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Great Lakes Ship Monitoring
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The Last of WNYS' "Touch of Class" by Don Bishop

Every Sunday afternoon for the past 22 years, Frederick Stark has recreated a classical music program from the 1960s on his radio station. Problem is, Stark is not licensed to transmit, except as an amateur radio operator. So, although WNYS was the longest-running mediumwave pirate in the U.S., the FCC shut it down at last. Don Bishop tells Fred's story.

Monitoring Times Convention

The convention of the year is building momentum as exciting events are planned and more radio personalities respond; Look for all the details in this update.

DX'ers Discussion

Have you ever looked with envy at the "DXperts" and wished you could ask them how they do it? Were they ever beginners? Do they have special equipment or techniques that enabled them to become so well-versed in radio monitoring?

MT has set up a panel of well-known experts and asked them these very questions for you in this feature on "The Secret to Hearing More Stations."

FM DXing by Karl Zuk

It's an unpredictable, though not unusual, phenomenon -- One day you'll tune across the FM dial and hear a station you've never noticed there before. This occurrence, known as "skip," has given birth to a hobby known as FM DXing -- Logging, identifying and verifying the reception of stations which are out of the normal reception range of your receiver.

Karl Zuk helps you map out your strategy for catching stations hundreds, perhaps even thousands, of miles away!

Communications Expert to the White House by Michael Esposito

Don Pitts took over White House telecommunications during the administration of Calvin Coolidge, when its link with the outside world was a pull-cord switchboard. By the time he retired in 1971, he had served eight Presidents and had designed an emergency strategy that could put more than one hundred people in touch with each other on one conference call in 90 seconds.

That's just a foretaste of the tales Don Pitts has to tell of his varied career in Washington, as reported by Michael Esposito.

ON THE COVER: Andrews Air Force Base, part of the "Mystic Star" network
Scanner Programming Basics
by Bob Kay

Don't let that new scanner intimidate you with its "mega-banks" of memory! Monitoring Times' quick tutorial will help you get and keep control of those 400 memory channels so they work for you.

And more ...

Not your usual Yuppie station, WEXT, Next-FM, strives to play the best of a great range of music. Tune in to Karl Zuk's American BandScan on page 50 and see what makes its listeners in Poughkeepsie, New York, so loyal. Maybe you'd like to give broadcasting a try yourself; Karl tells you who's selling and who's buying!

If you're satisfied sticking to your small-scale operation, why not build your own antenna? Uncle Skip's Beginners' Corner (p.38) and Clem Small's Antenna Topics (p.96) both have simple antenna projects for the ham or SWL this month. You're a scanner buff, too? Then Doug DeMaw has a project for you in his VHF/UHF preamp (p.92).

Wondering what to listen to? Rod Pearson presents a good selection of federal frequencies from central Texas and Miami, Florida (p.40). James Hay can get you started listening to and identifying ships on the Great Lakes (p.42).

If you find satellite dish set-ups to be fascinating but confusing, you'll be interested in the first weekly TVRO user's net. Ken Reitz tells all about it in his Satellite TV column on page 48. As an added bonus he'll let you in on a new source of compact disk quality music with no interruptions.

Reviews this month include the Regency INF-50 scanner and AIE Tone Finder (p.88) and the DAK MR-101 portable shortwave radio (p.86).

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Thanks for all of the great feedback on the first annual Monitoring Times Convention, October 5, 6 and 7 in Knoxville, Tennessee. The staff here is quite excited about having the chance to meet everyone and we've got all kinds of things cooked up.

Ian McFarland of Radio Canada International will be hosting a number of events and will be recording an edition of his "Shortwave Listener's Forum" program at the convention.

Also in attendance will be Radio New York International's Alan Weiner. Alan made international headlines when he parked a ship in international waters and challenged the American system of broadcasting. He is currently an applicant for an international shortwave broadcast license.

Bob Kay has been talking about having a "bug" hunt, so bring your scanners. Ike Kershner will be putting a special events ham station on the air and people arriving by car will be able to get directions by tuning in 147.40. The talk-in will be operated by the Radio Amateur Club of Knoxville.

There will be exhibits. There will be a fleamarket. The IRCA has invited you to their DXpedition Sunday night. The convention will even have its own radio station broadcasting on 530 kHz for the duration of the event! This is going to be great so be sure to get your registration in now. And we'll see you in Knoxville!

Here's some more fun you can have with radio. On July 14th, a group of radio enthusiasts in Florida are going to launch a high altitude, radio-equipped, balloon, from the Crystal River Airport. The time of the launch will be 1300 UTC (0900 EDT). Alternate launch dates are July 15 and 21. The flight of the balloon is expect to last two hours and reach 100,000 feet before returning to earth by parachute.

The payload will consist of a fast scan amateur television transmitter operating on 434.000 MHz. There will also be a 1 watt ID beacon on 144.340 MHz. The beacon will include altitude, internal and external air temperature, as well as the ID K4BV in Morse code.

It's estimated that signals from the balloon will be audible for 500 miles. In addition, you might want to tune in mission control on 71555 kHz LSB. Sounds like fun. Mark your calendar.

"Did you see the Christian Science Monitor Newsletter, Monitor Month?" asks Ken Martle. "In it they talk about an interview they had with Radio Moscow's Vladimir Posner. Now get this. They call him a 'renown journalist.' I almost fell off my chair. I listened to Mr. Posner for years on the shortwaves and let me assure you, he is no journalist."

Mr. Posner would like very much for you to think of him as a journalist and is annoyed that some in the West "have branded me a propagandist." He sincerely hopes that someday, Americans will come to see him "as a normal, authentic, honest person."

So does Mr. Coffee, Juan Valdez and Betty Crocker. Mr. Posner is, of course, a public relations specialist and a very good one to have hooked our worthy colleagues at the Christian Science Monitor. See the review of Posner's new book, Parading Illusions, in this issue of Monitoring Times.

Vladimir Posner -- Working for Radio Moscow doesn't make him a journalist.

Art Loftus of Islington, Ontario, writes in with this simple plea: "Please tell me what I am picking up on 4885 kHz at approximately 0445 UTC. A lady comes on and begins repeating the words "de, devet, bosum, nedla, nul, sadam and ozar." I am spelling these words as I hear them. No one seems to know the language."

We do not know either; however, on a similar frequency we recently heard a high pitched voice repeat the words "oo ee, oo ah ah, wing, walla walla bing bang." It turned out to be Dave Seville and the Chipmunks.

Sorry. Just a bit of silliness there. Anyone know who this might be?

"I was wondering how long it would be before someone would mention the conduct of amateur radio operators on 14.313 MHz," writes William Ritz of Cleveland, Ohio. (See "Closing Comments," March 1990 Monitoring Times.) "It's like a sick soap opera -- it's bad, it's predictable, but you tune in anyway.

When I first entered the hobby of radio monitoring back in 1959, I aspired to be an amateur radio operator some day. In the same way that I did not want to be identified with C.B. radio in the 1970s, I do not wish now to be a member of the amateur radio fraternity. Code or no-code, only an idiot would aspire to be a ham now."

"I can't believe the shock and indignation that filled your 'Closing Comments' editorial in March. You folk are living in the past. Remember all the hype that hams used to feed us during the '50s?" asks Ken Peters. "You know, ham radio operators as stalwart members of the community, ready in an instant to assist their neighbors in time of disaster?"

"Well, you don't have to listen to the fracas on 14.313 MHz to get a real feel for ham radio. Those days are gone. Tune in anywhere. The ham bands are a refuge for long-winded bores with nothing else to do with [Continued on page 100]
Electronic Blizzard Brings Down U.S. Planes

The scene is Libya, 1986. High in the sky, an armada of 33 high-tech U.S. fighter planes begin their attack. But something is wrong. One plane, carrying two crew members, crashes. Of the surviving 32 planes -- including five F-111's -- seven are unable to get off even a single shot.

The probable reason: an electronic blizzard that, according to Pentagon officials, came not from the Libyans but from high-powered U.S. military transmitters that filled the night sky with electronic signals designed to jam Libya's anti-aircraft defenses, hunt down targets, guide weapons, and communicate.

According to Air Force Col. Charles Quisenberry, during the Libyan strike, U.S. weapons "were interfering with each other." Numerous U.S. weapons, some of which were electronically guided, went astray during the attack, damaging three foreign embassies and diplomatic residences, including those of France and Japan.

Further, says Quisenberry, some of this interference can "actually affect the aircraft's flight controls as well as its fuel controls," either putting a plane into an uncontrolled turn or dive or turning off its fuel supply.

The Pentagon recently finished a classified seven-month investigation of the problem which led officials to order a more detailed three-year probe. Preliminary studies of one war plan shows "thousands of [frequency] conflicts" among weapons. Says Quisenberry, "There are major, major problems out there..."

OTH-B Radar to the Rescue

With three engines out and their aircraft beyond the range of conventional radar, a Cubana Airlines crew struggled to control their plane. Responding to a distress call from the crippled airliner over the North Atlantic, controllers at Gander Oceanic Air Traffic Control in Newfoundland, could not locate the stricken aircraft.

Fortunately for the Cubans, GE Aerospace was in the process of running a full test on their OTH-B (Over the Horizon) radar. Using the radar's unique ability to automatically match filed flight plans and actual aircraft tracks, OTH-B operators had already locked on to an aircraft that did not correlate with a flight plan and flashed the Cuban airliner's actual location to controllers at Gander, who were able to guide the plane to a safe landing in Newfoundland. The Cuban aircraft was on a Havana-to-Belgium flight.

Four Antennas are Better than One

Engineers from Blaupunkt have applied a high-tech solution to an age-old problem: getting stations to come better on the car radio. The answer is phased-array steerable antenna technology. Known as the auto-directional system, the ADA not only eliminates the need for an external rod antenna but also allows the antenna reception pattern to be electronically steered in the direction of the strongest signal path.

It's not as complicated as it seems. Engineers mount four simple foil antennas inside each of the car's bumpers, one on each corner of the car. According to Electronic Engineering Times, the key to the system is a

Friend or foe, OTHB will find you when no one else can.

"signal monitoring computer that analyzes the individual antenna levels, rotating the array in search of the best possible direction to steer the array. Rotation and steering are inaudible to the listener.

There is no word as to the availability of the system.

Radio Antorcha Martiana Closed

Long-time shortwave listeners will remember the exploits of the fiery anti-Cuban clandestine station Radio Antorcha Martiana. It was eventually closed by FCC officials in 1982 after its location was discovered in Florida. According to the FCC's Miami Field Operations Bureau, Radio Antorcha Martiana has once again been on the air -- and has once again been closed.

Eloy Escagedo of Miami, Florida, was fined $1,000.00 for illegally operating on 7350 kHz. The station was, according to press releases, "used to transmit commentary and music."

On the Other Side...

Anti-pirate enforcement activity by the FCC on the east coast now shows signs of activity on the west coast. There, the Los Angeles office of
the FCC shut down an unlicensed pirate broadcast station identified as "Zodiac."

Investigators, using "the monitoring network," located the station at the residence of James Keul of Anaheim. He was fined $1,000.00 for operating on 7416 kHz.

Emergency Boxes Go Cellular

Because New York City's emergency call boxes have "deteriorated beyond the point of cost-effective repair," Police Commissioned Lee Brown said the department will replace them with cellular phones. Over forty percent of the old call boxes were broken.

After testing 20 solar-powered cellular emergency phone call boxes, the city is now planning to install some 850 more city wide. At a cost of $3,447.00 each the phones are expected to cost the city some 2.9 million in the end.

The phones provide a direct link to the 911-emergency dispatching system already in place in the Big Apple.

Chinese Ship Launched

Entertainer Yves Montand and Chinese student leader Wu'er Kaixi christened a 1,200-ton boat that will soon begin transmitting pro-democracy radio broadcasts into China from international waters. The 262-foot boat, formerly a British oceanographic vessel, was renamed Goddess of Democracy after the statue was erected by Chinese students in Beijing's Tiananmen Square last year.

The project is sponsored by the French magazine Actuel, with assistance from news publications in several other countries. The operating budget is estimated at some $1.4 million.

Cuba: No Listening to Foreign Stations

A Soviet Newspaper article, in a rare attack on Moscow's long-standing Caribbean ally, gave some insight into Cuban society. Vladimir Orlov, writing in the weekly Moscow News, said that "Cuban society is more stable than in the majority of other socialist countries... thanks to a network of committees for the defense of the revolution which permeate the entire country."

Such committees, he continued, track down people listening to foreign radio stations or who hold "politically immature conversations," and work closely with the security services, Orlov wrote.

So now you know where not to plan your next DXpedition.

Romania Was Into Electronics

Romanian monitoring centers, sealed since the overthrow of Nicolae Ceausescu last December 22, were opened by the army. According to a Reuters report, the Ceausescu regime was into bugging in a big way.

When officials opened the doors of the secret taping centers, they revealed banks of tape recorders and control desks. Conversations were allegedly monitored from all over Bucharest.

Soviets Use Sex to Slow Down Polish Protest

The Kremlin used a "secret weapon" in an attempt to slow a mass Soviet demonstration in favor of democracy. The weapon, which was about as low-tech as you can get, was a pornographic movie.

Soviet chiefs ordered the television screening of a Polish film, "The Sex Mission," to coincide with an anti-Communist protest march that the Kremlin feared would turn violent. The film featured steamy nude scenes of the kind rarely seen on Soviet television.

According reports from London, analysts suggest that the ploy may have worked. Organizers had hoped for some 500,000 people to turn out. Estimates of the crowd were as low as 100,000 with hundreds of thousands of Soviet citizens apparently remaining glued to their TV sets.

Democracy, it seems, can wait -- for some things.

MTV Invades Czechoslovakia, Poland

The walls between East and West continue to fall. First was the invasion of U.S. "men's" magazines into the eastern bloc; now comes MTV, the rock 'n roll music television channel. According to a report in the Boston Globe, MTV Europe launched with 20,000 subscribers in Czechoslovakia and 5,000 in Poland this month.

Viewers in the two nations will receive the music television service 24 hours a day from the Astra satellite via a home dish.

MTV recently added Yugoslavia and Hungary to its global territories and made its first live feed to East Germany in November.

Phony Distress Call Spells Trouble for Teens

The party is over for three New Buffalo, Indiana, high school students who are accused of making a false distress message. According to police chief Ed Caid, the youths, ages 16, 17 and 18, admitted to sending signals claiming the "Party Boat" was sinking in Lake Michigan.

The call, which set off a futile search involving rescue boats and two helicopters, was placed on marine channel Q6, an international distress frequency for water craft.

In addition to criminal charges, the Coast Guard has indicated that it intends to file suit against the 17-and 18-year old and the juvenile's family in an effort to recover the cost of its rescue operation.
The Last of WNYS' "TOUCH OF CLASS"

The United States' oldest mediumwave pirate ends 22 years of weekly broadcasts and fades to dead air on December 17, 1989.

Frederick K. Stark's time tunnel sucked in radio airwaves from the 1960s and breathed them out into the light of New York's Hudson Valley. Every Sunday for the past 22 years, Stark faithfully broadcast a radio program that he listened to as a youngster drawn to classical music. That program, also broadcast on Sundays, was transmitted over the 1,000 watt facilities of Rensselaer Polytechnic Institute's 1330 kHz, WHAZ.

Music and Radio

"I listened to WHAZ when I was small," said Stark, who is now 37 years old. "I learned a lot of classical music from that station."

"I wanted to be a conductor and composer. I wanted to make records for the young person like myself who rarely gets to go to concerts. I wouldn't look for big publicity, just to be a recording artist who presents classics to shut-ins and people who take time to listen," said Stark.

"I play the violin. We even have a piano in the house. I compose some music. I wrote a serenade for string. Someday I'll write a symphony. It takes me a long time, the mechanics of getting it down. But I do have the ideas, and I pick up a melody like that. I wanted to be a composer -- conductor -- and then the radio bug hit me."

DXing

Radio gripped Stark by the ears and pulled him into DXing, a hobby in which listeners strive to hear stations as far away and in as many locations as possible. "I was nine or ten years old when I got a shortwave receiver, the Star Roamer by Knight-kit. It was only half-built when I turned it on. The first station I picked up was Radio Berlin International. I was so hungry for shortwave."

Stark soon found he got more pleasure out of DXing the AM band than the shortwave frequencies. With careful listening on 891 kHz, he heard an Algerian station, "the most distant station I've heard. But what I'm trying to pick up is California. Years ago, people tell me, KFI, Los Angeles, was received here. I always wanted to pick up the west coast. The most distant station I ever picked up as a preteenager was KSL, Salt Lake City."

But listening wasn't the only thing on Stark's mind. "I've always wanted to own a licensed station. But it is basically impossible to go through proper channels to obtain a license. It takes big bucks -- megabucks -- to start a station."

Dream Channels

Over the years, Stark's dreams were channeled into other achievements. Instead of becoming a composer-conductor, he learned to play instruments and amassed a huge library of classical music. Instead of starting a licensed broadcast station, he studied electronics, became a two-way radio technician, earned commercial and amateur radio operator licenses, and built WNYS, where his dreams were realized eight hours every Sunday.

"Urania" Brand

Stark began to build his own equipment, first a console, an audio processor and then line amplifiers. "All the equipment was designed and built in-house, except the reel-to-reel and cartridge tape machines and the turntables. 'Urania' was to have been my brand name, the top-shelf name in broadcast equipment. A lot of today's transmitters are not designed by audiophiles. The WNYS equipment was set up by an audiophile -- me."

First operating from his parent's house, Stark used his transmitter and studio equipment as a pirate broadcaster. His call letters and frequencies changed over the years to avoid using letters assigned by the FCC to someone else and to dodge interference.

What once was WNYW on 650 kHz and 640 kHz became WNYS on 1000 kHz.

During his service in the army, Stark was stationed at a base nearby. He came home almost every weekend to broadcast. He did the same while attending college.

After he married, Stark and his wife bought the house across the street from his parents' house, and WNYS moved in with them. When a new station forced WNYS off 640 kHz, Stark relied on his AM DXing experience to pick 1000 kHz. "I know the AM band allocations like the back of my hand. I know where to broadcast so as to not interfere with another station. The 1000 kHz dial position is clear during the day. At night -- WNYS never was on at night -- WLUP, Chicago, broadcasts on that frequency."

Stark said a 'top hat' antenna boosted the station's coverage. "The 'top hat' part of the antenna is four horizontal wires suspended between two towers," he explained. "One of those wires connect in the center to a vertical wire that drops to an antenna tuning unit at ground level. Copper cables and rods buried beneath the earth under the antenna form a ground system. I always say you never have enough ground."

"WHAZ," Stark said, "had a top hat antenna during its early years."

WHAZ "Returns"

"I longed to bring back the times of WHAZ," Stark said. "I built a homemade studio and massive classical music library recreated WHAZ's Air Magazine and Afternoon Concert programs."

His 75-watt transmitter broadcast as WHAZ at 1000 kHz on the AM dial - broadcasts that continued for the next 22 years. "One of our motto was "WHAZ, a touch of class in the Hudson Valley, West Taghkonkic, New York."

Sunday Morning hangover Symphony filled the 9 a.m. to noon period. It was "the perfect program to help one recover from Saturday night, if it's been one of those nights." Symphony was not patterned after WHAZ; the Troy station had no broadcast during that period.

"The afternoon shift at my station was exactly the same as WHAZ's," Stark explained, "including the music." Air Magazine included rebroadcasts of programs from "the golden age" of radio.

"Some of the listeners collected old radios."

WNYS Sunday program schedule:

9 am -- "Morning Hangover Symphony"
Host: Alex Hazeltine
Noon -- "Air Magazine"
Host: William Mathias
Rebroadcasts of programs originally aired during "the golden age" of radio.
2 pm -- "Afternoon Air"
Host: William Mathias
5 pm -- Sign-off
Fred Stark, a radio amateur and two-way radio service technician, set the record as the longest-running medium wave pirate broadcaster in the United States.

Stark said, "They would fire up their old radios and hear shows like Fibber McGee and Molly and Amos and Andy on their Atwater Kent and Crosley receivers. They were overjoyed when I carried the old radio shows.

Air Magazine's introductory theme music was Typewriter by Leroy Anderson, performed by Arthur Fiedler and the Boston Pops. The program closed with a short instrumental theme.

At 2 p.m., Stark, as William Mathias, hosted the Afternoon Concert program of classical music. "No pretty-boy performances, such as Zuben Mehta and Leonard Slatkin," he said.

Afternoon Concert shifted its emphasis at 4 p.m. with a pops concert, including collectors' items on the Epic label and recordings by Arthur Fiedler and the Boston Pops. One more echo from WHAZ at three minutes to five, as Stark played as the closing theme the second movement of Mahler's first symphony, the same closing theme that WHAZ used in the 1960s. The sign-off played at 5 p.m. and WNYS left the air at 5:05.

WNYS avoided detection by the FCC for a remarkably long time. Said Joe Reilly, president of the New York State Broadcasters Association, "This has been going on for ten years. This guy is a legend in that area of the state."

Stark came to Reilly's attention when a radio listener blew the whistle on WNYS, asking Reilly to tell the FCC. "A listener wrote a letter describing the pirate station as a nuisance. He asked what could be done about it."

Reilly called Kevin McKeon, a friend of his at the FCC's New York office. McKeon, a public affairs specialist, told Reilly to see if he could get a tape recording of a WNYS broadcast. "I told the listener what McKeon said, and the listener recorded WNYS. The listener sent me the tape and I sent it to the FCC. McKeon called back and said, 'You got one. Where does your listener friend say the pirate station is?' Then the FCC sent a mobile unit to go out and get the guy."

Who Blew the Whistle?

The listener wants his identity kept secret. Regulatory agency administrative actions differ from judicial proceedings in that complainants' identities are not revealed if they request privacy. But few listeners know state broadcasting associations exist. Stark believes the complainant represents a broadcast station licensee who became annoyed with WNYS and maybe jealous of its classical programming. Pirates have pride:

"We had the finest fidelity on the air possible for an AM station. Our distortion was extremely low. You didn't hear any. We had a wide band of audio. The highs sounded like FM. We had the deepest bass, the highest highs -- a very clean tube-like sound, which makes sense because everything was tubes," Stark boasted.

"A listener called up and told me about another station some distance away playing classical music. "How do you know you're tuned to our station?" I asked. 'Because your sounds better,' he answered. Our fidelity speaks for itself. That was one thing we had to offer. You normally don't hear much talk about fidelity on AM."

Clinging to 1000 kHz

The "other classical station" is WKZE, 1020 kHz, a station that broadcasts classical music for an hour or two on Sundays. It began broadcasting October 27, 1986, with 250 watts and upped its power to 2,500 watts in March 1989. Stark's failure to give WKZE more clearance by moving WNYS to another frequency may have led to his downfall.

Sometime after WKZE boosted its power, a deficiency in its studio-to-transmitter link developed. The STL receiver did not filter the 19 kHz stereo pilot signal, instead passing it to the AM transmitter. Modulated by the 19 kHz pilot, WKZE's transmitter emitted spurious signals at 1001 kHz and 1039 kHz, 19 kHz to either side of its 1020 kHz carrier frequency. The spurious signal at 1001 kHz interfered with WNYS.

"When I was off the air during the week, I would listen in the early morning to WLUP on 1000 kHz," Stark said. "WKZE would go on the air about 6:45 a.m. to 7 a.m. As soon as they threw their carrier on, the tone would come right in."

He thinks one or more WNYS listeners may have figured out the problem and complained to WKZE.

Those complaints, he believes, may have led to a WKZE complaint against WNYS. But WKZE General Manager Drew Wilder said he heard about WNYS only after it was closed down. The station's contract chief engineer, Dave Groth, said he did not complain to the broadcaster's association or anyone else about Stark. Groth confirmed the stereo pilot signal problem, which he repaired by installing extra filters on the STL receiver.

"I didn't realize WKZE was broadcasting spurious signals until I got an anonymous call saying there was a beat frequency between WKZE and this other station that went off when they went off the air," Groth said. "That's when I located the pirate. Actually he was playing good music, classical, which is unusual. I do not condone anything illegal. But it is refreshing to hear a classical format on AM. It is illegal, but it is an alternative program. Pirates often have programs that legal stations cannot or will not play."

Groth said if a pirate station's broadcast ever
would interfere with any of his client stations' signals, he would take action. "We had listeners saying there were beat frequencies," he said, "but the beat frequencies affected WNYS, not WKZE. "The New York FCC did pay Stark a visit. I had made no calls. I had not taken any action. It is possible the FCC, monitoring the bands, found WNYS themselves."

Groth and Stark are acquainted with one another because Groth keeps the keys to a radio communications repeater site that Stark sometimes visits as part of his job as a two-way radio service technician. But Groth said he did not know Stark was the operator of WNYS until the bust made local news.

"Is there more to the listener's complaint than meets the eye?" broadcast association president Joe Reilly asked. "I don't know. The listener may not have agreed with the programming Stark was putting on. I just got the letter and did what I normally do. The association has a working relationship with the FCC. We interface with the broadcasters on some issues. When the FCC gets a complaint against a broadcaster, sometimes the agency asks us to call the broadcaster. We've been able to defuse a lot of situations with that relationship. Stations get defensive when the FCC calls."

When WNYS was on the air, "the listener claimed he couldn't get his regular radio station," Reilly said. "The interference was intermittent. I don't know why he didn't write the FCC. I've had other calls about pirates. But this is the first association has ever taken action on. I've had calls but listeners generally don't follow through. In this case, the letter was well written and the listener followed through."

**Interference to 1010 kHz**

An FCC press release cited interference WNYS caused to "a licensed station on 1010 kHz." The nearest such station is WINS, a 50,000-watt station in New York. According to Stark: "Number one, you can't hear WINS in this part of the state. Number two, even nearer to New York City, WINS does not come in well, because of its directional antenna. In Poughkeepsie, where I work, WINS does not come in well. Number three, if you're down the road and you're trying to listen to 1010 kHz, you're going to get some splatter."

So what. None of this matters to an FCC engineer, who will close a pirate station whether it causes interference or not.

**The Day of Reckoning**

Thus, on December 17, 1989, at about 2 p.m., FCC electronics engineer Judah Mansbach traced the WNYS signal to Stark's house. "The doorbell rang," Stark said. "I thought to myself, 'It must be Jehovah's Witnesses or somebody. I'll go outside and chase them away.'"

It was Mansbach ringing the bell at the front door. "I usually don't use the front door," Stark said. "Come over to the side door," I told him." He did.

"Hello, I've been listening to your station," he said.

"Oh, and who are you?" I asked.

"I'm the FCC," he said.

"Do you have ID?" I asked. You always ask for ID when the FCC comes," Stark advised.

"He showed ID and asked, 'May I come in?'"

"Being as I'm easygoing, I invited him in. He came in, saw the setup, took notes and that was that. He said that it was wrong, that I was a pirate radio station and it is against the law to do this. Then we went downstairs and looked at the transmitter over.

"It was December 17, so we were playing some Christmas music, Good King Wenceslas by Percy Faith. That side of the album ended and we faded down and there was dead air for five minutes while he checked everything over. That was the last thing we had on the air."

"It's a shame, because I had a nice Christmas program planned for the day before Christmas, which was the Sunday of the following weekend."

Stark said he asked Mansbach whether he wanted to take the transmitter, Mansbach said no. "He asked me what other licenses I had; I told him about my commercial and amateur licenses." Stark said Mansbach told him the FCC would get in touch with him in a few weeks. "They sent me a letter and fined me $1,000. A warning would have been fine. I guess that is the cost of broadcasting."

Stark seemed a little miffed that Mansbach used his direction-finding apparatus to locate WNYS. "All you had to do [to find us] was go to the post office. We gave our address on the air quite a bit for requests and comments. A regular listener would know the address by heart."

Mansbach was not as impressed with Stark's station as Stark himself is. "I found a homebrew transmitter and an army surplus power supply," the FCC engineer said, "and the usual stuff for audio. It wasn't a great station. He wasn't really trying to push it." Why didn't Mansbach accept Stark's offer of the transmitter? "It was built out of breadboard. He said he would destroy it and I believed him."

Stark confirmed: "I told the FCC I would get rid of the transmitter. My fear was if they were to come by again and see the thing back up. I'm already in the frying pan. I didn't want a fatal hotfoot. I undid everything." Mansbach did not see the WNYS top hat antenna, which had been destroyed not long before by a windstorm. "Stark had a dipole cut to size and hidden in a tree," Mansbach said. Asked whether he meant a halfwave dipole, which for 1000 kHz would be approximately 500 feet long, Mansbach said he did not know. "Stark is a radio amateur; he knew what he was doing when he built the antenna," he said.

**The Lone Pirate**

Mansbach said most pirates are part of a group, but that as a pirate, Stark was a loner
and unusual in that respect, Stark has few compliments for other pirates: "Most pirate stations deserve to be caught. The profanity I picked up some stations years ago, on 1610 kHz or 1620 kHz, from New York City. They sounded horrible. They sounded like their audio response was from 300 kHz to 3,000 kHz. They had 60 Hz hum. Their modulation was distorted. The profanity and garbage they played. They deserve to be taken off the air." No mutual admiration from Stark.

The former pirate operator said he would never have used shortwave. "When you're on shortwave, you're going worldwide. My audience is local. In a car you don't have a shortwave radio. Cars have AM radios. My target is the local community." FM was out, too. "I didn't go FM because in the 60s AM was more popular. Where I live, we're in a hole, the wobblers of Columbia County."

Stark said WNY's was "like a novelty. It primarily was for the promotion of classical music. We had 50 to 100 listeners, based on mail received. We are missed in the area and many people felt it filled a vital need. After we went off the air, the phone rang off the hook. 'Sorry to see you go,' 'My Sundays are ruined,' and 'What am I going to do now,' people said. A lot of people depended on the station."

A Hobby that Grew

"WNY's started as a hobby, a young kid setting up station and running it. Later on, the station grew into something good. It had a lot of listener response. We did fill a need in the community. We are certainly missed. Many are missing us already," Stark said.

H.V. Henninger is a classical music fan and mediumwave DXer in Saugerties, New York, 17 miles from WNY's. He had been a regular listener since about 1984, when he first noticed the station. Not long after he first heard WNY's, he sent a reception report to the address Stark announced frequently. Confirmation came in the form of a personal visit.

"I had a knock on the door," Henninger said, "and Fred introduced himself and came in. We had coffee, then went upstairs to the radio room and I played back the tape of his station. That's how I got to know Fred."

Henninger was a frequent listener who followed the station's transition from 650 kHz to 640 kHz and finally 1000 kHz. "I rarely ever missed a broadcast," he said. "I'm off work Sundays so I always listened to him. We would talk frequently, and over the years his broadcast quality got better and better. He was always tweaking and adjusting the Urania transmitter."

In Saugerties, Henninger heard the heterodyne caused by WKZE's malfunctioning STL receiver. He heard it when he drove as far as 70 miles away from WKZE, where it beat against another station's carrier. Now the heterodyne is gone, and so is WNY's. "That station essentially made my day on Sunday," Henninger said. "I listen to a lot of classical music, which is something Fred and I have in common. He has the kind of record collection that, to a person who enjoys good high-quality classical music, cannot be beat. That station was his life, really. He worked at that station; that was what he spent the majority of his free time on. He would go to various record stores looking for new material to play."

Henninger said Stark's mother always was afraid he was going to get caught. "His wife was not that keen on it, either. She was afraid he was going to get caught some day. But she understood this was his life, that he had been on the air 22 years. He is the longest-running mediumwave pirate in the United States."

A Typical WNY's Music Log

9 a.m. "Sunday Morning Hangover Symphony"

Beethoven: Twelve Contra Dances

Mozart: "The Raftsmen" overture

Draeseke: Symphony No. 3

Saint-Saens: Piano Concerto No. 4

Andreyev: "Under the Apple Tree"

Grieg: Symphony

2 p.m. "Afternoon Concert"

Saint-Saens: Symphony No. 3

(organ Symphony)

Shumann: Symphony No. 1 (Spring Symphony)

Beethoven: String Quartet No. 2, Op. 18

Bartok: Concerto for Orchestra

Tchaikovsky: Swan Lake Ballet-excerpts

QSL Cards

Stark said even though WNY's is off the air, he will verify correct reception reports. The station occasionally made evening equipment tests that may have been heard beyond the local area, he explained. Reports can be sent to: WNY's, Rd 1, Box 191, Elizaville, NY 12523.

"The next time I broadcast, it will be with a license," said Stark. He might put the station on cable, an idea that occurs to many pirates after they are busted. "We don't have a cable company in the area. Maybe I'll turn the red light on and beg for money to put together a cable system. I can go cable FM and supply TV for viewers, too. I'd put together a small studio once again and have fine Programming." Stark said he talked with the FCC about the future possibility of obtaining a broadcast license. "They said my WNY's operation wouldn't affect my eligibility. I would like to have a licensed station. But it is hard to get the money and meet the criteria. For the common Joe who goes to work, it is an impossible dream."

I ran WNY's as if it had a license. Everything was done to the book."

Actually, Stark broadcast one more time, as a guest on WIPY-FM, 106.5 MHz, Albany, New York. The station's morning DJs, Bob Mason and Bill Sheehan, read a newspaper story about Stark on the air when Stark and his coworkers at New York Communications' radio service shop in Poughkeepsie were listening. "The guys in the shop said, 'Hey, Fred!'"

The DJs called Stark's parents, who gave them the shop number. Stark took a vacation day to be heard on their show. For his musical introduction, Stark brought the overture to Gilbert and Sullivan's Pirates of Penzance, which faded in with Hail, Hail, the Gang's All Here and was followed by Bobby Fuller's I Fought the Law and the Law Won.

Now, Stark's pirate broadcasting days are over. But radio continues as part of his life. He services police, fire, business and industrial two-way radio equipment at New York Communications in Poughkeepsie. Radio signals emanating from his West Taghkonic home are confined to the amateur bands where he is heard communicating as amateur station K2AYLZ. Classical music continues to play, but only in the Stark's living room. The Hudson Valley has lost "a touch of class."
Have you ever heard something absolutely fascinating on the radio, told a friend, neighbor or even spouse, only to find that really, they just weren’t that interested? Darn! What’s the matter with them! I just heard a 5 watt transmitter from Yinglyang Province in North Korea and they don’t care!

How about scanner monitoring? You’re listening to a local law enforcement channel and suddenly you hear, "10-33—all units clear the channel—shots fired at 1827 Prospect Avenue—officer down." "Honey!" you shout breathlessly; "Come here and listen to this!" "Sorry,” she replies, "I’m busy vacuuming the bird cage."

Wouldn’t it be great if you could get together with people who share your enthusiasm for monitoring, people who enjoy talking—and talking—about radio?

Such a place exists—it’s not a fantasy—but it will only last for three days this fall. The place is the luxurious Hyatt Regency Hotel in friendly Knoxville, Tennessee, and the event is the 1990 Monitoring Times convention!

The whole idea got started during a conversation between aero columnist Jean Baker and Managing Editor Larry Miller. "We really need to get together," said Jean. Intrigued by the idea, Miller began calling other Monitoring Times columnists. Scanner columnist Bob Kay said, "Sure," I’d love to go. Just tell me the time!"

Bob Grove will share his expertise and experience with on-the-spot sensitivity and selectivity testing.

And so it went—Larry Magne, Larry Van Horn, Bob Grove, Clem Small, Karl Zuk, Joe Woodlock, Ken Reitz, "Uncle Skip" Arey, Jack Albert, Greg Jordan, Kannan Shanmugam, Rod Pearson; each day, more are checking in.

So, what does my registration fee buy me?

This is not a hamfest where visitors have to pay a fee to buy merchandise. The Monitoring Times Convention is a unique learning experience as well as a social gathering, an opportunity to rub elbows with the experts, to learn more about listening to the spectrum from the real luminaries of the industry.

Shortwave listeners will have the opportunity to meet popular Radio Canada International announcer/producer Ian McFarland. Ian, one of the greatest guys in the business, will be holding seminars for beginners, giving listeners a "behind the scenes" look at Radio Canada International, answering questions about the industry and even recording a special edition of his popular "SWL Digest" program right at the convention!

Larry Magne, who is also a member of the "SWL Digest" team as well as MT’s shortwave receiver reviewer and publisher of the best-selling Passport to World Band Radio, will be there to brief his audience on the latest receivers and give out tips on choosing the perfect radio.

Gene Hughes, publisher of the famous Police Call directory, will be there as well, sharing his wealth of information on monitoring police, fire and emergency medical communications.

Bob Brown and Harold "Dr. DX" Cones of the North American Shortwave Association (NASWA) will be giving a lively hour-long presentation on DXing.

Also in attendance will be Radio New York International’s "infamous" Alan Weiner. Alan made worldwide headlines when he parked a ship off the coast and challenged the American system of broadcasting. Scuttling his pirate ship for the time being, Alan is currently an applicant for a legitimate international shortwave broadcast license.

Bob Grove, our master of ceremonies, will be setting up an equipment laboratory and will be offering no-charge, on-the-spot, sensitivity and selectivity testing. Be sure to bring your receiver or scanner! Bob will be sharing his expertise in several areas of monitoring.

Scanner hobbyists will meet Bob Kay who has been talking about having a "bug" (hidden transmitter) hunt, so bring your scanner! Other scanner notables will teach you how to get more out of VHF/UHF listening. We are working on a tour of a major public safety communications center as well.

Ike Kerschner will be putting a special events ham station on the air. You can be part of the convention even if you are unable to attend by sending in a reception report or working the station and you’ll qualify for a special, limited edition QSL!

Stop by the hospitality suite and meet your favorite columnist. Talk scanners with Bob Kay; design an antenna with Clem Small or compare low frequency loggings with Joe Woodlock. Even Glenn Hauser is planning to attend!
Make plans now to attend this fall!

Thanks to the people from the Radio Amateur Club of Knoxville (RACK), you'll have no trouble finding the convention if you drive in. Tune your scanner to 147.30 MHz (hams: 147.90 input) and they will literally talk you into the Hyatt!

The International Radio Club of America (IRCA) will be holding their annual convention along with us. These people know how to have fun—they've arranged tours of local broadcasting stations and have even planned a DXpedition in a nearby park for Sunday night!

And believe it or not, the convention will even have its own radio station on the air! The Voice of Monitoring Times will be broadcasting on 530 kHz for the duration of the event, keeping convention-goers up to date on the latest seminars and events.

Saturday evening is the optional honors banquet—a delicious cut of top sirloin with salad, vegetables, potato, dessert and beverage! A vegetarian plate is optionally available. Special awards, drawings and prizes will be presented following the banquet, as well as a spirited and enjoyable talk by our keynote speaker!

That's only a sampling of what's going to be happening this fall at the 1990 Monitoring Times convention, the most distinguished gathering of leaders in radio listening ever assembled, and you can be part of it!

So mark your calendar for October 5, 6 and 7, exhibits will be on display all three days. Friday is set aside for informal get-togethers and registration. Seminars will be held all day Saturday.

As more special guests and events are lined up we will let you know. But don't wait—make your reservations now by filling out the registration blank below and sending it along with your check or money order (no credit cards) to: Monitoring Times Convention, P.O. Box 98, Brasstown, NC 28902. We will send you advance details following your registration.

Planning to fly in? Delta is the official airline of the 1990 Monitoring Times convention. For more information or to book your reduced-fare flight, call 1-800-221-1212. Be sure to use MT's discount number: J20088!

Room reservations at the luxurious Hyatt Regency have been reduced for this special event to a flat rate of only $62.00 a night if you mention Monitoring Times! Extra roll-away beds are available or you may arrange your own sleeping accommodations.

Capacity is limited and reservations are coming in fast, so call the Hyatt Regency now at 1-800-233-1234 to reserve your room while they are still available!

The Monitoring Times Radio Convention
It's the Radio Event of the Year!

☐ Sign me up! Enclosed is my $30 registration fee. I'll see you in Knoxville!
☐ Enclosed as well is my $18.40 banquet payment (includes Tennessee tax and gratuity)

Name ________________________________
Address ________________________________
City ____________________________ State/Prov _________ Zip __________
Phone (Optional) __________________________

Make your check payable to Monitoring Times and send it to P.O. Box 98, Brasstown, NC 28902.

Ian McFarland is planning a special recording session of "SWL Digest" at the convention.
DX'ERS DISCUSSION

The Secret to Hearing More Stations

Because of the distances involved, it's often difficult for shortwave listeners and DXers to actually get together and talk about their hobby. In an attempt to solve this problem, MT has organized the first Monitoring Times convention for this October.

In the interim, we got some of the best DXers together in a simulated round-table discussion — arranged by phone and conducted by Monitoring Times managing editor Larry Miller.

