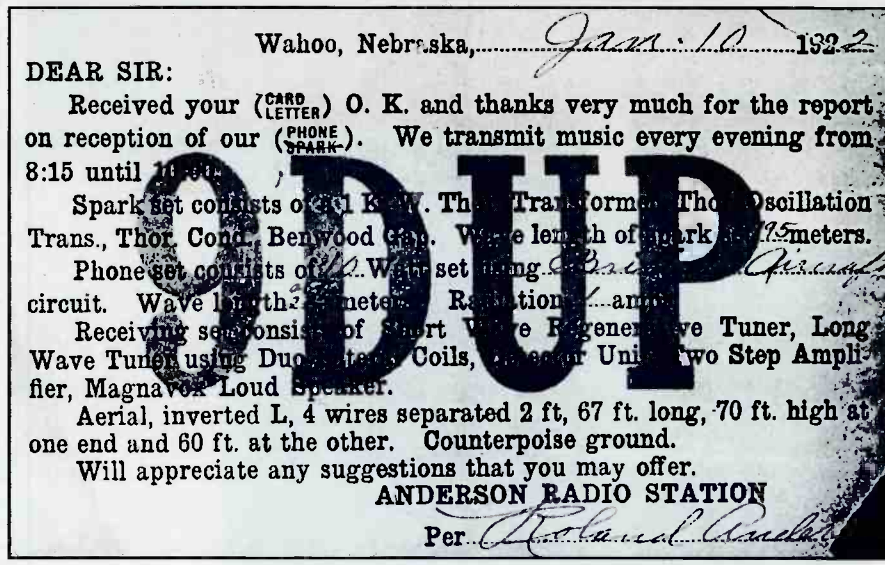
in 1933, had a powerful 500-watt signal on 815 kHz. The station was located aboard a gambling ship, the S/S *City of Panama*, which was operating in Santa Monica Bay, California. The station generated enormous interference and its presence offshore created a number of diplomatic problems as our government frantically attempted to get it silenced.

Outlaw station WGM was operated on 840 kHz by Lee Elton Spencer of Jeanette, Pa. A radio publication of 1931 noted that it had been on the air "for years." Many listeners thought WGM was a licensed station. In 1930, Spencer was charged for operating WGM and released on $2,500 bond. But the station remained in operation. WGM's final broadcast was on February 17, 1932. Soon after, Spencer was convicted and put on probation for two years.

Outlaw WJM was operated in 1933 by Ray Wilson and E.C. Whitney from the Lincoln Hotel, Massillon, Ohio. It kept skipping around between 830–860 kHz, and ran about 10 watts. Widely reported, the station played records and held daily auditions for local talent. The station had previously operated from New Philadelphia, Ohio, under the call letters WAIR.

Outlaw WDMC was operated in 1933 by Willard G. Demuth of the Demuth Music Store, Uhrichsville, Ohio. The 7.5-watt station was quick to send QSLs. Demuth eventually applied to the FRC for a Construction Permit to broadcast legally. He was turned down.

Outlaw WUMS operated sporadically from 1926 until the late 1970s by legendary DXer, the late Dave Thomas, Proctorville, Ohio. WUMS (We're Unknown Mystery Station) was originally conceived for emergency use during floods on the Ohio River. WUMS ran from 2–5 watts (at times) on 1560 kHz, using an end-fed longwire antenna a half-mile in length. Thomas repeatedly asked the FCC to issue him an emergency station license, but he was always turned down. Each time they turned him down, they demanded he immediately remove WUMS from the air. And every time, he wrote them back bluntly refusing, claiming WUMS was needed to save lives during floods. WUMS was always much publicized and became well known. The illegal call letters were even on his car's license plates. Thomas sent prized QSLs to those who reported hearing WUMS operating in CW during announced DX tests. The FCC tried for years to get WUMS off the air, but without success. Thomas was dragged into court many times by the FCC but somehow always managed to survive the ordeal. The WUMS transmitter was rumored to have eventually been donated to a museum.


Wahoo, Nebraska, Jan. 10 1922

DEAR SIR:

Received your (CARD / LETTER) O. K. and thanks very much for the report on reception of our (PHONE / ~~SPARK~~). We transmit music every evening from 8:15 until [illegible]

Spark [illegible] co[illegible]ts o[illegible] K.W. Th[illegible] Tra[illegible]orme[illegible] Tho[illegible] Oscillation Trans., Thor. Cond., Be[illegible]wood [illegible]. W[illegible]e le[illegible]th of [illegible]ark [illegible] 175 meters.

Phone [illegible] co[illegible]ts of 10 W[illegible] set [illegible]ng [illegible] circuit. Wa[illegible]e l[illegible]th [illegible] mete[illegible] R[illegible]tion [illegible] am[illegible]

Receiv[illegible] se[illegible]onsis[illegible] of [illegible]rt W[illegible]e R[illegible]ene[illegible]ve Tuner, Long Wave Tun[illegible] us[illegible] Du[illegible] Coils, [illegible] Uni[illegible] two Step Amplifier, Magna[illegible] Loud [illegible]er.

Aerial, inverted L, 4 wires separated 2 ft, 67 ft. long, 70 ft. high at one end and 60 ft. at the other. Counterpoise ground.

Will appreciate any suggestions that you may offer.

ANDERSON RADIO STATION

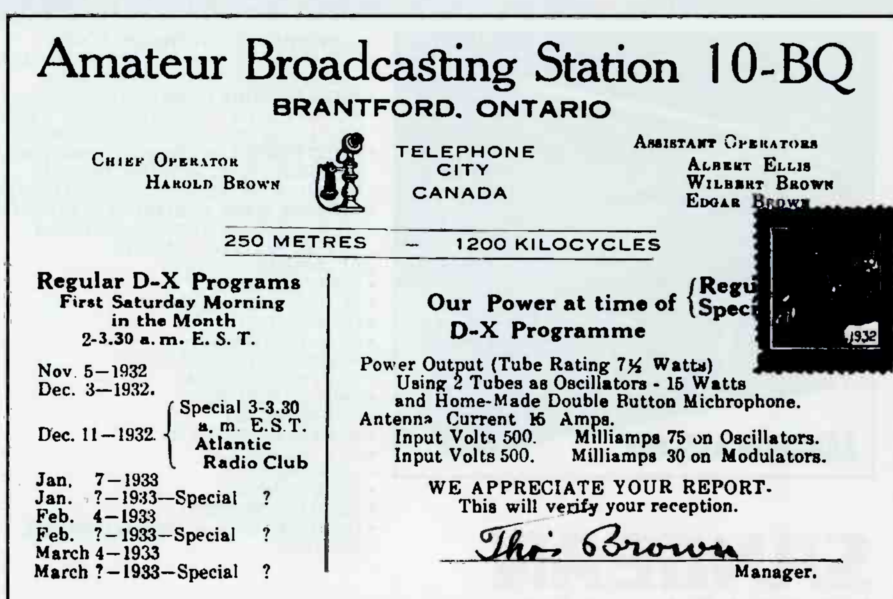
Per Roland Anderson

Roland Anderson's ham station, 9DUP, clearly stated on its 1922 QSL that the station broadcast nearly two hours of music every night with 10 watts on 1333 kHz.

These are just a couple of examples of the dozens of so-called outlaw stations that packed the mediumwave band, but also never appeared in station directories.

When it came right down to it, during the 1920s and much of the early '30s, it almost seemed as if there were nearly as many intruders operating in the mediumwave band as there were broadcasters. That only served to lend an extra dash of adventure, mystery, and interference to the hobby every time a DXer sat down.

Please pass along your old radio station photos, picture postcards showing radio stations, old radio QSLs (good photocopies are fine), station directory listings, news clippings, anecdotes, memories, and comments. Our mailing address is in care of *Pop'Comm*, and you're welcome to E-mail any comments or column ideas directly to me at <Radioville@juno.com>. See you on the road to Radioville! ■


Amateur Broadcasting Station 10-BQ

BRANTFORD, ONTARIO

CHIEF OPERATOR
HAROLD BROWN

TELEPHONE CITY CANADA

ASSISTANT OPERATORS
ALBERT ELLIS
WILBERT BROWN
EDGAR BROWN

250 METRES — 1200 KILOCYCLES

Regular D-X Programs
First Saturday Morning in the Month
2-3.30 a. m. E. S. T.

Nov. 5—1932
Dec. 3—1932.
Dec. 11—1932. { Special 3-3.30 a. m. E.S.T. Atlantic Radio Club
Jan. 7—1933
Jan. ?—1933—Special ?
Feb. 4—1933
Feb. ?—1933—Special ?
March 4—1933
March ?—1933—Special ?

Our Power at time of D-X Programme {Regu[illegible] / Spec[illegible]

Power Output (Tube Rating 7½ Watts)
Using 2 Tubes as Oscillators - 15 Watts
and Home-Made Double Button Michrophone.
Antenna Current .16 Amps.
Input Volts 500. Milliamps 75 on Oscillators.
Input Volts 500. Milliamps 30 on Modulators.

WE APPRECIATE YOUR REPORT.
This will verify your reception.

Thos Brown
Manager.

There were more than a dozen licensed amateur broadcasters in Canada until the early 1930s. Most ran less than 10 watts on 1200 kHz. The official call letters of this station were actually VE10BQ. (Courtesy Howard Kemp, Laconia, N.H.)

Your concept of the word "scanner" is obsolete.

AOR introduces Advanced Technology Receivers™

Calling an AOR Advanced Technology Receiver a "scanner" is like referring to a modern fighter aircraft as an "airplane."

AOR has long been at the forefront of receiver technology. The new AR 8200B, and the forthcoming AR 16 Wide Ranger and the limited edition AR 7000B DSP Wide Range Receiver are new concepts that redefine what is possible in wide-band multimode receivers. Discover AOR, *the serious choice in 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
- True carrier reinsertion in USB and LSB modes. Includes 3 KHz SSB filter!
- Detachable MW antenna with negative feedback
- Optional internal slot cards expand the AR 8200B capabilities. Choose from Memory Expansion (up to 4,000 memories), CTCSS Squelch & Search, Tone Eliminator, Voice Inverter and Record Audio (saves up to 20 seconds of audio)
- Tuning steps programmable in multiples of 50 Hz in all modes
- 8.33 KHz airband step is correctly supported
- Noise limiter and attenuator
- Band activity "scope" display with "save trace" capability
- Four-way side panel rocker switch allows one-hand operation
- Large display includes A and B VFO frequencies and signal strength meter
- Battery Save function with Low Battery indicator
- Operates on 12 VDC external power
- 4 AA Ni-Cd batteries supplied, also uses standard AA dry cells
- BNC antenna connector
- Wide choice of accessories

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).

CIRCLE 156 ON READER SERVICE CARD

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The Radio Connection

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

A LOOK BEHIND THE DIALS

The Shop That Time Forgot

Every collector dreams of the "Big Score" — uncovering a large stash of old radios, parts and tubes untouched and forgotten by time. Since the early 1960s, many old one-owner radio repair shops have folded up as tube technology waned. Often the contents of the old shops were stored away, and are relied on by today's collectors as a source of tubes, Rider manuals, and vintage radio parts.

Imagine a long-abandoned radio shop forgotten and suspended in time. It sits as its owner left it. Imagine further that this old shop is on the second floor of an old farmhouse, on a windswept and desolate Minnesota prairie. It has been there, unmolested and untouched, for over half a century. Here is the story behind a very unusual find, as told by *Pop'Comm* reader Gerry VanLoh.

"My longtime interest in radio was piqued when I learned of an old radio shop in an abandoned farmhouse nearby. Curiosity brought me to investigate. I became fascinated with the history of the old place and what I could imagine of the radio business in the '30s and '40s.

I learned that the farmhouse was built during the 1930s. The radio shop was in existence during those early years, but it was doing business in a nearby town until the building was torn down. The owner moved his business to the family farm, and continued operating it there for a number of years. During this time, he pursued his interest and education in electronics, as evident by the many old radio courses and textbooks found in the shop. He eventually struck out for California to work for a large company, and I'm told he often came back to the farm during the summers and for visits. He passed away in California, and since then the farm has gone unattended, and was left to the elements and time.

My wife and I decided to explore the place. The farm is now rather run down. We found that most of the original furniture and farm equipment was still there. The farmhouse window glass is long gone, and because of its age one has to be careful while inside. What was life like back then, during those long and lonely prairie winters and hot summers? Several old wood stoves supplied heat, but there was little, if any, insulation in the walls. Water was drawn from a hand-pumped well outside of the building. The radio shop was the center of activity and was on the upper level. The stairway going there is very steep and creaky, as they usually are in these old farmhouses. I wondered how someone managed to carry those old heavy consoles up those stairs.

We entered the shop. There were many old John F. Rider Trouble Shooter manuals, early ARRL ham publications, and even hand-written and unsent bills in envelopes. I carefully removed an old yellowed "Authorized Philco Service" certificate from the wall, and also discovered some early Philco service bulletins. Being a Philco buff, I was thrilled at finding these!

We found large numbers of old tubes, components and box after box of carefully stored items. There were some old Atwater Kent radios, still in nice shape, and some even older appearing RCA RADA and Freshman Masterpiece battery sets. I started digging into the boxes and jars, and immediately uncovered a stash of vintage wood knobs, just like those on some the of the early 1930s radios I've managed to collect recently. Time slipped by far too fast. Before darkness fell, I managed to shoot a number of photos and haul out a few of the boxes.

A few weeks later, we returned to explore further and salvage what we could. More Zenith and AK radios were uncovered. We found more old tubes still in boxes, some with names I had never heard of. Some of the items have been exposed to the prairie elements for many

Life on the farm in the 1930s must have been a hard and lonely experience. Neighbors were miles away, and prairie winters could be long and harsh. Note the hand-operated water pump in front of the farmhouse.

The visual imagery of the farm's old grain building. It is slowly giving way to timeless winds and the prairie elements.

This gorgeous Atwater Kent tombstone managed to withstand the ravages of time.

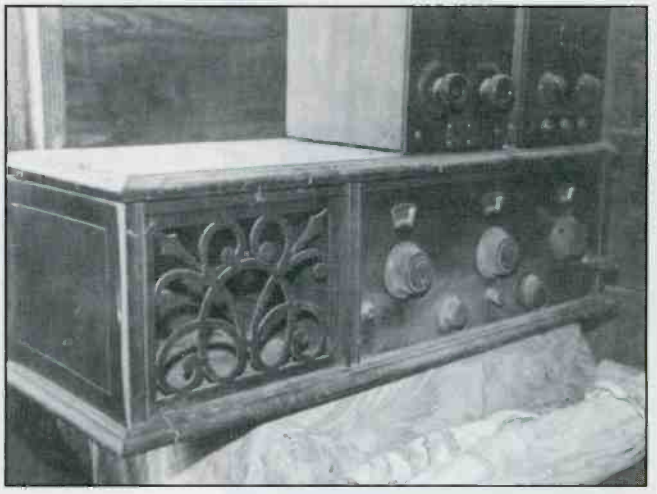
years and were damaged, but many somehow managed to survive in nice shape. While staring out of the old shop window, at the same fields and distant farms, I was back in time listening to those old radios sputtering back to life. It was time to leave for the last time. The prairie owns the house now, but I feel I know the old radio repairman, and I am somehow more attached to those old sets that are now displayed in my collection."

Gerry supplied us with over 20 photos, far too many for this column. Choosing which photos to run was a difficult task. So many interesting finds, so little room. Many of the items shown span a time from the 1920s, and judging by the 829 RF tube and other items which are of WWII surplus vintage, the shop probably was active until at least the late 1940s or early 1950s. That's almost half a century ago. Imagine a similar situation existing in any urban area of America in these times! Alas, it's not very likely.

Until rural electrification in the '40s, most farm families used battery sets, and often wind generators for charging. Radio listening time was doled out sparingly to preserve battery life. The typical farm battery set of the '30s and '40s relied on a 6-volt storage battery. The battery supplied the filament voltage, and a vibrator power pack supplied the high B+ plate voltages. Synchronous vibrators eliminated the need for rectifiers. Early farm battery sets are deemed to be less desirable by many collectors because of the difficulty in powering them. I feel they represent an important era of American farm life. For many farm families, the parlor radio was their link to the outside world. I only have one farm set in my collection and it is almost totally destroyed. I will try to feature it as a restoration project in a future column. Little of the cabinet remains, and the chas-

Stockpiled shelves in the old radio shop remain as left by the owner many years ago.

The radio shop was on the second floor, and was the center of activity in the old farmstead. These steep and rickety steps lead the way, and must have been a challenge for those carrying up larger console sets.



This early Freshman Masterpiece 1920s vintage battery set sported an internal horn speaker. This was a TRF design and is a fairly common item. Atop the Masterpiece is the rarer and much more valuable two-piece RADA 1920s battery set.

sis is in very poor shape. It will be a major undertaking. You may view more photos and find more information at Gerry's Website, <http://www.qsl.net/wa0jcv>. Gerry's E-mail address is <Vanloh@inst.augie.edu>.

Another Reader Writes . . .

Harley Ryan has these kind words: "Dear Peter, I enjoy the Radio Connection column. I am 77 years old, and started playing with radios in 1934. I had an uncle who liked to tinker with many things, and one time while I was visiting him and my grandmother, he built a few crystal sets. When I returned home to a town of about 300 people in a rural area, I managed to salvage some discarded radios from a number of junk piles. Most rural families had one place where all the junk was tossed. This gave me enough wire and parts to build some crystal sets of my own.

A great many of these old radios were battery sets. Atwater Kents were plentiful, some in almost mint condition. Also, there were various types of batteries. 1–1/2 volt telephone batteries, B batteries, and an occasional C battery. Of course, all of these were tossed out when they no longer provided the necessary power. By removing all the parts in these fine old radios, and by connecting enough batteries in series, I found I could make my own radios. This eventually helped me get a job, which I could retire from in 1985 after 41 years.

The way you restore these old radios is exactly the I would have done the job. I get very sad when I think of all the great old sets that I destroyed, but it did provide me with a good hobby and later with a good job. Keep up the good work."

Harley Ryan
Whitehall, Ohio

Radio chassis, boxes of vintage tubes, and parts were spread throughout the shop.

Harley, thank you for your letter. I enjoy hearing from "old timers" who were around in radios heyday, perhaps more so than any other letters I receive. The town I grew up in was still somewhat rural back in the late '50s. Several families shared a dump in a back field, and I remember pulling a few AKs out of the pile when I was very young. We will be doing crystal set construction and some simple one and two-tube radio construction projects, and early battery set restorations in far future columns. Perhaps it will be the impetus for some other youngster to start a career in electronics. We can only hope so. I have so much material and plans, and yet so little space and time. Until next month, 73! ■

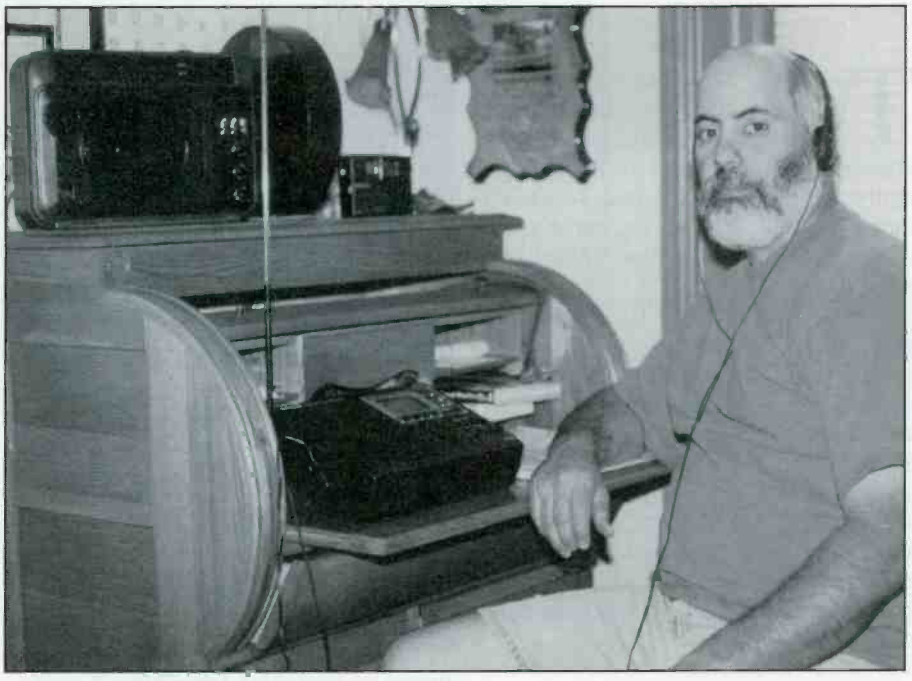
How I Got Started

Congratulations To Lawrence Paola Of New York!

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.



Lawrence Paola in upstate New York.

Our November Winner

Pop'Comm reader, Lawrence Paola of Mooers, New York says, "It was during an ice storm in January 1998 that I became interested in the radio hobby. In northern New York, ice six inches thick blanketed the region resulting in extensive damage to electrical, telephone and cable. We were without electricity for eight days. It was during the dark, silent evening hours that I realized the necessity of alternative energy sources and a good operating radio.

"Friends who spent a couple of nights brought an inexpensive multi-band radio that received shortwave. Caring for the wood stove at night, I would tune in the worldband stations and listen to exotic chatter and the variety of newscasts. After a few nights of listening, I decided to pursue two goals: Get a portable radio and more information about shortwave. My first DX radio was the GE Super Radio III. I teamed it with a Select-A-Tenna and now enjoy listening to all types of MW stations. I also have a DX-390. I find shortwave radio informative, and with the possible exception of NPR, shortwave broadcasts from the BBC, Deutsche Welle, and many other stations offer a glimpse of the world not available through our commercialized and stunted news broadcasts. As an educator, I believe this can be a valuable tool for learning about other cultures. My goal for this winter is to have an ICF-2010 and a of portable scanner. To hedge against another ice storm, a BayGen Freeplay radio will also be purchased." ■

BY GORDON WEST, WB6NOA

Radio Resources

INTERESTING THOUGHTS AND IDEAS FOR ENJOYING THE HOBBY

Scanning For Meteor Signals

Two major meteor showers are just weeks away. These showers will enable hobby radio listeners like you and me to tune in VHF stations normally well beyond normal reception range. You might even log some commercial FM and TV stations up to 1,000 miles away!

But the signals won't last long! On a good "burn," you may get FM radio reception and a distant TV signal on channels 2, 3, and 4 up to a half-minute. That would be a *good* burn. And many times all you might hear will be two or three seconds of an incoming signal. And if you are standing outside listening to your scanner, you may even have the opportunity of *seeing* the same meteor that's bringing you reflected signals from hundreds of miles away.

Try channel 11 on CB for meteor reflections.

How's Your Rock Knowledge?

There are seven relatively good meteor showers every year. There are as many as 12 more that can be counted on if we are real patient. Sometimes the showers exceed expectations, and astronomers, as well as radio operators, get more than what was expected. And sometimes a shower may come and go without almost anything being seen or heard.

Q. What two upcoming meteor showers will occur in mid-November and early December?

A. Perseids and Quadrantids
B. Lyrids and Perseids
C. Leonids and Geminids
D. Aquarids and Perseids

You should have answered C, Leonids and Geminids. If you went for Perseids, that fabulous meteor shower already took place a couple of months ago in August. The Leonids meteor shower is rated good, and begins on **November 15,** peaks on the 17th, and then dies out on the 19th. Best viewing time is bright and early in the morning just before sun up. During the day on November 17, we expect the Leonids to peak, possibly into a meteor storm posing a serious threat to orbiting satellites.

The Geminids meteor shower is the biggie — beginning **December 7**, peaking on December 14th, and then quickly fading away on December 15th. Astronomy experts are also waiting for the November Leonids, to maybe pack a terrific punch this year, and, more than likelym, next year. In fact, the little Leonids meteor shower could actually erupt into a huge meteor storm. We haven't had a meteor storm in years!

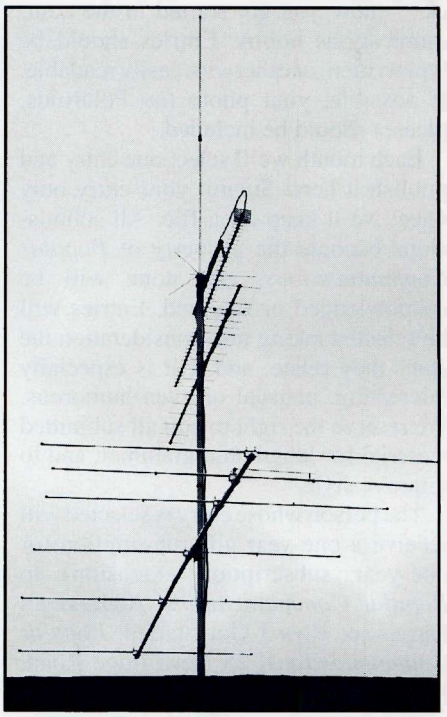
Q. Which shower will *probably* bring better radio "catches"?

A. Leonids
B. Geminids
C. They will probably be equal.

Unless Leonids turns into a storm, we suspect that Geminids will give us the most bang for the incoming buck. Meteors coming in at an incredible rate of 35 kilometers a second should be visible at the rate of about one a minute during the peak of activity. But you better get toothpicks for your eyes — some of the best viewing times are extremely late at night, or very early in the morning. We expect Leonids to give us a good "zinger" about one every five minutes.

Q. What magazine can I buy at a bookstore that will really give me the scoop on the upcoming showers?

A. *Sky & Telescope*
B. *Heavenly Watch*
C. *Star Power*
D. *Deep Impact*



The beam on the bottom is set for 50 MHz and TV channel 2 for meteor reflections.

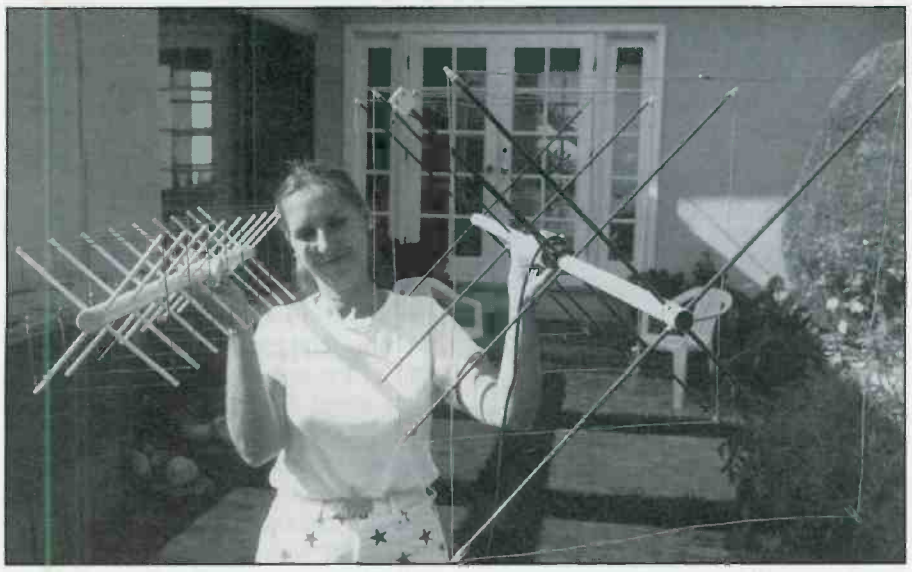
Probably the most quoted and respected magazine that publishes monthly articles about everything above is *Sky & Telescope*. You should be able to locate it at your favorite bookstore. Chances are their current issues are carrying all sorts of viewing tips on how to see the best meteor shower in your life.

The Radio Connection

When meteor debris enters the Earth's atmosphere, friction will heat it to incandescence, giving us the view of a "falling star." The term "meteor" technically refers to the streak of light, not to the actual particle itself.

Q. At what altitude do most meteors burn up?

A. Deep space



The Cubex quad on the right was tuned to TV channels 2 and 3, and the one on the left was tuned to TV channels 7 and 8.

B. 100 miles up
C. 5,000 feet

Incoming meteors entering our atmosphere begin to streak visibly at about 100 miles up. Meteors coming in from deep space are not troubled by atmospheric friction, so they approach "cold" and can only be spotted with a powerful telescope.

Incidentally, these two meteor showers always cause satellite system providers to lose a lot of sleep. It has been reported that the typical incoming meteor may be as small as a grain of sand, but can punch a hole in any satellite in its path as if it were a bullet coming out of a 22-caliber gun. Meteors and ultraviolet radiation from the sun are some of the biggest concerns for space agencies keeping track of their "birds" in the sky.

Q. What is the typical length of the ionized and incandescent trail that might be capable of returning VHF radio signals?

A. 50 feet
B. 500 feet
C. 5,000 feet
D. 10 miles plus

It takes a long, fat meteor trail to create enough ionization to reflect VHF radio signals back to Earth for a period of more than a few seconds. It's not uncommon that a good radio-reflecting meteor trail might be as long as five or 10 miles.

Q. Any trail seen can reliably produce reflected radio reception, providing it is at least 10 miles long.

A. True
B. False

Not many trails can produce reliable radio reception. The meteor trail should be perpendicular to the path of the signal, and must be at an angle where natural reflection will take place between your receiving antenna and the distant transmitting station.

And for ham operators actually exchanging communications off of the short-lived meteor trail, it's a two-way path: if you can hear another station hundreds of miles away on a spectacular meteor burn, then chances are they should hear you with about the same intensity.

Q. What are the best radio bands to receive reflections from meteor trails?

A. AM broadcast band
B. 10 MHz WWV
C. FM broadcast band
D. TV Channels 7 through 14

Some of the best reception reported by shortwave listeners and scanner radio enthusiasts occurs between 25 and 163 MHz. Great reception of radio signals depends mostly on how much power the transmitting radio system is running and their duty cycle. It has been found that 100 watts or more is about the minimum power required for scanner enthusiasts to reliably receive a signal with an outdoor multi-band ground plane antenna. If you have a bigger antenna system, chances are you may hear stronger signals.

The FM broadcast band from 88 MHz to 108 MHz is an ideal listening post for meteor scatter signals. But you need to choose a frequency that is unused in your local area. Hopefully, you will choose one that is anywhere from 400 to 700 miles away for best reception. And, while you may think that tuning around the FM dial might be a good way to grab a signal, it generally is not. Your best bet for meteor scatter reception is to buy an FM radio atlas, study the callsign and frequency of a distant FM station, and then punch that frequency into your wideband FM scanner for possible reception.

On television, you need the TV set hooked up to an outside antenna which

should be beamed in the *general* direction of the visible meteor activity in the sky. Remember that you are not receiving the incoming signal directly, but rather as a reflection. Aiming a directional TV antenna squarely at the distant station you are trying to receive via meteor scatter normally won't achieve the best results.

Q. To get guaranteed success on a first attempt, are there any tricks in dialing into a specific frequency?

A. No tricks, it's pure luck

B. Lots of tricks!

Since you're getting up before dawn to get your best reception of the upcoming meteor showers, you better choose some frequencies that you know are constantly on the air, with activity that you can immediately identify as a bonafide meteor reflection.

If you're into shortwave listening with a big long wire, try WWV or WWVH (Colorado and Hawaii) at 20 MHz. When you dial into 20 MHz, tune it in double sideband, or, if you have the capability, single sideband — upper or lower, it doesn't make a difference. Ideally, you won't hear anything in the early morning hours on WWV and WWVH on 20 MHz. And then all of a sudden, there it is, loud and clear, for about 10 to 15 seconds. You just scored your first meteor reception.

