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- * Antenna: Motorola jack
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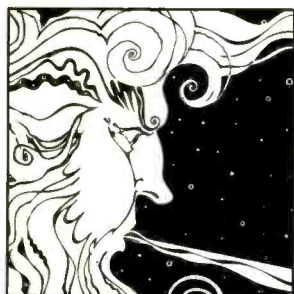
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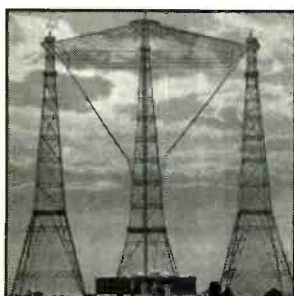
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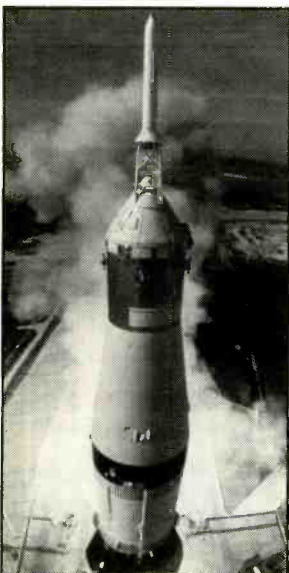
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This month's cover: George Maglaras, Meteorologist at the National Weather Service, reads the forecast over WXL-34, Albany, NY and WXL-37, Ulster Co., NY. Photo by Larry Mulvehill, WB2ZPI.

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Note: Radios listed above are all LW-MW-SW-FM digital. Contact us for other models.

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By L. Magne. Graphic presentation of all SWBC stations. Equipment reviews too. \$16.95

● Shortwave Receivers Past & Present

By F. Osterman. Your guide to 200 receivers with new-used value, specs, features. \$8.95

● Aeronautical Communications Handbook

By R. Evans. A mammoth book on all aspects of shortwave aero listening. 266 pages. \$19.95

● Complete SWL's Handbook

By Bennett, Helms, Hardy. Nearly 300 pages on all aspects of SWLING. \$16.95

● Guide To Utility Stations

By J. Klingentuss. The definitive guide to utility stations- CW, SSB, FAX and RTTY..... \$36.95

● Easy-Up Antennas for Listeners & Hams

By E. Noll. Low cost, easy to erect antennas for LW, MW, FM, SW, SCAN and HAM. \$16.95

● World Radio TV Handbook

All SWBC stations by country with schedules, addresses, power, etc. Reviews too. \$19.95

● Discover DXing!

By J. Zondlo. An excellent introduction to DXing the AM, FM and TV bands. \$4.95

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- ◆ Weather Reports
- ◆ Research Traffic
- ◆ Packet Messages
- ◆ Radio Bulletins

If you are only listening to your shortwave radio you are missing half the fun. With the addition of a Universal decoder and monitor you can see the world. The shortwave spectrum is filled with interesting text messages and photos that you can intercept and display. If this sounds interesting to you, request our two free pamphlets: *Listening to Radioteletype and Receiving FAX on Your Shortwave Radio*. Shown above is the Universal M-900 (\$429.95) which decodes: Morse code, Baudot RTTY, Sitor A/B, FEC-A and FAX. Contact us today for information on the full line of Universal decoders.

● Universal M-900



DATA AND TONE READER

● Universal M-400



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The M-8000 offers tremendous intercept power to let you listen to the exciting world of radioteletype and FAX on shortwave, VHF and satellite! It includes capabilities not available in other decoders. The VGA color output permits the presentation of more information than ever before. A double status line indicates all current lator and decoder settings. The lower left corner displays five bar-graph type tuning bars. A horizontal window at the bottom of the screen shows a continuously updated, spectral display. A square window in the lower right corner features a simulated X-Y tuning scope. The M-8000 decodes all the "standard modes" plus ARQ-M2/4 (TDM), FEC-A, FEC-S, ARQ-E, ARQ-E3, ARQ-S, SWED-ARQ and Piccolo used by diplomatic, military and aeronautical concerns worldwide. The M-8000 itself is automated, utilizing a microprocessor to control shift tune and selection. Manual tuning is facilitated by on-screen bargraph tuning indicators for level, mark and space plus a simulated tuning scope. Instructive LEDs for: Mark, Space, Buffer, CW Lock, Squelch, Idle, Sync., Sel-Cal, Data, Tuning Error and Data Error. Other refinements include: ATC, UOS, built-in diagnostics, bit inversion (Baudot), speed readout, external scope output plus serial and parallel printer ports. Can be 19 inch rack mounted with optional mounting kit. 9 Lbs. (15 Lbs. ship). 115/230 VAC, 50/60 Hz. Requires a VGA analog color monitor. \$1299.00 (+\$10)



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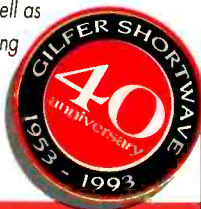
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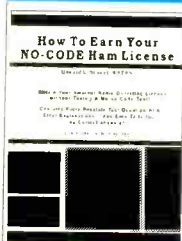
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CIRCLE 67 ON READER SERVICE CARD

How To Earn Your NO-CODE License



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CIRCLE 76 ON READER SERVICE CARD

BEAMING IN

BY TOM KNEITEL, K2AES

AN EDITORIAL

My colleague and good friend, Harold Ort, N2RLL, has devoted the better part of this year meticulously assembling the ingredients of the *Popular Communications Worldwide SWL Conference*. This event takes place in a few weeks, on October 2 and 3, at the Radisson Hotel, Virginia Beach, Virginia. The conference is coordinated and timed to coincide with the huge *18th Annual Virginia Beach Hamfest and Computer Fair*, also taking place at the Radisson.

Harold has lined up manufacturer and distributor exhibits, equipment demonstrations, a flea market, raffles, and door prizes. There are plenty of terrific speakers. These include (among others) Gerry Dexter, Don Dickerson, George Jacobs, Ian McFarland, Dick Robinson, Bill Price, Dr. Harold Cones, and Pat Murphy. The keynote speaker is Roy Neal, K6DUE. These experts will discuss relevant hobby topics ranging from equipment purchase to where shortwave radio is heading.

Attendance on October 3rd provides a visit to the giant Norfolk Navy Base.

All of this for an SWL Conference ticket that costs only \$25. A ticket also admits you to the ham/computer show, and includes free parking at the Radisson. You can order conference tickets by mail from Popular Communications, 76 North Broadway, Hicksville, NY 11801. Tickets may be ordered by phone, too, with a VISA, MasterCard, AMEX, or Discover card. Call-in orders to (516) 681-2922. Registration at the conference itself takes place on Friday, October 1, and Saturday, October 2.

For room reservations at the Radisson Hotel in Virginia Beach, call 1-800-333-3333 and specify that you are interested in the rates for the hamfest on October 2 and 3. This show always draws a large crowd, so if you want lodging at the Radisson, don't wait until the last minute.

If you have a mobile rig, or an H/T, the talk-in frequency of the show is 146.97 MHz.

Many people have long considered the Virginia Beach show to be the friendliest and best-run of all the major hamfests. It seemed the ideal event with which to synchronize the first *Popular Communications Worldwide SWL Conference*. You will like the ham show. More importantly, you'll find that Harold has done an absolutely wonderful job of putting together this vital and exciting international conference devoted and dedicated to our hobby.

Letters, We Get Letters

Among the mail regularly received here are suggestions for things that we should either drop from or add to the magazine. Readers have suggested that we add columns ranging from CD reviews to regular coverage of fiberoptics. Many of these suggestions are quite good. Still, when only one or two readers say they want a particular new monthly column, it's a topic we feel wouldn't have sufficient appeal to justify its existence. We would need to see far more widespread support in order give it serious consideration.

There is one subject, however, that has brought in a steady stream of requests for quite some time. It does appear that there is enough reader interest to warrant testing a column relating to showing disabled communications hobbyists ways to take fullest use of SWL'ing, scanning, ham and CB radio.

This would include coverage of certain comms equipment, accessories, and operating aids of special interest, and discussions of FCC regulations relating to disabled persons. One DX'er wanted ideas on antennas for a person who was physically unable to climb up onto the roof of a house. Someone once wrote asking if we knew of a receiver that announced its frequency aloud by voice. It does appear that there's a lot of valuable specialized information that could be presented, perhaps on a bi-monthly basis.

The communications hobbies have long been particularly attractive to physically challenged persons. It's been an arrangement that has worked out very well for all concerned, and added many dedicated, proficient members to our ranks. The code-free Tech ham ticket certainly helped this along.

We at *POP'COMM* would like to take this one step further. But, nobody who has written to suggest this coverage has offered to write the column. The question is whether we can find a competent columnist. What we are looking for is a knowledgeable *POP'COMM* reader with a pinch of writing talent and ability, plus a dash of enthusiasm for doing a column about this topic—who also owns either a typewriter or a computer. Obviously, we would prefer a columnist who has first-hand experience participating in the hobby as a physically challenged person.

If you think you might be this person, please write to us, telling something about

(Continued on page 74)

TONE READING IMPROVED!!!

DECODE...CTCSS-50, DTMF-16, DCS-105



OPTOELECTRONICS

Monitoring off-the-air signalling tones such as private line and DTMF (Touchtones®) has always involved compromises—tiny displays, ambiguous readouts and poor response time. *No Longer!*

Optoelectronics has applied world class engineering to the problem and set a new standard for inexpensive tone reading equipment. This unit was designed to fill a function, not meet a price—yet it is competitive with other, less featured units. A micro-processor measurement system makes the unit precise and enables future expansion of capabilities.

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- Stores most recent CTCSS or DCS tone

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- Use with scanner or receiver (may require internal connection for CTCSS)
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- Ideal for two-way service technicians, hams and monitoring hobbyists
- 2 line by 16 character backlit LCD display
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DC440 with R10 Package
Price \$549.
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SPECIFICATIONS

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Monitoring The Weather

Severe Weather Events Are Getting Worse, & Happening More Often. Keeping Informed is Important!

BY RICK MASLAU, KNY2GL

It can't be my imagination, but it seems that tornadoes, hurricanes, rain storms, blizzards, and other nasty weather events are upon us. Hurricane Andrew last year, the deluges that soaked Texas and southern California, terrible snows in the Great Plains, killer tornadoes throughout the southern states are things vividly etched into our consciousness.

Other than being prepared, there may not be too much one can do in the face of a severe weather event. Having an adequate supply of batteries, flashlights, candles, matches, drinking water, non-perishable food, bedding, sanitary and medical needs, dry clothing, handheld scanner, a portable AM/FM radio, and as secure a

shelter as possible mean you have made a good start. In addition, following instructions from area public safety officials is important.

As a communications hobbyist, you have the added advantage of being able to use your equipment to gain additional insight and warnings regarding approaching severe weather systems. There are HF, VHF, and UHF frequencies utilized for weather-related communications and broadcasts. Our chart shows selected active weather communications frequencies, also frequencies and schedules for regional weather advisories. The scheduled weather advisories shown are primarily intended for maritime or aeronautical interests.

Your local area probably has one or more ham radio RACES networks (especially on the 2 meter band) that activate during times of severe weather. Check locally for RACES frequencies in your community as these are very informative. Also monitor police, fire, power utility, public works, and other local services.

Remember, your area TV/FM/AM broadcasters will be sending out updated weather information and advisories. Some aeronautical radionavigation facilities in the 200 to 400 kHz band also transmit recorded voice weather information.

With a scanner and an all-band radio, you can hear everything. Keep this information handy. ■

Selected Weather Frequencies

NOAA VHF-FM Weather Broadcasts: 162.40 162.425 162.45 162.475 162.50 162.525
162.55 MHz

USCG Weather Bulletins: 2670 4426 6501 8764 13089 17314 kHz 157.10 MHz

Automated Terminal Information Service (ATIS) & Automatic Weather Observing System (AWOS): Check nearby airports to determine if they have these VHF facilities, which carry weather data. They can advise their local frequencies.

Amateur Radio Hurricane Networks: 3815 3900 3935 7165 7268 14270 14283 14325 kHz

Hurricane Hunter Aircraft: 3407 4701 5562 6673 8876 10015 11398 13267 21937 kHz
304.8 MHz

Atlantic Small Vessel Weather Nets: 6224 12353 kHz (evenings)

Air/Ground VHF/UHF Weather: 122.0 239.8 342.5 344.6 375.2 MHz

WWV, Ft. Collins, Colo.: 2500 5000 10000 15000 20000 kHz; N. Atlantic Ocean Weather at 8 & 9 min past each hour; Pacific Ocean Weather at 48 48 50 51 min past each hour. (Also from **WWVH** in **Hawaii**, except no 20000 kHz service.)

Scheduled Broadcasts

CALIFORNIA

Inverness (KMI): 0000 & 1200 UTC on 4402 & 13083 kHz

Oakland: 5 10 35 40 min past the hour on 2863 6679 8828 12382 kHz

FLORIDA

Fort Lauderdale (WOM): 1300 & 1300 UTC on 4363 8722 13092 17242 22738 kHz

HAWAII

Honolulu: Continuous on 2863 6679 8828 13282 kHz

NEW JERSEY

Manahawkin (WOO): 1200 & 2200 UTC on 4387 & 8749 kHz

NEW YORK

New York: Continuous on 3485 6604 10051 13270

VIRGINIA

Portsmouth (NMN): 0400 0530 1000 UTC on 4426 6501 8764 kHz; 1130 1600 2200 2330 UTC on 6501 8764 13089 kHz; 1730 UTC on 8764 13089 17314 kHz

CANADA

Edmonton, AB: 20 min past even hrs between 2300-1200 UTC on 5753; 20 min past even hrs between 1200-2300 UTC on 15035 kHz.

Gander, NF: 25 30 50 55 min past the hour: 3485 6604 10051 13270 kHz

Saint John's, NF: 40 min past the hour on 6753; 40 min past the hours between 1200-2300 UTC on 15035 kHz

Trenton, ON: 30 min past the the hour between 2300-1200 UTC on 6753; 30 min past the hour 1000-0100 UTC on 15035 kHz

Scanning Riverboat Casinos

Floating Gambling Palaces Are Now Cruising Our Waterways

BY CHUCK ROBERTSON

A hundred years ago, Mississippi riverboats were in their glory. Each one tried to offer the tastiest food and drink, most luxurious accommodations, fastest service, and best gambling. Yet, the development of a nationwide railroad system led to their demise. By the 1930's, the combination of the railroads and new anti-gambling laws turned the few remaining riverboats into tourist excursion vessels.

Due to changes in gambling laws, and the public's interest in nostalgia, spectacular and lavish Mississippi riverboat casinos are staging a dramatic comeback. Riverboat gambling has been legalized in Illinois, Iowa, Louisiana, Missouri, and Mississippi. Similar laws are pending in Arkansas, Kansas, and Michigan.

These aren't resurrected old hulks. They are all safe, newly designed and constructed, modern vessels, although they are designed to capture the flavor, look, and essence of old time luxury riverboats. They carry all of the creature comforts needed to ensure maximum passenger convenience, including staterooms, bars, restaurants, and live entertainment. More than a dozen are now in operation, with more being designed and built at a furious rate.

Keep in mind that these new riverboat casinos are large, rivaling the size of some casinos in Las Vegas, Reno, and Atlantic City. Some have hundreds of gaming tables, slots, and video poker games. The President Riverboat Casino, of Davenport, Iowa, is nicknamed "The Big One" because it can accommodate 3,000 patrons.



The Players Riverboat Casino, docked at Metropolis, Ill.

The dazzling 425-ft. S/S American Queen is under construction and should be completed by early 1995. This will be the largest steam-powered paddle-wheeler ever built. Although it will offer a swimming pool, elevators, and modern conveniences, it will retain the atmosphere and look of a turn of the century riverboat. It will carry 420 passengers, and have 6 decks. This ship will make overnight trips on the Mississippi, Ohio, Cumberland, and Tennessee Rivers.

As you may have guessed, these activities require communications. Whether you're on the shore or on board, you will want to have a scanner to hear what's going on.

Steamboat 'Round The Bend

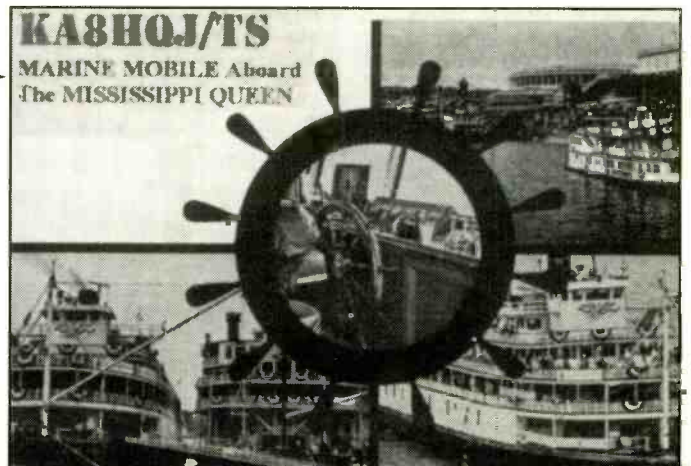
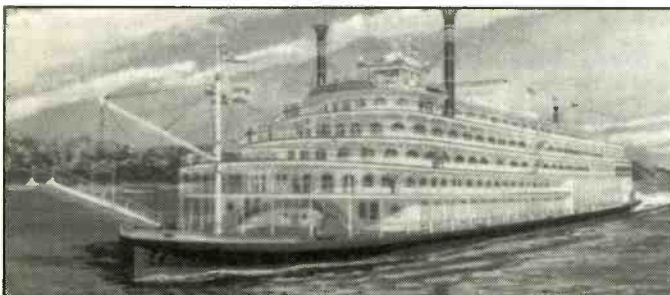
Handheld transceivers are plentiful. They are used to coordinate the onboard staff personnel, such as dealers, security, cashiers, maintenance, and pit bosses. The Players Riverboat Casino, out of Metropolis, Ill., has been monitored running a repeater on 464.90 MHz. The frequency has been monitored with reports of which slot machines have made large payoffs.

Security is extensive on the floating casinos, and the employees operate much like police on patrol. Security includes uniformed personnel, as well as plainclothes operatives. Since cheating is always a pos-

This ham QSL was commemorates temporary operation on the 2-meter ham band from aboard the riverboat Mississippi Queen.

You never know where riverboat signals will turn up next! →

↓ Artist's conception of the new S/S American Queen.



Monitoring on The River

The Admiral, St. Louis, MO: 462.875
Alton Belle Casino, Alton, IL: 156.45
B B Riverboats, Covington, KY: 156.95
The Boatworks, Rock Island, IL: 461.85 463.725 464.425 464.775
Casino Magic, Bay St. Louis, MS: 461.85 464.525 464.875 464.925
464.975
The Delta Queen, New Orleans, LA: 461.40 464.85
Greater Peoria Riverboat Corp., E. Peoria, IL: 154.57 463.8125
464.8124 466.8125
Isle of Capri, Biloxi, MS: 461.1625 461.775 461.95 463.2375 463.2875
Jo Daviess Silver Eagle Casino Riverboat, E. Dubuque, IL: 463.35
464.225
Miss. Riverboat Amusement, Biloxi, MS: 461.0375 461.375 461.6125
463.5375 464.375
Mercury Sightseeing Boats, Palatine, IL: 156.95
Players Riverboat Casino, Metropolis, IL: 154.60 464.90
Par-A-Dice Riverboat Casino, E. Peoria, IL: 464.00 464.10 464.35
464.625 464.875
The President Riverboat Casino, Davenport, IA: 461.025 463.5125
463.5375 463.5875 463.60 463.6125 464.025 464.35 468.5125 468.5375
468.5875 468.6125
Riverboat Days, Clinton, IA: 151.685 151.895

sibility, it takes an experienced eye to detect this form of fraud. Therefore, some casinos hire experts in such matters to constantly circulate and watch the customers and employees for suspicious activities.

Any large payout draws attention, and sometimes surveillance to make certain that there was no cheating, or collusion between the player and an employee. An investigation may last for several days. If doubts remain, a suspect employee could be quietly fired. Casinos dislike this type of negative publicity in the news media.

Surveillance includes CCTV, wireless and body mikes, bugs, and tapes. Employees who look like they are wearing hearing aids might well be using receivers to get information from the management about certain players.

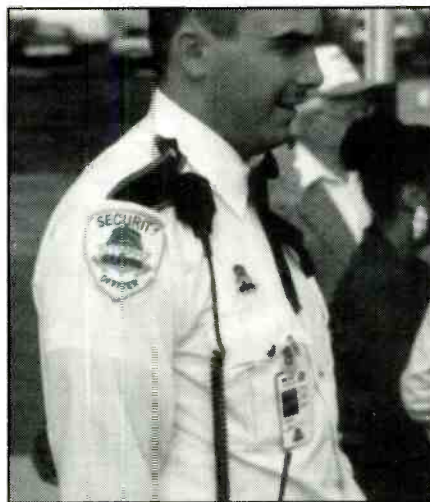
Crusin' Without Losin'

Cheaters use radios, too. One stunt calls for placing a special receiver directly into the circuitry of a slot machine. When the machine pays off, the cheat keys a secret transmitter and causes the machine to get hung up in the "pay" mode. Every subsequent play is another winner. When the transmitter is unkeyed, the operation returns to normal.

In one case when the cheater was caught, the little UHF transmitter was discovered hidden in his cigar.

Your Lucky Numbers

To find the frequencies often used aboard riverboat casinos, search 151.625 to 151.955 MHz, 154.515 to 154.60 MHz, 457.5125 to 457.6125 MHz, and



Security aboard riverboat casinos is tight, and coordinated by radio.

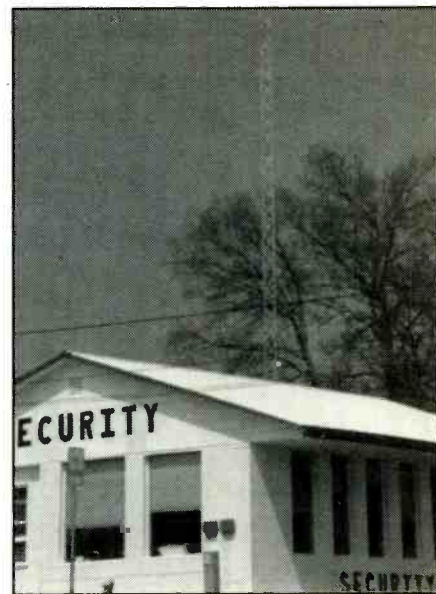
460.65 to 470.00 MHz, also the 462 MHz GMRS channels.

Of course, the VHF-FM channels between 156 and 157 MHz are used. It seems that 157.025 MHz has been a particular favorite in this band. The 216 to 220 MHz marine band could also produce results. Check for signals in the 217.0125 to 217.9875 MHz band segment (12.5 kHz steps).

While the riverboats are docked, there may be dockside activity on 457.525, 457.55, 567.575, and 457.60 MHz.

Grinnin' & Winnin'

If you visit a riverboat casino, you will



The security operations for The Players Riverboat Casino operates on 464.90 MHz. Here's their shore headquarters.

probably find that security personnel look with particular disfavor at your attempting to bring a scanner into the casino areas. They suspect you might be using it in connection with a scheme for cheating. Since you are on private property, if security people ask you not to bring the device into the casino area, then respect that it's their call.

There shouldn't be any problems using it in other areas of the vessel, so long as it is not operated loud enough to disturb other passengers. ■

Radio, As It Was

Let's Dig Back Into The Past

BY ALICE BRANNIGAN

It was one of the most celebrated and famous wireless stations in the world. It was assigned distinctive call letters, and it operated on a myriad of frequencies, including longwave, mediumwave, and shortwave. That describes U.S. Naval Radio Station NAA, Washington, DC.

NAA went on the air in the early days of wireless. Its actual location was at the southwestern end of Fort Meyer, Arlington, Virginia. You couldn't miss it on the horizon or the airwaves.

NAA was rated at 100 kW. Three gigantic steel towers were constructed, and were known as "The Three Sisters." One was 600 ft. tall, 150 square at the base. Two were 450 ft. tall, 120 sq. ft. at the base, located at angles of an Isosceles triangle. The largest tower was at the apex base of the triangle, with 350 ft. between centers

of towers, perpendicular to base 350 ft. When the station was built, it cost about \$250,000. The government said that NAA had a minimum daytime range of 2,000 miles, and a nighttime range of at least 3,000 miles.

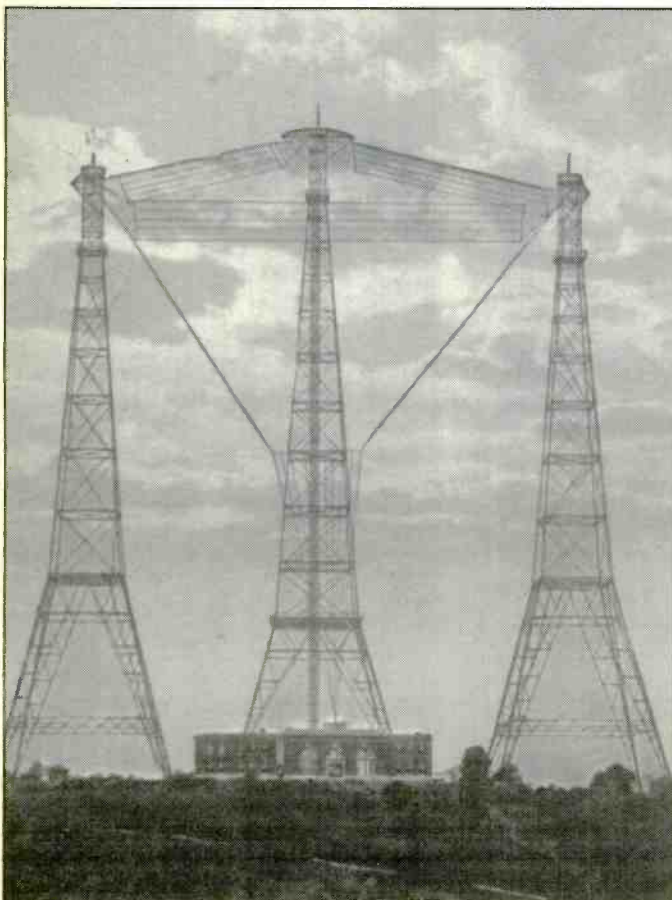
One of NAA's regular functions was the hourly transmission of official Naval Observatory time signals. Before the advent of WWV/WWVH, NAA's time signals were used as a time standard by governments, scientists, and industrial interests around the world. Naval stations in California, Hawaii, and the Philippines relayed the time signals.

Around 1915, NAA was the station used to exchange transatlantic voice communications with the station in the Eiffel tower. NAA's voice transmissions included a weather report accompanying the sta-

tion's time signals twice daily on 690 kHz until NAA's mediumwave broadcasts ended in 1936.

Most of NAA's activities were on the maritime communications bands and consisting of bulletins broadcast at 18 wpm CW. Many was the budding ham or commercial operator who sat at home and learned CW the old fashioned way by copying NAA's traffic. NAA realized that it had a large ham following, and NAA operated on the ham bands every Navy Day. Special QSL cards were issued for these contacts.

Historic NAA went out of service sometime in the 1940's, when its functions were taken over by NSS, Annapolis, Maryland. The giant towers were taken down. The old NAA site is presently location for the U.S. Defense Communications Agency. The call letters NAA were later reassigned



These imposing NAA towers were nicknamed "The Three Sisters."



The Hotel Vicksburg was built in 1928 and, in its day, was quite a showplace.

WQBC

THE POST-HERALD STATION
IN THE HOTEL VICKSBURG

Vicksburg, Miss.,
January
13th
1 9 3 2

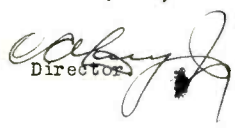
Joseph Leo Hueter
1722 North 18th Street,
Philadelphia, Pa.

Dear Sir:

This will verify reception of W Q B C on your set at 2 a.m. CST or 3 a.m. EST January 10th, 1932.

We appreciate hearing from you and hope that if at any future time you are successful in picking us up you will write us of your reception.

Cordially,
RADIO STATION W Q B C,

By: 
Director

C
A
L
M
B

WQBC sent this homey QSL letter back in 1932 when it had digs at the elite Hotel Vicksburg. (Courtesy the late Joe Hueter.)

for use by the Navy's megawatt VLF communications station at Cutler, Maine which is used for sending messages to submarines.

For most of the information presented here on historic NAA, we are indebted to Perry F. Crabill, Jr., W3HQX, of Winchester, Virginia. Perry got his first ham ticket in 1938 after learning CW by copying NAA's 18 wpm traffic. He started out not knowing any CW, and when he could get solid copy, Perry figured he was ready for the FCC test. He got his ham ticket on the first try!

From High Atop The Hotel Vicksburg

Station WQBC was one of the many radio stations once located in majestic and elaborate downtown hotels. It was a status thing. This station opened in 1931, in Vicksburg, Miss., from studios on the top floor (11th floor) of the beautiful Hotel Vicksburg, 801 Clay Street. This landmark Art Deco building, built in 1928, was the tallest structure from New Orleans, north to Memphis. The marble lobby took up two stories, featuring an ornamental fountain and pool filled with goldfish.

WQBC, owned by Delta Broadcasting, Inc., operated on 1360 kHz with 500 watts

when it first went on the air. The transmitter was 2-1/2 miles east of town, but the studios were in the hotel. Soundproofing the studios meant sealing them up tightly. Nobody could survive very long on a summer day under such conditions, so an air cooling system had to be improvised. Every day a large tub was filled with crushed ice. Fans blew fresh air across the ice, then the cooled air went through vents into the studio for comfort and ventilation. This worked just fine.

In 1941, WQBC went to 1 kW and briefly shifted to 1390 kHz. Soon after, the station moved to its present frequency on 1420 kHz. WQBC continued as a successful resident of Vicksburg. However, after thirty years of operation, the late 1950's saw the Hotel Vicksburg facing declining business due to newer hotels and the popularity of motels. The hotel remained open until 1973, when it went out of business. In 1979 it was added to the National Register of Historic Places, and is now a residential apartment building.

As for WQBC, the station relocated to 3190 Chapel Hill Road. In the early 1980's, it upped its power to 5 kW (days), and 500 watts (nights). In 1987 it was purchased by Sharing, Inc. The station operates with urban gospel and adult contemporary formats.

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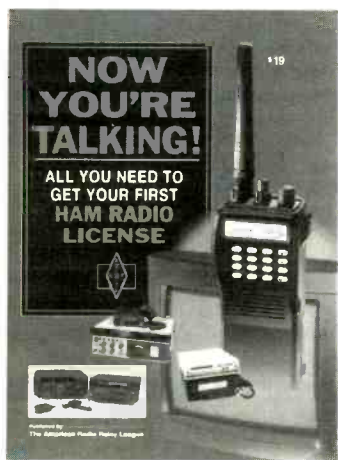
Tickets & General Info
Manny Steiner, K4DOR
3512 Olympia Lane
Va. Beach, VA 23452
(804) 340-6105

Exhibitor info
Lewis Steingold, W4BLO
1008 Crabbers Cove Lane
Va. Beach, VA 23452
(804) 486-3800

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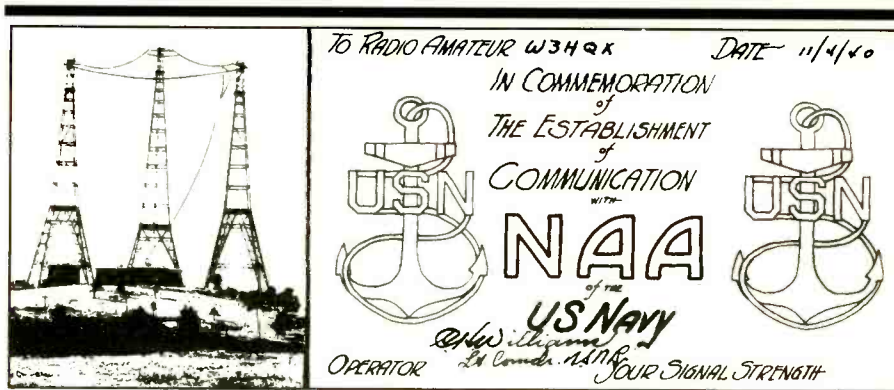
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CIRCLE 52 ON READER SERVICE CARD



QSL received for contacting NAA on Navy Day, 1940. (Courtesy W3HQX.)

Thanks to Hugh M. Hawkins, of Port Gibson, Miss., for his information on WQBC. Hugh lived in Vicksburg until 1940. He's a regular reader of these pages.

Hi Neighbor!

Next, we have an inquiry from Tom R. Rice, WB6BYH, of the Holler Observatory, Livermore, Calif. Tom tells us that he grew up in Walla Walla, Washington, where he particularly enjoyed tuning in local KUJ/1420 to hear *The Jack Kirkwood Show*.

Tom writes that recently he happened to watch *Fancy Pants*, a 1950 Bob Hope-Lucille Ball film. Although Tom did not know Kirkwood had made films, he immediately recognized the distinctive voice of one of the supporting players as being Jack Kirkwood, and confirmed it by checking the film's cast credits. Tom then looked up Jack Kirkwood in Ephraim Katz' *The Film Encyclopedia*, and found considerable information about Jack Kirwood's movie career as an actor and director. Although many of Kirkwood's credits were given, there was a gap extending from a 1941 film to one he made in 1948. No mention was made that Kirkwood had ever been in broadcasting, yet there was obviously only one person with that name and voice.

It is Tom's guess that the gap in the Hollywood years represents Kirkwood's time in broadcasting. Tom is now researching Kirkwood and hopes we can turn up something on Jack Kirkwood's years in radio.

Yes, Jack Kirkwood (1883-1963) was active in films and broadcasting. In late 1941, Kirkwood had a supporting role in the half-hour Western serial *Saunders of the Circle X* that ran weekly on NBC's West Coast stations.

The Jack Kirkwood Show, also called *Mirth and Madness*, ran as a daily (except Sunday) morning program in 1943 on NBC. From June of 1944 until 1946, it was called *The Jack Kirkwood Show*, and aired every evening on CBS, sponsored by Proctor and Gamble. The theme song was, "Hi, neighbor, Hi, neighbor; Time to smile and say hi!"

Kirkwood's show featured cornball and

madcap humor, including lots of satire. The cast included Lillian Leigh (Mrs. Kirkwood), announcer Jimmy Wallington, singer Don Reid (later, Jeannie McKean), second banana Gene Lavalle. A catch phrase made popular by the show was, "Hy-ya, Jackson!"

About 1948 Jack and Lil did *At Home With The Kirkwoods*, which was a well-received satire on husband/wife breakfast table radio shows that were popular in the late 1940's. Each of their shows started out happily but soon degenerated into nit picking and bickering. The shows all abruptly ended amidst accusations, threats, and gross insults loudly being exchanged by the couple, and sometimes their invited guests. In 1949, ABC carried *The Kirkwood Corner Store*, based on a similar concept. From 1950 to 1953, this program was carried over the Mutual network.

Looking for Information

Donald H. Harter, M.D., is seeking information about the manner in which recordings and transcriptions were made of domestic radio broadcasts in the early 1930's. This is particularly in reference to the technologies used for the studio recording of radio broadcasts during that era as well as the personnel and staff that produced the recordings.

This isn't too close to the information we can access in our records, but we passed along what we could to Dr. Harter. Perhaps you have information, or can suggest to him a textbook or article that would cover the topic in whole or part. If so, he'd really appreciate any help you could offer.

Contact him at: Donald M. Harter, M.D., 2475 Virginia Ave., N.W., Apt. 503, Washington, DC 20037.

See Us Again

We hope you will be with us in October. Thank you for your continuing help and items sent for our use in the preparation of these pages. This includes: old radio and wireless station QSL's, station photos, station listings, newspaper clippings, as well as your questions, anecdotes, memories, and thoughts.

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Frequency Coverage	Default Steps
25.000 - 25.995 MHz (AM)	5.0 KHz
26.000 - 28.995 MHz (AM)	5.0 KHz
29.000 - 53.995 MHz (NFM)	5.0 KHz
54.000 - 71.995 MHz (WFM)	50.0 KHz
72.000 - 75.995 MHz (NFM)	5.0 KHz
76.000 - 107.995 MHz (WFM)	50.0 KHz
108.000 - 136.995 MHz (AM)	12.5 KHz
137.000 - 173.995 MHz (NFM)	5.0 KHz
174.000 - 215.995 MHz (WFM)	50.0 KHz
216.000 - 224.995 MHz (NFM)	5.0 KHz
225.000 - 399.995 MHz (AM)	12.5 KHz
400.000 - 511.995 MHz (NFM)	12.5 KHz
512.000 - 549.995 MHz (WFM)	50.0 KHz
760.000 - 823.995 MHz (NFM)	12.5 KHz
849.0125 - 868.995 MHz (NFM)	12.5 KHz
894.0125 - 1,300.000 MHz (NFM)	12.5 KHz

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For more information on Bearcat radio scanners or to join the Bearcat Radio Club, call Mr. Scanner at 1-800-423-1331. To order any Bearcat radio product from Communications Electronics Inc. call 1-800-USA-SCAN.

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- Bearcat 65XLT-F handheld/SPECIAL \$99.95
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- Bearcat 210XLT-F base/SPECIAL \$119.95
- Bearcat 172XL-F base \$109.95
- Bearcat 147XLT-F base \$83.95

New FCC Rules Mean Last Buying Opportunity for Radio Scanners

On April 19, 1993, the FCC amended Parts 2 and 15 of its rules to prohibit the manufacture and importation of scanning radios capable of intercepting the 800 MHz cellular telephone service. Supplies of full coverage 800 MHz scanners are in very short supply. When this inventory is exhausted, there will be no more full coverage scanners available to our U.S. customers. If you have an inquiring mind that wants to know, today could be your last opportunity to own a Bearcat 800XLT scanner. Call Communications Electronics now to order your scanner.

Bearcat® 800XLT-F

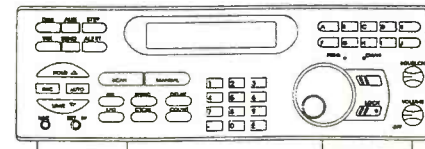
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Frequency Coverage	Steps
29.000 - 54.0000 MHz (NFM)	5.0/12.5/25.0 KHz
108.000 - 136.9950 MHz (AM)	5.0/12.5/25.0 KHz
137.000 - 174.0000 MHz (NFM)	5.0/12.5/25.0 KHz
216.000 - 224.9875 MHz (NFM)	12.5/25.0 KHz
225.000 - 399.9875 MHz (AM)	12.5/25.0 KHz
400.000 - 512.0000 MHz (NFM)	12.5/25.0 KHz
806.000 - 823.9875 MHz (NFM)	12.5/25.0 KHz
849.0125 - 868.9875 MHz (NFM)	12.5/25.0 KHz
894.0125 - 956.0000 MHz (NFM)	12.5/25.0 KHz

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BY R.L. SLATTERY



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As you know if you have read Joe's antenna column that appears bi-monthly in *POP'COMM*, his antennas are clever. Best of all, the construction information is so easy to follow that even folks who can't figure which end of a soldering gun gets plugged can still understand Joe.