The participants are from a wide range of organizations. They include well-known Latin DXer and Monitoring Times contributor Don Moore, Gerry Dexter, author of the "Listening Post" column in Popular Communications magazine, Gayle Van Horn, MT's loggings and QSL editor, and the legendary Glenn Hauser, perhaps the world's foremost authority on shortwave radio.

We begin with a brief introduction...

Monitoring Times: Let's start with a quick radio bio. How did you get started in radio and how long has it been?

Dexter: I began in '51 -- nineteen fifty one [laughs]. I don't really know how I got started but I do remember that a friend was given a shortwave radio and I was so captivated by the whole thing that I had to have the very same thing immediately. I've been at it almost continuously ever since.

Hauser: I was living in Santa Rosa, New Mexico. My parents had an old Philco 1941 console radio which included shortwave bands. However, at that point I was more interested in seeing what I could pull in on mediumwave [AM].

Santa Rosa was an isolated area so when we got our first TV set I tried to pull in Albuquerque stations -- over 100 miles away -- but the skip stations were coming in with greater strength of not greater reliability from much greater distances. So I was pretty much hooked on DXing from that point on. A few years later I shifted emphasis to shortwave.

Van Horn: I got started back when my husband Larry and I first got married. That was back in 1978. He started telling me about shortwave and how much he enjoyed it. So we went out and bought a Radio Shack DX-160. A DX-160, a Bearcat 210 scanner and a CB [laughs]. We thought we were hot! But that first night we heard the BBC, Moscow -- and I was hooked.

Moore: I started in September of 1971. One night there was nothing good on TV and I started playing around with the shortwave band on my parent's Sears tri-band. I came across HCJB, the BBC and the Voice of America. Gradually, about a year later, I began tuning around the Tropical Bands [below 5060 kHz] for stations from Latin America. I've been active ever since, except for three years that I was in college.

Monitoring Times: What kind of equipment do you use?

Hauser: Since I move around so much, I haven't become as encumbered as I might be with all the latest equipment. So I'm using a [Yaesu] FRG-7 which has served me well. When I need to know a frequency accurately, I can measure it on a Radio Shack DX-400, if I can get it to pull in the station at all.

For an antenna, I always used nothing more than random wires since I don't particularly specialize in one part of the world or one band. There's not much point in putting up dipoles or other fancy antennas. I need something that will pull in a little of everything.

Moore: Right now I use a Kenwood R-5000 as my main receiver, an Alpha Delta SWL Sloper, a 60-meter Delta Loop antenna from Universal and an 800 foot beverage antenna in the backyard -- There are benefits to living in a rural area.

Van Horn: We have a Kenwood R-5000, an SPR-4 and Panasonic RF-3100 receiver; longwires and dipole antennas on the roof.

Dexter: I have a Japan Radio NRD-525, an NRD 515, a currently inoperative Drake R4B, a MAP [Multiband AM Pickup] unit and a couple of cassette recorders. For antennas, I use an old Mosely SWL 7-trap dipole and the other is a longwire that goes partly east, partly west and partly north.

Monitoring Times: Do you consider yourself a shortwave listener -- concerned mainly with listening to stations for their content -- or a DXer -- tuning the bands with the object of bagging rare or difficult stations?

Moore: I'm about 80% DXer and about 20% shortwave listener. I do do some shortwave listening, especially when I'm on vacation -- that sort of thing.

Dexter: I'm like Don. I would suppose that I'm about 80 to 90% DXer and the rest a listener.

Van Horn: I would say I'm a 100% DXer. There are times when I just want to sit up all night and go for the tough ones. I guess I'm a real die-hard.
Monitoring Times: Do you have any special interests, some aspect of the hobby that you especially enjoy about shortwave?

Hauser: I guess you'd have to say harmonics or other oddities -- stations showing up where they're not supposed to be.

Monitoring Times: Is that because you've pretty much heard everything there is to be heard and have to rely on the unusual to stimulate?

Hauser: I wouldn't say that. I just find things that are out of the ordinary more interesting.

Monitoring Times: How about you, Gerry? You're probably the world's leading authority on QSLing. So it would have to be QSLing for you...

Dexter: Yes, it is, certainly. Particularly an interest in QSLing clandestines and Latins.

Moore: My special interest is Latin America. I worked in the Peace Corp in Latin America and Honduras for two and a half years. I traveled there for about a year altogether. Now I work with international students teaching English.

Van Horn: I like Africa. My favorite area of the dial is the tropical bands -- there are so many African stations down there. It's such a challenge hearing them, let alone hearing them. I like going after Pacific stations a lot, too.

Monitoring Times: Let's imagine that we're in your radio room with you. The radio is on. It's time to DX. What will we see you do?

Moore: Since I listen in either the evening or early morning, I immediately go to 60 meters [4750-5060 kHz]. Usually I go to 5000 kHz first because it's in the middle of the band and check WWV and tune up or down.

I've got the band down pretty well and know what is regular. In the morning, for example, 4996 kHz is Radio Andina, Peru; 4990 is Radio Ancash; 4985 is a Brazilian. So as I go down, I look for anything that is unusual. Or for times when one of the regular stations is not there because that leaves the frequency open and something else might come through.

When I hear something unusual, it's usually just a matter of sticking to it. I save the station in one of the R-5000's memories and then keep tuning. Every minute or so I check back. This is especially helpful in identifying a strange signal when the station is playing a lot of music. Sometimes I have five or six stations in the memories and I just flip back and forth between them.

I always have tape recorder going -- every moment that I'm DXing. It has a digital counter and I keep make note cards of what I'm recording. I don't listen to the tapes right away because I might miss something else live. So I make the notes and go back later in the day.

Van Horn: I keep a "hot sheet" of stations I'm hoping to hear so I get that out. I get out my logbook, Passport to World Band Radio] and the [World Radio TV] Handbook.

Usually, I'll go to WWV and listen to the propagation forecast at 18 minutes after the hour. I'll check conditions on the bands and then head down to the low frequencies to see if there is anything I need -- just do some bandscanning.

Dexter: Sometimes I check my by-hour want list that I build by going through various information sources, jotting down notes under the appropriate time periods. So I'll start by looking to see what it is that I need at the time I'm listening.

Or I may pull out my by-frequency log and just tune around to see what I can hear that I haven't logged on that particular frequency before. Or I may take a current list of Peruvians and just bop around, checking various Peruvian frequencies to see if any of them are coming in.

That's the way I approach the radio, depending on my mood. Unlike Don, however, I don't always run my tape recorders.

Hauser: Unlike the tradition, dyed-in-the-wool DXer who is probably going to get up at three or four AM to tune the tropical bands, I would probably be at the radio more in the daytime.

I'd start at the high end of the shortwave spectrum. That's where you find things like harmonics at 30 megahertz -- although I don't want to give the impression that I'm devoted to harmonic DXing and nothing else. But I would say that I am more partial to the higher frequency bands -- seeing what new stations are operating on 11 meters [25670 - 26100 kHz] than I am in digging through all the noise on the lower bands.

Monitoring Times: So your listening is more casual, Glenn? You just turn on the radio and flip around the dial?

Hauser: Yes. That's more or less what I do but I wouldn't call it casual because flipping around the dial is how you find new things, how you originate DX news rather than looking for something that someone else has already reported. I'm glad that there are people who are always checking things out but with the limited time I have I would prefer to tune around at random until I come to something that strikes me as unusual and try to identify it.

Monitoring Times: If you hear something unusual, how do you go about identifying it?

Hauser: First of all, I try to figure out what language it is in, see if the frequency rings any bells in my head, applying the knowledge any long-time listener has in propagation -- to give an idea of what part of the world is likely to be coming in.

While I'm doing that I'm listening closely for further clues and hopefully to catch an ID. That's pretty much standard procedure.

Dexter: I'll check recent DX bulletins and the basic references. If that doesn't get me anywhere, I'll also work on what kind of music they're playing, what languages are they're using, what normally would be coming in from what area of the world at

You need a better than average receiver to become a master DXer.
that time. Very often, you can get some kind of indication just from the sound of the station or the programming.

I think anyone who has put in much time at the radio can almost immediately recognize a Soviet signal when they hear it -- no matter what language it's in. In fact, over time, thousands of hours of listening, I think you develop a "sense" of, you know, this is an Andean, is this a Soviet, is this from Northern Africa, or whatever. Of course, the bottom line is to try and pick out an ID of some kind.

Moore: Quite often, the first thing you hear on a station is music. If it's a kind of nondescript, easy-listening instrumental music, that in itself doesn't tell you anything. But if it's a particular type of folk music, I can distinguish between African style and Middle Eastern styles of music; in Latin America, even different styles of Andean music. Ecuadorian music, for example, is very different from Peruvian music.

Once we get to the talking, it becomes a matter of experience. I can't understand any languages other than Spanish and a little Portuguese, but I can identify French and Chinese and Russian -- or at least their general families. I couldn't tell you Russian from Polish but I could tell you it's a Slavic language. Language and music can really narrow the station's location down to a specific geographic area. After that it's really a matter of listening for things like a station ID or perhaps a time announcement.

Monitoring Times: How many stations have you heard and how many have you verified?

Moore: I haven't counted them up in about a year. But I probably have approximately 212 countries heard and 165 verified on shortwave. Personally, I'm more into station counting than country counting. I've got slightly over a thousand stations heard and less than 500 verified. Personally, it means more to me to have heard over 100 Peruvian stations than to have heard 50 African countries.

Hauser: I don't keep track of that sort of thing.

Dexter: According to the NASWA country list, it's 235 heard and 234 verified. In terms of stations heard it's 1,562 heard and 1,410 confirmed. That's due to longevity.

Monitoring Times: In all the time that you've been tuning the shortwave bands, what is your most exciting moment?

Van Horn: After trying every night for oh golly -- several years, Kiribati in the South Pacific. And one night, there they were! I will never forget that. And then a couple of weeks later, they sent me a QSL!

Speaking of QSLs, about two years ago I went on a hunt for Vanuatu, which is also in the South Pacific. Finally, I got them one night on 3945. Well, just a few weeks ago, I got a QSL from them.

Those are the two that really stick out in my mind.

Dexter: Oh boy. That is difficult. Was it hearing Radio Free Czechoslovakia during the invasion or listening to the Falklands during the war? Recently, I got a kick out of hearing the new opening of Radio New Zealand.

Moore: More recent things tend to stick in my mind so I suppose that it would be the June 4th, 1989, broadcast from Radio Beijing where a brave announcer condemned the massacre. It's not DX but it was a great moment in history.

Hauser: More recent things tend to stick in my mind so I suppose that it would be the June 4th, 1989, broadcast from Radio Beijing where a brave announcer condemned the massacre. It's not DX but it was a great moment in history.

Moore: For me, it's the chance to visit the stations I heard. My interest in the hobby is not technical. I don't know the first thing about what goes on inside the radio. To me it's an inter-cultural experience.

Monitoring Times: What kind of advice would you give the beginner who wants to become a master DXer like yourself?

Van Horn: I would tell the novice DXer the same thing that my husband Larry told me when I was just getting started. Sit yourself down with an English frequency list like the one in Monitoring Times. Start with the easy ones but go on to work all those stations in English. Get familiar with the bands and the stations and the programming.

If there's something you're really after, be persistent. Check it every night because eventually it's going to show up. Do your homework. Read.

Moore: The most important DX accessory is not the radio, antenna, or any books you buy. It's patience. It takes time to build up that experience. DXing is like anything else. You don't get to be in the Indy 500 in two weeks.

Dexter: Right. Don't expect instant success. Don't focus solely on how many countries you can hear because that's a dead end. Just hang in there. Learn all you can. Read everything you can read about the hobby.

Hauser: It's the culmination of so many things. You certainly need a better than average receiver. There comes a point when you can only get so much from a bottom of the line receiver. You've got to have good selectivity and sensitivity.

And, I think, a knowledge of languages -- not necessarily being able to speak them but being able to recognize them. And it's a sort of chicken and egg thing -- the more you listen to shortwave and pay attention, the more knowledgeable it becomes. And that goes a long way -- though not all the way -- towards identifying a station.

As for technique, as I mentioned earlier, I prefer random tuning.

Finally, spend as much time at it as you can but try not to let it take over your life -- which can be a temptation.
If you’re the owner of a PRO-2004 or 2005, you already realize that programming 400 frequencies into one scanner radio can be very difficult. Many scanner buffs often ask if there is a standard format to follow. Can frequencies belonging to several different bands be grouped together? And what about utilizing the delay, scan speed and lock out features?

To answer these and many other programming questions, we need to push our scanners aside and grab a pencil and paper. We begin by separating the 400 frequencies into 10 banks. The numerical sequence of each bank will exactly match the display on your scanner radio. Don’t try to squeeze all 10 banks onto one sheet of paper. Spread them out over several pages. Generally, two banks per page is adequate.

After the banks are numbered, assign a title to each one. The titles that you choose, will naturally be related to your individual scanning interests. Since most scanner buffs will designate a specific bank for local police and fire frequencies, let’s title our first bank (1-40) as “Local Frequencies.” The next step is to pencil in 40 local police, fire and ambulance frequencies.

The frequency of your local police, and any other frequency of special interest, should be entered twice -- once near the beginning of the bank and again somewhere near the center. In doing so, you improve your chances of hearing all of the more interesting action.

After the first 40 channels are down on paper, move to the second bank and fill in the frequencies between 41 and 80. This bank should be also be labeled to reflect your next area of interest. It may be any of the following: military air, coastal marine, civilian air, FBI, etc. The key to programming each successive bank is to include the important frequencies from previous banks.

Here’s an example: Suppose that your second bank of frequencies is designated for military aircraft. Don’t be afraid to include your local police frequency, or similar frequency into this bank. If your local police operate on 40.10 MHz, you can place that frequency immediately following the frequency of 243.000 megahertz. Your scanner radio isn’t affected by extremes in the frequency ranges between each channel.

The remaining banks, three through ten, are completed in the exact same manner. Take your time, and make the entries neatly. Don’t use a pen. A pencil mark is much easier to erase. After you’re satisfied with the bank arrangement on paper, it’s time to transfer the frequencies into your scanner radio. Again, take your time and be sure to check each entry. It’s frustrating to learn that you missed a hot segment of scanning action because of an incorrect entry.

As banks of frequencies are filled on paper, consider designating an entire bank for miscellaneous frequencies. These are frequencies that have been located during a random search, or perhaps given to you by a fellow scanner buff. After the frequencies are confirmed, you can then permanently transfer them to other banks.

After all the frequencies are entered, allow yourself a few weeks of monitoring to sort out, move and make deletions from your list. The key here, is to change the list first. Immediately thereafter, enter the change into your scanner.

To make your ten bank lists readily available, place them on a clipboard and store them within easy reach. Maintaining the clipboard serves several purposes. It allows you to see the programming at a glance, it keeps things organized, and if your scanner’s memory should fail, the clipboard will become an invaluable reference source.

Okay, we loaded our scanner with 400 frequencies and now it’s time to sit back and enjoy the action, right? Not quite. We still haven’t learned how to manipulate the delay, priority and lock out features.

The key to effective programming is to plan your attack on paper. Bob Kay tells you how.

Since the scan speeds of both the PRO-2004 & 2005 are relatively slow, don’t further restrict the scanning speed by indiscriminately using the delay function. If you’re listening to routine calls, there’s no reason to have the radio pause after each transmission. When the action gets hot, use the delay feature to extend the “hang time” on active frequencies.

The priority button on your scanner radio is another feature that should be used with caution. If you assign the priority function to an active frequency, the entire bank of frequencies will be hindered by constant interruptions from the priority frequency.

The lockout function can be used to silence frequencies that provide a constant stream of information. A few examples are airport weather frequencies, and NOAA weather broadcasts. When the information is needed, it can easily be monitored by depressing the lockout review button.

To verify a group of newly entered frequencies, use the lockout feature to silence the “active” frequencies. When your scanner radio becomes silent, there won’t be any doubt that the displayed frequencies are inactive.

Also remember that each of the ten banks on the PRO-2004 and 2005 can hold a separate “search mode.” For example: Bank #1 can be set to search across the cordless phone band, 46.60 to 47.00. Bank #2 can be set to search the cellular phone bands, 860.00 to 890.00. The remaining banks can be designated to search a variety of interesting areas. If you already have a “miscellaneous bank,” your newly discovered frequencies will have a place where they can be stored and verified.

In the high tech world of the nineties, the channel capacity of scanner radios will continue to spiral upward. Within the next few years, channel capacities are expected to reach the one thousand mark. For now, programming 400 frequencies into one scanner radio is an admirable challenge for even the most seasoned scanning veteran.

However, by following the above guidelines, scanner buffs from all skill levels can produce scanning programs that will take full advantage of their scanner’s potential, customized to their own listening style. Why not say you did it your way?!
FM DXing

by Karl Zuk

Every year at about this time, a strange thing happens. All across the United States, people turn on their FM radios, spin across the dial and hear -- stations from hundreds, even a thousand miles away! These surprise appearances by "foreign" FM stations are hard to predict but not all that uncommon, if you know how to look for them.

Every sport has its strategies, and FM DXing -- as this endeavor is known to its many fans, is no different. Your first move is to acquaint yourself with the band in your location. Do a complete bandscan. Take your time and see what stations are normally heard. Note their frequencies, formats and slogans. This will save you endless time later. Be sure to keep an eye out for frequencies that are vacant.

You need a good guide to FM broadcasters. Broadcasting Yearbook is a huge reference guide (with a huge price tag -- nearly a hundred dollars!) that includes listings of FM broadcasters by frequency and location, as well as the addresses and names to use while writing for QSLs.

The Vane Jones North American Radio-TV Station Guide, published by Howard Sams and Company, also has similar frequency and location lists for about one-tenth the price but seems to often be out of date.

The best guide, however, is Dr. Bruce Elving's annual FM Atlas and Station Directory. Written for the avid FM DXer and anyone else that listens to FM, it is extremely comprehensive, compact, and up to date. It's a very affordable $9.95 plus .90 bookrate shipping from DX Radio Supply, P.O. Box 360, Wagontown, PA 19376.

Make your own list and map out each frequency. Ask yourself what are the most likely stations to come in, and go after them! Find out when your local stations might be off the air for testing and maintenance. After midnight, Sunday night/Monday morning, is an excellent time to look.

SEARCH FOR CLUES

Think of everything a station transmits as a clue to its identity. Almost every commercial, for example, offers a street address and phone number. Most big libraries have a collection of phone books. If you hear a phone number, try to see if that prefix is used in the town you suspect. You can even call the advertiser and ask if they advertise on the station you suspect.

The FM band is sliced up into three basic categories of stations. Noncommercial educational and religious broadcasters are allocated to the 88 to 92 MHz band in
most cases. The stations on the 92 to 108 MHz band are commercial and are divided into two groups: Class A stations serving a local area, and Class B and C stations for regional and large area coverage.

The twenty Class A frequencies are home to lower powered stations, around 3 KW and less. They are packed much more tightly together because they can be heard for shorter distances than the Class B and C stations.

Keep in mind that the sound carrier of television's Channel 6 is on 87.75 MHz. Most FM receivers can pull in this frequency, and it makes for unusual listening.

Things can get confusing, though. Sometimes a station might seem to appear on the "wrong" frequency. WALK, 97.5 MHz, Patchogue, Long Island, New York, can be heard in the New York City area on 103.1 MHz. What you're really listening to is a low-powered translator transmitter: W276AQ in Fort Lee, New Jersey. Using a power of only one watt, and a high-gain antenna, it can be heard within at least a ten mile radius, if not further.

Head towards Connecticut and you'll hear WQXR, 96.3 MHz, on their translator in Stamford on the same frequency. These stations repeat their mother stations and identify themselves only as the station that they are rebroadcasting. It would be very rare to hear the translators' calls over these low-powered transmitters.

Also, watch out for public radio or religious networks. These stations are notorious for poor identifications which may come only once an hour. Mostly you'll hear "This is PRM" or "This is Family Radio." Again, a good guide book is essential.

Finally, if all this confusion weren't enough, DXers now have to deal with leaky cable TV lines. Cable television systems often leak signals into the outside world. When cable TV systems carry FM broadcasts, they always offset their rebroadcasts of regular FM stations. For example, a station on 92.3 would be on the cable at 91.9. This prevents co-channel interference between the signals via cable or through the air.

Search up and down the band for transmissions that sound like millions of loud bees in a hive. These are data transmissions that control the cable system. Typical frequencies are 97.5 MHz, 106.5 MHz, and 108.2 MHz.

Chances are, if you hear a data signal, you'll hear other strange signals as well. If your local 98.3 MHz station also appears on 98.7 MHz, you might be picking up regular and cable FM. Keep in mind that your cable company is responsible for cleaning up these leaks. This is especially important if you DX FM!

And always run your tape recorder! One chance might not be enough to hear that rare ID, or other clues. It also gives you a permanent record of your great catch.
Public and religious stations are among the hardest to ID, so turn on your tape recorder to take advantage of every clue offered. Skip may last only a few seconds, and you'll need to be prepared!

HERE COMES SKIP!

Possibly the best time to listen for distant FM DX is just before dawn until a few hours later. The atmosphere collects moisture during the evening, and the ionosphere's electrons become discharged because of the lack of sunlight. This allows signals to drift in from up to 600 miles away, or even farther. This condition is called Tropospheric Skip or simply "Tropo."

This is the most common type of FM skip. It is very dependent on the weather. If an oncoming weather front is bringing a cloud cover of moisture between you and your target, your chances are much better for good skip. The signals will probably come from one general area, and the distance of the skip will decrease as the sun burns off the morning's dew and fog.

E layer skip can produce more distant stations. During the summer (and occasionally during mid-winter), the next highest layer of the atmosphere becomes energized. You'll start hearing stations from 600 to 1700 miles or more away.

Sporadic E skip can be amazing! As the name implies, it comes and goes very erratically. Imagine a large mirror, broken into a million pieces, about 80 miles above the earth. It will reflect signals completely randomly to a widely varying area. Maybe the signals will come from one place for an hour or more. Maybe it will be received for a few seconds and change to another location, or the skip will disappear completely. Studies have shown that if you are hearing skip from an area, it is likely that they are hearing stations near you.

Once again, a map is a excellent tool. Find yourself a map of North America, or wherever you live. Plot a circle of points 600 miles away, and another circle of points 1700 miles away. Your sporadic E skip will probably bring you stations from somewhere between these two circles. This will aid you in identifying unknown stations.

Stations outside of this band are unlikely candidates for your reception during these periods. Under rare periods of intense energizing, double-hop skip can be heard. The signals literally bounce off the ground and up to the E-layer for a second trip. This will double the distance of the skip. Reception of such signals are very prone to distortion and fading. Identification of these stations is difficult and often frustrating. Actually bagging one is a source of true pride!

Once in a blue moon the F layer of the ionosphere will become active enough to propagate FM skip. When this happens, and it happens very rarely, pull out all the stops! Shortwave-like reception comes to FM, and stations from thousands of miles away can be heard. This is probably the rarest type of FM skip, about as elusive as the Loch Ness Monster!

There are other kinds of unusual skip. Learn about meteor showers. These are very predictable astronomical events. Debris falls to earth from outer space energizing the ionosphere. It creates skip that is much like sporadic E, but it can pass in a flash.

Sit on one frequency, or set up several receivers, and record them during the predicted night of meteor showers. Your results might bring you wonderful catches, but they will be brief, maybe only a few seconds. Periods of enormous auroral activity can also produce similar effects.

That's the basic story on FM DX. It's an exciting and rewarding type of monitoring that can be done on any FM receiver. Obviously, the better the radio you have, the better your chances of snagging that rare signal.

But FM DX can be the great equalizer. While a good receiver and an external antenna can be useful, some of the most amazing catches have been made on inexpensive clock radios. So don't be intimidated by a lack of equipment. Go after it any way you can. This is the FM DX season. Go for it.
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National emergency comms, missile failsafe systems, bugging and debugging -- all part of Don Pitts' job description as

Communications Expert

When Don Pitts took over White House telecommunications during the Coolidge administration, he spent five or ten minutes a day now and then waking up a sleeping secret service agent by telephone. In the 1960s, Pitts and 23 other communications experts oversaw a sophisticated communications system that accidentally launched a Nike missile in the Baltimore-Washington area, despite the failsafe odds against that.

By the time he retired in 1971, Pitts had kept eight Presidents in touch with the world, had seen at least two of them bug their own offices, had helped design guidance systems for advanced missiles and had written the book for the civilian emergency warning system that will alert the nation in the event of nuclear attack.

Despite that, he cautioned an interviewer, "Don't lay in on too thick."

Donald Edwin Pitts, 81, was sitting on his front porch at The Oaks Cottage when an interviewer arrived recently. He tossed his cigarette into his yard and invited his guest into his 19-room home on Magnolia Street in the heart of Pinehurst, North Carolina.

Once inside, he recounted his 45-year career supervising communications systems for the White House.

"I started in 1926 with Coolidge," he said. "In those days, communications in the White House was more or less, you might say, a joke."

Pitts was a radio whiz kid of sorts, who built his first radio station in 1919, when he was 12 or 13 years old. He stopped shooting for a chance at a military career after his World War I veteran father persuaded him the War to End All Wars meant military service would just be a social activity in the future.

In the 1920s, he was a radio research engineer for AT&T in Washington, DC, experimenting with inter-city broadcasting.

Don Pitts still has the telegraph key from the Washington, D.C., AT&T telegraph office where he started his career in communications.
to the White House

by Michael D. Esposito

President Calvin Coolidge vacationed in South Dakota, but wanted to remain in touch with the White House. At the time, White House communications was a telephone operator with an old-style pull-cord switchboard.

Pitts was told to set up two different telephone lines between the White House and Coolidge's fishing retreat. After that, all he had to do was test the lines each morning that Coolidge was in South Dakota by waking up a secret service agent shortly after 6 a.m. to make sure the lines still worked.

"That was the start, really, of emergency communications for the President," he recalled.

"When we got to Roosevelt, we got into a little bit different situation."

Franklin Delano Roosevelt was more concerned than any previous President with staying in touch with Washington while he was traveling. When he traveled by rail, special telephone lines were installed at every stop along the President's route. At each stop a man ran out and plugged the two lines into the side of the train.

Pitts recalled that Roosevelt's personal manager, Jim Farley, kept the President on a tight schedule. If the schedule called for a seven-minute stop and Roosevelt was still talking, Farley would signal the conductor to move the train out anyway.

"Here's these two wires on the side of the car, and they'd just go 'ping.'"

Another difference was that "Roosevelt had half the phones in Washington bugged," recalled the man who did the bugging. The telephones of cabinet members, reporters, "and Eleanor's private line at the White House," were all tapped.

During World War II, Pitts did military research. His assignment with White House communications and military research were destined to become more closely related after Harry Truman became President.

"He was my favorite, really," Pitts said of Truman.

"Truman, for example, had little affection for the tight security that has closed in around U.S. Presidents. Often, Truman would slip away from the White House and the Secret Service would have no idea where he was.

"There he'd be, down on F Street, shaking hands with people and looking in the windows."

Another time, while the White House was being renovated, Truman was the target of Puerto Rican nationalists who attempted to assassinate him while he was resting at Blair House, across Lafayette Square from the White House.

Pitts recalled he was dining in a restaurant near the scene when he heard the shooting in the street. A secret service agent was killed by the attackers.

Truman also heard the shooting in the street, "and what does he do? He goes over and opens the window on the second floor and leans out to see what's going on down there."

After the invention of the atomic bomb and the intercontinental ballistic missile, "Things changed rapidly."

The operation Pitts supervised changed from the prosaic facilities of the past to something vastly more complex. The President is the only one who can order a nuclear attack, and military planners estimated there would be only five minutes after warning of an attack on the United States for the military to respond.

"Of that five minutes, we were allotted only 90 seconds" to connect the President with other top national leaders so they could decide if it was time to reach out and touch someone with nuclear bombs and missiles.

Pitts was assigned offices in the Pentagon and he and his staff developed a system that could put 144 people in touch with each other on one conference call in 90 seconds.

"It wound up that I had 23 top telephone men in my office there at the Pentagon," he said. "I had my pick, really, of craftsmen and supervisors."

In addition, "I had a car that was really a laboratory on wheels parked outside my house," he recalled, adding he would get calls on his home phone containing a code word directing him to go out to the car.
When Pitts first started out with Coolidge, White House communications consisted of a telephone operator and a pull-cord switchboard.

The neighbors must have thought it an amazing sight, Pitts guessed, when he got into the cart with the windows up on a summer day and revved the engine up to power the generators so he could have a telephone conversation using the equipment in his car.

Because he would be called every time "somebody'd sneeze in Moscow or something," Pitts also carried a beeper that invariably interrupted vacations.

One weekend in the early 1960s, Pitts decided he needed to get away somewhere where no one could possibly find him - fishing in Virginia with his family.

His wife, however, had an intuition that Pitts should call the office and wouldn't let the matter drop. Finally, after his wife threatened to call the office herself, Pitts agreed to do so.

"That was the weekend of the Cuban missile crisis."

John Kennedy introduced another feature into White House communications, one later associated with Richard Nixon.

Kennedy "recorded everything in that damned Oval Office," Pitts said. "He had a beautiful set of tape decks.

"I don't know why Nixon pulled those out and put in some Sonys."

Pitts' least favorite President to work for was Lyndon Johnson.

"It was awful. I could tell you a lot of stories about that jerk," he said. "Johnson was the most paranoid man I ever met in my life. And vulgar! Oh God, you wouldn't believe it."

Pitts remembered a call from a Southwestern Bell manager who was on the spot because Johnson had heard a hum during a long distance telephone call. Johnson was pressuring the man for an explanation, but finding the source of the hum was impossible because long distance telephone call can be routed all over the country and the routing can change during the call.

Pitts told the man to check the obvious routes and, if he found a hum, tell Johnson what he found. Then he told the man, "If you don't (find a hum on one of the lines), you put a hum on one of them, you find it and tell him what you found."

With Johnson, "It was no damn fun anymore."

Pitts stayed for the first years of the Nixon administration. Then he retired and settled in a house in Pinehurst that was built in 1895.

While interviewed there, Pitts recalled designing the national early warning system that will be used in the event of nuclear attack, as well as designing the "brains" of the Nike missile.

Experience with all these systems gave Pitts a feeling for how fail safe modern weapons actually are - or aren't.

The Nike missile system was deployed at bases around Washington about 30 years ago. The fail-safe feature of the system was that two buttons had to be pushed in order to launch the missile. One was at the missile site. Another was at the command center, miles away.

On one occasion, a military officer was showing the missile site to a group of school children. To demonstrate how safe the missile was, the officer pushed the red button up and down several times.

But, "At the command center, we had a congressional delegation down there."

And their guide decided to demonstrate the safety of the system in the same way and at the same time as the officer at the missile site.

"The Nike missile took off," Pitts said, adding that the officer had the presence of mind to detonate the missile before it had traveled very far.

But the explosion scattered debris all over a major highway linking Washington and Baltimore.

"They think this can't happen, that they're so damn fool-proof," Pitts said. "It goes to show that these things can happen - and do."

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No two sunspot cycles are alike. Number 2, which lasted from 1766 to 1775, took only nine years. Number 3 lasted 9.25 years, but took less than three years to reach its peak of 158.5 sunspots. Number 4 was the longest cycle on record, 1784 to 1798, or 13.67 years. Number 6 had the lowest maximum, 48.7 in April, 1816. Number 7 took much longer to reach its maximum, 6.5 years, than to decline, 4.9 years. Cycles since 1855 have been more uniform, lasting from 10 to 11.83 years, the rise to max taking 3.2 to 5.0 years. The greatest max on record was Cycle 19, which reached 201.3 in March, 1958.

We have now passed the 3.5 year mark in Cycle 22. March 1990 was predicted to be the maximum, at 179.7, a figure which dropped as the month approached; June 1989 had the largest monthly average of 196.0; if July was the max, it would be the earliest in modern records, 34 months into the cycle. This all data comes from the Space Environment Services Center, Boulder, Colorado, which predicted monthly 10.7 cm solar flux averages for March, April and May, 1990 at 195, 230 and 210 respectively; and says, "in our judgment, Cycle 22 has not reached maximum and additional pulses of activity will occur, resulting in an extended active period through 1992."

AFGHANISTAN Radio Afghanistan in English at 1830-1930 on 15440, 11830 (BBC Monitoring) (non) Voice of Unity, from Egypt, observed on new 10590 ex-17540, and parallel 12230, 15685 at 1200-1300, 1515-1610; nasty modulation, but good strength (Supratik Sanatani, India, OzDX)

ANDAMAN ISLANDS AIR Port Blair operates 0700-0850 on 7180, 1030-1630 on 4760; also plan to add 0030-0345 on 4760 (Peter Bunn, Australia, OzDX) Watch out for China on 4760. Additional channels allocated for Port Blair are 6085, 9600 (via Bob Palmer, WA, OzDX)

ANGOLA Radio Nacional has English at 2000-2100 on 3375, 7245, 9535; "A" program on 5500 ex-9535 around 1500-0500; at 0400 also on 6530, location unknown. UNITA clandestine, Voz da Resistencia do Galo Negro, at 0500 on 9700 and new 7390; 1100 on 11830 and new 9850 (Richard Gibney, Namibia, Radio Netherlands Media Network) Acronymed VORGAN, announced 0500 on 7145, 1100 and 1800 on 9850 (BBCM)

AUSTRALIA Radio Australia new General Manager, Richard Brinowski, writes in response to our February column: "You have given the wrong impression. Radio Australia has regarded the Asia/Pacific region as its primary target since the early 1940s. Successful reports and reviews have endorsed this. This does not mean that Radio Australia is not interested in people outside the region. We are pleased they choose RA as a source of information and entertainment. Many mention our comprehensive coverage of Asia/Pacific affairs as a prime reason for listening. It is also incorrect to report that RA is 'sending younger Australian women' to Indonesia as correspondents. The Communicator segment was an interview with the leader of a group of journalism students, which included young women, who were visiting Indonesia."

We're glad to hear this, but the shrinkage of RA's focus to strictly As/Fac matters in the last few months has been obvious. We've now written off Communicator as a not-to-be-missed DX program, since any mention on it of shortwave monitoring has apparently been banned. If the Indonesia-correspondent item was misleading, we reported the angle Communicator obviously meant to convey. We hate to see a potential (and former) world-class station sink so deep into regionalism.

Communicator is not kaput; heard on 13700 at 0730 Monday (C. Clifford Coffman, IN) Yes, RA's M90 schedule shows this EBA usage; English: 21825-Darwin 0900-1000. 21775-Carnarvon 0630-1400. 17630-Carnarvon 0000-0400 & 0500-0900 (no break Sat. and Sun.). 15560- Shepparton 0200-0800. 15465-Shepparton 2030-0730. 13700-Carnarvon 1530-1800. 13605-Darwin 2230-2400. Standard Chinese: 17630-C 0400-0500, 17630-S 2200-2400. Thai: 13700-C 2300-0000 (via Bruce MacGibbon) But this was quickly modified, including: 15485 instead of 15160 opening at 1603 (not to be confused with new Zealand); also at 1603, 13740 ex-13700; and 13700 opening at 0600 (MacGibbon, OR)

The M90 schedule also shows 10 kW from Brandon: 11930 at 0700-2030, 11880 at 2030-0800, 7240 at 0800-1100.

Radio Rum Jungle is a new program service via ABC Katherine, UTC Sun.-Thu. 2020-2100 on 2485, 2100-2300 on 5025; Mon.-Fri. 0700-0800 on 5025; produced by the Top End Aboriginal Bush Broadcasting Association, TEABBA. English, Kriol, and Top End languages are used. In the morning, it's the Bush Breakfast Show; afternoon, Drive Time Show (Bob Padula, RA DX Time) We find it hard to envision traffic jams in the bush ...

AUSTRIA English half-hours from Radio Austria International: 0730 on 6155, 13730, 15410, 21490. 1030 on 15440, 21490. 1130 on 6155, 11780, 13730, 21490*. 1330 on 11780. 1430 on 6155, 11780, 13730, 21490. 1630 on the same. 1330 on 5945, 6155, 12010, 13730. 0130 on 9870, 9875*, 13730*. 0530 on 6015* via CanadA (* = to North America). Austrian SW Panorama is now heard Sundays at 1030, 1130, 1430; at the same times on Saturdays, Coffeetable.

BANGLADESH R. Bangladesh in English on new 15040 instead of 15255, 0800-0830 and 1230-1330, parallel new 17850 (Victor Goonetilleke, Sri Lanka, RNMN) 15040 is double a former frequency, 7520 (gh) Also on 15040 later in the day plus new 11705 (Jonathan Marks, RNMN) Such as 1815-1900?

BOLIVIA Radio Viloco reactivated on 3340.2, heard from sign on at 0958 to fade at 1018 with two IDs, rustic Andean folk music (Kevin Atkins, AL, RCI SWL Digest)

BRAZIL Radio Integração is the new name for the Cruzeiro do Sul station on 4765 (Claudio R. Moraes, SW Info) That's een-chee-grah-SOWN, as in a nasaized female pig

CANADA RCI's SWL Digest has been cut to only five airings on a new schedule: Sat. 2336 on 9755, 5960; Sun. 1836 on 17820, 15260, 13670; Sun. 2136 on 17875, 15325; Sun. 2306 on 11730, 9755; Tue. 1233 on 17820, 11855, 9635 (and C-Sapan cable audio)

Thanks to Al Quagliieri for transcribing the "Hauserisms," DX news report on SWL Digest and availabliming them on the SW Echo computer net, for those who find copying them off RCI inconvenient or difficult (Andy Sennitt, WRTVH, via ANARC BBS via Larry Nebron)

RCI decided to keep its morning broadcast to Europe and Africa, now at 0500-0600, and expand the English portion to include news at 0515, CBC features at 0530 weekdays on 6150 and 9750 via Sackville; 6050, 7295, 11775, 17840 via Daventry, England: Mon., Inside Track (sports); Tue., Food Show; Wed., Open House (religion); Thu., Media File, Fri., The Arts Tonight. (RCI Listeners' Corner)

The CBC Northern Quebec SW Service, 9625, has weak spurs with readable audio on 9592.7 and 9657.3, heard until sign-off after local 1 a.m. (Ernie Behr, Kenora, Ont., World of Radio)

CHINA (non) The medium-wave only Voice of Democracy in China, shipboard clandestine planned to start in late April, got lots of publicity. Meanwhile, the Independent Federation of Chinese
Students in the USA has been broadcasting its Voice of June Fourth clandestine program in Chinese via Taiwan since last Sept. 30; address is Box 15-7939, Chicago, IL 60615. The frequencies have long been used by Taiwan for broadcasts to the mainland and are heavily jammed. 0250-0340 on 7250; 0615-0800, 1030-1200, 1630-1830, 2215-0020 on 11905, 7250, 7150; 0915-0955 on 11905, 7150; 2100-2200 on 15280. Differing sets of MW frequencies are also used: 603, 747, 750, 900, 1098, 1100 (via BBCM) Could be one hour earlier for summer.

COSTA RICA Radio for Peace International was knocked off the air in March by a Richter 6.4 earthquake; it left tapes on the floor, and moved roller-mounted transmitters around the studio, but no one was hurt. Schedule is 1400-1600 in Spanish on 7375, 13660; the rest mostly in English: weekdays 2000-2330 on 21566, 13660; repeated at 2330-0300 on the same plus 7375-USB; and 0315-0645 on 7375-USB only. UTC Saturdays an additional repeat follows to 1015. Saturday and Sunday 1800-2330 on 21566, 13660; repeated UTC Sunday and sometimes UTC Monday to 1030 on 7375-USB. See tail of last month's column for World of Radio Times.

CUBA Despite Guatemala on 3360, Cuba shifted its new Radio Rebelde outlet from month's end to 2330-0300 on Saturdays and Sunday and Monday to 0315-0645 on 7375-USB only. See tail of last month's column for World of Radio Times.