Do you live within a couple hundred miles of a major airport? If you do, see if your scanner will tune in 75 MHz, either AM or FM. Right on 75 MHz are aeronautical beacons which transmit straight up to approaching aircraft that are ready to land. You won't hear voices on it, but rather a data-type signal. Once you hear it, you won't mistake it. While your little omnidirectional ground plane could achieve results, you may wish to hook into a coax-fed, 75-ohm TV antenna, aimed toward the distant airport. A simple TV antenna temporarily hooked into your 75-MHz capable scanner could result in some terrific beacon reception that might last for as long as 10 or 15 seconds.

Your little antenna doesn't need to be high — after all, you are picking up signals from the sky. And don't worry about the mismatch of 50 ohms to 75 ohms because most scanners and shortwave receivers with a 50-ohm input can work nicely from 30 ohms to 80 ohms.

Q. The higher you go in frequency, what happens to reception capabilities?

A. Reflected signals are stronger.

B. Reflected signals are weaker.

C. Frequency makes no difference.

One broadband VHF/UHF antenna might serve both a TV and scanner for reception using this duplexer.

D. They won't exceed the maximum useable frequency.

The higher you go in frequency, the tougher it will be to capture an incoming reflection. Ham radio operators favor the 6-meter band at 50 MHz for relatively easy reception of incoming meteor scatter signals that may last up to 20 or 30 seconds. If you have a 10-meter ham station at 28 MHz, or a CB station on 27 MHz, you have an even *greater* chance to hear some exciting incoming meteor scatter signals that could last for up to 30 seconds or more. That's right. The CB band is a good spot to look, providing there is somebody at the other end of the circuit transmitting at the time of a long meteor trail.

Q. If a big meteor creates a reflection that causes radio signals to be received for 30 total seconds at 50 MHz, how long might that same trail reflect a weather station at 162.55 MHz?

A. Same amount of time

B. Much longer

C. A little shorter

D. Maybe two or three seconds

Trying to tune in the 162.550, 162.400, and 162.475 MHz weather signals via meteor scatter is only suggested if you have an outside beam antenna. Even a 2-meter ham radio beam will work OK up at this higher frequency.

How long will reception last on weather channel frequencies when you have about a 30-second burn on 50 MHz? You might get a couple of syllables! That's right. When you exceed 100 MHz, reflected signals don't last very long. If you DO have a good VHF weather reception system, turn off the squelch, and listen to the secondary channel that has no activity in your area. Just keep listening, and be patient. Every so often, you might detect a single syllable. "UR" might be all you'll hear from the word "pressure." "ABLE" might be the next syllable you hear five minutes later from the word "variable." About every minute or so, a good meteor shower should produce at least one or two syllables. If you get more than a word up at 162 MHz, consider yourself lucky!

Down on the FM broadcast band, you may be tuned into an unused FM station frequency where that station is located 600 miles away. Your antenna might be crossed dipoles in the attic. All you hear is background hiss: "... ear in Milwaukee, the weatherman says we can expect morning temperatures to...." That was it. Out of the noise comes a strong signal with about five to 10 clearly spoken words. On FM reception, the signals will instantly appear, and then slowly die off as the meteor trail dissipates. Up on the weather channels, it is instant on and instant off with maybe just a couple of syllables recovered. But those syllables are extremely strong.

Q. Where should I look in the sky for meteors?

A. It's random — take your pick.

B. Get yourself the latest issue of *Sky & Telescope*.

C. Meteors will always come in from the north.

D. Meteors will always come in from the south.

Count on seeing the visible meteor trails anywhere in the dark sky you can see clearly. The darker the sky, the better. City lights will occlude all but the very biggest of incoming meteor trails. Luckily, lights around you have no effect on the radio reception.

Astronomers will actually tell you what time of the night and early morning hours to focus your attention. Don't try binoculars because your field of view will be much too narrow. Just find a dark spot, and look up. Experts will tell you specific times and directions, but I can usually figure that out myself by going out and seeing where most of the activity is in the sky. Make sure you have good visibility down to the horizon — sometimes the activity may only be 20 or 30 degrees off of the "deck."

But don't despair if you live in a valley. All of a sudden you'll watch an overhead screamer that comes and goes with the blink of an eye.

Got your radio ready? These two upcoming meteor showers should provide visual "wows" plus some short-lived S-9 and full-quieting scanner reports. So give it a try and add one new dimension to your radio hobby. Remember, the better your outside antenna, the stronger and longer you're going to hear meteor reflections. ■

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Antennas & Things

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

SIMPLE ANTENNAS AND ACCESSORIES FOR SIGNAL IMPROVEMENT

The Dipole Blossom Antenna

One of my early antenna installations at my ham shack was a pair of half-wavelength dipoles at right angles to each other, connected together at the feedpoint. **Figure 1** shows the basic configuration in an oblique view. This view would look like a pair of right angle "vees" if viewed directly from above. Only one center insulator and one feedline are needed for this antenna.

I recall that the Blossom (as my buddy called it) had a little odd azimuthal horizontal pattern, and a very low angle of radiation. Whether you are receiving or transmitting, the angle of radiation determines the skip distance. A low angle of radiation produces very *long* skip, while a high angle of radiation produces *short* skip. The normal horizontal dipole's angle of radiation varies with the height of the antenna above ground.

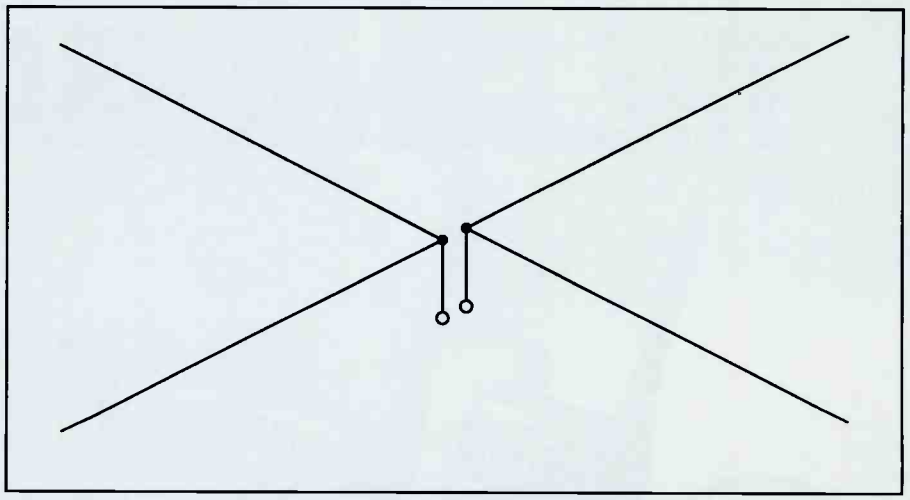


Figure 1. Basic configuration in an oblique view.

When I was recently reminded of this antenna I decided to model it to see if it was as I remembered (when you get to my age the first thing to go is the memory, and I can't forget which is the second thing to go). I use the Nittany-Scientific *Nec-Win Basic* antenna modeling software. It is based on the NEC-x numerical electromagnetic computation (which is where "NEC") comes from) calculation engine.

The Model

The antenna I modeled was a 10-MHz horizontal dipole. Each quarter wavelength element was 24 feet long, and the antenna was mounted 48 feet above ground (which is about half-wavelength). I chose the "average" Somerfield ground to get a good view.

Figure 2 shows the azimuthal or horizontal pattern. At first I expected the pattern to be four-lobed or quasi-omnidirectional, as might be expected when one combines two antennas that each have a figure-8 bidirectional pattern. The results in **Figure 2**, however, show something I had not anticipated, but did confirm the "odd" part of my recollection. The normal figure-8 azimuthal pattern for a dipole is perpendicular to the run of the wire. In **Figure 2** the wire runs from 0

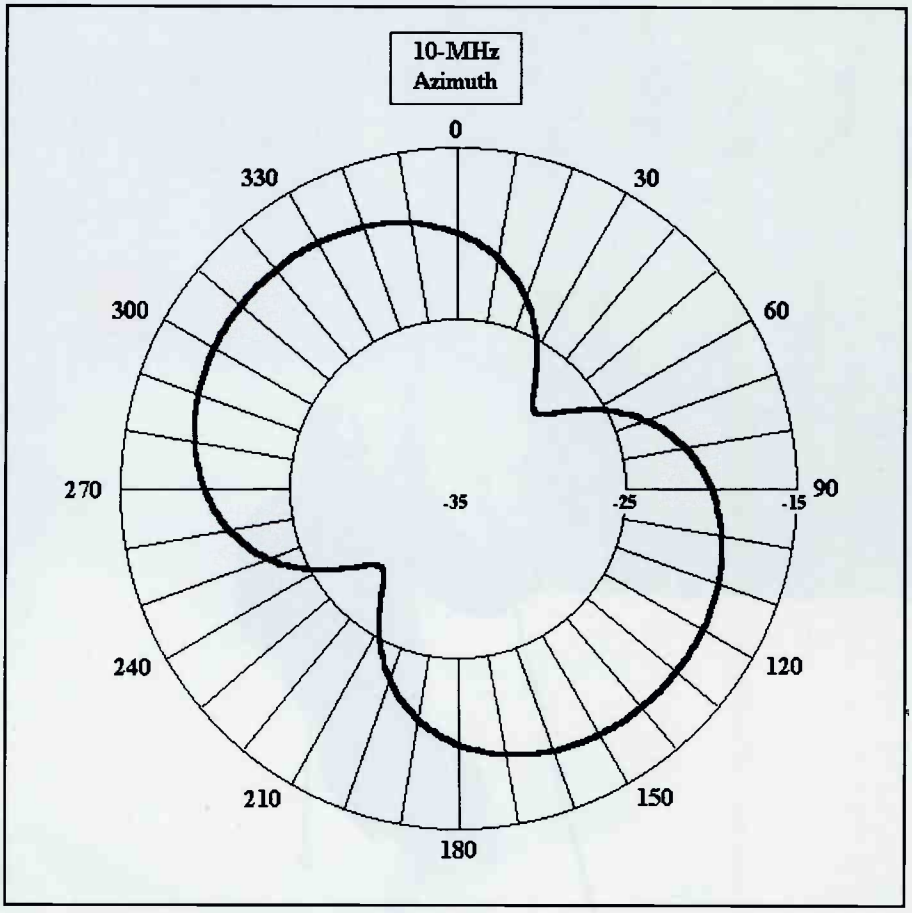


Figure 2. Azimuthal or horizontal pattern.

degrees to 180 degrees, so the two main lobes for an ordinary dipole would be expected at 90 degrees and 270 degrees (the nulls would be at 0/180 degrees).

In **Figure 2** the pattern is still a figure-8, but the main lobes are canted at a 45-degree angle off the expected direction for a dipole. If this antenna were installed in the north-south direction (0-to-180 degree wire run), then it would be most sensitive in the northwest and southeast directions, and least sensitive in the northeast and southwest directions.

The vertical or "elevation" dimension (**Figure 3**) also showed a bit of a surprise. In a regular dipole at half-wavelength above ground, the pattern has a relatively high angle of radiation. In terms of **Figure 3**, that means more of the energy is distributed in the straight up direction (0 degrees elevation). In this antenna, however, the useless "straight up" portion of the elevation pattern is pinched in, and the lobes along the horizon are pushed out. That means the antenna has a relatively low angle of radiation, similar to some vertical antennas I've seen.

The impedance of this antenna is lower than an ordinary dipole, so people using transmitters might want to use some impedance matching scheme. In the old

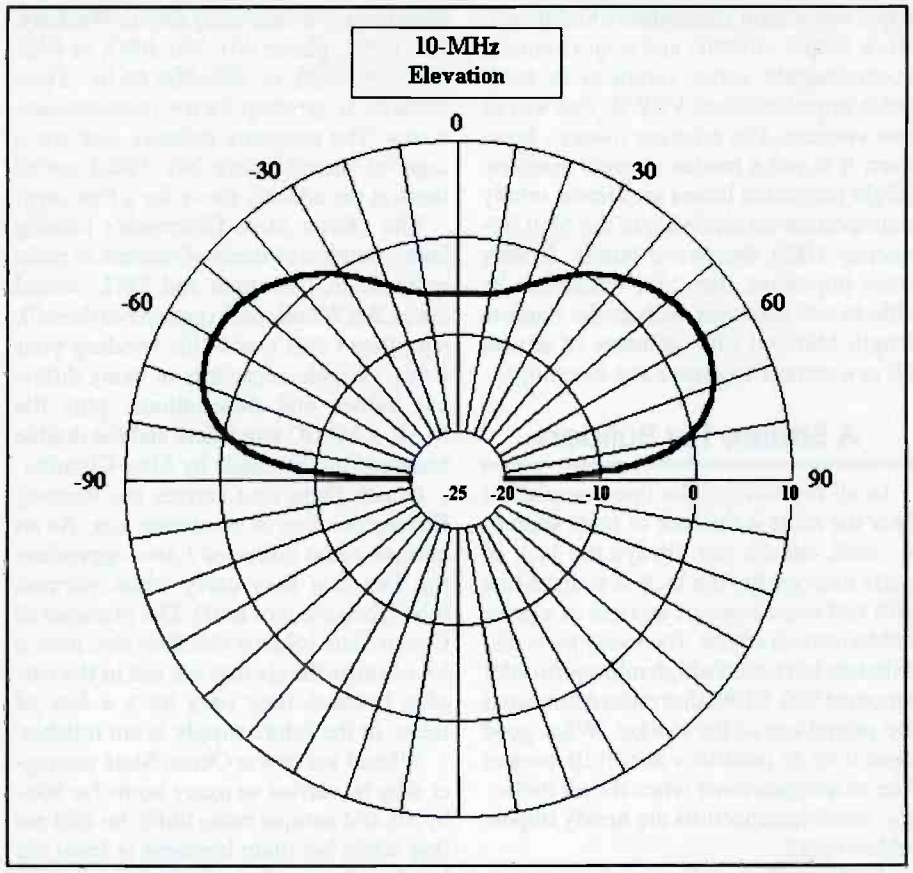


Figure 3. Here, the vertical or "elevation" dimension also showed a bit of a surprise.

days, when ham transmitters had pi-network output circuits, and could actually accommodate some variation in feedpoint impedance and VSWR, that was of less concern. For *receiver* owners, however, it is not a matter of great concern. Slight mismatch losses are almost totally unimportant on receivers in the high frequency (HF) shortwave bands. If they were important, then you would not be able to use antennas such as the random length Marconi (the mainstay of almost all newcomers to shortwave listening).

A Source For Builders

In all my writing the one complaint I hear the most is the lack of parts sources — well, maybe not always the lack of parts *sources*, but the lack of sources that will sell *one or two* of an item at a price hobbyists can afford. Too many parts distributors have such a high minimum order amount ($50, $100) that radio enthusiasts are priced out of the market. What good does it do to publish a neat little project like an antenna tuner when the air dielectric variable capacitors are nearly impossible to get?

A source I found several years ago recently issued a new catalog. Ocean State Electronics, 6 Industrial Drive, Westerly, RI, 02891; phone 401-596-3080; or FAX 401-596-3590 or 800-866-6626. Their Website is at <http://www.oselectronics.com>. The company recently sent me a copy of their Catalog No. 199. Contact them at the address above for a free copy.

The Ocean State Electronics catalog lists a number of items of interest to radio enthusiasts, both ham and SWL: toroid cores, B&W coil stock (remember those?), slug-tuned coil cores (for winding your own), variable capacitors of many different values and descriptions, plus the MAR-x MMIC amplifiers and the double balanced mixers made by Mini-Circuits.

Ocean State also carries the Ramsey Electronics line of electronic kits. As an antique radio collector I also appreciate the fact that they carry some vacuum tubes (believe it or not!). The manager of Ocean State told me that they also have a lot of other things that are not in the catalog because they only have a few of them, or the future supply is not reliable.

When I asked the Ocean State manager why he carries so many items for hobbyists and antique radio buffs, he told me that while his main business is from the local professional electronics companies, he is also a ham, hobbyist and antique radio collector himself, so he carries the things he believes we might like to buy.

Before Winter Comes

If you live anywhere in the northern tier of the lower 48 states, or Alaska, then you might want to take a hint: do some antenna maintenance now, *before* the icy winds and bad weather sets in. Go check solder connections, the antenna supports, the ropes used to hold wire antennas, guy wires on masts, and anything else you think might cause failure. If you get a failure when it's icy outside, it might be dangerous or impossible to fix it. Or, how about trying to stand on a ladder when the icy wind blows. I've done that, and it sure ain't fun! The lesson I learned: Do it in the fall, not in the winter. It's easier that way (you might also want to try installing new antennas *before* old man winter messes up your opportunities).

Connections . . .

I can be contacted at P.O. Box 1099, Falls Church, VA 22041, or via E-mail on the Internet at <carrjj@aol.com>. Remember that your antenna questions are always welcome. See you in January! ■

ScanTech

BY KEN REISS
<armadillo1@aol.com>

TRUNKING, TIPS, TECHNIQUES, AND MODS

New Life For The PRO-2006!

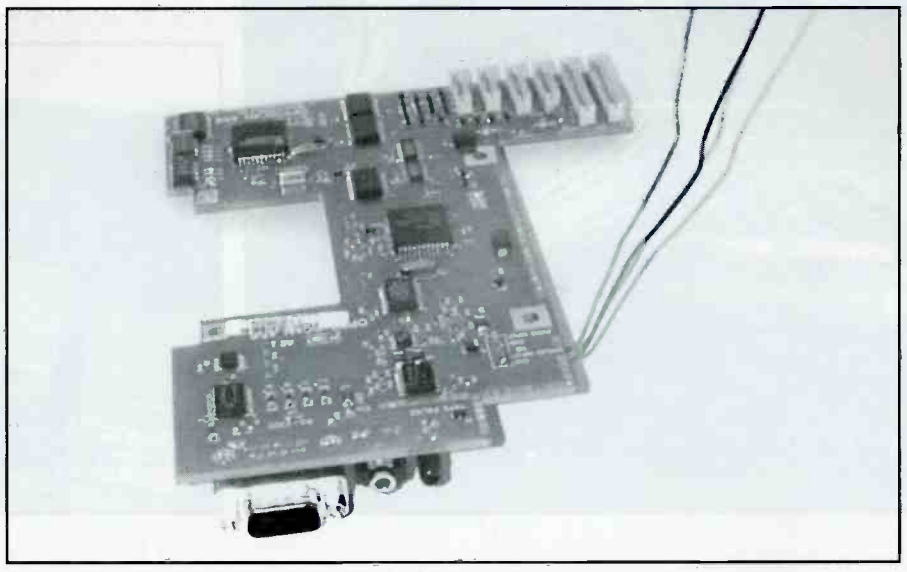
The RadioShack PRO-2006 and its older brother the 2005 are long gone, much to the dismay of many scanning enthusiasts. While they have been replaced with newer, high-tech receivers (which were also discontinued), there are many who believe the 2006 was the most bang for the buck scanner ever built. I'm not sure I could argue that, although the recent arrival of scanners with cool features like trunking, has made me slightly less addicted to the 2006.

Computer-controlled scanning has been with us for a long time, really since the mid '80s when Yaesu introduced the FRG-9600 and ICOM the R-7000, which had computer interfaces available. The FRG-9600 almost required computer control to be useful as a scanner.

Several of the early AOR base units also had computer interfaces. The problem is that all of these units were expensive, and the interface required additional hardware to operate. And, there wasn't much choice in software. There were a few pioneers who made the effort to program commercial quality stuff, but there wasn't much. The reality was that the software didn't offer all that much that you couldn't do with the stock scanner. In some cases, it just did it faster, and in others it just tied up a computer while you were using the radio.

Several months back, we defined the difference between computer *assistance* and computer *control*. Up until recently, that wasn't much of an issue, because most computer interfaces and software were really designed for computer assistance; uploading and downloading memories, scanning lists of channels and other things that the radio will do, which the computer makes easier. Not to play that down — quite the contrary, that's a very convenient feature. Being able to reprogram a receiver in two or three minutes — most of that time is lost hooking the thing up — is very desirable. More and more scanners are appearing on the market with this feature.

Even with the long track record that computer control has earned, there are still a lot of questions out there. About one-third of the letters I receive are related to computer-controlled scanners and equipment. It seems like we're just beginning to realize the potential of this wonderful tool. I have received several requests for details on what's required in the radio to make a computer-control system work. So, without further adieu, because I don't believe any further adieu is coming, here's an overview of the requirements and installation procedure for one system.

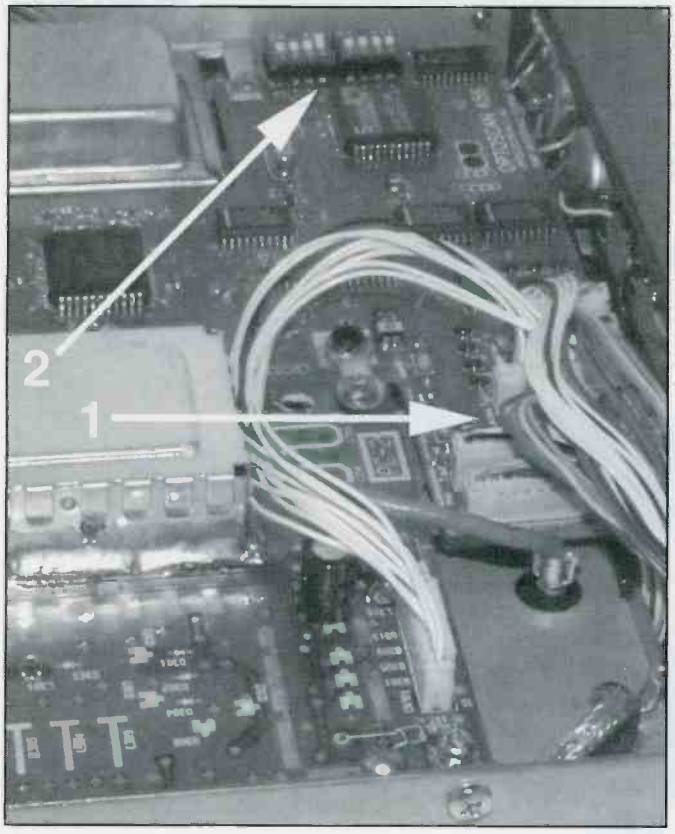


The interface board before installation. Note the wires off the right side that must be soldered for signal strength and tone decoding on the standard installation. Note that the Optoscan LITE does not have these features, and therefore no soldering is required.

In 1994, Optoelectronics announced a computer control interface for the PRO-2005 and 2006. And what an interface it was. No-solder installations were promised in the early marketing information! Even if you didn't have the radio, and had to start from scratch, here was computer control for under $1000! A breakthrough. And it is true computer control. It turns out that the OS-456 and it's newer cousin the OS-535 for the PRO-2035 and 2042 scanners do not interface with the scanner's processor, and so only offer computer control. You can not reprogram the radio with these interfaces.

It also turns out that soldering is highly recommended, but only in a couple of points for the full installation. While it is still technically possible to do a solderless installation, even Optoelectronics has revised their recommendations. If you're not comfortable with a small amount of soldering, you should look at the new OS-456 LITE interface. It can be installed without any soldering, although you'll have to destroy your battery cover to do this. We'll talk more about this later.

Actually, there is a good chance that by the time you read this, the OS-456 interface will no longer be available in its full configuration. The chip that does the tone decoding and signal strength measurements is no longer manufactured, so the original OS-456 will not be able to have these features, which is what the soldering is all about. Rest assured that there are still plenty of advantages to having a computer interface with the OS-456 LITE if you own one of these radios, or you can look to the newer scanners (PRO-



← *One of the most frequent causes of installation problems is the cable connections that must be made between the board and the radio. Also note the DIP switches above which control the speed of data transmission and CI-V settings. Most users can use the factory settings without further adjustment.*

The installed board fits nicely around the existing board on the bottom section of the radio. Also note the transformer which must be removed during installation. ↓

2042 and PRO-2035) with the OS-535 interface which has the full feature set because a different chip was used.

If you own an ICOM or AOR scanner, sit tight — we'll talk about interfacing those units in an upcoming column!

Getting The Interface Installed

You should find an owner's/installation manual with the OS-456 box. It's beyond the scope of this article to give you step-by-step instructions — besides, the instruction manual is fairly well written. Read it completely *before* you even start to take the parts out of the box.

The first step in getting ready to install the interface is to remove it from the box, and get your scanner to a convenient position. Just unplug the scanner and take it to the kitchen table or workbench, because you'll need the space to spread out. Trust me. Of course, no matter what you do, make sure you don't work on a plugged-in scanner. It could really mess up your scanner and spoil your whole day if you get zapped by the household voltage that's present in the radio. In fact, during the installation, you have to remove the transformer.

And as always, don't do this if you're uncomfortable. If, after reading this article, you don't feel comfortable and confident that you can make the installation yourself, don't. There's no sense in messing up a perfectly good day by ruining your scanner. There are lots of folks around who will do the installation for you, if you prefer.

Another word of warning is also in order here. Because you'll be removing the cables from the internal controller, and plugging them into the Optoscan interface, it is very likely that you will lose the memories programmed into your scanner. Take a few minutes and write them down, if you don't already have them stored somewhere.

As you remove the pieces from the box, let's take a minute to identify them, and set them out of harm's way for a while. We'll be coming back to all of them before too long, but we have a few other things to accomplish first, and it's frustrating to lose a cable or screw right away.

An Overview Of The Process

The OS-456 replaces the controller electronics in your scanner with an interface to allow the computer to take control of the scanner. When not in use, the OS-456 just passes the signals through to the scanner's controller and the radio operates like normal. However, when the computer comes along and says it wants control, the OS-456 interrupts the scanner controller and takes over. Because of this, there is no way for the controller/computer combination to communicate directly with the scanner controller, and therefore you cannot use the 456 interface to upload/download memories. We'll install this new controller, and then patch it in to the circuit at appropriate places.

The first step in installation is to remove the covers from both the top and bottom of the scanner. This is fairly straightforward — after the removal of the four screws watch out for the speaker wire attached to the top cover. If you follow it along, you'll find it is simply plugged into a connector on the board, and is very easy to remove.

Now, here's the first decision you'll have to make. The instructions call for removing the battery compartment from the radio (it will be replaced by the Optoscan cover) by punching a larger hole in it, or by cutting the hole larger with cutters. In either case, you will ruin the cover. This is fine, if you don't think you'll ever want to remove the Optoscan unit from the radio, but if you do, you'll

Rather than the recommended Velcro inside the radio, I chose to mount the battery on a clip outside the radio for convenience.

want to save that cover. You'll have to solder to make this happen, but if you follow the wires attached to the battery, you'll find they are relatively easy to unsolder momentarily. Make a note of which wire goes to which pad and then unsolder them. Remove the cover from that end, and then resolder the battery wires back on to the board. Make sure to get the polarity right!

The best situation is to have a completely free serial port that you can dedicate to your radio.

After you get the battery compartment removed, the instructions recommend that you relocate the battery inside the scanner with Velcro on one of the walls. I decided that I didn't want to have to open the scanner up every time the battery went dead (OK, it's only once a year, but still) and that I didn't want to have to find a new Velcro strip every time either. So, I used a RadioShack 9V battery holder (part number 270-326) and attached the battery to the outside of the radio after the procedure was completed. There is just enough room around the Optoscan cover, that goes where the battery compartment door used to be, to make the wires come out without having to drill anything. Of course, the choice is yours. The spot where the battery compartment was located is replaced with the OS-456 panel. Once installed, it looks pretty much like the factory put it there.

Following the mounting of a few screws and brackets to hold the new inter-

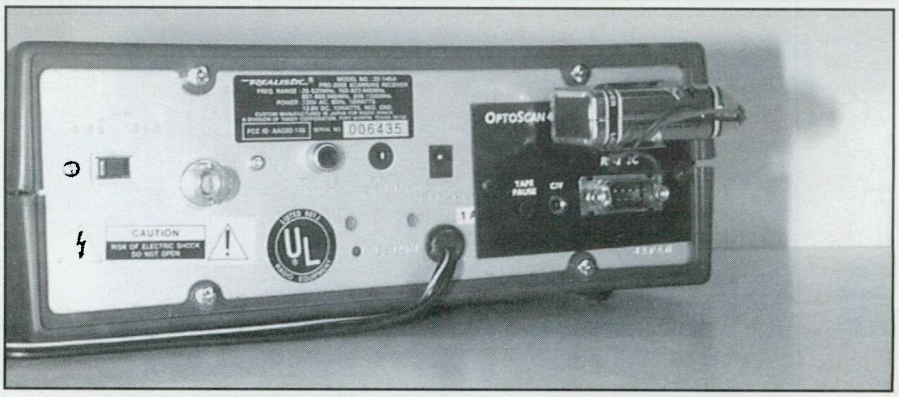
face, the next major hurdle is to get the transformer out. I have installed three OS-456 units and the transformer removal has always been the hardest part. Some of the transformer's mounting hardware may have a sealant on it, which makes getting the bolts to turn without also turning other things, difficult. This is compounded by the fact that you can't get a straight angle for the screwdriver that needs a firm hold on the bolts. On the first unit I installed, I spent nearly an hour just getting this done. It was downhill after that! It can be done, but may take some persistence.

Now we're ready to actually install the board. The only hassle with this is to take care with the transformer wires that you just finished removing. The rest of this process is very easy.

This is followed by wiring the interface into the scanner. Again, this is not a particularly difficult process, but you do have to keep the cables straight. You'll note there are three cables that have to be disconnected and reconnected. The 15-pin is the toughest, just because it has the most friction on the connector and it's hard to work out. The directions suggest that you use a small screwdriver around the edges to help pry it loose. This is exactly what I did, and it worked just fine, but you must be careful.

Also note that the other two cables are not exactly the same size. One of them is a 10-pin and the other an eight. Keep them separate. Plugging the cables back into the sockets is a main source of trouble with this installation. The connectors supplied on the cables are just a little tight going into the sockets. Also, the cables supplied in the kit use all white wires except for pin one which is designated with a black wire. The cables used in the manufacture of the radio are colored, with a brown wire on the end on the two smaller cables, and a pink one on the larger one. This makes for a nice consistent color code — not! Just check and recheck all your connections.

If you are installing a full OS-456 unit, the next step involves some soldering. If you are installing an Optoscan LITE, you won't have these wires to worry about. There are two wires which come out of the interface and are passed through to the other side of the scanner. One is used for discriminator audio, so that the unit can decode CTCSS (tone squelch), DCS (digital code squelch) and DTMF (touch tones). The second, called the "analog wire" is used to read the signal strength of the received signal and pass it on to the software running the interface.



The completed installation is very professional, except for that battery hanging out of the back. When the computer is disconnected, the scanner functions as normal.

There are several ways to make these connections. The manual calls for them to be soldered onto the appropriate spots, which is probably the most reliable and long term solution. However, if you have a complete aversion to soldering, you can purchase mini-test clips from RadioShack and attach them to the end of the wires. In the case of the analog wire, that may be the easiest way to make the connection. It's a tight connection for soldering. Take your time and determine what's going to work best for you.

That's it! Check your connections (Optoelectronics's technical folks tell me that the biggest cause of failure in the installations is poor cable connections.) Once you're satisfied that everything is correct, and connected firmly, you're ready to reassemble the scanner. Put the covers back on and plug it in!