Joe Carr's *Receiving Antenna Handbook* is \$19.95. It comes from HiText Publications, P.O. Box 1489, Solana Beach, CA 92075. It's available from the publisher and also from leading dealers carrying communications books.

CET Study Guide

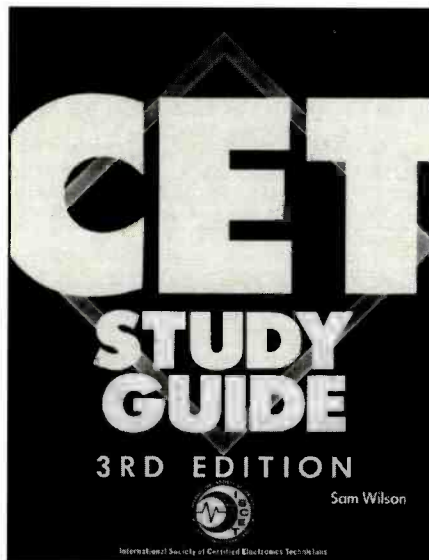
If you're planning on taking the Associate or Journeyman level CET (Certified

Electronics Technician) exams, this 268-page study-guide could be a distinct help. It's called *CET Study Guide, 3rd Edition*, by Sam Wilson.

The updated and revised book contains the latest information on digital electronics, as well as a comprehensive Q&A review of every other subject covered in the CET exams. There are theory and practical workbench techniques for servicing VCR's, TV's, radios, stereos, computers, and other equipment.

In addition, there is information on the best methods to use for passing these tests, as well as how the tests are organized, and how to properly analyze the exam questions. Requirements for becoming a CET are also given. Good information here.

CET Study Guide, 3rd Edition's TAB book number 4076. It comes from TAB Books, Blue Ridge Summit, PA 17294-0840. Enclose \$3 for shipping, and \$5 for

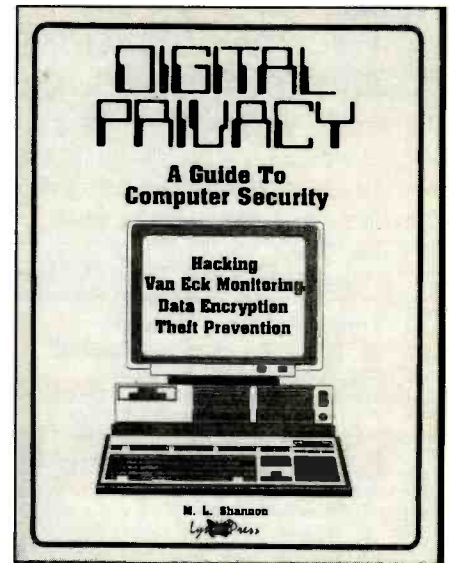


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Digital Privacy: A Guide to Computer Security, by M. L. Shannon, is a new book written with the average computer owner in mind. The user-friendly, 129-page illustrated book is non-technical in its approach, although quite thorough.

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hackers, passwords, E-mail, RSA & DES algorithms, alarms, booby traps, locks, BBS, and some really tricky things.

The news media regularly tells of the ease with which unprotected or improperly protected data can be stolen, snooped, modified, or maliciously destroyed. Obviously there are things that should be known, and steps taken, in order to protect the privacy and integrity of valuable personal, business, or professional records, files, whether sent/received by modem, or simply stored. Remember that unprotected stored data can be accessed by employees and intruders.

Digital Privacy contains an abundance of vital advice, then also provides a useful bibliography and glossary of terms. This is a new (1993) book containing current information.

Digital Privacy, by M.L. Shannon, is \$20.95 plus \$4 shipping (\$5 to Canada). Residents of NY State please include \$2.23 tax. This book is available from CRB Research Books, Inc., P.O. Box 56, Commack, NY 11725. VISA/MC welcome. Phone orders: (516) 543-9169; 24-hour FAX order line (516) 543-7486.

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The Code Book, by Robert J. Halprin, K1XA, is a 89-page illustrated manual for those interested in pursuing and preserving the art of ham radio CW operation. The book has it all, if CW is your thing. Tells how to learn the code, use CW to advantage for contests and DX'ing. You could learn to love those *di's* and *dah's* with Halprin's well written book. It's \$17.95, \$2 shipping (\$3 foreign) from Tiare Publications, P.O. Box 493, Lake Geneva, WI 53147. VISA/MC are OK. Phone orders (414) 248-4845.

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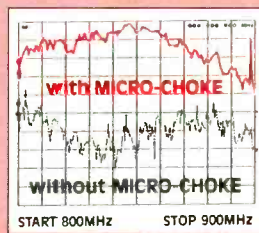
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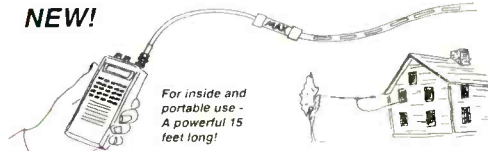
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Monitoring the World's Ionosondes

Unusual DX You Can Try For!

BY ANDREW W. CLEGG

We amateurs rely on a lot of patience and a little luck to snag rare DX. But pros often have to establish a reliable radio link between two distant stations, and many times that link must be established in a matter of minutes. How do they do it?

The answer is a device called an ionosonde. Military and scientific users of the shortwave band use them regularly to establish radio links and to probe ionospheric conditions. I'll describe what ionosondes are and how you can listen for them, but first let me digress for a brief review of the ionosphere and its role in radio propagation.

The ionosphere is a layer (several layers actually) of charged particles that surrounds the Earth. The charged particles come from sunlight (ultraviolet radiation and X-rays) that ionizes atoms and molecules in the upper atmosphere. The ionosphere has the fortunate property that it can refract and reflect radio waves. Two stations separated by a great distance on the Earth can use the ionosphere to communicate over the horizon, since the radio waves traveling between the stations can bounce off the ionosphere.

The ionosphere is composed of three principle layers. The bottom-most is the D-region, which is about 30-60 miles above the Earth's surface. The D-region is mostly responsible for absorption of radio signals. Next up is the E-region at about 60-90 miles. Usually the E-region doesn't affect radio waves very much. Occasionally a very thin, dense ionized layer forms here. This layer, known as "sporadic E," can cause strong reflection of radio waves at frequencies up to VHF and beyond.

The F-region is all of the ionosphere above about 90 miles. It is quite good at refracting radio waves. That is, an upward traveling wave is gradually bent by the F-region until it is traveling back down towards Earth again. The F-region is the layer which is most responsible for long-distance short-wave propagation.

Radio waves can bounce off the ionosphere more than once. Such "multi-hop" propagation occurs when signals reflect or refract off the ionosphere to be reflected/refracted again, and so on. In this fashion

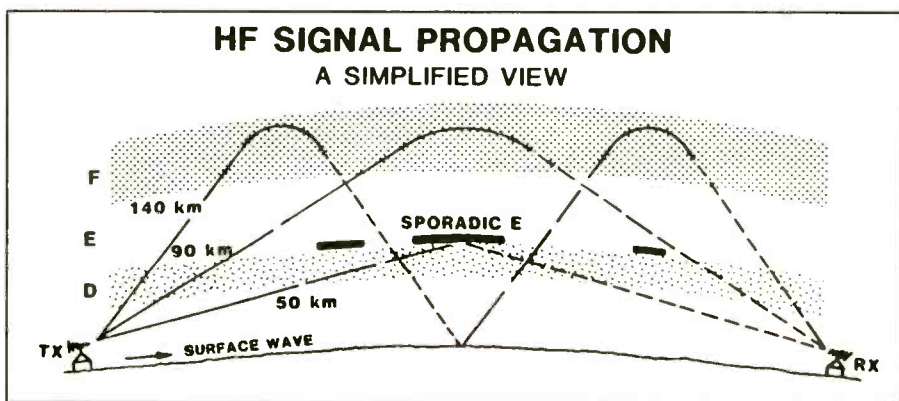


Figure 1. Radio wave propagation using the ionosphere. Courtesy Gerald Oicles/BR Communications, Sunnyvale, CA

radio signals can hop right around the globe.

The ionosphere's efficiency at refracting, reflecting and absorbing radio waves depends critically on a large number of factors: the time of day, the season, weather conditions in the upper atmosphere, the degree of solar activity, as well as the fre-

quency of the radio wave and the geographic locations of the transmitter and receiver (to name a few). Shortwave propagation is therefore inherently unpredictable. How does one know, then, when the ionosphere is just right for radio propagation between two specified points at a



Figure 2. An ionosonde transmitter. Photo courtesy Gerald Oicles/BR Communications, Sunnyvale, CA



Figure 3. An ionosonde receiver. Photo courtesy Gerald Oicles/BR Communications, Sunnyvale, CA

specific frequency? Enter the ionosonde!
 Short for "ionosphere sounder," the ionosonde is actually a very simple device. The ionosonde transmitter emits a narrow bandwidth, low power (10-150 watt) signal that sweeps in a frequency across the shortwave band. Most ionosondes start sweeping at a frequency of 2000 kHz, and sweep at a rate of 100 kHz per second up to a maximum frequency of 30 MHz. It takes 4 minutes and 40 seconds to complete one sweep, and most ionosondes repeat their sweeps every 15 minutes (some

repeat at other intervals such as 5, 10, 20 or 30 minutes). Table 1 lists a few dozen ionosonde transmitters and their locations, power and start times. These ionosondes, like most, transmit through omnidirectional antennas.
 To establish a reliable radio link between two points, an ionosonde transmitter is located at one point and an ionosonde receiver at another. The ionosonde receiver is synchronized to sweep at the same time and rate as the transmitter. The receiver records how strong the received signal is at

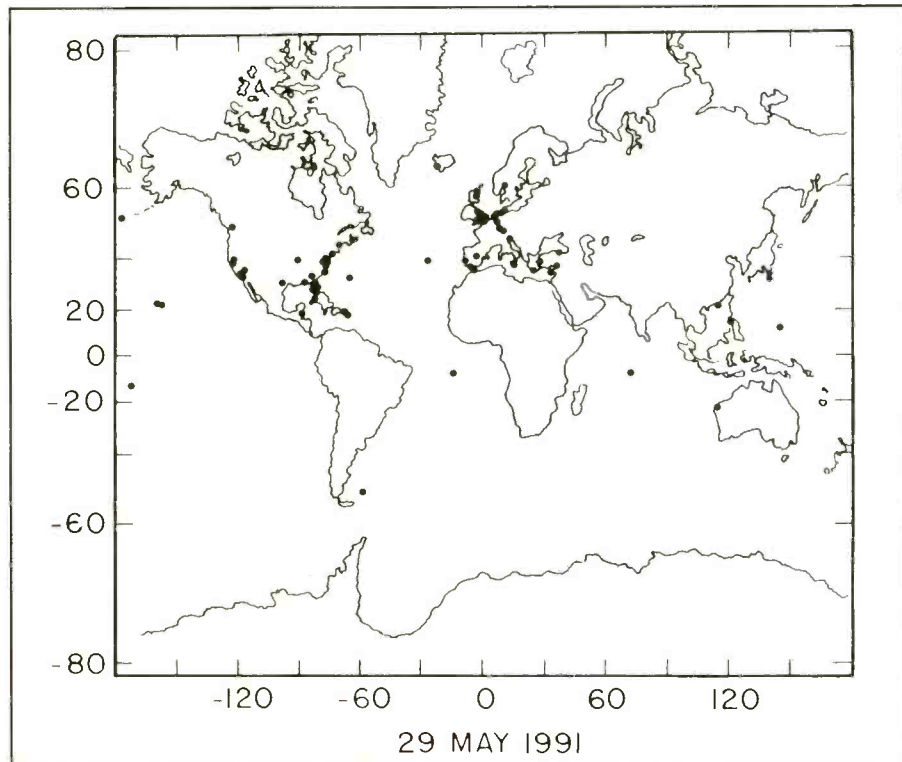


Figure 4. Global distribution of the ionosondes listed in table 1.

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each frequency. At some frequencies the transmitted signal may not be heard at all because ionospheric conditions may be more favorable and the signal may come booming in. The two stations then choose a frequency for the communications link based on the ionosonde results.

This technique is used extensively by the military. A command base will operate an ionosonde transmitter and mobile units which must establish a link with the base will use ionosonde receivers in the field to find the best frequency. Once the ionosonde starts sweeping, it takes at most 4 minutes and 40 seconds to establish a link (assuming there are any good frequencies!).

A typical "ionogram," as the output of an ionosonde receiver is called, is shown in Figure 5. The ionogram records the strength of the received signal, as well as the total amount of time it took to travel from transmitter to receiver (typically a few milliseconds, where one millisecond equals 1/1000 of a second).

Occasionally, a transmitted signal may reach the receiver along several different paths, each with a different time delay. This is why more than one signal shows up in Figure 5, even though only one was transmitted. The separate signals appear as curved traces in Figure 5, where each trace records the signal's time delay (vertical axis) as a function of frequency (horizontal axis). The signals that have taken many hops to reach the receiver show up at large time delays since they have been traveled a larger total distance. The strength of all the signals combined is shown as a function of frequency at the top of the figure. The ionosonde receiver automatically ignores normal shortwave signals (i.e., those that don't drift at the same rate as the ionosonde).

As the frequency of a radio wave increases, it penetrates higher up into the ionosphere. This is why the trace for an individual signal in Figure 5 curves upwards with frequency. Beyond a certain frequency, called the Maximum Usable Frequency or (MUF), the signals disappear altogether, since the ionosphere is incapable of refracting them back downwards. In Figure 5, the MUF is about 26 MHz. Above this frequency, the signals exit the top of the ionosphere and travel off into space.

Is it possible to hear ionosonde signals without a specialized receiver? Absolutely—in fact, it's hard not to! Since most ionosondes operate on a regular schedule, it is a simple matter to compute when they will sweep at 100 kHz per second (1 MHz each 10 seconds) up to 30 MHz.

A typical shortwave receiver has a bandwidth of about 3 kHz or so, so the ionosonde signal, sweeping by at 100 kHz per second, can be heard only for a small fraction of a second. You should listen for a brief—but very distinctive—"weep" as the signal sweeps by. The ionosonde signals are generally unmodulated, but it doesn't

TABLE 1. GLOBAL IONOSONDES

LOCATION	LAT/LONG		POWER	START TIMES (MIN:SEC PAST HOUR)			
<i>(NORTH AMERICA/NORTH ATLANTIC)</i>							
EGLIN AFB, FL	30°39' N	86°30' W	10W	00:00	15:00	30:00	45:00
AVON PARK, FL	27 38	81 21	10	00:06	15:06	30:06	45:06
NORTH ISLAND, CA	32 42	117 12	10	00:20	15:20	30:20	45:20
MACDILL AFB, FL	27 51	82 29	10	00:24	15:24	30:24	45:24
ALDERGROVE, CAN	49 04	122 15	10	00:26	15:26	30:26	45:26
NEWPORT CORNER, CAN	44 58	63 59	10	00:32	15:32	30:32	45:32
BERGSTROM AFB, TX	30 13	97 48	10	00:40	15:40	30:40	45:40
DRIVER, VA	36 49	76 32	10	00:50	15:50	30:50	45:50
CAMP LEJEUNE, NC	34 40	77 20	10	00:54	15:54	30:54	45:54
DAVIDSONVILLE, MD	38 32	89 51	10	04:44	19:44	34:44	49:34
ADAK, AK	51 54	176 35	10	05:12	20:12	35:12	50:12
BRUNSWICK, ME	45 54	69 56	10	05:36	20:36	35:36	50:36
JACKSONVILLE, FL	30 14	81 40	10	05:48	20:48	35:48	50:48
SADDLE BUNCH KEY, FL	24 39	81 36	10	05:56	20:56	35:56	50:56
MOFFETT FIELD, CA	37 25	122 03	10	10:16	25:16	40:16	55:16
ISABELA, PR	18 27	67 04	10	10:42	25:42	40:42	55:42
CECIL FIELD, FL	30 13	81 53	10	10:52	25:52	40:52	55:52
<i>(EUROPE)</i>							
FARNSBOROUGH, UK	51 16	0 39	10	EVERY 5 MINUTES	STARTING	01:04	
CHELVESTON, UK	52 18	0 31	100	EVERY 5 MINUTES	STARTING	01:12	
AKROTIRI, CYPRUS	34 37	32 56E	100	EVERY 5 MINUTES	STARTING	01:14	
EDLESBOROUGH, UK	51 51	0 36W	100	EVERY 5 MINUTES	STARTING	01:18	
PALHAIS, PORTUGAL	38 36	9 01	100	01:24	16:24	31:24	46:24
GIBRALTAR	36 09	5 21	100	EVERY 5 MINUTES	STARTING	01:30	
HEHN, GERMANY	51 10	6 22E	10	01:34	16:34	31:34	46:34
INSKIP, UK	53 51	2 50W	100	EVERY 5 MINUTES	STARTING	01:38	
MILLTOWN, UK	57 40	3 34	100	EVERY 5 MINUTES	STARTING	01:42	
HELGELANDMOEN, NORWAY	60 06	10 13E	10	EVERY 5 MINUTES	STARTING	01:54	
SCHOOL OF SIGNALS, UK	50 52	2 11W	100	EVERY 5 MINUTES	STARTING	01:56	
ELMSHORN, GERMANY	53 45	9 39E	10	02:26	32:26		
LAJES, AZORES	38 46	30 55W	10	EVERY 5 MINUTES	STARTING	02:30	
BOEBLINGEN, GERMANY	48 40	9 02E	10	02:32	17:32	32:32	47:32
HAVELTE, NETHERLANDS	52 47	6 12	10	02:36	17:36	32:36	47:36
SIGONELLA, ITALY	37 42	14 55	10	02:42	17:42	32:42	47:32
EDINGEN, GERMANY	49 27	8 37	10	02:48	17:48	32:48	47:38
SOUDA BAY, GREECE	35 30	24 04	10	EVERY 5 MINUTES	STARTING	02:56	
KEFLAVIK, ICELAND	63 59	22 36W	10	05:46	20:46	35:46	50:46
IZMIR, TURKEY	38 28	27 06E	10	06:28	21:28	36:28	51:28
SAMSUN, TURKEY	41 18	36 20	150	06:50	21:50	36:50	51:50
THURSO, UK	58 36	3 30W	10	07:02	22:02	37:02	52:02
BANN-B, GERMANY	49 23	7 36E	10	07:34	22:34	37:34	52:34
ROTA, SPAIN	36 37	6 21W	10	07:46	22:46	37:46	52:46
PIRMASEN, GERMANY	49 10	7 40E	10	07:54	22:54	37:44	52:54
BREMERHAVEN, GERMANY	53 32	9 35	10	12:40	27:40	42:40	57:40
NELLINGEN, GERMANY	48 43	9 16	10	12:44	27:44	42:44	57:44
CROUGHTON, UK	52 00	1 21W	10	14:44	29:44	44:44	59:44
<i>(ASIA/AUSTRALIA/ATLANTIC/PACIFIC)</i>							
BERMUDA	32 15	64 51	10	00:28	15:28	30:28	45:28
LUALUAEI, HI	21 25	158 09	10	03:10	18:10	33:10	48:10
ASCENSTON ISLAND (UK)	7 57S	14 22	100	EVERY 5 MINUTES	STARTING	04:02	
RAF, FALKLAND ISLANDS	51 45	57 56	100	EVERY 5 MINUTES	STARTING	04:04	
BELIZE	17 52N	81 18	100	EVERY 5 MINUTES	STARTING	04:06	
ASCENSTON ISLAND (US)	7 55S	14 24	10	05:38	20:38	35:38	50:38
EXMOUTH, AUSTRALIA	21 54S	114 07E	10	08:08	23:08	38:08	53:08
HONG KONG	22 13N	114 15E	100	08:20	23:20	38:20	53:20
TOTSUKA, JAPAN	35 25	139 33	10	08:20	23:20	38:20	53:20
DIEGO GARCIA, INDIAN O.	17 20S	72 20	10	13:04	28:04	43:04	58:04
CAPAS, PHILIPPINES	15 23N	120 36	10	13:06	18:06	33:06	48:06
GUAM	13 28	144 48	10	13:24	28:24	43:24	58:24

really matter whether you listen in AM or CW mode—the signal is quite distinctive in either.

There are several ways to monitor ionosondes on a normal shortwave radio. One is to pick up a good, interference-free frequency in the 2000 kHz-30 MHz range. Monitor that frequency and write down the times (accurate to the nearest second) that you hear ionosondes sweep by. Work backward to compute their start times and compare to Table 1. Keep in mind that Table 1 is only a partial list of ionosondes (it is estimated that over 200 ionosondes are in operation), and not all ionosondes operate all the time.

Another method is to listen to the WWV or CHU time signals at 2500, 3330, 5000, 7335, 10000 or 20000 kHz. Write down the times at which you hear ionosondes sweep by (their signal will beat with the signal from the time station). This is a very accurate way of timing ionosondes. The time difference between the ionosonde start time and when it sweeps by above fre-

quencies will be (in min:sec format) 00:05, 00:13.3, 00:30, 00:53.35, 01:20, 02:10 and 03:00 respectively, for an ionosonde sweeping at 100 kHz per second. Using this technique I routinely monitor the Driver, VA, Camp Lejeune, NC, Bergstrom AFB, TX, Isabela, PR, Newport Corner, Canada, Palhais, Portugal and Falkland Islands ionosondes (among others) from my listening post near Washington, DC.

To listen for a particular ionosonde, program several interference-free frequencies (or the time station frequencies) between 2000 kHz and 30 MHz into the memory of your shortwave receiver. Then compute when the ionosonde should sweep by each frequency, and listen to these frequencies in turn at the right time. The ionosonde will be audible at those frequencies at which a good ionosonde path exists, and not at others.

This last technique can be used as a real-time check on DX conditions. Say, for example, the ionosonde is clearly heard in the 10000-15000 kHz range. It may be a good

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time to try for southern European or northern African DX in that frequency range.

Once you know what to listen for, you'll be surprised how often you hear ionosondes, even when you're not trying. If you listen to shortwave for more than a few minutes, you'll certainly hear one or more sweep by. Their 10-150 watt signals are surprisingly easy to hear even over distances of thousands of miles.

Avoid the shortwave broadcast bands when listening for ionosondes because the interference level is high. You can often find quieter frequencies in the maritime or aviation bands, such as 3400-3500, 4000-4438, 5450-5730, 6200-6525, 8100-9040, 12230-13360, 16360-17410, 22000-22855 and 25070-25210 kHz, to name a few. The radio astronomy bands at 13360-13410 kHz and 25550-25670 kHz are particularly quiet since no transmissions are allowed there. Many ionosondes automatically silence their output in these protected bands, but some don't have this capability.

The start times of the ionosondes are accurate to better than about one second or so. To confidently identify a particular ionosondes signal, your clock should be set to WWV (or any other standard time station) to within the same accuracy. Under good conditions you may hear a half a dozen signals sweep by a given frequency within a minute's time.

Happy listening!

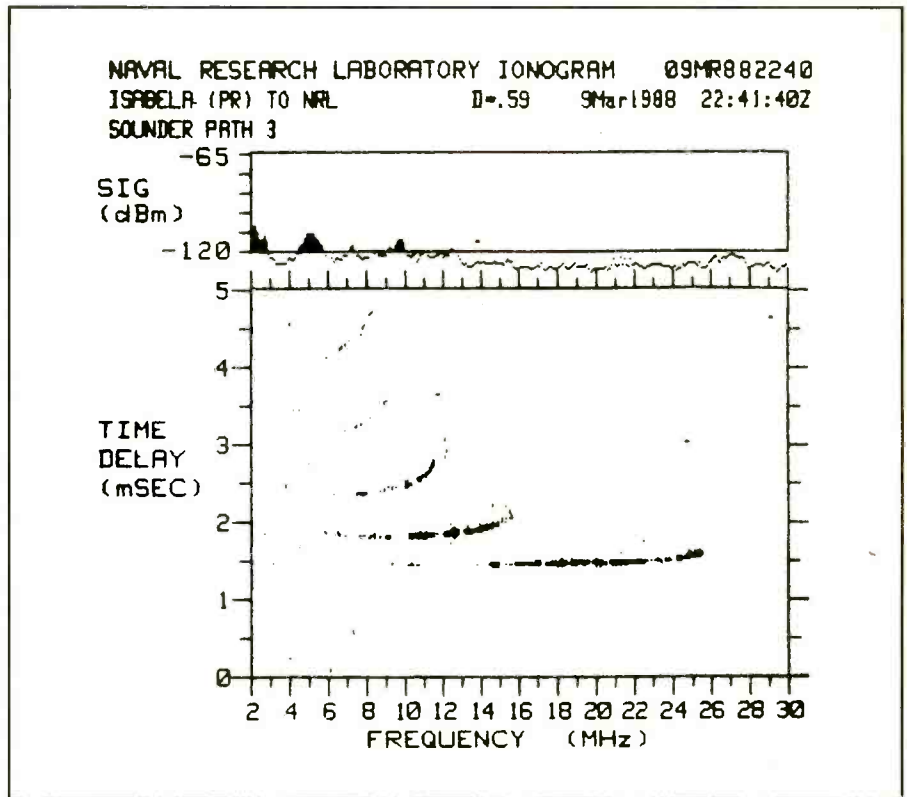


Figure 5. Typical ionogram showing time delay of the received ionosonde signal (vertical axis). The strength of the signal at each frequency is displayed at the top. Several separate signals are received (curved lines)—even though only one signal was transmitted—due to multi-hop propagation. Courtesy Dr. Mark Daehler/U.S. Navy.

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SIMPLE ANTENNAS AND ACCESSORIES FOR SIGNAL IMPROVEMENT

Low Frequency Antennas—Part 2

In the last installment of this column we looked at the problem of low frequency antennas, and provided a tentative solution in the form of shortened loaded vertical antennas. The same strategies that worked for vertical antennas also work for horizontal antennas, although in the horizontal case we are simulating a half wavelength (180 degree) balanced antenna rather than a $\lambda/4$ unbalanced antenna. Figure 1 shows several different shortened low frequency antennas that are based on the same methods as the verticals shown previously.

Shortened, Coil-Loaded, Horizontal Antennas

Figures 1A through 1C shows discretely loaded dipole antennas.

Figures 1A and 1B are center-loaded versions, while Fig. 1C is a center (of each element) loaded version. In each case it is assumed that the radiator elements are the same physical length. In the example of Fig. 1A the coil is tapped to provide a match to either 52 or 75 ohm transmission line. In some variants, the shield of the coaxial cable transmission line is connected directly to the junction of the coil and one radiator element, while the coax center conductor is connected to the tap that best matches the impedance of the line.

The impedance matching problem is solved a little differently in Fig. 1B. In this type of antenna, the coil is used to center load the dipole, but the transmission line is connected to a link wound on the same form as the loading inductor. The turns ratio between the loading inductor and the coupling link determines the impedance match.

The continuously loaded dipole of Fig. 1D is constructed in a manner similar to the helical vertical, i.e. about half wavelength of insulated wire is wound over the entire length of an insulated rod or pipe of some sort. The winding can be either broken at its center point to accommodate the feedline, or link coupled to the transmitter or receiver as shown in Fig. 1D. Of the two feed methods, the most popular appears to be the type that breaks the winding into two pieces.

Another form of continuously loaded dipole is shown in Fig. 1E. In this antenna we see a combination of the two methods of feed system. The distributed loading coil is broken into two sections, as is often done on continuously loaded dipoles. But in this case, a portion of the overall inductance is made by using a discrete inductor that is part of a toroidal transformer (T1). The

length of the wire used for the continuous loading coil is somewhat shorter (find by experimentation) than otherwise would be the case because of the inductance of the transformer secondary. Transformer T1 can be wound using the same sort of toroidal ferrite or powdered iron cores as are used for BALUN transformers.

A "hairpin" linear loading scheme is shown in Fig. 1F. This design is basically the same as for the vertical case, but it is balanced out of respect for the design of the dipole. This type of design is used on some commercial 40-meter beam antennas for both the driven and parasitic elements. In addition, some "add-on" 40-meter dipoles designed for beam antennas intended for operation at frequencies in the 20-meter and higher bands use this method. Such antennas are essentially "rotatable dipoles."

Random Length Marconi

One of the old standbys for all bands is the random length Marconi antenna. Such antennas consist of a length of wire, typically (but not always) less a $\lambda/4$, and fed at one end with coaxial cable and an L-section coupler (Fig. 2). The antenna radiator element can be angled in any direction as needed, but it works best if the radiator is as much horizontal or vertical as possible. The usual situation is to run the wire at about 45 degree angle, or with about equal portions horizontal and either vertical or angled 45 degrees.

The L-section coupler shown in Fig. 2 is set up for the case where the antenna radiator element is less than $\lambda/4$, i.e. a series inductor and a shunt capacitor. If the antenna is longer than $\lambda/4$ on some frequency, then reverse the positions of the capacitor and inductor.

Inverted-L Antennas

Another popular antenna for low frequencies is the $\lambda/4$ inverted-L (Fig. 3). In

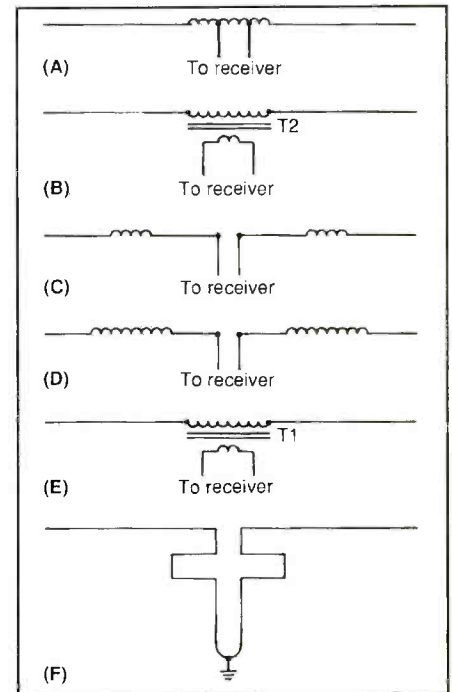


Fig. 1. Loaded short dipole antennas: A) Center-loaded, direct coupled; B) Center-loaded, transformer coupled; C) Loaded at the middle of each element; D) continuously loaded; E) continuously loaded, transformer coupled; F) linearly loaded.

this type of antenna, two sections are erected at a 90 degree angle with respect to each other; one vertical and the other horizontal. One way to think of this antenna is a bent $\lambda/4$ vertical, although some people liken it to a top-loaded vertical. The feedline can be 52 or 75 ohm coaxial cable.

It is generally the case that the sections of the inverted-L are equal length ($\lambda/8$ each), but that is not strictly necessary. As the vertical section becomes longer (with overall length remaining at $\lambda/4$), the angle of radiation depresses for longer DX.

(continued on page 74)

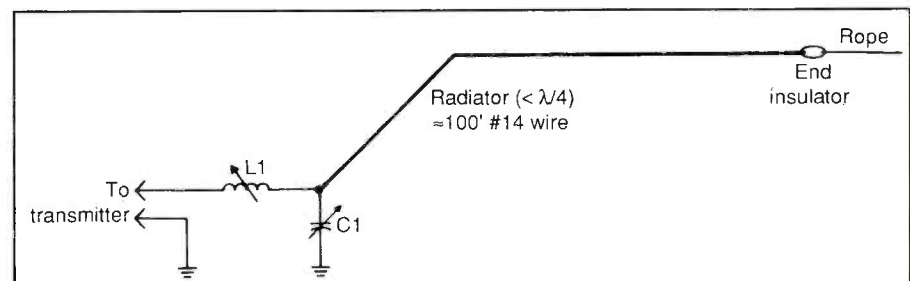


Fig. 2. Random length Marconi

SCANNING VHF/UHF

BY CHUCK GYSI, N2DUP

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

Now's the time to start organizing your summer scanning notes. If you took your scanner on vacation and jotted down a lot of frequencies that you found, review your notes now while a lot of what you recall still is fresh in your mind.

If you wait until next summer to look at your notes again, there may be things you just don't remember. Another good idea is to send in a list of interesting frequencies you uncovered to this column or even a scanner club that you may belong to.

For this month, I'm offering a series of tips to enhance your scanner listening. We welcome your comments on any of these tips.

Delay

Should you use the delay feature on your scanner or not? It really depends on your listening habits and whether or not your scanner has individual channel delay capability.

One of the first things you must determine is what type of delay your scanner offers. Basically, there are those that allow you to determine which channels can be selected for the delay feature, and then there are those that have delay on all the channels or none. In the latter instance, you cannot choose which channels have delay activated on them.

Also, you need to realize what delay does for you. The function will hold a channel for you automatically so you don't miss a response. For instance, if your scanner stops on channel 25 for a transmission, normally it will resume scanning automatically as soon as the unit you are hearing stops transmitting. However, in doing so, you may miss hearing the dispatcher respond to a mobile unit or vice versa. You also may miss two mobile radios transmitting back and forth between each other, which would be especially so on a "car-to-car" channel, because the scanner would have resumed scanning while the other radio transmitted a reply.

In general, if you have a scanner that allows you to only select delay for all or no channels without individual channel selection, you'd be best using delay. There are so few instances where you would not want delay, that you'd best opt for the feature.

However, it is those few times where you don't want delay that individual channel selection is best. For instance, if the service you are monitoring has a repeater with a long "squench tail," there is no need to use delay because the radio system you are monitoring has the feature built in for you.

How do you tell if a repeater is being used on the channel you are monitoring? First, when the mobile unit you are moni-



This is the well-equipped shack of Dave Carlson, WA6SHQ, of Ramona, Calif. Dave has an array of equipment for just about all bands and modes. Several scanners are used for VHF/UHF listening. Antennas include a discone for omni-directional purposes and a directional VHF/UHF beam.

toring is done transmitting, you likely will hear a click or quick break in the squelch, which means the repeater is done relaying the signal. Then, after a second or two, you may hear another very short burst of squelch or click, indicating the repeater is done transmitting and off the air. Most UHF radio users (406-512 and 851-940 MHz) use repeaters at high sites to relay their mobile and handheld units over a much wider area. If the channel in your scanner seems to be using a repeater with an adequate-length squelch tail after the mobile units are done transmitting, then you may not need the delay feature activated on those channels.

However, take note of two exceptions. First, when the dispatch center is at the same site as the tower and repeaters are employed, there may not be a squelch tail when the dispatcher transmits. The repeater squelch tail may be present only when the mobile units transmit. Thus, you may want to leave the delay feature on these channels so you don't miss a mobile unit replying to the dispatcher. The second exception would be channels that not only are used for the repeater's output frequency, but also for car-to-car communications on the same frequency as the repeater, but bypassing the repeater for short-range coverage. Leave the delay on in these instances, too.

There are a few more considerations in using delay. First, regardless of repeaters

and the like, it is recommended that all local emergency services channels in your scanner have the delay activated on them. Let's face it, you don't want to miss the address of a fire or shooting in your own neighborhood. However, if you also listen to outlying areas (especially so in those who have scanners that can scan 100, 200, 400 and more channels), it's not so important that you miss a call from the East Podunk Fire Department 50 miles away (unless, of course, you make a livelihood off of scanner listening). Also, every time your scanner sits on delay on each channel for two seconds, that time all adds up to when it gets back to the channels you really care about most, such as your own community.

Scanners such as the Uniden Bearcat 200XLT and 205XLT offer 10 priority channels that can be sampled at the same time when the priority is activated, and your most important frequencies should be entered in there with delay on each.

The Big Ones

A lot of scanner buffs have scanners that can scan hundreds of channels these days. However, it is important to practice good frequency management in programming these units. Let's take a look at the popular Realistic Pro-2006, for example. The scanner has 400 channels in 10 banks of 40 channels each. If you put a different frequency in each of the 400 channels, it may



Should you hit the "delay" button on your scanner or not? It depends on what you are tuned to and what your scanner is capable of handling.

take some time before the scanner returns to important frequencies you really need to hear. For instance, if you put the frequencies for your community in the first bank, then you may have a bank for railroad frequencies, another for news media, and yet others for aircraft, marine, businesses, security, etc. There are a lot of channels that your scanner may stop on before it gets back to that first important bank. Consider putting the frequencies for your local police and fire departments and more in each bank, or even every other bank, in your scanner. For those with Pro-2006 scanners, you may want to put your local police and fire channels in channels 1-5 in bank 1, channels 41-45 in bank 2, channels 81-85 in bank 3, etc.



Sailing celebrity Bill Pinkney, the first black to singlehandedly circumnavigate the globe, uses a handheld transceiver while sailing. Unless your antenna is up high enough, you won't always hear such low-power signals.

In the newsroom where I work, the most important police and fire channels for our coverage area are programmed into the first 10 channels of each bank. That still leaves 30 channels per bank for other activities we need to monitor. And by giving the scanner an opportunity to stop on the local frequencies more often, we reduce the possibility of missing an important call while the scanner is scanning many less important channels.

Antenna Height

The most important rule in VHF and UHF listening is that the higher your antenna, the more you will hear. While things such as antenna gain and cable length may have a factor in the formula, it is best to get it up as high as practical. Towers aren't cheap, but they do an excellent job in getting the antenna to where it should be. An inexpensive option would be to erect a mast and guy it sufficiently for adequate height, that is if you are putting only one or two antennas on it.

Most scanner antennas are erected on rooftops and that's a good place for them. However, if you live on the outskirts of a city and you want to listen primarily to services in that city, you want to put up a directional yagi antenna pointed at the city to hear the bulk of the action. The yagi antenna is a directional antenna that points at its target; they also are known as beam antennas. You might even want to consider mounting a yagi antenna on a TV-type antenna rotor so you can rotate the antenna and point it at various cities if they are within range of your listening post. If the signals you want to hear are all around you, forget the yagis and stick with the usual omni-directional scanner antennas.

Another consideration is whether the bulk of your monitoring is on one band. If most of your listening is on VHF high band

(144-174 MHz), you may want to scrap the all-band scanner antenna and buy an antenna designed for that band. You could trot off to your local radio shop and see what professional antennas they have in stock, but you will pay "professional" prices for the privilege. You'll make out much better heading off to the local ham radio shop and checking out a ham antenna. For instance, a 2-meter VHF ham antenna designed for 144-148 MHz will work fine in the 144-174 MHz band and a 440-450 MHz ham antenna will be perfect for 450-512 MHz monitoring. And you'll be paying ham prices, too, not "professional" prices.

If your antenna is mounted on a five-foot mast, consider raising it on a 10-foot mast, or adding a 10-foot mast to the 15-foot mast to get it up a bit higher. It may just make a difference in the signals you are trying to hear. But don't use cheap coaxial cable because all what you would gain in antenna height will be lost in a lossy cable as the signal is lost even before it reaches the radio. Spend a little bit more for better cable and it will pay off with better signals.

These few tips will help you get more out of your scanner. Many of you have your own tips that you may want to pass along to fellow POP'COMM readers. If you have a tip you'd like to share, send it to: Chuck Gysi, N2DUP, Scanning VHF/UHF, Popular Communications, 76 N. Broadway, Hicksville, N.Y. 11801-2909, or fax them to (516) 681-2926.

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DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

Less Platter/More Chatter: CKLW/800, the station serving the Windsor/Detroit market is widely monitored at night from great distances. The station's big band music has been a favorite for years. No more, though. Now, as *The Power of Talk*, the station has put the Glen Miller, Harry James, and Dorsey Brothers discs in the store room. With its new all-talk format, CKLW has call-in numbers making it convenient for listeners to phone the 50 kW station even from Toledo and Dayton. Thanks to Eric Calhoun for passing along this information.