CHILE A dirty trick by Pinochet just before relinquishing power: privatizing radio stations he had taken over, by turning them over to his friends; but Radio Nacional remained in the control of the military. The 5825 station previously reported is Radio Yuncal Evangelica (Gabriel Ivan Barrera, Argentina)

ECUADOR The terrorist attack on HCJB's Pifo site forced a cutback in transmissions for several weeks, with the 500-kW unit off and other transmitters unable to make antenna changes quickly. Replacing 6230, 15155 was extended to 0700, for example (HCJB)

Its semi-harmonic, 7577.53 kHz, was heard at 0615-0700 on two different receivers (Brian Alexander, PA, FT)

Program format changes take place May 6; we are trying to combine our locally-produced programming into a one-hour block, to make better use of our resources and provide our listeners with what I hope will be a better-sounding service (Brent P. Allred, HCJB, World of Radio)

ESTONIA Radio Tallinn's weekly Estonia Today program in English has been on the air for more than a year; a luck of qualified speakers of English has kept it from airing more often, or converting to a daily 5-minute English newscast (Radio Finland via BBCM)

ETHIOPIA (non) Voice of Tigre Revolution, clandestine, excellent around 1600 on 5685 (Rohan Goonetilleke, Egypt, RNMD)

GERMANY Deutsche Welle and Radio Berlin International have agreed to cooperate in easing each other's work, while maintaining full independence of each other, in areas such as technology, frequency coordination, audience research, programming (BBCM)

GREECE Voice of Greece to North America in Greek and English: 0000-0350 on 9395, 9420, 11645; 1200-1250 on 12105, 15630, 17535; 1500-1550 on 11645, 15630, 17525. Radiofonikos Stathmos Makedonias, Thessaloniki, domestic service relay as retimed for summer: weekdays 0900-2200; Saturday, Sunday, holidays 0500-2130, on 9935, 11595; daily 1800-2100 on 9425. The VOA-Kavala 250 kW transmitter is used on 9425, 11645, 12105 (John Babbis, MD, World of Radio)

GUAM The FCC has cut seasonal changes to two instead of four. The March-September season is now referred to as Z-90. KSDA hours in English are now: 1000 on 13720, 1600 on 11980, 2300 and 0000 on 15125, Saturday and Sunday 0200 on 13720. DX Asiawaves: Sat. 1630, 2330 (or is that UTC Friday??), Sun. 0230, Mon. 1030 (AWR via John Carson)

IRAN A new shortwave transmitter site has been inaugurated at Zahedan, including two 500-kW transmitters, to be used in English, Arabic, Urdu (BBCM)


ITALY Italian Radio Relay Service heard testing 21500 from 1245 on Sundays (Jerry Berg and Hans Johnson, FT)

Voice of Europe is new, 24 hours on 7556-variable, address Box 26, 33170 Pordonence (Dario Monterini, Play-DX) Heard at 2335 with music and ID in 5-minute cycles (Hans Johnson, MD)

JAPAN Radio Japan's DX Corner has been expanded to 24 minutes at these new times: UTC Sunday 0330 on 17810, 15195; 0930 on 21610, 11840; 1530 on 11865, 21700 = Gabon; 2130 on 21610, 17810, 17765, 15270; UTC Monday 0130 on 17845, 17835, 17810, 17765, 5960 = Canada (Tetsuya Kondo, Yokohama, World of Radio)

JYY the timesignal station on 2.5, 5, 8, 10 and 15 MHz, offers a special 50th anniversary postcard in addition to its QSL card, for 2 IRCs (Radio Japan DX Corner)

KASHMIR AZAD Azad Kashmir Radio, Muzaffarabad: 0045-0605, 1050-1810 on 7268, 4980, 3665. English news, mostly relayed from Islamabad, is at 0300, 0500, 1100, 1400, 1600. Frequencies vary (BBCM)

KOREA SOUTH Radio Korea's new English schedule: 0800 on 7550, 13670; 1100 on 15575; 1215 on 9750; 1400 on 9570; 1600 on 9870, 5975; 1800 on 15575; 2030 on 6480, 7550, 15575; 0000 on 15575; the 1215 and 0000 are North America, as is the new 1030-1100 via Canada on 11715 (shifting to 1130-1200 on 9700 next winter). Content of the 1030 broadcast: Sunday, Weekly News Review. Other days, 10 minutes of news and then: Monday, Seoul Calling and How Do You Interview corner; Tuesday, Seoul Calling and Touring Korea; Wednesday, Music Box, Pulse of Korea; Thursday, Music Box, Focus This Week; Friday, Let's Sing Together, Saturday, Abbreviated versions of From Us to You, Shortwave Feedback (Radio Japan DX Corner, and Bruce MacGibbon, DX Spread)

LITHUANIA For two days in mid-March, Radio Moscow replaced Radio Vilnus with its own transmissions. The next day Radio Vilnus discussed this, saying people at Radio Moscow were not aware of it, so perhaps blockaded by the Ministry of Communications of the USSR. (Ian Millett, Baltimore) The summer timing for English is 2200-2230, on 11770, 12060, 15180, 17665, 17690, all via Soviet transmitters outside Lithuania, which could be cut off again at any time Moscow wishes. Though Moscow resumed relays of Vilnius, very weak transmitters were put on 11770 and 12060, the latter jammed or hummed. The Minsk program at 2230 resumed with powerhouse transmitters. Moscow is using strange tactics to disrupt Radio Vilnus. And Radio Liberty is helping the Soviets to do the job: Radio Liberty heard on 11770 in Russian from 2200, on top of Vilnius (Ernie Behr, Ont., World of Radio)
MYANMAR Voice of Myanmar, Yangon, has started an advertising block at 1130-1145 on 5990 (Supratik Sanatani, India, OzDX)

NETHERLANDS Quality Radio (pirate) heard on 9985 at 0900-1100, 15055 at 1300-1500 (Mike Barraclough, England, WDXC)

NEW ZEALAND The tentative schedule through September of Te Reo Hirungi O Aoteaara (a.k.a. Radio New Zealand International): 17680 at 1900-2200, 0000-0200, 0400-0700. Alternative frequencies on short wave: 9850, 17730, 17705, 15485 (via John Carson, OK)

NORTH AFRICA La Voce de Nicaragua still heard on 6098.64, from 1030, apparently not the same station as La Voce, on 6001.9 kHz, which is best heard after 0500, as late as 0604, or past 0730 (Ernie Behr, Ont., RCI SWL Digest)

PALESTINE (non) Al-Quds Radio is using unannounced 5990 at 0600-1100, 1300-1700 (BBCM)

PERU Radio Mundial is new from Casacas, Contumaza, Cajamarca, on 4182.2 or 4183.3 kHz, from 1030 to 0325. Radio San Mateo is the new name for Radio Contumaza, from Contumaza, Arequipa on 4495.1; heard at 2342-2355. OAZSD is a new 1-kW station authorized at 3280 from Quipocapata, Ayacucho, Huamanga, Ayacucho (Pedro F. Arrunategui, Lima, Play-DX)

NORWAY Ondas del Titicaca reactivated on new 4924.1 kHz, heard from 0953 to 1035 including ads for a Bolivian bank (Kevin Atkins, AL, SWL Digest)

Radio Norandina, 4461.8, good at 0241; Radio Frequencia Lider, 4418.5 kHz, 0352 past 0400 (Gerry Bishop, Niceville, RCI SWL Digest)

Measurements between 10 and 11 UTC: 6187.47 Radio Oriente, 5097.30 or 5097.13 Radio Eco; 5024.92 Radio Quillabamba, 5015.42 Radio Tarapoto; 4954.00 Radio Cultural Amauta; 4924.11 Radio Ondas del Titicaca; 4859.83 Radio La Hora; 4840.00 Radio Andahuaylas; 4826.27 Radio Sicuani (Chuck Bolland, FL)

PORTUGAL A town destined for worldwide fame if Radio Free Europe/Radio Liberty completes a new transmitter site in Maxoquera, projected for four 500 kW transmitters and six antennas (Board for International Broadcasting)

ROMANIA Furthering its new identity, Radio Bucharest has been renamed Radio Romania International (Tim Hendel and Bill Dvorak) Not to be confused with the RRI in Indonesia

SEYCHELLES FEBA in English: 1458-1600 on 9590, 15330, alternate more evangelical program at 1458-1555 (Saturday 1610, Sunday 1540, Monday 1625) on 11865; 1731-1804 on 11820. FEBA keeps adding obscure languages, such as Chatischeghari, Saturdays 1242-1258 on 15325 (World of Radio)

SOMALIA $50 is ridiculous but is it unreasonable for a third-world station to ask for $2 to $5 for a QSL to a DXer whose equipment may have cost more than the entire annual salary of a station worker? (Tim Hendel, FL) Moot now, as Radio Mogadishu domestic and external services untraced for months on 6095, 7200, 9585 (BBCM)

SOUTHERN AFRICA From May 6, Radio RSA may add an omni-directional outlet on 9555, in English between 1100 and 1600.

SRI LANKA Deutsche Welle relay, Trincomalee, is now fully operational; English at 0200-0250 on 11965 and 9615. New Tamil clandestine Voice of Eelam, has been triangulated to Trincomalee too, rather than Jaffna, 0200-0300 and 1230-1330 in Tamil, English, Sinhala, varying daily between 7000 and 7025, but didn't last long, disappearing before the Indian troop withdrawal (Victor Goonetilleke, RNMN)

SUDAN Radio Omdurman relaying Radio Juba at 1400-1500 on 11711.2 instead of 9540 or 9550. Radio Voice of Ethiopian Unity at 1900 also on 11711 (BBCM) 11709 at 1410, lively pop music show by female announcer (Victor Goonetilleke, RNMN)

SWEDEN Radio Sweden, English to us at 1530, on new 21500 kHz, parallel still BBC-blocked 17880. French and Spanish may be cut to 15 minutes next fall, and Portuguese dropped, while English, German, Russian and Baltic languages expand (Sweden Calling DXers) The 0230-300 broadcast is on 11705, 15295 (John Carson, OK)

SWITZERLAND Swiss Radio International has dropped SSB tests, but has added 11 meters, 25600 to South and Southeast Asia at 1315-1500. Red Cross Broadcasting Service dates are the UTC Tuesday and Friday following the last Sunday of each month through August, at 0310-0327 on 6135, 9725, 9885, 12035 (via Russ Ray, Kevin Klein)

TURKEY Voice of Turkey will complete a new site with five 500 kW shortwave transmitters by mid-1992 at Emirler, 63 km from Ankara, with 44 curtains and a single antenna (Brown Boveri via Larry Miller). Cost will be $57 Turkish lira (Newspaper via W Young, DE) English now scheduled: 1230-1300 on 17785; 2000-2100 on 9795; 2200-2300 on 9445, 9665, 9685, 17880; 0300-0400 on 9445, 17880 (TRT)

USA WNOG now operates: 1500-2100 on 15420, 2100-2400 on 13720, 0000-0300 on 7335, 0300-0500 on 6185. See last month for World of Radio times. However, 15420 could be extended to 2400, or 7355 from 2300.

KUSW is authorized for Z-90: 1300-2200 on 15590, 2200-0300 on 15580, 0300-0500 on 9815, 0500-0700 on 6175, 0700-1100 on 6175, 1100-1300 on 9850; alternates are 9850 at 1300-1500, 11695 at 000-0300 (George Jacobs & Associates) But actually 24 hours only on Saturday night-Sunday morning, and off the air Sunday night. KUSW has been testing a Farsi program on 15590, soon to carry anti-Khomeini programs from a Los Angeles SCA programmer, Radio Seda-ye Iran (Khalil Ladjevardi, CA) Time?!

QSLs are not available from Boston HQ, but WCSV will verify with a computer-generated certificate for reports sent direct to volunteer QSL manager E.H. Cockburn, WCSV, P O Box 130, Costigan, ME 04423; fax (207) 732-4741.

WCSV has a new Czech broadcast every second Sunday at 0905-0950 on 9840 (SDX)

USSR Moscow dominates external broadcasting, so we were pleased to run across Leningrad, in Russian on a Saturday at 0715, on 15580 (g,h, AZ)

Former jamming transmitters now carry Radio Voroshilovgrad, Ukraine, on 7245, 15260 (Radio Moscow via BBCM)

VENEZUELA Radio Libertador reactivated and occasionally heard on 3245.2 at 1030 (Dave Valko, PA, F7) 3244.9 from 1000 and in the evenings (Chuck Bolland, FL, RCI SWL)

June 6 is radio industry day in Venezuela, so check the shortwave stations for special programming (via Jairo Salazar, Play-DX)
Broadcast Loggings

Let other readers know what you're enjoying. Send your loggings to Gary Van Horn, c/o Monitoring Times. English broadcast unless otherwise noted.

0003 UTC on 7415
PIRATE: Radio Free Willy. Station testing with rebroadcast of July '87 broadcast. "Dr. Dimento show on AM-1000." Off at 0100, to return at 0307 UTC with comedy skits and music -- very well done with fade outs by 0430 UTC. (Harold Frogge, Midland, MI)

0015 UTC on 15115
NORTH KOREA: Radio Pyongyang. Commentary on the outlook for the socialist policy of the 90s, and segment on reunification proposals. (Bob Hurley, Baltimore, MD) (John Carson, Norman, OK)

0030 UTC on 9900
EGYPT: Radio Cairo. Arabic/English. Station sign-on with chimes and Arabic ID as, "Ah-gahira," with newcast to follow. (Stephen Price, Conemaugh, PA) Arabic language lesson at 0300 and newcast. (John Carson, Norman, OK)

0030 UTC on 9835
HUNGARY: Radio Budapest. Feature on the Hungarian Ambassador visiting the Vatican and comments on the relations of the two countries. (Betsy Robinson, Clinton, TN) (Bob Hurley, Baltimore, MD) (John Miller, Thomasville, GA)

0030 UTC on 4800

0030 UTC on 7400
UNITED STATES: WCSN. Exceptional travelogue program through Nigeria, with interviews and a tour through a Nigerian castle. (Robert Rinkewich, Keyport, NJ) "Letterbox" show heard at 2145 on 13770 kHz. (Brian Bagwell, St. Louis, MO)

0050 UTC on 6090
LUXEMBOURG: Radio Luxembourg. Product commercials and musical IDs. Newcast at 0100 UTC, preceded by pop tunes and weather forecast. (Cindy Holmes, Orlando, FL)

0201 UTC on 12035
SWITZERLAND: Swiss Radio Intl. "Dateline" show discusses Hong Kong's dealing with a influx of boat people. (John Carson, Norman, OK) Monitored the European Service on 9885 kHz at 0645 UTC. (Jim Johnson, Galesburg, IL)

0235 UTC on 17705
NEW ZEALAND: Radio New Zealand. Monitored from 0235-0530 UTC. Programming included gospel music, sports and weather reports from Auckland, world and Pacific news, and special sport features. Excellent signal past 0300 UTC. (Craig Seifert, New Hampton, NH) Monitored at 0500 UTC on 17680 kHz-ed.

0240 UTC on 4910
HONDURAS: La Voz de la Mosquita. English/Spanish. English religious program proceeding at tune-in, followed by Spanish at 0515 UTC. (Jim Johnson, Galesburg, IL) Inspirational music and Spanish devotionals at 0300 UTC. (Frank Hillton, Charleston, SC)

0255 UTC on 5015

0310 UTC on 8135

0400 UTC on 7205
SWAZILAND: Trans World Radio. German. "This is Trans World Radio" ID at the hour into German service of religious music, devotions and prayer. (Cindy Holmes, Orlando, FL)

0410 UTC on 4910

0500 UTC on 13610
KUWAIT: Radio Kuwait. Arabic. Plenty of exotic Arabic music and IDs. Audible on parallel frequencies 17850/17895 kHz. (Jim Johnson, Galesburg, IL) Monitored from 2300 to 0115 sign-off. (Stephen Price, Conemaugh, PA)

0710 UTC on 6305
CLANDESTINE: La Voz del CID. Spanish. Anti-Castro programming by male/female duo. Additional editorials on Panama's Honegga. Station ID at 0711 UTC. (Frank Mierzwinski, Mt. Penn, PA) (Randy Coyle, Slidell, LA)

0719 UTC on 11855
BRAZIL: Radio Aparecida. Portuguese. Easy-listening music and Brazilian pop vocals. "ID breaks between local ads and a time check." (Charles Edwards, Scranton, PA)

1000 UTC on 6105
BOLIVIA: Radio Panamericana. Spanish. Intermittent interference for opening ID and Bolivian vocals. Local morning announcements. (Rod Pearson, St. Augustine, FL)

1025 UTC on 5015
PERU: Radio Moyobamba. Spanish. Native campesino music presented in a DJ format. ID as "Moyobamba Radio" and local time checks. (Frank Hillton, Charleston, SC) Monitored from 1020-1040 UTC. (Walter Snieder, Tyler, TX)

1025 UTC on 5025
PERU: Radio Quillabamba. Spanish. Very good signal for Andean music and station ID at 1027 UTC. (John Tuchischer, Neenah, WI)

1035 UTC on 4875
BOLIVIA: Radio La Cruz del Sur. Spanish. Religious message and instrumental vocals. Station ID and program announcements at 1100 UTC. (Kelly Jennings, Ottawa, IL)

1140 UTC on 3270
GUATEMALA: Radio Tezulultek. Spanish. Male DJ with Guatemalan music program. Station ID at 1145 UTC. Audible on parallel frequency 4835 kHz. (Frank Mierzwinski, Mt. Penn, PA) Monitored on 4835 kHz with campesino music from 2345-2359. Station ID at the hour. (Jack Davis, Birmingham, AL)

1300 UTC on 6115
MEXICO: Radio Universidad de Sonora. Spanish. Mexico's national anthem and chorus anthem. Sign-on ID and news bits to musical ballads and Spanish instrumentals. Pleased to hear this one -- now for the GSL. (Charles Edwards, Scranton, PA) Managed to pick up Mexico's Radio Educacion on 6185 kHz at 0700 UTC. (Tim Johnson, Galesburg, IL)

1315 UTC on 9635
AFGHANISTAN: Radio Afghanistan. Urdu. Fair signal quality for subcontinental music to announcement break. Mentions of Kabul and Afghanistan heard followed by flute interval signal at 1330 UTC. (Frank Hillton, Charleston, SC)

1430 UTC on 21550
FINLAND: Radio Finland. "Weekend News Review-Compass North" with segments on strikes in Finland and damage to the Finnish forests from air pollution. (Bob Hurley, Baltimore, MD) (Sam Wright, Biloxi, MS) Monitored at 0605 on 17750 kHz. (Kathy Parks, Richmond, CA)

1538 UTC on 21810
SWEDEN: Radio Sweden. Music from Swedish pop group Abba and comments on the Swedish translations of the Bible to "Mailbag" show. (Sam Wright, Biloxi, MS) Heard at 11705 kHz at 0230 UTC. (Kathy Parks, Richmond, CA)

1540 UTC on 6005
CANADA: CF-CX. Great music show of "Golden Oldies." Station ID at 1545 UTC. (Frank Mierzwinski, Mt. Penn, PA) (John Carson, Norman, OK)

1600 UTC on 21705
NORWAY: Radio Norway Int'l. Discussion on proposed plan to assist Romania with 1.2 million in aid and developments in oil spill cleanup technology. (John Wright, Conemaugh, PA) Monitored on 11520 kHz at 2308 UTC. (Randy Coyle, Slidell, LA)

1900 UTC on 15450
BOLIVIA: Radio Jamahiriya. Arabic. Features and readings to Arabic music. Signal observed to drifting from 15449.9 at 1900 UTC, to 15452.8 at 2105 UTC. (Stephen Price, Conemaugh, PA) Audible in Arabic on 15450 kHz at 2300-2345 UTC. (Brian Bagwell, St. Louis, MO)

2020 UTC on 9520

2145 UTC on 9535
ALGERIA: Radiodiffusion-TV Algerienne. French. Big band jazz program and national newscast. (John Tuchischer, Neenah, WI)

2200 UTC on 11820
INDIA: All India Radio (AIR). International news and editorial on the importance of multibranching in the Indian economy. Parallel frequency 11620 kHz considerably weaker. (John Miller, Thomasville, GA) Heard also on 15020 kHz at 1305 UTC. (Jim Johnson, Galesburg, IL)

2230 UTC on 7270
POLAND: Radio Polonia. In-depth discussion on Soviet Europe and the regional cooperation. Jazz program barely audible at 2200 UTC. (Betsy Robinson, Clinton, IL) Audible on 9675 kHz at 0630 UTC with "Mailbag" show. (Jim Johnson, Galesburg, IL)

2255 UTC on 4900
GUINEA: Radiodiffusion-TV Guinewe. French. Fair signal quality for announcement ID and program intros. Musical bridge separated music from news. (John Thomson, Greenville, TN) Native African music and IDs to sign-off routine at 2359, with interval signal and IDs. (Sam Wright, Biloxi, MS)

2310 UTC on 9560

MONITORING TIMES May 1990 27
Letters from a Beacon Addict

Just when you thought it was safe to leave the radio, the revenge of the Single Letter HF beacon (SLHFB) pops into your speaker. Well not exactly in the speaker, maybe it is the absence from your speaker that you should be noting. SLHFB expert Keith Russell has noted a big change in one of the Utility World's more interesting mysteries.

By his own admission, Keith says that SLHFB "has been close to an obsession for me over the past few years that hardly a day goes by without the so-called cluster bands plus the clear channel signals K/U/V beacons being checked and the results recorded."

Keith says that the "D" and "P" SLHFBs have left the airways of shortwave. Also, the "C" and "F" beacons have disappeared possibly never to return. He also says that some of the more rarely heard cluster band letters such as "R" for example have also gone with them. Transmissions still being heard within these 4 kHz clusters are "S," "L," "O" and "**--**

What's all this fuss about? Well, for years listeners have monitored the spectrum and heard someone, somewhere, sending a single letter Morse code (CW), continuously. Nothing is known about these CW sentinels of the airways. Not much has been written about these beacons as compared to, say, the number stations. The mystery of what purpose they exist for and who runs the beacons is no less as great when compared to the number stations.

Case in point: Keith emphatically disagrees with David White's statement in the September 89 edition of this column that the SLHFB do not originate in the USSR. Keith says, "It would be most easy for me to believe that the signals come from Russia because of the success which I have had with a beverage antenna headed slightly east of the north pole as seen from the US mid-west."

Keith also points out that the Morse Code characters "**--**" and "* **--**" are Russian Morse Code. (Not quite true, Keith, those are Latin characters that are also used in the Arabic, Greek, Japanese and Russian Morse code alphabets.-ed)

As previously reported in this magazine by Mr. Russell, the "O" beacons change schedule precisely with the summer/winter local time change in western Russia and again in the winter/summer. Keith says he is prepared to accept that the SLHFBs are sited in the USSR or eastern bloc nations.

"It is strange to me how little of the obvious about cluster band SLHFB has appeared in print," says Russell. "While most SLHFB on these bands are the same repetitive signal speedwise," Russell notes that others are simultaneously running at different speeds on different bands.

For example, "O" is a triplet which uses different sending rates on 6804.0, 10646.0 and 13638.0 kHz each time it transmits for a 30-minute schedule once every two hours.

Just to keep the record straight, Keith says the first of those three frequencies is identical to 5308.0 kHz and the third is a repeat of that on 17018.0 kHz. This set of nonidentical triplets was to Russell's knowledge unique. Other cluster band SLHFB had nonidentical twins, as proven on many occasions when it has been possible to switch back and forth as the two signals aired at the same time. Those which for Russell had been the most easy to find with these characteristics are marked below:

<table>
<thead>
<tr>
<th>Band (kHz)</th>
<th>O</th>
<th>N</th>
<th>R</th>
<th>Z</th>
<th>L * * *</th>
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<tbody>
<tr>
<td>5305/5309</td>
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<td>6801/6805</td>
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<td>8645/8649</td>
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<td>10643/19647</td>
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<td>13635/13639</td>
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<td>17015/17019</td>
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<td>20991/20995</td>
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</table>

Russell has done some timing measurements on these beacons and his contention is that the SLHFBs are ufe stations providing an almost constant monitor of water levels at remote locations in rivers, dams, lakes, etc.

Keith's whole premise on these SLHFBs is that the speed at which any given single letter signal is being used as a low tech method of passing to a distant recipient a "measurement" of sorts in real time. It can be easily demonstrated by stop-watch timing the passage of, say, ten letters over a period of weeks that some show marked changes.

The theory that Russell presents is very persuasively demonstrated by the "V" SLHFB on 7395.4 or 10285.4 kHz. At the close of the day on Tuesday the transmissions slow down dramatically, hold the new slow sending speed about 48 hours, then by Thursday night (GMT) it reverts to a fast sending pace again.