The first thing that you should check is that the radio is functioning normally. You'll probably have to reprogram a few memories to make sure that it's scanning properly, and that it receives a signal appropriately. I used the National Weather Service broadcast in one of my test channels to make sure that it would stop during the scan. Of course, you can reprogram the original channels that were there, or you may decide to take the opportunity to have a special "non-computer" mixture of memories. After all, you'll be doing most of your scanning with the computer attached from now on.

Testing The Waters

The next step is to hook the new interface to a computer, and see if it does its stuff. You'll need an open serial or com port on your computer, and you'll need to know which port that is. Most of the time ,they are labeled COM 1 and COM 2, or sometimes A and B. On any new computer this will be a 9-pin jack, but some of the older machines have a 25-pin jack, or one of each. You may need an adapter if this is the case. If your computer uses a serial port for the mouse, check to see if you have a second port free, or if you should consider adding a serial interface card to the computer. It's not going to be convenient to have to switch a major device like the mouse in and out of your system in order to use the radio. The best situation is to have a completely free serial port that you can dedicate to your radio.

Also, keep in mind that if you have an internal modem, it too is considered a serial port by the computer, which is why some of the newer machines label them A and B. If your modem is considered COM 1, then the B serial port is COM 2, and the A serial port is probably COM 3. In this situation, your modem and COM 3 likely share an IRQ setting. (If you don't know what this is, don't panic. It may not matter because you won't likely be using the modem and the radio at the same time. If you are, then you'll get what's called an IRQ conflict, in which case you'll get a quick education on what IRQs are as you try to resolve that problem. You'll need to be able to tell the software which COM port to go looking for a radio.

In theory, hooking up to the computer should be the easiest part, but in practice it can prove to be the most frustrating, for two reasons. First, software vendors tell me that a lot of the calls they get for support are related to cables — the computer to scanner connection. It's just a serial port, but some computers have software hidden in there that doesn't let the serial port behave the way it should. It's also possible that you can have driver problems with software. Or you think it's COM 1, but it's really COMM 3, as you can see by the example above.

The second reason for the frustration is

the software itself. There is a learning curve with any new piece of software that you might decide to use. Take your time and *walk through the manual.* If the manual has a "getting started" section, or something similar, you might want to read through that before you even install the interface. Just being able to enter a few frequencies, and get the radio scanning for a test ,can be a challenge if you haven't worked with scanning software.

Choosing software is a lot like buying gloves. What fits perfectly for one person is likely to be a totally unacceptable color for another. It's easy to be impressed by flashy graphics and bells and whistles, but remember that you're going to be using this program quite a bit. You want something that makes sense to you, and has the computer control features you're after in the first place. Look around a bit. Several of them have demos available for download on the Internet, some do not. If possible, before you even buy the interface, I'd recommend that you do some digging on software. If you have friends that use an Optoscan, find out what they use. Perhaps they can even send you frequency files for your city. That will save you a lot of work.

Software Anyone?

I hate to even open the topic, but I'm sure if I don't, I'll be getting letters. I'll probably get letters because I did and didn't pick the right stuff. However, it's a necessary part of the system, so here goes.

What do I recommend? Well, it depends on what you want it to do. Remember that gloves analogy above? If you're looking for simple but powerful, Probe is my first choice. The reason for that is simply that I can run Probe on an older computer without having to tie up my main machine. Older 286 and 386 machines, which make great scanner controllers are available all over the place for less than $100 — sometimes a lot less. Look around! Just because it's simple, don't sell it short. This DOS program packs a lot of great features including several that a scanner by itself can't do. Probe is also unmatched in tone squelch control, an important factor in my particular situation. Information on Probe is available from <Datafiles@aol.com>, or on the Web courtesy of Steve Hancock's PRO-2006 Monitoring Post Page at <http://home.ptd.net/~pro2006>.

If you want windows and graphics, then ScanStar is my second choice. It's a great program and not difficult to use once you learn how to navigate. It does, however, require a fair amount of horsepower from the computer to be able to run, and the desire to have a full time scanner/computer combination is what keeps me from using ScanStar more. Information on ScanStar is available from <scanstar@scanstar.com>, or on the Web at <http://www.scanstar.com>, or from many dealers.

If your favorite program is not on my list, it's not because I don't like it. It's just because these are the two that I choose to use with an Optoscan. When we talk about other radios, I'll have a different list, again, depending on functions.

I have installed three OS-456 units and the transformer has always been the hardest part....The rest of this process is very easy.

Scanning The Mail

Charles Biebl from Baltimore, Maryland wrote in with a couple of Trunk Tracker questions. "What is the difference between the Trunk Tracker by Uniden and the one made by RadioShack?"

Not much, if you're talking about the handhelds. The PRO-90 from RadioShack has a slightly different case and different knobs. Beyond that, they are identical as far as I can determine.

If you're talking about the base units, that's a slightly different story. The PRO-2050 is essentially a PRO-90 in a bigger box. The 2050 would probably make a good mobile unit, if you're so inclined. The Uniden BC-895 is slightly larger than the 2050, has a computer interface and S-meter functions.

Charles also asks us "What plans are there to make future models of the Trunk Tracker by Uniden and RadioShack easier to use for blind persons such as myself?"

All of the Trunk Trackers to date are actually made by Uniden, as they hold the patent on the process. Regarding plans to make them more "friendly" for blind users, I'm not aware of any. I do believe that something could probably be done with a voice synthesizer and the BC-895's computer interface, since it can report its activities back to the computer, and would not require any further modification to the scanner.

Your Input Needed

"ScanTech" is your column! What would you like to see? Got questions, or things you always wondered about? Send them in! And I'm always looking for your photos of your shack, public safety vehicles or other things you think a scanner nut might be interested in seeing! If you send a Self Addressed, Stamped Envelope, I'll return pictures to you as soon as possible. You can reach me via E-mail at <armadillo1@aol.com>, or at Ken Reiss, 11406 Gravois Rd. #309, St. Louis, MO 63126. Until next time, good listening!■

BY EDWARD TEACH

The Pirate's Den

FOCUS ON FREE RADIO BROADCASTING

Good Audio, Bad Audio, And Even A Rock Version Of The National Anthem

The regular mail has been a little screwy over the past month so we don't have the full complement of reports from the usual suspects this time. Thank goodness for E-mail! So here are this month's pirate loggings.

Radio Clandestine, 6954.25 USB at 0231 with nice-sounding audio and a program featuring many canned IDs. Strong. (Al Quaglieri, NC)

Rock Radio, 6954.96 USB at 0446, heard well with inane drivel and bad audio. (Quaglieri, NC)

Echo Alpha, 6955.02 USB at 0213 to 0223 with incredibly stupid program with annoying voice extolling the virtues of Echo Alpha. (Quaglieri, NC)

Radio Metallica Worldwide, 6955, with King Crimson and Pink Floyd program with Dr. T and Sandman heard on various occasions, i.e. 2250 to 2315 sign-off; 0140 to 0205 sign-off; 1305 to past 1336 and also around 1955. Still another time heard at 0035 to past 0115 with what may have been a repeat program. (Lee Silvi, OH)

Up Against the Wall Radio, 6955 at 0021 with an old program. Gave the Wellsville address. (Silvi, OH)

Jerry Rigged Radio, 6957 at 0145 to 0203 with Louis Armstrong, Glenn Miller and others. (Silvi, OH)

Radio Animal (tentative) on **6955** at 2313. Believe I heard Radio Animal ID. Started out strong but then severe fading. (Silvi, OH)

Radio Nonsense, 6955 at 0004 to 0030 with their usual format. (Silvi, OH)

Radio Amazonia, 6955 at 0049 to 0145 — a relay broadcast. (Silvi, OH)

Voice of the Runaway Maharishi, 6951 (approximate), heard at 0035 to 0045. Hard to pinpoint the frequency which might have been as low as 6949. (Silvi, OH)

Free Dylan Experience, 6955 USB at 0258 to 0316 with music; calling "Jo Mamma" and "Shadow." Announced the Providence mail drop. (Silvi, OH)

WUNH, 6955 SSB at 0152 with '40s music, sitar music, Elvis-style and '50s rock. Sudden fade at 0227. Announced thProvidenc address. Also heard at 0123 with music and ID. Off at 0132. (Dave Jeffery, NY) Heard with ID at 0400. (Tim Taylor, PA)

Radio Butterfly, 6955 SSB at 0234 with rock and ID. (Jeffery, NY)

The Real Radio Three, 6950 at 0216 with hard rock and ID as "The Real Radio Three — we don't play that Barney crap!" They requested that log reports be sent to the ACE club's newsletter. Off at 0240. (Jeffery, NY)

Reefer Madness Radio, 6955 SSB at 0133 with reggae music, ID, with talk about drug use in Canada and funny anti-drug messages. They also had a parody about pot smoking and another one about the U.S. Army (Jeffery, NY)

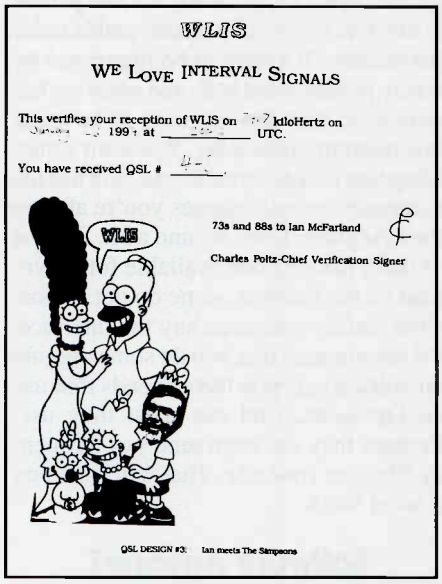
WREC — Radio Free East Coast, 6955 SSB at 0144 with rock music and funny commercials. Off at 0150. Also heard at 0232 with rock, including a rock version of the national anthem, ID, then off at 0251 after announcing the Belfast and Blue Ridge Summit addresses. (Jeffery, NY)

Take It Easy Radio, 6955 SSB at 0311 with a number by the Talking Heads ("Slippery People"), another tune "I'm Already Gone" and sign-off at 0317. (Tim Taylor, PA)

Mystery Radio, 6955 SSB with sign-off around 0337. (Taylor, PA)

WLIS, 6955 SSB — I heard a ham mention (at 2052) that WLIS had been on earlier, so I just missed this one on a Sunday afternoon. (Taylor, PA)

WLIQ, 6955 SSB, ID and Providence address given at 2141. Then Beatles tune "Don't Want to Leave Her Now." Then "Over the Rainbow, an Elton John number, more addresses and off at 2207.



WLIS must be one of the longer-running pirates. This QSL is a few years old.

Unidentified, 6955 at 0005 to 0039 close. Many, many station IDs spliced together, including WFIM, WXYZ, KFBQ, WKBC and many others, followed by a couple of songs until sign-off. (Silvi, OH)

Unidentified station on **6955** heard at 2230 with non-stop Beach Boys music. Off suddenly at 2232 with no announcements. A similar thing heard at 2335 with surfer and reggae music. No announcer or ID. (Jeffery, NY)

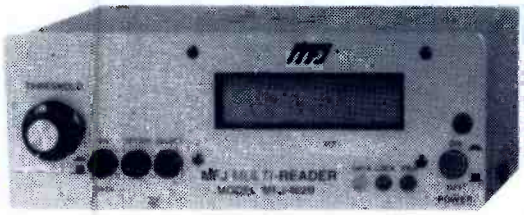
Unidentified, 6955 USB at 1408 with continuous hard rock. Gone by 1413. (Jeffery, NY)

I haven't listed a few other unidentifieds because there wasn't enough program content to do any good.

That's it for this go-round. Hey, don't let up on your time at the radio — there's lots of pirate activity going on! I always appreciate your reports so keep 'em coming. I'd also appreciate receiving copies of your pirate QSLs for use as illustrations in the column. ■

Tap into *secret* Shortwave Signals

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



MFJ-462B **$179.95** **Plug** this self-contained MFJ MultiReader™ into your shortwave receiver's earphone jack.

Then *watch* mysterious chrips, 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 commerical, military, diplomatic, weather, aeronautical, maritime and amateur traffic . . . traffic your friends can't read -- unless they have a decoder.

Eavesdrop on the World

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

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 .

High Performance Modem

MFJ's high performance *phaselock loop* modem consistently gives you solid copy -- even with weak signals buried in noise. New threshold control minimizes noise interference -- greatly 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. 5¼x2½x5¼ inches.

No Matter What Warranty

You get MFJ's famous one year *No Matter What*™ *unconditional* warranty. That means we will repair or replace your *MFJ MultiReader*™ (at our option) *no matter what* for a full year.

Try it for 30 Days

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.

Super Active Antenna

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

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

Receives strong, clear signals from all over the world. 20dB attenuator, gain control, ON LED. Switch two receivers and aux. or active antenna. 6x3x5 in. remote has 54 inch whip, 50 ft. coax. 3x2x4 in. 12 VDC or 110 VAC with MFJ-1312, $12.95.

$129.95 MFJ-1024

Indoor Active Antenna

MFJ-1020B **$79.95**

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, $12.95.

Compact Active Antenna

MFJ-1022 **$39.95**

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, $12.95. 3⅛x1¼x4 in.

Eliminate power line noise!

MFJ-1026 **$169.95**

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 **$99.95**

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, $12.95.

Dual Tunable Audio Filter

MFJ-752C **$99.95**

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 **$69.95**

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, $12.95.

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

MFJ-1214PC **$149.95**

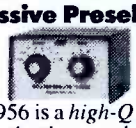
Use your computer and radio to receive and display *brilliant full color* FAX news photos and incredible WeFAX weather maps. Also RTTY, ASCII and Morse code.

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 **$39.95**



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 **$99.95**

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.

MFJ-38 **$16.95**

MFJ 12/24 Hour LCD Clocks

MFJ-107B **$9.95**

MFJ-108B **$19.95** MFJ-105C **$19.95**

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 **$59.95**

MFJ-1702C **$21.95**

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 **$59.95***kit*
MFJ-8100W **$79.95***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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MFJ . . . the world leader in shortwave accessories

Pop'Comm's World Band Tuning Tips

November 1998

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

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

UTC	Freq.	Station/Country	Notes
0000	5770	Radio Miskut, Nicaragua	SS
0000	9580	Radio Yugoslavia	
0000	9810	Radio Budapest, Hungary	
0000	11815	Radio Gaucha, Brazil	PP
0030	5950	Radio Vilnius, Lithuania, via Germany	
0030	6055	VOIRI, Iran	
0030	6725	Radio Satelite, Peru	SSW
0030	7115	Radio Yugoslavia	
0030	7345	Radio Prague, Czech Republic	SS/EE
0030	9855	Radio Vilnius, Lithuania, via Germany	
0050	6010	RAI, Italy	
0100	5637	Radio Peru	SS
0100	5930	Radio Slovakia Int'l, Slovak Rep.	
0100	9580	Radio Budapest, Hungary	
0100	9615	Voice of Islamic Republic of Iran	
0100	9737	Radio Nacional, Paraguay	SS
0100	11710	RAE, Argentina	
0100	11780	Radio Nacional do Amazonia, Brazil	PP
0100	17675	Radio New Zealand Int'l	
0130	6212	Radio Tirana, Albania	
0130	7160	Radio Tirana, Albania	
0145	11910	Vatican Radio	SS
0200	4819	La Voz Evangelica, Honduras	SS
0200	4885	Radio Clube do Para, Brazil	PP
0200	4940	Radio Amazonas, Venezuela	SS
0200	5010	Esculas Radiofonicas Populares, Ecuador	SS
0200	6155	Radio Romania Int'l	
0200	7450	Voice of Greece	GG/EE
0200	7465	Radio Norway Int'l	NN/EE
0200	9780	YLE - Radio Finland	
0200	11720	Radio Bulgaria	
0230	9605	Vatican Radio	FF
0230	9655	Radio Austria Int'l	
0230	9765	RDP, Portugal	PP
0230	15140	HCJB, Ecuador	SS
0230	15380	Radio Romania Int'l	
0300	3300	Radio Cultural, Guatemala	SS
0300	4835	Radio Tezulutlan, Guatemala	SS
0300	4980	Ecos del Torbes, Venezuela	SS
0300	5975	BBC, via Antigua	
0300	6260	Voice of Greece	Greek/EE
0300	7110	Radio Ethiopia	Amharic
0300	9345	Radio Prague, Czech Republic	
0300	9655	Voice of Turkey	
0300	9690	China Radio Int'l via Spain	
0300	9745	HCJB, Ecuador	
0300	11665	Radio Sweden	Swedish
0300	11785	Radio Iraq Int'l	EE
0300	17705	Voice of Turkey	
0300	17780	KWHR, Hawaii	
0300	17825	Radio Japan	
0330	4828	Zimbabwe Broadcasting Corporation	
0330	4960	Radio Cima, Dominican Republic	SS
0330	7250	Voice of Vietnam, via Russia	
0330	7500	Radio Moldova Int'l, via Romania	
0330	9475	Radio Sweden	
0330	9820	Far East Bdcstg. Assn., Seychelles	var. langs.
0330	11675	Radio Kuwait	AA
0330	15240	Radio Australia	
0330	15615	Reshet Bet home service, Israel	HH
0330	15635	Australian Defence Forces Radio	
0400	4919	Radio Quito, Ecuador	SS
0400	4930	Radio Internacional, Honduras	SS
0400	6265	Zambia Nationala Broadcasting Corp	
0400	9435	Kol Israel	
0400	9730	China Radio Int'l, via French Guiana	
0430	6115	Radio Union, Peru	SS
0500	4850	RTV Cameroon	FF
0500	5030	Adventist World Radio, Costa Rica	
0500	5077	Caracol, Colombia	SS
0500	7255	Voice of Nigeria	
0500	7270	RTV Gabonaise, Gabon	FF
0500	7520	Radio Bulgaria	
0500	7645	Kol Israel	
0500	9525	Channel Africa	
0500	9790	Radio France Int'l	FF

UTC	Freq.	Station/Country	Notes
0530	7155	La Voix du Sahel, Niger	FF
0530	11900	Channel Africa	
0600	5025	Radio Rebelde, Cuba	SS
0600	5047	RT Togolaise, Togo	FF
0600	11860	Swiss Radio Int'l	
0600	12005	RTV Tunisienne, Tunisia	AA
0630	3290	Guyana Broadcasting Corp.	
0630	6015	Radio Austria Int'l, via Canada	
0700	6070	CFRX/CFRB, Canada	
0700	11625	Radio Norway Int'l	
0800	5865	HCJB, Ecuador	
0800	11880	Radio Australia	
0900	4765	Radio Rural, Brazil	PP
0900	4890	NBC, Papua New Guinea	
0900	6185	Radio Educacion, Mexico	SS/EE
0900	9580	Radio Australia	
0900	11890	Voz Cristiana, Chile	SS/EE
0930	4875	Radio Roraima, Brazil	PP
0930	9700	Radio New Zealand	
0930	9710	Radio Australia	Pidgin
0930	9809	Radio Kiribati	Ee/vern.
0930	11635	Far East Broadcasting Corp., Philippines	
1000	3220	HCJB, Ecuador	SS Quechua
1000	4824	La Voz de la Selva, Peru	SS
1000	4830	Radio Tachira, Venezuela	SS
1000	4995	Radio Andina, Peru	SS
1000	6130	CHNX, Canada	
1000	6937	Yunan People's Bc Station China	various langs.
1000	9475	Far East Broadcasting Corp., Philippines	CC
1000	9795	Radio New Zealand	
1000	9865	Trans World Radio, Guam	
1030	3280	La Voz del Napo, Ecuador	SS
1030	4748	Radio Huanta 2000, Peru	SS
1030	4779	Radio Oriental, Ecuador	SS
1030	4790	Radio Atlantida, Peru	SS
1030	5020	Solomon Is. Broadcasting Corp.	
1030	7935	CPBS-1, China	CC
1030	11715	Radio Korea Int'l	
1100	3260	Radio Madang, Papua New Guinea	Pidgin
1100	3325	Radio Maya Barillas, Guatemala	vern
1100	5055	Faro del Caribe, Costa Rica	SS
1100	5522	Radio Sudamerica, Peru	SS
1100	5981	Radio Chasqui, Peru	SS
1100	6120	Radio Japan, via Canada	
1100	6150	KNLS, Alaska	RR
1100	9385	KHBI, Saipan	
1100	9515	Radio Novas de Paz, Brazil	PP
1100	9540	Radio Nacional, Venezuela	SS
1100	9865	Radio Sweden	
1100	11660	KCBS, North Korea	KK
1100	11760	Radio Republik Indonesia	II
1130	4000	Radio Republik Indonesia, Sualwesi	II
1130	9845	Voice of Russia	Mongolian
1200	9495	KWHR, Hawaii	
1200	9760	Voice of America via Philippines	
1200	12085	Voice of Mongolia	EE/others
1230	6150	Radio Singapore Int'l	
1230	7130	Radio Taipei Int'l	
1230	9640	Radio Canada Int'l	
1230	9885	Radio Thailand	
1230	15185	Voice of Turkey	
1230	17630	Africa Number One, Gabon	FF
1300	11705	Radio Japan/NHK	JJ
1300	11745	Radio Taipei Int'l	CC; via WYFR
1300	17745	Radio Romania Int'l	
1330	5930	Radio Netherlands via Russia	DD
1330	9840	Voice of Vietnam	
1330	11690	Radio Jordan	
1330	15395	UAE Radio, Dubai, UAE	
1330	17775	Radio Tashkent, Uzbekistan	
1400	11600	Far East Broadcasting Assn., Seychelles	
1400	13580	Radio Prague, Czech Republic	
1400	21645	Radio France Int'l	SS
1420	15125	Radio Republik Indonesia	II
1430	9520	Radio Veritas Asia, Philippines	
1430	15160	Broadcasting Svc. of Kingdom of Saudi Arabia	AA
1500	10330	All India Radio	Hindi
1500	21551	Radio Vision Cristina, Chile	EE/SS
1600	11570	Radio Pakistan	
1600	12125	Voice of Hope, via Georgia Republic	
1630	11805	Radio Oman	AA
1630	11815	Radio Exterior de Espana	SS
1630	13675	UAE Radio. Dubai, UAE	
1700	12135	Adventist World Radio, via S. Africa	Af. langs.
1700	15084	VOIRI, Iran	Farsi
1730	15475	Africa Number One, Gabon	FF
1730	15570	Vatican Radio	
1800	11625	Vatican Radio	unk. lang.
1800	11990	Radio Kuwait	
1800	15345	RTV Morocaine, Morocco	AA
1830	12050	Radio Ukraine Int'l	
1900	11734	Radio Tanzania-Zanzibar	Swahili
1900	13690	Merlin Network One, England	
1900	15120	Voice of Nigeria	various langs.
1900	17860	Deutsche Welle, Germany, via Rwanda	GG
1930	11402	Icelandic National Bdcstg. Service	Icelandic
2000	11590	Merlin Network One, England	
2000	11715	Radio Algiers Int'l, Algeria	
2000	17735	HCJB, Ecuador	
2030	6285	Voice of Hope, via Georgia Republic	
2030	9770	UAE Radio. Dubai, UAE	
2030	13715	Radio Havana Cuba	
2030	15415	Radio Jamahiriya, Libya	AA
2100	9855	Radio Kuwait	AA
2130	6035	Voice of America via Sao Tome	
2200	7170	Radio TV du Senegal	FF
2200	7225	RTT, Tunisia	AA
2200	13760	Radio Pyongyang, North Korea	
2200	15600	Radio Taipei Int'l, via WYFR	
2215	7105	Cyprus Broadcasting Corporation	weekends
2230	9650	Rdif. Guineenne, Guinea	FF
2300	6135	Voice of Turkey	
2300	9485	Radio Bulgaria	
2300	9725	Adventist World Radio, Costa Rica	
2300	13680	Radio Havana Cuba	
2330	6020	Radio Netherlands	
2330	9925	Croatian Radio via Germany	

Product Parade

BY HAROLD ORT AND R.L. SLATTERY

REVIEW OF NEW, INTERESTING AND USEFUL PRODUCTS

Future Scanning Systems Upgrades RadioMax

Future Scanning Systems' Windows™ based software allowing PCs to control receivers, scanners and audio tape recorders has been recently improved. The improvements include support for the Uniden BC895XLT TrunkTracker™, more extensive database file support for formats such as Betty Bearcat and Mr. Scanner files (up to five million records per file), higher resolution and faster graphic zooming of spectrums, duplicate frequency detection-lockout, plus 10 user-programmable audio alarms.

RadioMax controls radios by AOR, ICOM, RadioShack/OptoElectronics, Lowe, and Uniden according to their news release. The program is available directly from Future Scanning for $45 including shipping in the USA. To order, or for more information, call Future Scanning Systems at 918-335-3318 or write to them at 6105 SE Nowata Road, Bartlesville, OK 74006. More information, and a functional evaluation version of the software is available on their Website at <http://www.futurescanning.com>.

MFJ's New Deluxe ClearTone™ Amplified Communications Speaker

MFJ announced availability of their new 1-watt amplified speaker for QRPers, base station HT users, or for requiring more volume. The speaker has a three-inch speaker and its level is adjustable from barely audible to high volume. The MFJ news release says the volume will "blow you out of the room."

Constructed in an all-metal cabinet with rubber feet and vinyl clad cover, the unit measures (HWD) 3 1/2 x 1 3/4 x 1/2 inches. It has an on/off button and includes a free mono-to-mono cable for connection to your rig. It's powered by a

The new MFJ Enterprises, Inc. Deluxe ClearTone™ Speaker is available for $39.95.

9-volt battery (not included) or 110 Vac with the optional MFJ-1312B ($12.95).

The new Deluxe ClearTone™ speaker from MFJ costs $39.95 and is available from MFJ by calling 800-647-1800 or faxing 601-323-6551. You can also E-mail them at <mfj@mfjenterprises.com>. Be sure to visit their Website at <http://www.mfjenterprises.com>.

SolarVerter™ Makes Portable, Plug-In Power Available For First Time

The first completely portable indoor/outdoor solar power unit for business and consumers has been introduced by Patrick Technologies, Inc. SolarVerter™ polycrystalline panels can be located in the sun to power any portable radio, cassette player, CD player, cellular telephone, electronic toy or small television. The panel instantly converts sunlight or incandescent light into electric power enabling these electronic products to operate without batteries or AC current.

Daniel P. Dietzler, President of Patrick Technologies, Inc. said, "Until now, the technology used in our SolarVerter was available only as built-in parts or in the form of large fixed panels. SolarVerter™ puts this innovative space age technology into the hands of business users and consumers in a portable, versatile way like never before." The company's news release said, " . . . using SolarVerter™ whenever possible complements rechargeable battery use and conserves batteries for times when consumers really need them; outdoors or at night or in places where incandescent lighting is not available. Using a patent pending DC jack adapter supplied with the product . . . it can also be used to charge rechargeable batteries without removing them from the radio or other electronic device."

The panels are available in several sizes by calling toll-free, 888-858-2801 or by visiting the company's Web site at <http://www.solarverter.com>. Because the power supply required to run a cassette player or CD player is greater than that required to operate a radio, there are several model sizes. Units range in price from the radio-only model at $24.99 to a unit the size of a license plate which will operate almost any portable electronic product. Additional DC jack adapter kits are available at the suggested retail price of $4.99.

SolarVerter™ from Patrick Technologies, Inc.

Accessory cords are also sold which enable multiple panels to be connected in parallel or series to increase power output for higher voltage or power demands.

Patrick Technologies, Inc., an Illinois corporation, was formed in 1996 to develop and distribute technology-based, environmentally safe products worldwide. It is an expansion of Patrick Engineering, Inc, founded in 1979 by Daniel P. Dietzler. The solar panel products are guaranteed under normal use and service for a period of one year from date of purchase. ■

The Ham Column

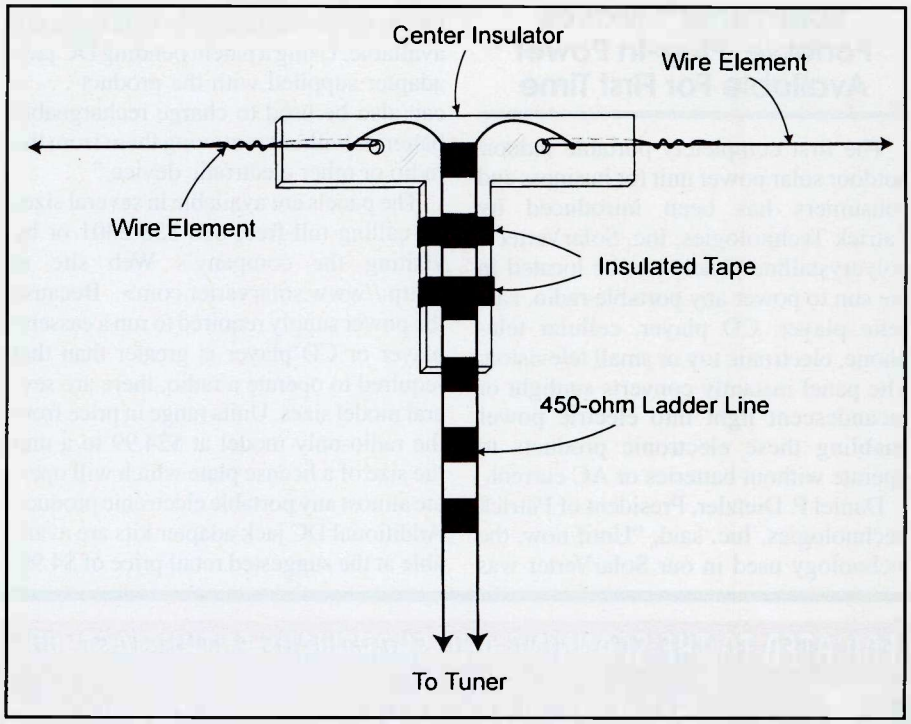
BY KIRK KLEINSCHMIDT, NTØZ

GETTING STARTED AS A RADIO AMATEUR

Climb The Ladder To Antenna Success!

Beginning hams often dream of huge antenna farms and acres of sky-high towers spiked with beams, quads and a few non-rotating, yet awe-inspiring fixed antennas for the low bands. These dream stations almost always have their own Caribbean islands, and enough RF hardware to make their own propagation if the ionosphere doesn't cooperate. Reality, however, often presents a different picture — and a different operating environment. Most hams live in average-size houses on too-small city lots. No beams, no towers, no runs, hits or errors! If we're lucky, we have a couple of well-placed trees to serve as reasonable skyhooks. If not, a vertical, sometimes known as an antenna that performs equally poorly in all directions, may be our only option.

Usually, however, some type of multiband wire antenna goes up as a compromise. They've been used for years and everyone seems to have at least one, right? Some swear by them, while others swear at them. Their performance is really up and down, but it's hard to argue with tradition. Or is it?



Our center-fed dipole uses two equal-length elements (wires) fed with 450-ohm ladder line. A plexiglass center insulator provides extra support for the feed point and the ladder line, which might break without reinforcement. This is one multiband antenna that can really put out a healthy signal. It's worth a second look! See the text for details.

The traditional multiband dipole is fed with a random length of 50-ohm coax that's tweaked into submission by an antenna tuner. Conventional wisdom says to put up as much wire as possible, and let the tuner worry about matching the load on various bands. Even on bands where the antenna's SWR is quite high, and a lot of energy is reflected back and forth between the tuner and the antenna, *some* RF energy will be radiated. Gooch's Paradox, explained to me by former ARRL staffer and "Ham Column" author Dave Newkirk, simply states, "RF's gotta go somewhere." And indeed, it does. But it doesn't have to go *anywhere* in an elegant and useful fashion! In the high SWR conditions often found in typical multiband, tuner-fed dipoles, Gooch's Paradox might as well read, "RF's gotta heat the feed line!" For example, a 66-foot non-resonant dipole fed with 50 feet of high-quality, low-loss coaxial cable will tune up on all bands, 40 through 10 meters. Tuning on some ham bands will be touchy, but you *can* work stations, DX included.