Two For The See-Saw: Jacor Communications owns Cincinnati's powerful WLW/700. In November of 1992, when Jacor purchased another Cincinnati station, WKRC/550, they cleverly began intermixing the WLW personalities between the two stations. Now the famous and historic WLW call letters are used on both 550 and 700 kHz.

This info from Ron Zeis, N4UGB, of Highland Heights, Kentucky. Thanks, Ron!

It's a Big Country: A regional network known as *Country 102* began last winter on 102.3 FM in South Bend, Indiana. Six weeks later, the country music programming was being broadcast on 102.7 in Ligonier, Indiana. Plans for additional expansion with the addition of two stations were being worked up as our information was received from reader A.R. Butt, Syracuse, Indiana.

Country music is particularly popular in northeastern Indiana. Competition there for listeners is very strong between AM and FM broadcasters running this type of programming.

No Tower of Song: A proposed religious FM station in Frankfort, New York was planning on operating on 100.7 MHz. The antenna was to be mounted on a 183-ft tower to be constructed on the only local site that met FCC and FCC rules. This was a 33-acre tract of land.

The person who wanted to put the station on the air was Nelson Soggs, an ordained minister who said he owned controlling interest in the broadcasting company hoping to put the station on the air.

At the zoning board hearing to allow the construction of the tower, there was some opposition from area residents who thought it would reduce property values in the area even though it was a third of a mile from the closest residence.

Surprisingly, one who spoke in opposition to the station was a lady who also claimed ownership of controlling interest in the broadcasting company. She said that she had never been consulted about the

Applied to Construct New FM Stations

AK	Tetlin	103.3 MHz	15 watts
CT	Torrington	89.9 MHz	28 kW
FL	Holly Hill	90.3 MHz	2 kW
GA	Mt. Vernon	101.7MHz	6 kW
IN	Clinton	93.9 MHz	2.3 kW
KY	Paducah	89.3 MHz	12 kW
MI	Lake City	104.9 MHz	4.6 kW
MN	Caledonia	94.7 MHz	1.9 kW
MN	Moose lake	107.1 MHz	25 kW
NE	Chadron	94.7 MH	50 kW
NY	Mexico	103.9 MHz	3kW
OH	Columbus	91.5 MHz	300 kW
OH	St. Mary's	107.7 MHz	6 kW
PR	San German	91.7 MHz	300 kW
TN	McMinnville	91.3 MHz	1 kW
WI	Reddsburg	102.9 MHz	
WI	Wausau	91.9 MHz	56 kW

Permits Issued to Construct New FM Stations

AL	East Brewton	95.7 MHz	6 kW
CA	Avenal	105.7 MHz	915 watts
CA	Seaside	103.5 MHz	3kW
FL	Inglis	104.3 MHz	
FL	Panama City	89.1 MHz	100 kW
GA	Bolingbroke	102.1 MHz	3 kW
GA	Helen	105.1 MHz	422 watts
IA	Des Moines	107.5 MHz	50 kW
IA	Hudson	96.1 MHz	3 kW
KS	Horton	93.7 MHz	25 kW
LA	Richwood	100.9 MHz	6 kW
MS	Forest	89.1 MHz	100 kW
OK	Lahoma	95.7 MHz	5.6 kW
OR	Canyon City	94.5 MHz	190 kW
OR	Cottage Grove	100.5 MHz	6 kW
SC	Bowman	94.5 MHz	3 kW
SC	Sumter	94.7 MHz	3 kW
SD	Custer	105.1 MHz	6.5 kW
TN	Tiptonville	101.3 MHz	25 kW
TX	Eagle Pass	89.5 MHz	100 kW
WI	Appleton	91.9 MHz	3.3 kW
WI	Whitewater	106.5 MHz	3 kW

Cancelled

KJTH	Hiawatha, KS	91.1 MHz	
WHKR	Rockledge, FL	101.7 MHz	3 kW

Seeking Changed AM Facilites

KAAB	Batesville, AR	1130 kHz	Seeks nites, 20 watts.
WXLI	Dublin, GA	1230 kHz	Seeks drop to 700 watts.
WXYB	Indian Rock Beach, FL	1520 kHz	Seeks drop to 600 watts.

Changed AM Facilites

KENO	Las Vegas, NV	1460 kHz	Increased days to 30 kW.
WCAW	Charleston, WV	680 kWz	Dropped to 10 kW days.

Seeking Changed FM Frequencies

KRTN-FM	Raton, NM	94.3 MHz	Seeks 93.7 MHz, 5.5 kW
KYRE	Yreka, CA	97.7 MHz	Seeks 103.9 MHz, 3.25 kW
KZTA-FM	Yakima, WA	99.3 MHz	Seeks 99.7 MHz, 5 kW
WBAD	Leland, MS	94.3 MHz	Seeks 93.3 MHz, 50 kW
WDYL	Chester, VA	92.1 MHz	Seeks 93.1 MHz, 1.35 kW
WYDA	Graceville, FL	102.1 MHz	Seeks 101.7 MHz, 6 kW
WYKS	Gainesville, FL	105.5 MHz	Seeks 105.3 MHz, 6 kW

Changed FM Frequencies

KEMB	Emmetsburg	98.3 MHz	To 100.1 MHz, 5 kW
KFXE	Dumas, AR	107.1 MHz	To 106.9 MHz, 25 kW
WAVI	Christiansted, VI	94.3 MHz	To 93.5 MHz, 15 kW
WMPI	Scottsburg, IN	100.9 MHz	To 105.3, 6 kW

Seeking Changed AM Call Letters

Now	Seeks	
WPRW	WKDV	Manassas, VA

Changed AM Call Letters

New	Was	
KKDZ	KKFX	Seattle,
KKPC	KDZA	Pueblo, CO
KMUL	KLZK	Muleshoe, TX
KSIR	KKGZ	Brush, CO
WAYC	WBFD	Bedford, PA
WGOC	WJTZ	Blountville, TN
WKCV	WGOC	Kingsport, TN
WKGT	WJBW	Cantoment, FL
WLGC	WTCV	Greenup, KY
WLOR	WAAJ	Huntsville, AL
WMIN	WPRX	Hydson, WI
WSVY	WBSK	Portsmouth, VA

lier than expected. Seems to have been caused by and in response to WRHP/107.9 dropping its soft rock format rock and beginning a country music format. WKFM rushed into their country music format so quickly that they had no announcers and no commercial spots, just 3,000 songs in a row and zillions of on-air promos. Also, WUUU in Rome changed its call to WKDY, dumped its oldies format and is playing country music, too.

Thanks to Mark Schnell, Greg Deyoe, and Nick Marasco, for this information. These good folks are with the Syracuse University Audio Services Department.

Show Me: The FCC asked the licensees of two AM stations to show cause why their licenses should not be revoked because of their prolonged silent status.

Station WKLO, Danville, Kentucky, has been dark since 1989. The FCC claims its owner apparently has been unable to put together sufficient funds to return the station to operation. This is a 1 kW station authorized on 1000 kHz.

AM station WJHH, Soperton/Dublin, Georgia, has been down since 1990. The station's Trustee has not been able to demonstrate to the satisfaction of the FCC that he has the capability and the intent to resume operations. This is also a 1 kW station licensed on 1000 kHz.

If you have a license and you talk, they may fine you. If you keep quiet like these guys did, they take away the license. You figure that one out.

Try Harder: When New York City's WNEW/1130's went off the air, it was replaced in early 1993 by WBBR/1130, a 50 kW station using the former WNEW transmitter. WBBR runs an all-talk format based on business-related information. When the first Arbitron ratings appeared after WBBR went on the air, the stats seemed to indicate that the new station had racked up virtually no measurable listening audience.

Keep in mind that Spanish language KLAX/97.9, in Los Angeles is pulling the big ratings in that town. This station is ex-KSKQ, and it jumped from 21st to 1st place in only 3 months.

WBBR needs to do significantly better, and soon. Otherwise, our business advice



Here's a great photo of the sign in front of one building housing 5 stations in Windsor, Ontario: CIMX, CKLW, CKWW, and CKLW-FM. Photo by Keith D. Davis. VE3TGD, Windsor, Ontario, Canada.

Four new deejays were brought in to replace those who were out because of the format change. The new deejays had all left another broadcaster when that station switched formats from classic rock to country and western!

These tidbits tossed our way by Gary K. Hamlin, N2OHO, and Registered Monitor KNY2AAW, of Utica, N.Y.

More Central New York: WKFM in Fulton was purchased by the owners of Syracuse stations WYYY-FM and WSYR. WKFM's format was changed from classic rock to country and western. Guess where four of its former deejays ended up? The format change took place two weeks ear-

antenna site, nor had she ever approved it.

The zoning board turned down the permit for the special exemption needed to put up the tower.

In another upstate New York development, popular WKGW/104.3, in Utica, suddenly dropped its adult contemporary format and switched to classic rock. It happened so suddenly that listeners weren't expecting the change. Staff members at the station were caught off guard, too. One deejay walked out during her shift, claiming she had been given her notice two minutes before air time.



Batter up! It's KMPC/710, all-sports radio in Los Angeles. Sent to us by Tom Martin, Yucaipa, Calif.

Requests For Changed FM Call Letters

Now	Seeks	
KANC	KXDZ	Anchorage, AK
KMJC	KMXG	Clinton, IA
KNFO	KCKR	Waco, TX
KTKX	KZRB	New Boston, TX
WCDJ	WCBS	Boston, MA

Changed FM Call Letters

New	Was	
KAAR	KJLF	Butte, MT
KDWG	KGHL-FM	Hardin, MT
KDZA-FM	KRYT-FM	Pueblo, CO
KEGX	KOTY-FM	Richland, WA
KHHT	KMXX	Killeen, TX
KISQ	KLTW	El Dorado, AR
KKBR	KZLS	Billings, MT
KRCB-Fm	KZQC	Santa Rosa, CA
KRMR	KYAA	Ketchum, IA
KSIR-Fm	KSIR	Brush, CO
KSRY	KDBK	San Francisco, CA
KXEZ	KQEZ-FM	Los Angeles, CA
KYRK	KNJT	Eunice, NM
KZRB	KTKX	New Boston, TX
WAMQ	WBBS	Great Barrington, MA
WANT	WJFM	Lebanon, TN
WBHT	WYXY	Mountaintop, PA
WCYT	WJTJ	Lafayette Twp., IN
WDVX	WJTD	Clinton, TN
WEVN	WLGU	Keene, NH
WHEN-FM	WRHP	Syracuse, NY
WINH	WZZV	Olyphant, PA

WJRR	WVRI	Cocoa Beach, FL
WKDY	WJUJ	Rome, NY
WKGT	WJBW	Cantonment, FL
WLGK-FM	WLGK	Greenup, KY
WPAL-FM	WNTC	Walterboro, SC
WPLY	WKSZ	Media, PA
WQLZ	WTJY	Taylorville, IL
WSVY-FM	WSBK-FM	Windsor, VA
WUSV	WCDK	Virginia, MN
WUUU	WKDY	Remsen, NY
WWBD	WWLT	Bamberg, SC
WXPC	WLMK	Horse Cave

New FM Call Letters Issued

KAAX	Avenal, CA
KABD	Brainerd, MN
KABE	Lake Ozark, MO
KABG	Prescott, AZ
KABH	Shawnee, OK
KSRF	Poipu, HI
WAAN	Blackville, SC
WAAR	Lebanon, OH
WAAT	Tiptonville, TN
WAKU	Crawfordville, FL
WBSB	Dade City, FL
WBXE	Baxter, TN
WDBS	Bolingbroke, CA
WGTR	Buckspport, SC
WHEL	Helen, GA
WICI	Sumter, SC
WVHC	Herkimer, NY

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KICT-95

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Some folks tell us that there are two great rock music stations in Kansas, and Wichita's KICT/95.1 is one of them. This sticker from Shawn S. Smith, Wichita. Says he loves our mag!

to them would be to turn off the transmitter, send home the executives and engineers, and just read the copy into unplugged microphones. Tens of thousands of dollars per week saved, and hardly any listeners lost in the bargain.

Hang in there, WBBR. Try harder!

New Band: The FCC is finally moving on the 10 new AM channels between 1605 and 1705 kHz. First crack at assignments here will go to existing stations causing or experiencing interference on their present frequencies. This will probably result in a higher percentage of applicants seeking to move from frequencies above 1000 kHz than from below 1000 kHz.

A catch, however, will be that priority shots at licenses here will be offered to daytime stations located in cities (pop. 100,000 or more) where there are no full-time AM or FM broadcasters.

Various other lesser priority categories are also being put into place, and the FCC will work down the list in issuing authorizations. Stations proposing to broadcast in AM stereo will get preference over monaural stations, for instance. Stations owned by members of racial minorities have been proposed for certain priorities, but the FCC appears to be reluctant to go along with that concept.

Although it is not directly connected to the impending opening of the new AM channels, the FCC is mulling over putting a freeze on issuing new FM licenses. FCC Chairman James Quello says that the FM market is oversaturated to the point where more than half the FM stations can't support themselves. He offered no timetable, but thought a freeze should be instituted in the near future.

Please join us again in October! ■

HOW I GOT STARTED

Popular Communications invites readers to submit, in approximately 150 words (more or less), how they got started in the communications hobby. They should preferably be typewritten, or otherwise easily readable. If possible, a photo of the submitter should be included.

Each month we will select one entry and run it here. You need submit your entry only once, we'll keep it on file. All submissions become the property of *Popular Communications*, and none can be acknowledged or returned. Entries will be selected for use taking into consideration if the story they relate is especially interesting, unusual, or even humorous. We reserve the right to edit all 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,



Mark Schmidt, KA8LUG, holds an Advanced Class ham ticket. He's been a communications hobbyist since he was presented with a radio at age 8.

Popular Communications, 76 North Broadway, Hicksville, NY 11801.

Our September Winner

This month our winner is Mark Schmidt, KA8LUG, of Valley City, Ohio. Mark told us:

"When I was 8, my dad gave me a pocket transistor radio. I was intrigued that I could hear a station as far away as Detroit. Later, I got a receiver that allowed me to hear the air traffic at Cleveland's Hopkins International Airport. That hobby branched out into public safety monitoring, and I now have 1,000 area frequencies in my computer. I also have police codes, which makes monitoring a lot more enjoyable.

"Shortwave listening has been a part of my hobby, too. Using a wire antenna, I have managed to earn QSL cards from stations all over the world. About 15 years ago, a friend introduced me to ham radio. Five years later, a local ham club started a class and I got my ham ticket. Now I have an Advanced class ticket and I talk on the radio almost nightly.

"Hamming, scanning, and SWL'ing; three aspects of the hobby that have never ceased to be interesting and exciting." ■



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Information

Wars are won and lost before a single shot is fired. They are won and lost by intelligence officers who struggle to keep their side informed about the opposition. The Davidians in Waco, Texas won the initial battle with AFT because their information or intelligence resources were better or as good as ATF's. Information or the lack of it makes winners and losers of us all.

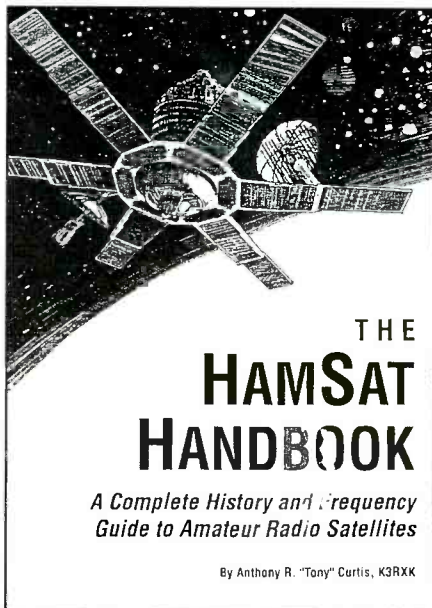
This month I want to give you some useful information. We are speaking specifically of information on satellites and space communications. You are fighting the battle to stay abreast of the latest developments in this specialized area of the hobby and to get the most for your hobby dollar. We will try to help you do just that.

Books, next to first-hand information, are your best bet for learning about the hobby. When it comes to Amateur Radio Satellites, however, I am real excited about a new product by CQ Productions. They have produced a new line of video tapes on Amateur Radio. One of the tapes is entitled *Getting Started in Amateur Satellites*. This 40 minute video is a great way to learn about not only satellites, but the Mir and Shuttle Amateur Radio operations. The video combines NASA footage with interviews with satellite operators, animation and tons of facts, figures and details. It not only talks about U.S. satellites, but all of the international fleet of amateur satellites, including Russian. I was pleased, but not surprised to find that the tape taught me more than a few things I did not already know. The tapes are first class, having been produced by three time Emmy winner Richard Mosesan, NW2L.

Now let's look at some books. If you are into TVRO, you will need a copy of *The Hidden Signals on Satellite TV*. This book, which was co-authored by Thomas P. Harrington and Bob Cooper Jr., has become a classic for anyone who is interested in the additional radio, audio sub-carriers, telephone channels, Single Channel Per Carrier and other data services available on TV satellites.

The real tech-noids among us will want to look at a copy of Mark Long's *World Satellite Almanac*. It is an exhaustive, technical work on every TV and telecommunications satellite in orbit. It gives complete details on spacecraft, frequency bands, antenna footprints, etc.

The newcomer and the experienced TVRO enthusiast will find Ken Reitz's book *Satellite Television Sourcebook* informative and entertaining. It shows how to install



The HamSat Handbook alerts enthusiasts to the history of amateur satellites and how to monitor them..

and trouble-shoot your first TV satellite system. The book includes detailed instructions on setting up your station to the specialized data, audio and video formats and included a satellite by satellite description of what can be heard on each.

If NASA holds any interest for you, and I know it does, you can't do without the new book by Anthony R. Curtis, K3RXX. His book, *Monitoring NASA Communications*, thoroughly covers NASA systems, including sections on weather, navigation and other specialized satellites including the shuttle. An exhaustive HF, VHF, UHF and satellite frequency list is included. Tony's second book is called *The Hamsat Handbook*. Both are published by Tiare publications. This volume is a complete history and frequency guide to all amateur radio satellites. It includes full operational details for each system, including the shuttle and Mir space station.

Weather satellite enthusiasts will already be familiar with my next recommendation. It's Ralph Taggart's classic, *Weather Satellite Handbook*. If you are considering weather satellites as a hobby or are interested in adding WxSats to your station, read this book first.

If you want more information on these publications, just drop me a line and I will

be glad to help. Most can be obtained from current POP'COMM advertisers and the larger mail order houses.

News

Now we move on to current satellite news. This has been a very good year for SAREX, the Amateur Radio missions on-board the shuttle. Shuttle downlink is on 145.550 MHz. The Packet uplink is on 144.90 MHz. Voice uplinks are different as the shuttle uses split frequency operation. Uplinks are 144.99, 144.97, 144.95, 144.93, 144.91 MHz. Europe Only links are 144.80/75/70 MHz. I would also suggest trying 144.49 as a possible uplink.

AMSAT's next satellite, Phase III D, will carry transponders in the following bands: 10.4 GHz, 435 MHz and 29 MHz will be the downlinks. Satellite uplinks will be in the 1.26 GHz, 435 MHz and the 145 MHz bands.

The French satellite ARSENE was to have been launched in May. It has a downlink of 145.975 MHz and operates FM packet at 1200 band, like standard packet BBS systems. It has three uplinks: 435.050, 435.100 and 435.150 MHz. This two-meter downlink has failed, however a second downlink can be heard on 2446.500 MHz (2.4 GHz). An additional frequency to listen to is 46.500 MHz. This is an experimental beacon for propagation studies. This satellite will have a 17.5 hour window (it will be visible at your location for up to 17.5 hours). This is due to the high orbit that has a 20,000 km pedigree and a 36,000 km apogee (it's furthest point from the Earth).

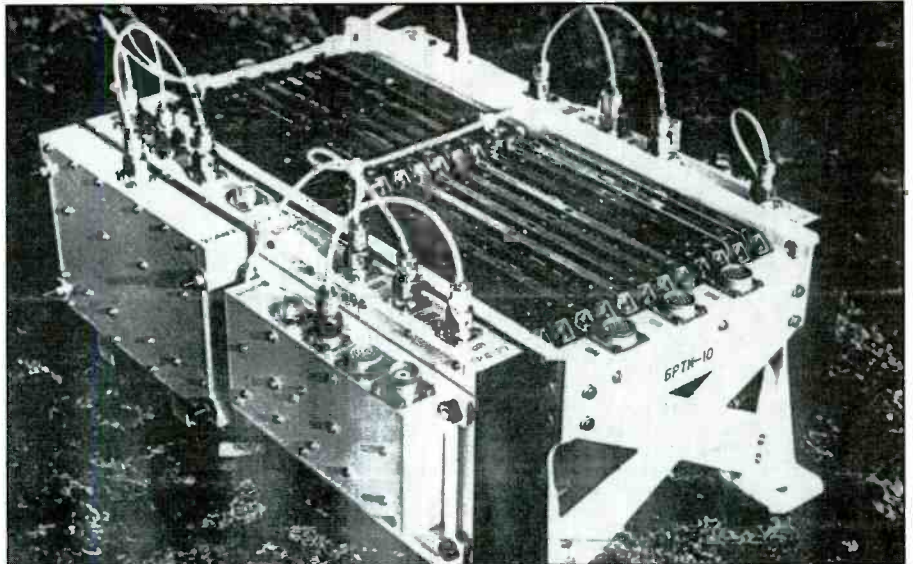
April 11, 1993 was the date of the first official ham QSO between the space shuttle and the Mir space station. It took place at 0035 hours UTC between astronaut Mike Foale (KB5UAC) and cosmonaut Alexander Pollischuk (R2MIR).

Mir QSLs are available for those of you who have heard or worked the station. Send the usual information, time, date, frequency call and what you heard to the following addresses along with a self addressed stamped envelope and two ICRs: Sergei Sambvov RV3DR, Prospect Kosmonavtov, d.36, KW96, Kalingrad City, Moscow, 141070, Russia. Listeners in South America only write: Gustavo Carpignano, LW2DTZ, M. Rosas 2044, 1828 Benfield, Buenos Aires, Argentina, South America.

Speaking of South America, Junior De Castro of Bramsat in Brazil has worked out an agreement with the Russians to place



The Mir Space Station.



The transponder, otherwise known as BRTK-10 (RS 10/11, RS 12.13). Chief architects: A. Papkov and V. Samkov. Courtesy of RS3A.

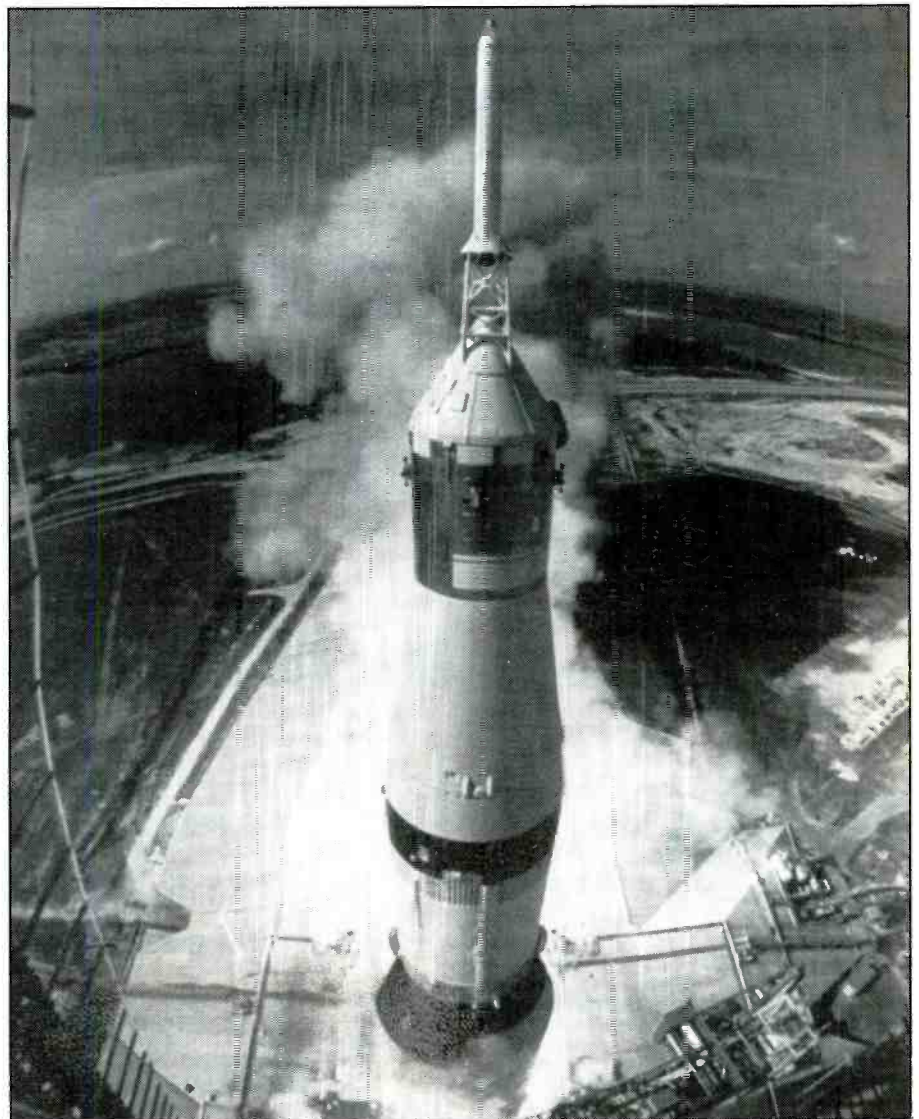
voice messages about world peace on the voice synthesizer of RS-14 (AO-21). This idea was the basis for the design and launch of the DOVE satellite by BRAMSAT (AMSAT Brazil). This satellite lost its voice, so to speak, so the Russians are accommodating. These voice messages can be heard on a frequency of 145.987 MHz. RS-14 (AO-21), Russia's Packet/data spacecraft, has also become the first to operate in the FM voice mode. The beacon transponder is switched from beacon to voice synthesizer to FM repeater at regular intervals during its orbit. When the satellite switches to the FM mode you can hear hams using regular FM equipment calling CQ. The uplink is 435.016 MHz. This satellite is also known as Informator-1. That is the name of the host spacecraft which is a Geological Research satellite.

Geoffery Perry of the UK announced last year in AMSAT-UK's publication Oscar News, that the Russian had dropped two experimental satellites out the door of the Mir space station. Little is known about the MAK I and II which were pushed out the Mir air-lock. It is believed they were experiments to study Earth's atmosphere. MAK-I failed to deploy an antenna. These spacecrafts remind me of the IRSKA satellites which were dropped out the airlock of Mir during the early 1980's and failed to work.

Good manners, like all civility, are a scarce commodity these days. The Russian Amateur-Cosmonauts, however, extended a warm space greeting to the fellow space travelers on recent SAREX missions. They taped a greeting and wished them good luck which played continuously on 145.550 the first two days of each mission.

RS-15, Russia's next amateur satellite, will carry A-mode transponders for the following frequencies:

uplink: 145.857 to 145.897 MHz



Apollo 11 lifts off!

The Hidden Signals on Satellite TV

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Thomas P. Harrington



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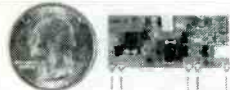
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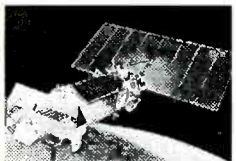
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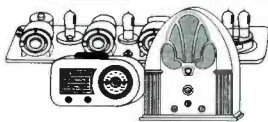
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Well, let's close this edition with an uplifting, positive thought for the day, shall we?

THE YEAR 2126 MAY SPELL DOOM FOR THE EARTH!

A six mile wide piece of space ice known as the Swift-Tuttle Comet will be making an extremely close pass of Earth according to recent articles in *Time* and *Newsweek*. Some Scientists think the comet, which is responsible for the annual Perseid Meteor showers, will hit the Earth on August 14, 2126. Be sure to mark those calendars.

Books and Publishers

The Hidden Signals on Satellite TV
Howard W. Sams & Co.
Universal Electronics Inc.
4555 Groves Road, Suite 13
Columbus, Ohio 46232

Monitoring NASA Communications, The HAMSAT Handbook
Tiare Publications
PO Box 493
Lake Geneva, WI 53147

World Satellite Almanac
Howard W. Sams & Co.
4300 West 62nd Street
Indianapolis, Indiana 46268

Satellite TV Sourcebook
Xenolith Press
R#5 Box 156A
Louisa, VA 23093

Getting Started in Amateur Satellites (video)
CQ Communications, Inc.
76 North Broadway
Hicksville, NY 11801

NEW PRODUCTS

REVIEW OF NEW AND INTERESTING PRODUCTS

GPS Nav Systems

Panasonic announces the introduction of the KX-G5500, the company's Global Positioning System (GPS) receiver. This pocket-sized navigator puts the accuracy of a satellite system in the palm of your hand.

GPS is a radio navigation system that relies on a network of satellites (operated by the Department of Defense) to provide accurate locations for boats, planes, even wilderness hikers. Through a network of 19 orbiting satellites, GPS provides three-dimensional positioning (latitude, longitude and altitude) to pinpoint virtually any location on the globe.

"The new Panasonic GPS receiver may be the smallest, lightest and most compact unit on the market, according to Panasonic. The company entered the GPS market with a Ni-MH battery-powered pocket-sized unit for the widest possible use.

Panasonic's receiver is not just for boaters, but has been designed for aviators and outdoorsmen, too.

The new Panasonic KX-G5500 is a five-channel digital parallel receiver. Unlike some GPS receivers that switch sequentially between satellites to maintain a position, the KX-G5500 reads and processes information from up to five satellites at a single time. It processes this data to arrive at and constantly update the user's current position. By using a parallel design, the receiver never loses contact with the satellites.

The KX-G5500 offers full navigational functions, and an internal memory that stores up to

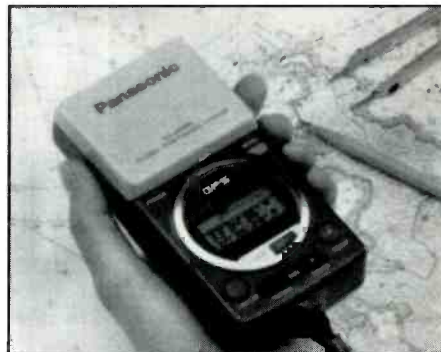
99 way points (destinations) plus nine preprogrammed routes. Additionally, the receiver offers Automatic Route Reversal, a feature rarely found in handheld GPS receivers. This function automatically reverses the way points of a programmed route, so boaters can easily navigate the return to port.

Among its navigational functions, the KX-5500 offers range and bearing to any selected waypoint, course over ground (COG) and speed over ground (SOG). Additionally, it continually calculates travel speed to display Estimated Time of Arrival (ETA) at the destination plus Estimated Time En Route (ETE). The receiver provides Cross Track Error (XTE), which indicates when the user strays off course. Also, it displays the Distance Off Course, telling the navigator how far the vessel is off course in nautical miles. A Steering Indicator gives the direction to return to the original course.

For use on land or off, the receiver can display latitude and longitude in two-dimensions, or add altitude for three-dimensional navigation required by hikers or mountain climbers. Furthermore, the display reads in degrees, minutes and seconds. Ninety-three almanacs are built-in for world-wide navigational coverage. All information is displayed on a large, easy-to-read backlight LCD screen.

The unit is ultra-compact and can even fit comfortably in a shirt pocket. It measures only 5 1/2" x 2 5/8" x 1 1/2" and, at 11.6 ounces (with battery), it is more than a lightweight traveling companion.

The receiver is powered by a built-in re-



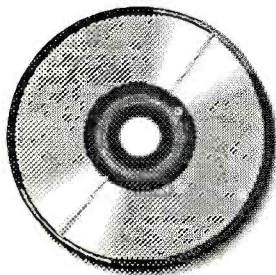
chargeable Ni-MH battery pack, which can be charged with AC or DC with the included charger. Additionally, it can be operated with five "AA" alkaline batteries (not included). A non-volatile five-year lithium battery back-up endures that programming will not be lost, even while the main batteries are being changed or charged. As added protection, the receiver has a low-battery indicator.

Other features include an external antenna and mount and optional 0183 interface which, when joined to an automatic pilot, offers hands-free navigation, and UTC/Local Time and Date functions. The receiver is splash-resistant and comes with a wrist lanyard and vinyl case. The KX-G5500 is now available at a suggested retail price of \$1195 from Panasonic dealers. For more information circle 101 on our Reader Service Card

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More Short-wave Puzzles

I probably get more requests for information about various shortwave mystery stations and covert networks than anything else I write about in this column. I'm not surprised, since this aspect of the short-wave hobby has a powerful attraction for many DXers, including me! Here's a summary of some of the latest happenings since my last report in the October, 1992 issue of *POP' COMM*.

Number Stations— On Your Scanner!

Brian Webb of Thousand Oaks, California is a familiar name to *POP' COMM* readers. Brian is the premier VHF low band (30 to 50 MHz) skip DXer on the West Coast, and you've seen his loggings in articles by Chuck Robertson and others. Brian recently informed me of a logging that certainly ranks as one of the best, most unusual numbers stations loggings that I have ever run across. On March 19, 1992 from 1903 to 1912 UTC, Brian logged a five-digit Spanish numbers station using the AM mode and a female announcer. Nothing out of the ordinary about that, but the frequency—36.15 MHz—sure was!

Brian thought he was hearing a harmonic from a numbers station operating below 30 MHz. However, he was unable to hear the station when he tuned 18075 and 12050 kHz. 18075 was empty of any signals, and 12050 was home to a powerful BBC signal. Brian does not think his reception was of a harmonic. For one thing, the only short-wave harmonics he has heard above 30 MHz have all been those of a powerful (150 kilowatt or more) broadcast stations, and it is apparent that short-wave numbers stations use only a fraction of this power. Additionally, he has only heard the second harmonic of such stations above 30 MHz. Brian says the signal was not local, but instead was via F-layer propagation.

At the time of his reception, Brian was hearing F-layer skip up to 30 MHz between the latitudes of 40° North to 40° South. This area includes the eastern United States from about Philadelphia southward, the eastern Gulf of Mexico, the Caribbean, Central America and northern South America.

While a location in the United States can't be entirely ruled out, it's unlikely. Given the number of scanner receivers in the eastern United States, it wouldn't take long for an AM mode numbers station on 36.15

MHz to be quickly noticed and located. That's why I'm willing to bet this station probably was somewhere in Cuba and operated primarily as some sort of studio-to-transmitter link. Has anyone else heard any numbers stations above 30 MHz, or have any other ideas as to location or purpose?

The KKN Stations

Bob Roehrig, K9EUI, is another monitor who is fascinated by the activity on the Department of the State's "KKN network." This network is named after KKN50, the main station assigned to the State Department's headquarters in Washington, DC. Transmissions are in both CW and RTTY, and the actual transmitter site is at Warrenton, VA. (That also happens to be the transmitter site for four-digit English and Spanish numbers transmissions, but that is another story...)

In a letter to me, Bob stated "I have monitored KKN50 and the others for many years, and have, for example, had KKN50 on several frequencies at once. They will be sending their usual 'marker,' then on one frequency they will start calling another station or answer a call from another one. There might be a quick exchange in very fast CW, and then back to the usual marker. I have never heard the second station on the same frequency, however."

Bob also asked about the actual locations of some of the sites he's heard, such as KKN50/51/52 (Washington), KKN44 (Liberia), KRH50 (London), KRH51 (Bonn), KWL90 (reportedly Tokyo), KWS78 (reportedly Cyprus), and KWK97 (reportedly Warsaw). KKN44 is off the air, but was listed for Liberia. KWS78 was in Athens, Greece, while KWL90 has been reported as being at both Tokyo and Manila. Does anyone have any definite information or further details? These stations are what might be called the "main modes" of the KKN network, as these as the ones most commonly noted with QRA markers in CW and RTTY repeated for hours on end. As Bob noted, these main stations are never noted working each other directly. Instead, he has heard them calling stations line ACA50, KBF70, KCA30, KCA50, KCT78, KGN39, KJB22, KLA24, KLA30, KLM49, KNA26, KOY97, KPB69, KPN41, KQD86, KSB52, KSI84, KWT93, KWX72, KWY97 and KWR95.

David White of Maine has long been one of the more perspicacious observers of the KKN network, and was the first to note how it goes into high gear whenever major for-

eign activity by U.S. military forces is imminent. On December 5, 1992, U.S. Marines were first dispatched to Somalia. Dave was monitoring KKN50 on 114858 kHz that day, and between 2155 to 2243 he heard KWT91 and KGN39 calling KKN50. These messages were cryptic ("QJK 1 ZTA3? Q EEEE QJK 1 ZTA3 K" was one I heard on a tape Dave sent to me.) At 001 on December 6, KKN50 changed over to a "KWT91 DE KKN50 ZBO O ZZK K" marker which continued until 0001, at which time random letters were set until 0116 when the marker resumed. At 0145, the marker was replaced by the familiar QRA marker for the rest of the evening. KKN50 can be heard on 6925.5 as well as 11458 kHz, and is clearly a place to listen to if something major involving the U.S. military might happen within a few hours or days.

(An unfortunate and sad note here: Dave White passed away in April 1993 of a heart attack. Although I never got to meet Dave, we had corresponded by mail and telephone for years, and every tape he sent was loaded with fascinating stuff. His many SWL and ham radio friends around the world will surely miss him.)

Finally, 1992's Hurricane Andrew destroyed Homestead Air Force Base in Florida so completely that it will be abandoned rather than rebuilt. Previous evidence has pointed to Homestead AFB as being the transmitter site for KKN39 on 4956.7 kHz, which is listed as being at Washington. The evening that Andrew was taking aim at south Dade county, KKN39 was heard well here with its QRA marker. The next night, KKN39 and Homestead AFB were both gone. And both are still gone at the time this is being written. This illustrates that not all KKN stations are at the locations indicated.

Bootleg Digital Stations

Those underground digital radio networks above 25 MHz are still there, although with declining propagation on higher frequencies they're becoming harder to hear. George Zeller of Ohio has been noting more of this activity than anyone else. He reports a packet radio net on 27537.6 kHz around 1440. UTC that includes a bulletin board system in French Guiana. George also says there are two-way French communications in SITOR-A on 27527.6 kHz around 1440. Finally, George caught "DE ROBY FROM NORTH ITALY" in RTTY (45/200) on 27553 kHz around 1400.

With the sunspot count declining, the higher frequencies will become open much less often. It would be no surprise if some of these networks migrate to lower frequencies in the next few months.

"Gurglers"

In the past couple of years, a signal that sounds like gurgling or boiling water has been heard throughout the short-wave spectrum. SWLs have termed these stations "gurglers." So what are they? It appears these are actually slow-speed frequency hopping systems. Frequency hopping is a system where the transmitter's frequency is shifted around within a certain bandwidth, and the receiver's frequency is synchronized with that of the transmitter. Complex microprocessor circuitry controls the frequency hopping in both the transmitter and receiver according to an encoded algorithm not available to others that might be listening in. The purpose of the hopping is to avoid attempts to jam or locate the signal. In gurglers, the frequency is shifted around within a bandwidth of roughly 20 kHz. This bandwidth is too narrow and the hopping rate seems to slow to allow these signals to frustrate direction-finding efforts. However, such a system would offer a good degree of security and immunity from jamming. The source of

these signals is almost surely the various branches of the U.S. military.