Taking no more than one reading a day for eleven weeks and plotting the data obtained gave a graphical presentation illustrated below.

```markdown
* * * * * * * * * * * * * * * * * * * * * * * *

Time in Seconds

Russell's guess is that the "V" SLHFB is used to record the regular filling of a reservoir or canal system.

Since Mr. Russell's original communication to me, he believes that the "O" and "L" beacons have gone silent. The only beacons left to hear on the bands are the "S" and "V" beacons.

The most bizarre finding by Russell is that the familiar "K" and "U" beacons have gone silent. Russell says that these utility band regulars are now gone. And I can confirm that, on the regular frequencies that I have monitored over the years, no beacons are on the air. Russell's speculates that perhaps the SLHFB are no longer needed or possibly they have shifted frequency. Maybe they are using a dish and satellite to do the job, whatever that may be.

The west has used a system like this for years through weather satellites with uplinks in the 400 MHz area. It could be possible that with the Meteor 3 weather satellite program, they could have very well moved their system.

I would like to thank Keith Russell for sharing this information with our readers and invite comments. I renew my offer to Guide to Utility Stations publisher Joerg Klinge to let us in on how he determined several of the SLHFBs' locations and open the column to David White to present his evidence that the SLHFB are not transmitting from the Soviet Union.

Larry Van Horn
C/O MT, P.O. Box 98
Brassington, NC 28702
FEMA has Struck a Chord

Several months ago I wrote a little piece on these pages concerning Federal Emergency Management Agency (FEMA). I listed several of the frequencies and one of them was 4790 kHz. Kevin J. Klein just couldn’t stand it so he dropped me a line to ask, "Why is the FEMA in the middle of the broadcast band, transmitting code on top of Djibouti. Djibouti is hard enough to get with Carabobo, Colombia, generating co-channel interference, much less the FEMA transmitting their racket on the channel. What gives?"

Well, Kevin, the answer is quite simple. The ITU divides the world into three regions and in a lot of cases each region is allowed to do their own thing. Also, even within a given piece of spectrum several services might be allowed to utilize a given frequency range (i.e. Broadcast, Fixed stations, Land Mobiles, etc.) This is the case with 4760 kHz. Just as Djibouti is authorized in its region to transmit on 4760, the FEMA is authorized in our region to use 4760 kHz.

Hope that helps. Just think of it this way: It is just part of the challenge of being a Broadcast SWL DXer. Nothing good comes easy. (Just ask my wife, Gayle. She complains about 4760 every time she sits down at the receiver.)

Achtung . . . German Numbers Located

Peter in West Germany has located some German number stations for our readers who regularly monitor them. Regular German numbers can be heard on 3370 and 4010 kHz during (local) night time hours. Both stations identify themselves at the beginning of each transmission:

3370 kHz "Hier ist DFC37"
4010 kHz "Hier ist DFD21"

Both transmissions originate from transmitters near Frankfurt, West Germany. They belong to the German PTT (Posts and Telecommunications). The organization, however, who is responsible for the transmissions provided by the PTT remains in the dark...

Thanks for the update Peter. I purposely did not reveal your last name and location so the German authorities will not knock on your door. I have heard about the strict monitoring laws in Germany.

AFRTS in Europe Revisited

A friend in England who wishes to remain anonymous has provided this column with information on the Armed Forces Radio and Television Service (AFRTS) utility band broadcast. In fact, this reporter used to work at the transmitter and receiver sites where the transmissions are coming from. The AFRTS transmissions, he says, are in fact coming from RAF Coughton, a small sub-base of Croughton, located ten miles away. There are no transmitters located on Croughton.

The transmissions are indeed used for FDM, and carry 16 circuits of teletype information to Lajes in the Azores. One of these usually carries AP and UPI press teletype. The other sideband carries a switchboard to switchboard telephone circuit. The lower lower (that’s correct) sideband is usually the one carrying AFRTS.

The signal is received in Germany from a satellite and relayed via microwave to Croughton. It is then re-sent to Barford on another microwave link, and then to Lajes on the Barford transmitters.

The receiving antennas for the Lajes link are four rhombic antennas, two for under ten MHz and two for frequencies above ten MHz. Two antennas for each frequency provide diversity reception. They have two receivers for each frequency. The audio output of each receiver is sent into a comptator where the strongest signal is selected for use.

For our readers not familiar with this technique, the theory is that a radio signal does not fade at two locations at precisely the same time, therefore, using diversity you will always have a constant strong signal. You can use space diversity — two different receivers and antennas on the same frequency, or frequency diversity — two receivers on different frequencies.

I appreciate this gentleman’s information and look forward to hearing from him in the future. Another mystery solved by MT readers for MT readers in the pages of the Utility World.

A Message from MARS

I received a very nice letter from the chief of Navy MARS, CWO4 T. Fisk from MARS Headquarters, Washington, DC. It was in regards to the article I wrote in these pages on the MARS afloat network in the November issue of MT’s Utility World. Thanks for the kind words, Warrant, and if any of you are interested in serving and bringing a little joy to our sailors and marines, you might want to drop a note to Warrant Fisk at the following address:

Headquarters
Navy-Marine Crops MARS Station (NAV)
Bldg. 13 NAVCOMMU Washington
Washington, DC 20390

I am sure they can use all the help they can get, it is a real neat program to work in. By the way, Warrant, I don’t have an NTP-8. How about some additional information? I am interested.

What’s an Alligator in the Playground?

For several months now a debate has been raging behind the scenes on the Navy’s usage of the terms Alligator and Alligator Playground. I think I have the answer but before I put it to bed, I’d like to hear from you, our experts out there in the field. If anybody has an answer for this one, drop me a note at the masthead address, and maybe settle this once and for all. We all would appreciate it.

Update the Update

My goodness, print one list and the world will beat a path to the mailbox to get it updated. I am referring to the new designator list I ran in the February issue. Several of our readers have been busy and provided some new answers and a couple of new designators with no frequencies attached. Here is that update to the update:

W-115 20124 X-906 13217
W-116 20167 P-380 no frequency yet
S-307 X-903 6730
S-307 no frequency yet P-381 5700
X-903 6730 P-382 5826

Thanks to all those who wrote. To Tom Redder, don’t confuse these designators with the Mystic Star freqs. They still use the Fox Trot series identifiers, not Sierra. I am afraid a complete a list does not exist. The reason we think there are over 450 is due to the numbers we hear over the air. If anyone has a good list of the current Mystic Star frequencies, I

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would like to hear from you. Mr. UK, I definitely would like to hear from you.

Canadian Designators

I would also like to hear from any military buffs that might have a good list of frequency designators for the Canadian Forces radio network. They seem to be doing their own thing out there and it would be nice to pin some of that down. Also, anybody with information on the Canadian Forces Amateur Radio system is invited to write. I would be interested in a solid frequency and callsign list. The CFARS is the Canadian equivalent to our US military MARS radio systems.

Aerostat Platforms

Aeronautical Communications Handbook editor Bob Evans has a special monitor interest other than aero freqs. He also enjoys Coast Guard monitoring. Bob currently has about 125 QSLs from USCG cutters, aircraft and shore stations. He also has been searching for Bill Battles' elusive Bravo 09, 36, 08 frequencies.

Bob says a couple of years back, he QSLed the Atlantic Sentry -- the first mobile Aerostat platform vessel leased from RCA. These aerostats are big balloons with a radar package aboard that can look over the horizon for aircraft and ships. They are used as part of the US Drug intervention program.

Well now, Bob says that Aerostat 2, 3 and 4 are in use and are active on USCG frequencies. Several weeks ago, Aerostat 4 was working Miami COMSTA on 5696.0 kHz. They were instructed to go to 5481.0 kHz USB. On this frequency they identified as Fox Trot Zero Two and were working Romeo Zero Quebec. The majority of the conversation was scrambled.

Utility Loggings

Abbreviations used in this column

<table>
<thead>
<tr>
<th>All times UTC, frequencies in kilohertz. All voice transmissions are English unless otherwise noted.</th>
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<tr>
<td>AM</td>
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<tr>
<td>Amplitude modulation</td>
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<td>LSB</td>
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<td>---</td>
</tr>
<tr>
<td>Independent sideband</td>
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<td>Lower sideband</td>
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</table>

2582.0 Motor vessel Cape Charles/Halifax Control via a patch through Yarmouth Coast Guard at 0620 in USB. (Fernandez, MA)

2678.0 1 Lima Xray working St. Petersburg CG group, shifted from 2182.0, talking about mission comms at 0755 in USB. (Fernandez, MA)

3076.5 Out of Band fishing boat, three boats in a net with XXX language about fishing ops. IDs were all first names. Similar net on 3096.0 with same comms. Both on military aero band. (It's a crowded band, guys, but not THAT crowded) IN USB at 0805. (Fernandez, MA)

3090.0 Spanish female five-digit number station heard at 0630. (Fernandez, MA)

3256.0 Eight chimes repeated until 0530, then callup, followed by five-digit text at 0532 in German. (This transmission consisted of several short texts. (Fernandez, MA)

3924.0 Spanish female number station heard at 0600 in AM in the ham bands. (Michael Elder, Highlands, TX)

4134.6 CGC Campbell working Boston Rescue through COMSTA Boston in USB at 0322 using duplex-4428.7. (Preston Sewell, Franklin, NJ)

4316.0 DGLF sending its call continuously in CW at 0330. (Dix, NY) Jack, that is the pleasure ship, La Vida I, a German ship, ed.

Bob, my lists show nothing for 5481.0 so it looks like you have found a new one that bears watching. Maybe that is one of the Bravos Bill Battles is looking for.

Speaking of the Coast Guard, I wish to apologize to members of the Coast Guard Auxiliary. They are not members of the reserves (as I tried to place them) but are a civilian volunteer organization under the Coast Guard. Probably a good case of work on the brain when I typed that one in the computer. Thanks to the many readers who caught me on this one.

It's Larry's Silver Anniversary

Ah yes, I have really enjoyed it and the love affair continues. There appears to be no end in sight. The mystery, intrigue and excitement I have for radios is still as strong today as it was when I began. I cherish the friendships I have made and the many friendly folks I have met over the years.

Yes, this month is special. It is my twenty-fifth anniversary in the shortwave radio hobby and I am into my third year as editor of this column. This is also my seventh year with the world's greatest magazine, Monitoring Times.

I would like to take this chance to thank the thousands of MT readers that have taken from their busy schedules to write me over the years. My presence in this magazine would not be possible without you, the reader, the real experts in the world of shortwave radio. So to you, I dedicate my first 25 years in the hobby and I am looking forward to serving you in the future. Let's shoot for another 25. (The Good Lord and Larry Miller willing!) Until next month... hey Rod, let's go get a cubo.

4428.7 COMSTA Boston working CGC Seneca in USB at 0231 using duplex-4134.3. COMSTA San Francisco working P4M in USB at 0632. COMSTA New Orleans working CGC Anacapa at 0633. (Sewell, NJ)

4577.0 US Air Force MARS radio net with various stations including AFA2KC checking in at 0100 in USB. (Russ Hill, Oak Park, MI) Welcome to the column, Russ. Hope to see you in the pages again-ed.

4860.0 Female repeating Uniform India Xray 2 for three minutes at 0300. (Bob Hurley, Baltimore, MD) Israel Mousand-ed.

4881.8 Female Bulgarian five-digit number station heard at 0700. (Fernandez, MA)

5000.0 Time announcement in Spanish immediately following each time announcement from WWVH from 0555-0600 in AM. (LOL, Buenos Aires?) (Hurley-MD) Probably-ed.

5321.0 CGC Buttonwood working COMSTA New Orleans with three short messages. COMSTA also had messages, would coordinate RTTY freqs when ready at 0310 in USB. (Patrick Kerrigan, Chicago, IL)

5695.0 English female digit number station at 2310. (Fernandez, MA)

6385.0 PPR-Rio de Janeiro Radio, Brazil, with Colt CW marker at 0122. (Art Blair, CA)

6493.0 FUM-French Naval Radio Pipette, Tahiti, with V CW marker at 0837. (Paul Hulse, North Hollywood, CA)

6518.8 Phone Patch between CG Cutter Seneca and Boston Rescue through COMSTA Boston, re-search for ERRIB at 1656 in USB. Full duplex with 6212.4. (Sewell, NJ)

6690.0 RAF Buchan working 5DY at 2338 in USB. Heard testing the PJ. Controller said all he was getting was garbled ping pong. (Doyle, CT)

6730.0 Air Force One working Andrews AFB at 0110 in USB. This frequency was primary and Fox Trot 115 upper was secondary. Noted phone patch to the Secretary of State among other things. (Martin Maragni, Deerfield Beach, FL) Welcome to the column, Martin. Hope you check in often-ed.

6748.1 CW five-digit code groups heard at 0844. (Hulse, CA)
Andrews AFB working SAM 683 with phone patch for Doral Hotel for info on Congressional delegation arrival. Poor copy, shifted to 6205 then back to 6757. (Robert Montgomery, Levittown, PA) 6757.0

US Army MARS net heard at 1724 in USB with numerous stations including AARSUY checking in. (Hill, MI) 7360.0

Noted a station sending single letter phonetics ending with Liberty clear at 0540. Then a call at 0545 for all stations to standby for flash traffic. At 0550 noted RTTY on the channel for two hours. (Skip Harwood, Beale AFB, Ca) Skip, I believe this was probably NASA voice SAC-ed. 7415.0

German female numbers station at 0110. (Charles Edmunds, Merritt Island, FL) 7958.0

Male with five-digit number station ended with one number repeated five times at 0635. Language sounded similar to Serbo-Croat. Same on 10235 but not a simulcast. (Fernandez, MA) 8457.0

NOI-COMSTA Kodialk, Alaska, with unclassified traffic to NATO CGC Mustang and others at 0401 in RTTY 170/75R. (Art Blair, TX) 8508.0

RIW-Khwa Naval Radio, Uzbeck SSR calling RMMV in CW at 0704. (Dix, NY) 8544.0

3DP44-Praque Radio, Czechoslovakia, with a DE CW marker at 0547. (Montgomery, PA) 8610.0

Unid station repeating VVY KAB in CW at 1352. (Dix, NY) 8656.0

POLN calling FRR8 and M5DL with no reply from either in CW at 0231/0236. (Dix, NY) Anybody have any ideas who these stations are? I see them logged from time to time throughout the spectrum but no one seems to know who these folks are. Looks military to me-ed. 8834.0

Dakar Aeradio working Roberts Aeradio with a very heated argument over who cleared Springbok 232 to flight level 39 (apparently Roberts said 39 was fine). After a while the Springbok operator refused to answer after repeated calls at 2357 in USB. (Doye, CT) 8861.0

FDI-French Air Force Als Les Milles, France, with a V CW marker at 0516. (Dix, NY) 8931.0

Miami COMSTA operations working Rescue 1437. Dropped buoys on frequency 240.6 at 1400 local in USB. (Montgomery, PA) 8993.0

Air Force 7 working MacDill talking about rooms at Best Western for crew members. At least the Air Force is watching their budget. (Montgomery, PA) 9023.0

A sweeping jammer by NORAD on a Spanish BC station on 9022 (of Israel-ed.). this jamming has been going on for the past year, due to stations interfering with NORAD exercises on 9023 in USB at 2135. (Fernandez, MA) 9365.0

Spanish female five-digit number station at 0320. (Fernandez, MA) 9956.0

EK57-possible Russian station calling UZ2H telling them to QSO 9332 In CW at 0105. (Dix, NY) Jack, my ITU call sign book doesn't list either call sign-ed. 10125.0

Female English accent operator repeating CI02 at 0055 (Saturday) In USB and parallel with 6745. (Doye, CT) Israel Mossad intelligence number station-ed. 10235.0

Male four-digit number station at 0650. Sounded like Serbo-Croat. See 7985.0. (Fernandez, MA) 10459.0

English female 3/2 digit number station at 0318. (Fernandez, MA) 11643.0

English female 3/2 digit number station at 0713. (Fernandez, PA) 11528.0

No ID but made request for shipment of grain then went green in USB. (Montgomery, PA) Time, Robert-ed. 12662.2

7TAL-Aiglrs Radio, Algeria, with CO CW marker at 1552. (Blair, CA) 12840.0

JMC/JMC2/JMC5-Tokyo Radio, Japan, with a CO CW marker at 1150. (Dix, NY) 12936.0

HLG-Seoul Radio, South Korea, sending a CO CW marker at 1146. (Dix, NY) 12950.0

Mossad number station, female with Victor Lima Bravo 2 repeated at 0634. (Fernandez, MA) 12975.0

VMM-Madras Radio, India with a CO CW marker at 1208. (Dix, NY) 13204.0

SAM 270 working Andrews, gave antenna heading, then switched to 370 upper (not on 13370). (Fernandez, MA) 13205.0

Alitalia 877 calling Berne Aeradio, he pronounced it phonetically as Bear-nah, with no reply. Even better was one minute later at 2224 an HLA 01 calls the same station with position as Angola, Africa. HLA 01 made four more calls saying he was on 13 upper in USB. (Doye, CT) 13212.0

Midship calling Bugle Boy, nothing heard then switched back to 9018,0 where contact was made, and told to maintain that freq at 1343 in USB. (Kerrigan, IL) 13217.0

Alpha 46 calling for a radio check and referred to this frequency as Xray 906. (Montgomery, PA) 13254.0

Heiflux Military with weather broadcast for terminals across Canada, ending at 2130 then into RTTY mode. (Fernandez, MA) 13378.0

KKNB-Department of State Radio, Washington, DC with CW ORA marker at 0427. (Eldred, TX) 13630.0

FAA stations KDM45-Saan Juan, Puerto Rico, and KDM49-Regional office discussing high wind condition 4, number of personnel unable to report due to high winds, roof off offices, and water damage to switcher. Operators also discussing damage to aircraft and terminals. Noted at 1251 in LSB. (Dix, NY) 13944.5

Melissen, East Germany, seems to be a security net for East Germany. Shift changes would be the corrected time for all stations to respond. Heard at 1400 in USB. (Gregory Dome, San Antonio, TX) 14443.0

Angry Warrior and View Finder 2 discussing frequencies and Air Force invoices at 0045 in USB. Have also heard them on 19015.0 Whozit? (Blair, CA) Don't knowzit-ed. 16852.0

Two undi stations working simplex with plain language messages in English-reports from provinces badly hit areas from a typhoon with a large number of people homeless. Place names mentioned were Basco-Cabayan-which are in the Philippines. No call signs or identity information heard at 2132 in CW. (Dix, NY) 16907.7

TFA-Rejkjavik Radio, Iceland, sending a CO CW marker at 1352.(Dix, NY) 17064.0

UAT-Moscow Radio, USSR, heard at 1213 with a CO CW marker, said QSO 16708. (Dix, NY) 17077.0

UAH-Talin Radio, USSR, heard at 1302 with a CW CW marker. (Dix, NY) 17170.5

ZLB-Awaura Radio, New Zealand, heard at 1515 sending a CW marker stating ZLB HF is closed. (Brian Webb, Thousand Oaks, CA) 17189.6

D3E51-Luanda Radio, Angola, sending CO CW marker at 1452. (Webb, CA) 17197.4

9V-G-Singapore Radio, Singapore, with ARG Idler and call sign only CW marker at 1620. (Webb, CA) 17207.0

NMC-Coast Guard COMSTA San Francisco, California, heard at 2107 with ARG Idler and call sign only CW marker. (Webb, CA) 17210.4

NNM-Coast Guard COMSTA Portsmouth, Virginia, sending ARG Idler tones and call sign only CW marker at 1315. (Webb, CA) 17211.4

WLO-Mobile Radio, Alabama, with ARG Idler and call sign only CW marker at 0437. (Webb, CA) 17223.9

WLO-Mobile Radio, Alabama, heard at 0452 sending a ARG Idler and CW call sign only marker. (Webb, CA) 17952.0

Singshot working Coffee Table at 2032 with track information in USB. (Doye, CT) USS Customs Service-ed. 17966.0

Female English accent operator repeating CI02 at 1714 in USB. (Doye, CT) 18655.0

An undi station continuously sending 786 786 786 1 In CW. (Dix, NY) 19525.0

Demon Flyer working Taco 1, Alexander and Draco. Regular use of encryption, often made mention of support HC-130 aircraft. Heard In USB at 0300. (Edmunds, FL) 20186.0

Ascension Is. USAF MUX signal with Space Shuttle Columbia mission comms to Houston. Heard at various times in USB. (Kopins, OH) 22428.0

9YGS-Singapore Radio, Singapore, heard at 0111 with CW CW marker. (Dix, NY) 22460.0

FU-Japanese Naval Radio Nourima, New Caledonia, sending a V marker at 0143. (Dix, NY) 22465.0

9MG-Penang Radio, Malaysia, heard at 1831 in CW sending a CO marker. (Dix, NY) 22472.0

NMO-Coast Guard COMSTA Honolulu, Hawaii, with area weather broadcast in CW at 0114. (Dix, NY) 22485.0

VIX-Sydney Radio, Australia, with CW CW marker and weather from Melbourne to all ships, weather reports followed. (Dix, NY) 22533.0

ZLB-Awaura Radio, New Zealand, heard at 0123 with a DE CW marker. (Dix, NY)
Simplex or Duplex?

I'll be the first to admit that I don't give a darn about the type of signal that I'm monitoring. As long as I can hear the action on my scanner radio, I'm happy. Sound familiar? I knew it would. My mail indicates that approximately 80 percent of you could care less about simplex and duplex signals. Ditto for intermediate and image frequencies.

Still, these terms are part of our world -- the scanning world. Understanding simplex and duplex signals is about as elementary as learning to tie your shoes. To scan like a pro, you must master a few of the basic rules of scanning. These rules are not difficult to learn, and if you will stay with me for a few more paragraphs, I'll show you just how easy it is to become a "Scanning Master."

Last month I mentioned that the cordless phone base transmitted on a duplex frequency. When we hear the word "duplex," many of us instantly become perplexed. But the difference between a duplex signal and a simplex signal is quite simple. When you talk on a cordless phone, that's full duplex. Why? Because you can talk, listen or interrupt the other person at any time. The cordless phone base makes all this possible by transmitting a duplex signal. However, the cordless phone handset transmits a simplex signal.

Now, don't start complaining and give up. Hang in there. From this point forward, learning the difference between simplex and duplex will be entertaining.

To understand the nature of a simplex signal, punch the following cordless handset frequencies into your scanner radio: 49.670, 49.845, 49.860, 49.770, 49.875, 49.830, 49.890, 49.930, 49.990, 49.970. As you listen to these frequencies, you will immediately notice that only one side of the cordless conversation can be heard. Now you understand the meaning of a simplex signal.

To hear both sides of the conversation, simply monitor the duplex frequencies of the cordless base unit: 46.610, 46.630, 46.670, 46.710, 46.730, 46.770, 46.830, 46.870, 46.930 and 46.970. Go ahead and try it. It's an easy "hands on" lesson that everyone can do at home.

The world of simplex and duplex signals becomes a little more complicated when we consider that there are "one frequency" and "two frequency" simplex systems. Seasoned scanner buffs will probably recognize yet another term: "semi-duplex." To learn more about these and other types of radio signals, check out your local library or visit your nearest ham radio outlet store.

The "Intermediate Frequency" or "IF" of your scanner radio can usually be found in the instruction booklet. Generally, the "IF" will be 10.7 or 10.8. Before the days of continuous-tuning scanner radios, knowing the "IF" permitted hobbyists to monitor U.S. government frequencies.

Here's how it worked. The older scanner radios could not be programmed between 406.00 and 420.00 megahertz. To monitor a federal agency on 412.00 MHz, the listener simply doubled the "IF" (2 x 10.7 or 10.8) and then added the sum to the frequency. (21.4 or 21.6 + 412.00 = 433.40 or 433.60). The resulting image frequency was in the 433 megahertz range and although the signal wouldn't be all that great, it was better than nothing.

Do cordless phones operate on a simplex or duplex frequency? To find the answer, check out the Scanning Report.

In today's world, the continuous-tuning scanner radio has eliminated the need to tune image frequencies. But even with our sophisticated high-tech scanner radios, we still need to understand the mathematical formula for finding an image frequency. Why? Because it can help us to verify our frequency lists.

Suppose that you hear a commercial pilot talking on 143.940 MHz. As most of you know, the civilian air band is between 118.00 and 135.00 MHz. So how did the pilot's transmission get on 143.940 MHz? This is also called an "image" frequency. To prove it, simply double the "IF" of your scanner radio and subtract it from the frequency in question. It's another quick and easy way to verify all of your "questionable" frequencies.

Another interesting set of rules that everyone can use is the "pairing" of frequencies between 450.00 and 470.00 MHz. Suppose that you heard a taxi cab driver on 470.40 MHz. However, the response from the base station could not be monitored. Where would you look to find the base frequency? Between 450.00 and 470.00 MHz paired frequencies are separated by exactly 5 megahertz. The base can always be found on the lower frequency. By subtracting 5 megahertz from 470.40, the base operating frequency could be found on 465.40. Get the idea?

Between 470.00 and 512.00 MHz, paired frequencies are 3 MHz apart and the base is on the lower frequency. Between 806.00 and 896.00, paired frequencies are 45 megahertz apart and the base is on the higher frequency.

The above rules are just a few of the "trade secrets" that are used by all of the pros. By learning to apply them to your everyday scanning adventures, you can also become a "Scanning Master."

Treasure Hunt

For the May/June Treasure Hunt, Bob Grove has donated his world-renown "Scanner Beam" antenna. As most of you know, the Scanner Beam provides unexcelled coverage between 30 and 960 MHz. Best of all, the Scanner Beam can be used with an inexpensive TV antenna rotor for monitoring those elusive low-power signals.
Personally, I use the Scanner Beam and a rotor to tune in on cordless phone calls. However, the antenna performs quite well in a fixed position. Although signals arriving from the sides and back will be slightly attenuated, you won't miss any of the action! Here are the clues:

1. In the February 1–April 30 Grove Catalog, what page features the "Scanner Beam"?
2. What year was the Electronic Communications Privacy Act passed into law?
3. Name the woman on page 90 of the February 1990 MT.
4. As of January 1, 1990, the civilian aircraft band will include 136 to 137 megahertz. True or false?
5. Provide a frequency for the Space Shuttle between 250 and 260 megahertz.

If you can't wait to find out if you're our lucky winner, the Scanner Beam can be ordered direct from Grove Enterprises. Send $59.95 to P.O. Box 98, Brasstown, NC 28902. Can't find the answer to a particular clue? Drop me a line -- I'll bend the rules and provide you with some additional hints.

**Frequency Exchange**

Are you ready to go flying? John Jenkite has provided an 8-1/2 by 11 inch U.S. map that contains the weather and metro operating frequencies for military aircraft. By glancing at the map, it's easy to discover the weather and metro frequencies for over 150 military air bases. Here's an example: NAS Norfolk-271.600, NAS Jacksonville-344.600, Offutt AFB-342.500, Travis AFB-375.200.

The map also features an altitude chart that provides the optimum reception ranges at various altitudes. Apparently, the map was intended to serve as a reference guide for military pilots. To receive your copy of the map, without folds or creases, an SASE is not necessary. Simply put three bucks in an envelope and ask for the "Military Map." Send your requests to the Frequency Exchange, P.O. Box 98, Brasstown, NC 28902.

Since we're already airborne, let's touch down and check out the frequencies at NAS, New Orleans:

- 138.70 Security Channel #4 (Navy Police only, simplex rptr)
- 140.82 Security Channel #1 (All police, including air force)
- 140.10 Crash crews, control tower, fire department
- 163.4875 National Guard

The above list was submitted by G.J. Forbin. G.J. also provided the following miscellaneous frequencies for the city of New Orleans:

- 450.5125 Media
- 156.45 RCA Corporation
- 426.025 RCA Corporation
- 164.9875 NASA
- 173.7375 NASA
- 164.175 Postal Service

As we become airborne again, let's fly over Florida and check out Steve Schmidt's Game and Fish Commission frequencies.

**Florida Fresh Water Fish Commission**

- 151.385 F-1 (Primary)
- 151.160 Mobile
- 151.310 F-2

---

**After the May/June Treasure hunt is completed, this could be you putting up your own Grove Scanner Beam!**

151.415 Orlando
151.430 Repeater
160.14 Orlando area
160.425 Tampa and Lake Okeechobee area
161.445 Lake Oke area
172.275 Link to U.S. Park Service

Anyone care to "buzz" past Fort Bragg, North Carolina? Richard Garner from Spring Lake has provided the following:

- 32.50 Range Control
- 38.90 Range Control
- 40.60 Army Helicopter
- 40.50 Search and Rescue
- 41.075 Range Control
- 49.70 Bomb Squad
- 49.80 Bomb Squad
- 141.025 Bomb Squad
- 142.500 Range Control
- 40.60 Search and Rescue
- 41.075 Range Control
- 49.70 Bomb Squad
- 141.025 Bomb Squad
- 142.500 Range Control

If you get air sick or don't like to fly, please depart the airplane after we land at Charlotte, North Carolina. As we take on fuel and await our departure clearance, take a peek at the following four page list that was sent in by G.W. Hollen.

- 42.08 South Carolina Highway Patrol
- 42.10 South Carolina Highway Patrol
- 42.12 South Carolina Highway Patrol
- 42.56 North Carolina Highway Patrol
- 42.64 North Carolina Highway Patrol
- 42.72 North Carolina State Bureau of Investigation
- 453.65 Iredell Sheriff
- 453.10 Lincoln Sheriff
- 453.9750 Cleveland Sheriff
- 154.86 Rutherford Sheriff
- 155.01 McDowell Sheriff
- 154.81 Buncombe Sheriff
- 155.325 Charlotte Memorial Hospital Helicopter

To receive a fresh copy of all four pages, simply include a business size SASE with your request. That's right, the list is free! But you must hurry. Letters that are postmarked after May 31 must include two dollars to defray the cost of copying.

For those of you who remained on board, our next stop is Glasgow, Scotland. (Hey, I warned you to get off in North Carolina.) Dom Hamrick from Wilburn, Arkansas, is a
Merchant Seaman. On a recent trip to Glasgow, he came across a frequency allocation table that was labeled "Re-Engineered UK Allocations for Bands 1 and 3." While I'm not certain of the term "Re-Engineered," I thought that everyone would find it interesting.

UK Listings

<table>
<thead>
<tr>
<th>Frequency(MHz)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>49.00</td>
<td>An unspecified 500 kHz to be allocated into fixed paging services at 49 MHz from 1987</td>
</tr>
<tr>
<td>174.00-174.50</td>
<td>Simplex Duplex (where used)</td>
</tr>
<tr>
<td>174.50-176.50</td>
<td>Fixed Communication Links for Emergency Services (UK Landbased)</td>
</tr>
<tr>
<td>176.50-181.50</td>
<td>Private Mobile Radio (PMR), Simplex</td>
</tr>
<tr>
<td>181.50-184.50</td>
<td>Private Mobile Radio, Base Transmitters</td>
</tr>
<tr>
<td>184.50-191.50</td>
<td>Private Mobile Radio, Simplex</td>
</tr>
<tr>
<td>191.50-192.50</td>
<td>Private Mobile Radio, Simplex</td>
</tr>
<tr>
<td>192.50-199.50</td>
<td>Private Mobile Radio, Mobile Transmitters</td>
</tr>
<tr>
<td>199.50-200.50</td>
<td>Private Mobile Radio, Simplex</td>
</tr>
<tr>
<td>200.50-207.50</td>
<td>Private Mobile Radio, Base Transmitters</td>
</tr>
<tr>
<td>207.50-208.50</td>
<td>Private Mobile Radio, Simplex</td>
</tr>
<tr>
<td>208.50-215.00</td>
<td>Private Mobile Radio, Base Transmitters</td>
</tr>
<tr>
<td>215.50-221.50</td>
<td>Private Mobile Radio, Simplex</td>
</tr>
<tr>
<td>221.50-223.50</td>
<td>Private Mobile Radio, Mobile Transmitters</td>
</tr>
<tr>
<td>223.50-225.00</td>
<td>Private Mobile Radio, Simplex</td>
</tr>
</tbody>
</table>

N.B.: PMR to operate at 12 1/2 kHz channeling, commercial cordless phones and data handling to be permitted.

Well, I hope that someone on board can fly this thing, because that wraps up this month's Frequency Exchange. Have a happy landing.

Photo Busting

If you have been following the previous columns, you already know that Photo speeding tickets have stirred a great deal of interest. At least one company is manufacturing a "PHOTOBUSTER" license plate frame. According to the ad that I received, the license plate frame has a special protector lens that cannot be photographed by a radar camera. Since I don't know if the frame actually works, I won't print the name of the company. However, I'll send you all the info for an SASE.

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**Nuclear Scanning**

In Boston a business man has been scanning the Seabrook nuclear power plant. Fred Anderson recorded Seabrook operators discussing their 'bad feeling' about a set of valves. He listened to security guards talking about workers, and he heard a plant operator making personal statements over the air. The Seabrook owners say they meant to scramble their communications, but somehow that was never done. The Nuclear Regulatory Commission is investigating the incident and contemplating whether to change radio security regulations for all nuclear plants.

Okay, gang. You all know the obvious question. What is the frequency? If you have it, send it in and let's share it. I'll also accept frequencies for other nuclear and nonnuclear power plants in your local area.

**Taxi Cab Scanning**

The cab drivers in Worcester, Massachusetts, are in trouble with the chief of police. The chief wants to ban all scanner radios from city cabs. It seems that the cab drivers monitor the calls of other cab companies and then steal their customers.

People who ride the cabs aren't complaining. The service is quick, and it's not uncommon for several cabs to arrive for one customer. The chief, however, is growing tired of having to break up the brawls that ensue between rival cab drivers.

**Digital Cellular**

Two cellular companies have announced a breakthrough in Digital Cellular phone systems. PacTel Cellular and Qualcomm Inc. are currently using a van fitted with digital cellular phones to promote the many advantages of the new system.

The digital cellular technology provides increased channel capacity, fewer cell sites, improved voice quality and complete privacy.

Digital cellular will be impossible to monitor because the calls will be spread across a wide segment of voice channels. Current cellular technology places every call into a single voice channel - permitting the monitoring of one particular frequency.

But don't get discouraged. Before digital cellular can become a reality, the major cellular companies will have to agree on one specific type of digital system. Getting all the cellular companies to sit down at the same table would be a difficult task in itself. Forcing them to accept a single type of digital network seems ridiculous, if not impossible.

**PRO2004 Owners, Take Heart**

Owners of the Radio Shack Realistic PRO2004 scanner who found that they could not get them repaired will be pleased with this update. According to a conversation Bob Grove had with a Radio Shack repair center, new circuit boards are now available through your local Radio Shack dealer.

**Next Month**

If you are planning to go on a vacation this year, don't miss next month's column. I'll explain some of the techniques that radio savvy burglars are using to discover that you're not at home. In the meantime, check out the Treasure Hunt, solve the clues and send in your answers. You could be the lucky winner!
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DON'T DELAY SUBSCRIBE TODAY!
Just fill out the order card in this magazine and mail it in today.
Vladimir Posner Parts with Illusion

To millions of American TV viewers, Vladimir Posner was the Soviet Union's cold war "color man," a New York-accented character who was brought out to rationalize and apologize for the behavior of the Soviet government on such popular programs as "Nightline" and "Donahue.

There, given the legitimacy of a "journalist" by the hopeful American press, he would defend the war in Afghanistan, rationalize the Berlin Wall as a "quick fix" and tell the nation in 1985 that [Jewish] people don't want to leave [the Soviet Union] anymore.

Showbiz listeners, however, knew Vladimir Posner's game long before America got to see his face.

Born in France and raised in the United States, Posner began his on-air career as the American voice on the North American service of Radio Moscow. Despite this (and the fact that he also worked for Soviet Life, the English language propaganda monthly that is distributed in the U.S.), Posner shows annoyance when people call him a propagandist.

He attributes that slander to maliciousness or mindless anti-Communism and, according to a New York Times article, hopes that when Americans come to see him "as a normal, authentic, honest person, an honest Soviet," they will begin to question America's military spending, the cold war, and anti-communism. You can't fault the man for never giving up.

Parting with Illusions is the story of Posner's life that, while it gives a rare insight into the life of this well-known short-wave personality, is in the end a mixed bag -- mostly because of his refusal to take the mask off for more than a minute at a time and his insistence on proving 200% that he is just like us.

Parting with Illusions is available in hardback from DX Radio Supply for $19.95 plus 1.55 book rate or 2.80 UPS.

In the end, Pirate Radio Stations is a great read despite the bad handling it got from its publisher and remains a must for anyone even remotely interested in this facet of radio monitoring. "Pirate Radio Stations" is available from DX Radio Supply, P.O. Box 360, Wagontown, PA 19376 for $12.95 plus 1.20 book rate or 2.30 UPS.

Cracking the Cuckoo's Egg

Reading like a captivating novel, Cuckoo's Egg is actually a documentary of the cloak- and-dagger trail leading to the German spy ring which preyed on the U.S. computer industry.

It all began when a computer manager discovered a $.75 error on his program, alerting him to the presence of an intruder on the system. The months that followed laid the final trap which was sprung on the international hacker.

The Cuckoo's Egg is written by Clifford Stoll and can be ordered for $24.95 postpaid from Advanced Electronic Technologies, Suite 173, 5800A N. Sharon Amity Rd., Charlotte, NC 28215.
Uniden Public Service Scanner

A number of readers have inquired as to why we have not reviewed the new Uniden MR8100 scanner. The reason is that it is not available through Uniden scanner dealers, only through two companies which exclusively import it for use in public service vehicles such as police, fire and related applications.

The $500 scanner features a ruggedized, flat-panel control box and scans at up to 100 channels per second. Frequency coverage is 29-54, 118-174, 406-512 and 806-956 MHz (including cellular).

100 memory channels are stored in ten banks. There is no search capability. A dual-conversion receiver, the intermediate frequencies are 10.85 MHz and 455 Hz. Audio power is 3 watts into a separate speaker (included).

Intermod rejection is 60 dB at high band; adjacent channel rejection (25 kHz separation) is 70 dB. Dimensions are slightly smaller than 8"W x 6"H x 2"D. Weight is 4-1/2 pounds.

Scan resume delay is 2 seconds; there are also priority and lockout provisions. An external antenna (not included) attaches via a BNC connector.

A supervisory function allows field programming which cannot be altered by unauthorized personnel. The display is a backlit dot-matrix LCD.

For additional information, contact Page-Com, 10935 Alder Circle, Dallas, Texas 75238 (1-800-527-1670).

Logging and Analysis Program

Jim Baughn, who calls himself "The Computer Handyman," has developed what he calls the Communications Intelligence Gathering and Analysis Program (CIGAP).

It has been written, says Jim, "to assist those interested in determining the purpose and origin of various signals heard on shortwave and scanner frequencies."

Howzitdun? Jim says it happens this way: A logging section is used to record date, time, frequency emission type, call sign, location, signal quality and up to fifty-nine characters worth of comment. The analysis section allows sorting, selecting, searching, editing and listing, to either the screen or printer.

For example, all entries with the word "beacon" in the comment field may be selected and listed. The resulting list would show information about all beacon stations that have been logged.

The cost is $29.95 and the program is available on 3-1/2 or 5-1/4 diskette for IBM compatible computers. Further information is available by writing P.O. Box 503, Carmel, IN 46032-9967.

Wide Range Frequency Counter

Optoelectronics has released their new 2210-A, a frequency counter with the incredible range of 10 Hz to 2.4 GHz. It measures 4x3.5x1 inches and weighs only 9 ounces. Resolution is 1Hz (10Hz - 12MHz) and 100Hz (10MHz - 2.4GHz).

Priced at just $219, the 2210-A easily outperforms classical instruments costing ten to 20 times more. "We used virtually every state-of-the-art technique to reduce size and increase performance," says Marketing Director Bill Owen.

The '2210-A is encased in a high impact aluminum housing for maximum emi-rfi shielding and rugged field use. It's manufactured domestically and carries a one year warranty.

To order, contact your favorite radio dealer or Opto: 5821 NE 14th Ave., Fort Lauderdale, FL 33334 or call 1-800-327-5912.
Uncle Skip’s Dandy Do-All DX Dipole

One of the neatest side rewards of writing for a magazine is that you get all sorts of mail from folks. What is more amazing is that people have very long memories. I have written for three different publications over the years before making the big time and joining the staff of Monitoring Times. Would you believe I still get mail from folks who remember that I once gave some good advice way back when, in the dusty pages of some old radio journal or another?

As I set about answering these letters, I have to remember that, no matter how many times I have heard a particular question or problem before, that question is really important to that person writing to me.

What does this have to do with dipoles, Uncle Skip?

Easy, Ace! When I look back at the most commonly asked question of my radio sage career, it would probably go something like this... "Dear Uncle Skip. What is the absolutely best antenna I could possibly put up for listening to all kinds of radio? P.S. It has to be cheap!"

Get the picture? When most folks, especially beginners, peruse the pages of radio magazines and catalogs, they see all manner of antennas for performing all sorts of functions, costing all kinds of money. Things get pretty confusing real quick like. You can easily drop the price of a good used car on an antenna installation. The simple fact is that most folks don’t have all that much money to put out.

But perhaps more importantly, most people don’t want their property to look like a giant pin cushion. Practical considerations dictate one simple antenna structure. If you could only put up one antenna, you’re going to want to have a chunk of wire that is going to get the job done over a wide range of frequencies.

Well, Old Uncle Skip has come up with an antenna system that has served him in good stead across the HF bands for shortwave listening. In fact, this antenna is so good that it can also be used for transmitting! It utilizes a blend of simple and traditional radio lore that can be applied in almost every case without too many complications and considerations. This antenna is also relatively unobtrusive, making for happy neighbors in places where esthetics rule the day.

Without further verbiage, let us consider...

**UNCLE SKIP’S DANDY DO-ALL DX DIPOLE**

A simple dipole antenna has only three main parts. Two wire elements (usually of equal length) and a feedline which would be known as the transmission line if you were operating a transmitter into those antenna elements. Sounds easy enough, right? Throw up a couple of chunks of wire and hit the dials? If only life were really that simple.

To create the best circumstance for receiving or sending with that antenna, it should be "tuned" or resonant on the frequency of operation. In other words, any antenna will only be useful over a fairly narrow band of frequencies unless we give it a little help.

As a shortwave listener or ham, you will probably want to operate over the entire range of frequencies you have access to on your equipment. Does that mean you need to put up dozens of different antennas to enjoy our hobby? Not really. You can use an antenna tuner to bring a dipole into the ballpark, especially if you use the right kind of feedline.

Now the theory behind how this works fills a few books and MT only gives me two pages, so you will have to take some of this stuff on faith because, for now, we want to concentrate on the construction action. If you crave more theoretical detail than what follows, please write with your questions so I can point you toward the right textbook.