But how much power is being wasted because of high SWR? The manufacturer's data sheet says our cable has 1.5 dB of loss per 100 feet at 100 MHz (loss increases with cable length and frequency). We're using only 50 feet with an upper frequency limit of 30 MHz, so our losses due to SWR mismatches should be minimal, right? Wrong. Those loss figures are for matched, resonant antennas. With high SWR values, a lot of power (sometimes most of your power), can be lost between your antenna and tuner — even with a low SWR between your rig and tuner. As we'll see, losses increase in proportion to SWR, too. A 3-dB loss represents a 50 percent reduction in transmitted signal strength!

On 40 meters, our 66-foot dipole is a great match, and the antenna system wastes only about 0.2 dB. Not bad! On 15 meters, an odd harmonic of 40 meters, the match is also pretty good, sporting an acceptable 0.8 dB loss. On 80 meters, however, feedline losses approach 14 dB. And on 160 meters, losses total a staggering 27 dB! If we start with a typical 100 W output, we'll radiate about 3 W on 80 meters and less than a half a watt on 160! No wonder your actual mileage may vary!

One way to reduce the feedline losses experienced while using multiband, non-resonant antennas is to ditch our "traditional" coaxial feed line and replace it with ladder line, which is even more traditional! As shown in the figure, 450-ohm ladder line - parallel conductors separated by a plastic, ladder-like insulating material replaces the coax we previously used to feed our dipole. Ladder line, also

known as "450-ohm balanced line," was the norm in the days before coaxial cable (an unbalanced line). It may not be as convenient as coaxial cable, but when used with an antenna tuner designed to handle ladder line (most are), feedline losses for our 66-foot dipole stay blissfully below 0.3 dB on all bands, 40 through 10 meters! On 80 and 160 meters — big trouble spots when fed with coax — losses total 1.5 and 8.5 dB, respectively. That's a really *tremendous* improvement!

Details

If ladder line was a magic cure-all, of course, we'd never use coax. For best overall performance, a few ladder line tips are in order.

• When attaching balanced feeders to houses, structures and towers, be sure to keep the ladder line several inches away from metal (or metal-containing) objects.

• Be sure your antenna tuner has a sufficient voltage rating. Tuning antennas with high feedline SWRs can create *very* high RF voltages inside your tuner. Resulting arcs and sparks can damage expensive equipment (especially on bands with the highest SWRs).

• If arcing occurs, reduce your transmitter power output, or get a tuner with beefy components. Using a 1 kW tuner (with balanced feeder outputs) with your 100 W transceiver *isn't* excessive.

• Water, ice and snow can affect (unbalance) ladder line. Keep things clear for best results.

• If left flapping in the breeze, the soldered connection between your ladder line feeders, and your dipole wires will probably fatigue and break rather quickly. Be sure to reinforce the junction with electrical tape, etc.

• Ladder line can be hard to find. If your local ham store doesn't stock it, check the ham magazines for wire and cable suppliers. Some ops — especially QRPers — sometimes use 300-ohm TV twin-lead instead of 450-ohm line. It's a true balanced line, but reduced feeder spacing and lower-capacity insulation doesn't always produce acceptable results.

The Bottom Line

If you're suffering from antenna restrictions of any type, a balanced feedline can provide an excellent compromise between convenience and cost. Simply install the longest center-fed dipole that's practical, (make each side the same length) and feed it with enough ladder line to comfortably reach your station. And don't worry about feed line length. Some hams use 500-foot runs of 450-ohm line and laugh at the losses (which, when installed correctly, are practically microscopic). With a decent tuner (the beefier the better), you'll put out a good signal on a variety of bands. Go to it!

Send your questions, comments and QSLs to me at "The Ham Column," *Popular Communications*, 25 Newbridge Road, Hicksville, NY 11801. And send along your photo while you're at it. See you next month! 73. ■

CB Scene

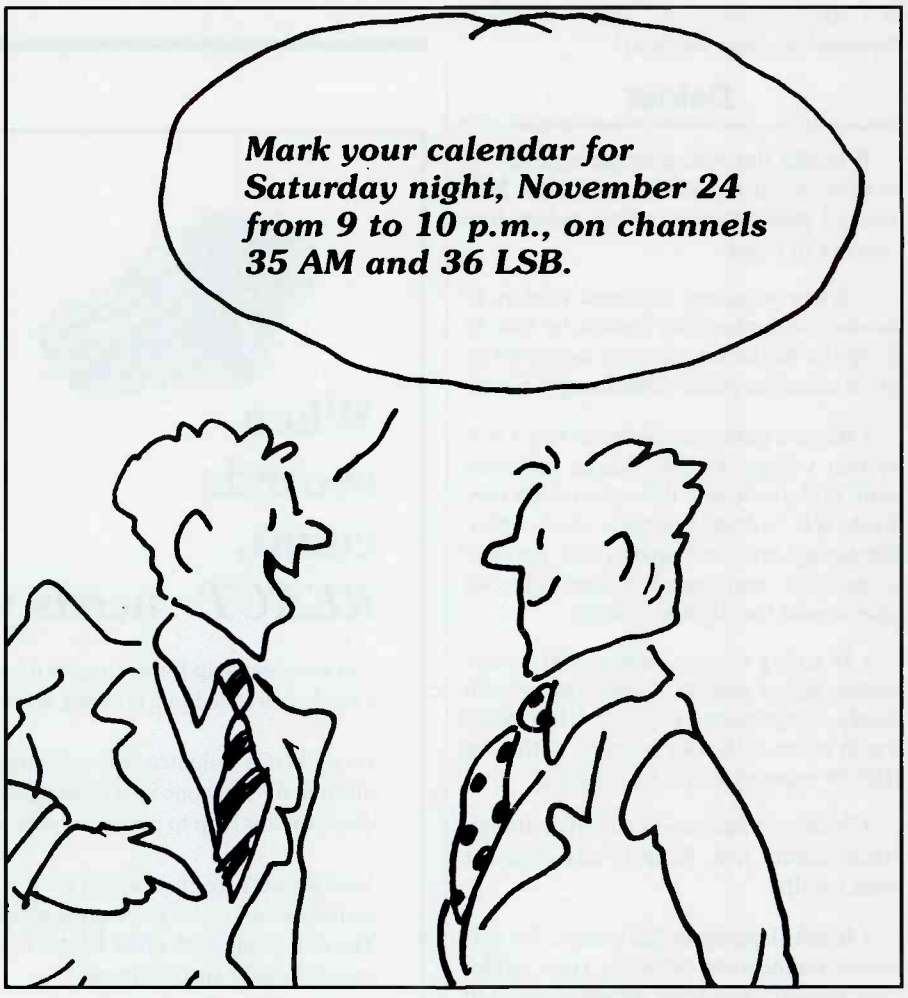
27-MHz COMMUNICATIONS ACTIVITIES

BY ED BARNAT
<Edbarnat@global2000.net>

Let's Talk: Planning For Success

Ahhh, November. The days are turning cooler and the nights are growing longer. Fall and winter are typically the best times of the year to enjoy talking on our radios. It doesn't matter if your "base station" setup is in the house or out in the mobile, you and your on-air neighbors will have more time to snuggle up to that ol' CB and make a few contacts. So, to help ensure a season full of good contacts and better conversations, let's make a date. We'll call it a mixer. Let's have a planned day, time, and channel where folks who want to make some new contacts and renew a few old ones can meet on the radio. Mark your calendar for Saturday night, November 24 from 9 to 10 p.m., on channels 35 AM and 36 LSB. Plan on being there, and plan on succeeding!

"In order to communicate, two or more operators have to be in range, they have to be on the radio at the same time, they have to be on the same channel, and each has to know the other is there."



What Is Success?

Let's face it, the real measure of a successful operators is not how loud his station is, or how much it cost, or how high the antenna is, or how far he can transmit. All those things are just easy cop outs! They are just cheap substitutes for true radio success. No, there are only two *real measures* of success on the radio: the number of people you talk with and how well you converse with them.

What's that, you say? You can't find anyone to talk to? And even if you could, you wouldn't know what to talk about? Well guess what, you are not alone. Actually, most of us have the very same problem. That is why we need a plan.

You don't think that all the folks looking for "radio checks" and "10-36s" (time checks) really want to know if their rigs and clocks are working, do you? Heck no! Most of them just want to talk to somebody but don't know how to find anybody or what to say once they do. They don't have a plan (some of them don't have a clue), but on November 24, we do! It doesn't matter if you are a novice or a seasoned operator. Most of us find it difficult to find new people to talk to on the radio. Sure, some people can talk to anyone, anytime, about anything for hours. If you listen around the band long enough, you are sure to find a few who can talk to nobody about absolutely nothing forever!

Occasionally, one of my neighbors can be heard on the radio having prolonged conversations with his dog! I don't know about you, but I am not ready for that, at least not yet. That's why I am planning on doing something about it, and so should you.

Why Plan?

When you think about it, the problems we face are few, actually—just two. First is finding someone to talk to and second, finding something to talk about. The first, finding someone to talk to, is the easiest to solve. The second, finding something to talk about, is a little tougher. In both cases, a little advanced planning can help.

Planning your radio contacts helps overcome four major obstacles: space,

time, frequency, and awareness. In order to communicate, two or more operators have to be in range, they have to be on the radio at the same time, they have to be on the same channel, and each has to know the other is there. Now I know that sounds pretty obvious, but I point them out because all four conditions have to be met if our attempt to connect is to be successful. When you consider how easy it is for any one of these conditions to be off, even just a little, it is easy to see why it is so hard to connect. By working planned contacts, you can increase the number of operators on a specified channel at a specific time, thereby increasing everyone's chances to succeed.

So, starting a little before 9 p.m. on Saturday November 24, go to channel 35 AM, and, if you have a sideband rig, the lower side of channel 36. Listen to see if the channel is in use. If it is, get a break and explain to them that you will be listening and why. Next, especially if the channel you'll be listening to is busy, do a little band scanning. Try to find a couple of quiet channels that you can move to if you connect and want to talk to your contact. If the activity on 35 or 36 is "less than friendly" you may need to find a suitable alternate channel for your entire operation.

Quiet Channels

Starting at 9 p.m. sharp, if the channel is not in use, key up and say something like "C.Q. Mixer," or "(Your name, handle or callsign) listening" or "Hello, is anyone there?"

The idea is to make your presence known. If you don't say anything, nobody will know you are listening. Listen for a couple of minutes. If you don't hear anyone, repeat your call every couple of minutes until you do or till 10 p.m., whichever comes first. If your radio is sideband equipped, call alternately on both 35 AM and 36 LSB. Be patient, be polite, and above all, be persistent.

Busy Channels

What if channel 35 AM or 36 LSB is busy in your area that night? Maybe it is an active home channel or there is already a planned activity, such as a net already going on. First, let them know that you're there and why. Invite them to participate. If they accept the invitation, great! You have made a few instant contacts and allies in your quest for new ones!

What if they don't want to participate?

Pick another channel. If you had planned on working channel 35, find a quiet or cooperative one below, and as close as possible to 35. If you were planning to work 36 LSB, find a quiet or cooperative LSB channel above, and as close as possible to 36.

If the folks on your original channel (35 or 36 LSB) were friendly, but just unwilling or unable to participate, ask them to direct anyone else looking for the mixer to your alternate.

Hostile Channels

No doubt, some of us will find that either or both channels 35 and 36 LSB are busy the night of November 24. A few might even find their occupants not only uncooperative, but down right hostile. In those cases, they are best avoided. Find a suitable nearby alternate frequency and work it instead.

Contact!

With any luck at all, some of us are going to connect! When you do, log your contacts. This will give you something to start a conversation with and a few notes to help make future connections. Include their ID, location, time and channel where contact was made, as well as their usual time and channel of operation.

If the channel was busy, or becomes busy, temporarily move to a suitable nearby frequency. Check the original channel occasionally for new arrivals. As you talk, be sure to leave a short pause, say two to three seconds, between transmissions. This not only provides a convenient place for others wishing to use the channel to ask for it, but will also encourage others to join your conversation.

What To Talk About

After your initial contact, radio check, and log questions, what should you talk about? There is no easy answer, but here are a few thoughts to consider. The key to being a good conversationalist is being a good listener. Ask questions. Do you have a computer? Ever seen a UFO? Do you think that there is life after death? Who did you vote for in the last election? Keep in mind that you are talking in a public area. Picture a town meeting, church hall, or other public meeting place. You don't know who is listening, so try not to be intentionally offensive. Keep your conversation clean and be prepared to disagree agreeably.

Beyond that, anything goes. Let us do away with the old taboos. Let's get real and interesting. I was always told that we shouldn't talk about politics or religion, the two most influential areas of life. As a result, most radio conversations have evolved to revolve around sex and radios. Neither of which makes for very good conversations, at least not for long.

When the topic gets stuck on radios, I quickly get bored, then drowsy, and, before long, I shut off the radio and head for the bedroom. Same thing happens when sex is the main topic, well at least sort of. If I don't immediately get offended and turn the radio off, I eventually get excited, turn the radio off and head for the bedroom. Either way, the conversations end with me turning off the radio and going to bed.

It's Sunday, November 25 — Success?

Well, how did you do? Make any new contacts? Renew any old ones? Have any good conversations? Get in more trouble than you care to admit? Whatever the outcome, if you participated in the mixer, I would like to know how you did. Drop me a note or E-mail. Tell me about your experience, how many contacts you made and what you talked about. I'll be issuing up to 10 (suitable for filing) certificates (drawn at random) to qualified participants. So, be sure to include your snail mail address.

Legislative Update

As I write this column in mid-August, Congress has already adjourned for the summer. Legislation that would allow local enforcement of certain FCC CB regulations has passed the Senate. Similar legislation, HR 2612, is pending in the House. It could become an amendment to HR 3888 (anti-slamming bill). HR 3888 was worked on and amended on August 6. So far, there's no mention of CB radio. We will have to be very vigilant when Congress reconvenes for the fall session on September 9, about the time you receive this issue of *Pop'Comm!*

Well, that's it from here. Thanks for writing me here at the magazine or via the Internet where my address is <Edbarnat @global2000.net>. And as always, if you can — especially on November 24 — catch me on the radio! 73, — Ed

The Old CB Shack

BY DON PATRICK

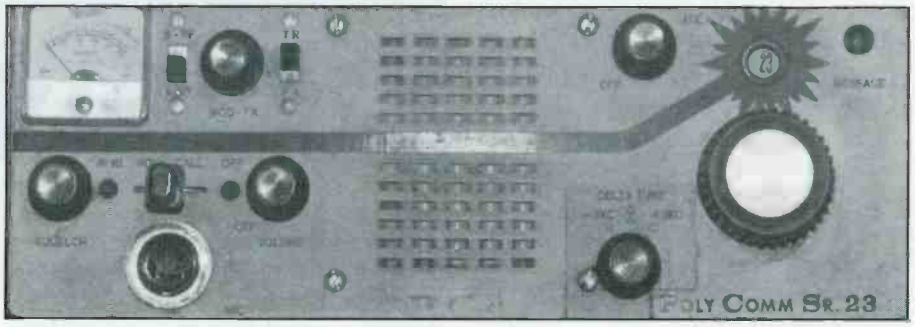
GIVING LIFE TO YESTERDAY'S RELICS

Checking Out The Poly Comm 23 And SR 23

Good Grief! You're holding the November issue in your hands! Where has the year gone? Would you like to be confused? Bear with me for a moment as there is a point concerning CB radios I want to make. You are holding the November issue, but due to the lead time required to do all the set-up in printing a magazine like *Popular Communications*, it is the last week of July as I am writing this article. Also, this week I received the September issue of *Pop'Comm* in the mail. "The Old CB Shack" columns are in every other issue, so our next one will be in the January 1999 issue. Therefore, if I wish to send you a Christmas greeting, I will have to put such in this issue, correct? But wait, the January issue will be sent in October? Just to be on the safe side, I will send Christmas greetings in both issues! *Merry Christmas and Happy New Year to all.*

Just as you often don't know how many months earlier an article in a magazine was written, many times you have no idea what company built your CB radio. Do you have a Midland or Cobra current model CB? To the best of my knowledge, neither company has ever *built* a CB radio! They both (and most other brands, also) are models made by a company like Maxon Electronics, but with their own name and model number on them. Sometimes they have the controls or meter placed differently or some other minor change to make it unique to them. That same radio may be sold to RadioShack/Tandy and others, too. This was also true in the days of the tube units and original transistorized units. USL (United Science Labs) and Lafayette shared the same model. They looked different on the outside, but were identical on the inside.

This can be very helpful to you when trying to find service information on an old CB radio. More than once, I have used this to enable me to repair a radio. There is a semi-source of some of this cross-over data plus other useful service information on over 1,000 models. I have looked the *Green Book* over carefully and can only partially recommend it. While it has a lot of information, the layout is not easy to use and is very confusing. However, with diligence, you can dig out information that you might not find otherwise. The author of the book says that he is re-doing it, hoping to correct its weakness, but, in the meantime, it is as it is. My suggestion is that if you need service information on a specific radio that is available from Sams, they'd be your best source, but if you can't locate a Sams at the library, then the *Green Book* may save the day. It costs $25 plus freight. You can order it from Ken's Electronics at (616) 345-4609.

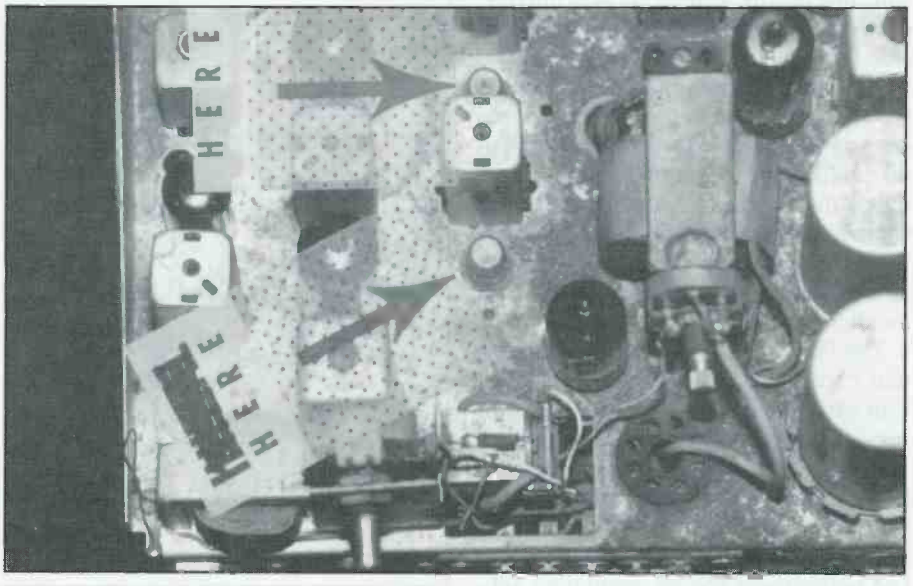


The front panel of a Poly Comm SR 23.

This month we are going to examine the Polytronics Poly Comm SR 23 and SR 23. I have received a number of requests to cover the Poly 23 since we did a re-build on the Poly Comm G-series mobile. As I stated before, I feel that the Poly Comm mobiles (the late model G and N) and the Poly Comm 23 CB radios were the best CB radios ever built. While their transmitters were only average, the receivers were *extraordinary* and never equaled for combined sensitivity and selectivity.

The Polytronics Way

Sensitivity is the ability to hear or pick-up weak signals, and *selectivity* is being



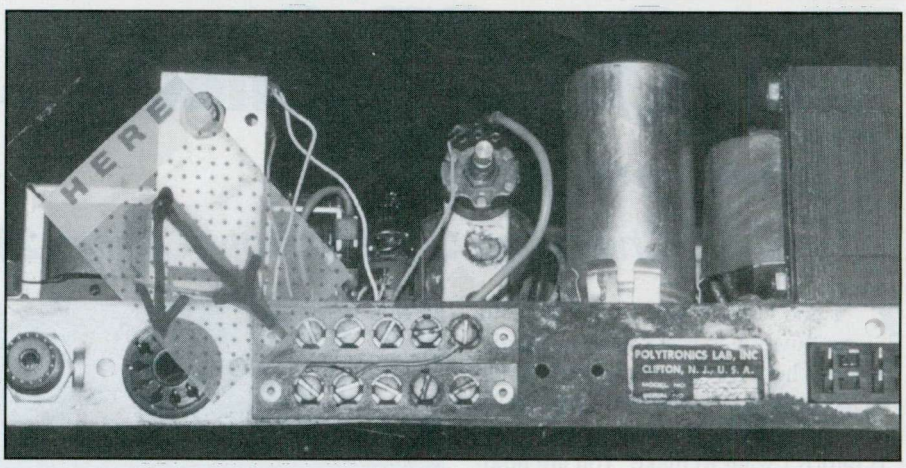
The two nuvistors.

able to receive the channel you are tuned to and not the channel on either side of it. It is easy to do either one well, but it is very difficult to do both at the same time. Polytronics Labs spared no expense in design or quality of components to achieve this goal. They eliminated image interference by using dual conversion with a 6 MHz first IF and 455 kHz second IF. The receiver has 16 tuned stages, and, when all was said and done, it was able to pick out just one channel to the exclusion of those on either side far better than any other radio on the market.

One factor that limits the ability of any receiver to hear a weak signal is the noise generated within its own RF amplifier and mixer stages, generally called thermal noise, or hiss. One of the last advancements made in tubes was the development of the "nuvistor." When you first see one, you will not think it is a tube since it is made of metal, not glass. It is also very small! I mean really small, about one-half of the size of a sewing thimble. The Poly 23 used two of them in its receiver as the RF amplifier and the first mixer stage. This enabled them to make a receiver with unheard of sensitivity due to such a low noise figure in the front end of the receiver.

If you can't hear them, you cannot talk to them no matter how good your transmitter or the other person's transmitter. You and the station you are trying to talk with might be using beams and illegal power levels, and talking 30 miles apart, but when the fellow three houses away on the next channel comes on, and he drowns out your other station with what we call "bleed-over." Even if you don't have someone nearby, you do get skip interference on your channel and those on either side. With many radios of yesteryear and today, you are receiving three channels at the same time (the one you want and the ones on either side). Two of the most popular units made were very poor in selectivity: the Johnson Messenger I and the General series of units. There were others just as bad, but these were the most popular. We called them "catfish radios," all mouth and no ears!

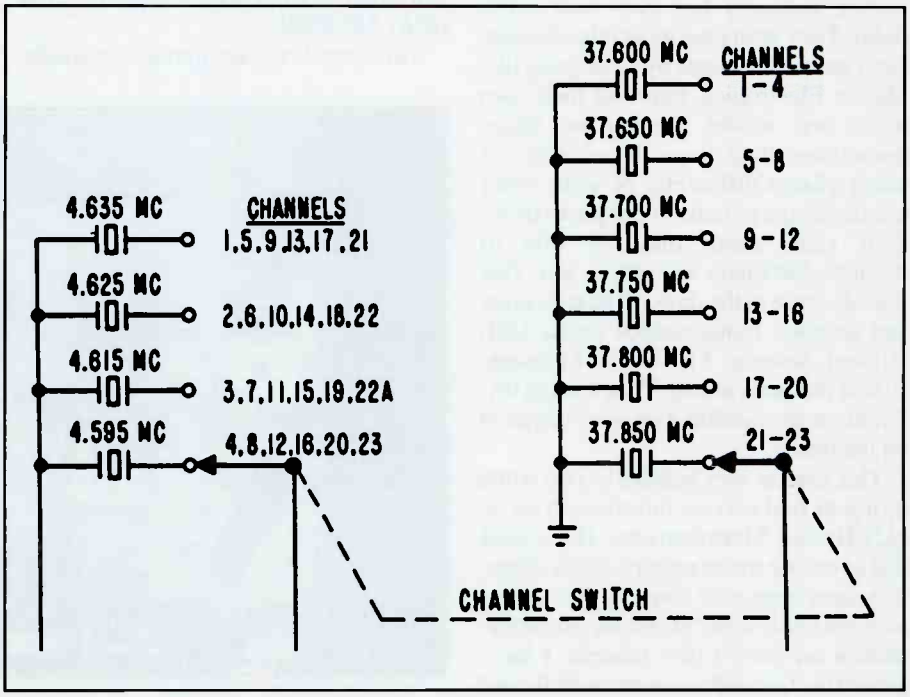
The Poly 23 and SR 23 were the same unit except that the SR 23 had the Poly Call system built in — commercial two-way radio and CB share each channel with other users. In an office, you cannot have a radio making noise with other companies communications coming over it, disrupting your business. So business FM radios use a special continuous subaudible tone system to turn off the receiver until a signal is received which has a certain special, very low frequency and low-level tone along with the voice. An incoming signal with that special tone opens up the receiver and is heard. The exact system cannot be used on a CB radio because CB uses AM (amplitude modulation) instead of FM (frequency modulation). But with skip signals plus local traffic, we get a lot of unwanted noise and conversations over our radios.



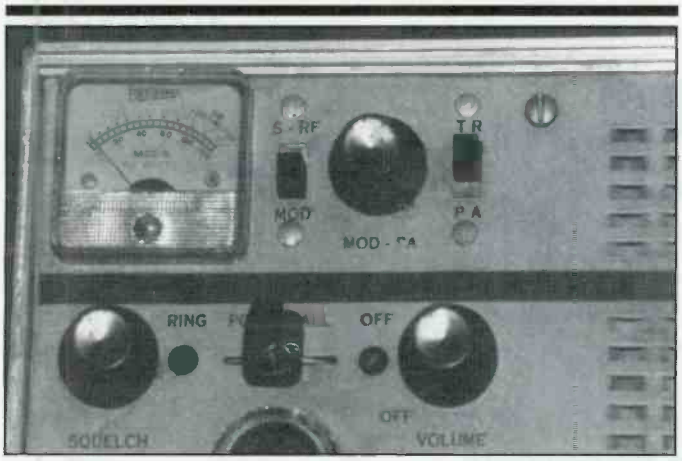
The meter socket and Poly Call output terminals.

A user trying to listen for a family member or trying to use the CB in his business had to put up with a lot of noise between desired traffic. Polytronics devised a system that would work with a CB radio as an add-on to the mobile units and built into the SR 23. Instead of subaudible, it used tones within normal hearing range which worked on an AM radio. If you had the circuit in the *off* position, the radio was just a normal CB and would receive any CB signal or noise. If the circuit was *on,* it had to receive whichever tone you were using for two or three seconds before tripping the relay and opening up to let the call come through. Once tripped, it stayed open for the whole call until you reset it. So you had a radio that served a dual purpose. During the day it sat quiet until a member of your family or one of your service trucks opened it up, and at night you could use it as an ordinary CB and talk to whomever. The Poly Call circuit also had other features — such as a set of relay contacts that you could wire to a light or buzzer to alert you to a call if you were outside the building.

Polytronics included some other useful features in the Poly Comm 23 such as



The crystal system for 23 channels.



The Poly Call controls and early model meter switching.

Delta tune, PA, and RF/MOD metering. Radios in the 1960s did not stay on frequency like today's PLL units. With Delta tune, your receiver could be shifted up or down 3 kHz to compensate. The unit shown in the photo above is an early model SR 23 as revealed by the two slide switches just to the right of the meter. Later models (and most manufactured) replaced these with a four-position rotary switch. This was better, plus it allowed Polytronics room to move the Poly Call volume and sensitivity adjustment control from the back of the radio to the front panel.

The Days Before PLL

The Poly Comm 23 was Polytronic's first venture into a radio with more than eight channels and those with crystals per channel. These were the days before PLL (Phased Locked Loop) circuits which generate all the necessary signals to develop 23 or 40 channels. Polytronics used a total of 10 crystals to synthesize all 23 receive channels. For the sake of this explanation, I am going to drop the numbers to the right of the decimal point. Keep in mind that the receiver used a 6 MHz first IF, so to receive any given channel, a signal 6 MHz above your channel was needed. They had six crystals in the 37-MHz range connected to one switch section, and four crystals in the 4 MHz range to another section. Your CB channels are in the 27 MHz area. Therefore, you have one crystal running at 37 MHz and another running at 4 MHz which is subtracted from the first (37 - 4 = 33 MHz). This 33 MHz is 6 MHz above your 27 MHz channel and gives you the signal you need to receive that channel. To transmit on that channel, the 33 MHz signal is combined with one crystal that subtracts six from it, giving you the "on channel" signal that you need.

It sounds complicated, but it is really simple as you can see if you examine the illustration on page 50. It shows that the first crystal is used for channels 1 through 4 and from the crystal bank to the left, the first crystal is used for channel 1, the second crystal for channel 2, and so forth. It enabled them to generate 46 signals (23 receive and 23 transmit) with only 11 crystals. This was better than 46 crystals!

Next issue, we will start the check-out and tune-up of this unit. If you have questions on old CB radios, you can send them by E-mail: <Oldestimer@aol.com> or by regular mail with an SASE to Don Patrick, 3701 Old Jenny Lind, Ft. Smith, AR 72901. Until next issue, try to find an old Poly Comm 23 and you will hear the difference. ■

Broadcast DXing

BY BRUCE CONTI
<BAConti@aol.com>

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

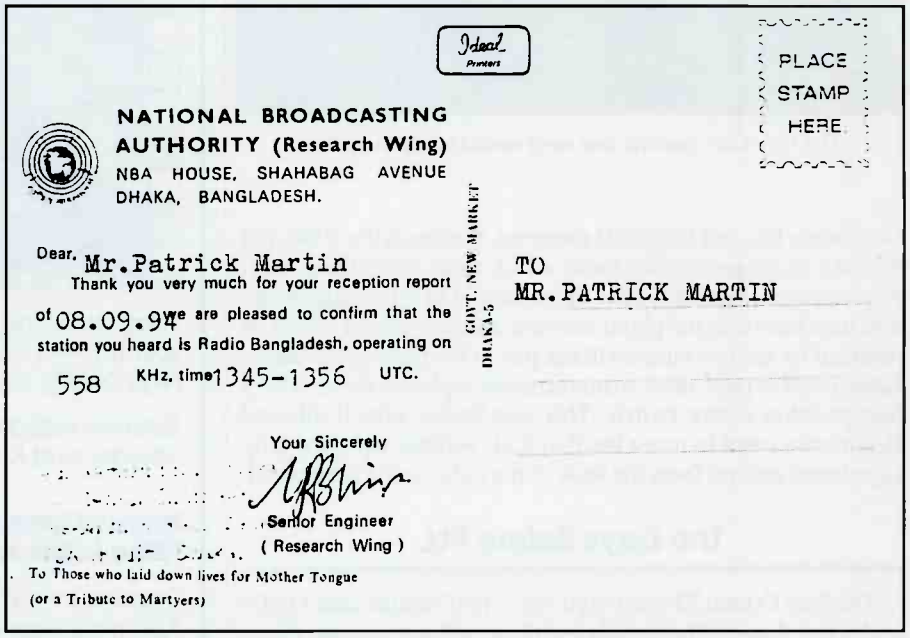
Tales Of 2,500 QSLs

The mediumwave DX season is well under way. Regular "Broadcast DXing" contributor Patrick Martin celebrated the arrival of the new season after receiving his 2,500th mediumwave QSL. Patrick DXes from Oregon along the Pacific coast, currently using the Drake R8 receiver and a multitude of Beverage antennas. Patrick shares some of his more memorable catches.