A similar type of system sounds very much like the "songs" of whales; other listeners have described it as sounding like the simultaneous howls of "feedback" from several different microphones. This has been most recently heard on 7780 kHz around 2330.

Part 15 Numbers Stations?

The frequency range of 13553 to 13567 kHz is allocated in the United States to low-power Part 15 unlicensed operations. The main intent of Part 15 is to cover incidental radiation from industrial, scientific and medical devices, and it also permits operation of low-power walkie-talkies around 49 MHz. Recently, a five-digit Spanish numbers station with a female announcer has been heard around 0200 on 13565 kHz in USB. This is a clever move by whoever is operating this station, since most listeners—and monitoring agencies—won't give this range a lot of attention. 13553 to 13567 kHz might be a good range to look for strange stuff, and it's surprising that more pirate stations haven't given this area a try in preference to the area around 15050 kHz, which is heavily monitored by the U.S. Air Force and others. ■

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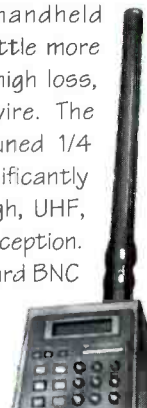
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POP'COMM'S World Band Tuning Tips

September—1993

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2310	VL8A, Alice Springs, Australia	1000		6070	CFRX, Canada	0800	
3200	TWR, Swaziland	0355	s/on	6075	R. Super, Colombia	1000	SS
3205	R. West Sepik, Papua New Guinea	1130		6088v	R. Esperanza, Chile	1000	SS
3215	R. Oranje, South Africa	0300	EE/Afk	6100	Deutsche Welle, Germany	0400	GG
3221	R. Kara, Togo	0530	FF	6116	LV del Llano, Colombia	0130	SS
3245	R. Gulf, Papua New Guinea	1130	idgin	6120	R. Japan	1130	via Canada
3250	R. Luz y Vida, Honduras	0200		6120	Deutsche Welle, Germany	0300	
3270	Namibian Bc Corporation	0300		6135	Swiss Radio Int'l	0230	
3280	LV del Napo, Ecuador	0305	SS, close	6150	Caracol, Colombia	0400	SS
3290	R. Central, Papua New Guinea	0930		6155	Radio Austria Int'	0830	
3300	R. Cultural, Guatemala	0200		6165	R. Netherlands, via Bonaire	0030	
3316	SLBS, Sierra Leone	0600		6170	R. Cultura, Brazil	0900	PP
3320	R. Suid Afrika, S. Africa	0400		6185	R. Educacion, Mexico	1000	
3325	R. Maya, Guatemala	1130		6205	HCJB, Ecuador	0800	
3360	La Voz de Nahuala, Guatemala	1130	SS & indian	6219	Radio Bosnia-Hercegovina	0200	regular
3365	R. Rebelde, Cuba	0300	SS	6250	R. Nacional, Equatorial Guinea	0500	SS
3375	R. Nac. Educadora, Brazil	0130	P	6270v	R. Patria Libre, Colombian clandestine	0030	SS
3384	Icelandic State Broadcasting Service	0330	Icelandic	6305	La Voz del CID (anti-Castro)	0800	SS
3395	Channel Africa, S. Africa	0400		6576	R. Pyongyang, N. Korea	1100	
3810	HI2IOA time station, Ecuador	0200	SS	6825	China R. Int'l (feeder)	1000	CC
3970	R. Nigeria, Enugu	0500		7100	Voz Res. Galo Negro, clan	2300	PP
4000	R. Cameroon, Bafoussam	0430	FF	7105	REE, Spain	0430	SS
4300	R. Naylamp, Peru	1030	SS	7115	V of Pujiang, China	1130	CC
4460	CPBS-1, China	1300	CC	7140	R. Italia Int'l	0700	
4485	R. Tikhiv Okean, Russia	1200	RR	7150	R. Vilnius, Lithuania	0000	
4552	Rdf. Tropico, Bolivia	1000	SS	7170v	ORTS, Senegal	0600	s/on, FF
4705	Estacion Laser, Peru	0900	SS	7175	RAI, Sicily	0700	Ital
4755	Educadora Rural, Brazil	0230	PP	7180	R. Ukraine Int'l	0100	
4760	R. Frontera, Venezuela	0130	SS	7215	TWR, Swaziland	0355	s/on, vern.
4765	RTVC, Congo	0355	s/on, FF	7225	R. Sofia, Bulgaria	0100	
4770	R. Nigeria, Kaduna	0500		7235	Deutsche Welle, Germany	0400	AA, via Malta
4770	R. Centinela del Sur, Ecuador	1030	SS	7245	R. Nacional, Angola	0400	PP
4785	Ecos del Combeima, Colombia	1000	SS	7250	Vatican Radio	0600	//6245
4800	R. Lesotho	0330		7255	V of Nigeria	0500	
4805	Rdf. Amazonas, Brazil	1000	PP	7265	VOA Relay, Botswana	0300	sign on
4825	LV de la Selva, Peru	1030	SS	7275	ELBC, Liberia	0700	
4840	R. Valera, Venezuela	0300	SS	7285	RT Malienne, Mali	0700	FF
4845	ORTM, Mauritania	0630	FF	7290	TWR, Swaziland	0255	s/on
4860	R. Ukraine Int'l	0100		7345	R. Prague, Czech Rep.	0000	
4870	ORTB, Benin	0530	FF	7370	R. Flanders Int'l, Belgium	0030	
4875	V of Jinling, China	1100	CC	7445	V of Asia, Taiwan	1400	CC
4885	Ondas del Meta, Colombia	0300	SS	7465	Reshet Bet HS, Israel	0100	Hebrew
4890	R. France Int'l, Gabon relay	0400	FF	7475	RTT Tunisienne, Tunisia	0500	AA
4895	LV del Rio Aruca, Colombia	0200	SS	7550	R. Korea, S. Korea	2230	
4904.5	R. Nat. Tchadienne, Chad	0430	FF	7580	R. Pyongyang, N. Korea	0900	JJ
4915	R. Cora, Peru	1030	SS	7705	RAI, Italy, SSB feeder	0400	II
4915	GBC, Ghana	0600		9022	VOIRI, Iran	0030	EE
4920	ABC, Australia	1100		9165	R. Omdurman, Sudan	0255	sign on, AA
4935	R. Tropical, Peru	1000	SS	9275	Icelandic State BC	2300	Icelandic
4944v	R. Onda Verde, Peru	1045	SS	9345	R. Pyongyang, N. Korea	1300	
4950	Voice of Jinling, China	1200	CC	9420	Voice of Greece	0130	GG/EE
4970	R. Rumbos, Venezuela	0200	SS	9445	Voice of Turkey	2330	TT
4975	R. Tupi, Brazil	0800	PP	9455	KHBI, No. Marianas	1000	
4980	Ecos del Torbes, Venezuela	0200	SS	9475	R. Cairo, Egypt	0200	
4985	R. Brazil Central	0100	PP	9490	R. Nadezhda, Russia	1530	RR
4990	R. Nigeria, Lagos	2230		9505	R. Tacna, Peru	1030	SS
5010	R. Garoua, Cameroon	0600	FF	9510	R. New Zealand	0930	
5015	R. Brazil Tropical, Brazil	0700	PP	9510	R. Havana Cuba	0600	
5020	Solomon Is. Bc. Corp.	0730		9515	BBC via Canada	1200	
5030	R. Continente, Venezuela	0330	SS	9535	Swiss Radio Int'l	0700	
5035	Rdf. Centrafricaine, Cent Af Rep.	0430	FF	9540	R. Educadora Bahia, Brazil	0900	PP
5047	RTV Togolaise	0524	s/on, FF	9545	Solomon Is. Bc Corp.	0700	
5055	TIFC, Costa Rica	0300		9560	Radio Finland	0300	
5066	R. Candip, Zaire	0325	s/on, FF	9565	R. Universo, Brazil	0900	PP
5075	Caracol Bogota, Colombia	0400	SS	9570	R. Portugal	0230	
5880	CPBS, China	1100	CC	9570	R. Romania Int'l	0230	
5882	Vatican Radio	0030	Italian	9575	Radio Medi Un, Morocco	0730	FF
5930	Slovak Radio	0100		9575	RAI, Italy	0100	
5945	VOA via Russia	1400	CC	9580	R. Tirana, Albania	0230	
5950	V of Free China via WYFR	0230		9590	R. Georgia, Georgia	0430	
5960	R. Monte Carlo, Monaco, via Canada	0400		9600	HCJB, Ecuador	0500	
5990	RAI, Italy	0430		9600	R. UNAM, Mexico	1300	SS
5995	R. Australia	1100		9605	UAE Radio, Abu Dhabi	2200	s/on
6010	R. Havana Cuba	0430		9615	R. Veritas Asia, Philippines	1500	CC
6015	R. Austria Int'l, via Canada	0645		9625	CBC Northern Service, Canada	0300	
6045	R. Melodia, Colombia	1000	SS	9640	VOIRI, Iran	1500	sign on, Farsi
6060	Radio Havana Cuba	0600		9645	Faro del Caribe, Costa Rica	0400	SS
6060	R. Nacional, Argentina	0530	SS	9650	Swiss Radio Int'l	0000	

Freq.	Station/Country	UTC	Notes	Freq.	Station/Country	UTC	Notes
9655	China Radio Int'l	1200		13660	R. Havana Cuba (USB)	0200	USB, EE
9660	ABC, Australia	0900		13675	UAE Radio, Dubai	1630	
9675	Voice of Indonesia	1230	II	13685	Swiss R. Int'l	0700	
9690	China Radio Int'l, via Spain	0300		13685	R. Vlanderen Int'l, Belgium	1900	sign on
9695	R. Sweden	0200		13750	AWR Latin America, Costa Rica	1200	s/on
9700	R. New Zealand	1030		13755	R. Australia	1200	
9705	BSKSA, Saudi Arabia	2030		13830	Zagreb Radio, Croatia	2000	EE/Croat
9705	R. Portugal	0230		13855	INBS, Iceland	1400	Icelandic
9715	VOA via Thailand	1400	CC	15020	All India Radio	1400	EE, others
9725	R. Clube Paranaense, Brazil	0800	PP	15084	VOIRI, Iran	0430	Farsi
9740	R. Canada Int'l	0630		15090	Vatican Radio	2245	s/on
9750	R. Korea, So. Korea	1200		15100	FEBC, Philippines	1400	EE, others
9750	R. Canada Int'l	0530		15110	REE, Spain, via Costa Rica	1900	
9760	R. Tirana, Albania	0130	Albanian	15120	R. New Zealand Int'l	0530	
9765	V of Mediterranean, Malta	0600		15130	R. Pyongyang, N. Korea	0000	
9770	UAE Radio, Dubai	2159	s/on	15170	R. Australia	0900	
9790	R. France Int'l	0130		15175v	Radio Tahiti	0500	FF/TT
9815	Radio Havana Cuba	0200	USB	15185	R. Finland Int'l	2300	
9835	KHBN, Palau	1300		15200v	R. Bangladesh	1230	EE
9835	Adventist World R., via Russia	1300		15220	Channel Africa, S. Africa	0600	(ex R. RSA)
9840	R. Kuwait	2100	AA	15240	R. Australia	0900	
9845	FEBC, Philippines	1600		15250	Iraqi Radio	1400	EE
9860	R. Netherlands via Russia	1100		15265	Qatar Broadcasting Station	1900	AA
9875	R. Austria Int'l	0130		15270	Deutsche Welle via Rwanda	2330	GG
9885	Swiss Radio Int'l	0200		15325	R. Japan via Fr. Guiana	0300	
9930	R. Vlanderen Int'l, Belgium	0030		15335	R. Romania Int'l	1430	
9935	RS Makedonias, Greece	2000	GG	15340	R. Japan, via Gabon	2000	RR
10059	V of Vietnam	1500	VV	15345	RAE, Argentina	2130	
10234	RAI, Italy, feeder	0100	II	15345	RTM, Morocco	1400	Berber
11335	R. Pyongyang, N. Korea	1100		15345	RAE, Argentina	1300	SS
11550	RTT Tunisia	1800	AA	15355	R. Japan via Gabon	1500	
11603	Kol Israel	2230		15360	Deutsche Welle, Germany	2100	
11620	All India Radio	2000		15365	Radio Australia	0330	
11650	China Radio Int'l	1500	RR	15415	Libyan Jamahiriyah Broadcasting	1500	AA
11690	FEBC, Philippines	1100		15425	ABC, Australia	0130	
11695	Rep. of Iraq Radio	2230	AA	15445	Radio Nacional, Brazil	1245	EE
11695	Radio France Int'l	0530	FF	15470	R. Tashkent, Uzbekistan	1200	
11705	R. Sweden	2330		15475	Africa Number One, Gabon	2100	FF
11710	UAE Radio, Abu Dhabi	2330		15505	Swiss Radio Int'l	1500	
11710	RAE, Argentina	0100		15505	R. Kuwait	2245	AA
11715	R. Algiers, Algeria	2100		15530	Radio France Int'l	1600	
11720	R. Sofia, Bulgaria	0400		15570	R. Ukraine Int'l	1500	
11725	R. Korea, S. Korea	1000	SS	15575	R. Korea, S. Korea	0030	
11740	Vatican Radio	0700		15615	Rashuth Hashidur service, Israel	1700	Hebrew
11740	R. Portugal	1900		15635	V of Greece	1230	
11745	Channel Africa, S. Africa	0200		15640	Kol Israel	1400	
11755	R. Finland Int'l	0130		15770	INBS, Iceland	1430	Icelandic
11765	R. Sofia, Bulgaria	2300		16000	VNG, Australia (time strn)	0800	
11785	VOA Thailand relay	1300		17490	HCB, Ecuador	1900	USB
11790	VOIRI, Iran	1200	Urdu/EE	17525	Voice of Greece	1845	EE/GG
11795	UAE Radio, Dubai	1600		17550	R. Flanders Int'l, Belgium	1400	
11795	R. Norway	2300		17595	R. Cairo, Egypt	1200	
11800	SLBC, Sri Lanka	0045		17605	R. Vilnius, Lithuania	0000	
11800	Channel Africa, South Africa	0430		17630	Africa No. One, Gabon	1430	FF
11805	R. Globo, Brazil	0830	PP	17650	R. France Int'l	1400	
11815	Polish Radio Warsaw	1245	GG	17670	R. Cairo, Egypt	1800	AA
11820	R. Sweden	0100		17690	R. Ukraine Int'l	0100	
11827	R. Tahiti	0300	FF/TT	17690	R. Yerevan, Armenia	0345	
11830	R. Anhanguera, Brazil	0000	PP	17710	Channel Africa, S. Africa	1700	
11835	R. El Espectador, Uruguay	2330	SS	17740	R. Yugoslavia	1200	
11860	R. Iraq Int'l	0400		17740	R. Sweden	1300	EE
11870	R. Yugoslavia	0040		17745	Radio Portugal	1330	PP
11870	AWR, Costa Rica	0100	SS	17745	R. Tashkent, Uzbekistan	1200	
11880	R. Australia	1600		17750	Radio Nacional	1800	PP
11885	UAE Radio, Abu Dhabi	2330		17760	R. Filipinas, Philippines	0230	
11920	BSKSA, Saudi Arabia	1500	AA	17770	R. New Zealand Int'l	0300	
11938	V of People of Cambodia	0030		17790	Radio Norway Int'l	1900	
11940	R. Romania Int'l	1300		17815	RTV Morocaine	1200	AA
11955	R. Nacional, Angola	0600	PP	17825	R. Japan	0300	
11960	RTV Malienne, Mali	0900	FF	17860	Qatar Bc Service	1300	AA
11970	R. Havana Cuba	0130		17870	R. Sweden	1500	
11980	AWR/KSDA, Guam	1600		17875	R. Canada Int'l	2130	
11985	UAE Radio, Dubai	2100	AA	17880	R. Finland Int'l	1300	
11995	R. Sweden	2200		17900	R. Portugal	2000	PP
12015	Radio France Int'l, via Gabon	1600		21455	USB HCB, Ecuador	0300	
12025	R. Netherlands, via Khazakistan	0300		21490	Radio Austria Int'l	1430	
12035	Spanish National Radio	1130	SS	21500	Radio Sweden	1600	
12050	R. Cairo, Egypt	0300	AA	21505	BSKSA, Saudi Arabia	1600	AA
12360	Radio Havana Cuba	0400	SS	21545	R. Canada Int'l	1500	
13595	WJCR, Kentucky	2300		21550	R. Finland Int'l	1430	
13605	Radio Australia	2300		21605	R. Yugoslavia	1230	
13620	R. Kuwait	2000		21625	Radio Sweden	1330	
13630	RFPI, Costa Rica	2300		21655	R. Portugal	1830	PP
13635	Swiss Radio Int'l	2130		21675	R. Kuwa	1500	AA
13650	R. Pyongyang, N. Korea	0000		25820	R. France Int'l	1430	FF
13655	R. Flanders Int'l, Belgium	2300	Dutch				

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

KWHR. Those are call letters you're probably not familiar with yet. They belong to the LeSea Broadcasting Corporation—the people who own WHRI in Indiana. It shouldn't be too much longer before you hear the KWHR call letters though—coming to you from LeSea's new station in Hawaii. The facility is expected to go on the air sometime this fall, beaming to Asia and Australia. Yes, we're well aware that on-the-air target dates are seldom met by shortwave operators. But LeSea has a pretty good track record in this department so we put a little extra faith in what they say. In fact, the first test broadcasts may have taken place by the time you read this. At this writing, though, we still don't have any frequency information. Regular broadcasts, once they're underway, will be produced at LeSea's main studios in South Bend, Indiana. KWHR is located at South Point, on the island of Hawaii.

Other Pacific Notes

Contrary to what we reported last month it seems Radio Cook Islands is inactive on shortwave after all. DX'er Guy Atkins of Washington State visited the islands a few months ago and learned that the shortwave transmitter was destroyed in a fire back in May, 1992. It's anyone's guess as to whether the station will return.

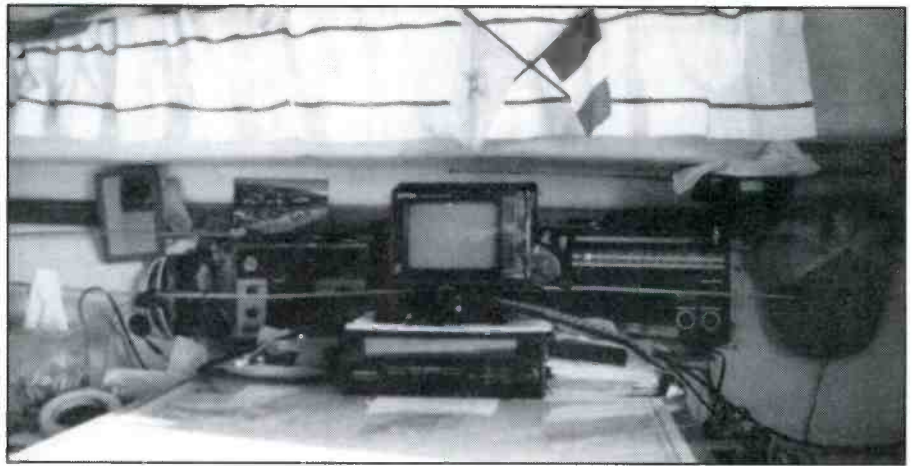
Speaking of returns, the Tonga Broadcasting Commission—AZ3 on 5030—returned to shortwave awhile back, but soon left again because of technical problems. Let's hope it's back by now, or that it soon will be. AZ3 is mighty tough DX. Try between 0600-0800.

Back on the mainland—can it be that WWCR was back on the air in a matter of weeks after being totally destroyed by fire?

We don't know at this writing but that was the plan of the WWCR powers that be, never mind that the emergency arrangements might be a bit on the rubber band and paper clip side. They'd hoped to return with a single transmitter carrying Gene Scott so round up the usual frequencies and check for them. Along with everything else, the fire destroyed the mailing list so you'll have to write them again if you want to receive their program schedules.

Also on the US shortwave scene comes word that Radio Miami International is making progress towards their on-air date. They've run into delay after delay so we don't want to get excited too soon. Check for the WRMI signal—mostly in Spanish—on 9955 between 2200 and 1300.

Radio Renescenca, the "other" station in Portugal is reported to have issued an appeal for those listening on shortwave to contact them—apparently making it sound



L. Mark Lussky of Los Angeles cruises the airwaves while he cruises the waterways. This shack is on board his yacht, moored at Marina del Rey, California.

as if continued operation on shortwave might be in jeopardy. Radio Renescenca is a Catholic station and is best heard in North America on 9600 between 0015 and 0115, in Portuguese.

Radio Portugal has announced a new address for their English service, namely: English Service, Radio Portugal, Box 1011, Lisbon 1001, Portugal.

Italy has and has had a number of private (even quasi-pirate) stations over the past several years, all of them using fairly low power. Every now and again one comes along which we in North America have a pretty good shot at hearing. The latest is Idea Radio, located near the city of Genoa. It runs 450 watts and operates on 7380, apparently 24 hours a day. It's been

heard by a number of DXers here, with IDs in Italian, Spanish and English. Try 'em late at night. The address is Box 38, I-16030 Gattorna, Genova, Italy.

POP 'COMM Convention Reminder

Now about that first weekend in October which you still haven't marked on your calendar...

We're putting together quite a party for you in Virginia Beach, Virginia on October first and second—including a get-together for all Listening Post readers and reporters. We're looking forward to meeting as many of you as possible so check elsewhere in this issue for details, make your plans and



Antonio Garcia works at RFI, Paris and spotted the 1983 Radio France Internationale New Year's card in our April column so he sent the 1993 version, and here it is!



Here's the QSL card being issued by Slovak Radio. Thanks to Stan Schmitt of Indiana.

mark that calendar! We'll see you in Virginia Beach!

It's been a long time since we've talked about local and regional listener clubs so let's do it now. If you're involved with a regional or local DX club or just an informal group that gets together now and then, and you'd like to add more people let us know. We'll be glad to publish information about your local or regional listener club or group.

Mail Notes

Thanks to Mickey Waldorf of Taiwan for a nice log report and a fascinating letter! Hope you'll check in often, Mickey!

Andy Johns in Texas wonders about reports of Zambia going off of shortwave, as

he still hears them signing on at 0250 on 4910. Don't know, Andy. Perhaps it was false information or they changed their minds. Let's knock on wood and hope they continue active on shortwave.

Edward Baud of New Jersey says he's new ("again!") to shortwave listening and notes that he's "not sure he enjoys it more now with digital tuning" or in the days when he used an old Hallicrafters and seat of the pants flying. Edward recalls it was very frustrating to find and keep a frequency, but in some ways more enjoyable. We're in total agreement with you on that point, Edward. By the way, with a last name like Baud, maybe you should try radioteletype monitoring!

In Tennessee, Jill Dybka is wondering

about the status of Radio Free Europe/Radio Liberty. They're both still on the air, Jill, and probably will remain so for some time to come, despite reports of the Clinton Administration wanting to phase them out.

Many RFE/RL broadcasts can be heard here but, of course, none of the programming is in English. You can write to the Frequency Division, RFE/RL, 1775 Broadway, New York, NY 10019 and request a full time/frequency schedule.

As for Antarctica, try Radio Nacional Archangel San Gabriel at the Argentine Antarctic base, sometimes active on 15474 to sign off around 0030, in Spanish. It's not an easy log.

Check this month's logs for Iceland.

Speaking of logs, keep 'em coming! Just (please!) remember to list items by country with cutting space between each item and your last name and state abbreviation after each item. If you don't adhere to these simple requests we just can't use your material. We're also very glad to get spare QSLs, station literature and photos for use as illustrations, station schedules and any other news or shortwave broadcast-related information you may run across or hear on the bands. Thank you!

Here are this month's loggings. All times are UTC. Language of broadcast is assumed to be English (EE) unless otherwise indicated (SS = Spanish, GG = German, AA = Arabic, etc.)

ALASKA - KNLS. 7395 at 0823 with Roy Rogers songs. (Dybka, TN) 9615 at 0800 sign on. (Urbelis, NY) 1300. (Waldorf, Taiwan)

ALBANIA - Radio Tirana, 9580 at 0230. "This is Radio Tirana" and features about Albania to 0300 close. (Maywoods DX Team, KY; LeClerc, CT)

ANTIGUA - BBC relay, 15220 at 1312 with news. (Dybka, TN)

ARGENTINA - Radio Nacional, 6060 in SS at 0710 with tangos and other Latin types, several IDs. (Urbelis, NY)

ASCENSION ISLAND - VOA relay. 15225 at 1625. (Low, TX)

BBC relay, 21660 at 1449. (Dybka, TN)



St. Helena even issued a stamp to honor the 25th anniversary of the island's radio station. (Thanks Chris London)

Radio St. Helena made a lot of SWL's very happy with their special "St. Helena Day" broadcast last October. They may even do it again this year! Thanks to Chris London in Minnesota for a copy of their QSL. ↓



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Here's the listening post of Donald C. Barnes of Wheat Ridge, Colorado, complete with lots of maps so he can look at what he's hearing.

AUSTRALIA - Radio Australia, via Brandon, 7240 at 1200. (Urbelis, NY) 5995 at 1321. (Dybka, TN) 9580 at 1230; 1603. (Low, TX; Barnes, CO) 9770 at 1500, 11855 at 1300. 13755 at 1324 and 15240 at 0128. (Waldorf, Taiwan) 11800 at 1555 and 11880 at 1600. (Fenwick, ME) 13605 at 1225. (Northrup, MO) 15365 at 0116. (LeClerc, CT)

AUSTRIA - Radio Austria Int'l, 13730 at 1220 with news in GG. (Northrup, MO)

BANGLADESH - Radio Bangladesh, 4880 at 1215 with Koran readings. (Maywoods DX Team, KY)

BOLIVIA - Radio Perla del Acre, 4600 at 0012 in SS with frequency announcements, time checks, Latin ballads. (Rausch, NJ)

BOTSWANA - Radio Botswana, 3355//4830 at 0300 sign on in EE, with anthem, frequencies, religious service, US soul numbers. (Lamb, NY) 4830 at 0253 with barnyard IS, ID, anthem, news. (Urbelis, NY)

VOA relay, 13710 at 1930. (Barnes, CO) 15495 at 1905; 2007. (Baud, NJ; Dybka, TN)

BRAZIL - Radio Nacional, 15445 at 1314 with news. (Low, TX)

Radio Educadora, 3375 in PP at 0137 with IDs, Brazilian pops, jingles. (Lamb, NY)

Radio Clube do Para, 4895 at 0405 in PP with BeeGees, Ravel, IDs. (Lamb, NY)

China Radio Int'l relay, 15445 at 0245 with CC/SS lesson. (Dybka, TN)

Radio Cultura, 3365 at 0226 with futbol. (Maywoods, KY)

BULGARIA - Bulgarian Radio home service via Stolnik transmitter, 7670. at 0545 with talk. (Maywoods, KY)

BURMA (MYANMAR) Defence Forces Broadcasting, 6570 in Burmese at 1155 with American and Asian pops. (Maywoods, KY)

Myawadi Broadcasting, 5972.9 at 1158 with Asian vocals, heavy BBC QRM. (Maywoods, KY)

CANADA - Radio Canada Int'l, 5960 at 2326. (Fenwick, ME)

6120 at 0100 and 9755 at 0135. (Baud, NJ) 15195 at 1230. (Waldorf, Taiwan) 21545 at 1722. (Low, TX)

BBC relay, 9515 at 1503; 1704. (Low, TX; Fenwick, ME)

CHNX Halifax, 6130 at 1212; 2018 with medium wave relay of CHNS—oldies, traffic reports, commercials. (Maywoods, KY; LeClerc, CT)

CKZN St. John's on 6160 at 2334. (Fenwick, ME) CIQX Montreal with CIQC relay, 6005 at 1728. (Fenwick, ME)

CFRX Toronto, 6070, relay CFRB at 1730. (Fenwick, ME)

CHU time station, 7335 at 0245. (Dybka, TN)

CHAD - Radio National Tchadienne, 4904.5 in FF at 0430. (Johns, TX)

CHINA - China Radio Int'l, 7405 at 1505 with news. (Barnes, CO) 2200 on 7435 in presumed PP to 2226 close. (Rausch, NJ) 7820 at 1031 in RR. (Foss, AK) 11650 in SS at 0150 and 11660 at 1309. (Waldorf, Taiwan) 11690 at 1300. (Urbelis, NY) 11715 via Mali at 0304. (Vaage, CA) 11755 at 0914. (Crook, Guam)

CPBS, 7620 at 1834. (Crook, Guam)
Voice of the Strait, 7280 in CC at 1200. (Maywoods, KY)

COLOMBIA - La Voz del Cinaruco, 4865 at 0447 in SS. (Fenwick, ME)

Caracol Bogota, 5075 at 0134 with futbol; 0220 songs. (Fenwick, ME; Dybka, TN)

COSTA RICA - Radio For Peace Int'l, 15030 at 0106 with "FIRE" program. (Fenwick, ME) 21465 USB at 2150. (Low, TX)

CROATIA - Croatian Radio, 7240 at 2341 with music. (Fenwick, ME)

CUBA - Radio Rebelde, 3666//5025 in SS at 0026. (Fenwick, ME) 3666 in SS at 0448 and 5025 at 0421. (Low, TX)

Radio Havana Cuba, 5965 at 0329 in SS. (Vaage, CA) 6010 at 0120. (Baud, NJ) 9510 at 0610. (Crook, Guam) 12035 at 0421 in SS. (Lamb, NY) 13660 USB in SS at 2140. (LeClerc, CT) 17705 at 2250 in SS. (Barnes, CA)

CYPRUS - BBC relay, 15575 at 1430. (Dybka, TN)

CZECH REPUBLIC - Radio Prague, 7345 at

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

0003 with news. (Fenwick, ME)

DENMARK - Radio Denmark, 9560 at 0140 with EE ID, otherwise all Danish to 0159 s/off. Via Radio Norway. (Vaage, CA)

ECUADOR - Ecos del Oriente, 3269.3 in SS with Ecuadorian music at 0305. (Maywoods, KY)

Radio Jesus del Gran Poder, 5049 at 0132 in SS with music. (Fenwick, ME)

Radio Centro, 3289.8 at 0730 in SS with ID, time checks, ballads. (Rausch, NJ)

Radio Centinela del Sur, 4771v at 0228 with sports, mentions of Quito. (Maywoods, KY)

HCJB, 3220 at 0407 in SS. Also 17490 at 0041. (Fenwick, ME) 9745 at 0820. (Crook, Guam) 15155 at 0327. (Vaage, CA) 21480 at 2146. (Low, TX)

EGYPT - Radio Cairo, 9475 at 0255. (Dybka, TN) 9900 at 2232 with call to prayer, ID, news. (Maywoods, KY) 11600 with test transmission in EE at 0200. (Lamb, NY) 15220 at 1450 in AA. (Pappas, SD) 17690 in AA at 1600 and 17695 at 1215. (Waldorf, Taiwan)

ENGLAND - BBC on 3955 at 0423; 12095 at 1945. (Fenwick, ME)

5975 (via Antigua)//7325 at 0259. (Vaage, CA) 7180//9740 at 1411; 11750 at 1310; 15340 in CC at 0314; 17790 at 0140 and 21715 at 0330. (Waldorf, Taiwan) 9590 (via BOA Delano) at 0220. (Baud, NJ)

FINLAND - Radio Finland Int'l, 15400 at 1330. (Dybka, TN) 17800 at 0800 with Compass North. (Waldorf, Taiwan)

FRANCE - Radio France Int'l, the 3965.4 kw transmitter at 0235 in FF with IDs, classical and African music. (Lamb, NY) 11705 at 1949 in FF. (Fenwick, ME) 11845 at 1824 in FF. (Barnes, CO) 12350 with IS to 2100 sign on, ID, news, Euro pops, frequency announcements and target areas to 2153 close, all FF. What are they doing here? (Rausch, NJ) 17620 at 1600; 17695 at 1400 and 17710 (via Japan, editor) at 0134. (Waldorf, Taiwan)

FRENCH GUIANA - Radio France Int'l relay, 21645 at 1448 in FF. (Dybka, TN) 21685 at 1600. (Urbelis, NY)

China Radio Int'l relay on at 0440 on 11680. (Maywoods, KY)

GABON - Radio France Int'l relay, 4890 at 0510 with news in FF. (Fenwick, ME) 12025 at 1845 in FF. (Barnes, CO)

Swiss Radio Int'l relay, 12035 at 2218. (Lamb, NY) Africa Number One, 9580 at 0630 with French and African music. (Maywoods, KY)

GEORGIA - Radio Tbilisi, 15235 at 1700 with IS chime, ID on the hour, 3 pips and anthem. (Maywoods, KY)

GERMANY - Deutsche Welle, 3995 in GG at 0220; 6055 in SS at 2328. (Fenwick, ME) 15105 (probably via Antigua, editor) at 0116. (Waldorf, Taiwan)

RadioFree Europe via Lampertheim, 5985 at 0251 in Uzbek with IDs, news. (Lamb, NY)

GHANA - Ghana Broadcasting Corp, 4915 at 2257 with sermon and religious music. (Maywoods, KY)

GREECE - Voice of Greece, 7450 at 2017 in FF, 2033 in Greek, 2046 in SS and 2054 off also 9375//9420 at 0132. (LeClerc, CT) 9425 at 2345. (Fenwick, ME) 0521. (Foss, AK) 15630 at 1445. (Maywoods, KY) 15650//17525 at 1050; 17515 in Greek at 1300. (Waldorf, Taiwan)

GUAM - KTWR, 11805 with religious program at 0915. (Rausch, NJ)

KSDA - AWR Asia, 15610 at 0125 with "The Living Bible." (Waldorf, Taiwan)

GUATEMALA - La Voz de Nahuala, 3360 at 0230 in SS, mariachi-type band. (Maywoods, KY) 0210 in SS with ID, marimbas. Off at 0259. (Lamb, NY)

Radio Buenas Nuevas, 4800 at 1125 with religious program and ID. (Maywoods, KY)

Radio Chortis, 3380 at 0347. Latin music, ID as "Chortis". (Maywoods, KY)

Radio Cultural, 3300 at 0220 with religious songs. (Maywoods, KY)

La Voz de Atitlan, 2390 at 0120 in SS. (Johns, TX)

Radio Maya de Barillas, 3325 at 0215 in SS. (Barnes, CO)

Radio Tezulutlan, 3370 at 0205 in SS. (Barnes, CO) 0239 with mention of "Coban." (Maywoods, KY) 4835 at 0214 with music and ID

"Tey-zoo-loot-lan." (Dybka, TN) 0339 with marimbas. IDs. Off at 0400. (Lamb, NY)

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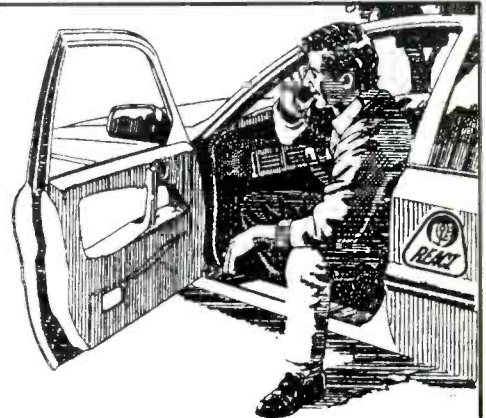
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HONDURAS - Radio Luz y Vida, 3250 at 0330; 0347 in EE. (Johns, TX; Maywoods, KY)

HUNGARY - Radio France Int'l relay, 15460 at 1600 with news. (Urbelis, NY)

ICELAND -INBS. 13855/15770 at 2021 in Icelandic with news. mentions of Reykjavik. Off 2035. (Lamb, NY) 15770 at 1430 in Icelandic. (Maywoods, KY)

INDIA - All India Radio, 7412 at 2100. (LeClerc, CT) 10330 at 1530 and 11745 at 0010. (Waldorf, Taiwan) 11620 at 1530 to 1600 close. (Urbelis, NY) 1934; 2143. (Maywoods, KY; Low, TX)

INDONESIA - Radio Republik Indonesia, Ujang Padang, 4753.4 at 1137 in II. (Maywoods, KY) 1100 with talk in II. (Rausch, NJ)

IRAN - VOIRI, 9022 at 0103 in EE. (Maywoods, KY) 9765 at 0027 with IS to 0030 then anthem, ID, frequencies. (Dybka, TN) 15084 at 0329 in Farsi. (Lamb, NY) 1330. (Northrup, MO)

IRAQ - Republic of Iraq Radio, 11740 in AA at 2200. (Low, TX)

ISRAEL - Kol Israel, 15650 at 1300 with news and features. (Waldorf, Taiwan)

ITALY - RAI, 5990//9710 with news and music at 2200. (Waldorf, Taiwan) 11800 at 2205; 0142. (Crook, Guam; Maywoods, KY) 17800//21555/-/21690 at 1442 with live soccer coverage. (Lamb, NY)

JAPAN - Radio Japan, 11815//15210 (prob. via Sri Lanka, editor)//15230 at 0308 and 11815/-/11860//15195 at 0100. (Waldorf, Taiwan) 15210 at 0450 in JJ. (Foss, AK) 15325 (French Guiana, editor) at 0300. (Baud, NJ) 17810 at 0700. (Crook, Guam) 17835 at 0108. (Lamb, NY)

JORDAN - Radio Jordan, 11940 at 0520 with Arabic music. (Dybka, TN)

KAZAKHSTAN - Alma Ata 2 on 15385 at 1220 with songs by woman, man announcer. (Northrup, MO)

KUWAIT - Radio Kuwait, 11990//21675 at 1417 in AA with Islamic program, ID, local music. Also 13620 in EE at 2001. (Lamb, NY) 13620 at 1905 with music program. (Maywoods, KY) 21675 at 1500; 1600 in AA. (Waldorf, Taiwan; Dybka, TN)

LEBANON - Wings of Hope, 11530 at 0100. (Johns, TX)

LESOTHO - BBC relay, 3255 at 0310 with news reports. (Maywoods, KY)

LIBERIA - ELBC, 7275 at 0700 with news to 0714. (Maywoods, KY)

LIBYA - Radio Jamahiriya, 15235 at 1805 in AA with talks, music, ID at 1828. (Maywoods, KY)

MALAYSIA - Radio TV Malaysia, Sarawak, 6050 at 1225 in unidentified language. (Maywoods, KY) 7160 at 1205 in CC. (Barnes, CO) Radio Malaysia, Kajang, 7295 at 1013. (Crook, Guam)

Voice of Malaysia, 9750 at 1324 in Indonesian with pop vocals. (Barnes, CO)

MADAGASCAR - Radio Netherlands relay, 11655 at 2123 in FF. Off at 125. (Low, TX)

MALI - RTV Malienne, 5995 at 0705-0740 in unidentified language, hi-life and vernacular music. few announcements. (Urbelis, NY)