As you can see from the diagram, a dipole antenna has a center. You will want to locate the center of the antenna in the highest possible place you can safely reach. For example, you might go with the peak of your roof. From this center point, the two elements of your antenna will extend outward and downward from each other to two tie-off points on other structures or poles.

**YOU WILL WANT TO BE ABSOLUTELY SURE THAT YOUR ANTENNA’S PATH DOES NOT CROSS OVER OR UNDER ANY POWERLINES.** You can use common antenna insulators (Radio Shack 278-1333) for your center point and the two antenna ends.

The element length of the two sides of your dipoles are only critical in two respects. You want them to be exactly equal in length and you want them to be as long as possible. Ideally you want your dipole to be as long as the lowest frequency you will want to tune. That would mean that a dipole optimized for the 90 meter band would consist of two elements, each 73 feet long.

Not everyone has enough real estate to pull this off. Most folks will have to settle with something a little less, but fear not, you’re still going to hear plenty and, if you have a mind to, you can get a good signal out on the air too. You can use just about any wire you have around that is 14 gauge or thicker to get the job done. If you live anywhere near a farm supply store, you might check out copper "electric fence" wire. Constructed of copper clad over steel wire, this stuff is very sturdy and can be bought in various size rolls to fit your needs.

With the elements all thought out, we can concentrate on the feed line. If your goal is listening and not transmitting, you can use any

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May 1990

MONITORING TIMES
good quality 50 ohm coaxial cable to get your antenna down to your radio (or your radio's tuning unit, but that comes later).

Hams who want to use the Do-All Dipole will want to look into using a transmission line made out of 300 Ohm TV "twinlead" cable (Radio Shack 15-1174 or 15-1175). We go with twinlead over coax for practical reasons beyond its comparatively low cost. Twinlead has substantially less line loss when compared to coax. This, coupled with twinlead's ability to operate efficiently with very high s.w.r. mismatches, make this the best transmission line for a wideband dipole like the one we are constructing.

These notions will probably send a lot of antenna experts to their typewriters to ask Larry Miller for my head on a spit! I would suggest they first give twinlead a try. Okay, hams, you probably won't want to send a kilowatt down the line at a s.w.r. mismatch of 20:1. But if you are a normal operator using in the neighborhood of 250 watts, you will find twinlead won't even get warm on you with mismatches as high as 40:1.

Regardless of if you use twinlead coax, feedline length is not particularly critical in this application.

Bring the feedline and the elements together at the center conductor. Wrap one end of each side of the feedline solidly with either element end, using the center conductor as both the separator and support. After you have assured the solid mechanical connection of both pairs of wires, solder each pair with a heavy-duty soldering iron or gun.

Securing the end insulators of your dipole to their respective locations is best accomplished with medium gauge nylon rope. This is strong enough to hold things without looking too bulky and out of place. Also, it does not rot and it has some natural spring and give that will allow your antenna to flex in the wind and under ice.

Now what?

Okay, we have constructed the ultimate antenna! So how do we hook it up to our rigs? Well, at this point we must diverge slightly depending on your intended use.

If you do not intend to use your antenna for transmitting, you have several options. If your receiver has binding posts for antenna and ground and also has some form of antenna tuning (sometimes called an antenna trimmer) you can simply hook up the center conductor and braid of your coax, or each lead of the twinlead and you are on your way.

However, most folks will find it advantageous to make use of an antenna tuner such as the Grove MiniTuner or the MFJ-16010, both available through the many advertisers in this magazine. If you are using twinlead, you can also experiment with hooking the two ends of the twinlead together to form a "T" shaped antenna.

Hams will have to dig slightly deeper into their pockets than their shortwave listening counterparts. The amateur will require a transmatch unit such as the MFJ-945C or MFJ-901B to get the signal straight. Whatever transmatch you purchase, you will want to make sure it is designed to make use of "balanced" transmission lines. Needless to say, a ham will need an s.w.r. meter to see just what kind of trouble he or she might be getting their transmitters into.

If you enjoy building things, you might look at the transmatch units described in any edition of The ARRL Handbook published annually by The American Radio Relay League, 225 Main St., Newington, CT 06111.

In addition to the safety warning given previously about powerlines, there are a few other points to ponder if you plan to get through the radio hobby with life and limb intact.

First, route all your wires carefully. We don't need anyone tripping over your feedline, nor do we want your "significant other" cutting through your element support lines with the hedge clippers. You can direct the path of your antenna feedline down from your rooftop with antenna stands that can be purchased at any TV-Radio supply store. (You don't want me to plug Radio Shack all the time, right?)

Another consideration is static discharge protection. Often wrongly referred to as "lightning protection," these devices are inserted in the feedline to protect your equipment from MILD static impulses that result from nearby lightning storms.

Let me make something very, very clear. Nothing short of Superman's underwear can withstand a direct bolt of lightning! So do yourself a favor and disconnect your antenna from your equipment during atmospheric storms. We don't want to lose any subscribers.

If you are using a coax feedline, you can make use of one of the products by Antenna Supermarket, Alpha Delta, or Cushcraft. Twinlead users can utilize a simple antenna discharge unit available wherever TV antennas are sold (Radio Shack 15-910).

For many of you, this first antenna project will generate more questions than it answers. That's okay, you will begin to learn the fun of antenna construction projects. Overall, antennas can be both low cost and create real improvement in both listening and transmitting activities.

An excellent first book of radio antennas is Edward M. Noll's Easy-Up Antennas For Radio Listeners and Hams, which is available from DX Radio Supply for $16.95 plus 1.55 book rate or 2.80 UPS shipping. Their address is P.O. Box 360, Wagontown, PA 19376.

As you continue to investigate the subject, you will find all manner of antennas that you will want to try. But for starters, the Do-All Dipole will give you plenty to listen to until that next antenna project comes along.
Flying through Texas

"I have listened in on some very exciting communications in the last year," says Randy Rogers in Austin, Texas. For example, he has heard:

- Military jet aircraft with engine overheat, result: safe landing
- Military jet aircraft with engine overheat, result: crash landing
- Military aircraft with landing gear stuck, result: crash landing
- Military aircraft with partial hydraulic failure, result: safe landing.

Where is all this action going on? Bergstrom AFB, Texas, and Randy has sent in a list to help others monitor his area of the Lone Star State. Bergstrom is a Tactical Air Force Base.

Bergstrom is the home of the Headquarters, 12th Air Force, Tactical Air Command. This headquarters controls Air Force tactical fighter units throughout the United States. This base is also the headquarters for the 10th Air Force, the Air Force Reserve. They have operational control of all tactical fighter units in the Air Force Reserve worldwide.

The base is also the home of the 924th Tactical Fighter Group and it is a SAC bomber dispersal base in time of nuclear attack.

Randy monitors all his activity with a Bearcat 210XLT, Realistic PRO-2020 and 2004 scanners. On shortwave, Randy uses a National 98 shortwave receiver and for the ham bands a Swan 240 transceiver. The roof has not been neglected in Randy’s shack. He has an ICOM Discone, 50 foot dipole (for shortwave), an 30 foot inverted V antenna.

To keep track of all the approximately 500 frequencies Randy has collected, he wrote an IBM PC program in Turbo Pascal language (a feat I couldn’t do, for sure). Anyway Table 1 shows a few of the Lone Star 500 that Randy has monitored.

The channels are “local channels” used in the RF-4 aircraft based out of Bergstrom. The channel numbers indicate preset channels set into each aircraft’s radio.

Randy also passes on in Table 2 the miscellaneous military air frequencies he has monitored that cover central Texas.

He has monitored the following Houston ARTCC frequencies:

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>343.9</td>
<td>307.3</td>
</tr>
<tr>
<td>335.6</td>
<td>353.8</td>
</tr>
</tbody>
</table>

Several refueling frequencies have been heard in the Austin area including: 264.9, 361.7, 326.6 and 291.9. Probably the best listening of all are the dogfight, or Tactical Maneuver Training, channels. Randy reports the following channels can be heard from his Austin listening post: 339.3 and 359.6.

So if you are in central Texas and want to monitor some great action, dial in some of Randy’s Lone Star 500 and catch the excitement.

Military COMSATS Monitored

One of the more exotic forms of communications that can be monitored in the Federal Spectrum are the military satellites. These things are neat and can provide some very interesting listening. Case in point, a friend of mine knew about the Grenada invasion several days before it happened.

He was monitoring one of the geostationary military comsats and heard some operators trying to establish communications through the bird to Washington, DC.

The operator on the Pentagon end of things either wasn’t briefed on what was happening or just was plain dumb. He kept asking the unit off the coast of Grenada who he was and what authority he had to be on the channel. The unit off Grenada tried to be cool and discreetly explain what was happening and who he was.

I guess enough was enough and he finally blurted out that he was off the coast of Grenada and was part of the Grenada invasion force. The rest is history.

Table 1

<table>
<thead>
<tr>
<th>Channel</th>
<th>Frequency (MHz)</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>258.4</td>
<td>Bergstrom &quot;Outlaw Operations&quot;</td>
</tr>
<tr>
<td>2</td>
<td>372.8</td>
<td>Bergstrom Ground Control</td>
</tr>
<tr>
<td>3</td>
<td>265.6</td>
<td>Bergstrom Tower</td>
</tr>
<tr>
<td>4</td>
<td>352.3</td>
<td>Austin Approach Control (SW Arrival/Departure)</td>
</tr>
<tr>
<td>5</td>
<td>306.2</td>
<td>Austin Approach Control (East Arrival/Departure)</td>
</tr>
<tr>
<td>6</td>
<td>363.8</td>
<td>Austin Approach Control (North)</td>
</tr>
<tr>
<td>7</td>
<td>238.1</td>
<td>RAPCON/GCA (Primary Approach Control/Flight Control)</td>
</tr>
<tr>
<td>8</td>
<td>341.9</td>
<td>RAPCON/GCA</td>
</tr>
<tr>
<td>9</td>
<td>344.8</td>
<td>RAPCON/GCA</td>
</tr>
<tr>
<td>10</td>
<td>321.8</td>
<td>Dixie Military Operating Area (MOA) Primary Channel</td>
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<tr>
<td>11</td>
<td>391.9</td>
<td>Bergstrom Final Approach</td>
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<tr>
<td>12</td>
<td>398.2</td>
<td>RAPCON/GCA</td>
</tr>
<tr>
<td>13</td>
<td>314.2</td>
<td>924th Tactical Fighter Command Post, BSM Safety of Flight</td>
</tr>
<tr>
<td>14</td>
<td>235.8</td>
<td>Bergstrom Clearance Delivery (prev 266.0)</td>
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<tr>
<td>15 to 20</td>
<td></td>
<td><em>Have Quick</em> (Scrambled) channels</td>
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Table 2

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<td>375.2</td>
<td>Bergstrom Metro (Weather briefing channel)</td>
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<td>372.0</td>
<td>Brady MOA discrete frequency</td>
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<td>259.25</td>
<td>Brady scheduling (45 TFS operations)</td>
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<tr>
<td>296.7</td>
<td>Crystal MOA discrete (primary)</td>
</tr>
<tr>
<td>307.2</td>
<td>Crystal MOA discrete (secondary)</td>
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<tr>
<td>301.0</td>
<td>Yankee MOA (R-8512) Primary Ops</td>
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<tr>
<td>280.4</td>
<td>Yankee MOS (R-8512) Secondary Ops</td>
</tr>
<tr>
<td>357.9</td>
<td>Ft Hood Flight Following (primary)</td>
</tr>
<tr>
<td>231.6</td>
<td>Ft Hood Flight Following (secondary)</td>
</tr>
<tr>
<td>293.9</td>
<td>Ft Hood Range (Secondary)</td>
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<tr>
<td>231.7</td>
<td>Ft Worth Center (Eagle: Brownwood)</td>
</tr>
<tr>
<td>269.4</td>
<td>Ft Worth Center (Raven: Brownwood)</td>
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<tr>
<td>360.8</td>
<td>Ft Worth Center (Texon: Big Lake)</td>
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<td>323.1</td>
<td>Houston Center (High Alt: Crystal-Laredo)</td>
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<td>322.5</td>
<td>Houston Center (Low Alt: Crystal-Laredo)</td>
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<tr>
<td>355.1</td>
<td>Austin Tower</td>
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<td>348.6</td>
<td>Austin Ground Control</td>
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<tr>
<td>361.4</td>
<td>Bergstrom Flight Test</td>
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<tr>
<td>241.8</td>
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<tr>
<td>304.6</td>
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<td>358.2</td>
<td>81 TRS Operations</td>
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<td>321.6</td>
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<td>252.9</td>
<td>San Antonio Approach Control</td>
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<td>381.8</td>
<td>Raymond 29-67th TRW Command Post</td>
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<td>Brownwood MOA Operations</td>
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<td>255.4</td>
<td>Low Level AFSS (Austin Radio)</td>
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<tr>
<td>372.2</td>
<td>Bergstrom Pilot Dispatch</td>
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<tr>
<td>321.2</td>
<td>Test Operations (Controller into MOAs; Oil Burner routes)</td>
</tr>
<tr>
<td>270.1</td>
<td>Bergstrom Air Terminal Information Service (ATIS)</td>
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</tbody>
</table>

One of our readers, Ed Flynn of San Rafael, California, has been listening to the milcomsats on his ICOM R-7000 and AH-7000 antenna. The following are some of the results of his monitoring. (Mode: Narrow band FM)
Table 3
Miami Federal Freqs
(+ denotes confirmed usage/agency)

<table>
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<th>Design</th>
<th>Usage, Agency</th>
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<td>Yankee</td>
<td>+ Secret Service, AF-1</td>
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<td>162.710</td>
<td></td>
<td>PPL Downlink</td>
</tr>
<tr>
<td>162.825</td>
<td></td>
<td>Government agency</td>
</tr>
<tr>
<td>163.200</td>
<td>Ch 1/2</td>
<td>+ US Marshals</td>
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<tr>
<td>163.3625</td>
<td>Secret Service</td>
<td>+ US Marshals</td>
</tr>
<tr>
<td>163.350</td>
<td>F1</td>
<td>+ US Border Patrol/Immigration</td>
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<td>163.3625</td>
<td>F1</td>
<td>+ DEA</td>
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<tr>
<td>163.8125</td>
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<td>+ Secret Service</td>
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<td>164.200</td>
<td>Ch 3</td>
<td>+ Secret Service</td>
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<td>165.2375</td>
<td>Charlie</td>
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<tr>
<td>165.250</td>
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<td>+ Secret Service</td>
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<tr>
<td>165.2875</td>
<td>Mike</td>
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<tr>
<td>165.375</td>
<td>Charlie</td>
<td>+ ATC (Charlie Base)</td>
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<tr>
<td>165.675</td>
<td></td>
<td>+ DEA</td>
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<tr>
<td>166.925</td>
<td>Delta</td>
<td>+ DEA</td>
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<tr>
<td>167.100</td>
<td>November</td>
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<tr>
<td>167.875</td>
<td>Ch 1</td>
<td>+ Secret Service</td>
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<tr>
<td>235.100</td>
<td>Preset 7</td>
<td>+ USAF Aerial Refueling channel</td>
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<tr>
<td>241.000</td>
<td></td>
<td>+ Military aircraft</td>
</tr>
<tr>
<td>252.800</td>
<td></td>
<td>+ Military aircraft</td>
</tr>
<tr>
<td>257.600</td>
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<td>+ Military aircraft</td>
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<td>271.200</td>
<td></td>
<td>+ DEP (Charlie Base)</td>
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<tr>
<td>275.800</td>
<td>Preset 1</td>
<td>+ Secret Service</td>
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<tr>
<td>295.700</td>
<td>Preset 2</td>
<td>+ US Secret Service</td>
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<td>296.700</td>
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<td>+ DEA</td>
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<td>318.100</td>
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<tr>
<td>324.600</td>
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<td>349.000</td>
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<tr>
<td>363.800</td>
<td>Preset 15</td>
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<td>381.700</td>
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<td>381.800</td>
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<td>+ DEA</td>
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<tr>
<td>407.850</td>
<td>Echo</td>
<td>+ DEA</td>
</tr>
<tr>
<td>415.700</td>
<td>Foxtrot</td>
<td>+ DEA</td>
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<tr>
<td>417.200</td>
<td></td>
<td>+ DEA</td>
</tr>
<tr>
<td>418.625</td>
<td>ch 1</td>
<td>+ DEA</td>
</tr>
<tr>
<td>418.675</td>
<td>ch 4</td>
<td>+ DEA</td>
</tr>
<tr>
<td>418.750</td>
<td>ch 3</td>
<td>+ DEA</td>
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<tr>
<td>418.800</td>
<td>ch 2</td>
<td>+ DEA</td>
</tr>
<tr>
<td>418.975</td>
<td>ch 7/8</td>
<td>+ DEA</td>
</tr>
</tbody>
</table>

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Will this handheld (IC-R1) pick up the voice communications in the 225-400 MHz band? If not, is there a desk-top scanner on the market today which can pick up these frequencies?

The answer, Don, to both your questions is a resounding yes. The IC-R1 will monitor the voice 225-400 MHz AM military aircraft and FM milsatcom communications. Given the size and frequency coverage of this rig, a prepam and outside antenna will probably be required to hear military satcom transmis-
sions but the rubber duckie antenna should work well for military aircraft comms.

The most popular desk-top scanner covering this range is the Realistic PRO-2005, 400 channel scanner. I own one and it performs well in the 225-400 MHz range and has recently been on sale, down below its $420 list price.

South Florida FED List or Let’s Visit Miami Vice . . .

James Gilbert down Miami way has sent in a list of federal freqs he has monitored. He says that south Florida offers the fed monitor some very interesting frequencies. Check it out for yourself with some of the entries in Table 3.

Thanks a bunch for the list, James. I did a little updating for you. Keep listening, check in often.

Well, that’s it for this month. Until we meet again, it’s time for a cubo with a little Coca Cola... Later.

262.204 Raymond 24 (Tinker AFB, OK) working Charlie Bravo (AWACS aircraft)
261.931 Top Rock (Alaska) working Harmony (Told him to go green or scramble his communications.)
261.954 Atlantis (Guam?) working Trout 50 aircraft

Thanks for the intercepts, Ed, and hope you check in often with your "out-of-this world" monitor efforts.

UHF Handheld???

Dennis McFall says he "doesn't understand it. It's almost springtime, the time when MT will publish frequencies for the Blue Angels, Thunderbirds and the Snowbirds. The problem is that most of the frequencies are in the 225-400 MHz range and my handheld scanner does not cover that range. I have not found any handheld units that do. Can you help?"

Dennis, it is Monitoring Times and reader Don Sewell to the rescue. Don sent in a flyer on ICOM Radio's new IC-R1 wideband handheld receiver. The IC-R1 continuously covers 100 kHz-1300 MHz with AM, FM and FM-wide modes. This little handheld will allow keyboard entry into the 100 channels of memory and even has a built-in 24 hour clock with timer. The spec sheet says that the "IC-R1 allows you to listen to what you want when you want."

So the answer to your dilemma, Dennis, is the IC-R1 handheld.

Don also includes a question with the IC-R1 spec sheet. It goes something like this:

MONITORING TIMES  May 1990  41

www.americanradiohistory.com
Listening for business or pleasure

Plying the Cruise Routes

First, for those of you interested in the cruise ship front, as you read this, Carnival Cruise Lines' new 70,000 ton Fantasy will have made her maiden voyage. She is on the Miami to Bahamas run making three- and four-day cruises. The delay in putting the Fantasy into the water was reportedly caused by financial problems at the Finnish shipyard where the vessel was built.

This, in turn, also postponed the delivery of Carnival's second new ship, the Ecstasy. This vessel is now expected to be completed in the spring of 1991. Negotiations are currently underway for the construction of the Sensation, which is the third vessel of this group.

Still on the cruise line front, Princess Cruises has announced that its second new vessel will be named Regal Princess, and delivery is expected in the spring of 1991.

Plying the Great Lakes

As you receive this month's issue of Monitoring Times, the Great Lakes shipping season is getting into high gear and I thought a look at some of the ships which ply the lakes might be in order.

The backbone of the Great Lakes fleet is the bulk freighter. Traditionally the cargoes have been grain moving east from the head of the lakes and iron ore moving west to the steel mills. Coal to fire those mills is another major cargo. The "lakers" were designed to take maximum advantage of the size of the locks and the newer ones carry up to 50,000 tons. The following is a listing of bulk freighters belonging to some of the major shipping companies on the lakes.

<table>
<thead>
<tr>
<th>Call sign</th>
<th>Name</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>VDRC</td>
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<td>VCPK</td>
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<td>WA 2806</td>
<td>Benjamin F. Fairless</td>
<td>United States Steel</td>
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<td>V C LP</td>
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<td>Algoma Steamships</td>
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<td>Photo/Harry Baughn</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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A few general cargo ships which are seen and heard on the lakes are:

- **DSGK**: Federal Saguennay, Fednav Limited
- **DSGI**: Federal St. Laurent, Fednav Limited
- **VCLV**: Fort Chambley, Canada Steamship Lines
- **CYMS**: Fort St. Louis, Canada Steamship Lines
- **VOPG**: Soodoc, N.M. Paterson & Sons

Oil and other liquid cargoes are an important part of the great lakes trade. Among the ships which can be heard are the following, many of which are also ocean-going vessels.

- **VGEP**: Imperial Acadia, Esso Canada
- **VYQI**: Imperial Bedford, Esso Canada
- **VXKM**: Imperial Dartmouth, Esso Canada
- **CYBS**: Imperial Lachine, Esso Canada
- **VGYS**: Imperial Quebec, Esso Canada
- **VCVS**: Imperial Sarnia, Esso Canada
- **VCDD**: Imperial Skeena, Esso Canada
- **VCFQ**: Imperial St. Clair, Esso Canada
- **ELEG4**: Stolt Aquamarine, Stolt Nielson Inc.
- **5MMH**: Stolt Avance, Stolt Nielson Inc.
- **DSGR**: Stolt Avenir, Stolt Nielson Inc.
- **ELHO**: Stolt Boel, Stolt Nielson Inc.
- **SMTU**: Stolt Castle, Stolt Nielson Inc.
- **DSVJ**: Stolt Condor, Stolt Nielson Inc.
- **SMEJ**: Stolt Crown, Stolt Nielson Inc.
- **DSVG**: Stolt Eagle, Stolt Nielson Inc.
- **ELEG3**: Stolt Emerald, Stolt Nielson Inc.
- **FNPL**: Stolt Energie, Stolt Nielson Inc.
- **FNPJ**: Stolt Entente, Stolt Nielson Inc.
- **DSUG**: Stolt Excellence, Stolt Nielson Inc.
- **DSUW**: Stolt Falcon, Stolt Nielson Inc.
- **DSUX**: Stolt Hawk, Stolt Nielson Inc.
- **DSVE**: Stolt Heron, Stolt Nielson Inc.
- **ELVP**: Stolt Integrity, Stolt Nielson Inc.
- **ELEG5**: Stolt Jade, Stolt Nielson Inc.
- **GOZD**: Stolt Llandaff, Stolt Nielson Inc.
- **DSKX**: Stolt Loyalty, Stolt Nielson Inc.
- **5LPY**: Stolt Norness, Stolt Nielson Inc.
- **DSUV**: Stolt Osprey, Stolt Nielson Inc.
- **A8ZV**: Stolt Pride, Stolt Nielson Inc.
- **ELEG2**: Stolt Sapphire, Stolt Nielson Inc.
- **ELTZ**: Stolt Sea, Stolt Nielson Inc.
- **6ZBJ**: Stolt Sheaf, Stolt Nielson Inc.
- **6ZDV**: Stolt Sincerity, Stolt Nielson Inc.
- **6ZXI**: Stolt Span, Stolt Nielson Inc.
- **5LIX**: Stolt Spirit, Stolt Nielson Inc.
- **6ZDP**: Stolt Spur, Stolt Nielson Inc.
- **A8AQ**: Stolt Surf, Stolt Nielson Inc.
- **5MQK**: Stolt Syndness, Stolt Nielson Inc.
- **DSCP**: Stolt Tenacity, Stolt Nielson Inc.
- **ELEG6**: Stolt Topaz, Stolt Nielson Inc.

For those living around the Great Lakes, there is a great deal of variety to listen to. Apart from the lake ships, there are ocean-going ships coming from many different countries.

Apart from the various ship traffic control frequencies, these ships will be heard on the public correspondence frequencies, although frequently the ocean-going ships are using satellite communications more and more. Frequencies such as 161.800 or 162.000 MHz are the most frequently used public correspondence frequencies. 156.300 and 156.700 MHz are common ship traffic control frequencies. 156.300 and 156.400 MHz are also frequently used for communications between ships and can provide a considerable amount of interesting listening.

Good listening until next time.
Learn the Code

As you know, I strongly believe that a no-code amateur license is required to assure the continuation of amateur radio! In fact I would like to see a license that is even easier to obtain and offers more privileges than the license that is presently being considered by the FCC and the amateur community.

However, Morse code is easy to learn—and a heck of a lot of fun to use! I am certain that anyone who takes a little time to learn Morse properly will enjoy using it. Now please notice I said, "learn Morse properly!"

Two popular methods

There are dozens of code teaching programs for sale; but only two basic types. They are the code tape scheme and computer generated instructional programs.

Computer code teaching programs usually allow you to go to some particular section at the press of a key, making it easy to review material you are not sure of. Of the several good computer programs there is one that I am particularly found of.

MorseMan Plus
The premier Morse Trainer for IBM-PC's

Is a fantastic piece of work that has been created by "Renaissance Development Corporation," P. O. Box 640, Killen, Alabama 35645. MorseMan guides you over the rough spots from the basics to speed building in several unique ways.

The beginner goes to the section called "Tutor Mode," where you will be given small bites to learn at a given session. The program introduces you to each character and allows you to go back over any part as often as needed to ensure confidence.

The next step is called the "Practice Mode" wherein you will receive random groups of code at your chosen speed. It is possible to watch the code being printed to the screen, or to turn the screen off, and then check your copy against the screen later.

At this point let me say that perhaps the best feature of this program is the concise, clearly written instruction manual that comes with it. The manual will instruct you as to the best way to set the speed settings to learn and explains each step of the program in simple easy-to-understand language.

A keyboard mode allows the user to practice the characters he feels weak on by simply typing them in on the computer keyboard.

The QSO monitor is truly a great idea. In this mode, contacts such as you would copy off the air are generated. Each QSO starts out with a CQ and follows proper procedure. The user has the option of choosing frequency offset, which makes the QSO sound like the genuine thing. Stations operate at random speed; that is one station may be sending at 7 words per minute (WPM) with a tone of 1000 Hz and the station he is in contact with may be sending at 10 WPM with a tone of 800 Hz (or so). Both speed and frequency ranges are user selectable.

In the QSO monitor mode you will never see the same QSO twice; each is different! To be sure, if you followed the format to a T, you would be a very boring person to talk to on the air, but it does give you the idea, and the program uses correct procedures.

One last feature I want to tell you about is the FCC Test mode. Here you will receive an actual exam, then be asked ten questions of the same type an examination team gives. The program then grades the exam and records your progress. There are over twenty trillion different tests that can be generated by the program; hence there is no chance that you will ever receive the same test twice.

Several students who have used this program have shown remarkable improvement. One fellow went from 0 to over 5 wpm in only one week!

MorseMan Plus is the slickest program to come along in a long time and I highly recommend it to those who want to learn Morse properly. Let me remind you, though, that no program will help if you do not apply yourself!

MorseMan Plus is available only for the IBM PC/clones and costs $24.95 plus $2.00 shipping direct from Renaissance Development.

Special Event Station AE9K

The W/K Amateur Radio Club will operate special event station AE9K from 1400Z May 5th to 0500 UTC May 6th to commemorate National Astronomy Day. AE9K is located at the Nichols Astronomical Observatory. Suggested frequencies are 14.250, 21.350, and 28.450 MHz. Operation through RS10 is also planned in the CW mode.

Reception reports from shortwave listeners are welcome and qualify for the special QSL card. Address cards and reports to: Nichols Observatory, 3885 Pioneer Rd, Richfield, Wisconsin 53076.

MIR Is Back

U6MIR/U7MIR have resumed operations on 145.50/145.550. Listen for them after 1800 UTC during the week, and at any time during weekends.

The new radio that was taken to MIR broke down and the cosmonauts are using the original U2MIR gear that had been left aboard the space craft. A new rig is being shipped to them on a resupply mission in the near future.

QSLs can be sent to the bureau, or to W3AX at P.O. Box 679, Moscow 107207, USSR. Cards sent direct require an IRC and self addressed envelope for a reply!

WO-18

WEBERSTAT - OSCAR 18 is an OSCAR carrying an imaging device to take photos of the earth from orbit and return them via amateur radio. WO-18 has been in orbit since early March of 1990 and has returned many good photos. The device was designed and built by Weber State University.

At present only a few designated testers have the required software to receive the images from the WO-18. A software design team is presently evaluating and debugging the software required to receive the images.

If all goes well the software (Weberware 1.0) will soon be available to all from the AMSAT Software Exchange. The software will run only on an IBM PC or clone with EGA or VGA graphics. The photos generated are in color.

Geosynchronous OSCAR

Imagine intercontinental communications with an HT 24 hours a day every day of the week! A fantastic idea, and it is possible.

For several years, AMSAT has been studying the possibility of orbiting an OSCAR at an altitude of about 22,000 miles. At this altitude the satellite would appear to remain stationary. All one would need do is aim an antenna at a spot in the sky and operate. No more computer programs to track the bird as it flits by every few hours.

It would be possible to link repeaters on earth to provide voice and digital communications 24 hours a day with a large portion of the earth. Gear requirements would be very simple and affordable for the majority of the amateur population.

AMSAT has been studying the project; to date they have operated on a shoestring and have proven the feasibility of space communications for amateurs. If they are going to get a geosynchronous OSCAR up there, it is going to take a lot of money [read that millions of dollars]. It is one heck of a great project which will truly bring amateur radio into the twenty first century with a bang.

Seems to me this is the kind of thing every amateur should get behind and push for. Join AMSAT, be active and promote the idea!

Kudos to W5UN

Early March saw the DOVE OSCAR's (DO-17) computer crash. The system was locked up and impossible to re-boot. The problem was caused by a transmitter that was turned on, and would not shut off which in
turned de-sensitized the 2 meter command receiver aboard the space craft. Hence the AMSAT command team could not give commands to the computer.

Repeated attempts were unsuccessful until Saturday March 17th when W5UN aimed his large EME (Earth Moon Earth) array at the errant satellite. W5UN owns the largest (privately owned) two meter antenna in the world. Even with two million watts of Effective Radiated Power (ERP) it took several days and many attempts to correct the problem. DOVE is now operating normally thanks to W5UN!

AMSAT Nets

Table I provides a list of nets that provide timely information on space communications.

Join in, learn what’s going on in the field of space communications!

Propagation

Sunspot numbers have improved with numbers over 200 on many days. Conditions have been too erratic to make any kind of definitive call, but in any case we can expect good to excellent conditions for the next few months!

DX (via Northern Illinois DX Assn)

Walvis Bay QSO's after September 1, 1977 will receive DXCC credit. Do not submit cards before June 1, 1990.

Conway and Banaba QSL's are now being accepted. Since no activity is believed to have taken place from Conway before the 3D2CR operation of April 1989, contacts with the reff are creditable effective with the start of that operation. However, there were a few operations with the prefix VR1 from Banaba, formerly known as Ocean Island, before the T33JS/T33RA activity of May 1989, and those VR1 QSL's are creditable.

A few DXCC members have been given credit for Western Kiribati, formerly known as Gilbert Islands, including Tarawa, based on an Ocean Island QSO with a VR1 station before 1979. Those members may resubmit those cards for the proper Banaba credit, along with a Gilbert Island or Western Kiribati card for Western Kiribati credit, as of March 1, 1990.

Nambia became independent on March 20, and has changed prefix. ZS3 is now V51, and ZR3 is now V50.

Packet Coming of Age?

On a recent notice on a packet BBS, I saw a message about Orienteering. Checking the message out proved very interesting. The message explained what Orienteering is, how events were conducted and a schedule of Orienteering events in the area for the entire summer. It also extended an invitation to everyone to join the Delaware Valley Orienteering Association.

What a pleasure to see the general public being included in our amateur radio activities. With luck there will be more such messages aimed at John Q. Public, this in turn can only help make our non-ham friends aware that we are humans and want to participate in general society. (nice going W0HLCJ!)

That's all for May, folks. See you in Knoxville! 73 - Ike, N3IK
the qsl report

Gayle Van Horn

BRAZIL
Radio Cultura, 17815 kHz. Partial data QSL letter. Verification signer, Maria Luiza A. Kfouri, Chefe de Prod. Programacao. Also received station literature and photo. Received in 46 days for a registered Portuguese report and two IRCs. Station address: CEP 05099, Aqia Branca, Sao Paulo, Brazil. (Robert Landau, Secaucus, NJ)

BURKINA FASO
Radiodiffusion TV Burkina, 4815 kHz. Full data QSL letter with schedule and map, without verification signer. Received in 208 days for a French report and mint stamps. Station address: B.P. 7029, Ouagadougou, Burkina Faso. (Terry Ryan, Bellerose, NY) (Sam Wright, Biloxi, MS) (Brian Bagwell, St. Louis, MO)

CECHOSLOVAKIA
Radio Prague, 11990 kHz. Full data scenery card of Opopo Castle, without verification signer. Also received ship’s card and return envelope. Received in 80 days for an English report and one IRC. Station address: 12099 Praha 2, Vinohradské, Czech. (John Carson, Norman, OK) (Frank Hinton, Charleston, MO) (Max Gruenberg, Baltimore, MD) (John Caron, Norman, OK)

GUAM
KTWR, 11865 kHz. Full data station studio card and program schedule. Verification signer, Beth Chick. Received in 27 days for an English report and mint stamps. Station address: P.O. Box CC, Agana, Guam 96910. (Darren White, New Augusta, MS) (Franz Bonnett, Kettering, OH) (Sam Wright, Biloxi, MS)

LUXEMBOURG
Radio Luxembourg, 6090 kHz. Full data “antenna” card and stickers, without a verification signer. Received in 30 days for an English report and three IRCs. Station address: 38 Hertford St., London WY 8BA, United Kingdom. (Darren White, New Augusta, MS) (Franz Bonnett, Kettering, OH) (Charles Edwards, Scranton, PA)

MOROCCO
Radiodiffusion TV Marocaine, 17595 kHz. Full data QSL card. Verification signer Tanane M’hammed Jamal Eddine. Received in 53 days for an English report and three IRCs. Station address: 1 Rue el Brihi, Rabat, Morocco. (Darren White, New Augusta, MS) (Frank Hillion, Charleston, SC)

NAMIBIA
Radio Southwest Africa, 4965 kHz. Full data scenery card, without verification signer. Received in 229 days for an English report. Station address: Box 321, Windhoek 9000, South West Africa/Namibia. (Robert Landau, Secaucus, NJ)

BURKINA FASO
Radiodiffusion TV Burkina, 4815 kHz. Full data QSL letter with schedule and map, without verification signer. Received in 208 days for a French report and mint stamps. Station address: B.P. 7029, Ouagadougou, Burkina Faso. (Terry Ryan, Bellerose, NY) (Sam Wright, Biloxi, MS) (Brian Bagwell, St. Louis, MO)

NORTHERN MARIANAS ISLANDS
KFSB, 15375 kHz. Partial data QSL card, without verification signer. Received in 80 days for an English report and two mint stamps. Station address: Far East Broadcasting Co., Box 209, Saipan, CM 96950. (Robert Landau, Secaucus, NJ)

SHIP TRAFFIC
Continental Wing-ELJIS, 15665 kHz USB (car carrier). Full data prepared form card with ship’s stamp. Verification signed as initials L.A.R. Received in 10 days for an English utility report and return postage. Ship address: c/o Act Maritime Co., Ltd., Honga Yaesu Building, 505 Yaesu Building, 1-10-4, Mita, Minato-ku, Tokyo 103, Japan. (Hank Holbrook, Dunkirk, MD) Changed to Finnish flag 12/2/85.

Ocean Explorer-ELJHS, 500 kHz (tanker). Full data QSL letter with two photos of vessel. Received for an English utility report and return postage. Ship address: c/o Johnson Maritime Service (Guill) Inc., 2210 Market Street-Suite 707, Galveston, Texas 77550. (Hank Holbrook, Dunkirk, MD)

S/S Canberra-GBCV, 12356 kHz USB (British cruise ship). Partial data prepared form card with ship’s stamp. Verification signed as initials L.A.R. Received in 10 days for an English utility report, souvenir postcard and one U.S. dollar for return postage. Ship address: c/o Express Travel Services Inc., 350 Fifth Avenue, New York, New York 10118. (Richard Albright, Merced, CA)

M/S St. Michaelis-DNMM, 16587 kHz USB (West German tanker). Full data prepared form card with ship’s stamp. Verification signer Klaus Dieter Henn, Radio Officer. Received in 39 days for a German utility report, souvenir postcard and one U.S. dollar for return postage. Ship address: c/o Columbus Overseas Pty. Ltd., G.P.O. Box 5340, 2001 Sydney, NSW Australia. (Rick Albright, Merced, CA)

USS Briscoe DD-977, NNNOCNV, 14467.0 kHz USB. Full data QSL letter. Verification signer Paul Demaroney. Also included the ship’s sticker with crest and postcard. Received in 30 days for an English utility report and US mint stamps. Ship address: FPO New York, NY 09565. (Franz Bonnett, Kettering, OH)

USS Eisenhower CVN-69, NNNOCCCC, 14477.0 kHz USB. Full data QSL card. Verification signer T.M. Rice. Received in 28 days for an English report and US mint stamps. Ship address: FPO New York, NY 09532-2830. (Franz Bonnett, Kettering, OH)

SWEDEN
Radio Sweden, 11705 kHz. Full data Stockholm scenery card, with illegible verification signer. Received in 15 days for an English report and one IRC. Station address: S-105 10 Stockholm, Sweden. (John Carson, Norman, OK) (Brian Bagwell, St. Louis, MO)

UNITED ARAB EMIRATES
UAERA Radio, 13605 kHz. Full data QSL folder card. Verification signer, Ahmed A. Shoufly, Director. Received in 47 days for an English report. Station address: P.O. Box 63, Abo Dhabi, UAE. (Bob Hurley, Baltimore, MD) (Max Grunenberg, Edgewater, NJ) (John Caron, Norman, OK)

UNITED KINGDOM
Speedbird Radio, London Heathrow Airport, 5535 kHz USB. Full data QSL letter and station info sheet. Also received a color postcard of the Concorde. Received in 21 days for an English utility report. Station address: Speedbird London, British Airways, London Heathrow Airport, Hounslow, Middlesex, England. (John Kokinda, Mariborough, OH) Noted frequencies are: 8921, 10072, 13333, 17922, 21946 kHz USB.-ed.

UNITED STATES
WHAS-840 AM. Full data station QSL card. Verification signer, Charles Strickland-Chief Engineer. Received in 10 days for an English AM report and a self-addressed envelope. Station address: 520 W. Chestnut, Louisville, Kentucky. (Russ Hill, Oak Park, MI)

WSM-650 AM. Full data station QSL card. Verification signer, Tom Bryan, Production Manager. Received in 21 days for an English AM report and a self-addressed envelope. Station address: 2644 McGavock Pike, Nashville, Tennessee 37212. (Russ Hill, Oak Park, MI)

KYW-1060 AM. Full data station logo card, without verification signer. Received in 26 days for an English AM report, self-addressed envelope and mint stamps. Station address: Independence Mall East, Philadelphia, PA 19106. (Harold Frode, Midland, MI) (Russ Hill, Oak Park, MI)

WHRRC-1480 AM. Full data station logo card. Verification signer, Bill Glaister, Chief Engineer. Received in 4 days for an English AM report, self-addressed envelope and mint stamps. Station address: P.O. Box 9117, Canton, Ohio 44711. (Harold Frode, Midland, MI)

USSR
Radio Station Peace and Progress, 11980 kHz. Full data color card with station logo and no verification signer. Also received station literature and souvenirs. Received in 76 days for an English report and one IRC. Station address: Moscow, USSR. (Bob Hurley, Baltimore, MD) (John Caron, Norman, OK)
Copying Cyrillic

The RTTY system in the US and Europe uses a Baudot code that has 32 combinations. They are derived from what is called the five unit code. If you consider a mark and space as a 0 and 1 you will have two combinations for each bit. An "RTTY" character has five bits.

Mathematically it's expressed as 2^5 (two to the fifth power). With only 32 combinations, you probably wonder "how will the Baudot code support the 26 letters of the alphabet plus numbers and punctuation?" The fact is, there are a total of 52 different characters that can be sent during a transmission.

The Baudot system was set up so that six of the 32 combinations are used as control codes. They are: carriage return, line feed, letters, figures, space and null (unperforated tape), and they don't generate a printout on a TTY or computer screen.

When a figure control code is sent, for example, a teletype machine or computer goes into a mode which replaces the letters with numbers or punctuation. On a teletype machine this involves a mechanical movement of the paper roller assembly (in some machines) and causes a loud clanking or sometimes the floor to shake.

A computer simply goes to the proper look-up table and prints the character which follows the figure's command. The figure's code allows the equipment to support 26 additional characters. The baudot code 11000, for example, can be an "A" or a "." (dash).

Other languages such as Russian, Arabic, Korean, and Chinese have more than 26 characters. For them, another system is needed in order to support the additional set. Russian, for example, uses what is known as the third shift cyrillic. Other countries use variations of this scheme and if you want more information, get a copy of George Klingenfuss' Radioteletype Code Manual or the Confidential Frequency List from one of the Monitoring Times advertisers.

The third shift system means that the teleprinter will shift to a third set of characters (the paper roller moves to a third level) which usually supports the national alphabet. On a radio modem (such as the Universal M-7000) you will have the ability to display the extra cyrillic characters but some amateur radio "all mode" packet units will not. AEA sold a software package for the Commodore 64 in the mid 1980s called "SWL Text" which used the transliteration method.