I lived in Seward, Alaska in the mid-'60s. I started QSLing in 1965, when I logged HSK9 Thailand with 10 kW. In those days, I used to hear all types of Asian stations across the dial, especially during the winter months when it was dark much of the time.

One of the thrills of my life was the year I bought the Drake R8. It was in 1992. This was the first time I had a receiver that tuned ECSS. My old Hammarlund SP-600 JX17 is a great receiver, but lacks a lot of the good bells and whistles. The fall of '92 was unbelievable, highlighted by reception of India on mediumwave. One morning, the dial sounded weird, as all I was hearing were southern Asians. Philippine stations were all over the dial. Then, after 1300 UTC, it even got more strange. I started hearing Thai on 891 kHz (Thailand runs 1000 kW). 585 kHz had some weird language which I never figured out. I landed on 864 kHz at 1350 UTC and heard some sub-continental music with a strange language. I taped the signal and sent a copy of the tape to a friend who teaches at a college. One of his students from eastern India identified the language as a Hindi/Burmese hill language. I then sent a taped reception report to All India Radio. In three months, I received a full detail QSL.

Two Nepal stations were even more of a surprise in 1993. Just after the start of the season in September, I was tuning around one morning and landed on 792 kHz. I heard this weird, almost haunting music, that sounded Hindi, but not quite. Then, I heard a woman in English say, "This is Radio Nepal." I about fell out of the chair, knowing that Nepal on shortwave is rare enough, but on mediumwave? Later that season, I logged my second Nepal catch on 576 kHz, identified with the help of another DXer. A woman announcer in English was heard saying, "You're tuned to Radio Surhet." Surhet is a town in western Nepal, not far from Pakistan. Both stations run 100 W, which is needed to cover the mountainous region.


Ideal Printers

PLACE STAMP HERE

NATIONAL BROADCASTING AUTHORITY (Research Wing)
NBA HOUSE, SHAHABAG AVENUE
DHAKA, BANGLADESH.

GOVT. NEW MARKET DHAKA-5

TO
MR. PATRICK MARTIN

Dear, Mr. Patrick Martin
Thank you very much for your reception report of 08.09.94 we are pleased to confirm that the station you heard is Radio Bangladesh, operating on 558 KHz. time 1345-1356 UTC.

Your Sincerely
Senior Engineer
(Research Wing)

To Those who laid down lives for Mother Tongue
(or a Tribute to Martyers)

Here's a QSL card from Bangladesh on 558 kHz.

Another one of my thrills was logging Bangladesh, and receiving a reply to a reception report, as I hear that they are very poor QSLers. It was the fall of 1994 when I logged another sub-continental language during a morning DX session. By that time, I had an idea of what I had logged, so off went a taped report. The language was Bangla. They were running 100 kW on 558 kHz from the Bangladesh coast, near Calcutta, India.

I also enjoy DXing the South Pacific. Living on the Pacific coast (one mile away), I hear many Pacific stations. Hawaiian stations are very strong much of the time. Back in 1982, there were strong auroral conditions blocking many of the signals from the north and east. Even the 50 kW Seattle stations 125 miles to the northeast were about gone. On one day in particular, there was a 2.5 kW station on 630 kHz from Edmonds, WA, just north of Seattle, that was heard in the morning. Otherwise for most of the night, the channel was dead. Then at around 0700 UTC, I started hearing this very weak island music. Then, I heard a man in English say, "Radio Cook Islands," followed by an announcement about a birthday and music. I was quite excited hearing a 5 W station on a U.S. channel from the Cook Islands! As always, I record everything I hear. Off went a taped report, and back came the QSL card. In the meantime, I received a bulletin from the New Zealand Radio DX League, which I was a member in those days, reporting that the Cook Islands had experienced a very bad storm knocking out the local radio station. They came back on the air with only 500 watts. When I received the QSL card, it indicated 500 watts, one of my best Pacific catches!

Congratulations, Patrick, for reaching this QSL milestone, and thanks for the look back at some of your best transpacific catches. For those of you living west of the Rockies, expect transpacific DX to improve as the peak of sunspot cycle 23 approaches, perhaps producing equally impressive catches. At the same time, DXers across North America will be chasing deep Latin American and Caribbean stations, and those along the east coast will be listening for African and sub-continental Asian stations. Auroral conditions produced by increased solar activity enhance DX from southern latitudes, by subduing skywave from stations

Applied for Permits to Construct New FM Stations

AZ	Kingman	91.9 MHz	40 kW
CA	Firebaugh	90.5 MHz	
CA	Lafayette	102.1 MHz	(KDFC-FM booster)
CA	Lompoc	91.5 MHz	1 kW
CA	Pleasanton	101.3 MHz	(K-101 booster)
CA	Redwood Valley	88.1 MHz	1.35 kW
CA	West Point	89.1 MHz	400 watts
FL	Cape Canaveral	88.7 MHz	
FL	Deltona	89.5 MHz	
FL	Pierson	88.9 MHz	
IN	Chesterton	91.1 MHz	
IN	Columbus	91.1 MHz	
IN	Michigan City	88.5 MHz	
IN	South Haven	91.1 MHz	
IN	Valparaiso	91.1 MHz	
KY	Lerose	88.3 MHz	100 watts
LA	Bunkie	89.5 MHz	
MI	Freeland	90.9 MHz	
MI	Gagetown	88.5 MHz	
MI	Riverside	88.7 MHz	
MI	Rogers Hts.	88.1 MHz	
MT	Butte	90.5 MHz	
NC	Pinehurst	90.3 MHz	400 watts
NE	Grand Island	91.5 MHz	
NE	Hastings	91.7 MHz	
NV	Lund	88.7 MHz	3 kW
OH	Norwalk	90.7 MHz	
OK	Pocola	88.1 MHz	
OR	La Pine	89.9 MHz	
OR	Sisters	89.3 MHz	
PA	Coatesville	89.3 MHz	
PA	Morgantown	89.7 MHz	
PA	Nanty Glo	90.7 MHz	
PA	Patton	91.1 MHz	
TX	Brownfield	89.5 MHz	
TX	College Station	91.9 MHz	
TX	Cuero	89.9 MHz	
TX	Kiel	91.3 MHz	
TX	Mineral Wells	88.5 MHz	
VA	Spotsylvania	89.5 MHz	
VT	St. Johnsbury	88.5 MHz	280 watts
WA	Asotin	88.1 MHz	440 watts
WI	Fond du Lac	91.3 MHz	
WI	Plymouth	91.3 MHz	
WV	So. Charleston	89.5 MHz	150 watts
WY	Casper	89.3 MHz	450 watts

Granted Permits to Construct New FM Stations

AR	Harrison	91.9 MHz
GA	Cuthbert	100.7 MHz
LA	Grand Isle	104.5 MHz
MI	Bear Creek Twp.	89.3 MHz
NY	Fenner	90.5 MHz
OH	Rushville	88.5 MHz
OR	Florence	88.1 MHz

inside the auroral dome. Signals at great distances from the south will arrive at low angles, slipping underneath the edges of the dome.

WPGS Takes The Heat

Remember the wildfires in Florida over the summer? It's certainly something residents of Brevard County will never forget. Thankfully, one local radio station braved the firestorm to keep listeners updated. As thousands were forced to evacuate, normally daytime-only WPGS on 840 AM remained on the air 24 hours during the emergency, relying on a gas generator, when electricity was cut off. Fire sightings and progress reports were phoned in by listeners. WPGS was the only link for many evacuated residents, who listened as lists of damaged or destroyed addresses were read on the air. At one point, 60-foot flames completely surrounded the transmitter site. WPGS—proving once again that hometown radio is alive and well.

Also in Brevard County, congratulations to WMMB Melbourne, FL on 1240 celebrating 50 years of broadcasting with sister stations WMMV 1350, Classic Rock WBVD 95.1, Lite Rock WLQR 99.3, and Country WHKR 102.7.

Spanish Is Hot In NYC

Spanish-language radio has made history in New York City, with WSKQ La Nueva Mega 97.9 in a tie for first place with WLTW Lite 106.7 in the overall ratings. This marks the first time a Spanish station has been rated the most listened to in the Big Apple. But Howard Stern, on WXRK K-Rock 92.3, still holds the lead in the morning drive race. And WSKQ now has some direct competition, as WCAA Caliente 105.9 tries to take a piece of the pie.

In Los Angeles, where Hispanic radio has long been the dominant force on the air, Spanish romantic music station, KLVE 107.5, tops the overall ratings, while Mexican music KSCA 101.9, is number one during morning drive.

The debate continues in Chicago over the lack of available tower space. Although a developer is considering construction of a skyscraper that will reclaim the title of World's Tallest Building, broadcasters are discussing the possibility of a 2,000-foot antenna tower to address their needs. Television stations that want to begin digital broadcasting in 1999 are faced with finding appropriate transmission sites, as antenna masts on both the Sears and Hancock buildings are filled to capacity. A stand-alone antenna tower would also free some broadcasters from the exceedingly high rental costs for space on the top of the two buildings.

QSL Information

891 4TAB Townsville, Queensland, Australia, received partial-data letter in 11 days for taped report, signed Van Richards-Smith (CE). Address: P.O. Box 275, Albion, Q 4010, Australia. Australian QSL #206. (Martin-OR)

(Continued on page 58)

Holiday Gift Ideas

Building and Using Baluns and Ununs

by Jerry Sevick, W2FMI

This volume is the source for the latest information and designs on transmission line transformer theory. Discover new applications for dipoles, yagis, log periodics, beverages, antenna tuners, and countless other examples.

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33 Simple Weekend Projects

by Dave Ingram, K4TWJ

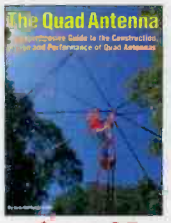
Do-it-yourself electronics projects from the most basic to the fairly sophisticated. You'll find: station accessories for VHF FMing, working OSCAR satellites, fun on HF, trying CW, building simple antennas, even a complete working HF station you can build for$100. Also includes practical tips and techniques on how to create your own electronic projects.

Order No. 33PROJ.... $15.95

The Quad Antenna

by Bob Haviland, W4MB

Second Printing



An authoritative book on the design, construction, characteristics and applications of quad antennas.

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The VHF "How-To" Book

by Joe Lynch, N6CL

This book is the perfect operating guide for the new and experienced VHF enthusiast.

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The Vertical Antenna Handbook

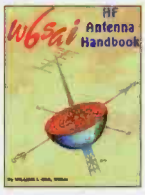
by *Paul Lee, N6PL*

Learn basic theory and practice of the vertical antenna. Discover easy-to-build construction projects.

Order No. VAH..... $9.95

W6SAI HF Antenna Handbook

by Bill Orr, W6SAI



Inexpensive, practical antenna projects that work! Guides you through the building of wire, loop, Yagi and vertical antennas.

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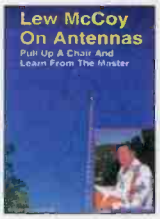
McCoy on Antennas

by Lew McCoy, W1ICP



Unlike many technical publications, Lew presents his invaluable antenna information in a casual, non-intimidating way for anyone!

Order No. MCCOY $15.95

CQ Amateur Radio Almanac

by Doug Grant, K1DG

Filled with over 600 pages of ham radio facts, figures and information. 1997 edition,next volume won't be published until 1999.

Order No. BALM97 ... ~~$19.95~~ $15.95

Keys, Keys, Keys

by Dave Ingram, K4TWJ

You'll enjoy nostalgia with this visual celebration of amateur radio's favorite accessory. This book is full of pictures and historical insight.

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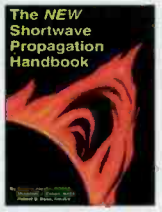
The NEW Shortwave Propagation Handbook

by W3ASK, N4XX & K6GKU



A comprehensive source of HF propagation principles, sunspots, ionospheric predictions, with photography, charts and tables galore!

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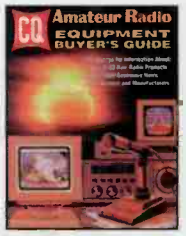
Amateur Radio Equipment Buyer's Guide



This New 144-page book is your single 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 Guide, complete with specs and prices. Over 2100 product listings (3100 including transceiver accessories!).

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CQ Communications, Inc., 25 Newbridge Rd., Hicksville, NY 11801/516-681-2922; Fax 516-681-2926

Applied for Permit to Construct New AM Station

MS	Jackson	1260 kHz (exper. Synchr. Stn.)

Granted Permit to Construct New AM Station

HI	Honolulu	1130 kHz

Cancelled

WADW	Pickford, MI	105.5 MHz	6 kW

Changed AM Facilities

WFLA	Tampa, FL	970 kHz	Changed power
WJCM	Sebring, FL	960 kHz	Changed power, frequency
WORL	Titusville, FL	650 kHz	Moved to Altamonte Springs, 660 kHz 5/1 kW

Seeking FM Frequency Change

KSFH	Mountain View, CA	90.5 MHz	Seeks 87.9 MHz

Changed FM Facilities

KLUE	Soledad, CA	106.3 MHz	Moved to 105.7 MHz
WWXM	Garden City, SC	97.7 MHz	Changed community

New AM Call Letters Issued

KBEG	Clovis, CA
KBFQ	Enid, OK
WBAH	Elizabeth, NJ
WBDI	Highland, IL
WCGR	Canandaigua, NY

Pending AM Call Letter Change

New	Old	
WLSG	WNVL	Nicholasville, KY

Changed AM Call Letters

New	Old	
KIKN	KKNW	Port Angeles, WA
WAHI	WDMF	Knoxville, TN
WDZK	WRDM	Bloomfield, CT

New FM Call Letters Issued

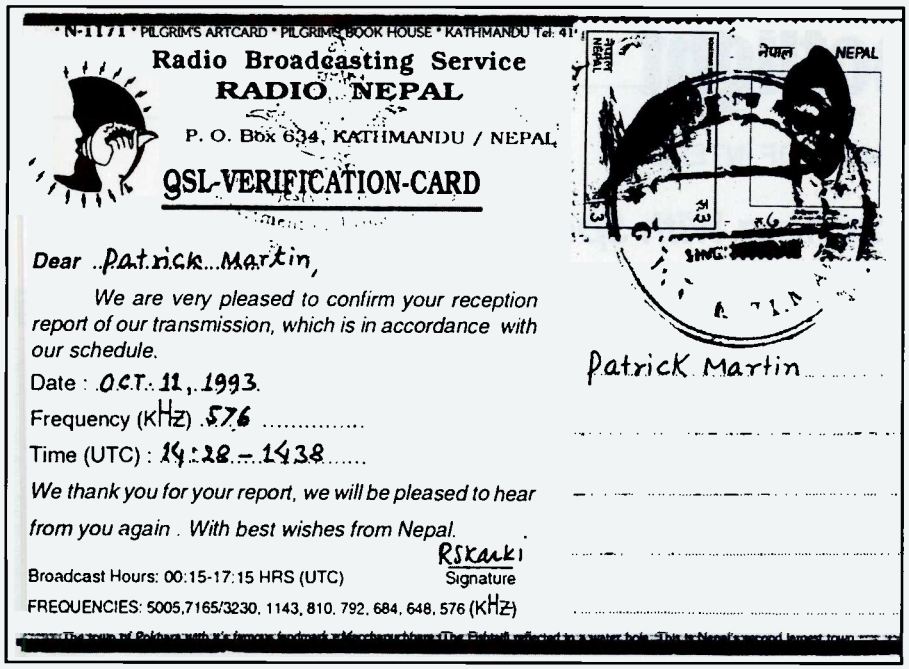
KAFC	Anchorage, AK
KBFE	Grand Junction, CO
KBFF	Gallup, NM
KBFH	Moose Lake, MN
KBFJ	Mountain Home, AR
KBFQ	Aberdeen, SD
KBFP	La Monte, MO
KPFN	Seward, AL
KBKK	Pillager, MN
KCML	St. Joseph, MO
KFRZ	Green River, WY
KHIX	Ely, NV
KJJM	Baker, MT
KLSI	Hutchinson, KS
KMAP-FM	Castana, IA
KOTT	Otterville, MO
KPRU	Delta, CO
KQKK	Walker, MN
KQTY-FM	Borger, TX
KRKH	Harwood, ND
KVTY	Lewiston, ID
KXKK	Park Rapids, MN
WAXK	Jewitt, NY
WHLH	Port St. Lucie, FL
WNPA	Barnesboro, PA
WNJV	Jonesville, VA
WNBQ	Mansfield, PA
WTRT	Benton, KY
WXXC	Truxton, NY
WZEN	Farmington, NH

Pending FM Call Letter Change

New	Old	
WVJZ	WVGN	Charlotte Amalie, VI

Changed FM Call Letters

New	Old	
KIKN-FM	KIKN	Salem, SD
KIST	KLDZ-FM	Santa Barbara, CA
KKID	KMMC	Salem, MO
KKSD	KPHR	Milbank, SD
KLTW-FM	KSIG-FM	Rayne, LA
KSLI	WQPM-FM	Princeton, MN
KYLA	KZXB	Homer, LA
WAHI-FM	WAHI	Augusta, IL
WCAA	WNWK	Newark, NJ
WCLU-FM	WMCC	Munfordville, KY
WCRQ	WHRR	Dennysville, ME
WCTD	WDLS	Dallas, PA
WCTP	WSGD-FM	Carbondale, PA
WHGN	WAVQ	Inglis, FL
WJNI	WRLO	Ladson, SC
WKQY	WTZE-FM	Tazewell, VA
WMPS	WJOI	Tunica, MS
WMHX	WSJW	Louisville, KY
WNRQ	WLAC-FM	Nashville, TN
WOCE	WBIN-FM	Benton, TN
WRSR	WAHV	Owosso, MI
WSKY-FM	WRRX	Micanopy, FL
WWKZ	WWZQ-FM	Aberdeen, MS
WWVV	WIJY	Bluffton, SC
WWYY	WRNJ-FM	Belvidere, NJ



Radio Surmet, Nepal on 576 kHz issued this card.

1360 KZTS Tacoma, WA, Letter in 36 days from Dick Harris-Corporate Eng. for taped report. Address: Salem Communications, 2815 Second Avenue #550, Seattle WA 98121. Call letters now have gone back to KKMO. (Martin-OR)

1575 Clandestine, **The Voice of the Military Forces and the Internal Security Forces.** I sent a reception report and a cassette tape to the Iraqi National Accord office in London. I received a hand-written letter 26 days later from Mr. H. Hmoud that said: "We 'Iraqi National Accord,' received with thanks your letter dated 9 July, 1998, concerning 'Voice of the Military Forces and the Internal Security Forces.' The Iraqi National Accord for years has its broadcasting station 'Al Mustaqbal,' which means 'The Future,' and it broadcasts directly to inside Iraq. Our friends and colleagues inside Iraq who are listening to Al Mustaqbal broadcasting mention that they monitored 'Voice of the Military Forces and the Internal Security Forces.' But our movement, the Iraqi National Accord, has nothing to do with it, and unfortunately we have no idea who is responsible for such a Voice." (Burnell-NF)

1590 WVNA Tuscumbia, AL, Letter in 245 days, signed Chuck Miller-CE. Address: 509 N. Main, Tuscumbia AL 35674 (Martin-OR)

1590 WPSL Port St. Lucie, FL, Letter in 238 days, signed Greg Wyatt-GM. Address: 8245 Business Park Drive, Port St. Lucie FL 34952. (Martin-OR)

1610 "WKPW" Maine Turnpike Authority TIS, Address: Margaret A. Trueworthy, Director of Public Safety & Special Services, 430 Riverside St., Portland, ME 04103. (Provencher-ME)

1700 KDSX Denison-Sherman, TX, Full-data letter in 90 days for taped report, signed Hubert (Hue) Beavers-Chief Operator KPLX/KLIF. Power used was 750 watts. Address: 3632 Blossom Tree, Plano TX 75074. (Martin-OR)

1700 WCMQ Miami Springs, FL, Letter received in six months, signed Ralph Chambers, Director of Engineering, with apologies for the delay, citing an overwhelming response from all over the globe. Address: 1001 Ponce de Leon Blvd., Coral Gables, FL 33134. (Provencher-ME)

Broadcast Loggings

All times are UTC.

640 R. Progreso, Cuba, at 0850 this R. Progreso outlet noted running R. Reloj overnight. (Conti-NH)

765 RTS Dakar, Senegal at 0005, fast excited AA talk by man; fair at pre-sunset fade-up, then at 0025 now loud with Koranic-style vocal, then Arabic dialogue or preaching. (Connelly-MA) This one is typically best during local sunset, with RSR Switzerland dominant later at night. (Conti-NH)

801 2RF Gosford, Australia, fair with Italian program in splash at 1312. (Martin-OR)

891 5AN Adelaide, Australia, very good signal most of the morning near local sunrise with discussion program. (Martin-OR)

1050 XEQOO R. Pirata del Caribe, Cancun, Mexico. In Spanish with Mexican pop music and salsa, very good reception many nights. (Willis-FL)

1060 CMKS network, Baracoa, Cuba, 0400 sign-off with Guantanamera theme and anthem, over/under KYW. (Conti-NH)

1089 Durres, Albania, tentative, at 0220 with classical music over Talk Radio-UK. (Conti-NH)

1089 Talk Radio synchros, United Kingdom. At 0120 talk show host said, "Let's go to Blackpool. Albert, you're on Talk Radio." Fair to good signal with WBAL phased. (Connelly-MA)

1314 NRK Kvitsoy, Norway at 0135 with English/American pop and Norwegian vocals, good steady signal. (Conti-NH)

1690 WMDM Lexington Park, MD, heard well during the nighttime hours with "Bay Talk" IDs, ABC news, and mentions of WPTX 920. (Renner-PA)

49 KPXB Houston, TX, ex-KTHT, is on the Paxnet TV network. Add to the Paxnet listing in the September *Pop'Comm.* (Branch-TX)

Thanks to Greg Branch, Jean Burnell, Mark Connelly, Bob Gilbert, William Hassig, Patrick Martin, Edouard Provencher, Alan Renner, Edwin Tulowitzki, and Keith Willis for another interesting and informative column. Do you have some DX fish tales to share, QSLs or loggings to report? Send them here to Broadcast DXing so we can all learn from your experiences. Until next time, 73. ■

BY KEN REISS

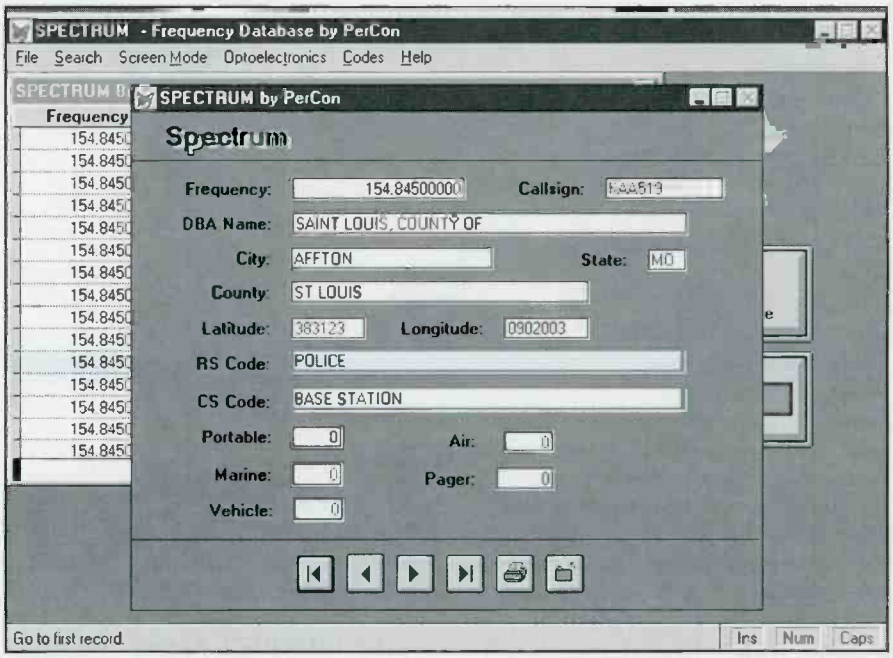
Product Spotlight

POP'COMM REVIEWS PRODUCTS OF INTEREST

Searching With Spectrum!

Most folks who have been around the scanner world for any length of time will know that the Federal Communications Commission is in charge of issuing licenses to most users of the two-way radio spectrum that we listen to on our scanners (federal and aviation users are the most notable exceptions). And most folks will also be familiar with the name PerCon when it comes to FCC databases that are available to radio hobbyists.

PerCon has recently released the 1998 Spectrum collection. This is the summer edition, and Spectrum is generally considered the most suitable for hobbyists. It's relatively inexpensive ($37.45 from PerCon, includes shipping) and contains data for the entire country. PerCon's more expensive product, the Regional series, each only covers a portion of the country, but does include more detail on each frequency record. The information in Spectrum is more than adequate for most hobbyist needs.



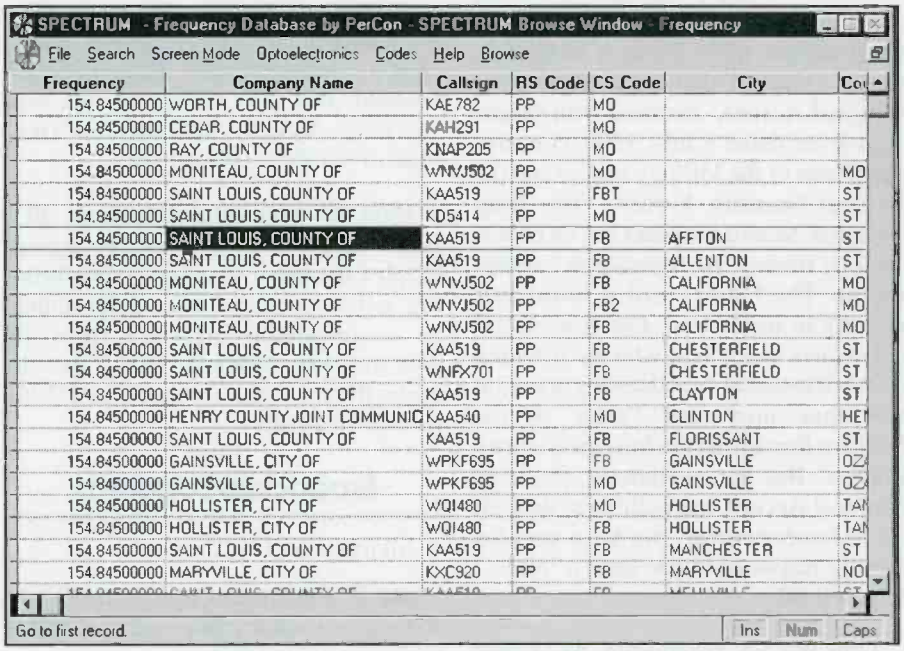
Spectrum's 16-bit application was used for this search of 154.845 in Missouri. The results were returned to the screen fairly quickly, and as you can see, there is lots of data to check out.

Startup

One great option is that the program can be run entirely from the CD without installing to your hard drive. While it does run a bit slower, if you have a Pentium processor or better, I don't think you'll notice too much, and the hard drive space can be conserved, or if you'd like to run it from your laptop from time to time, you can do this without installing the program.

You have the option of running either the Windows version or a DOS version. You'll have to make sure you get the right version if you're not installing the program to your hard drive. The setup program is used to install the 32-bit version for Windows 95/98. It is, however, convenient to still have the DOS version available for older computers, and the 16-bit version runs well under both Windows 3.1 and 95.

Upon running either the DOS version or the 16-bit program, you're presented with a menu of choices for how to search the data. The options include frequency, callsign, company, city, Radio Service code, frequency range, and county. Several options, such as frequency, also



Here's the detailed view of a record. Lots of information is presented here in an easy-to-read form. The data is also shown in the table view, but requires quite a bit of scrolling, or a very large monitor.

have a second screen to help narrow your search to a more manageable level, such as "frequency" in a city, frequency in a county, frequency in a state, etc. There is also a convenient Radio Service List report and a Class of Station (CS) list that can be displayed or printed for help in interpreting the data that is included with each record.

I was impressed by how quickly I was able to retrieve the 27 records for 154.845 in Missouri, my local police channel. There are approximately 65,000 records for the state of Missouri, and that does not include licenses that are nationwide — there's no shortage of information.

Once the query is entered, you then specify where you want the output directed. Your choices are to the screen, an 80 column report, a 132-column report, or to export to a UFDBF file for use by many computer control programs. This option also allows you to export the records for use with other database software if you choose. All of the PerCon software appears to run with a Foxpro engine; however Access, Filemaker Pro and almost any other data manager can read the UFDBF files if you'd prefer to develop your own rules.

Each record in Spectrum contains a fair amount of data. There is a "full screen" mode that will allow you to view the data for just one record all at once, or you can scroll back and forth in a table view and look at the columns. Included in each record is information on the frequency, callsign, DBA Name, City, State, County, Latitude and Longitude (in a DDDMMSS format), Radio Service code, Class of Station code, and the number of units licensed as base, vehicle, marine, air, and pager. Not all records contain complete data, as it's from the FCC and the data may not have been available at the time of entry. (Note: This is a function of the government data, not PerCon's or any other FCC data vendor's fault.)

The 32-bit application that requires installation to your hard disk looks to be quite a bit more powerful an implementation. You can browse through the entire database if you choose in this program. It has options for much more "database-like" queries, including a query by example function and a query editor. Be sure to check their Website for information on updates to this version, as the one on the CD has a few reported problems at <http://www.perconcorp.com>. I found that I preferred using my own database software and working with just the records from Missouri, rather than the entire database with the limitations of the PerCon software. Because of this, I didn't spend a lot of time with the 32-bit version of the program, and downloaded the update too late for this review.

If you don't have an FCC data collection, you probably should. It's a wonderful resource for finding unknown frequencies, and for helping to identify unknown stations that might pop up in a search, or via tropospheric ducting some evening. The PerCon data is excellent as FCC data goes, and their software is usable on almost any platform if you choose. I know that a lot of folks use the export UFDBF function to build search files for their scanner control software. Check it out — you may find a useful new tool for your scanning arsenal.

For additional information on their frequency databases, contact PerCon Corporation, 4906 Maple Springs/ Ellery Road, Bemus Point, NY 14712; phone 716-386-6015 or by fax at 716-386-6013. Or check out their Website, which can be found at <http://www.perconcorp.com>.

C. Crane's CCRadio

By Bruce Conti

The CCRadio represents years of development by C. Crane Company and Sangean Electronics engineers, culminating in the design of a superior portable AM radio in its price range for broadcast listening. In addition to great AM performance, this receiver includes FM broadcast, VHF TV audio, and weather radio. This is the first radio to carry the C. Crane name in their 22-year history.

I was intrigued by the introduction of this new receiver, simply because it's unusual to find a manufacturer interested in providing for high-quality AM radio reception these days.

Initial Observations

Upon opening the box, initial impressions are of a well-designed, portable receiver. The chassis feels substantial and solid. It measures 11 x 6.5 x 4 (HWD) inches. The overall industrial design is high-tech but not overwhelming. Simplicity of operation is emphasized, with dedicated knobs and push buttons for each function. The push buttons provide firm tactile feedback and click when engaged. A generous size, custom LCD display indicates time and frequency or channel number with large easy-to-read numerals visible over a wide viewing angle. The display is backlit with two green LEDs. Backlighting can be turned off with a dedicated front panel push button switch to conserve battery power. Time is displayed in hours and minutes with AM and PM indication. Seconds are indicated with smaller numerals in the upper right corner of the display. TV channels 2 through 13 and weather frequencies are displayed by channel number. Seven standard NOAA weather channels are preset for 162.400 through 162.550 MHz at 25 kHz intervals.