MALTA - Deutsche Welle relay, 15205 at 0343. US phone number given as 1-800-392-3248 plus frequencies and site ID. (Lamb, NY)

MAURITANIA - ORTM - Radio Mauritanie, 4845 at 2301: 0000 in AA. (Maywoods, KY; Johns, TX)

MEXICO - Radio Universidad, 9600 at 1517 in SS. (Low, TX)

Radio Educacion, 6185 at 1235 in SS. (Maywoods, KY)

MONACO - Radio Monte Carlo via Sackville-5960 at 0300, in AA. Sign off at 0320. (LeClerc, CT)

Trans World Radio, 9480 at 0806 with religious program in EE. (Dybka, TN)

MOROCCO - RTV Marocaine, 15335 with Koran readings at 1930. (Maywoods, KY) 15345 at 1236 in AA. (Pappas, SD) 17595 at 1430 in EE. (Johns, TX)

17815 at 1320 in AA. (Northrup, MO)

Radio Medi Un, 9575 at 0024 with AA music. (Dybka, TN)

NAMIBIA - Namibian Broadcasting Corp., 3270 at 0504 with talk show, US pops. (Maywoods, KY) 3270//3290 at 0417. (Fenwick, ME)

NEW ZEALAND - Radio New Zealand, 9700 at 0805 with Pacific news. (Dybka, TN) New 15120 at 0510. (Lamb, NY) 0317 with relay of 12B. Rugby updates, K-mart commercials. (LeClerc, CT)

NETHERLANDS - Radio Netherlands, 9860

(probably Madagascar, editor) at 0030. (Waldorf, Taiwan) 9895 to South and East Asia at 1530 with news. (Low, TX) 15150 (via Madagascar) at 1507. (Dybka, TN)

NETHERLANDS ANTILLES - Radio Netherlands Bonaire relay, 6165 at 2335. (Fenwick, ME) 21515 at 1745. (Low, TX)

NICARAGUA - Radio Miskit, irregular on 5770 at 2325 with frequency and location announcements in SS. Latin pops. "hola de aficionados de onda corta en Estados Unidos. Alemania, Italia." Asked for reports but no address noted. Heard as early as 2200 and as late as 0200. Listed for 5970. (Rausch, NJ)

NIGERIA - Radio Nigeria, Lagos, 3326 at 2254 with choral music, ID, news. Off at 2307. (Lamb, NY) 4990 at 0430. (Johns, TX)

Radio Nigeria, Kaduna, 4770 at 0430; 0613. (Johns, TX; Maywoods, KY)

Voice of Nigeria, 7255 at 0505 with "World Link-up". (Fenwick, ME)

NORTH KOREA - Radio Pyongyang, 9977 at 1112 with news. (Pappas, SD) 9835 at 1530. (Maywoods, KY) 13760 at 1325; Also here and //15130 at 0000; 15230 at 1344. (Waldorf, Taiwan) 15180 at 0603. (Foss, AK) 17765 at 0442. (Vaage, CA)

NORTHERN MARIANAS - KHBI, Monitor Radio, 9530 to East Asia at 1509; 13625 at 2350. (Low, TX) 11580 at 1630. (Barnes, CO) 13625 at 1120. (Urbelis, NY)

KFBS, 9495 at 1516 in CC. (Barnes, CO)

NORWAY - Radio Norway Int'l, 15220//17730 at 1910 with weekend EE service. (Lamb, NY) 15335 at 1200, news in NN. (Northrup, MO)

PALAU - KHBN, 9830 at 1208 with religious program in CC. (Maywoods, KY)

PAPUA NEW GUINEA - Radio New Ireland, 3905 at 1000 with talk in Pidgin, local music, US rock. (Rausch, NJ)

Radio East New Britain, 3385 at 1025 in Pidgin with local music. (Rausch, NJ)

PERU - Radio Satelite, 6724.5 at 0152 in SS with mentions of Santa Cruz, ID 0201. (Maywoods, KY) 0330 sign off. (Johns, TX)

Radio Ancash, 4991 at 0231 in SS with folk music, IDs, mentions of "corazon del Peru". (Lamb, NY)

Radio Horizonte, presumed, 4505 at 0400 in SS with talks. (Rausch, NJ)

Radio El Sol de los Andes, 3230 with ID, time checks. Latin pops, all SS from 0428. (Rausch, NJ)

Radio Tarma, 4770 at 1015 with ID "Radio Tarma mas popular..." and local music. (Rausch, NJ)

Radio Oriente, 6190 at 0135, segued local Latin vocals. Clobbered by VOA at 0145. (Maywoods, KY)

PHRadio Pilipinas, 21580 at 0230 with Voice of Democracy program. (Waldorf, Taiwan)

VOA relay, 9760 at 1450. (Dybka, TN)

PORTUGAL - Radio Portugal, 9570 at 0143. (Baud, NJ) 15200 at 1800 with interview. (Maywoods, KY) 21515 at 1430 news and features. (Waldorf, Taiwan)

Deutsche Welle relay, new 13790 at 0345 with "Insight", frequencies, ID for Sines site in PP, IS. (Lamb, NY)

ROMANIA - Radio Romania Int'l, 17745 at 1520 with IS, anthem.. ID in AA. (Maywoods, KY)

RUSSIA - Radio Moscow, 10345 (feeder, editor) at 1513 and 21690//21790 at 0100. (Waldorf, Taiwan) 11760 at 2000. (Fenwick, ME) 15150 at 1614. (Low, TX)

Magadan Radio in RR at 0151 on 9600. (Baud, NJ)

Radio Rossi, feeder, 12175 USB in RR at 0534 with news, IDs, pops, radio play. (Lamb, NY)

Radio Aum Shinrikyo, 15290//15355 with EE religion from Japan to 2058 sign off. Radio Moscow follows. (Urbelis, NY)

Radio Galaxy, 11880 at 2023 with music. (Fenwick, ME)

SAUDI ARABIA - BSKSA, 15060 at 0400 in Turkish. (Johns, TX) 21505 in AA at 1500. (Waldorf, Taiwan)

SENEGAL - ORTS, Dakar, 7170 at 0715 in vernacular. Not heard nightly. (Urbelis, NY)

SEYCHELLES - FEBA, 11710 at 1533 with news, music, religion. (Pappas, SD) 11810 at 0332 in Swahili with ID, religious talks, African choral music, off with IS at 0400. (Lamb, NY) 15445 at 0230 with IS, ID in Pushtu; beamed to Afghanistan. (Rausch, NJ)

SIERRA LEONE - SLBS, 3316 at 0605 to 0720, local language, news, vernacular music, a few EE IDs. (Urbelis, NY) 0630 in EE and vernacular. (Johns, TX)

SINGAPORE - BBC relay, 9740 to Asia at 1525. (Low, TX)

11750 at 0134. (Dybka, TN)
Radio One, 5052 at 1400. (Johns, TX)

SLOVAKIA - Radio Slovakia International, 5930 at 0102 with news. (Fenwick, ME)

SOUTH AFRICA - Channel Africa, 3995//9695 at 0355 with ID, contest, reggae, cultural program, news. 11745 at 0500 with ID, news, "Mailbag". (Lamb, NY) 9695 at 0436. (Vaage, CA)

SABC, on new 3230 at 0421 in Afrikaans with pops. (Lamb, NY)

Radio Suid Afrika, 3320 at 0411 in Afrikaans. (Lamb, NY)

SOUTH KOREA - Radio Korea, 7550 at 2208. (Crook, Guam) 9570 at 1408 and 15575 at 0122. (Waldorf, Taiwan) 9750 at 1305. (Barnes, CO)

SPAIN - Radio Exterior de Espana, 6125 in SS at 2332. (Fenwick, ME) 9690 at 0340 and 15110, in SS, at 2145. (Low, TX)

SRI LANKA - Sri Lanka Broadcasting Corp., 9720 with music dedication at 0105. (Rausch, NJ) 15425 at 0118 with old pops. (Maywoods, KY)

Deutsche Welle relay, 11765//17810 at 1933. (Lamb, NY) 11950 at 1800 with IS and into unidentified language. (Low, TX)

SUDAN - Sudan National Broadcasting, 7200 at 0340 in AA, mentions of Sudan. (Maywoods, KY)

SWAZILAND - Trans World Radio, 5055 at 0455 with IS. TIFC QRM. (Johns, TX)

SWEDEN - Radio Sweden, 15240//21515 at 1230 with "60 Degrees North" program. (Waldorf, Taiwan)

SWITZERLAND - Swiss Radio Int'l, 6135//9650//9885 in SS at 0030. (LeClerc, CT) 9885 at 0201 with news. (Fenwick, ME) 15505 at 1500. (Waldorf, Taiwan)

SYRIA - Radio Damascus, 12085 at 2030 in EE. (Fenwick, ME) 2223 in AA. (Maywoods, KY)

TAHITI - Radio Tahiti, 11827 at 0330 in FF. (Maywoods, KY) Here and //15175 (ex-15170, editor) at 0330 with island pops, YL in Tahitian. (Rausch, NJ)

TAIWAN - Voice of Free China, 5275 at 1120 in CC. (Foss, AK) 5950 (via Florida) at 0700. (Crook, Guam) 7130 at 1213 in CC. (Barnes, CO) 9765//11745 (via Florida) at 0300. (Waldorf, Taiwan)

11825 in CC at 0900. (Rausch, NJ) 15345 via Florida at 0315. (Foss, AK)

THAILAND - Radio Thailand, 9655 at 1205 with local news. (Maywoods, KY)

VOA Udorn relay test on 11785 at 1225 in Mandarin. (Lamb, NY)

TOGO - Radio Kara, 3222 at 0530 in FF. (Johns, TX)

TUNISIA - RTT Tunisienne, 7475 at 0341 in AA, with ID, Koran. (Maywoods, KY) 15450 in AA at 2103. (Barnes, CO)

TURKEY - Voice of Turkey, 9445 at 2230; 2320. (Maywoods, KY, Fenwick, ME)

Turkish Police Radio, 7370 at 0535 with music, man and woman announcer. Turkish. (Maywoods, KY)

UGANDA - Radio Uganda, 4976 at 0400 in EE. (Johns, TX)

UKRAINE - Radio Ukraine Int'l, 7240 at 0013. (LeClerc, CT)

9860 at 2220. (Crook, Guam) 15135 at 1950 in Ukrainian. (Barnes, CO) 17690 at 0126 with folk song, ID, listener's letters. (Maywoods, KY)

UNITED ARAB EMIRATES - UAE Radio, Dubai, 13675 at 1600 and 21700, in AA, at 0415. (Waldorf, Taiwan)

UNITED STATES - KJES, New Mexico, 11715 at 1300 with religion, station ID by children (they're still doing that? editor). Erratic schedule. (Urbelis, NY) Religion talks, ID 1500. (Maywoods, KY)

UZBEKISTAN - Radio Tashkent, 17745 at 1352 with economic feature. (Waldorf, Taiwan)

VATICAN - Vatican Radio, 9850 at 0145, 17525 at 1350 and 21515 at 1000. (Waldorf, Taiwan)

VENEZUELA - Radio Tachira, 4830 in SS at 0215. (Maywoods, KY)

Ecos del Torbes, 4980 at 0238 in SS and lively Desi Arnez type music. (Maywoods, KY)

Radio Nacional, 9540 at 2144 with EE ID. (Johns, TX)

VVTO time station, 5000 under WWV at 0512 with SS time announcements. (Barnes, CO)

VIETNAM - Voice of Vietnam, 15009 at 2045 with EE, then into FF. (Rausch, NJ) 15010 at 1329 "This is the Voice of Vietnam". (Maywoods, KY)

YEMEN - Radio of Republic of Yemen, 9780 in AA at 2035 to 2111 sign off. (Urbelis, NY)

YUGOSLAVIA - Radio Yugoslavia, 21605 at 1138 with news and commentary. (Waldorf, Taiwan)

And that's it, folks! Let's tip our collective hats to the following reporters this month: Jil Dybka, Nashville, TN; Marie Lamb, Brewerton, NY; Bjorn F. Vaage, Granada Hills, CA; Sheldon F. Crook, Dededo, Guam; Ed Rausch, Cedar Grove, NJ; Marty Foss, Pitkas Point, AK; Michael

LeClerc, Somers, CT; Mark A. Northrup, Gladstone, MO; Charles Fenwick, South Harpswell, ME; Edward Baud, Hamilton, NJ; Andy Johns, Mansfield, TX; Errol Urbelis, Kings Park, NY; Mickey Waldorf, Taipei, Taiwan; Donald C. Barnes, Wheat Ridge, CO; Marina Pappas, Huron, SD; Brand Low, Jacksonville, TX. And the Maywoods DX Team, DX'ing from Eastern Kentucky University's Maywoods retreat - Dr. Joel Roitman, Ed Shaw, Loy W. Lee, Jim McClure, Charles Eberman, Eric Petty, John Hafendorfer, John Long and Wayne Gregory—plus Michael Matus of Aptos, California who flew in for the event! ■



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Subject: Comparative Gain Testing of Citizen's Band Antennas
Ref: Rye Canyon Antenna Lab File #670529

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FREQUENCY (MHZ)	RELATIVE GAIN (dB)	RELATIVE POWER GAIN (%)
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27.015	1.30	35
27.065	1.45	40
27.115	1.60	45
27.165	1.50	41
27.215	1.60	45
27.265	1.75	50
27.315	1.95	57
27.365	2.00	58
27.405	2.00	58

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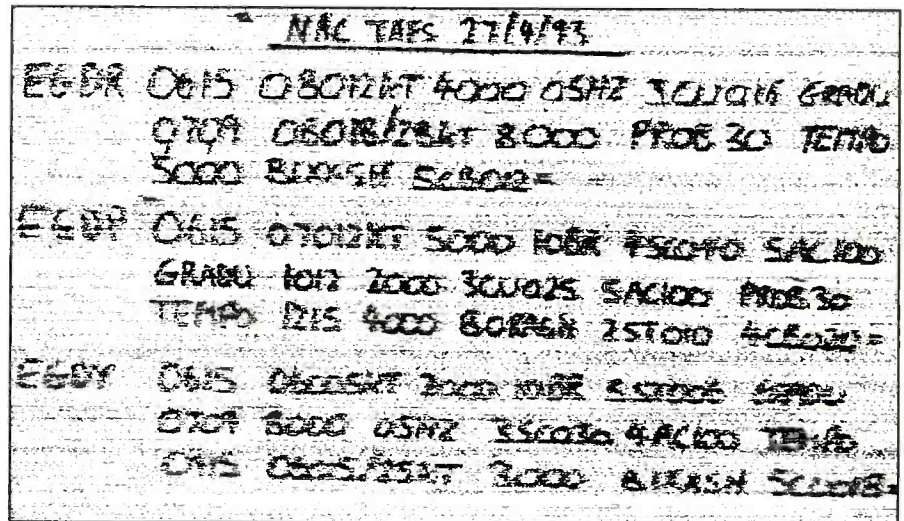
Text in the ASCII RTTY mode is rarely used on shortwave radio. That is because there are more printing characters used in ASCII than in Baudot, making the transmission time slower compared with Baudot at the same speed.

One of those rare occasions when ASCII was used was on May 13, when an unidentified station tested its transmitter on 13401.0 kHz at 1758 UTC. The test consisted of foxes, 10 count, and the word "testing," and ran at 850/110. Testing ended at 1830 UTC. A sample of the test is shown in figure 1. The files of the Federal Communications Commission and the International Telecommunications Union both show only one agency in the world registered to use 13401.0 kHz—the U.S. Department of Interior. It has four stations listed, all located in the South Pacific. They are KUP71, Saipan, The Northern Marianas; and KUP66, Ponape, KUP67, Truk, and KUP76, Kosrae, all in the Caroline Islands, which are part of The Federated States of Micronesia.

I doubt, however, that the test was run by the Interior Department and feel that it was by another federal agency. Just which one it was may forever remain a mystery.

A Canadian RTTY news broadcast over satellite can be monitored 24 hours daily on Anik E2, transponder eight, located 107.3 degrees West. The 75-baud transmission can be heard by tuning your shortwave radio to about 7695.0 kHz, in either upper or lower sideband. The news service is operated by Broadcast News Ltd. of Toronto, Ontario, Canada. Part of a transmission is shown in figure 2.

Sitor-A seems to be the choice mode for RTTY operators when they want to send messages of love and romance over shortwave radio, according to what I've been observing the past several months. My study began last Dec. 12 while reading a schmaltzy transmission from an unidentified ship to a coastal station. "Yes my love I have your picture in mind," wrote the correspondent on 22888.0 kHz at 1517 UTC. "No one can take that from me. Sometimes I



GYA, Royal Navy, London, England, sent this weatherfax chart at 0620 UTC on 8331.5 kHz, 120/576. (From Robert Margolis)

just look at your picture too (in my mind), but that is not the same as being able to see you for real."

Since then I've collected a number of other examples which might be the makings for a book someday. On May 18, for instance, a man in Cuba traded many a "mi amor" with his lady friend somewhere else. They were sending love messages back and forth when I encountered their Spanish-language transmissions on 13916.4 kHz at 1822 UTC. The two expressed great desires to be in each other's arms as quickly as possible. The senorita also wished to have their romance result in her having a baby. Their PG-13-rated endearments finally ended at 1930 UTC. Once in a while I hear the two on 13915.0 kHz chatting and giggling on upper sideband, in what may be the best ongoing shortwave radio soap opera of the year.

On May 21, a person, who shall be nameless here, at the Boston Coast Guard Station, talked of romantic difficulties in messages to someone aboard NRCB, the sail training cutter "Eagle" (WIX-327). This

was on 6962.8 kHz at 1828 UTC. "Hugs and kisses" were sent at the end of the transmission. The two returned to the air at 2000 UTC, but this time the messages were official ones from the Coast Guard station. Their real names were used again at the beginning of the latter transmission and that is how I found out where each was stationed.

For more than a year I've heard numerous radio and television stations use the term "the former Yugoslavia" when referring to the former Yugoslav republics, including Serbia. Then the shortwave radio utility station guidebooks came out listing Belgrade, Serbia. I, in the meantime, continued referring to Belgrade, Yugoslavia, in this column. Now I'm getting readers' loggings saying Belgrade, Serbia, and I thought this matter should be clarified.

Two former Yugoslav republics, Serbia and Montenegro formed a new nation, called the Federal Republic of Yugoslavia, on April 27, 1992, as a successor to the old Yugoslavia. This federation is not a member of the United Nations. On May

DIV	IN-1	AGC	HIGH	NOM	M+S	ODD		MK=2125			
ASCII		110	850	NOR	ATC	PRN=ON		SP=2975	05/14 17:58		
THE	QUICK	BROWN	FOX	JUMPED	OVER	A	LAZY	DOG'S	BACK	1234567890	TESTING.
THE	QUICK	BROWN	FOX	JUMPED	OVER	A	LAZY	DOG'S	BACK	1234567890	TESTING.
THE	QUICK	BROWN	FOX	JUMPED	OVER	A	LAZY	DOG'S	BACK	1234567890	TESTING.
THE	QUICK	BROWN	FOX	JUMPED	OVER	A	LAZY	DOG'S	BACK	1234567890	TESTING.
THE	QUICK	BROWN	FOX	JUMPED	OVER	A	LAZY	DOG'S	BACK	1234567890	TESTING.
THE	QUICK	BROWN	FOX	JUMPED	OVER	A	LAZY	DOG'S	BACK	1234567890	TESTING.

Figure 1. Test broadcast, possibly from a U.S. Government agency, ran on 13401.0 kHz. The top two lines are the status lines from the Universal M-8000 decoder and were not part of the test transmission. They show the date, time and RTTY decoder settings. Note that the test ran in the ASCII mode. (From Robert Margolis)

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HEADLINES...

JOBLESS RATE AT HIGHEST LEVEL
SINCE DECEMBER 1992

ALBERTA BUDGET AIMS FOR ZERO
DEFICIT WITHIN FOUR YEARS

WHITE SUPREMACIST BEHAVIOR
REPORTED IN CANADIAN FORCES

QUEBEC TABLES BILL ALLOWING
FRENCH-ENGLISH OUTDOOR SIGNS

COMING UP...
NATIONAL, WORLD NEWS
REGIONALNEWS
SCOREBOARD
SPORTS

NEWSBREAK...

CANADA AND THE WORLD

THE NATIONAL UNEMPLOYMENT
RATE ROSE TO 11.4 PER CENT IN
APRIL FROM 11.0 PER CENT IN
MARCH. IT WAS THE HIGHEST
JOBLESS RATE SINCE DEC., 1992.
STATISTICS CANADA SAYS 43,000
JOBS DRIED UP IN APRIL.

ALBERTA HAS DONE WHAT THE
FEDERAL AND AT LEAST FIVE
PROVINCIAL GOVERNMENTS HAVE
DONE. IT HAS TABLED A DEFICIT
CUTTING BUDGET. THE AIM IS TO
SLASH THE PROVINCE'S SPENDING
DEFICIT TO ZERO IN FOUR YEARS.

THE U.S. HAS BEEN ORDERED
TO RE-ASSESS THE 6.5 PER CENT
DUTY IT IMPOSED A YEAR AGO ON
CANADIAN SOFTWOOD LUMBER. THE
ORDER WAS MADE BY A PANEL SET
UP UNDER THE CANADA-U.S. FREE
TRADE DEAL.

Figure 2. Beginning of a satellite news broadcast from Broadcast News Ltd., Toronto, Ontario, Canada. It runs on Canadian satellite Anik E2, transponder eight. (From Robert Margolis)

22, 1992, three other former republics, Bosnia and Herzegovina, Croatia, and Slovenia, were admitted to the U.N. as separate nations. A sixth former republic, Macedonia, is a separate nation that has not been admitted to the U.N. The New York Times newspaper, the Associated Press news agency, and the Cable News Network television station, continue to say Belgrade, Yugoslavia.

And so will I.

Now on to the radiofax news. In lieu of

a radiofax test chart at its regularly scheduled 0500 UTC time slot, the San Francisco Coast Guard station in May sent this announcement: "In response to user requests we have made modifications to the surface analysis chart that will follow. To make the chart more useful, the surface analysis chart will now include 24 hour forecasts of positions and central pressures for all highs and lows. Also, only observed surface wind reports, which we have received from ships and buoys, will now be plotted. Thank you."

An unidentified radiofax station one day in May sent weather charts that were compiled by KGWC, Offutt Air Force Base, Elkhorn, Nebr. The transmission at 1514 UTC on 10667.0 kHz was found not to be running in parallel with Offutt's radiofax broadcasts on 6906.0 and 11122.0 kHz, and the radio signal was much weaker than Offutt's.

On another day in May, a station, possibly the U.S. Navy facility at Rota, Spain, sent charts after 0054 UTC showing European and Mideast weather conditions. The station, heard on 11485.3 kHz, was not on the air the following night. WLC, Rogers City R., Mich., changed weatherfax frequencies, moving to 5900.5 kHz from

5898.5 kHz. Some transmission times are at 1430, 1730 and 2030 UTC.

An unidentified radiofax station monitored on May 24, ran what appeared to be a news transmission on 13900.0 kHz. The text, apparently in Chinese, was in two columns, and ran at 120/576 at 1520 UTC. The text was in small print and was easier to read on a video monitor than from a printout. Files of the ITU show two possible idents, BBC75, Shanghai, China, with a circuit to Jakarta, Indonesia, and BCR74, Taipei, Taiwan, with circuits to Manila, Philippines, and Naha, Japan. The mode listed for both locations is A3E, which is AM broadcast and not radiofax.

"John Doe" of England: I've forwarded your letter as requested. Hope you've gotten a reply by now.

RTTY Intercepts

2000.0: LAEL4. Dyvi Skagerak (Norwegian cargo ship). w/msg to its home office, ARQ at 0700. (Ary Boender, Netherlands)

2147.0: LCZO3, Norsk Barde (Norwegian oiler), w/an ARQ msg at 0658. (Boender, Netherlands)

3560.0: YKW1. SANA. Damascus, Syria. w/nx in EE at 1830. 50 baud. ("John Doe," England)

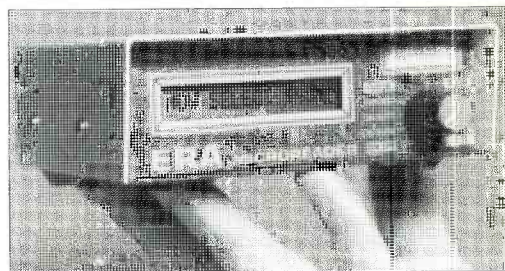
3840.3: LRO23. NA. Buenos Aires, Argentina, w/nx in SS at 0242, 784/75. (Robert Hall, South Africa)

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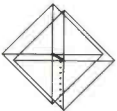
1:30pm-5:30pm, PST: Voice Only

6:00pm-1:00pm, PST: BBS & FAX Only

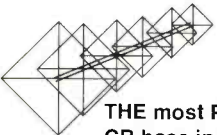
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船舶向けFAX放送スケジュール

(1993年5月10日現在)
共同通信社放送部

送信時間(UTC)

(シンガポール中継は0740-1010、1415-1815Z)

放送時間(UTC)	運用日	放送内容
0600-0140 (1500-1845Z)	(毎日)	朝刊、スポーツ版①、航行警報
0145-0245 (1645-1745Z)	(月曜) (火曜-日曜)	日曜版 夕刊
0245-0425 (1845-1925Z)	(毎日)	朝刊、スポーツ版①
0430-0845 (1930-2145Z)	(月曜) (火曜-日曜)	日曜版、航行警報、ファクスだより①②③④ 夕刊、航行警報、ファクスだより②③④
0630-0845 (2030-2145Z)	(祝日の翌日)	航行警報、ファクスだより②③④ (注)ファクスだより④再送は第2、第4火曜 日と第1、第3土曜日なし
0715-1035 (2215-0135Z)	(月、祝日の翌日) (火曜-日曜)	朝刊、スポーツ版①②、航行警報、ファクス だより①②③④(注)月曜のみ)、天気図 (6時) 朝刊、スポーツ版①②、航行警報、海運水 産ニュース、出生情報(日曜のみ)、ファ クスだより①②、天気図(8時)
1045-1100 (0145-0200Z)	(相模と高松) (野球中継中)	スポーツ版②
1100-1145 (0200-0245Z)	(月曜) (火曜-日曜)	航行警報1週間分 航行警報、衛生情報(日曜のみ)、東京図 (4のつく日)、東京湾横断連絡(火曜のみ)
1145-1330 (0245-0430Z)	(毎日)	朝刊、スポーツ版①、航行警報、東京湾横 断連絡(再送)
1330-1415 (0430-0515Z)	(毎日)	天気図(6時)、海産物情報(日曜と月曜のみ)、 海産物(4のつく日)、東京湾横断連絡(再送)
1420-1440 (0520-0540Z)	(毎日)	韓国語版(テスト)
1440-1505 (0540-0605Z)	(火曜と金曜) (土曜と日曜)	衛星利用伝達局通信 海洋情報
1505-1530 (0610-0630Z)	(毎日)	航行警報、東京湾横断連絡(再送)

1535-1550 (0635-0650Z)	(月曜-土曜)	ファクスだより④(注)第2、第4月曜 日と第1、第3、第5金曜日はなし
1550-1605 (0650-0705Z)	(日曜) (月曜-土曜)	天気図(12時)、漁況情報(上、中、下旬 の3日版) 天気図(12時)
1605-1645 (0705-0745Z)	(月曜-金曜)	東証時況
1645-1900 (0745-1000Z)	(日曜) (月曜-土曜)	日曜版、ファクスだより①②③④、日曜版 (再)、相模湾と高松(期間中) 夕刊、海産物ニュース、衛生情報(土 曜のみ)、ファクスだより①、相模湾 と高松(期間中)、ファクスだより② 朝刊、スポーツ版①、ファクスだより③、相 模湾と高松(期間中)、ファクスだより④
1935-2000 (1035-1100Z)	(毎日)	漁況情報②
2000-2020 (1100-1120Z)	(毎日)	航行警報、相模湾と高松
2125-2200 (1225-1300Z)	(毎日)	韓国語版(テスト)
2205-2315 (1305-1415Z)	(月曜-金曜)	東証市況
2320-2345 (1420-1445Z)	(月曜-土曜)	海 水
2345-0000 (1445-1500Z)	(相模と高松) (野球中継中)	スポーツ版②

①スポーツ版②は相模と高松の高級野球中継中のみ発行。
②海洋情報(第1、第3金曜日は第2のもの以外の土曜と日曜に放送します。
③1000放送の再送は、4のつく日か月曜日の場合に限り、前日(日曜日)
の同等版に乗り上げて放送します。
④季節によって、サケ・マス、サンマ漁況情報が空室時間に入ります。
⑤その他、ニュース速報やお知らせが空室時間に入ることがあります。

Weatherfax transmission schedule of JJC, Tokyo Radio, Japan is in Japanese and Korean. It ran at 1645 UTC on 12745.5 kHz, and was copied at 60/288, although the station sent it at 60/576. Changing the way in which the IOC setting was received made the schedule easier to read. At 60/576, the text would be much smaller and the chart would be shorter. (From Robert Margolis)

4015.0: U.S. Army MARS net in German w/packet radio xmsns at 2145. (Boender, Netherlands)

4246.0: British Royal Navy encrypted msgs separated by RYRY & vmngtenjhb, 100 baud at 0944. (Boender, Netherlands)

4258.0: MTO. Royal Navy. Rosyth, Scotland. w/available channels list, 75 baud at 0945. Same sta. heard on 5300.0 kHz at 1615. w/a similar xmsn. (Boender, Netherlands)

5060.0: GYA. Royal Navy. London, England. w/faxes to MTT, 75 baud at 0810. ("Doe." England)

5117.5: TYE, ASECNA. Cotonou, Benin, w/wx at 0444. 425/50. (Ed.)

5240.0: 40C2, Tanjug. Belgrade. Yugoslavia, w/nx in EE at 1846, 50 baud. (Boender, Netherlands)

5312.0: DFZG, MFA, Belgrade, Yugoslavia, w/a press review at 0645, 75 baud. (Boender, Netherlands)

6316.0: WLC, Rogers City R., Mich., w/wx syn-

opsis & forecast, Sitor-B at 1428. (Ed.)

6920.0: RGC70, Kiev Metro, Ukraine, w/50-baud wx at 1940. (Boender, Netherlands)

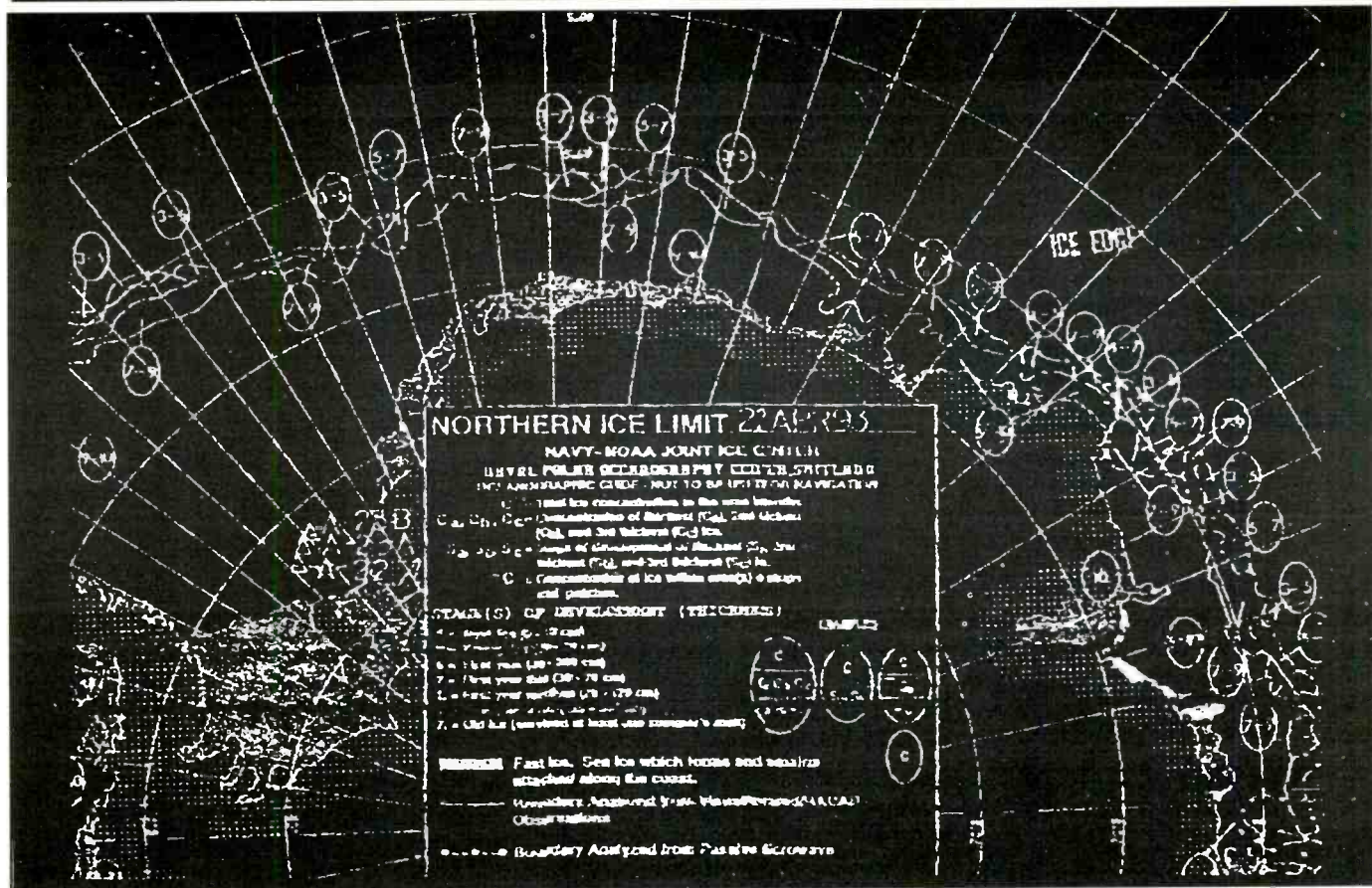
6962.8: NMF, USCG, Boston, Mass., w/uncles msgs & an AFRTS nx b/c. ARQ, 2100-2130. Then at 0100-0200 w/uncles msgs, a navarea IV report and ice patrol bulletin. Both xmsns were to NRCB, the sail training cutter "Eagle" (WIX-327). (Ed.)

7113.7: TJK, ASECNA, Douala, Cameroon, w/wx msgs. ARQ-M2/96, channel A, at 0136. (Ed.)

8123.0: TNL48, ASECNA, Brazzaville, Congo, w/aviation wx. ARQ-M2/96, channel A, at 2310, and coded wx on channel B at 0021. (Ed.)

8677.5: URD, St. Petersburg R., Russia, w/Telexes in RR & a computerized menu system in EE, Sitor-A at 0530. (Ed.)

9114.0: HGG31, MTI, Budapest, Hungary, w/sports nx at 1729, 50 baud. (Boender, Netherlands)



Northern Ice Limit chart of ZRO3, Pretoria Meteo, South Africa, ran at 0800 UTC on 13538.0 kHz, 120/576. Contributor Robert Hall of South Africa notes that copying the chart in negative polarity gives the chart better definition than when seen in positive polarity.

- 9190.0:** RDZ75, Moscow Meteo, Russia, w/coded wx at 0150, 1000/50. (Ed.)
10102.5: 3XA, Conakry Air, Guinea, w/RYRY at 0945, 425/50. (Fred Hetherington, Fla.)
10133.8: TZH, ASECNA, Bamako, Mali, w/RYRY, 425/50 at 0620. (Hetherington, Fla.)
10385.0: BAA21, Tianjin Meteo, China, w/coded wx at 1234, 850/50. (Ed.)
10460.0: UNHCR, Guatemala City, Guatemala, w/an ARQ msg at 2115. (Hetherington, Fla.)
10511.7: KNY29, Egyptian Emb., Washington, DC, w/a msg to Cairo at 2346, ARQ. (Hetherington, Fla.)
10523.2: HMF45, KCNA, Bosong, North Korea, w/nx in FF at 1240, 425/50. (Ed.)
10580.0: HMF46, KCNA, Bosong, North Korea, w/nx in EE at 1500, 250/50. (Ed.)

- 10609.5:** C5KMB in Colombia, w/msgs at 0000, 850/75. (Hetherington, Fla.)
10663.3: AFS, Offutt AFB, Elkhorn, Nebr., w/KAWN wx data, 850/75 at 1505 (Ed.), & at 0021. (Ted Hay, Ontario, Canada)
10718.0: GYU, Royal Navy, Gibraltar, w/???, 75 baud at 1740. ("Doe," England)
10804.5: NA, Buenos Aires, Argentina, w/nx in SS at 2330, 850/75. (Ted Hay, Ontario)
10893.2: LRB39, Telam, Buenos Aires, Argentina, w/nx in SS at 0010, 850/50. (Hay, Ontario)
11078.0: CCX, un-ID Chilean Navy, w/5L msgs to CCS, Santiago, + msgs in SS, 850/50, 0207-0217. (Ed.)
11112.5: RFHJ, French Navy, Papeete, Tahiti, w/"non protege" msgs at 1312 foll by nx in FF at 1330, ARQ-E3/100. (Ed.)
11118: AFS, Offutt AFB, Elkhorn, Nebr., w/KAWN wx data, 850/75 at 1505. (Hay, Ontario)
11133.0: BZG41, Xinhua, Yuryumqi, China, w/a 50-baud nx b/c at 1722. (Boender, Netherlands)
11124.7: DHJ51, Greleng Meteo, Germany, w/coded wx at 1432, 100 baud. (Ed.)
11256.7: MFA, Cairo, Egypt, in ARQ & FEC modes to the Americas at 0030. (Hetherington, Fla.)
11421.7: Un-ID French mil, w/"fm navire" but no msg, ARQ-E3/96, at 0551, FJY5? (Ed.)
11430.0: HMF55, KCNA, Jungsan, North Korea, w/RYRY & QRA's at 1453, into nx in EE at 1502, 250/50. (Ed.)
11447.8: "FOL" & "XOL," both un-ID U.S. mil. stas., w/manually-typed chitchat at 1308, 85/50. (Ed.)
11475.8: Un-ID comes up idling with I's, 950/100, at 0006, and causes severe QRM to KCNA fax photos on 11476.0. (Ed.)
11604.0: YZJ3, Tanjug, Belgrade, Yugoslavia, w/nx in EE at 1415, 425/50. (Ed.)