Transliteration converts special characters that can't be displayed on a computer screen into the English phonic equivalent. The Russian character that looks like a "W" with a tail, for example, is pronounced "shch." Another character looks like a number 4 and has the "ch" sound. The squiggly Arabic or even Oriental characters can be replaced with a phonic equivalent.

Figure 1 is a printout of a Russian cyrillic transmission on 12.504 MHz in normal RTTY mode. As you can see, it's quite garbled and looks cryptic. It also consists primarily of numbers and punctuation. Some RTTY enthusiasts will probably figure it's encrypted data. Figure 2 is much more readable, but sorry, I don't know Russian.

Most Russian cyrilllic traffic can be found near 12.5 MHz plus or minus a few kHz just about any time day or night in eastern or central USA. You can also find traffic on the 8, 16, 22 and 25 MHz bands. I didn't print any loggings because these transmissions pop up just about anywhere in that range. Just tune around until you hear an RTTY signal and set your M-6000 or M-7000 to cyrillic mode, 170 Hz shift and 50 baud.

By the way, the intercepts were printed out using experimental software that receives characters from the M-7000. The software has the ability to transliterate and display the characters on an IBM PC or compatible by connecting it to the M-7000's serial communications port.

The transliteration part works well, but I'm in the process of modifying the remaining software by adding the M-7000 control portion. The transliteration part was written by a university professor in the US.

NNN
"WA4NNJ, this is WOPYI, are you there, Barry?" What seems like the start of another typical amateur radio schedule is, in fact, the first stirrings of the weekly TVRO user's net. The net first began in the late 1970s as a meeting place for hams whose electronic interests included the emerging technology of satellite television. In those early days of the industry there were but a few satellites which carried a small number of active transponders. Equipment for reception was big, extremely expensive and far beyond the means of most consumers. In its own way, the birth of the home dish satellite industry mirrored the birth of commercial radio. Urged ahead by the hit and miss progress of experimenters, both radio and TVRO owe a debt to the amateur experimenter. As in the days of spark gap transmitters and galena receivers, there arose among this far-flung community of TVRO pioneers the need to communicate. Thus, the 20 meter TVRO User's Net was born. Every Sunday afternoon since then, hams from around the country whose other electronic passion is satellite TV have met at 2:00 p.m. ET on 14.309 MHz USB.

The Players

WOPYI is Jim from Missouri. It's his powerful signal which announces the beginning of the 'early bird' net (around 1:30 p.m. ET) to establish the frequency. Jim, with his friendly low-key style on the air, is typical of the hams of the net. Having built his own dish in addition to other satellite TV related gear, Jim has watched the industry grow from its infancy.

WA4NNJ, the object of Jim's call, turns out to be Barry who lives near Richmond, Virginia. Barry came to TVRO a little later than Jim but with no less enthusiasm. It is his signal, powered by a Heath HA-14 Amplifier which officially calls the net together at 2 p.m.

That's really the end of officiousness with this net. Barry, who takes on the duties of East Coast Net Control, sets a tone for the net which eschews the hectic business of most nets you may have heard. Stressing the aspects of satellite TV which are fun, interesting and entertaining as well as educational, Barry invites everyone listening to participate. Indeed, even when hams who blunder into the net not realizing it is a net ask for signal reports, Barry is patient enough to comply and introduce the newcomer to the rest. In this respect, the Net reflects the better qualities of amateur radio today.

Tom, KX7B, of Idaho is the overall net control and relays west coast stations whose signals, due to propagation, can't make the haul eastward. Tom's busy schedule as a full-time TVRO retailer forces him to miss the net for long periods of time. Last December he spent a month in the Caribbean replacing dishes which had been destroyed in the fury of Hurricane Hugo.

Ralph, VESLOE, who lives near Ottawa, works in the electronic field and brings the Canadian perspective to the Net. Using a homebuilt dish, Ralph has an avid interest in space activity and, among his other talents, is fluent in German.

WX6S is the call of Bob of California whose insights into the industry come from years of writing for various publications on the subject. Fluent in Russian, Bob keeps up to date on the fledgling Soviet TVRO hobby. Of course, there's the irrepressible Bob Heil, K9EID, of Illinois who is no stranger to the amateur radio community. In addition to his business of manufacturing amateur radio microphones, Bob is a major TVRO retailer, maker of the Heil SC-1 SCPS receiver, and still has time for his vintage T-Birds.

There are many many more who check into the net, some more frequently than others, but all with contributions from which we may all benefit. That's the whole point of the net: carrying on the tradition of experimentation, exchanging views on the status of the industry, and trying to find answers to everyone's questions. This is one place where your two cents is really worth something.

What you'll hear

Up for discussion on any given Sunday on the TVRO User's Net will be issues ranging from what new channels are seen and where, how to fix a balky actuator, where to find schematics for equipment from new defunct manufacturers and much more.

Each Sunday listeners will be treated to a few glimpses into the past of the industry: The Halcyon days before scrambling; old rivalries such as Shaun Kenny, Chuck Dawson and Keith Lomanica (who, as W7DXX, made many nets in the early days). There's talk of the joys of homebrewing TVRO gear; the many check-ins by early pioneer Bob Cooper, VP5D, whose call in those early days before his move to the Turks and Caicos was WSGHT.

There are always plenty of tales of dish installations, bent actuator arms, blown receivers and the like.

How to join

If you want to participate in the TVRO User's Net, all you need is an amateur radio license of General Class or higher. Even without a ham ticket, you can still enjoy monitoring the net but you'll need a receiver with good selectivity and sensitivity. 20 meters on a Sunday afternoon can be pretty crowded. If you're a shortwave listener and have a question or comment to pass to the Net, just send it to me in care of this magazine. I'll even QSL reception reports.

CD audio via satellite

For many months a black and white billboard for ICT CD/18 has appeared on F4.19. Dish owners who tune the FM subcarrier frequencies have enjoyed a number of music formats with an uninterrupted 24 hour per day format. Until now this has been a test transmission for International Cablecasting Technologies, Inc., which is now ready to introduce its service.

ICT through its own audio encryption system will make available 18 stereo channels of compact disc quality music without commercials, announcers or any other interruptions on a 24 hour per day basis.

How it works

ICT's CD 18 service will work much the same as premium video programming. Music in 18 formats will be uplinked from ICT studios, digitally encrypted and received by the consumer's TVRO system. A special tuner called the D-M 100A goes between the satellite receiver and a stereo. Consumers choose the formats to which they may wish to subscribe and the tuner allows access to those channels.

That's not all

ICT has other ideas with this unit as well as music. In addition, it has a data service capability which, when connected to the
consumer's computer, can receive data at 9.6 and 19.2 K Baud.

The system is also capable of displaying program information on any of the music channels either through a stand-alone LCD display or the consumer's TV screen. The display will be four lines of up to 24 characters listing the song title, artist, album and record company information concerning the music as it is being played.

Finally, authorization can be given for the whole music package or on a pay-per-program basis at a rate of about 250,000 subscriptions per second. One imagines they will reserve a channel or two for special music events such as concerts on a pay-per-event basis.

Paying the piper
ICT, who have been uplinking the Tempo Sound Cable Music service for several years, will charge TVRO users $150 for the tuner and about $100 per year for service subscriptions. It should be noted that cable listeners will likely pay the same for programming but will not have to buy the tuner.

For more information on ICT, write them at 342 Madison Avenue, Suite 505, New York, NY 10173, or phone 212-983-3300.

TRANSPONDER NOTES

Before the SCI-FI Channel has even had a chance to bomb, a report in Multichannel News warns us to look for the Chiller Channel which hopes to launch on -- you guessed it -- Halloween of this year. While you're at it, look for the debut of the Cowboy Channel at the same time. No word as yet as to their location or availability.

Where's all the programming for these networks coming from? Where else: the forty-year-old television graveyard. Hastily buried network stinkers will rise from the shrouded mists and infest your TV set. It's a horror story too true to be good.

ABC began regular tests of its scrambling system last winter. Thus all major networks have scrambled their CB-time band feeds. Dish owners who want to watch those networks are forced to subscribe to either the Netlink package (which uplinks the three networks via their Denver affiliates) or Prime Time 24 which uplinks WBBM (CBS) Chicago, WABC (ABC) New York and WXIA (NBC) Atlanta. The Netlink package, however, is not available to TVRO users who are deemed to be within the range of network over-the-air affiliates.

MAILBAG

Loren Cox, Jr., writes for Glenn Hauser's Review of International Broadcasting, notes Nebraska ETV on S2,2 with analog stereo on 6.12 MHz and 6.30 MHz. The channel also has a reading service on 6.8 MHz. He also says he gets Ku on an abandoned USCI dish and feed. (See MT Dec. 1988 for a picture of one of these USCI dishes.)

USCI was the original DBS Ku effort of the mid 1980s which went under after about a year of service and many millions of dollars. Subscribers, or victims, if you prefer, paid about $700 for these dedicated (immobile) Ku dishes with fixed feeds. By the end of the year, as the service collapsed, they all had very attractive boat anchors.

Loren uses a "Drake ESK2240 for Ku Band with 30 dB or 24 dB selectivity at 3 dB down...it can be set up for all Ku band formats but have found the best results are obtained by tuning it in 5 MHz increments." Having to set the feed for vertical or horizontal polarity

by hand, he finds the vertical transponders the more interesting. He has also replaced the original LN B with a California Amplifier 1.1 dB LN B and claims "pristine pix."

The USCI dishes are widely available in the areas of the country in which USCI was test marketed and may be had for little or nothing. One may also find them at hamfests.

Loren also noted the Caribbean Super Station with a test on W5J,4 on December 6. He sent a reception report "and received a reply indicating that transmissions were to begin on that transponder on 1 Jan. 1990." Interestingly, Westsat Communications, which publishes the bimonthly Satellite Channel Chart, has the following listing under W5J,4: "Great American Broadcasting (Beginning 1-1-90)."

Stewart Barry of Santa Clara, California, writes: "I'd like to know if you have any information on the 'Heil SCPC Receiver'?" Sure do, Stewart. Everything you want to know and more about the Heil SC-1 SCPC receiver may be had by writing Bob Heil at: Heil Sound, Marissa, IL 62257.

A special thanks to Charles Veith (KGTVV) of Tableluah, Oklahoma, and Bob Kozlarek (WA2SQO) of Elmwood Park, New Jersey, whose inquiries prompted the lead for this month's column. Charles is a long time MT subscriber "way back to when it was a newspaper format." Charles, that's going back a ways.

Bob is a product specialist in the Audio Video Systems Group-Technical Support Division of Panasonic (which makes the C2000, CRD 4400 and CRD4500 satellite receivers). He writes, "Along with my professional involvement, I have a working system and have installed quite a few of my own."

With people like this joining the TVRO User's Net, it's easy to see how it has lasted so long.

GUIDE TO UTILITY STATIONS 1999 (7th edition)
Including GUIDE TO RADIO/TELETYPED STATIONS (15th edition)

The fully revised new edition is the only publication in the world which considers the very latest technical developments as those made in the code-processing field. Hundreds of frequencies of ARQ-E, ARQ-EO, AUTOSPEC, FEC-A, SI-ARQ and SWED-ARQ teleprinter stations are listed, as well as the results of our 1998 monitoring missions to Guadeloupe/Martirene and to Malaysia/Sarawak/Singapore. A detailed introduction to the monitoring of utility stations completes our bestseller.

This unique manual covers the complete shortwave range from 3 to 30 MHz, plus the adjacent frequency bands from 0 to 150 kHz and from 1.6 to 5 MHz. Contrary to the many available publications it is built on real-time monitoring throughout the year, around the clock. It includes details on all types of utility stations including facsimile, Morse, phone and teletype stations, the latter covering the entire spectrum from standard RTTY over SITOR to all those fascinating new ARQ, DFM, FEC, TDMA and VHF systems.

The numerical frequency list covers 16290 frequencies of stations which have called the station, ITU country symbol, type of modulation and corresponding return frequency, or times of reception and details, are listed. The alphabetical call sign list covers 3054 call signs, with name of the station, ITU country symbol, and corresponding frequencies.

The RTTY press services are listed on S47 frequencies not only in the numerical frequency list, but also chronologically for easy access around the clock, and alphabetically in country order.

Additional alphabetical indices cover - Schedules of 70 meteorological FAX stations on 271 frequencies. - 73 meter RTTY stations on 231 frequencies. 518 kHz NAVTEX schedule. - 925 name and traffic abbreviations and signals, 182 telex service codes. - 1000 RTTY abilit stations addresses in 200 countries. - Radio Regulations on frequency and call sign allocations. - Frequency band plans for the Aeronautical and Maritime Mobile Services. - All G-code and Z-code groups for civil and military use. - Emission designations, calls of stations, and various other tables.

Further publications available are Guide to Facsimile Stations, Radio/Teletype Code Manual, ARQ and Meso Code Manual, etc. For further information ask for our catalogue of publications on commercial telecommunications on shortwave, including recommendations from all over the world. All manuals are published in the handy 17 x 24 cm format, and of course written in English.

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MONITORING TIMES
May 1990
49

www.americanradiohistory.com
What’s Next?

It’s elevated, creative, intelligent and informative. It’s an alternative to top-40 contemporary-hit radio, beautiful-music radio, hard-rock radio, and almost everything else on the air. It’s a thorough education in contemporary music. It’s Next-FM: WEXT 96.9 and it’s broadcasting from the center of the Hudson Valley in Arlington and Poughkeepsie, New York.

General Manager Ron Rizzi has created a station "where great music knows no boundaries," and whose format defies description. "It’s progressive in a sense, but not predictable or obscure. You don’t hear the same songs 500 other stations play. It’s quality music from quality artists. You’ll hear Kenny Loggins, but not the same five or six songs you always hear. Listeners say it’s like a breath of fresh air."

Next-FM is expanding the tastes of valley residents with a broad variety of music. Mature rock styles combine with additions from new age, jazz and folk artists. Listening becomes an enjoyable learning experience.

Turn on Next-FM any weekday morning and sample Bob Carmody’s show. You’ll hear Pat Metheny, Bob James and Bob Dylan. Sadao Watanabe, Bonnie Raitt and Brenda Russell. Julia Fordham, Bruce Hornsby and The Range and Indigo Girls. Mornings also bring a variety of help features on Next FM -- not the usual diet of shock and scandal. Instead, host Bob Carmody presents positive things like "Money Smarts," "Kid’s Stuff" with a local pediatrician, "Heart Of The Matter" on health, and a series on "Black History."

Truly a station for the 1990s, Next-FM began broadcasting just over a year ago on December 3, 1989. When the FCC created new rules under Docket 80-90 allowing many new FM stations around the country, Rizzi created a partnership with some friends and applied for the 96.9 allocation for Arlington, New York. Ron’s company, Bridge Broadcasting Group, was awarded a license, and Next-FM was born.

“Starting a new station is pretty complicated and expensive stuff. You have to be pretty creative to make something out of just a license for a frequency.” With a degree in business administration, Ron pursued a career in radio working at several New York stations until he switched careers five years ago to become a computer consultant and teacher.

Broadcasting never left his mind, however. He saw a tremendous gap in radio programming and was determined to fill it.

“I wanted to create a station for the nineties. Seventy percent of the world is now over thirty years old. They are well-educated, gainfully employed and have children. They used to come home and relax to Led Zeppelin, and that just isn’t appropriate and acceptable to their family lifestyle.”

Ron sees his audience as being diversified as their ages. “They are all so different. One media just won’t reach everyone. They don’t all watch ‘Roseanne’ and they never want to fill out surveys,” but Next-FM listeners really respond. A recent direct mail questionnaire must have hit a chord with the Poughkeepsie area since almost half of them were returned immediately. “We pay attention to everybody. Our listener’s suggestions and comments are very important.”

Most radio stations depend on rating services that measure the cumulative amount of people that tune in during a period of time; for example, 6 to 10 a.m. Contrary to this trend, Next-FM is designed for hours of continuous listening. “It depends on what your perspective is. When you produce least common denominator programming, you believe the average listener listens for ten or fifteen minutes. They don’t make you stay. They make you switch. It defeats the whole idea of marketing.”

“You have to deliver to your intended market,” Rizzi realizes. “Our listeners are people who had given up on radio. They became bored with the same repetitive music. Next-FM is not loud and obnoxious. It’s beautiful, but it’s not beautiful music. Our listeners used to listen to compact disks, but now they listen to us.”

Listeners of Next-FM are loyal not only for the music. With only eight minutes of commercials an hour, the station has a continuous noncluttered sound. Contest winners at Next-FM have won tickets to tapings of David Sanborn’s “Night Music” television program, trips to Europe and Jamaica, and digital audio music systems.

With new music and new ideas, 96.9 FM in New York’s Hudson Valley, is becoming a trend setter for what’s next for radio in the 1990s.

Bits and Pieces

Things are abuzz on AM radio, and broadcasters aren’t pleased. Radio frequency noisemakers are everywhere: televisions, computers, light dimmers, VCRs, even telephone answering machines.

The latest entry to the melee is the RF light bulb. Very similar in design to fluorescent lights, they may soon cover your home with static that few AM signals can penetrate. New England Power Service Company and Potomac Electric Company of Maryland have been installing these lamps, free of charge, as part of their campaigns to save energy for customers.

Over 15 million homes have seen the light, and the FCC has no plans to increase regulation on RF lamps in the near future. AM broadcasters are desperately trying to tighten federal regulations on RF noise to maintain at-home audiences that are essential to their survival. Stay tuned... if you can.

A new radio network will hit American airwaves soon, and it’s all kid’s stuff. Linda Katz and Marcia Moon have joined with lawyer Ragan Henry to create the first nationwide
network for children, providing 13 hours of programming a day, every day of the week. "Parents are looking for entertainment options for their kids other than television, and one of the greatest strengths of radio is its ability to help develop children's imaginations," Linda Katz said in a recent interview with *The Chicago Tribune*.

The shows, emanating from studios in Philadelphia, will be presented for children ages three to ten. Over 20 radio stations are already negotiating with the network, whose name has not yet been released to the public pending copyright approval.

**Mailbag**

David Parsons of Tucson, Arizona, sent us news of a dandy book you might want to read. *The Pied Pipers of Rock 'n Roll Radio: Deejays of The 50s and 60s* is an amazing collection of stories and recollections of legends like Alan Freed, Dick Biondi, Hunter Hancock and Wolfman Jack. You'll read all about the birth of rock music, the payola scandals, their wild lifestyles, and the power they achieved with their big 50,000 watt voices. It's just like sending you and your radio back to the future. Written by Wes Smith, it's published by Longstreet Press and is 224 pages of endless fun.

The ship has finally come in at WNOP in Cincinnati. The AM jazz station has finally dropped anchor forever and returned to dry land. Probably the only floating station in the nation, owner Al Vontz II decided to move into the world of barnacles and sea weed when the landlord for the station's original studios raised the rent.

Broadcasting from an odd-looking facility that resembled two oversized barrels, with a large ship's bell between them, WNOP floated in the Ohio River for over seventeen years. The big illuminated sign above saying "WNOP" has gone dark and the crew has become landlubbers in a larger modern facility. Thanks to reader Ken Hydeman for bringing us aboard.

All weather, all the time? WLVH in Hartford, Conn., is going to be sold in the near future, but for the time being they have a unique sound. Instead of the Hispanic programming that made the station the only Spanish speaker in the state, all you'll hear now is the sounds of NOAA Weatheradio retransmitted from the National Weather Service in Hartford. Just turn on 93.7 FM and see for yourself. Reader Fred Chesson kept us under his umbrella from Waterbury, Connecticut.

Durham, North Carolina's Ed Best is interested in swapping airchecks with other readers and wants to build an aircheck collector's network. Drop us a line at American Bandscan if you like hearing out-of-town stations on tape and would want to trade with other Monitoring Times readers.

**New Station Grants**

Congratulations to Northern Illinois University in Rockford for being granted a powerful 50,000 watt station on 90.5 FM. Also look for new stations in these areas: Merced, California, 107.7; Berea, Kentucky, 106.7; Ripley, Ohio, 99.5; Berwick, Pennsylvania, 103.5; Loris, South Carolina 105.9; Rockwood Tennessee 105.7; Emporia, Virginia, 99.1; and Pasco, Washington, 101.3.

**For Sale**

Things down south are raring to go this month. A Class A FM stereo station with 3,000 cool watts is for sale in Mississippi for cash or terms. Call G. Shurden at 601-843-4091.

A construction permit for a new AM station in a dynamic resort area of Georgia could be yours. If you want to put this 5,000 watt signal on the air, contact J. Evans at Route 4, Box 242, Knights Academy Road, Valdosta, Georgia 31602, or call 912-247-6859.

If the Beehive State is more your bag, how about another construction permit for a 5 KW AM in Southeast Utah? Equity interest is available for this property in the Four Corners area, and it will be the only station in its county. All inquiries will be kept confidential. Write to: P. Mueller, Highway 191 N (6-1), Blanding, Utah 84511, or call 801-678-2261.

**International Bandscan**

AM radio stations are fighting for their share of the pie down under as well as in the states. World traveler and avid MR reader M.L. Cauthon III sends us news from Sydney, Australia. The federal government has once again been haled in trying to auction AM licenses to the highest bidders. Eric McCrae of the Macquarie Broadcasting Network is fighting the Australian national radio plan to allow only a limited amount of frequencies for FM broadcasting, with some being purchased for up to 31.5 million in Australian dollars.

A longstanding AM broadcaster, he believes FM is merely a technical advance of an existing system, and that all current AM broadcasters should automatically be granted an FM frequency as well. "AM broadcasters who have missed out on FM licenses fear that they will go out of business due to the superior quality and range of FM signals as the allocations are extended," McCrae cautioned.

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**Be an American BandScan Reporter.**

See any stories about radio in the local paper? Send them to Monitoring Times, P.O. Box 98, Brassstown, NC 28902.

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**Super Snooper™**

- Miniature receiving antenna
- Short wave at its best!
- Works on AM Broadcast band too!

New! Super Snooper™ is only 36" high. Ideal for apartments and travel, wherever ordinary outdoor antennas are restricted. Exclusive passive network matches antenna to cable; cannot overload even on strongest local signals.

Mount outdoors away from noise. Brings noise-free signal to receiver for clear, quiet reception. Sealed weatherproof construction. SO-239 connector for coaxial cable (cable not included).


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The French Radio Network Nostalgie is about to add another 13 franchised stations to its network in Italy, Spain and Morocco. Eight stations will broadcast in Morocco in French, English, and Spanish. Two more stations will be in Spain, based in Barcelona; and three will originate from the Aosta Valley of Northern Italy. This month, a Moscow station will be added and there are plans to obtain franchises in Jersey and in the United Kingdom.

Nostalgie's network already covers 180 local stations in France, 31 in Belgium, one in Switzerland and one in Luxembourg. The network was recently bought by Monte Carlo Radio from Pierre Alberti, the founder and president of Nostalgie.

The British Forces Broadcasting Service has launched a second station in West Germany called BFBS-2. The service will present mostly talk and informational programming, Mondays through Fridays only from four VHF transmitters: 101.6 in Bielefeld, 102.2 in Munster, 104.7 in Hohne, and 105.0 in Lippstadt.

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**Credits:**

From Here, There, and Everywhere!

Box 1116 has been overflowing this past month. Everybody seems to be getting their share of good catches these days, so let's see what some of the "Outer Limits" gang has been monitoring.

From North Dakota, Mike Larson and Marv Dunn reported they came across the famous Radio Free Willy on 7415 from 0240 to 0515. Willy was up to some of his usual antics with comedy commercials and what some might consider rather cynical gags about the 1992 presidential election. Willy did suffer from some rather nasty QRM after about half an hour of broadcasting.

Meanwhile, moving further west, Idaho's Frank Arden came across KNBS on 7416 at 0230. As veteran readers of the "Outer Limits" know, KNBS claims to be "a broadcast service of the California Marijuana Cooperative."

In Ohio, Steven Marsh got a nice selection of logs. Among them was the classic Voice of Laryngitis on 7435 at 0510 UTC. This is one of the most creative stations around. It is always a treat to hear Stan Huxley and the gang. Steve also found Radio USA on 7475.

Patrick Kennigan of Illinois found Secret Society Radio with sixties-era rock music on the approximate frequency of 6850 at 0409. Secret Society Radio can be reached via Box 6527, Baltimore, Maryland 21219. But recent days have not been kind to this station. More about that situation shortly.

One of our regular reporters, Minnesota's Alan Masea, came across CHGO on 7410 at 0030. CHGO claims to be broadcasting not from Canada but from Chicago. On 7415 at 2355, Alan also logged a rebroadcast of the now legendary Radio New York International. Although not certain, he thinks this may have been transmitted by Free Radio One.

Robert Brosett in Wisconsin got Samurai Radio with just 40 watts on 15052 at 2300 UTC. He says you can reach this one through Box 628, Slanesville, West Virginia 25444.

We do get mail from North of the Border. Ontario's Michael Bolitho came across WXZR on 7426 signing off at 2206.

Both Fraser Bonnett in Ohio and this writer are now the happy owners of Hope Radio International QSL. You can contact them via Slanesville. Meanwhile in Maryland, John Babbits found WHBH, Billbilly Heaven, with music of Doc Boggs on 7425 kHz at 1710 UTC.

Pennsylvania's Barry Rowan has added a couple of QSLs to his collection. One was from Radio Garbanzo. The other came from Radio Clandestine. Barry's report to Clandestine made it through to Kingston, New York, before the maildrop closed. However, the QSL was postmarked from the same city in which he lives!

In Ohio, Dean Hewlett heard an interesting one: WGAR on 7415 in LSB at 0300 UTC. The station was broadcasting a program with a "new-age" religious philosophy. Readers in the Cleveland area are undoubtedly aware that there is a licensed station with the same call letters broadcasting on 1220 kHz.

We haven't seen very many QSLs from WENJ, but Virginia's Pat Murphy got one. The address is Box 40554, Washington, DC 20016. Pat also has some nice loggings including Voice of the Abnormal on 7413 at 0316.

We might end this segment of the column by noting we recently heard from a reader who has been faithfully forwarding mail for one widely heard pirate. The pirate never asked if our reader was willing to do this. He just started announcing the address. However, while he has QSLed some reports, so far he has failed to QSL the reception of the person forwarding the mail. Come on, guys. Is there no honor among Buccaneers?

It's No Secret:

Secret Society Radio was busted. At least that is what Ohio's David Dunn tells us. He heard it on an amateur net the day after the raid. David had been able to log Secret Society Radio on 7412 at 2345, with country music, just a week earlier. Now he doubts he will ever get a reply to his reception report.

Well, David, sometimes even after disaster hits, stations continue to answer their mail. On several occasions this writer has received QSLs from stations after they had been shut down.

Pat Murphy was more fortunate. He did receive a Secret Society QSL just a few days before the raid.

The WENJ Story:

For months now a report has been circulating that Judah Mansbach and Company (see the March "Outer Limits") had struck against a station in New Jersey. There still appears to be no reason to doubt this, given Mansbach's batting average in the last year. However, there had also been reports that the station closed was WENJ.

WENJ says this was not the case. Pat Murphy received a letter from Jack Beane himself in which he emphatically states, "We were not busted by the FCC." Murphy also reports logging and QSLing the station recently.

David Dunn monitored a WENJ broadcast on 7415 at 0152. In this transmission again WENJ denied they had been closed. They did, however, say they were no longer using a maildrop and instead announced a phone number to be used to report reception.
Ohio’s Dean Hewlett got the first WENJ QSL of 1990.

Still more evidence pointing to the life and health of WENJ is Dean Hewlett’s copy of the first WENJ QSL issued in 1990. But, we have also heard from Steve From Manhattan. Nobody seems to cover the New York metropolitan pirate situation more thoroughly than Steve. He says the publication, Radio & Records, reported the bust of WENJ as well as several other stations. Maybe what we really need to completely clarify the situation is a letter from Judah Mansbach himself telling us who bit the dust in New Jersey.

Meanwhile Steve says that despite the current heat, several New York City area stations have resurfaced. Since most of these outlets seem to be publicity shy and the New York pirate feud apparently continues unabated, we will omit any details.

One thing that definitely does have everybody nervous was the previously reported closing of WNYS. New York’s Joe Nooney tells us the licensed ham radio operator who put this pirate on the air received a $1,000 fine. WNYS liked to transmit reports from the John Birch Society and rebroadcasts of Armed Forces Radio Network programs. WNYS used 1010 kHz.

Across the Waves:

Many have logged Scotland’s Weekend Music Radio, but few have seen her. Now, thanks to WMR’s Jack Russel himself, you can. Jack sent a photo of himself (minus the face) plus WMR’s transmitters used for broadcasts on 6, 13, and 15 MHz. Our thanks to Jack, who has quite a following among “Outer Limits” readers.

The most unusual log received recently comes from Steve Harwood of California. He heard Radio Camelot International on 7416 at 0245 UTC with announcer Frank Morita. Radio Camelot asked for two IRCS for a QSL and gave the address of P.O. Box 1437, Hastings, New Zealand. Steve may have found himself a genuine New Zealand pirate. But then, Radio Camelot may also not be the first station to claim a location other than its authentic one. In any case, it is certainly a most interesting log.

Clandestine and Numbers Stuff:

This writer heard Colombian clandestine Radio Patria Libre on 6310 at 0105 with a numbers transmission. Rather than the usual numbers groups, these were “strings” with one of the longer ones containing 34 digits. Radio Quince de Septiembre continues to be heard on 6214. With the Sandinistas defeated in the Nicaraguan elections, there will be considerable pressure on the Contras to disband. Radio Quince may soon be clandestine history. Then again, maybe not.

Florida’s Terry Krueger notes that Cuba’s Radio Taino was silent for three weeks but finally returned. However, it resumed broadcasting only on 1160, rather than using multiple frequencies as it has often done in the past. Krueger discovered massive jamming on 1100 and 1120. Are these gearing up for the start of TV-Marti?

Clandestine expert Mike Fern in California always manages to hear the unusual. He hears a Korean numbers station on 5960 at 0325 UTC Mondays. Mike says also to try 4771, 5870, and 7270 at 1000, 1200, 1400, 1530, 1700 and 2200. The transmissions begin with the Song of General Kim Il-Sung. Numbers are in the dictionary code 3/2 pattern, and the messages apparently intended for agents in Japan and South Korea.

Mike is also hearing the North Korean Voice of National Salvation clandestine on 3480, 4120, 4454, and 6010 at 1000 UTC. All four frequencies have South Korean bubble jammers on them.

In Louisiana Joey Boone is hearing Iranian clandestine Flag of Freedom on 15100 at 0645 UTC. Iowa’s Norman Crocker is hearing a great variety of clandestines including Radio Libertas via WHRI on 17830 at 2101 and 11790 and 21840 at 1630 UTC. Radio Libertas wants an independent Croatia free of control from Yugoslavia. Norman is hearing the Cuban American National Foundation’s program via WHRI on 9495 at 0100 Monday through Friday.

Clandestine teletype? You bet! If you have the equipment, check 8350.2 around 1900. Florida’s Joe Paikovic receives UNITA’s transmissions at that time. UNITA opposes the Marxist government of Angola.

And a Final Note:

Both Bill Romberg and Terry Tauchen of Wisconsin sent along newspaper reports of a recent panel discussion in Chicago. Featured were pirate operators making their case against the FCC. Among those present were California’s famous Black Rose and the operator of an Illinois FM pirate, WTRA-FM. So turn on your radio. Also, keep tabs on who may be speaking in town. Expect the unexpected. Then tell it to the “Outer Limits.”
below 500 kHz

CQ CQ - Calling all hams! We've had a number of orders for the new 1990 edition of The Aero/Marine Beacon Guide coming from radio amateurs. This is easily noted because many hams do list their call signs on their correspondence. Quite a few mentioned that they were new to listening for beacons on the low frequencies. Gradually I began to understand what was happening.

For many years, hams used highly specialized equipment. These instruments were capable of listening and transmitting on a selected list of frequencies -- the ham bands. Today the equipment is much less specialized. It seems to be easier to produce full range receivers rather than those limited to just the ham bands. Ergo, the modern amateur has a full range of frequencies to listen to. With a background in CW, the low frequencies are not alien transmissions. Welcome, fellows, we're glad to have you join us.

Just like any other phase of radio, it's always more fun if you know what you're doing. Beacons are a big part of what fills the low frequencies. Just like amateur radio, QTH's are measured in countries or states or provinces. It's just a lot harder to work all states with beacons or to reach 50 countries. But that shouldn't keep you from trying. Who knows, you may make a few vacation trips that help fill in the blanks. Besides, listening takes a lot less paper work and approval than transmitting from various locations.

Now a short trip into No-Man's-Land. The title of this column is "Below 500 kHz." Mediumwave broadcast stations begin about 540 kHz. That leaves a small gray area not attached anywhere. This item sounds a little more like it belongs here than with some broadcast stations.

I just came across the latest NAVTEX schedules from a Notice to Mariners bulletin. NAVTEX receivers are supposed to be low-cost receivers that screen incoming messages to eliminate duplicates or those of noninterest, printing the rest on adding-machine size paper. According to the NOTAM bulletin, those who have SITOR equipment can receive NAVTEX by operating in the FEC mode. So Table 1 lists the schedule of USCG stations on 518 kHz as of March 1990.

The broadcasts include offshore weather forecasts, marine advisories, search and rescue information from inland waters to 200 miles offshore. Coastal and high seas weather forecasts are not included. By the summer of 1993, vessels will be required to carry NAVTEX receivers and the Coast Guard will discontinue using medium-frequency CW for safety messages. The bottom six locations on the list just began operation in March 1990 while the others had been on for some time.

This month's loggings are from a list submitted by John Carlson of Littleton, Massachusetts. Quite a few of these Canadian beacons get out quite well and are heard well into the middle west and further down the Atlantic coast. It might be worth your while to try for some of these.

Table 1 - Coast Guard NAVTEX

<table>
<thead>
<tr>
<th>Location</th>
<th>ID (B1)</th>
<th>Hours UTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boston (MA, NMF)</td>
<td>F</td>
<td>0445</td>
</tr>
<tr>
<td>Miami FL (NMA)</td>
<td>A</td>
<td>0000</td>
</tr>
<tr>
<td>San Juan PR (NMR)</td>
<td>R</td>
<td>0415</td>
</tr>
<tr>
<td>Portsmouth VA (NMN)</td>
<td>N</td>
<td>0150</td>
</tr>
<tr>
<td>New Orleans LA (NMG)</td>
<td>G</td>
<td>0300</td>
</tr>
<tr>
<td>Honolulu HI (NMO)</td>
<td>O</td>
<td>0040</td>
</tr>
<tr>
<td>Guam (NRV)</td>
<td>V</td>
<td>0100</td>
</tr>
<tr>
<td>Adak AK (NO?)</td>
<td>A</td>
<td>0000</td>
</tr>
<tr>
<td>Long Beach CA (NMC)</td>
<td>O</td>
<td>0445</td>
</tr>
<tr>
<td>Kodiak, AK (NO?)</td>
<td>?</td>
<td>0300</td>
</tr>
<tr>
<td>San Francisco, CA (NMC)</td>
<td>C</td>
<td>0400</td>
</tr>
<tr>
<td>Astoria OR (NMC)</td>
<td>W</td>
<td>0130</td>
</tr>
</tbody>
</table>

Notice the three different two-letter beacons for Logan Airport in Boston. These are runway markers to assist pilots in lining up their approaches to the runways.

John also reported hearing both MI (Manana Island) and HI (Highland Light) in Maine on the frequency 286. These are sequential beacons which operate during one or two minutes of every six. HI operates during minute 1 and MI during minute 6. Since the sequence is repeated every six minutes, HI comes on just after MI goes off (with a 10 second solid tone).

He also reported three groups of four dashes on 304. The three groups were repeated three times followed by a 10 second tone. This is probably the McNab Point, Ontario marker beacon. It sends a series of dashes or letter T. I only say probably because this is supposed to be a Navigational Season Only (NSO) beacon. It may have been just left on without maintenance and happened to keep going.

Finally, John reported VI on 374. This is a perfect example of negative keying. It is supposed to be a malfunction of the beacon and is usually heard close to the transmitter. In negative keying, a dit becomes the space between two sounds (dits and/or dahs). Conversely, the space between two sounds becomes a dit. A similar transposition occurs between dahs and the spaces between letters. The letter V is the negative key image of the letter B and vice versa.

John lives close enough to Logan Airport and BO is on 375. The B becomes V in negative keying and the two spaces between the three dahs of the letter O become two dits or the letter I.

Many times the negative keying will occur when you are a little off the actual frequency. As you tune toward the true frequency, the negative keying will disappear and the true ID be heard. But we did have a beacon in Indiana that was only heard with negative keying for almost two years. This was a severe transmitter problem that was finally corrected.

Joe Woodlock

Table 2 - Beacon Loggings

<table>
<thead>
<tr>
<th>Location</th>
<th>ID (B1)</th>
<th>Hours UTC</th>
</tr>
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<tbody>
<tr>
<td>206</td>
<td>OI</td>
<td>Yarmouth NS</td>
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<tr>
<td>212</td>
<td>SJ</td>
<td>St. John NB</td>
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<tr>
<td>212</td>
<td>PMX</td>
<td>Palmer MA</td>
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<td>220</td>
<td>JHM</td>
<td>Mansfield MA</td>
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<td>241</td>
<td>SFZ</td>
<td>Smithfield RI</td>
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<td>248</td>
<td>UL</td>
<td>Montreal (Dorval) PQ</td>
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<td>251</td>
<td>SKR</td>
<td>Bedford MA</td>
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<td>FFF</td>
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<td>La Tuque PQ</td>
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<td>PH</td>
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<td>304</td>
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<td>BLO</td>
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<td>YFM</td>
<td>La Grande 4 PQ</td>
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<td>DRY</td>
<td>Manchester NH</td>
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<td>404</td>
<td>BC</td>
<td>Baie Comeau PQ</td>
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<td>428</td>
<td>COG</td>
<td>Orange VA</td>
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<tr>
<td>516</td>
<td>YWA</td>
<td>Petawawa ONT</td>
</tr>
</tbody>
</table>

Notice the three different two-letter beacons for Logan Airport in Boston. These
Conozca el Interesante Contenido de Radioscan Magazine
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Sunday

May 6th, 13th, 20th, 27th


0014 Radio Berlin Intl': Yours for the Asking. Panelists give short answers to listener questions.

0030 BBC: The Ken Bruce Show. A mix of popular music and entertainment news.


0055 H.C.J.B: DX Party Line. Brent Allred presents news on shortwave radio and communications.

0101 BBC: Play of the Week. Hour-long drama selections.


0112 Radio Berlin Intl': Commentary. East German comments on the day's top news stories.


0115 Radio Japan: This Week. The major events of the week, and current affairs topics in Japan.


0120 Radio Berlin Intl': Yours for the Asking. See S 0014.


0157 Radio Berlin Intl': Commentary. See S 0112.


0214 Radio Berlin Intl': Yours for the Asking. See S 0014.


0230 BBC: Taking Issue. A program of round-table discussion on various topics of current relevance.


0312 Radio Berlin Intl': Commentary. See S 0112.

0315 BBC: From Our Own Correspondent. In-depth news stories from correspondents worldwide.


0335 Radio Japan: This Week. See S 0115.


0329 Radio Berlin Intl': Yours for the Asking. See S 0014.

0330 BBC: Panel Game. A quiz show of a topical nature.


0357 Radio Berlin Intl': Commentary. See S 0112.


0414 Radio Berlin Intl': Yours for the Asking. See S 0014.

0430 BBC: The Singing Stars. The careers of solo singers like Perry Como, Rosemary Clooney, Bobby Darin, and Frankie Laine.

0445 BBC: Personal View. A personal opinion on topical issues in British life.


0506 BBC: Twenty-Four Hours. Analysis of the main news of the day.

0515 Radio Japan: Commentary. Opinions on current news events worldwide.


0540 BBC: Words of Faith. People share how their scripture gives meaning to their lives.


0550 BBC: Jazz for the Asking. A jazz music request show.

0709 BBC: Twenty-Four Hours. See S 0509.

0715 Radio Japan: Commentary. See S 0515.

0745 Radio Japan: Hello from Tokyo. See S 0520.

0730 BBC: From Our Own Correspondent. See S 0015.

0735 H.C.J.B: Get Set. Interviews and features from the world of sports.

0745 BBC: Book Choice. Short reviews of current or future best-sellers.

0750 BBC: Wayguide. How to hear the BBC better.