Tuning is accomplished either via independent front panel up and down buttons, or an encoder knob on the right side. The up/down buttons step in 10kHz increments while the knob tunes in 1kHz increments covering 520 to 1710 on AM. FM tuning is in 0.1 MHz increments from 87.5 to 108.0 MHz. Press and hold an up or down button to auto scan for strong signals.

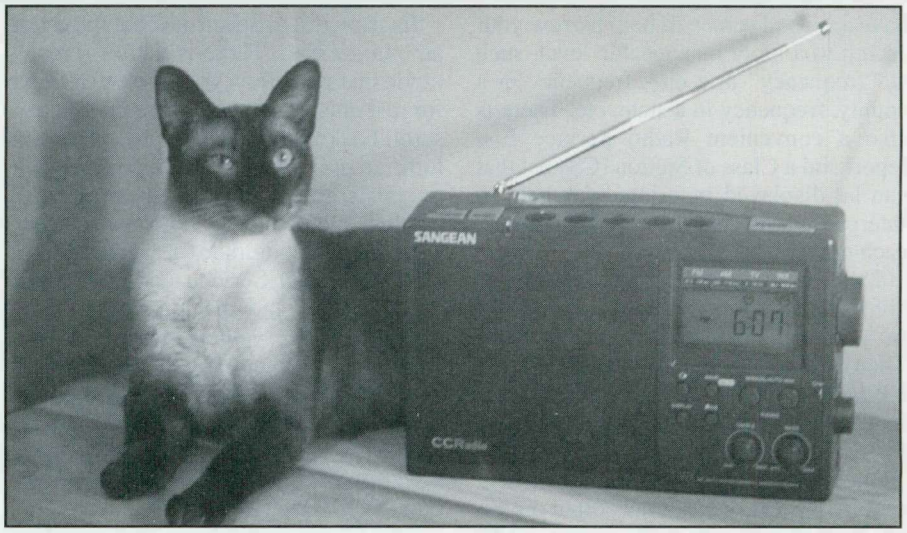
The receiver also features a snooze alarm, and a sleep timer to turn off the radio after 90, 60, 30, or 15 minutes. Five memory push buttons are located on the top for easy access to favorite stations. Five stations can be stored on each of the four bands, simply by pressing and holding of a memory button after tuning in the desired station, similar to car radio push button programming. Large power and alarm push buttons are also located on the top. Time is displayed when power is off. Separate bass and treble knobs with a center detente are located on the front, and the volume knob is on the right side. A 3.5mm lug accepts mono or stereo headphones, although audio is only in mono. A 20-inch telescopic whip for FM/TV/ weather reception completely collapses to protect against damage. A lockout switch disables functionality of all controls in the power on or off modes. This is especially handy when the receiver is in transport or packed away in luggage, preventing accidental power-on or loss of time settings.

It runs on four D-cell batteries, or nominal 120 Vac with a detachable line cord. Battery life is expected to be over 200 hours. The receiver carries the C-UL

mark indicating that it meets the requirements of Canadian and U.S. standards for safety. The instruction manual is thorough and includes a list of possible solutions for AM radio noise problems.

Further Investigation

OK, the initial inspection shows good attention to detail, but how does it perform? The FM, TV, and weather radio reception are about as good as can be expected for a receiver of this caliber. Weather radio reception is typically for up to 50 miles from transmitting stations, but, of course, will vary based on location. A weather alert mode activates a siren and/or flashing light upon reception of an NOAA emergency alert tone. Overall FM and TV reception is good. I was able to receive all the local stations without difficulty using the telescopic whip. Reception is only in mono in order to hear weak FM signals with less noise. The CCRadio is primarily designed for long-distance AM radio listening. AM reception is via an internal 7.8-inch long ferrite rod antenna. An external AM antenna and ground can be hooked up via screw terminals on the rear panel, but the internal ferrite rod cannot be defeated.



C. Crane's new CCRadio with Loco The DX Cat, Loco.

Further inside inspection reveals a mix of through-hole and surface-mount components. An MC3361 and 455-kHz and 10.7-MHz filters in a shielded enclosure appear to form the AM and FM IF sections. The front panel microprocessor control board is shielded from the receiver circuitry by a metal plate. A 6-watt, 5-inch speaker with a magnet of healthy size and weight provide plenty of audio output, specified at 2 watts when plugged into 110V power.

AM SPECIFICATIONS

- Tuning Range: 520-1710 kHz.
- Usable Sensitivity: S/N ratio = 20 dB; @ 600 kHz -41 dBu/m, @ 1000 kHz - 38 dBu/m, & @ 1400 kHz -37 dBu/m.
- Image Rejection: S/N ratio = 6 dB; @ 1400 kHz -48 dB.
- Selectivity: > 60 dB.
- Bandwidth: 4.5 kHz @ -6 dB.

Tuning across the AM band, I found the internal ferrite to be more than adequate for good reception of clear channel signals. There were no problems with splash from adjacent frequencies. For example, I could listen to KDKA on 1020 kHz or WHO on 1040 kHz comfortably without significant interference from local WBZ on 1030. The AGC seemed smooth, adding to the level of comfortable listening to distant signals. Reorienting the receiver to take advantage of the directional capability of the internal ferrite enhanced desired signals.

Specifications indicate a 4.5kHz AM bandwidth, which although not great for music, does result in optimal reception of news, sports, and talk programs. This also makes the CCRadio a good domestic DX receiver. However, when I hooked up a 100-foot external wire antenna and ground, the receiver produced extraneous tones at the low end of the AM band when tuned off of 10kHz domestic frequencies, not attributable to hets caused by overseas 9kHz signals. Otherwise no evidence of overload issues from local stations was exhibited when hooked up to the external antenna, although strong local stations could be heard on adjacent frequencies where no useable signal was present during the day. I was able to detect ZIZ Radio from St. Kitts on 555 kHz at night, and on-channel reception was excellent.

Final Comments

Overall, the CCRadio is a keeper. Nighttime AM reception of clear channel stations is reminiscent of the old days when all home stereos and car radios used to have a good AM front end. The receiver and alarm functions are intuitively easy to operate, and its audio performance is enjoyable. The CCRadio would make an ideal travel companion, superbly designed for tuning in your favorite sports and talk programs while you're away from home. It would be a good candidate for replacing a tired bedside clock radio, too. In addition, at $159.95, it's a great radio to have on hand for emergencies, and would be a good entry-level receiver for domestic and Pan-American AM broadcast DXing. C. Crane Company offers a variety of radios and accessories. Call 1-800-522-8863 for a catalog, or visit their Website at <www.ccrane.com>.

The Listening Post

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

Armed Forces Radio On Shortwave?

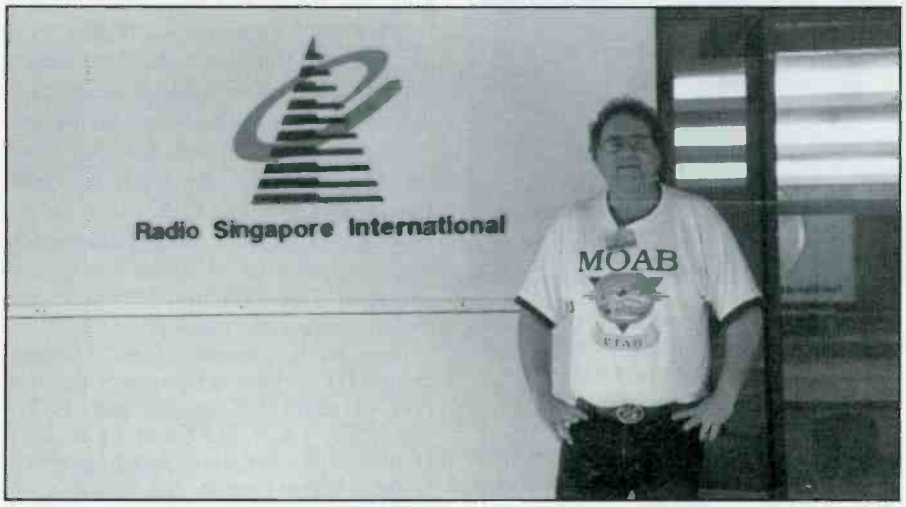
It's been a very long time since we've been able to hear U.S. Armed Forces Radio on shortwave. But, at the moment, that's what's happening. For some reason, broadcasts of American Forces Network have been appearing on **4278.5 and 12689.5 (both upper sideband)**, airing play-by-play sports, CNN and AP news, Rush Limbaugh, and programs from NPR and Public Radio International. This appears to be some sort of feeder, rather than something intended for the general public, so it may or may not be considered a "countable" log by purists. And, as we said, it may well be a very temporary thing, so check it out now.

There's a new one on shortwave from Peru — two, in fact. **Radio Regional** in the city of Celendin is operating on **5500.** Neither the power (sure to be not very much) nor the exact schedule is known so far, but check in the very early mornings (0900 and on) and early evenings (0100). The second one is called **Radio Power** on **5775**, on the air from Moyobamba. This one must have been named with tongue in cheek as it is supposedly using only a few watts.

The rarely reported **LRA36 — Radio Nacional Arcangel San Gabriel,** from Argentina's Antarctic base has a **new schedule**. It's now on the air Mondays, Tuesdays, and Fridays from 1230 to 1430.

Chile's still somewhat new **Voz Cristiana** has been employing more frequencies, including **11890 and 15375**, in addition to **21500** and **21550**, which were the first to come on line. Other frequencies in use at times are **9635** and **17680**. Three or four of these may be in use at any one time, although which ones and when hasn't yet been sorted out. Broadcasts start as early as 0800 and run as late as 2100.

It looks like the attempt to launch a commercial shortwave station broadcasting from a ship has sunk. The ship (actually a remodeled tug), called the ***Electra***, reportedly ran into another vessel on its way to Georgia. This, naturally, generated lawsuits. To top it off, the preacher who was putting up the money pulled out.



"Listening Post" reporter Marty Foss visited Singapore recently. Here he is in front of the entrance to Radio Singapore International.

So, the *Electra* was put on the block in a U.S. Marshal's sale and reportedly brought $35,000, though it's not known who opened his checkbook. However, it's reasonable to assume that a fully equipped radio broadcasting ship wasn't purchased for big game fishing!

There will be a **new BBC relay station in Oman** in a couple of years, at which time the current facility on Masirah Island will be closed down (the island will become a bird sanctuary). The new facility will operate from the mainland and beam programs largely to the Mideast and the subcontinent.

The Colombian **Radio Nacional**, on **4955**, now has an English program segment called "On Line," aired from 0200 to 0300, Tuesday through Saturday.

With a civil war under its belt just a year or so back, the Democratic Republic of the Congo (ex-Zaire) was experiencing a new

Here's the English staff of Radio Singapore International. (Left to right): Genevieve Koh, Denise Chong, Belinda Yeo, (gentleman unidentified) and Sakuntala Gupta, Department head.

Longtime Pop'Comm *reader Marty Foss with a couple of friends — two engineers at Radio Singapore International.*

rebellion as this was written. As of now, the government station continues active, albeit weakly, on **15244**, variable, apparently running through much or all of our day and evening periods. Broadcasts are in French. Try for this one and hope it's not too late.

Alan Weiner's new station in Maine, **WBCQ** ("The Planet"), should be in regular operation on **7415** by now. And it sounds like the content is going to be a constant stream of pirate-type programming, produced not only by station principals but also by outside pirate operators and wannabes.

Brazil's answer to Costa Rica's Radio Reloj, **Radio Relogio Federal (4905)**, is all through broadcasting time checks every minute (between music and commercials). It has been purchased by a religious group and now airs programming from the "Church of the New Life."

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

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.

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**

ALASKA — KNLS monitored on **6150** at 1107 with woman talking in RR. (Foss, AK)
ANTIGUA — Deutsche Welle relay, **6185** at 0704 with news in GG. (Barton, AZ) BBC relay, **5975** at 0200 and **17840** at 1757. (Jeffery, NY)
ASCENSION ISLAND — BBC relay to Africa, **11835** at 2000 and **17830** at 1956. (Jeffery, NY)
AUSTRALIA — Radio Australia on **6020** and **6165** heard at 1147 with various features. "Australia Talks Back" at 1205. (Taylor, PA) **17750** at 0339 with talk of the rise of the One Nation party in Australia. (Foss, AK)
AUSTRIA — Radio Austria Int'l, **13730** at 2231 in FF. (Foss, AK)
BENIN — ORTB, Cotonou, presumed, **7210** in FF at 0613 with announcer, music, possible mention of Cotonou passing ID at 0618. (Quaglieri, NC)
BRAZIL — Radio Gaucha, **11915** with sports commentary in PP at 0236. (Paszkiewicz, WI)R. Dif. Pocos de Caldas, **4945** at 0202 with talk on phone, mention of Brazil, ID, echo announcements, theme from "Love Story." (Paszkiewicz, WI)
BULGARIA — Radio Bulgaria, **9485** heard at 0240 with mailbag, ID at 0240. (Taylor, PA)
CANADA — CKZN, St. John's, Newfoundland, **6160** at 0312 with classical music. (Paszkiewicz, WI) CKZU, Vancouver, **6160** heard at 0614 with music. (Foss, AK) Radio Canada Int'l, **13670** at 2244 with radio drama. (Foss, AK) BBC relay via Sackville, **9515** at 1255. (Jeffery, NY)
CHILE — Voz Cristiana, **21549.95** at 1645 to past 2000, still testing with EE and SS IDs and contemporary Christian music in SS. (Alexander, PA)
CHINA — China Radio Int'l, **9575** at 0422 with story about a curfew on airline flights because of airport neighbors complaining about the noise. (Taylor, PA) **9690** via Spain at 0301 with news and ID. (Jeffery, NY) Did some checking between 1043 and 1055 to see how many of each of the CPBS services I could hear. Results: CPBS 1 (at 1047) 7503.98, 7935, 9290, 9340, 11825, 11960, 15390, 15550, 17605. CPBS 2 (at 1043) 7770, 9064.04, 11039.98, 11505, 11800. Taiwan 1 (at 1051) 11100, 11935 Taiwan 2 (at 1052) 10999.96, 15879.89 Voice of Pujiang (at 1054) 9705. Also noted English from China Radio Int'l during the same time frame on **9785**, and **11755**. (Quaglieri, NY)
COSTA RICA — RFPI, **10505** heard at 0150. (Jeffery, NY) Adventist World Radio — A QSL received notes the verie signer, Mrs. Mariam Pottinger, will be leaving the station because her husband has been transferred. (Silvi, OH)
CUBA — Radio Havana Cuba, **6000** heard at 0240 with news items and guitar music. (Jeffery, NY) Also at 0500 with ID, announcing **9550** (clipped audio), **9820** and **9830** SSB (not there). (Quaglieri, NY) **9820** at 0503. (Foss, AK) **12000** (2nd harmonic of 6000) at 0210. (Alexander, PA)
ECUADOR — HCJB, **9745** AT 0511. (Foss, AK) Radio Quito **4919**, heard at 0545 with Latin pops, recorded live. (Foss, AK)
ENGLAND — BBC via USA, **6175** heard at 0517. (Foss, AK) Merlin Network One, **13690** at 1925 with "Media Zoo." (Jeffery, NY) 15590 at 2025 with info on UK radio scene. //13690. (Alexander, PA).
EQUATORIAL GUINEA — Radio Africa, **15184.82** monitored at 2125 to 2300 close. EE religious program. Off with usual long national anthem.
ETHIOPIA — Radio Ethiopia, **7110**, 0255 with open carrier, no IS until 0300 and then only once quickly, then anthem, Amharic ID. (Quaglieri, NC) Voice of Peace, **11800** — a struggle to hear a quickie ID at 1100 and quickly into local language. It was under dominant AA station on same frequency. (Quaglieri, NC)
FINLAND — Radio Finland, **11900** at 0207 with Finnish and European news. (Foss, AK)
FRANCE — Radio France Int'l, **9790** at 0506. (Foss, AK)
GABON — RTV Gabonaise, on **7270** heard at 0513 in FF with woman hosting a program of Afro music. ID as "Radio Gabonaise." (Quaglieri, NC)
GUAM — Trans World Radio/KTWR, **9865** at 1011 with religious programming, music, IDs. (Jeffery, NY)
GUINEA — RTV Guineenne, **7125** in FF heard at 0558 with usual sign-on routine. (Quaglieri, NC)
HONDURAS — Radio Internacional, **4930.62** at 0412 in SS with music, canned IDs

Nashville shortwave station WWCR (World-wide Christian Radio) operates out of this building, along with its domestic outlet, WNQM.

as "FM Internacional," long ad block at 0423. (Quaglieri, NC)

INDIA — All India Radio at Bangalore, **11620** at 1927 in EE. (Jeffery, NY)

INDONESIA — RRI Nacional Program, on **9565** in II with excellent signal at 0930. (Quaglieri, NC)

IRAQ — Radio Iraq Int'l, **11785** at 0300 to past 0340. EE news to 0303, Mideast music, EE comment, ID and letters/reception report program at 0315. Surprisingly good, clear audio. Still had hum, but was perfectly readable with no distortion. Weak co-channel QRM from station with Koran and talk in unidentified language. (Quaglieri, NC)

ITALY — Radio Due (presumed) **7175** heard at 0610 in II with radio drama. (Quaglieri, NC)

JAPAN — Radio Japan, **17810** heard at 0101 with news. (Foss, AK) **17825** heard at 0309 with news of Japan and Asia. (Hill, ID)

KIRIBATI — Radio Kiribati, **9809.95,** tentative, 0935 in local language with odd reggae/cowboy/religious tunes hosted by a woman. Possible ID heard at 0950. Poor. (Quaglieri, NC)

LIBYA — Radio Jamahiriya, **15415** at 0225 in AA with Mideast music, talk by man and woman. (Jeffery, NY)

MEXICO — Radio Educacion, **6185** heard at 0218 in SS with music of northern Mexico. (Barton, AZ)

MOROCCO — Voice of America relay, **7195** at 0625. (Barton, AZ) **15410** monitored at 2007 with "Africa World Tonight." (Jeffery, NY)

MOZAMBIQUE — Radio Mozambique, tentative, **9619.42**, at 0446 with lots of talk, distorted audio, possible local news. Tough to hear with Spain on **9620**. Noted again at 0320 with Koran. (Quaglieri, NC)

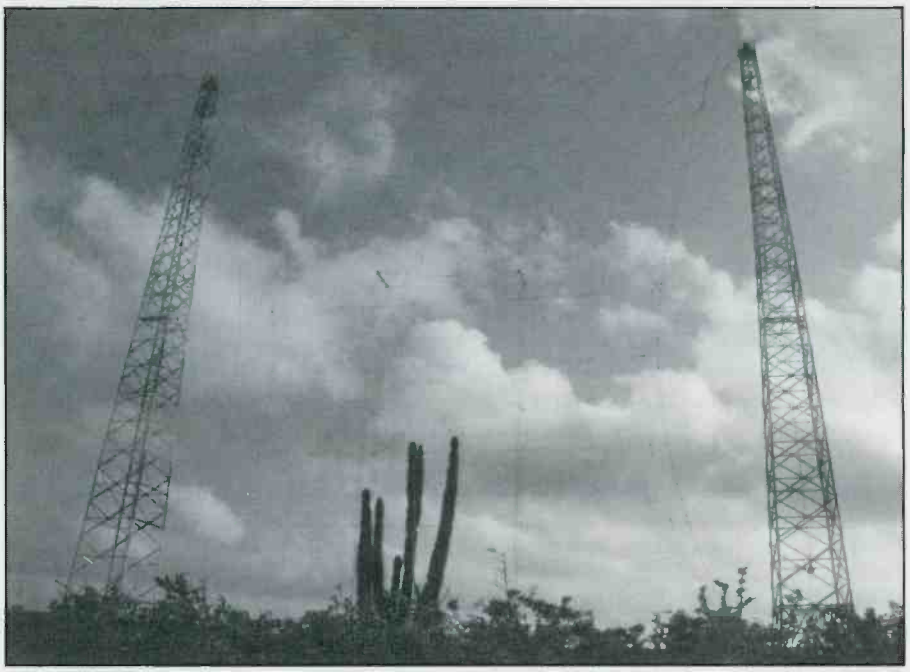
NETHERLANDS — Radio Netherlands, **6020** and **6165** (Bonaire) at 0046 with various programs and features. (Taylor, PA)

NETHERLANDS ANTILLES — Radio Netherlands via Bonaire, on **17605** heard at 1844 with "Newsline," ID, frequency info, etc. (Jeffery, NY)

NEW ZEALAND — National Radio (RNZI), **17675** at 0105 with detailed forecasts of weather all around the country. (Foss, AK) 0106 with weather, "Cadenza." (Jeffery, NY)

This strikingly modern building is home to YLE— Radio Finland International.

NICARAGUA — Radio Miskut, **5770** heard at 0215 to 0314 sign off. Suppressed carrier—USB. Woman announcer in SS, some U.S. pops but most SS pops. Off with national anthem. (Alexander, PA)
NIGER — La Voix du Sahel, **7155.01** heard at 0528 with traditional vocal music. Man with ID at 0530 (very low modulation), back to music. Much earlier than scheduled here. (Quaglieri, NC)
NORTH KOREA — Radio Pyongyang, **13760** at 2227 with woman and many slow, moody vocals. (Foss, AK)
PERU — Radio Union, **6115** in SS heard at 0557 with great salsa. (Foss, AK) Radio Villa Rica, **4886.75** at 0240 to 0306 close, with SS announcements, ID, SS pops, sign-off with national anthem. (Alexander, PA) Radio Sudamerica, **5522.23** heard at 0215 to 0232 close with SS announcements, Peruvian folk music, ID. No anthem heard at sign-off. (Alexander, PA)
PHILIPPINES — Radio Veritas Asia, **9520** at 1456 with ID by woman and sign-off. (Barton, AZ) Far East Broadcasting Corp., **9474.94** at 0955 with IS, alternating with CC ID. (Quaglieri, NC) Voice of America relay, **9760** at 1210 with news. Heard on **15160** at 1225 with news. (Jeffery, NY) 11870 at 2110 with interview. (Foss, AK)
ROMANIA — Radio Romania Int'l, **15380** at 0230 with EE ID, news. (Jeffery, NY)
RUSSIA — Voice of Russia, **11500** in EE with RR language lesson at 1536. (Barton, AZ) Voice of the Mediterranean (Malta-based) via Russia on **12060** at 1900-2000 with EE news, features and ID. EE is on Saturday to Thursday only. Into AA at 2000. (Alexander, PA)
SAUDI ARABIA — BSKSA Holy Koran Service, presumed, **15161.79** with time pips at 1430, man in AA and into recitations. Very low modulation on the announcement. (Quaglieri, NC)
SINGAPORE — Radio Singapore Int'l, **6150** at 1245 with "industrial" music. (Barton, AZ)
SOUTH AFRICA — Channel Africa, **11900** at 0609 with news of South Africa. (Foss, AK)
SOUTH KOREA — Radio Korea Int'l, **11715**, closing at 1059. (Taylor, PA)
SRI LANKA — Sri Lanka Broadcasting Corp., **11835** at 1030 in EE with excellent signal. Also heard on **11904.8** at 0152 with orchestral music and woman announcer. **15425** at 0215 with EE program on fusion research. (Quaglieri, NC)
SWITZERLAND — Swiss Radio Int'l **11860**, at 0556 with music, ID, music box IS at 0559, ID in EE. (Foss, AK)
THAILAND — Radio Thailand, **9885** at 1251, good with piano music. Parallel frequencies inaudible. (Quaglieri, NC)
TOGO — Radio Togolaise, **7265**, atop Sudwestfunk, Germany, at 0605. News in FF by man and woman. (Quaglieri, NC)
TURKEY — Voice of Turkey, **9655** at 2158 in EE with IS, ID, frequency info, news. (Jeffery, NY)
UNITED ARAB EMIRATES — UAE Radio, Dubai, **15395** at 1330 with ID, frequency info, world news, Dubai weather. (Jeffery, NY)
UZBEKISTAN — Radio Tashkent, **17775** at 1329 with pretty IS, woman at 1330 with "Radio Tashkent calling," music, and ID. (Quaglieri, NC)
VATICAN CITY — Vatican Radio, **7335** at 0050 to 0200 sign-off, announced as a broadcast to South Asia. Heard quite well over usually strong CHU. English from 0140 to 0200 with many mentions of and IDs as "Vatican Radio, broadcasting to South Asia" and many mentions of India. Unidentified language at 0050 changed to another language at 0100 and again at 0200. (Quaglieri, NC) On new 11910 at 0143 with IS, SS programming at 0145 with ID, religious talk. Ex-5945. **Parallel 9605// 7305**. But EE only heard on 7305 and 9605 monitored at 0250 to 0309. (Alexander, PA)
VIETNAM — Voice of Vietnam, **9839.84** at 1012 with commentary about regional peace and prosperity. Fair, stronger on **12019.56** (Quaglieri, NC)
YUGOSLAVIA — Radio Yugoslavia, **9580** at 0441 with sports, then talk about Croatian government. (Taylor, PA)
ZANZIBAR (Tanzania) — Radio Tanzania, Zanzibar, **11734.1** at 1907 in Swahili. Man with datelined news, ID at 1910, into music. (Quaglieri, NC)



Part of the HF antenna array used at the Radio Netherlands Bonaire relay in the Netherlands Antilles. The station is a staple on shortwave.

And that's it for this time! A rip-roaring resounding round of applause to all the faithful this month: Marty Foss, Talkeetna, AK; Al Quaglieri, Albany, NY, DXing from NC; Lee Silvi, Mentor, OH; Sheryl Paszkiewicz, Manitowoc, WI; Brian Alexander, Mechanicsburg, PA; Dave Jeffery, Niagara Falls, NY; Rick Barton, Phoenix, AZ, and Tim Taylor, Erie, PA. Thanks to each one of you.

Until next month, good listening! ■

BY RICHARD "RD" BAKER
<CommConf@concentric.net>

Communications Confidential

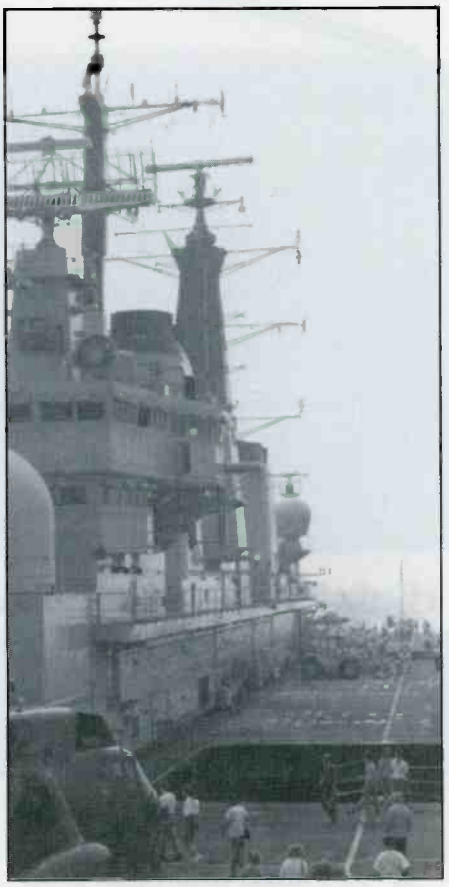
YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

More On Scope Command And Return Of AFRTS

As mentioned in the August 1997 column, the U.S. Air Force will be gradually phasing in new HF radio equipment as part of a new system called Scope Command. Scope Command will combine several existing USAF HF systems: Global High Frequency System (GHFS), Mystic Star (Presidential flight support and other key users), SITFAA (Information and Telecommunications System of the American Air Forces, a bilingual Spanish/English, high frequency voice and data network), and Defense Communications System (DCS) HF Entry. DCS provides HF communications services for tactical units in areas of the world where DCS connectivity is unavailable or insufficient.

The primary contractor is Rockwell-Collins Communications Systems Division. The new system, as currently planned, will consist of 14 worldwide HF ground stations interconnected through various transmission mediums. The 14 stations will be: Elmendorf AFB, Alaska; McClellan AFB, Calif. (listed as "Sacramento" or "West Coast" as McClellan is scheduled to close in the next couple years); Offutt AFB, Ne.; Andrews AFB, Md.; Salinas, PR (a present Mystic Star site); Thule, Greenland; Lajes Island, Azores; Ascension Island; Croughton, England; Incirlik, Turkey; Diego Garcia; Andersen, Guam; Yokota, Japan; and Hickam AFB, Hawaii.

When one looks at the above list of stations, the reason for the recent closing of MacDill Global becomes apparent. In fact, other locations may go silent as they are converted to "lights out" or unmanned locations. Scope Command will utilize a "central dispatch" concept using a net control station and remotely operated capable antenna sites. Andrews AFB, Md. will be the Centralized Net Control Station (CNCS) while all planned 14 ground stations will allow remote or local operator selection of operating frequencies, sideband selection, transmitter power, antenna selection, and azimuth selection for directional antennas, half- or full-duplex operation, and initiation of an Automatic Link Establishment (ALE) sequence.



Alan Gale, UK, sent along this photo showing the "island" of HMS Ark Royal *which was taken during "Navy Day" in Portsmouth, England, a few years back.*

Major equipment being installed include operator consoles, circuit switching equipment, HF radios, RF matrixes, and antennas. Each station will consist of personal computer workstations, Rockwell's Communications Control and Management System (CCMS) and audio interfaces. The HF radio equipment include Rockwell's Spectrum DSP RT-2200 receiver/exciters. These radios have automatic link establishment (ALE) and link quality analysis (LQA) capability. ALE is initially being installed at the behest of Air Mobility Command (AMC) who will have ALE-capable radios HF radios for their fleet of aircraft. Base and wing command posts with HF capability will also have ALE capability and the capability to dial a Defense Switching Network (DSN) phone number and remotely connect to the Scope Command ALE system. Conceivably, someone sitting at their desk at Tinker AFB, Ok., could pick up the phone, dial a DSN number, enter a code and make their own phone patch to an aircraft.

During early 1998, listeners worldwide monitored a great many tests by stations ID'ing as "Scope Command Cell" and others. Frequencies used and associated with this project include: **3059.0, 3137.0, 4721.0, 5708.0, 6715.0, 6721.0, 7632.0, 8965.0, 9025.0,9057.0, 11226.0, 11250.0, 13215.0, 15043.0, 18003.0, 20631.0, 23337.0, and 27870.0 kHz.**

The Return Of AFRTS

Many readers around the world have reported hearing transmissions of the Armed Forces Radio and Television Service (AFRTS) **on 4278.5, 6458.5, and 12689.5 kHz in USB.** These transmissions are apparently being made from the U.S. Navy communications station NAR in Key West, Florida, according to a release by the U.S. Navy. AFRTS is once again on HF thanks to a faulty satellite link. I'm undecided if this is a "broadcast" station or a "utility" station. Although broadcast "feeders" are under the ute umbrella, this is a direct broadcast except it is in upper sideband.