- 12197.0:** DFZG, MFA, Belgrade, Yugoslavia, w/nx in SC, FEC-A/144 at 0030. (Hetherington, Fla.)
12209.0: MFA, Sofia, Bulgaria, w/nx in Bulgarian, 2040-2105, 425/75. (Ed.)
12312.4: FDY, French Air Force, Orleans, France, w/"lebricks" at 0935, 425/50. (Hetherington, Fla.)
12741.3: HWN, Paris Navrad, France, w/RYRY & SGSG, 850/75 at 1640. (Ed.)
13346.7: Egyptian Emb., Havana, Cuba, testing at 2230. Sitor-B. (Ed.)
13373.0: 5YD, Nairobi Air, Kenya, w/RYRY at 2300, 300/50. (Hay, Ontario)
13399.0: DFZG, MFA, Belgrade, Yugoslavia, w/nx in SC, 425/75 at 1412. (Ed.)
13440.0: YZJ5, Tanjug, Belgrade, Yugoslavia, w/nx in EE at 1548, 425/50. (Ed.)
13566.0-13568.0: MKD, RAF, Akrotiri, Cyprus, w/RYI's, foxes, & 10 count, on all FDM channels, 170/50 at 1817. (Ed.)
13803.0: RCR78, Khabarovsk Meteo, Russia, w/coded wx, 1000/50 at 1339. (Ed.)
13829.0: MKD, RAF, Akrotiri, Cyprus, working MUH, 3-channel Piccolo at 1300. ("Doe," England)
13905.0: Un-ID in RR at 1122, 400/50. (Ed.)
13916.4: Un-ID in Cuba w/a lengthy love letter in SS, Sitor-A, 1822-1926. (Ed.)
13940.0: CLP65, Cuban Emb., Managua, Nicaragua, w/crypto after ZZZZZ, 500/75 at 1654. (Ed.)
13964.0: Bulgarian Emb., Bonn, Germany, w/encrypted msgs, 1720-1726, 425/75. (Ed.)
13965.5: KNY27, Swiss Emb., Washington, DC, w/5L grps at 1627, ARQ, S/off was in GG along w c/s. (Ed.)
13996.6: STK, Khartoum Air, Sudan, w/RYRY, 425/50 at 2334. (Hay, Ontario)
14382.3: GXQ, British Army, London, England,

Abbreviations Used In The RTTY Column

AA	Arabic
ARQ	SITOR mode
BC	Broadcast
EE	English
FEC	Forward Error Connection mode
FF	French
foxes	"Quick brown fox. . ." test tape
GG	German
ID	Identification/led
MFA	Ministry of Foreign Affairs
nx	News
PP	Portuguese
RYRY	"RYRY . . ." test tape
SS	Spanish
tfc	Traffic
w/	With
wx	Weather



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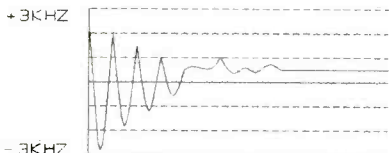
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w/foxes, 10 count & RYI's, 170/50 at 1405. (Ed.)
14374.0: CUW20, USAF, Lajes Field, Azores, w/MARSgrams to AGA1HA. Hanscom AFB, Bedford, Mass. Was packet radio at 1630. (Ed.)
14387.0: MFA, Sofia, Bulgaria, w/text in EE, 425/75 at 1350. (Ed.)
14420.0: MFA, Sofia, Bulgaria, w/a speech in EE re Bulgaria's role in Balkan affairs, 1326-1343, 425/75. (Ed.)
14478.5: OEC, MFA, Vienna, Austria, w/circulars containing 5L grps and GG text, ARQ-S6/96 at 1230. Also w/circulars in GG at 1352, ARQ-S6/96 & FEC-S/96 on another day. (Ed.)
14452.0: HMF57, KCNA, Jungsan, North Korea, w/nx in FF, 250/50 at 1320. (Ed.)
14481.0: OEC w/5L grps, ARQ-S6/96 at 1254. (Ed.)
14481.7: RFTJ, French Navy, Dakar, Senegal, w/5L-grpd msgs, ARQ-E3/48 at 1450. (Ed.)
14585.0: GYU, Royal Navy, Gibraltar, idling on all 4 Piccolo channels at 0830. ("Doe," England)
14611.8: PWX33, Brasilia Navrad, Brazil, w/unclas msgs to LOL, 850/100 at 1623. (Ed.)
14705.0: GFH, Hong Kong, working VHC w/3-channel Piccolo at 1800. ("Doe," England)
14726.0: Un-ID w/5L grps, 425/75, 1949-1951. (Ed.)
14764.0: A9M70, GNA, Manama, Bahrain, w/nx in AA, 310/75 at 1708. (Ed.)
14809.5: GXQ, British Army, London, England, w/RYI's, foxes & 10 count, 170/50 FDM at 1236. (Ed.)
14815.0: CLP1, MFA, Havana, Cuba, w/encrypted circulars to Managua, 425/75 at 1552. (Ed.) Monitored same sta. at 1515. (Hay, Ontario)
14873.2: RFLIG, French Forces, Cayenne, French Guiana, w/"consommation de combustible de navigation" msg at 1205. ARQ-E3/96. (Ed.)
14900.0: MFA, Brussels, Belgium, and Belgian Emb., Teheran, Iran, in QSO, using 6028-type FDM, 100 baud at 0840. ("Doe," England)
14928.0: CLN452, PL, Havana, Cubam w/nx in SS, 425/50 at 1328. (Ed.)
14934.8: GYA, Royal Navy, London, England, w/RYRY, foxes & 10 count to MTT, 850/75 at 1500. (Ed.)
14943.7: MFA, Cairo, Egypt, w/tfc in AA, ARQ at 1358. (Ed.)
14980.0: RAU, Tashkent, Uzbekistan, w/RYRY + ID, 1411-1412, 425/75. (Ed.)
14991.7: Un-ID Egyptian diplo (ID'd as IFR in AA) w/ARQ
 Telexes & FEC test tape to London at 1453. (Ed.)
16005.0: MFA, Sofia, Bulgaria, w/5F msgs to Stockholm, Sweden, 425/75 at 1204. (Ed.)
16017.4: DQG21L1, PIAB, Elmshorn, Germany, w/QRA's & RYRY, FEC-A/96 at 1852. Was // DGS70H3 on 18703.4. Nx in GG at 1900. (Ed.)
16077.5: FDY, French Air Force, Orleans, France, w/RY's & le bricks, 425/50 at 1830. (Hall, South Africa) Ditto at 1540. (Hetherington, Fla.) Same for me at 1456. (Hay, Ontario)
16117.0: 6VK317, Pana, Dakar, Senegal, w/nx in FF, 425/50 at 1110 (Hall, South Africa). & w/nx in EE, 400/50 at 1728. (Ed.)
16183.0: 5YF75, Nairobi Meteo, Kenya, w/coded wx, 425/100 at 1845. (Ed.)
16196.0: Un-ID w/5L grps, ARQ at 1111. (Hetherington, Fla.)
16264.8: 9VF206, ANSA, Singapore, w/QRA's & RYRY at 1652, 850/50, foll by nx in EE at 1705. (Ed.)
16312.5: "C37A" w/encryption, ARQ-E/288, & routine op msgs, 425/100, at 1715. (Ed.)
16340.0: Un-ID Cuban diplo (or diplos) w/5F grps at 1309 & Telexes from African embs at 1554, both at 425/50. (Ed.)
16348.2: CLN530, PL, Havana, Cuba, w/nx in SS, 425/50 at 1802. (Ed.)
16937.0: Un-ID w/encrypted msgs separated by RYRY + vmgtcnjhb, 170/100 at 1838. (Hay, Ontario)
17443.5: 5YE, Nairobi Meteo, Kenya, w/coded wx, 100 baud at 1530. ("Doe," England)
17470.2: BZS28, Xinhua, Beijing, China, w/nx in EE, 404/75 at 1100. (Hall, South Africa)
17474.0: "V5G," MFA, Bucharest, Romania, ending xmsn at 1617, ROU-FEC/164.5. (Ed.)

17450.0: Un-ID w/5F grps headed by "11177 20065 42394 09101 01649." Was 75 baud at 1455. (Boender, Netherlands)
17481.0: MFA, Brussels, Belgium, and a Belgian Emb., QTH unknown, in QSO, using 6028-type FDM to xmit plaintext FF, 100 baud at 1030. ("Doe," England)
17515.3: CLP1, MFA, Havana, Cuba, w/msgs in 5F to Peru, 425/75 at 1651. (Ed.)
18028.0: OMZ, MFA, Prague, Czech Republic, w/circulars in Czech, 425/100 at 1510. (Ed.)
18060.0: SNN299, MFA, Warsaw, Poland, w/Telexes & msgs w/5L grps to Ottawa, Ontario, Canada. POL-ARQ at 1450. (Ed.)
18102.0: Un-ID in what sounds like Sitor-A or SWED-ARQ, but isn't. Heard at 1705. (Hall, South Africa) The mode is PACTOR and it's used by amateur radio ops--Ed.
18195.7: CLP1, MFA, Havana, Cuba, in SS at 2318, 850/50. (Hay, Ontario)
18230.2: GFL25, Bracknell Meteo, England, w/coded wx, 398/50 at 1300. (Hall, South Africa)
18231.8: Zairian bank circuit t/c in FF at 1250, ARQ. (Hall, South Africa)
18264.8: CNM78, MAP, Tanger, Morocco, w/nx in FF pooled from African nx agencies, 425/50 at 1627. (Ed.)
18320.0: OMZ, MFA, Prague, Czech Republic, w/nx in Czech at 1309, 425/100 (Ed.), & at 0930, 404/100. (Hall, South Africa)
18356.0: RCF, MFA, Kupavna, Russia, w/RYRY foll by 2 5L msgs, 425/50 at 1641. (Ed.)
18490.0: Un-ID using an unknown synchronous TTY mode that appears as rpt of "evynckgeifvisg-wldkq" when viewed as Baudot, 500/100, at 1314. (Ed.)
18496.0: CNM80, MAP, Tanger, Morocco, w/nx at 1254, 50 baud. (Boender, Netherlands)
18592.5: CLP1, MFA, Havana, Cuba, w/pren-saminex, 500/75 at 1657. (Ed.)
18628.1: CLP1, MFA, Havana, Cuba, w/circulars, 980/75 at 1455. (Hetherington, Fla.)
18762.0: "V5G," MFA, Bucharest, Romania, w/encryption, ROU-FEC/164.5, at 1805. (Ed.)
18768.0: Un-ID w/encryption at 1334. ARQ-E/288. (Ed.)
18871.8: BZR68, Xinhua, Yuryumqi, China, w/nx of Asia in EE, 425/75 at 1322. (Ed.)
19109.0: Un-ID Danish diplo w/s/off in Danish, ARQ at 0305. (Ed.)
19224.5: RS-ARQ/228 65 mode heard at 2147. Can't decode with present eqpm. (Ed.)
19443.0: German Emb., Dakar, Senegal, w/msg in GG to Bonn at 1120, ARQ-E/96. (Hetherington, Fla.)
19490.0: Un-ID in CW at 1819 w/5F grps w/0 cut as T. To RTTY w/encryption, 170/50, 1825-1829, then back to CW w/more 5F grps, 1830-1837. (Ed.)
19529.0: JMG5, Tokyo Meteo, Japan, w/coded wx at 0320, 850/50. (Ed.)
19689.5: KMI, Dixon R., CA, w/tfc list, Sitor-B at 0300. (Ed.)
19918.4: Un-ID w/xmsn problems, ARQ at 1856. Saw some words in EE. (Ed.)
20151.8: PWX33, Brasilia Navrad, Brazil, w/unclas msgs re "Exer/Coamas 93" at 1422 & 1635, 850/100. Was xmitted to LOL. (Ed.)
20422.4: German Consulate, Sao Paulo, Brazil, w/msg to Bonn at 1640, ARQ-E/96. (Ed.)
20465.0: VHC, Royal Australian Navy, Belconnen, Australia, working GFH, three-channel Piccolo at 1100. ("Doe," England)
20609.0: HBD20, MFA, Berne, Switzerland, w/ATS nx in FF at 1443. ARQ. (Ed.)
22356.6: UOKV, the Russian merchant ship Kapitän Pryakha, w/kg Vladivostok Radio at 1156, 170/50. (Hall, South Africa)
22370.4: HZN50, Jeddah Meteo, Saudi Arabia, w/coded wx, 975/100 at 1556. (Hall, South Africa)
22370.9: UJGI, the Russian cargo ship Komsomoles Artema, w/kg Vladivostok Radio, 170/50 at 1212. (Hall, South Africa)
22374.5: UNHII, the Russian cargo ship Kristalnii, w/kg Kaliningrad Radio at 1138, Sitor-B. (Hall, South Africa)
23387.0: LOR, Puerto Belgrano Navrad, Argentina, w/msgs & 5L grps, 170/75 at 1928. (Ed.) ■

PIRATES DEN

BY EDWARD TEACH

FOCUS ON FREE RADIO BROADCASTING

Pirate radio stations continue to be as active as ever, it seems, and a fair number of loggings are on hand again this month so, let's get with it.

Pat Murphy in Virginia reports the return of **Secret Mountain Laboratory**, which he heard on 7415 at 2359 to 0011 close, mentioning "pirate shortwave radio now in its 9th year" and airing some unusual songs, satires and such and claiming to be from Hilo, Hawaii. Gary Hamlin in New York got 'em, too, from 0018 to 0035 with folk-rock music and humorous feature. They announced the P.O. Box 452, Wellsville, NY 14895 maildrop.

Murphy logged **The Fox** to 2249 close on 7417 and a second broadcast closing at 2330 on 7440. Mention of "All American coast to coast" and a dedication to Kristen Kay or the East Coast Beer Drinker and Pirate Jenny. Funny commercials and request for input about free radio and the establishment of an amateur broadcast band.

Pat had **Radio Maribou** on 7415 at 2253 to 2259 sign off with 60's rock (Beatles, Monkees, etc.) and DJ Pat Shafer. No address announced.

Kim Evans in South Carolina had **WKIK** on 7419.9USB to 0246 sign off. Played "Hotel California," had a rap parody and a John Wayne imitation plus several IDs for "WKIK, Jacksonville, Florida" and noted they were having technical problems with their solid state transmitter. Off after saying "I'm going to call it a night." Skip Harwood in California had this one on 7420USB from 0145, also claiming to be from Jacksonville and dedicating a song to EBO Radio.

Mikell Goetsch in Pennsylvania reports **Radio USA** on 7416LSB to 2346 sign off with fake commercials "Great Atlantic Radio Conspiracy" announcement, mention of the Wellsville address and invited listeners to send in editorials. The host was Mr. Blue Sky.

Goetsch had **Radio Morania** on 7416 at 0052 claiming the transmitter was "on the Moranian chocolate mine," and address of "P.O. Box 333..." Pretends to broadcast from the Free Republic of Morania. Off at 0116. Murphy says the rest of the address announcement was intentionally QRM'd by the station. ID as "the external service of Radio Morania." Had rock music and features on industry in Morania, interview from the chocolate mines.

Radio Virus/WRV was heard by Goetsch on 7415 at 0232 with Pirate Pete giving ID at 0239. Mention of the HIV virus QSL Candy and fade or signed off at 0242. Murphy heard them on 7416 with IDs as "Pirate Pete on WRV—The Radio Virus"



This pirate station runs from a 5 tube home brew, crystal controlled transmitter which the operator says is very seldom on the air. It's been around for a couple of years and operates from Illinois on 1610. The op says it does not interfere with highway info stations on that frequency. Apparently the station uses the name "Low Power Experimental Radio."

and "Johnny Rotten coming to you live" and mention of the "HIV Positive QSL Card." Sign off was at 0254.

KNBS was heard by Pat Murphy at 1835 to 1849 close on 7415.4USB with rock music and ID, "This is KNBS, the station with your mind in mind" and the comment that "America doesn't have a drug problem it has a drug law problem." Pat says reports go to the Wellsville address.

WLIS (We Love Interval Signals) was heard by Gary Hamlin on 7415 at 2307 to 2324 with a special third anniversary program. ID as "North America's Interval Signal Authority" and several IS tunes played from both pirate and legit stations. Noted that they "verify all reports and have different QSL designs." Reports to P.O. Box 109, Blue Ridge Summit, PA 27214.

Murphy had **Action Radio** on 7415 with A.J. Michaels on 0134 sign off. Talks about speed limits, "Unedited version of Action Radio..." and various rock songs.

Skip Harwood had **Radio Anarchy** on 7418 at 0130 to 0330 playing hard core punk rock from Belgium and Brazil. Still using the Blue Ridge Summit address.

Radio Free East Coast/WREC went into Murphy's log at 0036 to 0050 close on 7418. Lots of rock and novelty music, themes of Woody Woodpecker, Bugs Bunny, Daffy

Duck, the Munsters and some commercials.

Goetsch reports **Radio Free Oz/Voice of Oz** on 7415.5, signing on at 2352 and off at 0037. Relay announcement at 2352 but the name of the station wasn't caught. Included fake commercials, bogus public service announcements and news items. Announced the Wellsville, NY address.

Murphy had **KMRZ** on 7416 at 2200 to 2236 sign off with a long discussion about what to turn on and turn off. Signal went off and came back on numerous times. Definite "KMRZ" IDs.

Also logged by Murphy was **WMAD** on 7416 to 2337 sign off with ID "you've got the right station on your radio, WMAD." Played rock from the 50's, 60's and 70's. Pat also had **WJMR** on 7415 at 0245-0304 close with rock from the 60's and 70's "rock and roll hootchie coo" and "This is WJMR."

Harwood reports **Radio Airplane** on 7416 at 0245-0315. Captain Eddie played "Foxy Lady" and "Dream Weaver" from his airborne command post.

That it for this time. Keep those pirate logs coming our way! Don't forget copies of pirate QSL's, too. Station operators, please pass along details about your skeds, including photos. ■

THE HAM COLUMN

BY KIRK KLEINSCHMIDT, NT0Z
AMERICAN RADIO RELAY LEAGUE HQ

GETTING STARTED AS A RADIO AMATEUR

VHF Mountaintopping — Getting High Naturally!

If you're one of the thousands of new Techs who are exploring their VHF privileges: Why not take to the hills while the weather is still warm? Let nature elevate your antenna to several thousand feet!

This is the "naturalistic" ham radio offshoot is called "mountaintopping," and this month's column was written by veteran mountaintopper Bob Halprin, K1XA. So, as they say, read and learn:

VHF lends itself to mountaintopping or hilltopping in that VHF antennas are relatively small and lightweight, and equally compact station equipment can be packed and easily transported. After you set up on the mountain or hilltop, you'll have a very competitive signal—which is particularly good for VHF contests.

Many VHFers drive to the tops of the hills or mountains and set up their stations (if there are no access roads, some die-hard enthusiasts even hike to the top while backpacking their radio gear).

VHF mountaintopping is especially fun if you like to combine ham radio with country air, hiking and the great outdoors.

Scanner buffs or Technician-class hams are no doubt familiar with the typical coverage of local 2-meter FM VHF repeaters, where virtually every signal is full quieting. But channelized FM repeater activity is only part of the story!

You won't tap the potential of your privileges until you try SSB or CW on VHF. Simplex contacts (station to station without a repeater) over several hundred miles with two watts and a simple beam antenna at your hilltop will inspire your imagination!

SSB and CW signals are detectable at levels where FM signals can't be heard. For this reason, SSB and CW are called weak-signal modes in ham lingo. The signals in every case aren't necessarily weak, but you can often copy them even when they are.

On the 6-meter amateur band (50 MHz), SSB and CW activity is concentrated on the low end of the band from 50-50.2 MHz. On 2 meters (144 MHz), SSB and CW enthusiasts also operate at the low end, from 144 to 144.3 MHz.

Location

When you're scouting around, look for operating sites that are easily accessible, yet offer a commanding view of the surroundings so your signal will get out as far as possible. Generally speaking, the higher you are, the louder your signal will be.

If necessary, remember to obtain written permission from the proper authorities (Park Service and so on) for your operation. In dealing with the government officials or individuals for permission, be a goodwill ambassador for Amateur Radio and always follow up with a thank you letter. A little diplomacy goes a long way! Also, keep the environment in mind.

Equipment

On the used market, ICOM's multimode, single-band portables are ideal, although you have to look at flea markets to find them these days. The IC-502 for 6-meters, IC-202 for 2-meters and the IC402 for 70-cm, each run about two watts and measure about 7 x 2 x 7 inches. Weighing in at five pounds each, these radios are extremely user-friendly for mountaintopping.

If you're shopping for new-equipment, consider the Yaesu Mark II series, with an accompanying battery pack. The FT-690R: 10 watts, 6 meters; the FT-290R: 25 watts, 2 meters; and the FT-790R: 25 watts, 70 cm. Another compact radio is the Kenwood TR-751A 2-meter all-mode transceiver.

There are, of course, a variety of VHF radios on the new and used market; a look at the ARRL *Radio Buyer's Sourcebook* and a few conversations with fellow mountaintoppers will help you decide what's right for you.

When operating in a field location, you will probably need an independent source of power. One option is battery power. Radios with internal batteries last just a few hours, but a sealed gel cell will provide juice for a low-power VHF transceiver for an entire contest weekend—and it's lightweight enough to carry in your backpack.

Using your car battery is another option, assuming you can drive your vehicle to the operating site (be sure to use heavy-duty jumper cables). But be careful not to run down the battery so that your car won't start when it's time to leave.

Antennas

Buy or build, it's up to you, depending on your expertise. Unless your local dealer carries all the major brands, get catalogs from several major retailers. These usually feature photos and performance specs for the various models.

For portable mountaintop operations, small Yagis (multi-element, horizontally polarized directional antennas) are best, with typical boomlengths of 12 feet on six meters, 15 on 2, and 18 on 70 cm.

For antenna supports, most VHF antennas are small and lightweight enough to be mounted with standard TV-antenna hardware. For starters, inexpensive Radio Shack mast sections, available in five- or 10-foot lengths, are satisfactory to get your antenna in the air. You can rotate the entire array using the tried and true "Armstrong" (hand-rotated) method.

Camping Out

If your mountaintopping expedition turns into an overnighter, you'll need the necessary camping gear. Make a checklist of items to bring along (heavy jacket, food, flashlight, insect repellent, first-aid kit, etc.) so you don't forget anything. A tent or some

form of shelter is probably your most important piece of equipment because the temperature plummets precipitously on many mountaintops as soon as the sun sets, even in the summer. And make sure you bring your 2-meter F hand-held with you!

Timing

Perhaps the best time to go hilltopping is during one of the major VHF contests, when activity is concentrated and you can maximize the number of stations you can work, especially if there's a band opening. Making lots of rapid-fire contacts, which is the case in the first hour or two of most VHF contests, will get your adrenaline flowing and help you evaluate how good your hilltop location is.

The major VHF contests are the June VHF QSO Party and the September VHF QSO Party (see the Contest Corral column in *QST* magazine for details.) Incidentally, band openings are more common in the summer and fall (which fits in perfectly with hilltopping activities), with DX of well over 1000 miles coming through on 6 and 2. If your mountaintopping effort coincides with a band opening, bring plenty of log sheets!

Grid Squares

One of the first things you'll notice when you tune the low end of any VHF band is that most QSO's include an exchange of "grid squares." Grid squares are a shorthand means of describing your general location anywhere on earth using an established 2-letter, 2-number indicator that serves to identify your exact location in longitude and latitude. For example, my grid square here in Hartford, Connecticut, is FN31.

The ARRL administers a popular awards program for working grid squares. As such, it's sensible to find out the specific grid-square locator in your intended location; if you are going to activate a rare grid, better yet! Get ready to be on the receiving end of a DX pileup! A grid square map of North America is available from ARRL for a nominal charge.—Robert J. Halprin, K1XA

More Information

The ARRL has recently published an excellent VHF operating resource book called *Your VHF Companion*. It's written for beginners, and provides information on VHF hamming—including mountaintopping and grid squares—in a straightforward, easy-to-understand style. A valuable reference section is included to help you locate equipment, additional books, magazines and even software.

Your VHF Companion is available from your local dealer or directly from the ARRL. Keep your letters, photos and questions coming to me at ARRL, Department PCN, 225 Main Street, Newington, CT 06111. See you on the mountain? ■

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YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

A newspaper article forwarded by Simon Mason, England told of a British Police sting operation. Reports of a UFO landing were monitored by scanner listeners and when directions were heard indicating the landing site, several of the scanner enthusiasts proceeded to the location. They learned upon arrival at the site that the UFO reported landing was a hoax conducted by the police to "flush out the Hams who illegally listen to police frequencies."

Dave Sabo, Korea, advises he received a QSL address which was different from that appearing in a Utility QSL Guide. The correct address is: OTC Perth Radio, PO BOX 115, Wangera, Western Australia 6065, AUSTRALIA.

Richard Baker, OH, sent in a summary of U.S. Military press releases which included news of the commissioning this past March of the USS Montelier (SSN 765), a nuclear-powered attack submarine and two coastal patrol ships Monsoon (PC 4) and Typhoon (PC 5). References do not yet reflect call signs for these new additions to the fleet.

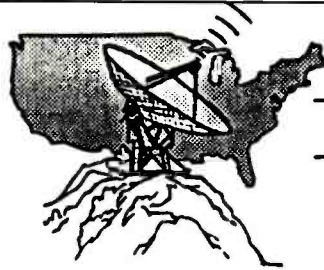
The USS Prairie (AD 15) was decommissioned in March after having been in service for 53 years. This Destroyer Tender was the oldest active ship in commission.

U.S. Air Force news sent in by Richard Baker indicated the 960th Airborne Warning and Control Squadron located at Keflavik AB, Iceland, was to be inactivated and 159 personnel slots transferred from Keflavik to the 552nd Air Control Wing based at Tinker AFB, OK. Also during 1993 one E-3 Airborne Warning and Control System aircraft along with 75 personnel slots will be moved from the 961st AWACS at Kadena AB, Japan, to the 552nd. Because of the scheduled closing of the RAF Bentwaters, England facility, the 510th Fighter Squadron has been moved from Bentwaters to Spangdahlem AB, Germany.

A big thanks to readers Walt Treftz, FL; Jack Woods, OR; Jacques d'Avignon, Ontario, Canada; Jeff Multer, NC; and Richard B. Cramer, NJ. All sent in informative details concerning the "CONSOLAN" long range navigation system which was mentioned in an earlier column.

Jim Deardorff, OH, said he has been listening to Utility stations since 1987. "My equipment consists of a Kenwood R2000, MJF 1020A active antenna (which I sometimes use as a preselector). My main antenna is an 8' copper pipe."

M. Heywood, Alberta, Canada wrote, "I am a newcomer to shortwave listening. I started last year while living in England. I am particularly interested in listening to aircraft communications on SSB. I have a



Starward

C6CM4

VERIFICATION OF RECEPTION

TO: EDWARD RAUSCH III

DATE: May/14/92 FREQ: 8198 kHz MODE: A3J
 XMTR.: NERA (Norwegian) ANTNA: 110 ft longwire
 POWER: 1,5 kW WATTS LOCATION: _____
 REMARKS: Between Martinique and Antigua
(Caribbean)

(Station Seal) **CHIEF RADIO OFFICER**
M/S STARWARD


 SIGNED

PFC for Cruiseship Starward returned to Ed Rausch III, NJ.

Sangean ATS-803 and a longwire antenna. While monitoring I'm able to check route and aircraft type by checking the flight number in the respective airlines schedules."

Several readers have written telling of a source of aeronautical references called "Aerial Development of New England." Items available include surplus (and new if so desired) publications, maps and charts helpful to monitors of aeronautical communications. The address given for further details was: PO BOX 661, Bangor, ME 04402-0661.

With the deactivation of various military units taking place and many major military installations targeted for closing, numerous QSL opportunities will be lost if you don't act quickly to obtain those you desire to add to your collections.

This month there are a few loggings (the remainder of a large batch) sent in by Dave (Poco) White, ME. I regret to report that these are the final loggings to be received from our valued friend, Poco. He passed away in April of this year. His loggings and informative comments will be missed.

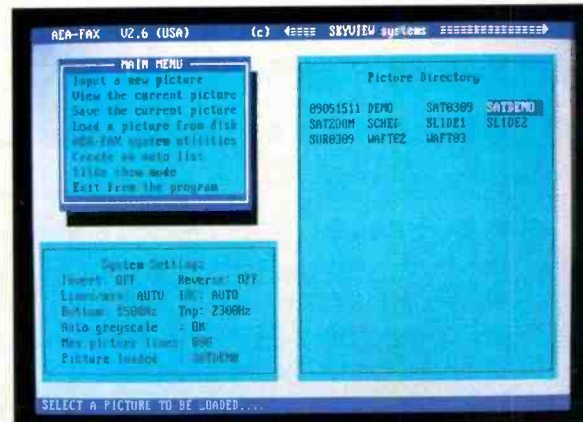
UTE Intercepts. All Times UTC.

205: Beacon COR, Corcoran Salyer Farms. CA at 0242. (Vaage, CA)
 210: Beacon MY, Montgomery Field. San Diego. CA at 0910. (Tomkinson, CA)
 212: Beacon AWW, Winchester, IN at 0426. (Vylasek, OH)

214: Beacon GYN, Galveston, TX at 1126. (Crabill, VA)
 227: Beacon SJY, San Jacinto Ryan, CA at 0244. (Vaage, CA)
 246: Beacon DFI, Defrance, OH at 0435. (Vylasek, OH)
 253: Beacon UR, Burbank-Glendale-Pasadena, CA at 0146. (Vaage, CA)
 254: Beacon 5B, Summerside PEI, Canada at 1111 (Crabill, VA)
 266: Beacon MS, Minneapolis/St. Paul International. MN at 0513. (Vylasek, MN)
 278: Beacon XSD, Tonopah Test Range. NV at 1034. (Vaage, CA)
 282: Beacon GWF, Lancaster, CA. No time given. (Polhamus, CA)
 284: Beacon PTB, Petersburg, VA at 1222. (Crabill, VA) Beacon UYF, London, OH at 0450. (Vylasek, OH)
 285: Beacon NE, Newport Bay Jetty, CA. Heard 24 hours. (Tomkinson, CA)
 289: Beacon HH, Hoek Van Holland Light, Holland at 0955. (Boender, Netherlands)
 290: Beacon AOP, Rock Springs, WY. No time given. (Polhamus, CA)
 294: Beacon BMC, Brigham City, UT at 1041. (Vaage, CA)
 294.2 Beacon OR, Hyskeir Light, Oigh Sgeir, Scotland at 0125. (Boender, Netherlands)
 299: Beacon LCR, Las Cruces Municipal, NM at 1130 (Vaage, CA)
 305: Beacon ONO, Ontario Municipal, OR at 1134. Beacon RO, Roswell, NM at 1135. (Vaage, CA)
 314: Beacon F, Farrallon Island Light Ship, Northern CA at 1049. (Vaage, CA)
 318: Beacon WF, Whitefish Point Light, MI at 1103. (Crabill, VA)
 319: Beacon RB, Redondo Beach, CA. No time given. (Polhamus, CA)
 323: Beacon OC, Oceanside Light #6, CA. Heard 24 hours. (Tomkinson, CA)
 326: Beacon RUV, Bellefontaine, OH at 0455.

Weather FAX

**AEA-FAX 2
NOW AVAILABLE.
DECODES CW,
RTTY, NAVTEX,
AND WE-FAX**



AEA-FAX is menu-driven and mouse compatible for ease of use.

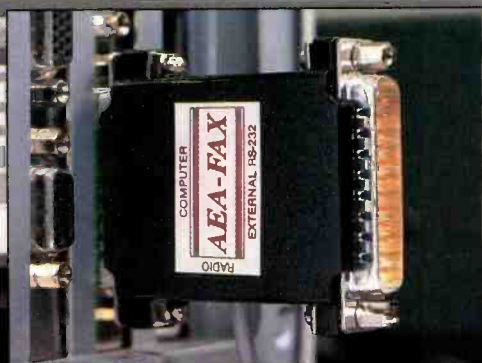
AEA-FAX is all you need to interface with your HF receiver and PC-compatible computer to pick up great looking, information packed weather maps, photos and charts.

Its features include an on-screen Miniscope RT tuning display, unattended image capture, slide show mode for showing multiple images, disk and printer interface, 16 grey levels (VGA) or false-color separations (EGA), and much more.

If you have an interest in the weather, look no further. The device plugs into your existing COM port (1 or 2) and into your HF receiver's External Speaker jack for quick and easy setup; just plug & play!

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Popular Communications

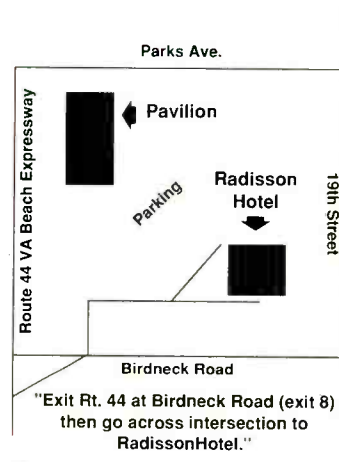
Worldwide SWL Conference!

October 2-3, 1993

* Meet major SW broadcasters

* EXPERT Speakers on Current topics include:

- ★ Antenna Construction Tips and Techniques with Bill Price
- ★ Buying a Receiver by Dick Robinson of Electronic Equipment Bank
- ★ PopComm "Listening Post" get-together with PopComm columnist and SW authority Gerry Dexter
- ★ The Future of SW Broadcasting, with world-renowned shortwave and propagation authority George Jacobs
- ★ How to QSL What You Hear by columnist Gerry Dexter
- ★ Pirate Radio – Hearing the Action with Pat Murphy of WTAR Radio
- ★ SWLing – What You Need To Know with shortwave expert, Dr. Harold Cones
- ★ Worldwide NASA and Satellite Comms with PopComm columnist and NASA authority Don Dickerson
- ★ SW Broadcasting – It's Two-Way Communication with noted international broadcaster Ian McFarland



PLUS – Speakers from the VOA, BBC and more!!!

KEYNOTE SPEAKER, Roy Neal, K6DUE, will talk about SAREX (Shuttle Amateur Radio Experiment) and Tuning the Space Shuttle Comms. He's the Chairman of SAREX, for ARRL-AMSAT and former NBC News Correspondent.

Dozens of manufacturers and dealers of SWL and amateur radio equipment will be on hand demonstrating their equipment and ready to answer your questions on the spot -- including -- Kenwood, ICOM, Yaesu, Alinco and more!

The SWL Conference will be held in conjunction with the **18th Annual Virginia Beach Hamfest and Computer Fair** (the areas LARGEST hamfest and computer exhibit). The first Popular Communications Worldwide SWL Conference, held at the Radisson Hotel, Virginia Beach, Virginia has something for everyone! Make plans NOW to be there. As part of the one-time \$25 admission charge, on October 3 you also get a tour of nearby Norfolk Naval Base that includes a visit to a ship and Naval Base waterfront.

Make Plans Now to attend both days – October 2 - 3, 1993 at the Virginia Beach Pavilion; minutes from the beach, Navy bases and historic sites!

Radisson Hotel is across parking lot from Pavilion. You can walk between both!

"Talk-in frequency 146.970 MHz."

To acquire room reservations at the Radisson Hotel Virginia Beach call 1-800-333-3333 and ask for Virginia Beach Hamfest rates. Registration in the Radisson Hotel, Friday, October 1 from 2 to 8 p.m.

Yes, please reserve _____ tickets at \$25 each.

Pick up tickets and info. pack at the Radisson Hotel on October 1 between 2 and 8 p.m.