0755 H.C.J.B: Saludos Amigos. Ken Mackharg presents his program of international friendship.

1115 BBC: From Our Own Correspondent. See S 0315.

1115 Radio Japan: Commentary. See S 0515.

1120 Radio Japan: Hello from Tokyo. See S 0520.

1130 BBC: The Ken Bruce Show. See S 0030.

1201 BBC: Play of the Week. See S 0101.

1345 BBC: Sports Roundup. The day's sports news.

1401 BBC: Russia, The Drive to Empire. A run of John Eldinow's comprehensive look at the history of the USSR.

1415 Radio Japan: Commentary. See S 0515.

1420 Radio Japan: Hello from Tokyo. See S 0520.

1430 BBC: Anything Goes. Sounds from the BBC archives as requested by listeners.

1515 BBC: Concert Hall. Classical music performances from the world's great halls.

1515 Radio Japan: Commentary. See S 0515.

1525 Radio Japan: DX Corner. Rika Kobayashi

If you hear a Welsh lilt on the BBC World Service, it belongs to continuity announcer Gaenor Howells.

LEGEND

* The first four digits of an entry are the program start time in UTC.

* The time is followed by the station name, program name, and a brief summary of the program's content.

* Some listings may be followed by "See X 0000." The letter stands for a day of the week:

S = Sunday
M = Monday
T = Tuesday
W = Wednesday
H = Thursday
F = Friday
A = Saturday

The four digits stand for a time in UTC. Listeners should check back to that date and time to find out more about that particular program.

* All broadcasts are listed in chronological order, starting on Sunday at 0000 UTC and ending on Saturday at 2359 UTC.

* All days are in UTC. Remember that if you are listening in North American prime time, it is actually the next morning UTC. For example, if you are listening to a program at 8:01 pm [EDT] on your Thursday night, that's equal to 0001 UTC and therefore Friday morning UTC.

We suggest that you tune in to a program a few minutes before the schedule start time, as some stations have tentative schedules which may slightly vary. We invite listeners and stations to send program information to the program manager at the address above.
Monday
May 7th, 14th, 21st, 28th

0001 Radio Berlin Intl': Mailbag. A weekend feature answering listener letters and thanking listeners for writing.

0013 Radio Berlin Intl': Weekend Magazine. A look at many different cultural events in East Germany.

0030 BBC: In Praise of God. A half-hour program of worship.

0035 HCJB: Get Set. See S 0735.

0055 HCJB: Saludos Amigos. See S 0755.

0101 BBC: Opera of the Week. Background and excerpts from operas by Puchkin, Lehár, Puccini, and Mozart.


0112 Radio Berlin Intl': Commentary. See S 0112.


0115 Radio Japan: Commentary. See S 0115.

0115 Radio Japan: Commentary. See S 0115.

0115 Radio Japan: Weekend Magazine. See M 0115.


0115 Radio Berlin Intl': Commentary. See S 0112.

0201 Radio Berlin Intl': Mailbag. See M 0001.


0213 Radio Berlin Intl': Weekend Magazine. See M 0213.

0215 BBC: Andy Kershaw's World of Music. Exotic and innovative music from the world over.

0230 BBC: Science in Action. The latest in scientific developments.

0235 HCJB: Get Set. See S 0735.

0255 HCJB: Saludos Amigos. See S 0755.


0312 Radio Berlin Intl': Commentary. See S 0112.


0315 Radio Japan: Commentary. See S 0115.

0316 Radio Berlin Intl': Mailbag. See M 0001.

0325 Radio Japan: DX Corner. See S 1525.

0328 Radio Berlin Intl': Weekend Magazine. See M 0115.


0344 Radio Japan: Japan Music Scene. See S 0115.


0357 Radio Berlin Intl': Commentary. See S 0112.

0401 Radio Berlin Intl': Mailbag. See M 0001.

0413 Radio Berlin Intl': Weekend Magazine. See M 0013.

0430 BBC: Off the Shelf. A reading selected from the best of world literature.

0445 BBC: Tech Talk. A series of reports on engineering and technology.

0505 HCJB: Get Set. See S 0735.

0510 Radio Berlin: Commentary. See S 0115.

0510 Radio Japan: Commentary. See S 0115.

0520 Radio Japan: Cross Currents. A current affairs program featuring views from Japan and abroad.

0525 HCJB: Saludos Amigos. See S 0755.

0530 BBC: Waveguide. See S 0750.


0540 BBC: Words of Faith. See S 0540.

0545 BBC: Recording of the Week. A personal choice from the latest classical music releases.

0551 Radio Japan: Commentary. See S 0515.

0556 Radio Japan: Pop-In. A short segment featuring a popular song from Japan.

0600 HCJB: Music in the Night. Brian Seeley presents music and thoughts for the end of the day.

0630 BBC: Russia, The Drive to Empire. See S 1401.

NEWS GUIDE

This is your guide to news broadcasts on the air. All broadcasts are daily unless otherwise noted by brackets. These brackets enclose day codes denoting days of broadcast. The codes are as follows:

S= Sunday
T= Tuesday
W= Wednesday
F= Friday
M= Monday
A= Saturday

We invite listeners and stations to send program information to the program manager.
team takes on teams from around Britain in a cryptic quiz.

0709 BBC: Twenty-Four Hours. See S 0509.
0715 Radio Japan: Commentary. See S 0515.
0720 Radio Japan: Cross Currents. See M 0520.
0735 HCJB: News Feature. Current affairs, features, and interviews from HCJB correspondents.
0751 Radio Japan: Commentary. See S 0515.
0755 HCJB: Dateline '90. Jan Shober looks at issues of the decade.
0756 Radio Japan: Tokyo Pop-In. See M 0556.
1115 Radio Japan: Commentary. See S 0515.
1120 Radio Japan: Cross Currents. See M 0520.
1130 BBC: Composer of the Month. A month-long series on a particular classical music composer.
1151 Radio Japan: Commentary. See S 0515.
1156 Radio Japan: Tokyo Pop-In. See M 0556.
1215 BBC: Round Britain Quiz. A resident London

"Morning in the Mountains" (HCJB) hosts Paul Bell (front) and Ray Hinchman.

news guide cont'd from p.57

0130 Radio Moscow (World Service): News in Brief
0145 Radio Berlin Intl: News
0151 Spanish National Radio: News Summary [S]
0155 Voice of Indonesia: News in Brief
0200 BBC: World News
0200 Radio Australia: International Report
0200 Radio Brasilia, Brazil: News
0200 Radio Bucharest: News
0200 Radio Havana Cuba: International News [M-A]
0200 Radio Kiev: News
0200 Radio Moscow: News
0200 Radio New Zealand Int'l: News [A-S]
0200 Radio RSA: News
0200 Swiss Radio Int'l: News
0200 Voice of America: News
0200 Voice of Free China: News and Commentary
0200 WWCR: USA Radio News [T-A]
0215 Radio Cairo: News
0230 Christian Science Monitor: News [T-F]
0230 HCJB: Latin American News
0230 Radio Berlin Int'l: News
0230 Radio Havana Cuba: News [M-A]
0230 Radio Moscow (World Service): News in Brief
0230 Radio Pakistan: News (Special English)
0230 Radio Portugal: News [T-A]
0230 Radio Tirana, Albania: News
0250 Radio Yerevan: News
0255 KUSW: News [T-S]
0300 BBC: World News
0300 Belgrade Radio One: News
0300 Christian Science Monitor: News
0300 Deutsche Welle: World News
0300 Radio Australia: World and Australian News
0300 Radio Beijing: News
0300 Radio Berlin Int'l: News
0300 Radio Canada Int'l: News [M-F]
0300 Radio for Peace Int'l: News [T-A]
0300 Radio Havana Cuba: International News [M-A]
0300 Radio Japan: News
0300 Radio Moscow: News
0300 Radio New Zealand Int'l: News [A-S]
0300 Radio Prague: News
0300 RAE, Buenos Aires: News
0300 Voice of America: News
0300 Voice of China: News and Commentary
0300 Voice of Turkey: News
0315 BBC: World Today. News analysis on a selected location or event in the news.
0315 Radio Berlin Int'l: Commentary. Background to the news from a wide range of specialists.
0315 BBC: Bread, Hashish, and Moonlight. A look at Arabic poetry, past and present.
0315 Radio Japan: Commentary. See S 0515.
0320 Radio Japan: Cross Currents. See M 0520.
0330 BBC: Multitrack 1. Tim Smith presents what's hot on the British pop music charts.
0355 HCJB: Dateline '90. See M 0735.
0355 KUSW: News [T-S]
0410 BBC: Outlook. See M 1405.
0451 Radio Japan: Commentary. See S 0515.
0515 Radio Japan: Commentary. See S 0515.
0515 Radio Japan: Commentary. See S 0515.
1205 Radio Japan: Commentary. See S 0515.
1555 Radio Japan: Commentary. See S 0515.
1615 BBC: Good Books. See M 0315.
1630 BBC: Health Matters. See M 1115.
1645 BBC: The World Today. News analysis on a selected location or event in the news.
2305 BBC: Commentary. Background to the news from a wide range of specialists.
2315 BBC: Bread, Hashish, and Moonlight. A look at Arabic poetry, past and present.
2315 Radio Japan: Commentary. See S 0515.
2320 Radio Japan: Cross Currents. See M 0520.
2330 BBC: Multitrack 1. Tim Smith presents what's hot on the British pop music charts.
2356 Radio Japan: Tokyo Pop-In. See M 0556.
2357 Radio Berlin Int'l: Commentary. See S 0112.

Tuesday
May 1st, 8th, 15th, 22nd, 29th

0006 Radio Berlin Int'l: Spotlight on Sport. A wrap-up of the weekend's national and international sports results.
0013 Radio Berlin Int'l: RBB DX Club Meeting. Articles for DX'ers and responses to member comments.
0030 BBC: Megamix. A compendium of music, sport, fashion, health, travel, news and views for young people.
0035 HCJB: News Feature. See M 0735.
0055 KUSW: News [T-S]
0101 BBC: Outlook. See M 1405.
0112 Radio Berlin Int'l: Commentary. See S 0112.
0115 Radio Japan: Commentary. See S 0515.
0120 Radio Japan: Cross Currents. See M 0520.
0121 Radio Berlin Int'l: Spotlight on Sport. See T 0006.
0125 BBC: Financial News. See M 2310.

0200 WRNO: ABC News [F]
0200 WWCR: USA Radio News [T-S]
0200 BBC: News About Britain
0310 Radio Belgrade: News About China
0315 Radio Cairo: News
0315 Radio France Int'l: News
0315 Radio Havana Cuba: Cuban National News [M-A]
0325 HCJB: World News
0330 Radio Science Monitor: News [T-F]
0330 Radio Havana Cuba: News [M-A]
0330 Radio Moscow (World Service): News in Brief
0330 Radio Netherlands: News [T-S]
0330 Radio Tirana, Albania: News
0330 UAE Radio, Dubai: News
0345 Radio New Zealand: News
0350 Radio Televisiune Italiana: News
0355 KUSW: News [T-S]
0400 BBC: News
0400 Christian Science Monitor: News
0400 Deutsche Welle: World News
0400 Kol Israel: News
0400 Radio Australia: International Report
0400 Radio Belgrade: News
0400 Radio Bucharest: News
0400 Radio Canada Int'l: News [M-F]
Corporation, the domestic radio service in Canada. The program lineup features "The Inside Block," a sports feature (Monday), "The Food Show" (Tuesday), "Open House," a look at modern religion (Wednesday), "Media File" (Thursday), and "The Arts Tonight" (Friday). The programs can be heard at 0530 UTC, with news and closing stock market prices preceding them at 0515 UTC.

NEW BBC PROGRAM BLOCK: The BBC World Service has quietly launched a new Sunday news program. "News and Twenty-Four Hours on Sunday" (1300 UTC) is a sort of 45-minute "Newsroom," with news, correspondent reports, and analysis all rolled into one integrated package. It's much more logical than the usual "News/"Twenty-Four Hours" combination heard in that time slot. It also paves the way for the introduction of another "Newsroom" in that 1300 UTC slot. Stay tuned...

SOCCER OR FOOTBALL?: On May 12th, the BBC World Service carries the English FA Cup soccer (or is it football?) final at 1330 UTC. The game is tentatively scheduled to air on ESPN as well.

0012 Radio Berlin Int'l: Commentary. See S 0112.
0015 BBC: The World Today. See M 1645.
0015 Radio Japan: Commentary. See S 0515.
0020 Radio Japan: Cross Currents. See M 0520.
0026 Radio Japan (Americas): Tokyo Pop-In. See M 0556.
0028 Radio Berlin Int'l: RDI DX Club Meeting. See T 0013.
0030 BBC: John Peel. Tracks from newly released albums and singles from the contemporary music scene.
0035 Radio Japan: Commentary. See S 0515.
0036 Radio Japan: Tokyo Pop-In. See M 0556.
0037 Radio Berlin Int'l: Commentary. See S 0112.
0046 Radio Berlin Int'l: Spotlight on Sport. See T 0006.
0043 Radio Berlin Int'l: RDI DX Club Meeting. See T 0013.
0050 BBC: Off the Shelf. See M 0430.
0049 BBC: Book Choice. See S 0745.
0050 HCJB: News Feature. See M 0735.
0051 Radio Berlin Int'l: RDI DX Club Meeting. See T 0013.
0051 Radio Japan: Commentary. See S 0515.
0050 Radio Japan: Commentary. See S 0515.
0051 Radio Japan: Tokyo Pop-In. See M 0556.
0050 BBC: Counterpoint. Paul Jones presents R&B, jazz, soul, and pop music.
0070 BBC: Twenty-Four Hours. See S 0509.
0071 Radio Japan: Commentary. See S 0515.
0072 Radio Japan: Asia Now. See M 0556.
0073 Radio Japan: Asia Now. See S 0515.
0073 Radio Japan: Commentary. See S 0515.
0075 Radio Japan: Asia Now. See S 0515.
0080 BBC: Words of Wisdom. See M 0540.
0085 CCC: The World Today. See M 1645.
0090 Radio Japan: Commentary. See S 0515.
0090 Radio Japan: Commentary. See S 0515.
0095 Radio Japan: Tokyo Pop-In. See M 0556.
0115 BBC: Waveguide. See S 0750.
0115 Radio Japan: Commentary. See S 0515.
0115 Radio Japan: Asia Now. See T 0520.

MONITORING TIMES
May 1990
Radio Japan QSL from Gert Rudolph Jahnke, Quebec.

new issues, history, and other information about stamps.

Radio Berlin Int'l: People in Profile. An in-depth focus on the economy, science, and culture in the GDR.

BBC: Omnibus. See T 1615.

HCJB: News Feature. See M 0735.

HCJB: Dateline '90. See M 0755.


Radio Japan: Commentary. See S 0151.


Radio Berlin Int'l: Commentary. See S 0112.

Radio Japan: Asia Now. See T 0520.


Radio Berlin Int'l: Stamp Album. See W 0008.


Radio Berlin Int'l: People in Profile. See W 0012.


Radio Berlin Int'l: Commentary. See S 0112.


Radio Berlin Int'l: Stamp Album. See W 0008.


Radio Berlin Int'l: People in Profile. See W 0012.

Radio Berlin Int'l: Stamp Album. See W 0008.
Tuesday
May 3rd, 10th, 17th, 24th, 31st

0016 Radio Berlin Info': Commentary. See T 0014.
0015 Radio Berlin Info': Sounds Around. All kinds of
music, including pop, jazz, rock, and folk.
0014 Radio Berlin Info': Viewpoint. East German
comment on current happenings in the news.
0013 BBC: Winston Comes to Town (except May
31st: Two Cheers for May). See W 1530.
0012 HCJB: News Feature. See M 0735.
0011 HCJB: Ham Radio Today. See W 0755.
0010 BBC: Outlook. See M 1405.
0009 Radio Berlin Info': Musical Interlude. See S
0110.
0007 Radio Berlin Info': Commentary. See S 0115.
0006 Radio Berlin Info': Viewpoint. East German
comment on current happenings in the news.
0003 BBC: Winston Comes to Town (except May
31st: Two Cheers for May). See W 1530.
0002 HCJB: News Feature. See M 0735.
0001 HCJB: Ham Radio Today. See W 0755.
0130 BBC: Waveguide. See S 0750.
0136 Radio Japan: Asian Crossroads. See W 0536.
0140 BBC: Book Choice. See S 0745.
0145 BBC: Society Today. A weekly look at the changes in Britain.
0151 Radio Japan: Commentary. See S 0515.
0156 Radio Japan: Tokyo Pop-In. See M 0556.
0157 Radio Japan: The Moscow Show. See T 0001.
0215 BBC: Network UK. See T 0215.
0235 HCJB: News Feature. See M 0735.
0255 HCJB: Ham Radio Today. See W 0755.
0315 BBC: The World Today. See M 1645.
0315 Radio Japan: Commentary. See S 0515.
0316 Radio Berlin Intl: Commentary. See S 0112.
0326 Radio Japan (Americas): Tokyo Pop-In. See M 0556.
0330 BBC: Round Britain Quiz. See M 1215.
0336 Radio Japan: Asian Crossroads. See W 0536.
0351 Radio Japan: Commentary. See S 0515.
0356 Radio Japan: Tokyo Pop-In. See M 0556.
0401 Radio Berlin Intl: Commentary. See S 0112.
0430 BBC: Off the Shelf. See M 0430.
0445 BBC: Andy Kershaw's World of Music. See M 0215.
0505 HCJB: News Feature. See M 0735.
0509 BBC: Twenty-Four Hours. See S 0509.
0515 Radio Japan: Commentary. See S 0515.
0525 HCJB: Ham Radio Today. See W 0755.
0540 BBC: Words of Faith. See S 0540.
0545 BBC: The World Today. See M 1645.
0550 Radio Japan: Commentary. See S 0515.
0556 Radio Japan: Tokyo Pop-In. See M 0556.
0600 Radio Germany: News in Brief.
0630 BBC: Goldmine in the Dustbin. See W 1215.
0640 BBC: The Farming World. See W 1225.
0709 BBC: The Moscow Show. See S 0509.
0715 Radio Japan: Commentary. See S 0515.
0735 HCJB: News Feature. See M 0735.

Members of the BBC World Service's drama unit. The group produces "Play of the Week" and other radio drama.

0745 BBC: Network UK. See T 0215.
0751 Radio Japan: Commentary. See S 0515.
0755 HCJB: Happiness is. See T 0755.
0756 Radio Japan: Tokyo Pop-In. See M 0556.
1115 Radio Japan: Commentary. See S 0515.
1120 Radio Japan: Business and Science. See H 0520.
1125 BBC: Book Choice. See S 0745.
1130 BBC: The Sittaford Mystery. A serial version of Agatha Christie's mystery tale (except May 3rd, 10th: The Lion, the Witch, and the Wardrobe, a children's tale by C.S. Lewis).
1151 Radio Japan: Commentary. See S 0515.
1156 Radio Japan: Tokyo Pop-In. See M 0556.
1215 BBC: Multitrack 2. See W 1630.
1245 BBC: Sports Roundup. See S 1330.
1309 BBC: Twenty-Four Hours. See S 0509.
1330 BBC: Network UK. See T 0215.
1345 BBC: Folk in Britain or Jazz Scene UK. A look at folk or jazz music on the British Isles.
1405 BBC: Outlook. See M 1405.
1415 Radio Japan: Commentary. See S 0515.
1420 Radio Japan: Business and Science. See H 0520.
1430 BBC: Off the Shelf. See M 0430.
1445 BBC: Mediawatch. See H 0730.
1451 Radio Japan: Commentary. See S 0515.
1456 Radio Japan: Tokyo Pop-In. See M 0556.
1515 BBC: The Pleasure's Yours. Gordon Clyde presents classical music requests.
1515 Radio Japan: Commentary. See S 0515.
1551 Radio Japan: Commentary. See S 0515.
1556 Radio Japan: Tokyo Pop-In. See M 0556.
1615 BBC: Assignment. See H 0230.
2305 BBC: Commentary. See M 2305.
2315 BBC: Music Review. Classical music events and developments from around the world.
2315 Radio Japan: Commentary. See S 0515.
2351 Radio Japan: Commentary. See S 0515.
2356 Radio Japan: Tokyo Pop-In. See M 0556.

News guide cont'd from p.61

1430 Radio Prague: News.
1500 BBC: Newsbeat.
1500 RTR: News.
1500 Radio Korea: News.
1500 Voice of America: News.
1500 WHRI: News [M-A].
1505 WVCUR: USA Radio News.
1510 Radio Budapest: News.
1510 Radio Belgrade: News about China.
1530 BRT: Brussels: News [M-S].
1530 Radio Slovenia: News [M-F].
1530 Deutsche Welle: African News [M-F].
1530 Radio Prague: News.
1530 Radio Tirana, Albania: News.
1530 Swiss Radio Intl: News.
1545 Radio Canada Intl: News.
1600 BBC: World News.
1600 Deutsche Welle: World News.
1600 Radio Australia: International Report.
1600 Radio Jordan: News Summary.
1600 Radio Poland: News.
1600 Radio Portugal: News [M-F].
1600 Radio Tanzania: News.
1600 Voice of America: News.
1600 WWCR: USA Radio News [M-F].
1609 BBC: News About Britain.
1630 Radio Netherlands: News [M-A].
1630 Radio Polonia: News.
1630 UAE Radio, Dubai: News.
1630 Voice of America (exc Africa): News (English).
1655 KUSW: News [M-F].
1700 BBC: World News [S-F]: News Summary [A].
1700 Belize Radio One: News [M-F].
1700 Koi Israel: News.
1700 Radio Australia: World and Australian News.
1700 Radio Jordan: Newsdesk [S-T].
1700 Radio Korea: News.
1700 Radio Moscow: News.
1705 Radio Pyongyanging: News.
1715 Radio Canada Intl: News.
1730 JT: Brussels: News.
1730 Christian Science Monitor: News [M-F].
1730 Radio Bucharest: News.
1730 Radio Moscow: News.
1730 Radio Moscow: News in Brief.
1730 Radio Prague: News.
1730 Swiss Radio Intl: News.
1735 KUSW: News [M-A].
1800 BBC: Newsdesk.
1800 Belize Radio One: Headline News [M-A].
1800 Radio Canada Intl: News.
tunes, as recorded live earlier this year.

0115 BBC: Book Choice. See S 0745.
0151 Radio Japan: Commentary. See S 0515.
0156 Radio Japan: Tokyo Pop-In. See M 0556.
0157 Berlin Intl: Commentary. See S 0112.
0207 Radio Berlin Intl: Berlin in Focus or GDR-
teries. See A 0007.
0215 BBC: Network UK. See T 0215.
0230 BBC: People and Politics. Background to the
British political scene.
0235 HCJB: News Feature. See M 0735.
0255 HCJB: Musica del Ecuador. See F 0755.
0315 BBC: The World Today. See M 1645.
0315 Radio Japan: Commentary. See S 0515.
0320 Radio Japan: Japan Panorama. See F 0520.
0322 Radio Berlin Intl: Berlin in Focus or GDR-
teries. See A 0007.
0326 Radio Japan (Americas): Tokyo Pop-In. See M 0556.
0330 BBC: The Vintage Chart Show. Paul Burnett
presents top ten hits from the music charts of yesteryear.
0351 Radio Japan: Commentary. See S 0515.

"DX Partyline" host Brent Allred was
featured on this QSL
card sent by Alfred
Fossum of
Massachusetts.

SUGGESTIONS?
SOMETHING MISSING?
Let us know your corrections, additions, and suggestions of what
you'd like to see to Program Manager Kannon Shanmugam at
4412 Tumbleberry Circle, Lawrence, Kansas 66047.

0356 Radio Japan: Tokyo Pop-In. See M 0556.
0407 Radio Berlin Intl: Berlin in Focus or GDR-
teries. See A 0007.
0430 BBC: Here's Humph! See F 1345.
0445 BBC: Worldofbel. See F 2315.
0505 HCJB: News Feature. See M 0735.
0509 BBC: Twenty-Four Hours. See S 0509.
0515 Radio Japan: This Week. See S 0115.
0525 HCJB: Musica del Ecuador. See F 0755.
0540 BBC: Words of Faith. See S 0540.
0545 BBC: The World Today. See M 1645.
0630 BBC: Meridian. See W 0630.
0700 HCJB: Musical Mailbag. A musical look at
listener letters.
0709 BBC: Twenty-Four Hours. See S 0509.
0715 Radio Japan: This Week. See S 0115.
0735 BBC: From the Weeklies. See F 2315.
0745 BBC: Network UK. See T 0215.
0755 HCJB: DX Partyline. See S 0555.
1115 BBC: The Dancing Fiddles. See A 0130.
1115 Radio Japan: This Week. See S 0115.
1130 BBC: Meridian. See W 0630.
1215 BBC: Multiflack. See F 2330.
1245 BBC: Sports Roundup. See S 1330.
1309 BBC: Twenty-Four Hours. See S 0509.
1330 BBC: Network UK. See T 0215.
1345 BBC: Sportsworld: A weekly sports magazine
(with breaks for news, through 1700 UTC).
1415 Radio Japan: This Week. See S 0115.
1515 Radio Japan: This Week. See S 0115.
2305 BBC: Words of Faith. See S 0540.
2310 BBC: Book Choice. See S 0745.
2315 BBC: A Jolly Good Show. See T 1515.
2315 Radio Japan: This Week. See S 0115.
## Frequency section

**0000-0010** FEBRC Radio Int'l, Philippines  
**0000-0010** KUSW, Salt Lake City, Utah  
**0000-0010** Radio Australia, Melbourne  
**0000-0010** Radio Beijing, Beijing, China  
**0000-0010** Radio Havana Cuba  
**0000-0010** Radio Luxembourg, Junglinster  
**0000-0010** Radio Tonga, Kingdom of Tonga  
**0000-0010** Spanish National Radio, Madrid  
**0000-0010** Voice of America-Americas Service  
**0000-0010** Voice of America-Caribbean Service  
**0000-0010** Voice of America-East Asia Service  

**0000-0040** Radio for Peace Int'l, Costa Rica  
**0000-0040** WHRL, Noblesville, Indiana  
**0000-0040** WINB, Red Lion, Pennsylvania  
**0000-0040** WRNO Worldwide, Louisiana  
**0000-0040** WWCR, Nashville, Tennessee  
**0000-0040** WYFR, Okeechobee, Florida  

**0000-0045** Radio Nacional, Venezuela  
**0000-0045** Radio Prague, Czechoslovakia  
**0000-0045** BBC English by Radio, London, England  

**0000-0100** FEBC Radio Int'l, Philippines  
**0000-0100** KUSW, Salt Lake City, Utah  
**0000-0100** Radio Australia, Melbourne  
**0000-0100** Radio Beijing, Beijing, China  
**0000-0100** Radio Havana Cuba  
**0000-0100** Radio Luxembourg, Junglinster  
**0000-0100** Radio Tonga, Kingdom of Tonga  
**0000-0100** Spanish National Radio, Madrid  
**0000-0100** Voice of America-Americas Service  
**0000-0100** Voice of America-Caribbean Service  
**0000-0100** Voice of America-East Asia Service  

**0000-0130** HCJB, Quito, Ecuador (att. prog.)  
**0000-0130** Radio Netherlands Int'l, Hilversum  
**0000-0130** Radio Japan Americas Soc, Tokyo  
**0000-0130** CBC Northern Quebec Service, Can 9625 (ML)  

---

### LEGEND

- The first four digits of an entry are the broadcast start time in UTC. The second four digits represent the end time.
- In the space between the end time and the station name is the broadcast schedule.
- S = Sunday  
  M = Monday  
  T = Tuesday  
  W = Wednesday  
  T = Thursday  
  F = Friday  
  A = Saturday

If there is no entry, the broadcasts are heard daily. If, for example, there is an entry of "M", the broadcast would be heard only on Mondays. An entry of "M, W, F" would mean Mondays, Wednesdays and Fridays only. "M, F" would mean Mondays through Fridays."TEN" indicates a tentative schedule and "TES" a test transmission.

* Lists following by an asterisk (*) are for English lessons and do not contain regularly scheduled programming.

We suggest that you begin with the lower frequencies that a station is broadcasting on and work your way up the dial. Remember that there is no guarantee that a station will be audible on any given day. Reception conditions can change rapidly, though, and if it is not audible one night, it may well be on another.

### HOW TO USE THE PROPAGATION CHARTS

Propagation charts can be an invaluable aid to the DXer in determining which frequencies are likely to be open at a given time. To use the propagation charts, choose those for your location (they are divided into east coast, midwest and west coast of North America). Then look for the one most closely describing the geographic location of the station you want to hear.

Once you've located the correct charts, look along the horizontal axis of the graph for the time that you are listening. The top line of the graph shows the Maximum Useable Frequency [MUF] and the lower line the Lowest Useable Frequency [LUF] as indicated on the vertical axis of the graph.

While there are exceptions to every rule (especially those regarding shortwave listening), you should find the charts helpful in determining the best times to listen for particular regions of the world. Good luck!

---

**MONITORING TIMES**  
**May 1990**  
65  

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www.americanradiohistory.com
<table>
<thead>
<tr>
<th>Time</th>
<th>Station</th>
<th>Frequency MHz</th>
<th>Country/Region</th>
</tr>
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<tbody>
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<td>Radio for Peace Intl, Costa Rica</td>
<td>7375 (13660)</td>
<td>T-A</td>
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<td>0100-0200</td>
<td>Radio Tonga, Kingdom of Tonga</td>
<td>5530v</td>
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<td>Spanish National Radio, Madrid</td>
<td>9630 11880</td>
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<td>Voice of America-Americas Service</td>
<td>5995 9775 9815</td>
<td>11580 15295</td>
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<tr>
<td>0100-0200</td>
<td>Voice of America-Caribbean Service</td>
<td>6130 9455</td>
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<tr>
<td>0100-0200</td>
<td>Voice of America-East Asia Service</td>
<td>7115 7205 9740</td>
<td>11705 15205</td>
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<td>Voice of Indonesia, Jakarta</td>
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<td>WHRI, Noblesville, Indiana</td>
<td>7315 9495</td>
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<td>WRNO Worldwide, Louisiana</td>
<td>7530</td>
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<tr>
<td>0100-0200</td>
<td>WWCR, Nashville, Tennessee</td>
<td>5985</td>
<td>17612 11720 15440</td>
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<td>0130-0200</td>
<td>M-A Voice of Greece, Athens</td>
<td>11645</td>
<td>9395 9420</td>
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<td>0130-0200</td>
<td>Radio Budapest, Hungary</td>
<td>6110 8520 9835</td>
<td>11910 15160</td>
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<td>0130-0200</td>
<td>Radio Austria International, Vienna</td>
<td>9870 9875 13730</td>
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<td>0145-0200</td>
<td>Radio Berlin International, GDR</td>
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<td>BBC Alternative Programming, London</td>
<td>5895 9580 11955</td>
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<td>0145-0200</td>
<td>Voice of America-Asia, Philippines</td>
<td>7125 9520 9835</td>
<td>11910 15205 16835</td>
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<tr>
<td>0155-0200</td>
<td>Vatican Radio, Vatican City</td>
<td>7125 9590 11750</td>
<td></td>
</tr>
</tbody>
</table>

**MONITORING TIMES**

**East Coast To Western Europe**

- **Frequency:** 7116v
- **Time:** 0100-0200
- **Station:** Radio Sweden, Stockholm
- **Frequency:** 7225 9640
- **Country/Region:** May 1990

**East Coast To Eastern Europe**

- **Frequency:** 7375 (13660) 21566 T-A
- **Time:** 0100-0200
- **Station:** Radio for Peace Intl, Costa Rica
- **Frequency:** 5530v
- **Country/Region:** May 1990

**East Coast To Arctic Europe**

- **Frequency:** 7125 9645 11750
- **Time:** 0100-0200
- **Station:** Vatican Radio, Vatican City
- **Frequency:** 12035 15380
- **Country/Region:** May 1990

---

**MUF/LUF**

- **North America:** E/W, M/E, E/W, M/E, W/E, M/W
- **Europe:** N/S, W/E, E/N, M/W
- **Asia:** E/W, M/E, E/W, M/E, W/E, M/W
- **Africa:** W/E, M/W, E/W, M/E, W/E, M/W

**East Coast**

- **0000 UTC:** 10:00 PM EDT/7:00 PM PDT
- **Frequency:** MHz
- **Area:** East Coast

**Charts**

- **Monitoring Times**
- **Frequency**
- **East Coast**
- **Western Europe**
- **Eastern Europe**
- **Arctic Europe**

---

**May 1990**
<table>
<thead>
<tr>
<th>Frequency</th>
<th>Station Name</th>
<th>City, Country</th>
</tr>
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<td>0200-0250</td>
<td>Deutsche Welle, Köln, Germany</td>
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</tr>
<tr>
<td>0200-0250</td>
<td>Radio Baghdad, Iraq</td>
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</tr>
<tr>
<td>0200-0250</td>
<td>Radio Bras, Brasilia, Brazil</td>
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</tr>
<tr>
<td>0200-0300</td>
<td>Adventist World Radio-Asia, Guam</td>
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</tr>
<tr>
<td>0200-0300</td>
<td>Radio Moscow North American Svc, Moscow, North America</td>
<td></td>
</tr>
<tr>
<td>0200-0300</td>
<td>Radio Moscow World Service, Moscow, Russia</td>
<td></td>
</tr>
<tr>
<td>0200-0300</td>
<td>CBC Northern Quebec Service, Can, Quebec, Canada</td>
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<td>0200-0300</td>
<td>CBN, St. John's, Newfoundland, Canada</td>
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<td>0200-0300</td>
<td>COU, Vancouver, British Columbia</td>
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<td>CFCF, Montreal, Quebec, Canada</td>
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<td>CHNS, Halifax, Nova Scotia, Canada</td>
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<td>0200-0300</td>
<td>Christian Science World Svc, Boston</td>
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<td>CHNS, Johannesburg, South Africa</td>
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<td>0200-0300</td>
<td>Radio Cairo, Egypt</td>
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<td>0200-0300</td>
<td>Radio Havana Cuba</td>
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<td>0200-0300</td>
<td>Radio Luxembourg, Junglinster</td>
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<tr>
<td>0200-0300</td>
<td>Radio RSA, Johannesburg</td>
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<tr>
<td>0200-0300</td>
<td>Voice of America-South Asia Service</td>
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<td>0200-0300</td>
<td>Voice of Free China, Taiwan</td>
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<td>WRR, Noblesville, Indiana</td>
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<tr>
<td>0200-0300</td>
<td>WNO, Worldwide, Louisiana</td>
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<tr>
<td>0200-0300</td>
<td>WWCR, Nashville, Tennessee</td>
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<td>0200-0300</td>
<td>WINB, Red Lion, Pennsylvania</td>
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<tr>
<td>0200-0300</td>
<td>WYFP, Okeechobee, Florida</td>
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</tr>
<tr>
<td>0211-0230</td>
<td>IRR Voice of the Democratic Alliance of Burma</td>
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</tr>
</tbody>
</table>

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**Eastern Coasts**

- **East Coast to Middle East**
- **East Coast to West Africa**
- **East Coast to Central Africa**

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**Monitoring Times**

- East Coast to Middle East
- East Coast to West Africa
- East Coast to Central Africa

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**Monitoring Times**

May 1990

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<tr>
<td>1 Year</td>
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<tr>
<td>12 Issues</td>
<td>24 Issues</td>
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**ZIP**

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**Monitoring Times**

May 1990

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**www.americanradiohistory.com**
### 1300 UTC [9:00 AM EDT/6:00 AM PDT]

| 1300-1330 | Radio Finland, Helsinki 15400 21550 |
| 1300-1330 | Radio Tirana, Albania 11855 9500 |
| 1300-1330 | S Radio Norway International, Oslo 9530 |
| 1300-1330 | S Radio Canada Int'l, Montreal 11955 15385 |
| 1300-1330 | S Trans World Radio, Bonaire 15345 11815 |
| 1300-1330 | Swiss Radio Intl European Service 3985 6165 9535 |
| 1300-1330 | Radio Berlin International, GDR 11970 15440 17880 21465 |
| 1300-1345 | Radio Berlin International, GDR 6115 |

### Monitoring Times

#### Midwest

- **CBU, Vancouver, British Columbia**: 6160
- **CFCF, Montreal, Quebec, Canada**: 6005
- **CFRC, Calgary, Alberta, Canada**: 6070
- **CHNS, Halifax, Nova Scotia, Canada**: 6130
- **Christian Science World Service**: 9495 9465 11930
- **Radio Moscow World Service**: 9765 11840 15475 17810
- **CBRF, Toronto, Ontario, Canada**: 6070
- **HCJB, Quito, Ecuador**: 11740 15115 17890
- **KUSW, Salt Lake City, Utah**: 9850
- **Radio Beijing, China**: 9530 17855 11600 15450
- **Radio Jordan, Amman**: 13665
- **Voice of America-East Asia Service**: 6110 9760 11715 15155
- **WHRI, Noblesville, Indiana**: 11790
- **WRNO Worldwide, Louisiana**: 9715
- **WYFR, Okeechobee, Florida**: 5950 7355 11830 17640
- **Radio UEFA, Paris, France**: 6125 9515 9560 9600
- **Voice of Greece, Athens**: 17550 15630 11465
- **Voice of Turkey, Ankara**: 17785
- **Voice of Vietnam, Hanoi**: 15010 12010 9840
- **M-SBRT Brussels, Belgium**: 21820
- **M-FBRT Brussels, Belgium**: 21815
- **BBC English by Radio, London**: 6125 9515 9560 9600
- **Radio Bangladesh, Dhaka**: 15195 11705
- **Radio France International, Paris**: 17650 21635 21645
- **Radio Sweden, Stockholm**: 15190 21570 17740
- **Radio Prague, Czechoslovakia**: 9505 7345 6055
- **Radio Berlin International, GDR**: 11970 15440 17880 21465

#### Midwest To Indonesia

- **MHz**: 50.00

#### Midwest To Far East

- **MHz**: 50.00

#### Midwest To Australia

- **MHz**: 50.00

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**May 1990 MONITORING TIMES**

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<table>
<thead>
<tr>
<th>Frequency</th>
<th>Time Range</th>
<th>Station/Location</th>
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<td>1300-1400</td>
<td>Radio Jordan, Amman</td>
<td>13655</td>
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<td>1300-1500</td>
<td>Radio Star Peace &amp; Progress, Moscow</td>
<td>17870 17880 17635 17470 17405 17370</td>
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<tr>
<td>1300-1400</td>
<td>Radio RSA, Johannesburg</td>
<td>17710 17650 17530 17405 17370 17330 17300 17270 17240 17210 17180 17150 17120 17090 17060 17030 17000 16970 16940 16910 16880 16850 16820 16790 16760 16730 16700 16670 16640 16610 16580 16550 16520 16490 16460 16430 16400 16370 16340 16310 16280 16250 16220 16190 16160 16130 16100 16070 16040 16010 16000 15970 15940 15910 15880 15850 15820 15790 15760 15730 15700 15670 15640 15610 15580 15550 15520 15490 15460 15430 15400 15370 15340 15310 15280 15250 15220 15190 15160 15130 15100 15070 15040 15010 14980 14950 14920 14890 14860 14830 14800 14770 14740 14710 14680 14650 14620 14590 14560 14530 14500 14470 14440 14410 14380 14350 14320 14290 14260 14230 14200 14170 14140 14110 14080 14050 14020 14000 13900 13800 13700 13600 13500 13400 13300 13200 13100 13000 12900 12800 12700 12600 12500 12400 12300 12200 12100 12000 11900 11800 11700 11600 11500 11400 11300 11200 11100 11000 10900 10800 10700 10600 10500 10400 10300 10200 10100 10000 9900 9800 9700 9600 9500 9400 9300 9200 9100 9000 8900 8800 8700 8600 8500 8400 8300 8200 8100 8000 7900 7800 7700 7600 7500 7400 7300 7200 7100 7000 6900 6800 6700 6600 6500 6400 6300 6200 6100 6000 5900 5800 5700 5600 5500 5400 5300 5200 5100 5000 4900 4800 4700 4600 4500 4400 4300 4200 4100 4000 3900 3800 3700 3600 3500 3400 3300 3200 3100 3000 2900 2800 2700 2600 2500 2400 2300 2200 2100 2000 1900 1800 1700 1600 1500 1400 1300 1200 1100 1000 9000 8000 7000 6000 5000 4000 3000 2000 1000 0</td>
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<td>1500-1600</td>
<td>BBC World Service, London, England 3915</td>
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<td>Voice of Myanmar (Burma)</td>
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<td>5405 5505 5605</td>
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<td>CHNS, Halifax, Nova Scotia, Canada</td>
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<td>Christian Science World Service</td>
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<td>5005 5105 5205</td>
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<td>M-F Radiodiffusion Nationale du Burundi</td>
<td>4605 4705 4805</td>
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<td>1500-1600</td>
<td>Radio Japan General Service, Tokyo</td>
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<td>Radio Moscow World Service</td>
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<td>1500-1600</td>
<td>Radio RSA, Johannesburg S. Africa</td>
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<tr>
<td>1500-1600</td>
<td>Voice of America-Middle East Service</td>
<td>4205 4305 4405</td>
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<td>1500-1600</td>
<td>Voice of America-South Asia Service</td>
<td>4105 4205 4305</td>
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<td>1500-1600</td>
<td>Voice of Nigeria, Lagos</td>
<td>4005 4105 4205</td>
</tr>
<tr>
<td>1500-1600</td>
<td>WHR, Noblesville, Indiana</td>
<td>3905 4005 4105</td>
</tr>
<tr>
<td>1500-1600</td>
<td>S WRNO WorldWide, Louisiana</td>
<td>3805 3905 4005</td>
</tr>
<tr>
<td>1500-1600</td>
<td>WWCR, Nashville, Tennessee</td>
<td>3705 3805 3905</td>
</tr>
<tr>
<td>1500-1600</td>
<td>Voice of Greece, Athens</td>
<td>3605 3705 3805</td>
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<tr>
<td>1500-1600</td>
<td>MABR, Brussels, Belgium</td>
<td>3505 3605 3705</td>
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<tr>
<td>1500-1600</td>
<td>Radio Tirana, Albania</td>
<td>3405 3505 3605</td>
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**Monitoring Times**

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<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
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<td>MUF</td>
<td>LUF</td>
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<tr>
<td>11:00</td>
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</tr>
<tr>
<td>23:00</td>
<td>MUF</td>
<td>LUF</td>
</tr>
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</table>

**Weekdays:**
- **Monday:** 10:00 to 21:00
- **Tuesday:** 10:00 to 21:00
- **Wednesday:** 10:00 to 21:00
- **Thursday:** 10:00 to 21:00
- **Friday:** 10:00 to 21:00
- **Saturday:** 10:00 to 21:00
- **Sunday:** 10:00 to 21:00

**Equipment:**
- **MUF:** Medium-wave unit
- **LUF:** Low-frequency unit

**Notes:**
- **MHz:** Megahertz
- **UTC:** Coordinated Universal Time

**Map:**
- **Midwest to Alaska:**
- **West Coast to Western Europe:**
- **East Coast to Eastern Europe:**

**Additional Information:**
- **World Time Zones:**
  - **Eastern Time Zone:**
  - **Central Time Zone:**
  - **Mountain Time Zone:**
  - **Pacific Time Zone:**

*May 1990*
<table>
<thead>
<tr>
<th>Time (UTC)</th>
<th>Station and Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800-1830</td>
<td>All India Radio, New Delhi</td>
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<tr>
<td>1800-1845</td>
<td>Radio Prague, Prague</td>
</tr>
<tr>
<td>1800-1830</td>
<td>Radio Sweden, Stockholm</td>
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<tr>
<td>1800-1830</td>
<td>Voice of Ethiopia, Addis Ababa</td>
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<tr>
<td>1800-1830</td>
<td>Voice of Vietnam, Hanoi</td>
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<td>1800-1830</td>
<td>Voice of Prague, Czechoslovakia</td>
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<td>1800-1845</td>
<td>Trans World Radio, Swaziland</td>
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<td>All India Radio, New Delhi</td>
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<tr>
<td>1800-1850</td>
<td>Radio Bras, Brasilia, Brazil</td>
</tr>
<tr>
<td>1800-1855</td>
<td>Radio Mozambique, Maputo</td>
</tr>
<tr>
<td>1600-1900</td>
<td>ABC, Alice Springs, Australia</td>
</tr>
<tr>
<td>1800-1900</td>
<td>ABC, Tennant Creek, Australia</td>
</tr>
<tr>
<td>1800-1900</td>
<td>Radio Korea, Seoul</td>
</tr>
<tr>
<td>1800-1900</td>
<td>KVOH, Rancho Simi, California</td>
</tr>
<tr>
<td>1800-1900</td>
<td>Radio Moscow World Service</td>
</tr>
<tr>
<td>1800-1900</td>
<td>Radio New Zealand, Wellington</td>
</tr>
<tr>
<td>1800-1900</td>
<td>CBN, St. John's, Newfoundland</td>
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<td>1800-1900</td>
<td>CBC, Vancouver, British Columbia</td>
</tr>
<tr>
<td>1800-1900</td>
<td>CFCF, Montreal, Quebec, Canada</td>
</tr>
<tr>
<td>1800-1900</td>
<td>CHNS, Halifax, Nova Scotia, Canada</td>
</tr>
<tr>
<td>1800-1900</td>
<td>Christian Science World Service</td>
</tr>
<tr>
<td>1800-1900</td>
<td>CBW, Vancouver, British Columbia</td>
</tr>
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<td>1800-1900</td>
<td>CFRB, Toronto, Ontario</td>
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<tr>
<td>1800-1900</td>
<td>KUSW, Salt Lake City, Utah</td>
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<tr>
<td>1800-1900</td>
<td>Radio Jordan, Amman</td>
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<td>1800-1900</td>
<td>Radio Kuwait, Safat, Kuwait</td>
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<tr>
<td>1800-1900</td>
<td>CBC Montreal</td>
</tr>
<tr>
<td>1800-1900</td>
<td>S-F WMLK Bethel, Pennsylvania</td>
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<tr>
<td>1800-1900</td>
<td>Radio RSA, Johannesburg, S. Africa</td>
</tr>
<tr>
<td>1800-1900</td>
<td>Voice of America-Africa Service</td>
</tr>
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### Frequency Section

**1900 UTC [3:00 PM EDT/12:00 PM PDT]**

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<tr>
<th>Time (UTC)</th>
<th>Station and Details</th>
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<tbody>
<tr>
<td>1800-1900</td>
<td>Voice of America-Middle East Service</td>
</tr>
<tr>
<td>1800-1900</td>
<td>WHRI, Noblesville, Indiana</td>
</tr>
<tr>
<td>1800-1900</td>
<td>WINB, Red Lion, Pennsylvania</td>
</tr>
<tr>
<td>1800-1900</td>
<td>WNBC, New Orleans, Louisiana</td>
</tr>
<tr>
<td>1800-1900</td>
<td>WWCR, Nashville, Tennessee</td>
</tr>
<tr>
<td>1800-1900</td>
<td>WYFR, Okeechobee, Florida</td>
</tr>
<tr>
<td>1815-1900</td>
<td>Radio Bangladesh, Dhaka</td>
</tr>
<tr>
<td>1830-1945</td>
<td>Radio Finland, Helsinki</td>
</tr>
<tr>
<td>1830-1955</td>
<td>Radio Polonia, Warsaw, Poland</td>
</tr>
<tr>
<td>1830-1900</td>
<td>A.S Radio Budapest, Hungary</td>
</tr>
<tr>
<td>1830-1900</td>
<td>Radio Yugoslavia, Belgrade</td>
</tr>
<tr>
<td>1830-1900</td>
<td>Radio Riyadh, Saudi Arabia</td>
</tr>
<tr>
<td>1830-1900</td>
<td>Radio Australia, Melbourne</td>
</tr>
<tr>
<td>1830-1900</td>
<td>Radio Canada Int'l, Montreal</td>
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<td>A.S Radio Canada Int'l, Toronto</td>
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<tr>
<td>1830-1900</td>
<td>Radio Afghanistan, Kabul</td>
</tr>
<tr>
<td>1830-1900</td>
<td>Radio Tirana, Albania</td>
</tr>
<tr>
<td>1830-1900</td>
<td>BBC Africa Service, London</td>
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<tr>
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<td>BBC World Service, London, England</td>
</tr>
<tr>
<td>1830-1900</td>
<td>BBC World Service, London, England</td>
</tr>
</tbody>
</table>

### Monitoring Times

**May 1990**

**West Coast To Indian Ocean**

**West Coast To Central Asia**

**West Coast To South East Asia**

**West Coast To Middle East**

**West Coast To Europe**

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*www.americanradiohistory.com*
**1900-1930**
- Radio Afghanistan, Kabul
- M-F Radio Canada Intl, Montreal
- Radio Japan General Service, Tokyo
- S Radio Norway International, Oslo
- M-F Radio Portugal, Lisbon
- Voice of Vietnam, Hanoi
- Kol Israel, Jerusalem
- All India Radio, New Delhi
- Deutsche Welle, Köl, W. Germany
- CBC, Montreal
- Radio New Zealand, Wellington
- Radio Moscow World Service
- Solomon Islands Broadcasting Co.
- CBN, St. John's, Newfoundland
- CBU, Vancouver, British Columbia
- CFCC, Montreal, Quebec, Canada
- CFCH, Calgary, Alberta, Canada
- CHNS, Halifax, Nova Scotia, Canada
- Christian Science World Service
- CKWX, Vancouver, British Columbia
- CFRB, Toronto, Ontario
- GBC Radio, Accra, Ghana
- HJCB European Service, Ecuador
- KUSW, Salt Lake City, Utah
- Radio Algiers, Algeria
- Radio Australia, Melbourne
- Radio Havana Cuba
- Radio Jordan, Amman
- Radio Kuwait, Safat, Kuwait
- A.S Radio for Peace Int'l, Costa Rica
- Radio RSA, Johannesburg, S. Africa
- Spanish National Radio, Madrid
- Radio Prague, Czechoslovakia

**1900-1950**
- Voice of America-Africa Service
- Voice of America-Middle East Service
- Voice of America-Pacific Service
- WHRI, Noblesville, Indiana
- WIBS, Red Lion, Pennsylvania
- S-F WMLK, Bethel, Pennsylvania
- WRNO, New Orleans, Louisiana
- Voice of America Radio Moscow British Service
- Voice of America Spin, Harrisonburg, Virginia
- Voice of America Voice of Greece, Athens
- Radio Tallin, Estonia
- Radio Austria International, Vienna
- Radio Bucharest, Romania
- Voice of the Islamic Republic Iran
- RAI, Rome, Italy
- Voice of America Berlin International Service
- Voice of America All India Radio, New Delhi

**2000 UTC**
- Vatican Radio, Vatican City
- Sierras Leone Broadcasting Co., Freetown
- Radio Portugal
- Radio Lubljana, Yugoslavia
- Radio Budapest, Hungary
- Radio Australia, Melbourne
- Radio Romania Int'l, Bucharest
- Voice of the Islamic Republic Iran
- Voice of America, Pyongyang, North Korea
- Voice of America, Costa Rica

**MONITORING TIMES**

- West Coast To Indonesia
- West Coast To Far East
- West Coast To Australia
frequency

2100-2200 Radio Moscow World Service 9685 15180 11655 11840
6195 9650 9740 11850
2100-2200 CBM, St. John's, Newfoundland 6160
2100-2200 CBU, Vancouver, British Columbia 6160
2100-2200 Voice of Hope, Lebanon 6280