The U.S. Navy commissioned the world's newest and most advanced aircraft carrier, the *USS Harry S. Truman (CVN-75),* on July 25 at Norfolk Naval Base. The carrier is named in honor of Harry S. Truman, 33rd President of the United States. She is the eighth of 10 Nimitz-class carriers currently authorized by Congress. The carrier will join the U.S. Atlantic Fleet. No word yet on a callsign, but in what had become pretty much a Navy tradition look for a play of the ships name, like NHST or NTRU.

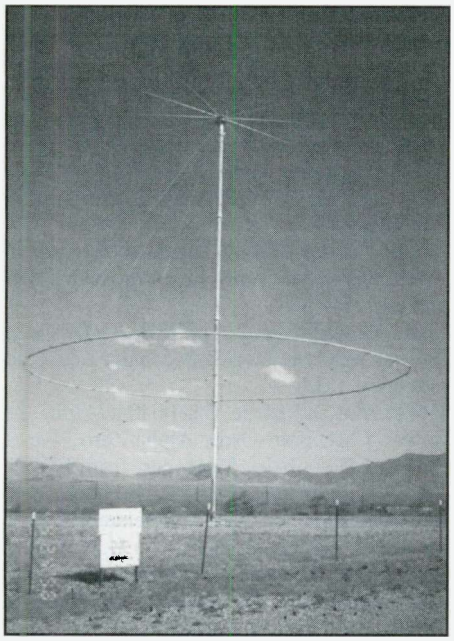
While on the subject of the USN, many readers have indicated they were able to hear related comms from RIMPAC-98. Nearly 100 commands, 50 ships, 200 aircraft and more than 25,000 Sailors,

Here's part of the very neat looking shack of R.D. Carter, NC.

Marines, Airmen, Soldiers and Coast Guardsmen participated in the RIMPAC '98 exercise. Participating nations included the United States, Canada, Australia, Japan, South Korea, and Chile.

VAI, the Canadian Coast Guard, Vancouver, BC, has changed its callsign to VAS. The station is now remotely controlled from KFS, Globe Maritime station Palo Alto Radio in Calif., according to a post made by Geoff Halligey over the WUN club list. Geoff found the changes in a recent edition of the Admiralty Lists of Radio Signals.

This month starts the annual Leonid meteor shower. Each November, the Earth crosses the path of the comet Temple-Tuttle. As the Earth passes through the debris trail from this comet, the Leonid meteor shower occurs which normally results in about 15 meteors per hour entering the Earth's atmosphere. But, on certain occasions the meteor activity can reach "storm" levels, with thousands of meteors observed per hour. The comet's orbital period is approximately 33 years. This year and next, will be the most intense meteor storms of the 33-year cycle. The peak period of the meteor activity lasts for a span of two to six hours, and can be fairly accurately estimated. This year's peak is expected on November 17, approximately 1900 UTC. The U.S. government is concerned, as little is known about the effects of this increased meteor activity on satellites. The last storm, in 1966, was during a time when the number of satellites on orbit was negligible. Today, the number of active satellites on orbit is over 500. We know it could be interesting on HF.



Bill Farley, NM, took this picture of the HF antenna formerly in use at a closed Titan II Missile facility in Green Valley, AZ (west of Tucson). It is currently the Titan II museum and is pretty much restored, including the radio equipment.

Reader Mail

Mr. J. Tuk, The Netherlands, wrote concerning the 27880 and 27900 logs in the August column. He points out these are part of a 27-MHz maritime frequency band and may be a good hot-spot for DXing. Try **27680.0** channel 68, commercial services, ship-to-ship and ship-to-shore; **27720.0** ch.72 fishing services, ship/ship, ship/shore; **27820.0** ch.82 same as ch.72; **27860.0** ch.86 safety and distress secondary; **27880.0** ch.88 safety and distress primary; **27900.0** ch.90 non-commercial services; **27910.0** ch.91 same; **27940.0** ch.94 same plus club events and services; **27960.0** ch.96 non-commercial services; and **27980.0** ch. 98 surf life saving, volunteer coastal patrol, certified rescue groups. See what you can hear.

Joe Putz, a Surf Air DC8-66 Captain, sent a correction to my notes on the 5550.0 LIFEGUARD logging in the August column. Joe correctly notes that the LIFEGUARD callsign is actually used by an aircraft transporting human transplant organs or tissue. LIFEFLIGHT is an air ambulance on an actual air ambulance response. Joe notes that aircraft using the LIFEGUARD call usually receive priority handling.

John H. Whitehead, who is located at the east end of St Lawrence Seaway near Montreal, Canada, sends in some first time logs this month. John has supplied some great pictures of ships passing on the St. Lawrence that readers have seen here. John uses a Lowe 150 and a NTR-1 DSP unit on the audio plus for decoding digital signals he uses John Hoot's HFFAX and SWL 3.0 in a 386. John recently added an ICOM PCR-1000 running on a P166.

John publishes a periodic positions list of all "Foreign Flagged Vessels in the St. Lawrence River and Seaway, and Great Lakes" at the Great Lakes Vessel Passage page at <http://www.oakland.edu/boatnerd> for those with Internet access.

Mike Scott (NJ) also has never submitted logs before, but felt there is a "first time for everything." That's the spirit! A sample of what is at Mike's station includes: ICOM R-7000, Horizon USA II Marine VHF transceiver, Regency Exec aircraft band receiver, Yaesu FT-225RD 2 meter all-mode, AEA PK-232 decoder, Info-Tech M-6000 decoder, JRC NRD-525 HF receiver, Kenwood 940S HF transceiver, and a home brew 266 Pentium computer. For his antenna farm he has two 50-foot towers, one 20-foot roof mounted tower, a Shakespeare big stick CB antenna at 80 feet, a Telex 12 meter 4-element beam at 40 feet, a Cushcraft 4-element tri-bander at 60 feet, an inverted "L" at 50 feet, a discone antenna at 60 feet with a pre-amp, a 16-element VHF beam at 60 feet, a 75 meter dipole apex at 50 feet, a 40 meter dipole apex at 50 feet, a 30 meter dipole apex at 40 feet, and "various other toys and trinkets!" Some may know Mike as KNJ2JD, KQD-7815, WJ2D, or WTR-3195.

Last, but definitely not least, also joining us for the first time is Patrice Privat from northern France. Patrice uses a Yupiteru MVT7100 and a Panasonic RFB45 in his area of interest which is civil aviation. Patrice is the first contributor from France this column has had.

Our friend Robin Hood over in the UK has noted a lot of unidentified XU7 callsigns in various maritime logs. Robin did some research and came up with the list in **Table 1** of all XU7 ships and callsigns he could ID. Any help on the unidentified ones or updates would be appreciated.

Alan Gale, UK, reports on some new SAR activity in the Irish Republic. It was reported to Alan by Donal Leahy that the IMES/Irish Air Corps South Eastern SAR helicopter had taken up station at Waterford Airport on the 1st of July, and this was an Alouette, serial no. 214. This will use the callsign "Rescue 111" during SAR missions. The new Dublin Airport based S-61 Sikorsky helo believed to be callsign 'EI-SAR' will also be active with the callsign "Rescue 116" during SAR

Abbreviations Used For Intercepts

AM	Amplitude Modulation mode
BC	Broadcast
CW	Morse Code mode
EE	English
GG	German
ID	Identification/Ied/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)

Ops. Alan also reports that **5680** has been very busy with record numbers of SAR operations being flown.

Al Marote (FL) dropped me a note quoting a Aircraft Owners and Pilots Association (AOPA) release that indicates the FAA, the U.S. Coast Guard and the Department of Transportation have decided the Loran-C navigation system should continue operation beyond the year 2000. While no new termination date was set, the AOPA has learned the Coast Guard is planning to operate Loran through 2008. The decision still requires the approval of the Secretary of Transportation. DOT had previously planned on shutting down Loran on December 31, 2000. Stay tuned!

We have folks from eight countries who sent logs this month that I'm sure you will enjoy. Now, on with the show . . .

UTE Loggings — SSB/CW/DIGITAL

356: SJ, San Angelo, TX at 1119 in CW. (DW)
365: FT, Fort Worth, monitored TX at 1117 in CW. (DW)
2182: S/V Romeo at 0130 wkg USCG Group Mayport (Fl) re collision w/submerged shipwreck, S/V has minor damage. At 0300, M/V Parrot wkg Mayport re finding drifting raft w/3 deceased people aboard. Both in USB. (RK) **2670:** NMQ27, USCG Group Los Angeles, at 0503 in USB w/MIB. (DW) **3410:** Unid numbers station (Enigma M17) at 2030 in CW, 66128 dots 27 27 = 5FG VA. (AB) Unid fishing boats at 0430 in USB talk of fishing, boats & employees. (DB)
3740: XSF34, Lianyugang Radio, China, w/CQ mkr in Hand-sent CW at 1040. (TY)
4015: Unid numbers stn (Enigma M08) in CW at 0400 w/5L cut numbers. (RC)
4028: YL/SS 5FG "Attencion" stn at 0450 in AM, these stations are very good about starting right cn the top of the hour, but today the broadcast started early. No "Attencion" call-up but several numbers slipped out. At 0454 "Attencion" call-up, then two-number slip out, at 0500 broadcast starts as normal. (RC)
4168: Italian Navy Augusta, I at 2259 in USB (I) ABJ w/ICB in USB, 75 bd RTTY on 4169 kHz. (AB)
4213.5: At 0705, NOJ, USCG Kodiak, Alaska w/sitor free CW marker. (MS)
4232.5: At 1227, VRX, Hong Kong Radio w/CW station marker. (EW)
4254: NATO 2400 baud PSK signal heard at 0515. (TS)
4426: NMC, USCG Point Reyes, at 1047 w/wx forecasts for Calif. coast in USB. (EW)
4483: Westernport Safety Council, Australia at 0650 in USB clg VJ4626, vsl *Attila II*, w/no joy. (SD)
4501: Unid at 2118 in CW, transmits time in hh.mm format UTC+4. (AB)
4506: Unid in CW at 0100 (Enigma M08) w/5L cut numbers. (RC)
4574: X-RAY 41 clg HOTEL YANKEE 5 at 0720 in USB no joy, contacting HOTEL YANKEE 5, going through a list of CH# designator's mentioned 26 ALPHA & SIERRA CHARLIE TANGO. (IJ)
4625: Cuban (tent) CW net at 1200 on w/hand-keyed tfc, 5MGs incl n-tilde character, two stations. (AWH)
4663: Khabarovsk Volmet, Russia, w/avn wx report in EE in USB at 1305 //10090. (TY)
4905: Numbers station (Enigma M1A) at 2000 w/CW id 025. Unexpected end of the month transmission. (AB)
5038: FDY, FAF Orleans, F at 2205 in RTTY 50 bd Test tape. (AB)
5091: YL/EE, ULX, Mossad, Israel, hrd in USB at 1600. Used to be JSR on this freq. (TY)
5096: Cuba? CW, SS plain text briefly at 1520 then off, hand-keyed. (AWH)
5178: Backward Music station at 2257, same signal strength as 6753 kHz. (AB)
5201: Unid Cuban net at 1905, OM/SS suddenly on w/long counts, "comienzo." into tfc consisting several 5-char mixed alfa-num groups, whole msg twice, "final" & off. (AWH)
5202: Unid tactical comms at 1407 in USB, BULLDOG MAJOR wkg MARCH ENERGY, DANGEROUS DAN, latter req VHF radio check. Southern US accents. (AWH)
5227: VLH, School of Distance Education, Charters Towers Qld, Australia at 2306 in USB w/YL reading "Goldilocks and the Three Bears." (SD)
5230: YL/EE, MIW2, Mossad, Israel, hrd in USB at 1715 also on 6745 kHz. Another day KPA2, Mossad, Israel, hrd at 1615, also noted on 4665 kHz. (TY)
5245: MRV92, Royal Tournament London, G at 1946 w/MRU18, MRA01, MRQ30, another day wkg at 1924 w/AMM (Air 2000), G-OBWE (BWA), & MRL47. MRC01, RAF Cadets, G at 1004 w/stations on-line: MRB01, MRC01, MRV20, MRH19, MRC28, MRU18, MRL47, MRV92 (maintaining flight watch for RT98) all in USB. (AB) *(The Royal Tournament is a yearly semi-military exhibition. The Air Training Corps (ATC) use their HF freqs to communicate w/other ATC stations, military & commercial aircraft around the UK and Europe, from their stand at the show — Ed.)*
5275: ALPHA 8 HOTEL with DELTA ROMEO YANKEE, ALPHA NOVEMBER 3 & 95 INDIA at 0610 in USB for radio checks, also asked units if they were using dipoles or whips, mentioned something about deployment & some units were mobile. Also gave out CH# SIERRA OSCAR ALPHA & PAPA 4 LIMA. At 0720 INDIA clg ALPHA 8 HOTEL no joy, QSY CH# INDIA ZULU 4. (IJ)
5277: PANTHER at 0521 in USB wkg SHARK 29 req. Shark look for vsl Marita. (RC) *(Shark 29 is USCG cutter, probably USCGC Decisive WMEC-629 — Ed.)*
5335: ZERO ALPHA & 10 New Zealand Army net at 2100 in USB mentioned about getting in contact w/the STARLIGHT element.(IJ)
5365: Russian Man, RUS at 2100 in AM w/826 00000. (AB)
5383: ZKCT, Civil Defence, Palmerston, North Central Zone HQ, New Zealand at 2115 in USB w/ann that national telephone system had failed for Southwest region of the Lower North Island & emergency calls were also affected. (IJ)
5421: "English man and Family" in AM at 0300, YL/EE w/5Fx2. (RC)
5422: Lincolnshire Poacher lady passes 5F in USB at 2200 //6485// 8464. (TY)
5427: VJQ727, Capricornian School of Distance Education, Emerald Qld, Australia at 0209 in USB w/YL conducting grammar lesson. (SD)
5436: 7 UNIFORM PAPA & QUEBEC ROMEO at 0835 in USB comms were a mixture of EE & Fijian w/msg re discontent had broken out between local & college students about school maintenance, also mentioned about sending msgs to station commander. Could be Army/Military Police units or poss Fijian National police units as have been getting some similar comms on 5400. (IJ)
5472: Numbers station (Enigma M45) at 1703 in CW w/074 (R4) 296 296 296 46 46 == 5F. (AB)
5598: Gander Radio, Canada w/aero wx in USB at 0253 wkg various a/c w/posn rpts, selcal cks, etc. (MS)
5643: Qantas 42 at 0211 in USB wkg Brisbane w/posn report & advised to contact Auckland at Ogibo. (SD)
5680: Kinloss Rescue, G at 0640 w/Alpine 24 re wx. (AB) Four Oscar Alpha Zero Five at 1411, a Puma helo, 5 pob enrt from EGOV (RAF Valley) to (EGAA) RAF Aldergrove, req listening watch. Pave Maintenance at 1230 in rdo/ck w/Kinloss, this was a U.S. station, believed to be a US 'Jolly Green Giant helo from Mildenhall. Yankee 64 at 1124 in rdo/ck w/Sweden Air Rescue. SRG 32 at 2112 in rdo/ck w/Kinloss, airborne from St. Mawgan, 6 pob, enrt to Falmouth Bay. Bodo (Norway) at 2119 wkg Sabre 33. Unk (Canadian?) stn at 2137 asking what sounded like US fishermen to move off 5680 as it was a SAR freq. DRGI (FGS Frauenlob M2658) at 1150 in r/check

w/Glucksburg Rescue (D). DRFL (FGS Siegburg M1098) at 1157 in rdo/ck w/same. Mission 4868 at 1203 in rdo/ck w/same. (AG) Taupo Search Base, New Zealand w/Team 1 thru 11 at 2230 carrying out a grid search, trying to home into a volley of signal shots from a pair of missing hunters in the bush, later Team 11 located them & req helo to ferry them out. (IJ) All in USB.

5692: RESCUE 2140, USCG HU-25 Falcon at 0144 in USB wkg CAMSLANT w/pp District 7 Op's, inbound w/1 survivor re crash of Army UH-60 assigned operation Bahamas & Turks drug interdiction, D-7 adv 2140 to land at Miami Int'l customs ramp & ambulance will be waiting. (Ed.)

5715: YL/North Korean nbrs in powerful AM at 1400. This stn starts w/martial music then into nbrs at 1403. Similar but non-parallel activities hrd on 4770, 5782 kHz at this time. (TY)

5804: VJQ727, Capricornian School of Distance Education, Emerald Qld, Australia at 0214 in USB w/YL conducting geometry lesson. (SD)

5806.6: ZLKF, Auckland Meteo, New Zealand at 2230 in CW w/WX Synopsis & gale warnings. (IJ)

5841: 93 ALPHA, 04 CHARLIE, & 39 CHARLIE at 2335 in USB coord crash recovery op w/PANTHER. Medical personnel, Jaw-of-Life, & injured being transported, later PANTHER 400 in net assisting as other assets join effort. Was re crash of Army UH-60 assigned operation Bahamas & Turks drug interdiction. (MF)

5853: VLH, School of Distance Education, Charters Towers, Qld, Australia at 2306 in USB w/YL conducting dental hygiene lesson. (SD)

5880: Unid numbers stn in CW heard at 0400 w/5L. (RC)

6215: NEA Artaki at 0729 in USB clg Melbourne Radio (VIM), adv departed from St Helens, Tasmania w/2 pax on board. (SD)

6264.5: NRCB, USCGC Eagle (WIX-327) at 0355 in ARQ, USCG training three-masted "barque," "America's Tall Ship" wkg CAMSLANT, NMN, w/request they send nx items by sitor. (*Ed.*)

6283: Numbers station (M1B) at 1723 in CW w/382 (R4) 214 214 44 44 == 5F. (AB)

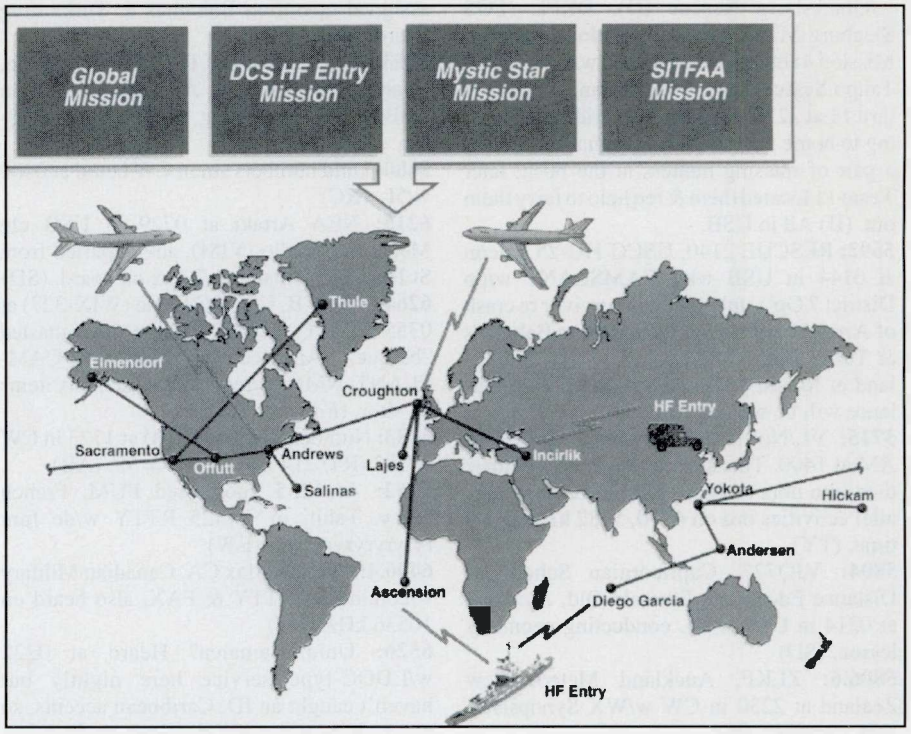
6462: At 1235, monitored FUM, French Navy, Tahiti in 75/425 RTTY w/de fum ryryryryryryryry. (EW)

6496.4: CFH, Halifax CA. Canadian Military w/continuous RTTY & FAX, also heard on 10536 kHz. (JW)

6526: Unid, Jamaica? Heard at 0222 w/LDOC-type service here nightly but haven't caught an ID, Caribbean accents, so maybe Kingston. (AWH) *(Both Air Jamaica, Kingston and Caribbean Bridgetown have LDOCs here — Ed.)*

6658: YL/EE, VLB2, Mossad, Israel, hrd in USB at 1545. Another day M1W2, Mossad, hrd at 1515. Both unable to find parallel freq. (TY)

6693: 4 ALPHA MIKE & 1 MIKE CHARLIE, U.S. Military at 0520 in USB mentioned getting authorization (audio was too distorted). (IJ)
6695: Backward Music station at 2255 very strong (+20 db). (AB)
6745: NATO 2400 baud PSK signal here at 0555. (TS)
6768: "Attencion" numbers stn at 0100 in AM w/YL/SS w/5F, background of SS broadcast later whistling. (RC)
6899: Unid unit heard at 0345 in USB, adv was changing to CH# Alpha Zero Golf. (IJ)
6900: Lincolnshire Poacher, CYP at 2000 in USB, Id 89125. (AB)
6962: Strong ANDVT signal (s9+40 with 30dB att) at 0346 in USB. (RC)
7377: Cuba, unid 2100 to 2111 in RTTY 50/500, sounds like same tx previously & occ noted on 6868, op chat incl "DIME COMO ME COPIASTES" & ments ADT ckt, so maybe link to Managua. However, brief check of 13857 packet ADT link showed nothing. (AWH)
7450: Cuba? Unid CW at 1457 to 1552 on, hand-keyed "KNA KNA KNA 23939 23939 23939" repeated once ea minute for a while, 1505 "NIL NIL SK" (very SVR-ish), then back again a few minutes later w/same format call-ups w/24142, 22690, 24182, cut 0 = T. (AWH)
7475: VLT, School of Distance Education, Charters Towers, Qld, Australia at 2306 in USB w/YL conducting lesson. (SD)
7484: YL/EE, Cherry Ripe nbr stn, MI6, hrd in USB at 1300, also noted on 11570, 13866 kHz. (TY)
7485: "Attencion" stn at 0400 in AM, YL/SS w/5F, lots of QRM from adj RTTY stn. (RC)
7535: Hrd during the month wkg SESEF Norfolk: NJJC, USS Clark (FFG-11) at 1730, Oliver Hazard Perry-class frigate w/start of HF xmitter testing; PCU Connecticut (SSN-22) at 1420, pre-commissioned Seawolf-class submarine w/HF testing; NIEY, USNS Bold (T-AGOS-12) at 1305, Stalwart-class ocean surveillance ship w/FSK tests for 2 xmitters; NKZI, USS Pensacola (LSD-38) at 1332, Anchorage-class Dock, Landing Ship w/HF testing. (*Ed.*)
7635: Texas Civil Air Patrol at 0030 in USB wkg Net Roll Call. (DW)
7983.7: RFTJ, French Forces, Senegal, heard at 0228 in ARQ-E3 48/400, no ID but presumed ckt TJF. Return link JFJ on 7783.7 at same time. (AWH)
8014: The CIA Counting stn w/YL/EE w/3+2Fs in AM at 1500. Unable to find out a parallel frequency. (TY)
8035: VHA, School of the Air, Alice Springs, NT, Australia at 0148 in USB w/YL conducting lesson. (SD)
8040: GFA23, Bracknell Meteo, UK at 0116 in FAX 120/576 w/wxfax. (JW)
8050.3: RFQP, French Forces Djibouti tuned at 2232 in ARQ-M2 200/200 idling. (EW)
8063: Two Letter German numbers station at 0034 in USB w/electric tones, YL/GG, caught "Achtung," and into groups which seemed to be x 2, very weak. (*Ed.*)



The planned locations of Scope Command transmit sites located on the Rockwell Scope Command World Wide Web page.

8145: Unid in 50/850 RTTY at 0224 w/RYs de eiaayhyx. (MS) *(This is EIP, Shannon Air, Ireland — Ed.)*
8157: Cuba, SVR at 1415 to 1800 range almost daily weekdays lately, mostly FSK/500 Morse but occasional RTTY 100/500 "RYRY." The "RYRY" on autokey morse occ also, but mostly "Lenin School" hand-keying w/Vs & what sounds like "EEFX7" or "IFX7" repeated frequently, not sure what it means. Hand-key "989 989" noted some also, trademark SVR test procedure. Sometimes it will break tx & return after a while also. Some SVR voice numbers tests have been noted around this freq previously. (AWH)
8255: 9HNU3, M/V Slovejna heard at 0506 in USB clg Valparaiso Playa Ancha Radio. (DW)
8273: Unid stns heard at 0229 in USB, sounds like military coms. "Papa & Kilo re correct mode 2, scrambled coms. (MS) (*Sounds like USN Link-11 coordination — Ed.*)
8297: ZLM, RNZN Auckland at 0937 in USB, YL & OM/EE w/MIB. (DW)
8331.5: GYA, Royal Navy, in FAX 120/576 w/chart. (DW)
8346: UONZ, TKH Volga 4006 monitored at 0728 in CW clg RUA8, Petrozavodsk Radio. (HOOD)
8359.1: UYHH, TKH Volga at 0823 in RTTY 50/170 msgs to Belgrade & Bucharest re tourist company passengers from master Km Zhurba to USO5 (a Danube cruiser). (HOOD)
8375: "New Star" Broadcaster, Taiwan, CC/YL w/4Fs in powerful AM at 1400. Similar but non-parallel transmission heard on 8300, 9725, 11430, 13750, 15388 kHz at same time. (TY)
8377: C6NR7, M/T Petrojarl Foinaven at 0637 in ARQ testing HF gear w/GKE login 70418 C6NR7. (HOOD)
8388.5: KRPB, M/V Oocl Inspiration at 0554 in ARQ w/AMVER msg. 59,810 DWT container ship. (DW)
8406.5: UHEL, BMRT Kazan tuned at 0735 in RTTY 50/170 crew TGs to UIW. (HOOD)
8418: LSD836, Argentina Radio heard at 0731 w/sitor free signal, CW marker. (MS)
8505: UCW4, St. Petersburg Radio heard at 1819 in CW w/msg to R/Officer on UAQN: Kapitan Plakhin (ice-breaker). (HOOD)
8506: XSX, Keelung radio, Taiwan at 1058 w/CW tfc list marker. (EW)
8574: LGB, Rogaland radio, Norway at 0201 in CW w/cq/de tape. (JW)
8685: IRM, Rome, Italy, at 0208 in CW, Medical Services Tape & ID. (JW)
8743: HSA, Bangkok R, Thailand, w/wx in EE and USB at 1305. (TY)
8828: At 0923 Auckland Meteo, New Zealand w/volmet info, wx for Pago Pago etc FIR reports. At 0926, monitored Honolulu Radio w/wx for Anchorage, Elmendorf, etc. Both in USB. (EW)
8846: New York ATC (CAR-B MWARA) at 0210 in USB selcal'ing Air France flt, adv come up 5550 or 6586. (MT)
8861: Khabarovsk Volmet at 0947 in USB, YL/RR w/aviation wx. (DW)
8968: BOLAR 80 at 0120 in USB wkg unid global w/pp Dover base op's. (RK)
8971: FLYING TIGER 751 at 1749 wkg 4BM w/spare group message. (MF) BLUESTAR at 0230 clg BEAR 03 then other units. OMAHA 95 req if BEAR 03 has radar contact on the Tango Oscar India *(TOI or Target Of Interest —Ed)*, 03 adv neg, last posn passed is just south

of Port au Prince. (RC) GOLDEN GOOSE, C4Y, BLUESTAR, others at 2030 in usual ANDVT/voice net. Later BIONIC 06 wkg GASPIPE ck'ing into the playground. (RK) WRANGLER 05 at 1140 clg BLUESTAR who has him LC & req he go green. After a few ANDVT bursts both stns return to voice & QSY to UNIFORM (UHF). (SD) All in USB.

8978.5: Reykjavik Air, ISL at 2215 in ACARS 1200bd w/HF Datalink squitter. (AB)

8983: CAMSLANT at 2304 wkg Air Force Rescue 232 (HH-60G) enrt to support USCG SAR. CG Rescue 1719 is flying cover over area w/at least one 41' USCG boat in the area. At 2325, 1719 reports one lost diver recovered by 41' boat w/second diver recovered by the HH-60G & enrt to Crystal River (Fl.) airport. (DW) NCF, USCG Group Miami, Fl, USA at 2352 clg CG RESCUE 6002 who was on-scene at the M/S Ecstasy fire off Port of Miami. (*Ed.*) Both in USB.

9023: SIDECAR, Canadian NORAD Region (CANR) East/West Sector Op Control Center, CFB North Bay, Ontario at 1752 in USB wkg FALCON 02 w/rdo ck. (*Ed.*)

9031: ARCHITECT, RAF London at 0336 in USB w/special Meteo actual for Akrotiri, Cyprus. (SD)

9041: 5YE, Nairobi Meteo, Kenya at 0420 in RTTY 100/850 w/RYRY, CQ CQ & then into WX synopsis. (IJ)

9130: YL/EE, EZI2 Mossad bcst in USB at 1400. (TY)

9154: D4B, Sal Air, Cape Verde at 0302 in 50/750 RTTY w/D4B testing & RY's. (MS)

9215: Argentine Federal Police net at 0325 in USB, OM in SS w/ advisories, often would repeat the word Solicitor Commisario & giving out the names of people. (IJ)

9219: The CIA Counting stn, YL/EE w/3+2Fs in AM at 1500 //10247 kHz. Similar but non-parallel transmission heard on 7600 // 10597 kHz at same time. (TY)

9220: VZQ, Dept. of Primary Industry, Brisbane, QLD, Australia, Stock Inspectors heard at 0715 in USB with a OM & YL trying to selcal a mobile unit & mentioned about closing up the office. (IJ)

9238: Attencion stn in AM at 0600, YL/SS w/5F. (RC)

9250.7: Antarctica, Dista Terre Adelie presumed, monitored at 1145 in ARQ-E3 96/400 idle. (AWH)

9263: Cherry Ripe Numbers Station at 1100 in AM w/interval signal & header (32455). //13866//. (DW)

9367: Russian Man (S7), RUS heard at 0520 in AM Repeat of 0500 transmission. (AB)

9415: Cuban Bored Man spook at 1413-1435, SS/OM "R290" msg, //6868//4106. Another day at 1400 w/R290 again. (AWH) Attencion stn in AM in 0355, YL/SS w/5F, broadcast started early w/Attencion x4, then a pause "Attencion, Attencion 974 011111111111..." etc., the computer got stuck on uno & repeated it many times. Op realizes it & beeps hrd from someone resetting the computer. At 0400 broadcast starts as normal "Attencion 974 01" call up msg 01 45 then into 5FG finale X2 04:06. "Attencion 974 01" call up msg 01 45 then went into 5FG at 0408 finale X2 0412. This one seems to be short every week. (RC)

9441: XPH Polytone station, at 0600, tones null message. (AB)

10045: 4XZ, Haifa in CW w/maritime wx rpts at 0058. (MS)

10051: New York Volmet at 0241 in USB w/aviation wx for Philadelphia, Washington & Baltimore. (DB)

10066: Ankara Aeradio, Turkey, wkg various a/c in EE & USB at 1440. (TY)

10197: DRET, FGS Rottweil (M-1061) at 1725 in USB, German Navy minesweeper wkg DHJ59, Wilhelmshaven Naval w/RTTY coordination tfc. (*Ed.*)

10263: CIA Counting Station at 2120 in USB YL w/numbers. (IJ)

10298.5: HSW62, Bangkok Meteo, Thailand monitored at 1220 in RTTY 50/170 wx info for Thai & other asian locations. (EW)

10536: CFH, Canadian Forces Halifax, NS, Canada in RTTY 75/850 at 2237 w/coded WX. (TS)

10820: CIO2, Mossad, at 0247 in USB, YL/EE repeating "CIO2." (DB)

10848.6: FOXTROT WHISKEY, Air Defense Warning (ADW) net for Pacific Rim Joint Fleet Exercise at 0436 in USB w/DELTA, others. (*Ed.*)

10954.7: RFTJF, French Forces, Port Bouet (assumed) heard at 2314 in ARQ-E 48/760 idling. (DW)

11022: NATO 2400 baud PSK signal here at 1758. (TS)

11041: XPH Polytone stn at 0620 w/Tones, long msg ea 5 mins. (AB)

11069: NNN0MBE USN Mars San Antonio TX at 0415 in ARQ w/MARSGRAMS. (IJ)

11093: WOODPECKER at 0254 in USB wkg unid units re bogies for next sorti will be in test procedure, then ROMEO clg SIERRA MIKE, & ref to "the playground" & tracks, also hrd BULLKNIGHT, BOUNCER & other SLCS stns. (DB) *(Link-11 coordination net, possibly an Air Defense Warning net — Ed.)*

11123.6: USN Link-11 Coordination Net at 0250 in USB for Pacific Rim Joint Fleet Exercise, w/PAPA, TANGO, KF, DH, JM, others. (MT)

11175: DOOM 80 at 0119 w/pp via Thule to Flight Bug? Command Post, not able to make low-level flight India Romeo 177 would like to resked low level flt to IR178-M. (RC) *(DOOM is a B-52G of 96th Bomb Sqd, 2nd Bomb Wing, Barksdale AFB, La; MUDBUG CONTROL is the command post from the 2nd BW — Ed.)* ZAPER 26 at 1200 in USB w/pp to RAYMOND 09 for landing info. (RK) *(EA-6B of VAQ-130 "Zappers," NAS Whidbey Island, WA — Ed.)* Both in USB mode.