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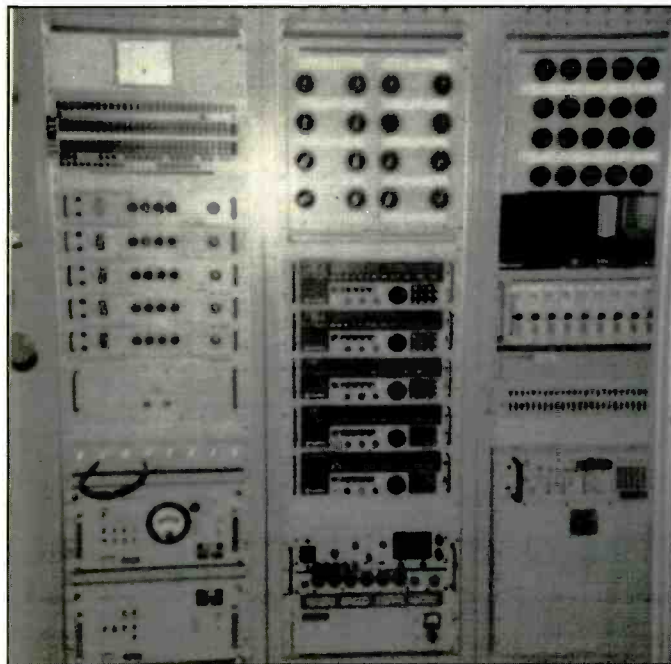
Abbreviations Used For Intercepts

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

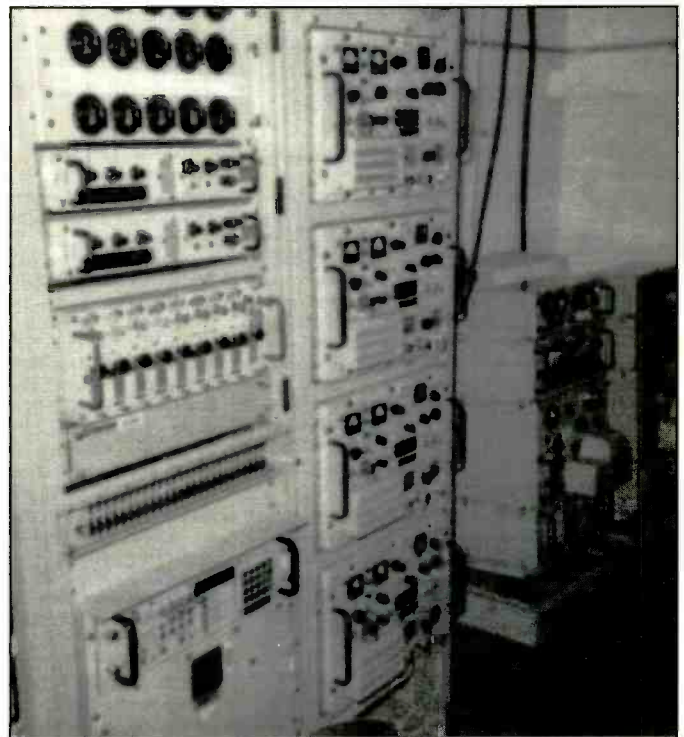
Vylasek, OH); Beacon MCY, Mercury Desert Rock, NV at 1140. (Vaage, CA)
332: Beacon QT, Thunder Bay, ONT, Canada at 0535. (Vylasek, CA)
333: Beacon STI, Mountain Home Municipal, ID at 1141. (Vaage, CA)
344: Beacon FCH, Fresno, CA. Heard 24 hours. (Tomkinson, CA)
348: Beacon DKG, Ohio St. University, OH. Heard at 0510. (Vylasek, OH)
350.5: Beacon ROT, Rotterdam, Holland at 0113. (Boender, Netherlands)
362: Beacon LYL, Lima, OH at 0533. (Crabill, VA)
367: Beacon MO, Modesto, CA at 0650. (Tomkinson, CA)
368: Beacon IMR, Marshfield, MA at 1058; Beacon NVK, Milton, FL at 1208. (Crabill, VA); Beacon SOY, Sioux Center, IA at 0556. (Vylasek, MN)
370: Beacon PAI, Pacoima Barton Heliport, CA at 0258. (Vaage, CA)

371: Beacon ITU, Great Falls, MT at 0835. (Tomkinson, CA)
374: Beacon SA, Sable Island, NS Canada (White, ME)
375: Beacon OO, Oostende, Belgium at 0920. (Bender, Netherlands)
379: Beacon PUU, Flagstaff, AZ at 1316 (Vaage, CA)
382: Beacon IRS, Sturgis, MI at 0611. (Crabill, VA); Beacon LRJ, Le Mars, IA at 0559. (Vylasek, MN)
383: Beacon PI, Pocatello Municipal, ID at 1318. (Vaage, CA)
384: Beacon F8, Victoriaville, PQ, Canada. (White, ME)
392: Beacon PNA, Pinedale Wenz Field, WY at 1200. (Vaage, CA); Beacon ML, Charlevoix, PQ, Canada. (White, ME)
397: Beacon SB, San Bernadino, CA. Heard 24 hours. (Tomkinson, CA); Beacon EHN, Eindhoven, Holland at 1027. (Boender, Netherlands)
399.5: Beacon ONO, Oostende, Belgium at 1029. (Boender, Netherlands)
404: Beacon YSL, St. Leonard, NB, Canada. (White, ME)
411: Beacon RD, Redmond, OR at 1126. (Vaage, CA); Beacon VFU, Van Wert Municipal, OH at 0543. (Vylasek, OH)
414: Beacon LYI, Libby, MT at 1127; Beacon SKX, Taos, NM at 1129. (Vaage, CA)
1856: GND, Stonehaven Radio, Scotland in USB at 1940 w/pp to u/I ship. (Sevart, England)
2182: Tanker Overseas Valdez in comms with Tampa Pilot. Tanker advises he had been on VHF channel 16. USS Aries PHM-5 in comms with CG Group Mayport re Medevac of Navy sailor. A 41 foot CG boat to meet them at Cape Canaveral. (Deardorff, OH); MLYT2, MV Seaboard Supreme clg Stonehaven radio at 2155. (Boender, Netherlands); NMR1, USCG San Juan, PR at 0304 with announcement to monitor 2670 kHz for scheduled MIB (Marine Information Broadcast). At 0717 NMR1 with broadcast re 3 flare sightings near British Virgin Islands. All ships requested keep sharp lookout. USB mode. (Baker, OH)
2598: VCP, Canadian CG, St. Lawrence, PQ in

USB with nav wng of winter hurricane force gales foll by t/c for the Atlantic Optimist. (Caldicott, MA)
2702: Coastal Control, Royal Navy wkg Golf Tango in USB at 2140 with radio check. (Sevart, England)
2932: Tokyo Aeradio wkg Korean Air 062 in USB at 1230. A/c reported position at 1230 and at flight level 310. Tokyo advised contact Honolulu on 6655 kHz primary, 5667 kHz secondary. (Sabo, South Korea)
3292: 5F CW msgs with unusual characters at 2232. Still going at 0350. (Sevart, England)
 3310: CHU, Canadian time signal station at 0432. English announcement foll by French. (Wright, IN)
3444: Scrambled speech in USB at 2056. (Sevart, England)
3880: Strong Am carrier with "diesel truck" sound at 0233. At 0300 YL/GG rptng 682 with 1-0 count. At 0310 ten tones and into 5F group message. (Sevart, England)
4024: 621 rptd in MCW at 2100. At 2105 sent GR 25 and into 25 group message. Rptd msg and signed off with AR. (Sevart, England)
4378: ZLW, Wellington, New Zealand working u/I vessel w/pp t/c at 0727. (Rausch, NJ)
4395: YL/GG rptng 395 x 3, 31294, 037 from 2000-2005. Then 5 dashes and into 5F groups. (Mason, England); YL/GG in AM at 2200 rptng 395 395 395 31294 037. At 2205 sent 5 dashes and into 3/2F groups. (Sevart, England)
4600: "Dripping Water" sound at 2126. Heard from 4600 to 4710 kHz. (Sevart, England)
4663: Khabarovsk Volmet in EE; YL op in USB at 1306. (Sabo, South Korea)
4722: Aviation wx in USB at 0253 for Royal Air Force, England area. (Starr, MI)
4882: Unusual activity here. Mossad station that uses 4880 kHz (ULX) was 2 kHz off frequency and at 1900 was using different YL voice. At 2000 was back on 4880 using normal YL voice that says "November" etc. (Mason, England)
5015: YL/GG rptng Romeo Delta with electronic tones from 2100-2105. Then 5F groups for 914 and 116. (Mason, England)



Here's what the Radio Shack looks like on the mine hunter coastal (MHC) class of U.S. Navy ship. The four views were sent in by Doug Jones, MD. LH rack contains RTTY patch panel, VLF/HF preselectors, receive multicoupler, receive antenna patch panel and UHF satellite rcvr/ demultiplexer. Rack 2 has xmtr switch board, VLF/HF rcvrs, VHF/HF transceiver, RF Dist. amplifier. (See view 2 for details of 3rd rack equipment.)



View 2 on the MHC shows rcvr switch boards, RTTY keyer/converter, RTTY demultiplexer, hi/low level conv., UHF auto tuner. Next rack has VHF/UHF transceivers. Units in back are HF 1KW xmtrs.

UTC	FREQ	STATION	CALL	REMARKS
1730	8764.0	USCG, COMMSTA PORTSMOUTH	NMN	OFFSHORE WX,
1730	13089.0	USCG, COMMSTA PORTSMOUTH	NMN	OFFSHORE WX,
1730	17314.0	USCG, COMMSTA PORTSMOUTH	NMN	OFFSHORE WX,
1733	2670.0	USCG, GROUP ASTORIA, OR	NMW	WX, NTM
1745	2670.0	USCG, COMMSTA SAN FRANCISCO (CAMSPAC)	NMC	OFFSHORE WX,
1745	8764.0	USCG, COMMSTA SAN FRANCISCO (CAMSPAC)	NMC	OFFSHORE WX,
1745	13089.0	USCG, COMMSTA SAN FRANCISCO (CAMSPAC)	NMC	OFFSHORE WX,
1750	2670.0	USCG, GROUP NEW ORLEANS, LA	NMG2	WX, NTM
1803	2670.0	USCG, GROUP NORTH BEND, OR	NOE	WX, NTM
1803	2670.0	USCG, GROUP PORT ANGELES, WA	NOW	WX, NTM
1820	2670.0	USCG, GROUP MAYPORT, FL	NMA10	WX, NTM
2130	13089.0	USCG, COMMSTA GUAM	NRV	OFFSHORE WX,
2200	6501.0	USCG, COMMSTA PORTSMOUTH	NMN	OFFSHORE WX,
2200	8764.0	USCG, COMMSTA PORTSMOUTH	NMN	OFFSHORE WX,
2200	13089.0	USCG, COMMSTA PORTSMOUTH	NMN	OFFSHORE WX,
2205	2670.0	USCG, COMMSTA GUAM	NRV	OFFSHORE WX,
2220	2670.0	USCG, GROUP MOBILE, AL	NOQ	WX, NTM, REM
2230	4426.0	USCG, COMMSTA SAN FRANCISCO (CAMSPAC)	NMC	OFFSHORE WX,
2230	8764.0	USCG, COMMSTA SAN FRANCISCO (CAMSPAC)	NMC	OFFSHORE WX,
2230	13089.0	USCG, COMMSTA SAN FRANCISCO (CAMSPAC)	NMC	OFFSHORE WX,
2230	17314.0	USCG, COMMSTA SAN FRANCISCO (CAMSPAC)	NMC	OFFSHORE WX,
2235	2670.0	USCG, GROUP NEW ORLEANS, LA	NMG2	WX, NTM
2240	2670.0	USCG, COMMSTA BOSTON	NMF	MARINE WX IN
2240	2670.0	USCG, GROUP CORPUS CHRISTI, TX	NOY8	WX, NTM
2250	2670.0	USCG, GROUP GALVESTON, TX	NOY	WX, NTM
2303	2670.0	USCG, GROUP CAPE MAY, NJ	NMK	WX, NTM
2330	6501.0	USCG, COMMSTA PORTSMOUTH	NMN	OFFSHORE WX,
2330	8764.0	USCG, COMMSTA PORTSMOUTH	NMN	OFFSHORE WX,
2330	13089.0	USCG, COMMSTA PORTSMOUTH	NMN	OFFSHORE WX,
2345	2670.0	USCG, COMMSTA SAN FRANCISCO (CAMSPAC)	NMC	OFFSHORE WX,
2345	8764.0	USCG, COMMSTA SAN FRANCISCO (CAMSPAC)	NMC	OFFSHORE WX,
2345	13089.0	USCG, COMMSTA SAN FRANCISCO (CAMSPAC)	NMC	OFFSHORE WX,

Final installation of USCG Marine and NTM schedules. Listing prepared by Richard Baker, OH.

5042: YL reading coded groups of ltrs/figs at 0010. (Wright, IN)

5310: Numerous comms in USB re UNHCR Naval Ops. Vessel surveillance and some boardings. One message between OIF and OUC described tracking of Russian Vessel. "My unit will escort that vessel to the Southern end of the block. Request your unit to commission yourself to intercept the vessel when it enters your area and also to ensure that the vessel does not enter Montenegro waters." (Boender, Netherlands)

5317: Fishing boats in USB at 0251. Some x-rated language. (Hill, MI)

5320: USCG Group Fort Macon, NC wkg USCGC Point Warde (NUIH) w/tfc in USB at 0224 and 0337. (Hill, MI)

5500: 584/000 rptd in CW at 2200. At 2205 BT BT 000. (Sevart, England)

5520: New York ATC wkg various a/c in USB at 0344 and was soon covered by clandestine bcst stn which was soon covered by warble jammer. Both bcst stn and jammer left frequency at 0345 and were found on 5540 kHz. (Sevart, England)

5530: YL/EE w/636 x#, 80688, 033 from 2100-2105 followed by 5 dashes and into 5F groups. In parallel with 6825 kHz. Says "I repeat" at halfway point. (Mason, England)

5598: NY Air wkg several a/c at 0108. Santa Maria heard wkg a/c next day at 0558. (Starr, MI; Air France 541 w/Shanwick, requesting FL 370 in USB at 0943. (Boender, Netherlands)

5634: Perth Aeradio wkg Britannia 608 at 2103, told a/c to contact Perth control on VHF 125 MHz. At 2021 Perth wkd Springbok 284. All USB mode. (Sabo, South Korea)

5649: Gander ATC wkg lights 0152-1235 including Speedbird 92, a 747 w/Selcal KMCH, Speedbird 186 B767 JFK-Glasgow, Aeroflot 316 JFK-Moscow, Lufthansa 423 DC10 Boston-Frankfurt. (Heywood, Alberta, Canada)

5658: Lufthansa 7477 with Bombay at 2140 with Selcal check in USB; Karachi with Singapore 328 and Singapore 341 at 2145 and 2153 in USB. (Boender, Netherlands)

5690: Canadian Forces, Lahr, Germany in USB at 2224 w/wx. (Sevart, England)

5692: USCG Group Cape May, NJ wkg Cutters Biscayne Bay and Hornbeam (NOIM), and Rescue 6576 w/SAR t/c in USB at 0156 and 0330. (Hill, MI)

5696: 7XN in comms at 1318 w/CommSta Portsmouth in USB re "Found ELT on 243 MHz at rough Loc of 35N 74W. Please contact Giant Killer and advise that 7XN lost contact with them and 7XN is proceeding to track down the ELT." (Caldicott, MA)

5700: Uppercut wkg Anklebone stating there will be a BBC bcst on Whiskey-102. USB at 0259. (Hill, MI) Callsigns are USAF tactical calls (ED.)

5718: At 2320. CanForce Rescue 102 w/Halifax Military, CZW, ops normal and wx. At 0305 Rescue Control Center advises M/V Gold Bond Conveyor is listing and in dangerous situation, need helo's on scene. RCC adv ETA is 2 hours. At 0355 2nd pp to RCC, adv M/V now has 23 degree port list. At 0419 3rd pp to RCC adv M/V abandoning ship at this time, declared MAYDAY after being hit by large wave, "they're all going overboard at this time." Unable to determine if crew made it to life boats, dropping flares to ck. At 0423 RCC adv British M/V Havkong was enroute to assist. Rescue 102 adv Havkong is at position of ves in

distress. At 0428 Res 102 back w/RCC adv ves is now completely submerged, can't see anything in water, Havkong reports same with lights on and lookouts manned. Later Res 106 and 408 on scene assisting. CNN had film of sinking, 25 on board lost. USB mode, (Baker, OH)

5746: YL/EE rptng 59415 in between Lincolnshire Poacher from 1900-1910. Then into 200 5F grps ending at 1946. (Mason, England)

6372: EAD3, Madrid, Spain in CW at 0442 w/callsign mkr. (Wright/IN)

6424: URD, St. Petersburg, Russia in CW at 0112 w/tfc list. (Boender, Netherlands)

6483: UFB, Odessa, Ukraine in CW at 0234 w/tfc list. (Boender, Netherlands)

6500: YL passing 5L groups in USB at 1536. Possibly parallel bcst on 7450 kHz. This was getting walked on by USCG Guam CommSta bcst on 6501 kHz. (Sabo, South Korea)

6501: USCG CommSta Guam in USB at 1538 w/Marine wx bcst. (Brookman, AK)

6504: Charlie Gulf Foxtrot (Canadian CG Control) in USB w/rollcall for 5 CG patrol ships (duplexed on 6203 kHz). Reports of escorts and tentative dockside arrivals. Requests made by Captains for Helicopter fuel at one predicted docking and pay vouchers for the crew. Heard 1910-1915. (Caldicott, MA)

6507: Beeps sent in AM at 0450-0500, then "Swedish Rhapsody" tune until 0505, then into 5F groups by YL/GG. (Sevart, England)

6636: Paris LDOC w/unid Air France plane. Selcal check. USB at 0047. (Boender, Netherlands)

6660: White noise here at 2312. Had wide bandwidth of 6660 to 6720 kHz. (Sevart, England)

REPUBLIC
OF
SOUTH
AFRICA
—
ZONE AF38
—

G C

30 57 24 S

29 55 08 E

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GLENHAM DUFFY

P.O. BOX 33042 MONTCLAIR, DURBAN, 4061 SOUTH AFRICA

Listening To The World



Log-Periodic SW antenna at the FAA Longmont, CO Air Traffic Control Facility. Photo provided by Patrick Griffith, CO.

Here is the QSL card used by Glenham Duffy, South Africa.

6679: Honolulu w/aviation wx best in USB at 0500 for Hawaiian Islands area. (Starr, MI)

6683: Andrews AFB w/pp at 1350 for two females (Peggy and Beth) re White House memos re Russian current events and some closed door meetings with Senate. Will call back when landed and in the car. No id given at sign off. (Starr, MI)

6738: Yokota in USB at 1608 w/kg SAM-56973. A/c apparently on the ground at Yokota. Refers to frequency designator "215." MYSTIC STAR activity noted w/973 and Andy on 8032 USB earlier in the evening between 1430 and 1450. (Sabo, South Korea)

6825: YL/EE w/317 x #, 03067, 035 from 2100-2105. Then 5 dashes and into 5F groups. (Mason, England)

6920: YL/GG w/1-0 count and "140" from 2100-2110. Then 10 dashes and into 3/2F grps. Also on 5413 kHz. (Mason, England)

7600: HD210A, Guayaquil, Ecuador Time/Frequency station in AM 0050-0052. (Goetsch, PA)

7605: YL announcing VLB2 in AM 0342-0349.

Mossad. (Goetsch, PA)

7660: ZKR, Rarotonga. Cook Islands in CW at 0254 w/mkr. (Wright, IN)

7860: YL/SS in AM 0332-0340 w/5F grps. (Goetsch, PA)

7887: YL/SS in AM at 0831 w/5F grps. Ended w/"Finale" x 3. (Sevart, England)

8063: Rare YL/EE 3/2F grps in USB at 2006. Similar to the YL/GG 3/2F stations. Used "end" and "Attention." (Sevart, England)

8119: MRR64, u/I in USB at 1205 clg AC and C1. At 1245 MRR64M1 clg MRR64 w/"I READ CFHAZKGD BREAK OVER." (Boender, England)

8300: YL/CC in AM at 2229 w/4F grps. Started with Chinese music and commentary by YL, then another YL sent the 4F grps. (Sevart, England); Chinese bcs: "New Star Radio Station #4" in AM at 1307. YL/CC w/5F groups, each x 2. Was unusual in that she usually passes only 4F grps. (Sabo, South Korea)

8466: UJY, Kalingrad. Russia in CW at 1533 w/CQ mkr. (Boender, Netherlands)

8470.4: Weird logging of the night. YL passing probable 5F grps, each x 2, in tonal Oriental language. Por sigs; might have actually been AM mode but broke best in USB. Can't say it sounded like Chinese. Maybe Vietnamese. USB at 1355. (Sabo, South Korea)

8522: FFL2/FFL4, St. Lys. France w/QSX 4 and 8 MHz. Hrd at 2322. (Laughlan, NY)

8641: Various YL/"MIW" phonetic bcsts hrd in USB on various evenings within one-week period. One night it was MIW6 from 1519-1520. One week later it was MIW2 at 1618. Next evening hrd MIWAB30 at 1512. (Sabo, South Korea)

8662: CBV, Playa Ancha, Chile in CW at 0030 w/Spanish text. (Wright, IN)

8722: BVA, Taipei radio in USB at 2020 w/voice mirror. (Boender, Netherlands)

8826: New York ATC wrkg various flights 0319-0430 including: Springbok 202, Air France 525, Speedbird 254, Aero Mexico 454. (Heywood, Alberta, Canada)

8867: Nandi, Fiji LDOC w/kg Polynesian 2791 w/position report and Selcal check at 0621. Auckland, NZ w/kg Singapore 7295 and United 816 at 0629. (Rausch, NJ)

8891: Lufthansa 7452 w/Iceland in USB at 2034 w/request for wx for Goose Bay. (Boender, Netherlands)

8906: Medang Papua, New Guinea Aeradio w/kg several u/I a/c at 0745. Language was Pidgin English. (Rausch, NJ)

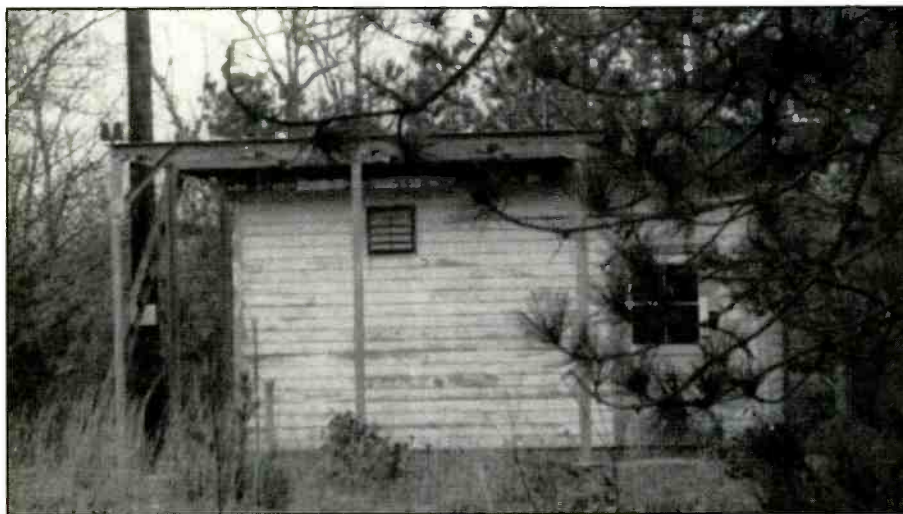
8942: Malaysia 876 w/kg Singapore Radar at 1308. Talked about contacting Singapore Radar on VHF 127.3 MHz. (Sabo, South Korea)

8972: Waifer 1 in comms at 1051 w/Sierra 6 Hotel in USB. Msg: "Estimate dirt in 20 miles Request you enter on Pap Uniform." (USN Kilo Channel). (Caldicott, MA)

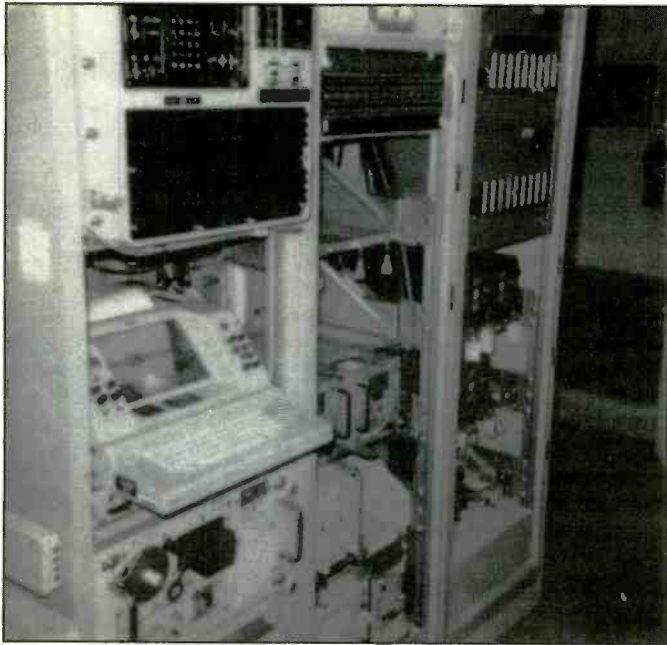
8976: Was Ausy/NZ night on this frequency. Between 1306-1312 hrd a/c Kiwi 602 w/extensive PT msg t/c to Air Force Auckland. At 1318 hrd Air Force Darwin tell Kiwi 602 to contact Darwin Tower on VHF 134.2 MHz. Later on, Air Force, Air Force Darwin wkd a/c HUDSON 466 at 1343. Finally, at 1406, hrd Air Force Sidney w/kg Air Force Darwin. All comms in USB mode. (Sabo, South Korea)

8984: At 0037, CG Rescue 1720 w/kg NMN, CommSta Portsmouth pp, Miami Ops re raft w/5 POB still in Cuban waters. Miami adv sending a H-60, make sure H-60 is aware be very cautious to avoid Cuban air space. At 1840 CG Rescue 2107 w/kg NMN, pp Miami Ops re debris found, reported by Tug and Tow Gulf Sword, later adv this may have been from Cuban refugee ship, another vessel has POB from it. (Baker, OH)

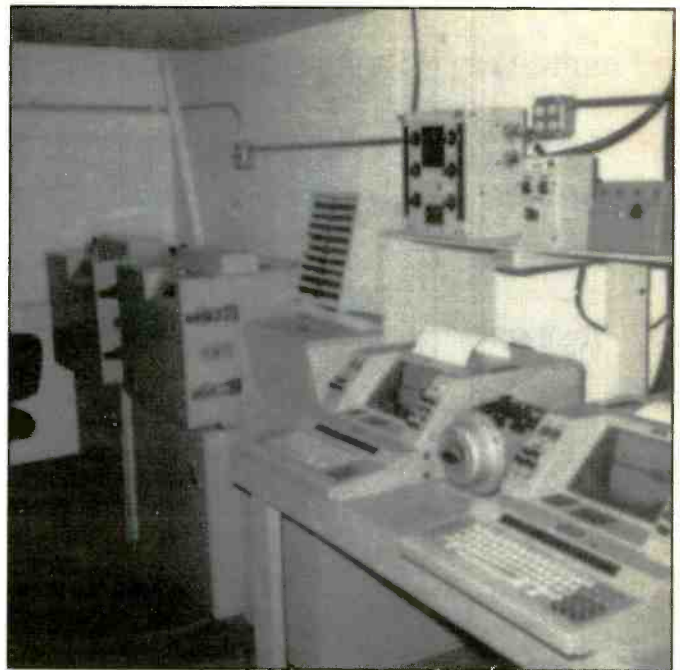
9040: YL rptng Papa Delta in USB at 1933 until



Non-directional aerobeacon "FO" (400 kHz) operates from this site in Riverhead, NY, 5 miles NE of the Francis S. Gabreski Airport, Westhampton Beach. (Photo by Tony Earll, Registered Monitor KNY2AE.)



View 3 on the MHC shows a NAVMACS computer, traffic processing unit, Navy standard teletypewriter, paper tape punch. The next two racks contain miscellaneous equipment items and patching panels.



View 4 on the MHC shows two medium speed printers, and two more standard typewriter printers with various switching units located above the equipment items.

1935, then 3/2F grps. (Sevart, England); YL/EE rptng Mike Delta from 2000-2005 w/electronic tones. Then "Message for 241/30 groups, 565/18 groups." Then into 5F grps. (Mason, England)

9130: YL in USB at 2002 rpts EZI in phonetics til 2003, then message, message, group 72, group 72,

text, text," and into 5L grps. (Sabo, South Korea)

9950: NKZI, USS Pensacola LSD38 w/kg Charleston SESEF for xmtr texts starting at 1821. USB mode. (baker, OH)

10045: 4XZ, Haifa Naval, Israel at 0240 in CW w/mkr. (Wright, IN)

10066: Katmandu Aeradio, Nepal w/kg a/c 410 in USB at 1241. A/c w/eta of 1500 at Katmandu. (Sabo, South Korea)

10420: OM/RR in AM at 1305 w/5F grps rptd x 2. (Sabo, South Korea)

10702.3: U/I CW stn at 2008 w/5L grps w/

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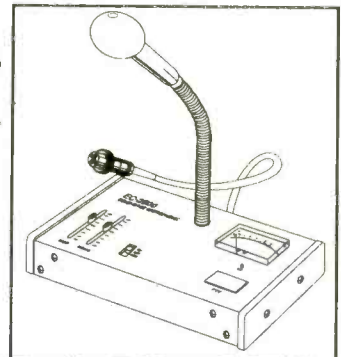
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THE MONITORING MAGAZINE

pause after every 10 groups. (ED.)

10723: YL/EE in AM at 1401 rpts 705 705 705 and 1-0 counts. (Sabo, South Korea)

10871.9: Channel marker "S" in CW at 1756. Arkhangelsk, Russia. Just above this at 10872 kHz was channel marker "C." Moscow, Russia. Hrd at 1756 also. (Boender, Netherlands)

10940: YL/EE in Am mode at 1132 w/3-2F grps. (Sabo, South Korea)

11176: USAF Head Dancer. TAC/Airborne Movement Control Formation, w/Croughlon in USB at 1420. PP to Fury (Security Police). (Boender, Netherlands); Mclellan AFB wkg Reach 3240 w/pp to Pope AFB, fwdng freight and passenger info. (Heywood, Alberta, Canada)

11214: At 1850 Trenton military, CHR, after QSY from 11233 kHz. pp Raymond 24 (Tinker AFB, 552nd AWACS). USB mode. (Baker, OH)

11288: Jeddah w/Saudia 005 in English at 1828 in USB. PP in Arabic to SVA, Athens, Greece. (Boender, Netherlands)

11342: San Francisco ATC from 2150-2326 wkg flights including: Japan Airlines 61, Canadian 15, Reach 70018 (to call Oakland Center on 134.15 MHz) and Northwest 07. (Heywood, Alberta, Canada)

11363: YRA, Bucharest, Romania LDOC w/unid a/c in Romanian lang on pp. USB at 0932. (Boender, Netherlands)

11387: Sydney Volmet w/aviation wx for Melbourne, Adelaide. Alice Springs and Perth at 0530. USB mode. (Baker, OH)

12314: At 2105, musical notes played on a keyboard, then a synthesized YL/EE voice rptng "Juliet Whiskey." At 2106 changes to CG. USB mode. (Baker, OH)

12852: 6WW, Dakar Naval. Senegal in CW at 0115 w/mkr. (Wright, IN)

13083: KMI, Dixon, CA in USB at 0401-0405 w/tfc list. (Goetsch, PA)

13107: XSQ, Guangzhou, PRC in USB at 0745. YL announces "Attention please. This is Guangzhou Radio. The public correspondence service of radio telephone is available with our schedule." Then gave chan-

nels/freqs and times in use. Foll by presumably same notice in CC. (Sabo, South Korea)

13131: NRPX, USCGC Buttonwood WLB-306, w/CommSta New Orleans. att pp after QSY from 8767 kHz. Buttonwood is replacement for decommissioned Cutter Blackhaw. USB at 1632. (Baker, OH)

13282: Hong Kong Volmet in USB at 0845: Auckland. NZ Volmet in USB at 0850. (Boender, Netherlands); Honolulu w/wx for Pacific coast city airports in USB at 0235. (Starr, MI)

13351: Concorde 002 (Paris-JFK) in USB at 1150 w/Paris re baggage. (Boender, Netherlands)

13354: Honolulu ATC 0255-0302 wkg Canadian 39, Delta 1579 and American 28. (Heywood, Alberta, Canada)

11430: YL/CC in AM at 1231 carefully passing 4F grps. each x 2. Strong, clear strong sigs. Similar tho non-parallel bct on 8300 kHz at same time. Prob the "New Star Radio Station #4 CC numbers station. (Sabo, South Korea)

13449.1: U/1 stn 1310-1312 w/FSK Morse. Sig not very loud. Sending 5F grps. Went down with "K" and carrier off. (ED.)

13826: NNOCUZ, USS Pudget Sound AD38, NNOCVK, USS Nashville LPD13, and NNOCUZ. USS Saipan LHA2 making pp's in rotation w/NNOTWT USN MARS. USB at 2327. (Baker, OH)

13921: YL rptd CIO2 in phonetics from 1549-1550 in USB. (Sabo, South Korea)

14404: US Army MARS AEM6USQ and AAR-4CSS in USB at 2233. (Boender, Netherlands)

14686: Atlas clg Flame 003 in USB at 2136. No joy. (Hill, MI)

15015: TS724, Navy SH-60B helo wkg MacDill for pp in USB at 2130; Navy LY508, P3B wkg MacDill for pp in USB at 2131. (Hill, MI)

15024: A/c 86524 clg COL, Havana Air and alternating w/RFNV, Moscow-Sheremetievo Air in CW w/QSA IMI K. No response. Hrd 1524-1526. (Caldicott, MA)

16241.1: CW stn (suspected Vietnamese diplomatic) at 2218 w/2,3 and 4 letter grps. (ED.)

16391: C4XD, vessel Sea Princess II, YL/EE 9w/accnt) clg Berne Radio repeatedly. First hrd 1346 in

USB. (ED.)

16870.5: DJJ, Bulacan (MCI Manila), Philippines in CW at 1500 w/nx re eruption of Volcano Mayon foll by 15 quakes. This press service is hrd daily on this freq w/ notice at 1457 UTC. (Caldicott, MA)

16930: UVA, poss Russian Mil stn at 1514 in CW w/extremely high-speed keying wkg several stns (non rcvd). (Caldicott, MA)

17172: ICB, Genoa, Italy in CW at 2045 w/mkr. (Wright, IN)

17245/16363: Portishead, England wkg GWAK, ves Eye of the Wind at 1805. GQIC, HMS Alacrity F174. Royal Navy Frigate at 1815. GZIR, HMS Nottingham D91, RN Destroyer at 1857. All USB mode. (Baker, OH)

17305: OTC Darwin Marine Radio (VID) in USB at 0815 attempting to work w/ vessel w/pp's but being blocked by OM/CC who seemed to be intentionally blocking all. Darwin opr advised vessel that illegal stn on freq and suggested moving elsewhere for pp. Not an uncommon problem, as Chinese pirates, fishing boats, or whatever are hrd operating out-of-band throughout the 2-30 MHz range, and even up through the low VHF bands to about 38 MHz. (Sabo, South Korea)

19955: NNNOMOB, USMC MARS Camp Schwab, Okinawa wkg NNNOMTP, USMC MARS 29 Palms, CA (nil hrd) for pp's. USB at 0204. (Sabo, South Korea)

20821: CLP1, MFA, Havana, Cuba in CW at 1555 sending V's. (Margolis, IL)

20970: VXN9, CFARS Nicosia w/CIW603 at 1400. w/CI9. CFARS Petawawa at 1417. USB mode. (Boender, Netherlands)

20992: Channel marker "C." Moscow, Russia in CW at 1559. (Boender, Netherlands)

21830: OM/SS in USB at 2220. He at Spanish Embassy, Managua, Nicaragua and is talking to MFA, Madrid. (Margolis, IL)

21925: Honolulu ATC at 0012 wkg Delta 75. A/c told to call Honolulu on 17946 kHz for the guard change. (Heywood, Alberta, Canada)

22548: TAH, Istanbul, Turkey in CW at 1305 w/tfc list. (Boender, Netherlands)

Improve Your Scanning Coverage!

GRE America is proud to introduce a new family of products to enhance your scanning pleasure! First, GRE has designed the new **Super Converter 9001** for base model scanners. The 9001 converts 810 MHz - 950 MHz down to 410 MHz - 550 MHz. The 9001 is the perfect alternative to buying a new, expensive scanner covering the 800 MHz band. Next, GRE announces the new **Super Amplifier 3001** for base model scanners. The 3001 will increase gain by as much as 20 dB, and is engineered to help scanners with low sensitivity pull in weak signals. Both products use BNC connectors, (1) 9 volt battery and have an off/pass switch for returning to normal operation.



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TELEPHONES ENROUTE

BY TOM KNEITEL, K2AES

WHAT'S HAPPENING WITH CELLULAR, MARINE & MOBILE PHONES

Are you one of the many analog cellular monitors who has become confused, and worried that digital cellular is on the verge of turning analog cellular into ancient history? That's what some would have you believe. If so, you'll be interested in the opinions of Nokia. This company is a leading cellular equipment manufacturer.

In Nokia's Information Bulletin No. 1/4, they report, "analog promises to be with us to a ripe old age, and for a while still offers some advantages over digital." Nokia points out that it is true, "some network operators have already begun to market their digital services, but they are yet sitting on a sizeable investment with a large customer base, and they paid for it. Obviously, there is great motivation to keep them viable for as long as possible."

Nokia notes that, although they are in digital market, their company is still introducing new analog cellphone models. The company says that there is "hype" in the way digital is being presented to the public, and feels the public has now become uncertain and confused. Nokia ends its bulletin with the words, "So don't give up on analog yet!"

Why They Don't Want You To Listen

The Blade (of Toledo, Ohio) reported that the city's mayor and city manager had worked out a political deal. It was the kind of unsavory deal that people think of as usually being made in a smoke-filled room, except this one was made over a cellphone.

Someone with a scanner happened to pick up that conversation, and made an 18 minute tape. The tape was provided to a newspaper reporter, and two days later the whole messy deal was blasted across the front page of *The Blade*. The people who made the cellphone call confirmed that they had spoken, but either denied having done anything wrong, or that they had ever heard of any deal.

As the furor raged, the anonymous scanner owner galloped off into the sunset with a hearty, "Hi-yo, Silver!" Who was that masked man?

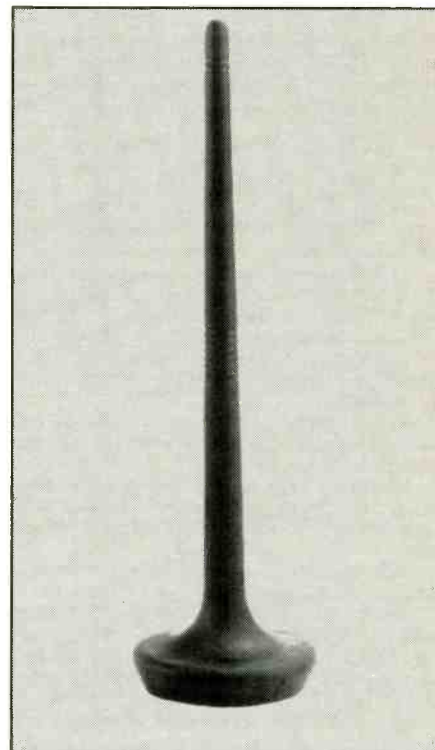
Pain On The Glass?

Jerry Stampleman, of Toronto, Ontario, wrote to ask if glass-mounted cellular antennas are as good as they are touted. Jerry tells us that he has tried several different ones and yet cannot get the same quality of results obtained from a magnetic mount on the roof or trunk lid.

My own experience has been that they



Mitsubishi's Model 3500 sells in the middle price range and is aimed at the mass market.



Doesn't look like a magnetic mount 800 MHz antenna, but Motorola's new Mini Mag does the job.

do a decent enough job for cellphones. Your problem could be if you are mounting your antenna on a car window that is factory tinted. The glass tinting process used by car manufacturers utilizes a metallic component that cuts into the performance of through-glass antennas. Antenna installation information sheets usually don't mention this.

Cellular Against Crime

A series of "Cellular Against Crime - Protect Yourself" seminars were sponsored in areas of Florida, Georgia, and Alabama by Palmer Cellular Partnership/Cellular One.

These hour-long sessions were free, and the public was invited to attend. Guest speakers from law enforcement agencies were on hand, and workshops were available to show how to operate a cellphone and use it for safety and emergency purposes.

Dialing 9-1-1 is a free call for most cellular customers. Every day, cellular users use their phones to report accidents, drunk drivers, street crime, fires, and to summon emergency medical assistance.

Marketing surveys show that the greatest percentage of new cellular users purchased their cellphones for safety or security purposes, as opposed to being used for business or personal conversations.

Money Matters

The FCC reduced the Notice of Apparent Liability (NAL), or fine, assessed against the Victoria Cellular Corporation, Victoria, Texas. Originally, the FCC had demanded a forfeiture of \$15,000, but later agreed to accept \$6,000.

What had irked the FCC and triggered the \$15,000 fine was that the cellular company built and operated a cell site without filing the required FCC Form 485, Notification of Status of Facilities. The cellular company requested reduction of the fine arguing, among other things, that they have voluntarily disclosed the violation to the agency. Based on the company's voluntary disclosure, the FCC reduced the amount.

The FCC issued an NAL in the amount of \$34,000 for unauthorized operations in San Diego, Calif. PacTel had been granted permission to conduct field tests using

experimental cellular equipment until February 6, 1992. Then they were to file information about the field tests.

The NAL was issued because the FCC claimed that PacTel continued testing beyond February 6m and didn't file its test information until June 10th.

GMD Partnership, and GMD Partnership II, which hold cellular licenses in several markets, were jointly given an NAL tagged at \$250,000. The agency said this was because of "continuing, willful, and repeated violations of the Communications Act for unlawful alien ownership." Still, the agency felt "GMD's violations were apparently inadvertent." If you can figure that one out, you're good. Very good!

New Mitsubishi

The Mitsubishi Model 3500 medium-priced handheld cellphone is a pocket-sized unit for the mass market. Weighing less than 8 oz., the 3500, lets you talk up to an hour per battery charge, or leave the set on stand-by for 10 hours. An optional extended-life battery more than doubles these times.

The Model 3500 has dual NAM's, 20 memory locations, a battery level indicator, redial function, and simplified programming. Accessories are available to add other features.

Basic price MSRP for the Model 3500 is \$699. For more information, contact Communication Equipment Sales Division, Mitsubishi International Corp., 1500 Michael Drive., Suite B, Wood Dale, IL 60191. Telephone (708) 860-4200.

Just The Facts

People on the go will applaud the new alpha-numeric pager from NEC America, Inc. called the Facts Reporter. With this unit, you get messages containing words, not just numbers. The memory will store up six received messages for playback on demand.

Incoming messages are time-stamped so you can keep track of when they came through. There are up to eight selectable alerting tones, plus a vibrating (silent) alert. The view area allows you to see twelve characters at a time.

More information on the Facts Reporter and other NEC products by calling 1-800-ASK-NEC, Ext. 001. Tell 'em you read about it in *Popular Communications*.

Hey, Maggie!