11181: TROUT 99 at 1530 in USB wkg Andrews w/landing info, also had 4 inert devices on board. (RK)

11214: Trenton Military in USB at 1838 wkg 'RAZOR 22' w/pp. (TS)

11220: SAM 27000 in USB at 1819 wkg 'Andrews' w/equipment write-ups, & later pp to Andrews Meteo. (TS)

11232: HUNT 60 (C-141) monitored at 1515 w/pp McGuire Op's re landing info. GASPIPE 07 at 1545 clg 'any stn this net,' GAMBIT answers, then into ANDVT. Both in USB. (RK)
11345: Stockholm Radio at 1415 in USB clg United 911. (PP)
11387: Sydney Volmet at 0931 in USB w/aviation wx. //6676. (DW)
11466: SAM 201, C-20B tail No.86-0201 at 0402 in USB wkg Andrews w/pp tfc. (MT)
12245: WBZ7735, Sailing-sloop Retriever at 1933 in USB wkg WOM, AT&T High Seas Radio Miami w/ship-shore pp. duplex w/13092. (DW)
12425: Unid stn in Cuba in CW passing telegrams in Russian at 2211. Probably a Russian ship. (TS)
12462: UOZR, TK Volgoneft 146 at 0656 in CW w/admin from Km Sobolev to UJE (ITU is now UABY but used old c/s). (HOOD)
12479: At 0422 unid ship monitored in ARQ w/msg to Pacship Panama via WLO. (MS)
12495: UBEZ, TK Orion 1 at 0713 at ARQ w/crew TG to UFN (3123dwt sea/river tanker). (HOOD)
12561.5: UCZV, TSM Ostrovets heard at 0708 in RTTY 50/170 admin from KM Safanov to UIW, K-grad Radio, is ex UNDE. UHFC, Karacharovo (TSM 8375) at 0750 in RTTY 50/170 admin from Km Sokolov to UIW. (HOOD)
12579.5: YLQ, Riga Radio monitored at 1515

TABLE 1. XU7 Call List from Robin Hood, UK as of July 1998

Callsign	Ship/Remarks
XU7AA UN BONG	gen cargo 1992 9798dwt
XU7AB KWANG MYONG	gen cargo 1990 9750dwt
XU7AC CHONG GEN	gen cargo 1991 9430dwt
XU7AF MUN SU BONG	gen cargo 1969
XU7AX KANGSON	gen cargo 1970 (vsl rptd unk??)
XU7BA FORTUNA 1	gen cargo 1992 2060dwt (ex 8IF9)
XU7BD HELENA 1	gen cargo 1970 3950dwt (ex us-Khrustalnyy)
XU7BE ALEXSANDRE	gen cargo 1965 3434dwt
XU7BL GLENCORA	bulker(ex Sovetskiy Khudozhnik, UICD)
XU7BM LAGOON	bulker 1972 32404dwt (ex Filipp Makharadze, UBOU)
XU7BN CLAIRE	gen cargo 1963 3468dwt (ex Izhorales)
XU7BQ RAYNA	bulker 1973 31923dwt
XU7BS JINAN	ro-ro 1968 3485dwt (ex Irismed)
XU7BT LUCKYMAR	gen cargo 1966 2121dwt
XU7BU DIBSON 1	gen cargo 1964 3434dwt (ex Kamales, UENY)
XU7BX LEJYA	gen cargo 1970 3050dwt (Russian)
XU7CA LIDIYA	gen cargo 1967 3930dwt (Russian)
XU7CJ KEYSI 1	reefer 1960 1363dwt (Turkish owners)
XU7CL WASSIM	gen cargo 1962 (ex Paldiski, UCJG)
XU7CN WATERLOO	sea-river cargo 1972 3180dwt (ex Volgo-Balt 167)
XU7CS LEVENT	bulker 1972 32404dwt
XU7CU ALBATROS	ro-ro 1971 1542dwt (ex Nikolas)
XU7DQ BARAKA	gen cargo 1970 20351dwt
XU7DR AHMED	gen cargo 1972 4211dwt
XU7DU IBRAHIM R	gen cargo 1969 6035dwt (ex Perm, UCNU)
XU7DV ANIVA	factort trawler 1990 1810dwt (ex Ivan Korobkin)
XU7DW ALEXANDER K	type unknown 395dwt (ex Kapitan Ukhovtsev)
XU7DY MAHER	gen cargo 1972 4631dwt
XU7EJ unid	heard in VRX tfc list Oct 1997
XU7EL OCEAN FALCON	gen cargo 1970 13150dwt (ex Ilya Ulyanov, UQRT)
XU7EZ WHESTGATE	gen cargo 1965 1691dwt
XU7FD SEACROSS	cont carrier 1971 3089dwt
XU7FH ACRIS	type unknown 1867dwt
XU7FK ELENA	sea-river cargo 1984 2150dwt (ex Omskiy 117)
XU7FM AYATT	cont carrier 1972 4244dwt
XU7FR SALIMA	gen cargo 1965 3317dwt (ex Nivin Junior)
XU7FT DANI	sea-river cargo 1972 2907dwt (ex Volgo-Balt 158)
XU7FW AL AMAL	gen cargo 1970 3950dwt (ex Kursenai/Kuntsevo)
XU7FZ GOLDEN LAKE	type unknown 2200dwt (ex Fujitoku Maru)
XU7GG AMIR	gen cargo 1967 2250dwt (ex Amir M/Amwage)
XU7GH FIDDLER	gen cargo 1991 3866dwt (ex Kirzach, UIVI)
XU7GN MCL TRADER	gen cargo 1990 3866dwt (ex Pizhma, UCSC)
XU7GX ORCA	gen cargo 1968 5935dwt (ex Isakogora, UUKC)
XU7HA SILVA	gen cargo 1971 2230dwt (Russian)
XU7HJ SOYANA	gen cargo 1969 2485dwt (exAleksandr Pankratov)
XU7HP NORLAND	gen cargo 1975 11341dwt (ex Petrodvorets, USFK)
XU7HR SVET	gen cargo 1970 13728dwt (ex Svetlogorsk, UTYO)
XU7JC JEANNE	gen cargo 1968 12707dwt (ex Jeanne Labourbe)
XU7JF BAMA	gen cargo 1976 1335dwt (ex Erminia)
XU7JS KENGMA	gen cargo 1977 2077dwt
XU7JT ELENA 2	type unknown (ex Blue Sky/Dongnama Inchon)
XU7KD NOOR ALHASAN	gen cargo 1968 3680dwt (ex Krasnoarmaysk, URHL)
XU7KF BIG DREAM	sea-river cargo 1967 1821dwt (ex Geroi Naumov)
XU7KG BLUE OCEAN	gen cargo 1979 20914dwt (ex Topaz)
XU7KK HIGH MOUNTAIN	bulker 1972 32628dwt (ex Nopeunidas/Buffalo)
XU7KM	unid in UFN tfc list May 1998
XU7KN	unid calling UAT November 1997
XU7KP	ALPHA LIVESTOCK 19 livestock carrier 1970 2008dwt (ex Chabaa)
XU7KQ	BETA LIVESTOCK 17 live stock carrier 1971 1881dwt
XU7KX	KAROLINA gen cargo 1969 12707dwt (ex Karl Libnekht, UWPR)
XU7MD VICTORIA	gen cargo 1968 12730dwt (ex stochnyy)
XU7MH	unid in IAR tfc list April 1998
XU7MK	MEKONG ore carrier 1963 9995dwt (ex Dneprodzerzhinsk)
XU7MN SOFIA	gen cargo 1970 2230dwt (ex Evgeniy Onufriev)
XU7MQ LALUNA DEL MAR	gen cargo 1962 2579dwt (ex Tartous 2)
XU7MSBANIAS	1 gen cargo 1969 1082dwt
XU7MY	unid possible "Sibirsk" working USU June 1998
XU7NE NIKA	gen cargo 1967 14390dwt (ex Nikolay Dobrolyubov)
XU7NJ AMANDA	gen cargo 1968 12640dwt (ex Inessa <Armand, UYUV)
XU7NQ GOGOA	gen cargo 1965 760dwt (ex Karin)
XU7PL	unid in UAT tfc list May 1998
XU7QJ	unid wkg UAT June 1998
XU7SC	unid calling UAT June 1998
XU7XH	AL FAROOK type unknown (ex-Lancing/Ballykern/Baxtergate)

Any information on the "unids" or on other XU7 calls would be welcomed.

in FEC w/tfc list (names, not calls) wx in EE for Riga & QSS as 2460/8432/12579.5/16955. (HOOD)

12580: GKE5, Portishead Radio, UK at 0430 in ARQ w/sitor free signal, CW marker. (MS)

12587.5: LZW, Varna Radio, Bulgaria monitored at 0437 w/sitor free signal and marker. (MS)

12593: ESA, Tallinn Radio, Estonia at 1530 in FEC w/tfc list. (HOOD) Same at 0452 in ARQ w/sitor free signal, CW marker. (MS)

12607.5: WNU, Slidell Radio at 1856 in FEC w/tfc list. (DW)

12610.5: VCT, somewhere in Canada at 0540 in ARQ w/sitor free signal, cw marker. (MS) *(Tors Cove Radio, NFLD, Canada a Globe Wireless station — Ed.)*

12615: USU, Mariupol Radio, UKR at 0550 in ARQ w/sitor free signal, CW marker. (MS)

12750: NMF, USCG Boston at 1904 in FAX 120/576 w/fax schedule. (DW)

12753.5: OXS, Lyngby Radio, Denmark at 0657 in CW w/channel marker. (EW)

12853.4: GKB5, Portishead Radio monitored at 1020 w/CW msg to 9HZU3, M/V PO. (HOOD)

12857: 6WW, French Navy, Dakar at 0232 in 75/750 RTTY w/"ceci est le testing de la station six whiskey whiskey voyez le brick que j examine prez du grand wharf," then RY's. (MS) *(commonly called "le brick's," this is the French equivalent to the English "Quick Brown Fox" test tape — Ed.)*

12887.5: EAD3, Madrid Radio at 1927 in CW w/call tape. (DW)

12950: YL/EE, CIO2 Mossad bcst in USB at 1245. (TY)

13022: SPB, Szczenin Radio, Poland w/ Polish plain text in ARQ at 1849. Up in FEC at 1900 w/tfc list. (TS)

13060: UFJ, Rostov Radio at 1030 in CW tfc list. (HOOD)

13069.5: JOS, Nagasaki Radio at 1932 in CW w/call tape. (DW)

13077: KMI, AT&T Coastal Station, Calif., at 0232 in USB wkg vsl Aleutian Spray w/radiotelephone tfc. (DB)

13113: HLS, Seoul Radio, South Korea, Rptng short melody mirror between phone patches at 0700, similar activity hrd on 13161 kHz. (TY)

13171.7: TSBN, the Tunisian Navy Tazarka-class (lead ship) Small Patrol Boat "Tazarka" (P-205) at 0158 in ARQ w/several non-classified msgs in FF after selcal QCQT. *(Ed.)*

13200: REACH 507 no joy w/Andrews at 1912 in USB. (MF)

13282: Auckland Volmet, NZ at 0751 w/aviation wx. //8828//6679. At 0735 Honolulu Volmet w/same, at 0741 Tokyo Volmet w/same. (DW) At 0240 Honolulu Volmet w/wx, 1st of anything hrd in the Pacific. (RC) All in USB.

13368.5: Unid in CW at 0245 w/5F, s/off @0251 w/73 873 052 152 tttt. (MS) *(The "Ts" are actually "cut zeros," where the T is sent in place of the 0, it's a form of CW shorthand as letters are quicker to send — Ed.)*

13846.7: RFQP, FF Djibouti at 0612 in ARQ-E3 100/425, idling then controle de voie at 0618. (EW)

13927: AFA5OA, USAF MARS, Utah at 2212 in USB attempting to enter the MARS net. AFA18N, Net Control, reports that AFA5OA is not on the list, & that net is a closed net. Adv net is the USAF Atlantic/Central America/South America-area phone patch net. (DW)

13953: P6Z, French MFA, Paris, F at 0458 in FEC-A 192/357 wkg unid stn w/5L's. *(Ed.)*

13958: Unid USN(?) Net heard at 2212 in USB w/YY, 7J, K9G, 12A, X7A, others, active. (DW)

14487: Lincolnshire Poacher, CYP at 1200 in USB, Id 47658. //15682//16084 kHz. All freqs heavily jammed by a pulse jammer. (AB)

14686: U.S. Customs at 1426 in USB, ATLAS wkg 411 20 minutes out of Panther 400. At 1535 ATLAS wkg 112, req confirm his tail number as did not come up in database, then into parkhill scrambling. (RC)

14732: RFVI, FF Reunion Island monitored at 0341 in ARQ-E 96/425 idling w/good clear signal. (EW)

14902: Louisiana CAP 30 heard at 0041 in USB wkg Night Time Communicators Net, units included Yosemite 184: Calif. CAP, Hill Cap 49: W. Virginia CAP. (DW)

14931: 8BY in CW at 1852 rpting VVV marker & two 3F grps. (TS)

15016: DOOM 80 at 0148 in USB w/pp to 781-DSN through Thule. QSY from 11175 no joy. (RC)

15624: YL/EE, Cherry Ripe nbr stn heard in powerful USB at 1000 //10452 //17499. This is a new Cherry Ripe freq first found Mar. 1998. (TY)

15735: New logging for The Counting Station at 1235 in AM w/3/2F. (CT)

16000: VNG Australia at 0618 in AM w/ strong time pips. (MS)

16011.7: Egyptian diplo stn in ARQ at 1958 w/Egyptian plain text. (TS)

16050: The Counting Stn (V05) in AM at 0100, YL/SS 3+2F. (RC)

16080: Unid military exercise stn heard in AM at 2015 w/repeating traffic. Possible SIGINT collection training. (TS)

16086: YL/EE, the Counting nbr stn monitored at 1100 in AM, was able to find parallel freq (21811 kHz), tonight it's easy to confirm a parallel CH at the test tone transmission before nbrs. Far away more than 5 MHz separation! (TY)

16087.7: RFVI, FF Le Port at 1705 in ARQ-E3 100 bd tfc to station "Paris" cct REI. (JD)

16193.2: RFQP, FF Djibouti heard at 1715 in ARQ-M2 200 bd tfc to "Paris" ccts QPF & QRG. (JD)

16324.7: RFTJD, FF Gabon all day lately, ARQ-E3 192/400, occ garbled CdVs mentioning RFTJ, should be ckt JDJ but no confirmation seen, lots of dropouts. Definitely isn't resurrected UGI. (AWH)

16409: NATO 2400 baud PSK signal here at 1852. (TS)

16688.5: OXWW2, M/V Melbridge Force monitored heard at 1834 in ARQ w/AMVER msg. (DW)

16711.5: P3JV4, M/V Seahope 2 at 0811 in ARQ msg to Thenamaris, Athens via SAB (a 29107dwt bulker).(HOOD)

16785: UAYP, Leonid Ivanov, hull ID MB-0018, at 1243 in RTTY 50/170 w/crew TGs to UDK2. (HOOD)

16804: UBXS, RTMKS Aleksandr Kosarev at 0753 in RTTY 50/170 w/crew TGs to UDK2. (HOOD)

16812.5: Heard t 0629 NRV, Apra Harbour, Guam monitored w/sitor free signal, CW marker. (MS)

16927: UIW, Kaliningrad Radio at 1533 in RTTY 50/170 w/msg to UDAR, SRTM Ulan. At 1040 w/msgs to UHDK, MTR Kvartsevyy, UHRN, TR Khrustalnyy Bereg, P3FZ6, TR Motovskiy Zaliv, ELQZ9, TR Frost 5 (ex Baltiyskiye Gory), 3FKX4, TR Ref Star (ex Kaliningradskiy Bereg), later to ELQZ6, TR Frost 2 (ex Primorskiy Bereg). (HOOD)

17022.5: WLO in FEC at 1837 w/tfc list. (TS)

17169: A9M, Hamala Radio, Bahrain at 0857 w/CW marker. (EW)

17521.6: HSW61, Bangkok Meteo, Thailand at 0735 in RTTY 50/850 wx info for many Asian locations. (EW)

17904: Seoul radio, S. Korea, wkg Korean Air 907 in EE, Korean & USB at 0300. (TY)

18280: At 1730 Piccolo mode, been here for more than 24 hours but no ID seen. (JD)

18879: At 1730 Piccolo mode, no ID seen but MTS wkg MKK listed here. (JD)

19145.7: At 1700, RFTJ, FF Dakar in ARQ-E3 200 bd to RFQP cct DKJ. (JD)

19696.5: 8PO, Barbados Radio, Barbados, wkg unid ship in ARQ at 1802. (TS)

21811: YL/EE, the Counting nbr station heard at 1100 in AM, also on 16086 kHz. (TY)

22890: At 1730 Piccolo mode, no ID seen, but MKK wkg MTS listed here. (JD)

23461: YL/EE, Cherry Ripe nbr stn, MI6, hrd in USB at 2300, also noted on 17499, 20474 kHz. (TY)

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Tuning In *(from page 4)*

truth about HDTV. We've waded through the piles of news releases, poured over the hype from the industry and here's what we found. Confusion. Buzz words. Hype. And more confusion.

And of course the National Association of Broadcasters is absolutely rabid about HDTV. They want to get those digitally-transmitted signals out there because of problems with analog signals that, with distance, slowly degrade into snowy pictures. And to make matters worse, the whole digital transmission of both video and audio is a pretty complicated process which translates into cost, which further translates into the usual "who's going to pay for this?" Who do you think?

Uncle Sam has told broadcasters that — also in the interest of moneymaking spectrum auctions — they need to completely switch to digital transmissions by 2006 when the current analog channels will generate nearly *$6 billion* for Uncle Sam. That's a lot of moola. But if you think that's a bundle, try to comprehend the more than $25 billion, which is how much Uncle counts on raising from *all* these spectrum auctions.

We sniffed the money trail right to the doors of equipment manufacturers and the FCC. Several manufacturers have come on board with converters that will allow us to watch these new HDTV signals on our current TVs — for about $200 to 500. So what does Congress, the White House and the industry think the millions of folks on fixed incomes will do when the broadcasting industry makes the digital switch? Few of these folks can afford to run out and buy the converter. Can you? Heck, most of us think long and hard before plunking down that kind of money on a new rig, let alone a converter, when the darned TV probably cost under $300 in the first place. Do you ever wonder what the folks in politics and industry who come up with hairbrained schemes eat, drink or smoke that makes them think in riddles? I have some ideas, but they're better left out of print.

Let's clear the air on the differences between Digital Television (DTV), Direct Broadcast System (DBS) and High Definition Television (HDTV), courtesy CEMA's publicity.

• **DTV** is a new broadcast standard that will eventually replace the standard analog television broadcast signal we receive today, giving consumers a higher resolution picture and wide-screen presentation. It will require a new television receiver and broadcast facilities. This changeover from analog to digital will be a gradual one, taking place over several years. CEMA says, "Thus, currently available analog TVs will provide years of use and enjoyment."

• **DBS** is a high-powered, high-band digital satellite TV transmission system that uses a home receiving dish 18 inches in diameter. You can get up to 200 channels of digital video and audio programming with what CEMA says is "superior picture and CD-quality sound." DBS was the first product to bring digital video to the living room.

• **HDTV** is "the centerpiece of digital TV" and provides, according to CEMA, "about five times more picture information (picture elements or pixels) than conventional television, creating unprecedented clarity and wide-screen perspective." CEMA says, "HDTV will ultimately allow for the presentation of an entire football game using a single camera, providing users with a view similar to that seen from seats on the 50-yard line."

CEMA's packet includes a Digital TV Q&A portion titled, "What You Always Wanted To Know About Digital Television But Were Afraid To Ask." Perhaps with good reason. Here are the salient points taken directly from CEMA's packet:

• Why would I buy a regular TV set with HDTV coming?

A: "These sets will work forever with everything but broadcast. For broadcast signals they will work until at least 2006 and then low cost converters will be available. Even if the broadcast analog signal is ended in 2006, a $1,000 set bought in 1997 would cost about three cents a minute of average use for the next 10 years."

• When the analog signal shuts off, will people throw out obsolete sets?

A: "Sets won't be obsolete. First, the TV sets will work with cable, home satellite, VCRs, DVD and other products. Second, for broadcast television, we expect low cost (under $150) converters to be available when digital signals replace analog signals. As soon as the transition to digital begins, current sets can receive both the analog and digital broadcasts with the addition of a set-top box."

• Where can people dispose of sets that are beyond repair?

A: "Procedures for the disposal of televisions that are no longer functioning vary by locality, and include curbside drop-off, special pick-up or collection days or drop-off at a centralized point. Consumers should contact their city or county authorities to obtain information on the appropriate procedures in their locality."

Kind of reminds us of when folks were getting rid of their large multi-band receivers by dumping them at the curb. Today some of those antiques are worth 10 times what grandma paid.

CEMA goes on to say that one out of four families buys a TV set every year anyway, and that the year 2006 is a target date for implementation of HDTV. They say, "In reality few people believe that DTV penetration by 2005 will allow the shutting-down of the analog signals by 2006." But that's what the FCC has mandated. Come hell or high water, in 2006 analog TV transmissions stop, digital begins. And what they don't talk about is about the *other three families* like you and me who buy a $400 TV set and expect it to last a few years. And just how many of us regular folks really have *room* for a large-screen TV in our already cramped homes? Visit some of those high-cost metro areas — New York, Chicago, Los Angeles — I'll bet my keyboard that the majority of viewers are watching "Jeopardy" on a 19-inch or smaller screen. OK, it's true that large-screen projection TV sales are rising every year, and the computer-TV "interactive" revolution is in full swing, but the trend is still gradual. No one has been given a specific year when they'll *have to* run out and buy a computer-TV combination or get their TV wired to the Internet.

Interestingly, the media coverage about HDTV rarely brings up these and other points. I would imagine that's because they're the ones that, in the long term, stand to benefit from the new TV standards. What TV station or network would dare step on its own coax by publicizing the down side of HDTV? According to an information packet from the Consumer Electronics Manufacturers Association (CEMA), " . . . some estimates are that [new TVs] will cost as much as $2,000 to 5,000 more than today's sets, while others estimate costs will range from $8,000 to $11,000 . . . but as mass production occurs in future years, prices will drop, making this technology affordable."

"I'll bet you also didn't know that in all likelihood your cable TV company isn't anywhere near ready to go digital."

Too bad that by the time prices drop sufficiently, I'll *need* to put a new roof on the house, fix that leak in the basement, and buy a new car. There's something terribly wrong when Congress can tell you and me that to see the same programs, in virtually the same picture quality we've seen for years, we've got to choose between a new roof and a TV.

You'll certainly read all kinds of technical dissertations about HDTV and analog, and all kinds of analogies presented to help consumers understand the coming of digital. But as we get closer to the conversion from analog to digital, are you ready to plunk down thousands of dollars for a new TV? Let's do the simple math. By 2006, if you've got three TVs in your house — one in each of your two kid's rooms and the other in the living room — you'll be spending a minimum of $500 for analog-to-digital converter boxes. Or you can go all out and buy three new TVs. You'll be plunking down a *minimum* of $6,000! That's provided prices come down a bit.

Think about the revenue that will fill the pockets of folks building and selling just the converter boxes when you're talking about 250 million television sets in the U.S.! So you better put a couple thousand bucks in the family budget otherwise you and your family will be listening to a lot more radio when 2006 comes around. Come to think of it, maybe this HDTV thing isn't a bad idea after all, especially if we could get Uncle Sam to give each of us our fair share of that newly generated cash to outfit a well-appointed monitoring post.

September's Gremlins!

September's "Product Spotlight" on the FirstRate program for Drake's R8, 8A, and 8B receivers generated lots of calls and letters, many from readers wondering where to get more information on Mark Chalkley's superb program. Well, enter the gremlins. The review didn't end abruptly on page 61, it continued onto the right column of the next page adjacent to the "How I Got Started" story.

You can get more information about the FirstRate software by contacting Mark at <Mark.chalkley@ibm.net> or U.S. mail at Spectrum Systems, P.O. Box 1177, Saluda, VA 23149-1177. It's $99 with $5 shipping in the U.S. Or you can call them at 800-296-2178.

He's A Travelin' Man

A special welcome to Australia's Bob Padula, whose feature this month "DXing From Sarawak — Land Of The Hornbills" is a must-read by anyone who tunes the international shortwave bands. Sit back and enjoy the picture Bob paints of his far-flung adventures in the coming months, exclusively here in *Pop'Comm*. Bob will take you along on his excursions to parts of the world most of us only dream about visiting. Bob has been an avid shortwave listener/DXer for many years and has traveled the globe, always bringing along his portable receiver. ■

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Radio Stuff Sale: Books, magazines, club bulletins, radio station items, old time radios & more. $1 for list. G. Dexter, 213 Forest Street, Lake Geneva, WI 53147.

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The Loose Connection

RADIO COMMUNICATIONS HUMOR

BY BILL PRICE, N3AVY

Me, A Radioman?

In my single-digit years, I longed for a '32 Ford roadster, a Harley-Davidson motorcycle, all kinds of guns (including a bazooka and a cannon), and a shortwave radio. In his wisdom, my dad got me a shortwave radio. He also let me have a BB-gun, but my mother's frequent admonitions about shooting my eye out crimped my enjoyment of the thing.

In the months leading up to a Christmas in the Fifties, I longed for the Hallicrafters S38-D, which had a control panel that looked as if it belonged in a B-17 bomber. I wore out that page in my *Allied* catalog. My dad opted for the improved S38-E with its all-glass front panel, not knowing I'd have traded performance for looks. It wasn't much past noon that Christmas day that I decided I wanted a transmitter. I wanted something to decipher Morse code for me too, but not so badly as I wanted a transmitter.

License? Study? Test? Code? Naaaah, I don't want a big powerful transmitter—just something to get me around the neighborhood — well, maybe down into Philadelphia. My dad, who usually did know best, bought me an ARRL license manual and novice study guide on the very next business day after Christmas that year. "Study, pass your test, get your amateur license," he said, "and I'll get you a small transmitter."

I had an "Elmer" nearby, but I never spent time with him asking questions about things I didn't understand. And there was the code. I spent hours each week devising ways not to spend hours each week actually studying and learning the code. I probably spent eight or 10 years of my life looking for a way to use a powerful radio transmitter without getting a license. I would see ads for CB radios, but they were beyond my savings account balance, which was usually a quarter (there were no minimum balances then). Eventually, my dad got a pair of CB radios just about the time I joined the U.S. Coast Guard, so I never got to use them very much.

After 13 weeks of boot camp, my hopes of pursuing the rate of *Journalist* were dashed (they only had about 12, and there was a waiting list), and the one opening for *Parachute Rigger* was filled. our boot-camp career advisor told me that I scored high in my Sonar Pitch Memory Test, and my Morse code Recognition test. If I wanted to get into a school, I'd have to pick between Sonarman School and Radioman School or end up chipping paint on an icebreaker somewhere. With apologies to all my *ping-jockey* friends, I was not about to give up the chance to use a transmitter just to chase submarines and launch depth charges. Radioman it was.

I'd like to pause here to discuss the one thing that keeps the world going 'round: Motivation. Without motivation, we just don't get out of bed, we don't go to work, we don't shower. The Coast Guard (and other fine branches of the military) has plenty of motivation to handle getting up, working, and showering. To my surprise, they had a great motivational system in place for learning to copy Morse code at a minimum of 20 wpm, learning to touch-type at a minimum of 60 wpm, and learning the other fine points of military and commercial communication procedure.

Before we attended a single class in Groton, Connecticut, we ate breakfast. It was good chow, as chow goes, and it was served by those who did not live up to the expectation of Coast Guard Radioman School and the other schools located there. Since we students got up very early, those who fed us breakfast got up *very, very* early, and were required to be polite to those of us still making the grade. I never once had to be reminded to study.

After six months in Groton, I was granted the authority to use BIG RADIO TRANSMITTERS! I sent official communication of great importance — sometimes life or death, sometimes matters of national security. I was taught encryption secrets (don't even ask) and granted neat clearance which authorized me to hide out in the crypto-shack and play with the neat gadgets. I learned to drop the power on our commercial frequency transmitters and ask passing freighters and passenger ships to mail postcards home from their next port of call.

Sometime during my four-year hitch, I learned that my dad had nudged me, cajoled me, steered me into joining the Coast Guard, preventing my Uncle Sam from drafting me into the jungles of southeast Asia. He helped me learn to save lives and use that radio transmitter I'd longed for.

On my first North Atlantic Patrol, I copied an SOS with the Captain standing behind me, looking over my shoulder. As for becoming a journalist, I did publish a ship's underground — no, that would be *underwater* newspaper. Never did learn how to rig a parachute. People serving in the Coast Guard just didn't jump out of many planes.

During my stint in the Coast Guard, I got to ride a Harley, fire a five-inch gun (just once), shoot a .45 Automatic, and march with an M1 Carbine dangling from my right thumb. I have never owned my own bazooka or cannon, but a neighbor here in the Old Dominion has a lovely collection of civil war cannons which he fires for us each Fourth of July. He is fortunate that he owns enough land to drop a croquet-ball into his own cornfield with a one-pound charge.

They don't use Morse code anymore in the Coast Guard, and there's no threat (not today, anyway) of being drafted into jungle warfare, but if you can get in, it's a clean place to grow up, learn something, and put away a few bucks for an education. My N3AVY amateur callsign is rather ironic for an ex-Coastie, but I'd have had to be Russian to get U3SCG. Semper Paratus. ■

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