Motorola introduced their [Mini Mag] mobile antenna covering the 800 to 900 MHz band. This unit is factory tuned and ready to go across the entire band. Magnetic mounting doesn't require drilling or permanent installation, and the antenna is suited for use on trunk, cowl, hood, roof, or fenders. It may be used with any cellular, including mobiles, portables, and handhelds. It's also suited to scanner use



This new alphanumeric Facts Reporter pager comes from NEC America, Inc.



Logo of the Cellular Against Crime program.

for these frequencies.

Unlike a familiar wire cellular antenna with the corkscrew coil, this antenna is fully encapsulated and presents a different external appearance.

For more information, contact, Motorola Land Mobile Products Sector, Public Relations Dept., 1301 E. Algonquin Rd., Schaumburg, IL 60196.

Chug-Cough-Sputter

New cellphones imported into Sweden raised havoc with luxury cars there. Circuitry in the phones radiated RF ener-

gy on a frequency that was critical to components controlling the operation of the vehicles' engines. The level of RF was sufficiently high to cause the engines to shut down as soon as they got hit with a blast of the stuff. Subscribers began complaining from one end of Sweden to the other.

The new phones had to be removed for modification before they could be put back into service.

We are out of gas here, too, until November. Always looking for your comments, questions, and clippings. Also seeking press releases and new product information.

SHOCKING MANUALS!!

Survival Electronics, Computers, Security, Weaponry, Rocketry, Phenoms, Energy, Financial, Medical, 100+ offers include Special Projects and Technical Research Services, and hardware. Confidentiality Guaranteed! Send \$4 for new Combined Catalog. By John Williams, former Senior Engineer (Lockheed), Professor of Computer Science (NMSU). As seen on CBS' 60 Minutes*. Since 1971.

CELLULAR PHONE MANUAL: Detailed manual on how cellular phones are re-programmed (ESNs and NAMs) and scanned. 30+ cellular phone mods described. Specific scanner mods \$39.

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COMPUTER PHREAKING: Detailed manual describes both computer viruses and how computers are penetrated. Includes 2 PC disks. [1] FLUSHOT+ protection system. [2] Disk loaded with hacker files. \$39.

Many more: STEALTH TECHNOLOGY (\$19), PHONE COLOR BOXES (\$29), TV DECODERS & CONVERTERS (\$14), STOPPING POWER METERS (\$19), RADIONICS MANUAL (\$29), EM BRAINBLASTER \$29, UNDER ATTACK (\$29), HIGH VOLTAGE DEVICES (\$29), DISK SERVICE MANUAL (\$29), ATM (\$39). Include \$4 S/H. Educational purposes only.

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27 MHz COMMUNICATIONS ACTIVITIES

This month we'd like to spotlight the Uniden *Grant XL*, which is a fine AM/SSB mobile unit. Among the basic features in this rig are mic and RF gain controls, switchable NB/ANL, panel light dimmer, triple-function meter, and a received-signal high/low tone switch.

The receiver's SSB sensitivity is better than .25 uV for 10 dB (S+N)N at greater than 1/2-watt of audio output. For AM signals, under the same receiving conditions, it's 0.5 uV. Selectivity (both SSB and AM) is 6 dB at 4.2 kHz, 60 dB at 7.0 kHz. The *Grant XL* has a 7.8 MHz IF, and the set uses a 7.8 MHz crystal lattice type filter in its receiving circuitry.

This unit is made by Uniden, Fort Worth, Texas. It is offered by the company's many dealers.

Fancy Flop

Vocaline was one of the very few of the companies in the CB market when it first started out during the early 1950's. That's when they were making equipment for the original 465 MHz Class B CB band. That band was a flop, but when the Class D opened in late 1959, The Vocaline Company of America, of Old Saybrook, Conn., was there with a beautiful transistorized portable called the PT-27. It was a commercial failure.

This was followed up with the introduction of the model ED-27 base/mobile transceiver. Another well-built and attractive radio that failed to capture the imagination of CB operators.

In September of 1962, Vocaline brought out its most formidable CB transceiver, called the ED-276. This high quality unit had 6 transmit channels, 5 fixed receive channels plus tunable capabilities. A front panel socket was there to plug in an additional transmit crystal. The set had ceramic filters, front panel metering, delta tuning, and a circuit that had 3 tubes, 22 transistors, 8 diodes. The 117VAC/12 VDC power supply was fully transistorized. Although boxy looking, it was a very sophisticated piece of equipment for its time, and had the features that CB'ers wanted.

The ED-276 achieved little popularity, however. Vocaline's equipment was too upscale and expensive for the CB market. The company didn't advertise very much, and they never had enough dealers to properly market their equipment. The ED-276 must have been Vocaline's last straw. After that, Vocaline came to the realization that they must be doing something drastically wrong. The company turned its attention to other markets and gave up on CB operators.



A fine 1970's Lafayette Telsat 50. It's in the collection of Dan Marquette. He hails from Pottstown, Penna.



The Vocaline ED-276 was ahead of its time in 1962, however CB'ers couldn't have cared less.

Out of The Mail Sack

J.R. Cade, KD6TUL, of La Habra, Calif., reports that our mention here that he was looking for a Browning CB radio found him one in excellent condition. He would now like to purchase a manual (or a copy of one) for a Browning R-27 S-23 Series. J.R. tells us that he has some Sam's FotoFacts covering older CB's from which he would gladly copy a schematic for any reader needing one for a particular reader radio. Contact him at: J.R. Cade, 2220 W. Baja, La Habra, CA 90631-5802.

An owner's manual for a Siltronix 10110 (Comanche) is needed by Bill Leiby, 606 Elm St., Carleton, MI 48117.

Christopher Cuomo, 670 Third Ave., Verona, PA 15147-1349 needs manuals for the Lafayette HB-525, Royce I-600B, and a Realistic TRC-422. He writes that he will pay for the photocopying.

Howard Mosca, Sacramento, Calif., is concerned. He wrote in to tell us that something called "Cellular Vision" is going to put 49 TV channels between 27.5 and 29.5 MHz. Howard points out that this is adjacent to the CB band, and on top of the 10 meter ham band. Howard even sent us a photocopy of a magazine report on this to show us that's really happening. Yes, it does report that "Cellular Vision" is being put on 27.5 to 29.5 MHz.

Howard didn't mention where this was published, but it's apparent they didn't realize there's a difference between MHz and GHz. "Cellular Vision" actually operates on 27.5 GHz (which is 27,000 MHz). This is in the microwave portion of the spectrum and nowhere near the CB band. Really, Howard, in the future you might want to think twice about the accuracy of communications information found in *Shoe Re-*



Uniden's Grant XL AM/SSB mobile transceiver is a beaut, but still a brute.

pair *Quarterly*, or wherever that clipping you sent us came from!

Channel Stuff

In Metairie, La., Channel 12 is a trucker and mobile frequency on the Causeway Bridge. Channels 6 and 33 attract a strange assortment of foul-mouthed, rude, and probably illegal New Orleans taxi drivers. That information from Scott H., whose insight and frankness should be taken as good advice to any who visit the Crescent City and stray on to either of the taxi channels.

Jason A. Fowler, KB7PZZ, of Las Vegas, Nev., wrote to tell us that Channel 18 has become a family oriented channel, used by many people trying to escape from the sometimes-raunchy chatter on other channels.

Dave Kieran, Reading, Mass., advises that on Boston's north shore, the busy AM channels are 22 and 24, with considerable



This attractive installation is owned by Ron Dowdy, 7-OT-827, SSB Network member SSB-827D, and Registered Monitor KOR7CD. Ron is from Myrtle Creek, Ore.

sidebanding on 37-L. The Mass. Sidebanders Assn. uses 36-L. Of course, truckers are on AM Channel 19. Dave would like to swap QSL's with other operators. His address is: Dave Kieran, P.O. Box 374, Reading, MA 01867.

Dave comments on the poor job of enforcement the FCC is doing on the unauthorized frequencies above Channel 40. Judging from the amount of enthusiastic activity he monitors there, Dave wonders if the FCC is doing any enforcement there at all, despite somber reports, warnings and threats to the contrary. He would like to see these frequencies opened for legal comms.

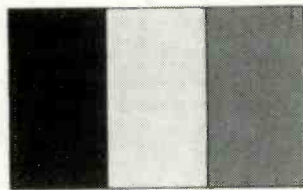
Note, Dave, that the FCC is tossing out fines like cigars at a political dinner. They must be enforcing something, somewhere. If not the outband operators, then a lot of other poor souls are sure getting the stuffing kicked out of them by Uncle Charlie!

Quiet, Please!

A note from Edward Garwol, III, KB2OMU, of Buffalo, New York takes strong opposition to the view of operating on unauthorized frequencies above CB Channel 40. This letter was written about in the May issue on page 21. It had been sent in by an operator who was an NCO on active duty in the military. Because of his sensitive job, he requested that we not publish his name. We complied with his wishes.

Edward accused him of a "lack of backbone" because he did not want us to publish his name. Edward writes that he, himself, "was a CB'er for 21 years (since he was a kid) and I played the same ball like others..." however he is now irritated by the use of unauthorized frequencies, and the use of non-type accepted transceivers. Ed suggests that this letter writer should quit

BELGIQUE



**citizen band
27 MHZ**

Phillippe, of Belgium, passed along this national CB sticker showing the Belgian flag.

complaining. Instead, he should seek to change the FCC regulations to get these frequencies made legal. Ed parrots the oft-heard stern warnings of the FCC's mighty and enforcement wrath against outbanders. He writes, "In the long run who gets hurt? You and your bank account."

In view of the FCC's continuing unwillingness to open up these frequencies for hobby use, Ed's "reformed sinner" type of approach is too simplistic. We are happy to learn that Ed saw the light. Instead of hellfire and brimstone, what Ed should have offered in his letter were details of a realistic solution as to how to finally get these frequencies reallocated for legal hobby comms.

Well intentioned, but nothing new or useful in Ed's finger shaking letter. Give it a rest, Ed.

Interesting Concept

Carl Belnap, N7UXP, wrote to tell us that he has been actively interested in CB since the 1970's, and got his ham ticket in 1986. Carl says that the ham community has recorded magazines on audio cassettes for blind operators. CB radio doesn't have anything like this for blind and visually impaired operators. Inspired by POP'COMM, and this column in particular, Carl would like to embark upon this project.

Carl proposes to feature new CB products, comments and questions from operators, CB pen friends, and anything else that would be of interest in an audio cassette format.

He knows that POP'COMM is available in a Braille edition and that this edition has a large following. That's how Carl gets our magazine. He hopes that other readers of the Braille edition will contact him and help him assess if there is sufficient interest in starting this CB project.

For the record, Carl is 37 years old. He has been blind all of his life, and interested in radio since he was only 10 years old.

Carl would like to see the FCC open up the frequencies above Channel 40 for legal comms. He encourages operating within the existing rules, but feels its time for the rules to be changed in many ways. Thinks the FCC really dropped the ball when it comes to dealing with CB radio.

He can be contacted as follows: Carl Belnap, 1460 S.W. Myrtle, Dundee, OR 97115. He's got a good idea here, hope people pick up on it.

We have had our nickel's worth for now. Send us your station photos, CB QSL's, thoughts, gripes, ideas, questions, local CB channels, and anything else you have relating to 27 MHz AM or SSB activity. We be definitely down and gone. Catch ya' on the flip-flop.

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FCC ACTIONS AFFECTING COMMUNICATIONS

Fun & Games In Fairfax

Kenneth E. Melson, United States Attorney for the Eastern District of Virginia; Richard M. Smith, Chief of the Field Operations Bureau of the Federal Communications Commission; and the United States Coast Guard, announced that Jorge Mestre, age 50, of Fairfax, Virginia, amateur radio operator NS3K, has been sentenced for knowingly and willfully communicating false distress signals in violations of 14 U.S.C. § 88(c). The false distress communications, which were made on August 7, 1992, caused the Coast Guard to make an unnecessary attempt to save lives and property.

Mestre was sentenced in U.S. District Court in Alexandria, Virginia, the Honorable Claude M. Hilton, U.S. District Court Judge, Eastern District of Virginia, Alexandria, Virginia, to one-year probation on condition of his serving 60 days home confinement. In addition he was ordered to perform 200 hours of community service and to pay a \$50 special assessment. Mestre could have received up to six years imprisonment and a fine of up to \$250,000. He claimed that the false distress incident occurred as a result of a drinking problem. He is currently employed by the Nuclear Regulatory Commission.

Mestre entered into a plea agreement with the government, under terms of which he pleaded guilty to one count of violating statute. The agreement further provided that Mestre would permanently surrender his FCC amateur radio license, dispose of his amateur radio equipment, and make immediate restitution of \$50,000 to the U.S. Coast Guard.

The false distress communications, consisting of both single band (SSB) voice and Morse Code transmissions on the Amateur Radio Service frequency of 14.313 MHz, falsely reported a sinking vessel off the Turks and Caicos Islands, British West Indies. It was also falsely reported that six persons aboard the vessel were in the water and needed to be rescued. For a period of approximately two hours during the evening of August 7, the false distress communications continued intermittently and included the internationally recognized distress message: "SOS."

The distress signals were monitored by other amateur radio operators who notified the Coast Guard and the Federal Communications Commission. The FCC's long range radio direction finding network immediately began monitoring the signals. Using the direction finding data, subsequent detailed technical analysis of tape recordings of the hoax transmissions, and information provided by other amateur radio operators, the FCC was able to later identify Mestre's radio station as the source

of the false distress messages. The subsequent testing of his radio equipment, which was seized pursuant to a federal search warrant, confirmed that his station was responsible for the hoax communications.

U.S. Coast Guard rescue policy requires that it commit the assets necessary for locating a vessel in distress and for assuring the safety of individuals aboard such a vessel. Consequently, the Coast Guard, upon receiving notification of the distress signal, immediately began a major search and rescue operation. Coast Guard cutters and aircraft were deployed to the area claimed to be the sinking vessel's location. The Coast Guard conducted an extensive search using medium endurance cutters, two HH-25 fixed wing aircraft, a HH-3 Pelican helicopter and a HH-65 Dolphin helicopter. Additionally, the Government of the Turks and Caicos Islands launched their patrol craft, and merchant marine vessels in the area were advised of a vessel in distress.

Responding to such hoax distress calls diverts crucial Coast Guard equipment and personnel that may be needed to respond to real emergencies and conduct legitimate search and rescue operations, poses unnecessary potential threats to the safety of Coast Guard personnel, and in this case, the Coast Guard expended more than \$100,000 in conducting the totally unnecessary search and rescue operations.

The United States Attorney, the Coast Guard and the FCC will continue to cooperate fully to ensure that individuals who engage in false distress signals are apprehended and prosecuted.

Novice License Examinations Placed In The Volunteer-Examiner Examination System

In the interest of integrity, simplification and efficiency, the Commission amended the amateur service rules by placing responsibility for the preparation and administration of Novice Class operator license examinations under the volunteer-examiner coordinator (VEC) system. The Commission will also allow recovery of out-of-pocket costs for coordinating and administering such examinations.

Currently, each examination for an amateur operator license, except the Novice license, is administered at a session coordinated by one of the 18 VECs. Under this system, the examination is administered by three volunteer examiners accredited by the VEC. An examination for a Novice license, however, is administered at an *ad hoc* session by two licensees selected by the examinee.

The examination elements required for

the Novice license are already being administered in the VEC system because they are also requirements for other classes of amateur operator licenses. With the advent of the codeless Technician Class, however, there has been a decline in the interest for new Novice licenses. To help standardize and simplify the license qualification process, the Commission has placed the Novice license examinations in the VEC system. Administering all amateur operator license examinations under the superior and more efficient VEC system will avoid the confusion that now exists because two fewer administration discrepancies and application errors than the Novice system. The data kept by the VECs provide a timely overview of the examination process and a means to gauge the effectiveness of the examination system. Additionally, by eliminating the separate certifications by examiners administering Novice license examinations under the *ad hoc* system, the license application Form 610 can be streamlined.

Call Sign Administrators For Club And Military Recreation Stations Established

The Commission amended its amateur service rules to provide for volunteer organizations to administer a system designed to provide special call signs to club and military recreation stations. This action was authorized by The Telecommunications Authorization Act of 1992. Organizations selected for the new system will be known as "Club and Military Recreation Station Call Sign Administrators."

An administrator must agree to accept and process all properly-completed license application forms from the trustees of club stations and from the custodians of military recreation stations without regard to race, sex, religion, national origin or membership (or lack thereof) in any amateur service organization. The organization cannot charge a fee or accept any form of reimbursement for services provided as an administrator.

Within ten days of receiving an application, an administrator must provide the FCC's licensing facility at Gettysburg, Pennsylvania, with the actual license document, including the call sign. The document must be ready for endorsement and mailing.

Each administrator will be assigned initially a block of call signs having a two-letter prefix from the NA-NZ "by three" series. An example of a block would be NA1AAA through NA0ZZZ. There are 26 possible blocks. The administrator must

issue public announcements detailing the policies and procedures of its call sign assignment system.

Experimental Actions

The Commission granted the following experimental applications:

KQ2XAT, STANFORD TELECOMMUNIS., INC., new experimental to operate on frequencies 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz for development and testing of spread spectrum radio equipment.

FX & MO: SANTA CLARA, California.

KQ2XAT, STANFORD TELECOMMUNIS., INC., new experimental to operate on frequencies 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz for demonstration of spread spectrum radios.

FX & MO: CONTINENTAL U.S.

KQ2XAX, NORTHERN TELECOM, INC., new experimental to operate on frequencies 887.250-892.080 MHz, and 5725-5850 MHz. for development of cellular product technology.

FX: BONHAN, FANNIN, Texas

KQ2XAY, KBLCOM, INC., new experimental to operate frequencies 1900-1930 MHz for field and market testing of personal communications services.

FX & MO: SAN ANTONIO, BEXAR, Texas

KQ2XBB, ROCKWELL INTERNATIONAL CORP., new experimental to operate on frequencies 824-849 MHz and 869-894 MHz to test and demonstrate chipset compatibility with IS-54-B cellular standard.

FX & MO: NEWPORT, California

KQ2XBC, UNIVERSITY OF NEVADA, new experimental to operate on frequency 160.8 MHz for conducting seismic research.

FX: ANGEL PEAK, Nevada.

KQ2XBF, UNIVERSITY OF ALASKA, new experimental to operate on frequencies 49.0-49.8 MHz for use of transmitters to conduct scientific radio research.

MO: WITHIN STATE OF ALASKA.

KQ2XBH, AMERICAN AIRLINES, INC., new experimental to operate on frequencies 1636.5-1645.0 MHz and 1535.0-1543.5 MHz for use of satellite earth station to provide communication in the event of a disaster or an emergency.

MO: CONTINENTAL U.S.

KQ2XBT, AT&T BELL LABS, new experimental to operate on frequencies 5725-5850 MHz for research of passive radio technology to aid in the development and demonstration of electronic shelf labels.

FX & MO: DULUTH, Georgia.

KQ2XBU, WESTINGHOUSE COMMUNICATIONS SERVICES, new experimental to operate on frequencies 1626.5-1646.5 MHz for research, experimentation and limited market testing of fleet data communications applications.

MO: CONTINENTAL U.S.

KQ2XCA, EPIC TECHNOLOGIES, INC., new experimental to operate on frequency 1433.92 MHz for development of a tire monitoring system

MO: CONTINENTAL U.S.

KQ2XFQ, IDB MOBILE, new experimental to operate on frequencies 1636.5-1645.5 MHz for development and enhancement of facilities in the INMARSAT system and provide demonstrations.

FX: WASHINGTON, DC.

KQ2XIE, RADIAN CORP., new experimental to operate on frequency 915.0 MHz to collect wind profile data.

FX: WITHIN STATE OF TEXAS.

KQ2XJN, RADIAN CORP., new experimental to operate on frequency 915.0 MHz to collect wind profile data.

FX: WITHIN STATE OF LOUISIANA.

KQ2XJO, MCI TELECOMMUNICATIONS, CORP., new experimental to operate on frequencies 1850.9-1990 MHz for testing of personal communications systems.

FX & MO: DALLAS, Texas.

KQ2XLE, MCI TELECOMMUNICATIONS, CORP., new experimental to operate on frequencies 1850.9-1990 MHz for testing of personal communications systems.

FX & MO: WASHINGTON, DC.

KQ2XMD, SYMBOL TECHNOLOGIES INC., new experimental to operate on frequencies 450-470 MHz for development and testing of a tracking and recording device.

FX & MO: BOHEMIA, New York.

KQ2XMS, NEW ERA COMMUNICATIONS, LTD., new experimental to operate on frequency 17625 MHz for communication essential to research project (high speed data, audio and digital TV modulation mean-transfer speed of personal computers).

FX: OXNARD, California

KQ2XMW, NEW ERA COMMUNICATIONS, LTD., new experimental to operate on frequency 17625 MHz for communication essential to research project (high speed data, audio and digital TV modulation mean-transfer speed of personal computers).

FX: CAMARAILLO, California

KQ2XND, NEW ERA COMMUNICATIONS, LTD., new experimental to operate on frequency 17625 MHz for communication essential to research project (high speed data, audio and digital TV modulation mean-transfer speed of personal computers).

FX: VENTURA, California

KQ2XNV, AMERICAN TELECASTING, INC., new experimental to operate on frequencies 2.15-2.162 MHz and 2.50-269 GHz for experimenting and testing modulation techniques to expand the number of television channels for wireless cable distributions.

FX & MO: ORLANDO, Florida.

KQ2XNV, AMERICAN TELECAST-

ING, INC., new experimental to operate on frequencies 2.15-2.162 MHz and 2.50-269 GHz for experimenting and testing modulation techniques to expand the number of television channels for wireless cable distributions.

FX & MO: COLORADO SPRINGS, Colorado.

KQ2XOA, AMERICAN TELECASTING, INC., new experimental to operate on frequencies 2.15-2.162 MHz and 2.50-269 GHz for experimenting and testing modulation techniques to expand the number of television channels for wireless cable distributions.

FX & MO: FT. MEYERS, Florida.

KQ2XOF, CITY UTILITIES OF SPRINGFIELD, new experimental to operate on frequencies 901.250 MHz and 930.250 MHz to test the functioning of a PC's system for utility related purposes and to develop technical parameters for such operations.

FX & MO: SPRINGFIELD, Missouri.

KQ2XOI, PINRANGER, (AUSTRALIA) PTY, LTD., new experimental to operate on frequency 173.2875 MHz for use of communication facilities to transmit real time data corrections to a series of mobile units.

FX: WITHIN STATE OF CALIFORNIA.

Fire Box Radio Service Rules Amended

The Commission amended Part 90 of its rules to permit Fire Radio Service eligible to use ten low-power mobile frequencies in the 72-76 MHz band, on a shared basis, for fire call box operations.

The additional frequencies will be shared with the Forest Products, Special Industrial, Railroad and Manufacturers Radio Services.

Fire call boxes are located throughout a local fire authority's operating area to provide a method for fire alarm notification and a means for monitoring vacant buildings and offices. These boxes transmit on frequencies within the 72-76 band designated for fixed use. They are limited to a transmitter output power of one watt.

The call boxes currently share frequencies with other fixed stations permitted to operate at up to 300 watts. This often causes interference with the fire call box operations.

The licensees on the ten additional frequencies must operate at one watt or less and, therefore, the potential for interference on these frequencies is much less.

Frequency Authorized For Emergency Locator Transmitters

The Commission authorized the use of the frequency 406.025 MHz for emergency locator transmitters (ELTs) on aircraft and adopted technical standards gov-

erning their operational performance.

In the 1983 Mobile World Administrative Radio Conference for the Mobile Services, the 406.0-406.1 MHz band was allocated for the exclusive use of low-power, earth-to-space emergency position indicating radiobeacons. On August 24, 1988, the Commission adopted rules authorizing the use of the frequency 406.025 MHz for emergency radiobeacons called emergency position indicating radiobeacons (EPIRBs) used on ships and adopted technical standards for such use. The action in PR Docket 92-125 adopts regulations similar to those governing EPIRBs. These EPIRBs and ELTs transmit a digital signal that is used in conjunction with an international and satellite system, COSPAS/SARSAT, to alert search and rescue (SAR) personnel and to compute the location of the EPIRB and ELT.

The rules will improve aircraft safety and improve the likelihood of rescue by providing enhanced alerting capabilities.

Class C EPIRBs To Be Phased Out

The Commission ordered the phase-out of Class C Emergency Position Indicating Radio Beacons (EPIRBs) after February 1, 1999.

EPIRBs are small, battery-powered transmitters carried on ships for the purpose of sending a distress signal. The distress signal is used both as an alarm to alert others that a ship is in distress and as a beacon to aid in its location by search and rescue personnel. There are two general classes of EPIRBs; those intended to be detected by satellite (satellite EPIRBs) and those intended to be detected by nearby ship or coast stations (Class C EPIRBs).

Satellite EPIRBs are used in conjunction with the COSPAS-SARSAT system of polar orbiting satellites that employ dedicated receivers to detect distress signals. By contrast, Class C EPIRB distress transmissions are intended to be detected by nearby ships and coast stations and cannot be detected by COSPAS-SARSAT satellites.

The Commission noted that as 1999 approaches and more and more ships install Global Maritime Distress and Safety System (GMDSS) equipment, there will be fewer ships capable of receiving Class C EPIRB distress calls, thereby drastically reducing their effectiveness. Moreover, it said, allowing continued use of these devices would give boaters a false sense of security.

To Amend The Marine And Aviation Rules To Require Registration of 406 MHz Radiobeacons

The United States Coast Guard has asked the Commission to amend Part 80 of the Marine Services rules to require registration of emergency position indicating

radiobeacons (EPIRBs) operating on frequency 406.025 MHz with the National Oceanic and Atmospheric Administration (NOAA). Additionally, comments in the Report and Order in PR Docket No. 92-125, strongly supported mandatory registration of emergency locator transmitters (ELTs) operating on the frequency 406.025 MHz in the Aviation services. Therefore, the Commission stated it would address the issue of mandatory registration for both EPIRBs and ELTs together.

The Commission would require owners of 406 MHz EPIRBs and ELTs to register information, such as name, address, type of aircraft/vessel, with NOAA. This information would be used by search and rescue personnel to identify the ship or aircraft in distress, and to select the proper rescue units and search methods. This would allow search and rescue (SAR) forces to determine if an emergency exists and result in more efficient SAR operations, more lives saved in real distress situations, and saving valuable resources when no distress exists.

Because beacon registration can provide valuable distress information to SAR personnel concerning the type and size of the aircraft/vessel, as well as prevent launching potentially dangerous missions on false distress signals, the Commission proposed to require that 406 MHz ELTs and 406 MHz EPIRBs be registered in NOAA's database.

Standards And Licensing For Aircraft Earth Stations

The Commission denied a petition by Aeronautical Radio, Inc., and the Air Transport Association of America either to clarify that the Commission's Report and Order in this docket established technical standards and equipment authorization requirements for *all* mobile earth stations operating in the upper L-band (as opposed to only Aircraft Earth Stations) or to reconsider the Report and Order and adopt such standards.

The Commission said that its Report and Order was clear on this point and the petitioner advanced no arguments or any compelling reasons to change the rules. In that decision, the Commission considered, among other things, establishing technical standards for maritime earth stations and land mobile earth stations in addition to aircraft earth stations the Commission, however, declined to do so.

The Commission noted the formation of the Mobile-Satellite Service Interagency Ad Hoc Working Group, composed of members representing the FAA, NTIA, the Coast Guard and the Commission. This group was formed to identify MSS service capabilities/functions necessary to ensure compliance with the Table of Frequency Allocations concerning the priority of distress

and safety communications in the aeronautical or maritime services. This group is mandated to seek establishment of assurances of implementation of the service capabilities/functions necessary to ensure compliance with the Table of Frequency Allocations concerning the priority of distress and safety communications in the aeronautical or maritime services. This group is mandated to seek establishment of assurances of implementation of the service capabilities/functions which it identifies. The Commission also noted that the FAA and NTIA have jointly sent a letter to the FCC recommending that it undertake a rulemaking proposing the incorporation of the letter's enclosure, "Mobile Satellite Service System and Service Capabilities/Functions," into the Commission's service rules. That action is under consideration.

Propose Amending The Exemption For Large Oceangoing Cargo And Small Passenger Vessels

The Commission proposed to revise and update the requirements of the two general exemptions from the radiotelegraph equipment requirements of the Communications Act of 1934 (Act) contained in the rules pertaining to large cargo vessels and small passenger vessels. By updating the general exemptions, the proposed changes would eliminate unnecessary regulatory burdens on several sectors of the maritime community.

The Act specifies that all passenger vessels and large oceangoing cargo vessels operating on domestic voyages along the coasts of the 48 contiguous states, not more than 150 nautical miles from the nearest land as well as small passenger vessels operating on certain domestic voyages.

The Commission believes that the current geographical limitation on the applicability of the present general exemption to voyages along the coasts of the 48 contiguous states is unnecessarily restrictive. Therefore, the Commission has proposed to amend the large cargo vessel general exemption by broadening its applicability to domestic voyages through the Panama Canal Zone, to Alaska, to Puerto Rico and along the coasts of the 48 contiguous states, not more than 150 nautical miles from the nearest land. Additionally, to reflect recent technological advances in emergency position-indicating radiobeacons (EPIRBs) the Commission has proposed to add a condition to the general exemption that vessels carry a satellite EPIRB.

The FCC recently adopted rules implementing the Global Maritime Distress and Safety System (GMDSS). The Commission determined that GMDSS offered significant advantages over the current marine manual Morse code radiotelegraph capabilities. As a result, the Commission proposed to add GMDSS equipment to the list

of acceptable communications alternatives specified under the general exemption. This will update the exemption without having to purchase unnecessary equipment.

Further, the Commission has proposed broadening the current general exemption for small passenger vessels to include certain short international voyages in the regions from which it most frequently receives such individual exemption requests (the waters contiguous to the coasts of Southern California and Baja California, Mexico, the Pacific Northwest and the Caribbean Sea), subject to the same conditions contained in the current general exemption. The Commission is asking for specific comment on whether other areas should be added or whether greater distances from land should be included for vessels equipped with a medium frequency radiotelephone equipment. The Commission also proposed a minor editorial clarification of the current general exemption for small passenger vessels operated on domestic voyages that would specify the applicable sections of the rules and would group it with similar exemptions.

Petitions For Reconsideration Concerning The Motion Picture Service

The Commission denied a petition for

reconsideration filed by Capital Cities /ABC, Inc., and granted, in part, the petition for reconsideration filed by the Alliance of Motion Picture and Television Producers (AMPTP), of its Report and Order in PR Docket No. 91-92 that amended Part 90 of the rules and regulations concerning eligibility in the Motion Picture Radio Service.

In the Report and Order issued last year, the Commission renamed the Motion Picture Radio Service the Video Production Radio Service (VPRS), and expanded the eligibility for this service to include the various program distribution technologies developed since its inception. The VPRS continues to serve entities engaged in on-location film production for motion picture theater distribution, but now includes: 1) individuals involved in the videotaping or filming of programs produced for final distribution to television, cable or other mass distribution outlets; 2) entities producing educational or training films not produced for movie theater, television or cable distribution outlets; 3) individuals providing supporting services that facilitate program production by VPRS eligibles.

In its petition, Cap Cities argued that the FCC should permit itinerant videotape program producers to employ the VPRS to coordinate the taping of an event without regard to whether the taped material is to be transmitted to the public more than 48 hours after the event. Cap Cities also requested clarification of the Order's limita-

tion that prohibits television and cable entities from using the VPRS to coordinate live transmission of an event. The Commission rejected Cap Cities' arguments and thus, denied its petition for reconsideration.

In its petition, AMPTP argued that eligibility for individuals providing supporting services should be limited to "production-oriented" services, and should not include short-term, de minimis support services such as the provision of sandwiches for production companies. AMPTP also requested that eligible entities be defined more precisely in the rule to include producers of music videos and commercials, and that the name of the service was changed in the Order without notice or opportunity for comment.

The Commission concluded that the name should reflect all eligibles and should not indicate a bias toward any technology. Therefore, the Commission has renamed the service the "Film and Video Production Radio Service (FVRPS)." The Commission agreed with AMPTP that only entities providing technical services directly related to the productions should be eligible to use the FVRPS.

However, the Commission declined to enumerate the additional entities in the amended rule as suggested by AMPTP. The Commission said that AMPTP has provided no new arguments that would persuade it to change its original decision on this matter. ■

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Beaming In (from page 4)

yourself. Hopefully, we can find someone just right for this. At that point, we can let this column become a reality.

Speaking of Reality

"Virtual Reality" (VR) has been getting a lot of attention of late. Although I had learned what this new technology was in the news media, it wasn't until I had seen it dramatized in the films *Total Recall* and *The Lawnmower Man* that it sparked more than my casual interest. After that, I made the opportunity of actually experiencing VR. I found VR to be thrilling, not only for what it is, but for the many things it will become as additional applications for VR are pursued. More than a game or recreational gimmick, VR has already been demonstrated to have military, teaching, surgical, diagnostic, therapeutic, engineering, architectural, artistic, sports, commercial, and space exploration roles and potentials. Other areas are being researched, too.

The computer-driven technology required to make VR happen is sophisticated and complex. You put on the VR goggles or headpiece along with attachments to your hands. Then you are able to participate in simulated events and experiences that seem to take place in an alter-

nate reality that may or may not represent a place that actually exists.

After my VR experience an odd thought flashed through my mind as I was going over my VR notes. I thought of Orson Welles' Mercury Theatre production of *The War of The Worlds* that was broadcast in 1938 over the CBS radio network.

Welles' program was aired 55 years ago. Those who heard the broadcast were whipped into a state of panic. From coast-to-coast, the public was certain that Earth was being invaded by hostile creatures from Mars. It scared the hell out of America, made world headlines, and became broadcasting history.

After that, many radio programs got the idea that it was possible to similarly manipulate their audiences so that they would better enjoy everything in (as one observer put it) "in the theatre of the mind." Kids' programs of the 1940's and later, like *Let's Pretend*, *The Green Hornet*, and *The Shadow* were examples I recall from my own early radio experience. And I remember there were afternoon soap operas.

Adult radio programs from that era, like *Inner Sanctum* and *Suspense* were so scary that listening to them in a dark or dimly lit room were tried only by the bravest of souls.

Audiences easily visualized what Jack Benny's basement vault looked like, and how each resident of Allen's Alley looked. Sunday nights the entire nation visited these places along with the comedians. Audiences believed these places really existed — like Fibber McGee's junk-filled hall closet that loudly spilled out its contents every week when the door was opened.

Thanks to the clever use of writing acting, music, and sound effects, the people, places, and events of radio dramas became real to audiences. The characters had faces, fictitious houses had rooms filled with furniture, and imaginary streets had traffic. Tom Palmer's book *Never Trust A Calm Dog* (Harper Collins, New York, 1990) quoted Steven M. Kelsman, New York City high school resource coordinator, as observing, "The sense of hearing is the easiest one to trick." This was the secret of why radio drama was so effective.

Listeners sat by a radio completely immersed in these programs; feeling, seeing, and experiencing all that was going on. Hearing heard a car, they could visualize its color, almost catch the exhaust odors. People listening to a good radio program became so involved that they seldom spoke during the show for fear of ruining the special mood. In fact, radio drama was an early and effective low-tech precursor of "Virtual Reality."

I don't believe most present-day adults still have the ability to fully enjoy radio drama. I have certainly lost most of it myself. Listen to the tapes of those classic old

radio programs. They are no less interesting, but they don't have the same power to summon up those vivid images of old. It's not their fault, it's ours.

Color TV, videos, and films have atrophied this area of our waking creative imaginations. We can still dream while asleep, but the general public is no longer required to generate its own internal images to accompany the audio inputs from outside sources. All the images needed to go along with dramas and sitcoms have very conveniently been pre-packaged and spoon fed to us for more than forty years. All you and I get when we watch a TV show is someone else's perception of what people, things, places, and events look like. As a result, we don't even need to sit there quietly while the TV set is on. Family members chat, work, study, read, eat, and wander around while watching TV.

At this rate, in a few years, when people go to sleep, their dreams will be interrupted every fifteen minutes for commercial breaks.

Therefore, I regard the new high-tech VR as a fine way to perk up the inner visualization capabilities that Orson Welles' listeners had in 1938. Fifty years ago, this could be activated using only a tinny sounding \$10 AM table radio. OK, so now it's going to take millions of dollars in R&D, plus fancy computer-driven technology to reach this fading ability. But it's worth it. Remember that when we stopped being hunters, our keen senses of smell and hearing substantially diminished. Some claim that disuse also cost mankind its telepathic abilities. Like they say, use it or lose it.

VR demands a person's complete attention. With VR, a person is a totally immersed, functioning, interactive participant in an audio/visual/spatial experience. VR goes far beyond pumping up or replacing dulled imaginations. You can't help but use your imagination because VR participants control their experiences.

VR experiences take place in an apparent reality called *cyberspace*. When you go there, communications makes it possible to be accompanied by people in other cities, with all and interacting with one another. Landline or radio comms could let you play tennis with someone a thousand miles away. A scientist in a wheelchair could explore the surface of the Moon, or ski in the Alps with his wife. The executives of a Chicago company could all visit their new facility in San Diego via VR to plan the office layout.

This spectacular technology is being expanded into many exciting and fantastic realms of communications, science, industry, and the arts.

Think what Orson Welles might have been able to do with this technology in 1938! Still, I like to think that Welles got the ball rolling that brought us to this place. ■

Antennas (from page 27)

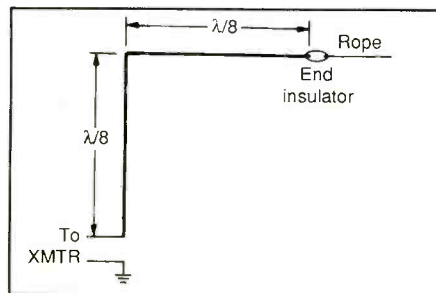


Fig. 3. Inverted-L antenna

One popular method of construction is to use a tower for the vertical section, and a run of wire for the horizontal section. If you already have a 60-foot tower to accommodate a beam antenna used on higher frequencies, then it is relatively easy to build an inverted-L antenna for 160-meters.

Recommended Reading

1. Receiving Antenna Handbook, Joseph J. Carr, HighText Publications, Inc. (7128 Miramar Road, Suite 15, San Diego, CA, 92121; 619-693-5900).

2. Practical Antenna Handbook, Joseph J. Carr, TAB/McGraw-Hill, Cat. No. 3270, (Blue Ridge Summit, PA 17294; 1-800-233-1128).

3. Low-Band DXing, John Devoldere, American Radio Relay League (Newington, CT, 1988). ■

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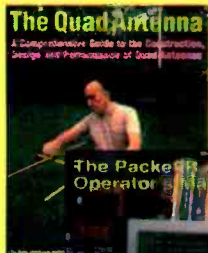


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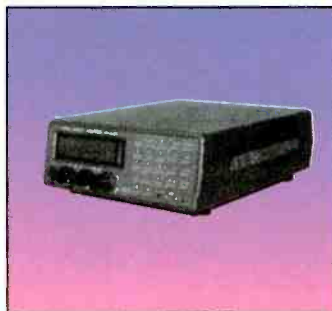


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