2100-2200 CFCE, Montreal, Quebec, Canada 6005
2100-2200 CFCE, Calgary, Alberta, Canada 6030
2100-2200 CHNS, Halifax, Nova Scotia, Canada 6130
2100-2200 Christian Science World Service 9455 13770 15601 17555
15265
2100-2200 Radio Moscow Africa Service 7360 11850
2100-2200 Solomon Islands Broadcasting Co. 5020 9545
2100-2200 CJFX, Vancouver, British Columbia 6080
2100-2200 CFRB, Toronto, Ontario 6070
2100-2200 KUSW, Salt Lake City, Utah 15590
2100-2200 Radio Australia, Melbourne 17795 9620 15160
2100-2200 KVOH, Rancho Simi, California 17775
2100-2200 Radio Baghdad, Iraq 13690
2100-2200 Radio Beijing, China 11500 9220
2100-2200 Radio Jordan, Amman 9560
2100-2200 Radio for Peace, Costa Rica 21566 13660
2100-2200 RAE, Buenos Aires, Argentina 11710 15345
2100-2200 Voice of America-Africa Service 7195 15410 15445 15580
15600 17785 17800 17870
2100-2200 Voice of America-Middle East Service 6040 9700 9760 11760
15205 11710
2100-2200 Voice of America-Pacific Service 11870 15185 17735
2100-2200 WHRL, Noblesville, Indiana 13760 17830
2100-2200 WINB, Red Lion, Pennsylvania 15185
2100-2200 WRNO, Worldwide, Louisiana 13720
2100-2200 WWCR, Nashville, Tennessee 15690
2100-2200 WWFR, Okeechobee, Florida 11580 11630 13695 17685
15566 17612 21615 21525
2110-2200 Radio Damascus, Syria 15095 12065
2115-2130 M-F BBC Caribbean Service, London 5975 15400 17715
7325 9410 11715 11750
12095 15140 15260 17755
15670
2130-2145 BBC English by Radio, London 11945 15260
7325 9410 11750 12095
15140 15260 17755 15070

2130-2200 Kol Israel, Jerusalem 15840 12077 11805 17575
17530
2130-2200 Radio Sofia, Bulgaria 15330 11680
2130-2200 Radio Vilnius, Lithuania 6100 9765 666
2130-2200 Radio Canada Intl, Montreal 11880 15150 17620
2130-2200 CBC English by Radio, London 6150 7125 9365
2130-2200 T-F BBC Falkland Islands Service, London 9915
2130-2200 HCJB, Quito, Ecuador 15270 17790
2145-2200 Radio Berlin International, GDR 5965 9730 13690

2200 UTC [5:00 PM EDT/3:00 PM PDT]

2200-2205 Radio Damascus, Syria 15095 12065
2200-2215 Sierra Leone Broadcasting Co., Freetown 3316
2200-2215 M-ABC, Alice Springs, Australia 2310 (ML)
2200-2215 ABC, Tennant Creek, Australia 2325 (ML)
2200-2215 BBC English by Radio, London 11945 15280
2200-2215 M-F Voice of America-Caribbean Service 9640 11880 15225
2200-2225 RAI, Rome, Italy 5990 7235 9710
2200-2230 Radio Beijing, China 3985
2200-2230 Radio Berlin International, GDR 5965 9730 13690
2200-2230 Radio Vilnius, Lithuania 11770 12060 6100 15180
17665 17690 666
2200-2230 Radio Prague, Czechoslovakia 6055
2200-2230 ABC, Katherine, Australia 2465
2200-2230 Radio Canada Intl, Montreal 11705 11905 9755 5960
2200-2230 Radio Sofia, Bulgaria 15330 11680
2200-2230 ABC, Denver, Colorado 15205 11705 9755 11690
2200-2230 S KGEI, San Francisco, California 15280
2200-2230 S Radio Norway International, Oslo 15180
2200-2230 All India Radio, New Delhi 7412 9550 9910 11620
2200-2230 Radio Baghdad, Iraq 7412
6175 6195 7325 9410
9570 9590 9595 9995
11730 11855 12065 15140
15260 15400 15070 17750
2200-2300 CBC Northern Quebec Svc, Canada 9625
2200-2300 CBM, St. John's, Newfoundland 6160
2200-2300 CBM, St. John's, Newfoundland 6160
2200-2300 CBC, Toronto, Ontario 6070
2200-2300 CBC, Vancouver, British Columbia 6160
2200-2300 CBC, Toronto, Ontario 6070
2200-2300 Voice of Hope, Lebanon 6280
2200-2300 Voice of Turkey, Ankara 17880 9445 9665 9685
2200-2300 CBM, Vancouver, British Columbia 6160
2200-2300 CBC, Toronto, Ontario 6070
2200-2300 Voice of Hope, Lebanon 6280
2200-2300 Voice of Turkey, Ankara 17880 9445 9665 9685
2200-2300 WWCR, Nashville, Tennessee 15690
2200-2300 Voice of America-East Asia Service 7120 9770 11780 15185
15290 15305 17735 17820
9852 11805 15345 15370
17610
2200-2300 WWCR, Nashville, Tennessee 15690
2200-2300 Voice of America-Eur/Pac. Service 17880 9445 9665 9685
2200-2300 Voice of China, Taiwan 17845
2200-2300 United Arab Emirates R., Abu Dhabi 9600 11985 13605
2200-2300 WHRL, Noblesville, Indiana 13750 17630
2200-2300 WINB, Red Lion, Pennsylvania 15185
2200-2300 WRNO, Worldwide, Louisiana 13720
2200-2300 WWCR, Nashville, Tennessee 15690
2200-2300 WWFR, Okeechobee, Florida 11830 13695 17885 17612
11580 21525
2205-2220 Vatican Radio, Vatican City 9615 11830 15105
2230-2230 Radio Polonia, Warsaw, Poland 5935 6135 7125 7270
2230-2230 Radio Tirana, Albania 7265
2230-2230 Swiss Radio Intl, European Service 6190
2245-2250 BBC English by Radio, London 7180 9185
2245-2250 All India Radio, New Delhi 15110 11745 11715 9910
9535
2310-2315 5975 9590 9915
11750 11945 11955 15260
17875 12095

2300-2330 FEBC, Manila, Philippines 6030
2305-2325 Radio Finland, Helsinki 1175 15185

2300-2315 Kol Israel, Jerusalem 11605 9435 15640
2300-2330 Radio Canada Int'l, Montreal 9755 11730

2300-2330 BBC English by Radio, London 6110 9825 11765 11820

2300-2345 WYFR, Okeechobee, Florida 11580 5985 15440 15170

2300-0000 Adventist World Radio, Costa Rica 9725 11870
2300-0000 Radio Sofia, Bulgaria
2300-0000 Radio, Athens 9395

2300-0000 Radio Moscow North American Sv., Washington, DC 9530 9685 9720 11750
11950 11735

2300-0000 Radio Moscow World Service 21690 21790 21565
2300-0000 Radio Sofia, Bulgaria 15390 11890

2300-0000 A.S. KTWR, Guam 15125

2300-0000 CBM, St. John's, Newfoundland 6160
2300-0000 CBU, Vancouver, British Columbia 6160
2300-0000 CFCF, Montreal, Quebec, Canada 6005
2300-0000 CFCN, Calgary, Alberta, Canada 6030

2300-0000 CHNS, Halifax, Nova Scotia, Canada 6130 13405
2300-0000 Christian Science World Service 9465 15275 15300 17555
15405

2300-0000 Radio New Zealand, Wellington 17680
2300-0000 CKWX, Vancouver, British Columbia 6080
2300-0000 CFUS, Toronto, Ontario 6070
2300-0000 KUSW, Salt Lake City, Utah 15580

2300-0000 Radio Australia, Melbourne 15160 15240 15300
17795 21740

2300-0000 Radio Japan General Service, Tokyo 11835 15195 17810 21610
17765

2300-0000 Radio Luxembourg 6090
2300-0000 Radio Pyongyang, North Korea 11735 13650
2300-0000 Radio Tonga, Kingdom of Tonga 5030v

2300-0000 Voice of America-East Asia Service 7120 9770 11760 15185
15290 15305 17735 17820

2300-0000 United Arab Emirates R., Abu Dhabi 9600 11985 13605
2300-0000 WHRI, Noblesville, Indiana 13750 17830

2300-0000 WINB, Red Lion, Pennsylvania 15145
2300-0000 WRN, New Orleans, Louisiana 13720
2300-0000 WWCR, Nashville, Tennessee 15690
2300-0005 Radio Polonia, Warsaw, Poland 5995 6135 7125 7145
2300-0000 Radio Polonia, Warsaw, Poland 7270

2315-2330 7145 7325 9570 9590
9625 9915 11750 11765
11820 11945 11955 15260
15390 17875 12095

2320-2345 BBC English by Radio, London 3915 6080 7180 11865
2330-0000 Voice of Vietnam, Hanoi 15010 12010 9840
2330-0000 Radio for Peace Int., Costa Rica 7375 (+13660 21566 M-F)
2330-0000 BBC World Service, London, England 5975 6110 6175 6195
2330-0000 7325 9570 9590 9825
9915 11750 11765 11820
11945 15260 15390 17875

2330-0000 BRT Brussels, Belgium 12010 13075
2330-0000 M.A. Radio Budapest, Hungary 11930 15190 9835 9520
6110

2330-0000 Radio Kiev, The Ukraine 17685 17890 15180 12060
1170

2330-0000 Radio Korea, Seoul 15575
2330-0000 Radio Tirana, Albania 6120 9760 11825
2330-0000 Swiss Radio International, Berne 6190
2335-2345 M.A. Voice of Greece, Athens 9385 11645
2345-0000 Radio Berlin International, GDR 6080 11890 13690

THE FREQUENCY FILE
May 1990

WELCOME to a new segment of the Frequency Section, where we'll try to give you a little inside information about what is taking place behind the scenes.

This won't be a place of DX news and tips—you'll have to turn to Glenn Hauser's Shortwave Broadcasting section for that. No, what we'll do here is make some observations and comments on the ever-changing frequency scene, and probably get in a few snide remarks here and there, as space and events allow.

A quick word: What you see here in the frequency section takes some detective work. BRT Brussels, for example, was still announcing a frequency of 9925 kHz, though they were actually on 13675 kHz and 12010 kHz, and had been for over a week. Everyone here at MT tries to sort through such things for you.

Some of you may have noticed that Radio Australia has shown up on an old Radio New Zealand stalwart, 15485 kHz. If reception is bad, you have to be careful to tell what you're really listening to. Moscow's World Service in English is now on during our pre-noon mornings on 21565 kHz - if you're not careful, you might think it's Costa Rica's Radio for Peace International just rebroadcasting a Moscow program.

It's not, and you'll see that if you put your receiver in the narrow bandwidth to confirm that it's on 21565 rather than 21566. Now we know why RFPI chose that split channel: to differentiate it from Moscow on 21565. Well, it's just a theory. And it sounds better than saying their transmitter is one diode short of a full fuse.

Speaking of Australia, they have finally shown up on the 13 MHz band. Imagine that. The Aussies are starting to jump around almost as much as the Norwegians!

And what about those Lithuanians! They've got a lot of courage, and I respect that. In fact, I fixed Radio Vilnius a letter of support a few weeks ago to let them know that we at MT had listed them simply as being in Lithuania rather than the Lithuanian SSR. I also invited them to the upcoming MT Convention. With all the pressure they're under, a vacation in the Smokies would do them good.

If you can't hear Vilnius on the frequencies we list, it's probably because their transmitter access has been stopped. With the events over there being what they are, we can all understand why that might be.

So, now you know what your Frequency Manager has to contend with each month. Changes are taking place so fast that it would drive Superman to kryptonite. But we persevere, and we're all the better for it. I hope. Continue to send your observations to me at 7009 Brandemere Lane, #1, Winston-Salem NC 27106. Your support is really invaluable.

-- Greg Jordan
Frequency Manager

MONITORING TIMES
May 1990

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www.americanradiohistory.com
Pssst... wanna good new car? For $2,500? Or a mouthful of Dubbie Bubble for a penny? No, no, that's not nearly wacky enough. Let’s try for something really ridiculous -- a $49.90 AM/FM/world band receiver with digital frequency readout, programmable channel memories... and a clock thrown in for good measure.

**Rock-Bottom Price**

The $49.90 shortwave radio is no joke. Read it for yourself on the back cover of the March, 1990 DAK Industries catalog: “$49.90 PLL Digital Shortwave Breakthrough.” Yes, $49.90 with digital readout, five memories, up/down slewing buttons for station selection, a clock with alarm and sleep features, sockets for ac power/earphone/external antenna, a "lock" switch... and, would you believe, a dial light!

**How Can It Sell at Such a Low Price?**

Normally, a radio like this would sell for at least twice as much. So, what gives? What gives, it seems, has more to do with movements for democracy than profit-oriented economics. This bargain-priced radio comes from no less than the People’s Republic of China.

Yes, China, which recently acquired international pariah status when it enforced its Thou Bow to Mao Now policy with rifle fire and tank trends. As a result, convertible foreign currency has since become difficult for the Chinese government to come by, so dumping world band radios on Western markets provides at least a partial remedy.

**Strange Bedfellows: Chinese Radio, Taiwanese Handbook**

DAK, however, has taken an ecumenical approach to Chinese politics. The MR-101 is made in the People’s Republic of China, all right. But the Frequency Guide, or Wave Handbook, is virtually identical, except for the front cover, to that given out by Sangean, whose radios used to be sold by DAK.

Sangean, of course, is a Taiwanese company, so the frequency guide for this Chinese radio lists the “Voice of Free China” in Taiwan, but not a single station from the People’s Republic of China -- not even Radio Beijing!

**Tuning Adequate, but with Shortcomings**

The MR-101 is a compact world band portable that, at under 1-1/4 lbs., including batteries, is well-suited for taking along on trips. It covers FM in 200 kHz steps, mediumwave AM from 530-1630 kHz in 10 kHz steps, and the shortwave spectrum from 3.2-7.3 MHz and 9.5-21.75 MHz in 5 kHz steps.

Of course, this means the fertile 7.3-7.6 MHz and 9.3-9.5 MHz world band ranges are missed in their entirety, as is the 11 meter band and the 21.75-21.85 MHz portion of the expanded 13 meter band. Too, the 200 kHz and 10 kHz tuning steps for FM and mediumwave AM, respectively, are appropriate for the Americas, but not for most other parts of the world, where narrower channel spacing is the norm.

In order to keep costs down, tuning features were kept to a minimum. Not only is there no tuning knob whatsoever, there's also no keypad. Instead, what you’re left with is a single set of up/down multi-speed slewing buttons and five programmable channel memories.

In reality, that sounds worse than it is. The slewing controls are so flexible in their speed that you can chug the radio up or down one channel per tap, bandscan at a comfortable rate, or soar up and down the shortwave spectrum at dizzying speed (tuning from 9.5 to 21.7 MHz takes only ten seconds). The real problem, because it’s so fast, is to stop the slewing process near the desired channel. You need a sharp eye and good reflexes.

In any event, the slewing scheme works acceptably, and the five memories are a snap to program. In fact, these can be set to five different bands to reduce reliance on the slewing buttons. However, complicating tuning is the MR-101’s use of an old-fashioned “SW1 SW2” control. (Radios incorporating more recent technology have one setting for the entire shortwave spectrum.)

SW1 tunes from 3.2-7.3 MHz, SW2 from 9.5 to 21.75 MHz. It’s an antiquated concept and an annoyance, but hardly a major drawback in a fifty buck radio.

**Many Features for Price Class**

While the MR-101 is hardly feature laden, it includes some extras normally found only on more pricey models. For example, when is the last time you saw a low-cost world band radio with a dial light? The MR-101 has one, and it works well.

Having a clock with timing facilities on a world band radio is also a great idea. You can use the clock to ascertain World Time (UTC), and as a timer it can allow for at least...
Performance: Good News ... and Bad News

Performance, overall, is a mixed bag. On one hand, selectivity is quite good — far better than that of many sets costing over twice as much. Audio quality, while a bit tinny, isn't too bad, either.

However, this set is about as insensitive a device as we've ever tested. If you are trying to tune in anything like a weak signal — or even a signal of reasonably moderate strength — forget it! Too, the MR-101's IF circuitry is of the single-conversion variety — hardly surprising for a receiver in this price class.

This means that you get lesser-strength "repeats" of radio signals that actually operate almost 1 MHz higher. Ironically, this is not all that much of a problem because of the set's pronounced lack of sensitivity.

Quality of Construction Only Fair

The MR-101's quality of construction is slightly below average, but acceptable for its price class. The main problem is the telescopic antenna's non-rotating swivel bends easily. Should that swivel break, it would be harder than most to replace — assuming you can get the part.

The Bottom Line

DAK's MR-101 is an awful lot of receiver for very, very little money. In some respects — notably, selectivity and digital frequency readout — it resembles radios costing at least twice as much. DAK calls it a "breakthrough," and it is.

That's the good news. The bad news is that if a radio is unable to pick up a signal in the first place, it doesn't matter how well it does or doesn't process that signal or display frequencies. The MR-101 sorely needs a boost in sensitivity and fuller coverage of the 7.3-9.5 MHz range.

For casual listening, especially along the East Coast where signals are stronger, the MR-101 is a real bargain. It is also suitable for listening to world band on trips to Europe — provided you aren't interested in listening to AM or FM while you're over there. After all, if Borshov the bellhop rings it off, so what?

As we go to press, DAK had completely sold out its first shipment of MR-101s and was heavily back-ordered for the second shipment. So, if you want this radio, you may have to be patient.
Regency INF 50
Desktop Scanner

As anyone who has read this column over the last couple of months will immediately note, Uniden has released a number of similar easy-to-program scanners to the consumer marketplace.

The INF50 operates from a 120VAC/12VDC wall transformer power supply and delivers 2 watts of clean audio to its top-mounted speaker. A weather button allows instant access to NOAA weather broadcasts.

Using the same technology as other members of the "Informant" scanner series, hundreds of preprogrammed police, fire and medical frequencies are retained in permanent ROM. By pressing STATE, the CPU defaults (presumably) to those frequencies active in the selected state.

A backlit LCD shows the two-letter abbreviation for the state selected (NY, CA, etc.) or the service desired (PO, FD, MD, WX). When a particular transmission of interest comes on during the search routine, a HOLD button prevents scanning until you want it to. Active frequencies of low interest may be skipped by pressing DELETE.

Any combination of police, fire or medical channels may be selected by toggling the service key for each of these categories. If an attempt is made to deactivate all three services, NO will be displayed.

The INF50 comes with a plug-in whip; a standard Motorola jack allows interconnection with an outside antenna if desired.

The Regency INF50 can be found in the $110-$120 price range from MT advertisers.

INF 50

An unusual -- and useful -- product!

AIE TONE FINDER

A subaudible tone (continuous tone coded squelch system--CTCSS) prevents mutual interference among groups of users on a common frequency. With tone squelch, signals will be heard only when accompanied by the appropriate tone, ignoring other transmissions.

The Uniden BC760XLT scanner offers a subaudible tone squelch option. Many listeners would find more use for their 760s if they knew what tones were present on signals of interest. Service shops need to determine CTCSS tones on signals in order to properly set compatible equipment.

Automated Industrial Electronics (141 Granite Street, Batesburg, South Carolina 29006; phone 1-803-532-9256) offers a model TF-1 Tone Finder, a hybrid scanner and frequency counter combination which digitally displays the frequency of any subaudible tone present on a received frequency.

The TF-1 is built around a Regency R1070 programmable scanner which has all original functions: low, high and UHF narrowband FM reception; ten memory channels; search; individual channel lockout, all-channel delay and even a test mode. A plug-in whip is included. So even when you aren't using the CTCSS test feature, the TF-1 makes a dandy back-up scanner!

How Does it Work?

A switched-capacitance, low-pass filter with a 250 Hertz cutoff separates the subaudible tone from the rest of the audio.
modulation. The extracted tone is fed to a 40 kHz multiplying frequency counter for rapid registration of the tone frequency.

Our lab tests showed the system to be equally effective on weak and strong signals, instantly revealing the tone frequency—if present—as its large (11/2" numerals), beveled LED display. In fact, even on marginally-receivable signals with whistling or noise present, the subaudible tone was displayed solid as a rock.

Tones are read out to the nearest lower whole-number frequency. For example, CTCSS tone 1A, 103.5 Hz, would be displayed as "103." With such accuracy (averaging better than 1%), it is easy to spot off-frequency tones.

A Peek Inside

The temptation to look inside the customized add-on portion of the scanner/counter was irresistible. Inside the sturdy aluminum enclosure was a professionally-designed glass-epoxy circuit board. The integrated circuits—and there's a bunch of 'em—were in sockets for easy test and replacement should it ever become necessary.

As with many Regency-designed programmable scanners, receivable frequency ranges are considerably wider than advertised. The R1070 in our TF-1 was capable of 23.2-54.6, 137.5-188.6 and 390.7-539.1 MHz coverage.

The R1070 may be forced to accept even wider frequency ranges by re-entering the frequencies which were rejected with "ERROR" the first time: 23.0-55.395, 136.795-190.75 and 389.2-551.187 MHz were finally retained by our sample.

The AIE TF-1 tone finder, complete with manual and instructions, normally sells for $385, but if you mention reading this review in MT, they will sell you one for a limited time for only $225! Readers may wish to take advantage of this unusually low price for a quick and useful item before the price goes back up.

TF-1 Tone Finder

MONITORING TIMES
tuners for the auto. These three separate catalogues that The and more amplifiers, speakers, antennas pages offering equalizers, CDs on slick, DEH price presets, for manual or lowest (list: start with car. radio enthusiast's shack Crutchfield: security. home office In the road. CD/Tuner/Amp Jensen's five AM FM -DX those tuners that they say are --1000, Crutchfield: $89). What makes the Crutchfield publication unique -- besides the fact that they allow manipulation and fine tuned in a way no ordinary receiver can. All of this is tempting enough in its own right -- this is "kid in a candy store" stuff for anyone who enjoys electronic equipment -- but we've never seen a better produced catalogue. What makes the Crutchfield catalogue unique -- besides the fact that they use ordinary models, not so pretty that they make us feel like a toady -- is that they are so helpful. Before they get on with the sales pitch, the catalogue offers in-depth explanations of the terms you're going to encounter when selecting a piece of equipment from their catalogue. "Finding the Right Stero for Your Home" takes you by the hand and tells you about individual components, how they work and how to judge them. The explanations are crisp, clear and free of excessive sales hype.

If you'd like to ask a question -- even if you're not buying -- there's a toll-free number that they encourage you to call: 1-800-446-1840. In short, the Crutchfield catalogue is a joy to read. Like to get a copy for yourself? We've arranged for you to be able to call a toll free number -- 1-800-336-5566 -- to get a copy. Mention Monitoring Times. There will be no charge and Mark Lee will put a copy in the mail to you ASAP. If you'd like to write, the address is Crutchfield Park, Charlottesville, Virginia 22906.

**Organize your space -- reliably!**

Office supplies can make the task of DXing or scanning easier, just as they can for organizing your office at work. If you don't believe us, read this month's "roundtable" discussion with some of the top DXers in the country. Virtually every one mentions lists, references and so forth.

Reader Ken Dreyfus of Minneapolis, Minnesota, passes along his copy of the Reliable catalogue. Featuring discount office supplies, they feature name brand, low-cost pens, papers, staples, hole punchers (for keeping those notes together) rolodexes, card files and more.

Reliable also has a toll-free "HelpLine" for questions "before or after ordering." Use it to call for their catalogue. And tell them you read about it in Monitoring Times. (I'm not sure why you should tell them that you read about it in Monitoring Times. It just seems that everyone writes that in magazine articles.)

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**Electronic gadgetry for the experimenter**

Finally, the new MCM Electronics catalog is out. As usual, it's filled with amazing things. While probably of more interest to the experimenter-project builder and otherwise technically-inclined hobbyist, every listener should have a copy.

Because not only do they have an impressive array of test equipment, tools and parts, they also have those special items that radio listeners often need -- like replacement telescopic antennas, patch cords, replacement speakers, coax, connectors and hard-to-find batteries.

Want a copy? Call toll-free 1-800-543-4330. And, yeah, tell 'em Monitoring Times sent ya!

"Catalogs" welcomes your participation. See something interesting in your pile of junk mail? Clip it and send it in! Add your own comments.

Be sure to include the name of the catalog, the item's description, price and shipping information along with the phone order number. Send it to "Catalogs," P.O. Box 98, Brasstown, NC 28902.
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Replace that inefficient flex antenna with our universal 25-1300 MHz whip -- and stand back! Adjustable from 7 to 46 inches, the ANT-8 is made of chrome-plated brass and equipped with a standard BNC base to fit most amateur hand-helds and scanners. Transmits on 45-960 MHz.

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If your desktop scanner is equipped with a BNC antenna connector, try the new Grove ANT-8B with right-angle adaptor for improved low, high and UHF band reception when an outside antenna is not practical.

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$21.95

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**Hear Shortwave on Your Scanner!**

How would you like to hear worldwide shortwave on your scanner? If you presently have aircraft band coverage, the world is yours with the new CVR1 Scanverter module from Grove Enterprises! We even provide the antenna!

Not a kit, the Grove Scanverter module comes fully assembled and tested! Simply attach a 9 volt battery and listen to the BBC, Radio Moscow, the Voice of America, even time and propagation alerts from WWV and CHU! And if your scanner covers 115-141 MHz (AM mode), you can hear your local AM broadcasters and even CB!

The Grove shortwave Scanverter connected to your scanner unleashes global listening power! A quick glance at your conversion chart tells you where to tune in signals and how to interpret your scanner’s frequency readout for shortwave.

The CVR1 Shortwave Scanverter module comes complete with antenna and interconnect cable (cabinet not included). Tell us your scanner model when you order.

Order CVR-1  
Only $39.00  
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**Mobile Antenna**

*Designed specifically for today's wide frequency coverage scanners!*

Utilizing Grove’s exclusive multi-element construction, this sleek, black, “24 fiberglass whip, mounted on a strong, chrome-finished magnetic base, assures premium signal reception on 30-50 MHz low band, 118-136 MHz aircraft, 136-174 MHz high band, 225-400 MHz military aircraft, 406-512 MHz UHF land mobile and 806-960 MHz microwave mobile.

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www.americanradiohistory.com
Build a Low-Noise VHF/UHF Preamp

Do you enjoy monitoring the VHF and UHF land-mobile frequencies? If this is part of your routine, chances are you need a signal booster to help pull in those weaker signals. Some of the older scanner receivers, in particular, are not monuments to sensitivity or low noise figures. A simple preamplifier may be inserted between the antenna feed line and the input jack of the scanner to bring new life to old receivers. In fact, a signal booster can even be useful with many of the modern VHF or UHF receivers.

This project is within the technical ability of most experimenters. All you need is a small handful of parts, a piece of PC board and a 25- or 40-watt pencil-type soldering iron. Of course, you will need to invest three or four hours of your leisure time to get the circuit up and running but what better way to spend an otherwise dull evening?

Preamplifier Advantages

Noise-figure improvement is perhaps the major benefit you will realize when you use an outboard preamp. This assumes that the preamp has a noise figure that is lower than that of the receiver with which you intend to use it.

A noisy preamp can worsen an already noisy receiver front-end circuit. Therefore, care must be taken when choosing a transistor for the preamp -- one that assures low-noise amplification in the frequency range of interest. You must pay attention also to the biasing of the transistor. There is a bias level that enables the device to operate in its most quiet manner.

The gain (amplification factor) of the preamp must be slightly greater than that of the first stage in the receiver. Too much gain may cause receiver front-end overloading, and this can ruin reception. There are many things to consider when developing a practical preamplifier. But, increased front-end gain can mean the difference between copying a weak signal or having it become lost in background noise.

This Month's Project

Figure 1 shows the circuit for our VHF/UHF preamp. The lowest operating frequency is approximately 140 MHz. The useful upper limit is roughly 450 MHz. Maximum preamp gain occurs at 140 MHz and drops approximately 3 dB per octave higher. Thus, if the gain is 12 dB at 140 MHz, it will drop to 9 dB at 280 MHz, and so on.

The noise figure increases slightly as the operating frequency is increased. The NF (noise figure) of the circuit in Figure 1 is 3.5 dB at 400 MHz. It is approximately 2 dB at 140 MHz. The preamplifier gain is on the order of 17 dB at 140 MHz and 10 dB at 450 MHz. This depends on the tuning adjustments and the exact nature of the particular transistor you plug in at Q1.

The Figure 1 amplifier is designed for a 50-ohm input and output impedance. C1 and C2 are adjusted to provide a matched condition between the feed line and the preamp input. This coincides with maximum Q1 gain, since maximum power transfer can only occur when unlike impedances are perfectly matched.

The output circuit for Q1 of Figure 1 is broadband. A 3-dB 50-ohm resistive pad is used at the output of the preamp to ensure a 50-ohm termination and amplifier stability. This circuit, like most solid-state amplifiers, can self-oscillate when it is not terminated in its design load impedance. The pad causes a 3-dB reduction in signal level. The resistive pad may be eliminated if your receiver has an assured 50-ohm input impedance. This will buy an additional 3 dB of effective preamp gain.

Figure 1 -- Schematic diagram of the VHF/UHF preamp. C1 and C2 are miniature ceramic, plastic or glass piston trimmers. L1 is 4 turns of no. 24 enamal wire, 1/2 inch long and with an ID of 3/16 inch. L2 has 5-1/2 turns of no. 24 enamal wire, 3/16 inch ID by 1/2 inch long. RFC is a miniature 10-μH choke.
I use a Motorola BFR91 UHF transistor for Q1. A Motorola MRF901 may be substituted if you change the resistor values as indicated in the Figure 1 table. A 2N2857 (TO-72 case) may be used at Q1 with appropriate layout changes. This is not a strip-line case style device, as are the BFR91 and MRF901 transistors. These transistors are available by mail.

Construction Hints

You may build your preamplifier on a 1-1/4 x 2-1/4 inch piece of single-sided PC board. Figure 2 shows the board layout at two times scale. The parts are mounted on the foil side of the board. This ensures the very short leads that are mandatory.

All of the components must be mounted so that they are snug against the PC board, except for L1 and L2. These coils must have sufficient clearance to prevent being short-circuited against the copper conductors of the board.

Miniature ceramic capacitors should be used in this circuit. The resistors are 1/4-W carbon composition. Carbon film resistors may be used, but they are more inductive than are the older style carbon composition ones.

You can form the isolated pads on your PC board by laying them out, then grinding away the unwanted copper by means of a hobby motor with a small cone-shaped abrasive bit. I suggest that you etch the board with ferric chloride solution if you are experienced with its use.

You can cover the copper of the blank board with ducting tape or an equivalent tight-sealing tape. Draw the PC pattern on the tape, then cut away the unwanted portions with an X-Acto knife. The board can then be etched in ferric chloride, which is available at Radio Shack stores in small bottles.

Adjustment and Use

The completed preamplifier should be checked carefully to ensure that all of the parts are in the correct locations. Check also for unwanted solder bridges between the copper islands. Connect the preamp between your antenna feed line and the receiver. Locate a weak VHF signal and adjust C1 and C2 several times to obtain the loudest signal and the least noise. No further adjustment is required.

You may wish to include a preamp-bypass switch (DPDT) to take the preamp out of the antenna line when it is not needed. It will not improve the reception of loud signals.

Summary

I hope you will build this little amplifier. The experience you gain will be valuable, and you will have the ability to enhance your reception of land-mobile, aircraft and other signals in the VHF and UHF spectrum. The completed preamp can be installed in a small shielded box to protect it from dust and to prevent signal energy from entering the circuit via paths other than the input circuit.

Footnote:

1 Circuit Specialists, P.O. Box 3047, Scottsdale, AZ 85271-3047. Catalog available. Toll free 800-528-1417.
The Readers Respond

It's mailbag time again. About every six months, I assemble the most noteworthy of the correspondence and include it in this column so others can read and learn. For every one of you who takes the time to write, there are at least ten of you out there who have a similar question or comment. So here goes...

Sony 2010 Blow-out


Yes, friends, it's true. I did engage in a bit of Sony-Bashing — and it was FUN. Actually, the December '89 Experimenters' Workshop comments regarding the Sony 2010 generated quite an influx of mail. My heart was in the right place, but my timing was a bit off.

The correspondence was evenly split between those who agreed and those who were ready to Lynch me. Upon checking with Bob Grove of Grove Enterprises, warranty and maintenance records on Sony 2010s sold during the last year and a half have turned up no returns for replacement of Q-303 (the RF front end transistor) that was so fond of self-destructing.

According to Bob, about two years ago Sony design engineers did, in fact, redesign the RF front end of the 2010 to remedy the problem. However, there is one disturbing fact remaining; articles are still showing up in radio publications, and comments are still being heard on the ham bands and elsewhere attesting to the fact that there are some late model 2010s that are subject to Q-303 problems.

For all of you who wrote, both pro and con, on the topic of the 2010, and for those who are still in a quandary about the receiver's track record, let me make the following statement: "As long as you use the 2010 according to the instruction manual supplied with the radio, there is little chance of blowing Q-303."

As Bob Colegrove writes to point out, the whip antenna on the 2010 is diode protected (back to back diodes across the input to the radio) that will normally handle any static discharges or hot RF from a nearby transmitter.

However: the external antenna jack on the side of the radio DOES NOT have this diode protection. Hence, when you plug an external antenna into this jack, you are effectively looking directly into the input port of Q-303. Any static discharge or high RF field present on the outside antenna will be applied to the input of Q-303. USE CAUTION when hooking the 2010 up to an external antenna. If you use the short (15-20 feet of wire) antenna that Sony supplies with the 2010, there is little danger of inflicting anything fatal on Q-303. Common sense rules.

There will always be those individuals who, in the truest tradition of the radio hobby, will want to squeeze the maximum amount of performance out of their radio, and to these intrepid souls I'll say: "Caveat Emptor, Bubba!"

John Barbato writes inquiring as to the kind of symptoms exhibited by a 2010 with a blown Q-303. First of all, the symptoms are not that noticeable on the shortwave broadcast bands. The real loss of performance seems to occur on the AM (medium wave) and tropical band segments. About the only way to know for sure is to compare the suspected unit with a known good 2010 and observe the S-meter of both units when they are tuned to the same station in the MW and TB segments.

If your unit proves to be bad, get it to a competent service person as soon as possible. If you need the services of a qualified technician, contact your favorite radio store. Many offer outstanding technical support and maintenance for the Sony 2010 and other top-line shortwave receivers.

On squeezing the maximum performance out of your radio (adding mods, external accessories, preamps, etc.) I'll say, go to it, but "Caveat Emptor," Bubba!

Steve Morehouse sent along some pictures and describes a mod for the ICOM R-7000 to increase the scanning speed to 20 CPS. That has been a very popular topic in the mail. Looks like we have received a workable answer from Steve which will be presented in a future EW column. Many thanks, Steve.

As long as we are talking about the R-7000: Bill NJ7YG writes to state his views on the ECPA and the temptation to users of receiving equipment that can access the "Forbidden Zone" of cellular frequencies.

Bill, any tool (and a receiver is a tool just like a pistol is a tool for a cop and an axe is a tool for a fireman) can be used for other than its intended purpose. Just like the pistol, which can be used to knock over a liquor store, or the axe which can be used to dismember another human being, a receiver capable of accessing the cellular frequencies can be used for unlawful monitoring of those frequencies, in violation of the ECPA. Like

Peter Credit, KCODP, writes to ask if there are any filter mods available for the Sony 2001 (the predecessor of the 2010). Yes and no, Peter. Best thing to do is to contact the repair facility at your favorite radio store and see if they have the necessary filters and would be willing to do the work. Get price quotes prior to sending the radio.

On Scanner Mods and Morals

On to the scanner crowd: Bob Baetke sent along a list of mods for the Bearcat BC140 to make it function like the up-gunned BC-145. These will be featured in an upcoming "Experimenters' Workshop." Roy McKenzie (along with several others) wrote to ask for mods for their favorite Bearcat scanner, the BC-200XLT. So, how about it gang? Anyone got mods for the 200XLT?

Mons for the RS PRO-34, PRO-2021, and PRO-2004 (adding an S-meter) have been requested by Pat Brown, Jason Jakragin and John Cain. Well, guys, there is not much in my files for the 2021 or the PRO-34. An S-meter for the 2004 should not be a biggie. The only problem might be where to put it on the radio. An add-on box with an S-meter is a bit unslightly. Let me research this one. I would like to get a meter on my 2021, also.
most things in life, the onus is on the user to ensure that the receiver is not misused. We all tend to “push the envelope” a bit (whether it’s driving over the 55 MPH speed limit or listening to a bookie operation on cellular).

The ECPA laws regarding monitoring of the “Forbidden Zone” are, in my sole and humble opinion, 99.9999999 percent unenforceable. Therefore, people will normally do what they can get away with. Unfortunately, the cellular industry is a self-serving group who want the best of both worlds. On one hand, all major cell-tel manufacturers hawk their product to the consumer public, trying to instill a sense of security about using their product.

The ECPA was a thinly veiled infringement on our rights to monitor communications transmitted via radio. This “law” is extremely dangerous. It attempts to give the cellular user a false sense of security about his/her communications that just does not exist. The majority of these same cellular manufacturers ALSO market scanners, some of which are capable of receiving these “Forbidden Frequencies” right out of the box or after a very simple modification.

Since you can monitor the cellular frequencies by tuning any UHF TV set between channels 60 and 83, why don’t we confiscate all the UHF TVs? Heaven forbid, some one might try to listen to the Sacred Cellular Frequencies.

Technology is available to completely eliminate the cellular coverage on these scanners at minimal cost to the manufacturer by simply redesigning the way the synthesizer coverage is set. By not doing the redesign, the cellular/scaner manufacturers are keeping their options open for future marketing strategy, should the ECPA be modified or overturned. It all boils down to $$. As for the R-7000, this is a VHF-microwave communications receiver of superb design and performance. To restrict the frequency coverage on this outstanding receiver would have been a criminal act!

Mike Schruber, K6KCO and Dino Papas, WSOJ/KL7, both wrote to say that the TorresTronics digital add-on display for receivers/transceivers is still available from Communications Concepts, 508 Millstone Dr., Xenia, Ohio 45385. Dino even included the original QST article (Jan ‘80) and the assembly manual.

Many thanks, guys. (Hey, Dino . . . R U the same Dino that was stationed at Ft. Monroe a few years back and attended the SPARK club meetings in Hampton, Virginia? AIRBORNE!!)

The TorresTronics digital readout is a godsend for analog receivers. I had one hooked up to an Argonaut 509 QRP transceiver for many years and it worked very well. Several serious tube-receiver DXers I personally know use these readouts on Hammarlund HQ-180s, R-390s, etc. They are very useful.

Until next month, a BIG “Thank you” to all who took the time to write. A special “Thanks” to those who sent in article material which will be used in upcoming “Experimenter’s Workshop” columns. 73s es gud DX.

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**Feeling Left Out?**

Have your favorite communications (Police, Fire, etc) moved to the 800MHz band? Are the scanners available which access this band too expensive? If you are like many scanning enthusiasts, this can be a real dilemma. For those of you who are still in a futile search for 800 MHz coverage on your hand held scanning radio, GRE America, Inc has a product for you. Introducing the newly developed **Super Converter™ II** which has all of the features that you have come to enjoy in our **Super Converter™ 8001** (810 - 912 MHz coverage, etc.), and more.

The **Super Converter™ II** has a convenient switch which allows for an instant return to normal scanning frequencies without disconnecting the unit. It is also equipped with BNC connectors for easy adaptability to your handheld scanner.

Introducing the **Super Converter 8001™** from GRE America, Inc. The **Super Converter 8001™** once attached allows any UHF scanning or monitoring receiver to receive the 810 to 912 MHz band.

It has been our experience that most scanning radios suffer from a lack of sensitivity due to antenna and power limitations. Introducing the GRE **Super Amplifier™**. The **Super Amplifier™** is a compact pre-amp designed to work with scanners and it amplifies the reception of the VHF/UHF bands (from 100MHz to 1GHz) as high as 20db.

The **Super Amplifier™** has an adjustable gain which is controlled from the back of the unit and allows amplification level of up to 20db through all frequencies, equipped with a bypass switch to return to normal scanning frequencies. As with all other GRE products, you will find the quality and design of the **Super Amplifier™** to be of the highest standard.

Wide range frequency (up to 1GHz) antenna is exclusively available from GRE America, Inc.

**For more information, or a dealer near you (new dealers are welcome), contact GRE America, Inc. at the address below.**

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**GRE America, Inc.**

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**MONITORING TIMES**

May 1990

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ONE FROM ACROSS THE POND:

The G5RV Multiband Antenna

Let's Build One:

To build this antenna, you will need about 104 feet of antenna wire, 30 feet, 4 inches of 300-ohm twinlead TV-type lead-in cable, three antenna insulators, and enough low impedance (50 to 75 ohms) coaxial cable to run between the antenna and your shack. One end of the coax will need to have a plug which fits the antenna socket on your rig. You will also need incidentals like guy ropes, black plastic electrical tape, and coax-type sealer.

Here are the steps in building the G5RV.

1. Cut two pieces of antenna wire each to 51 feet, 6 inches in length. These will be the radiating portion of the antenna.
2. Slip insulators onto each end of one of the wires just prepared. Pull the wire through the insulator only enough to make the overall length of the wire equal to 51 feet once the insulators are fully attached (see Figure 1).

Next, using a knife edge, prepare the wire for soldering by scraping both the ends of the wire and the body of the wire at the places where the wire will wrap around itself as shown in Figure 1. The wire must be scraped bright so you can solder the wire to itself to hold the wire on the insulator. When the scraping is finished, wrap the ends around the body of the wire as shown in Figure 1, and solder the wrapped portion in place.

3. Next, take the second piece of antenna wire which you prepared in step 1, and scrape both its ends as you did for the wire in step 2.
4. Put the remaining insulator on the other end of this second piece of wire. The length of this second piece of wire, once the insulators are installed, should equal 51 feet, the same as the length of the first piece you worked with.
5. Now cut the 300-ohm twinlead to a length of 30 feet, 4 inches. Trim the insulation from two inches at each end of this cable.
6. Take one end of the twinlead and wrap one of its conductors around the soldered connection on one side of the center insulator which attaches the two 51 foot antenna elements together (see Figure 1). Solder this conductor in place. Then similarly wrap and solder the other twinlead conductor at this same end of the twinlead to the soldered connection on the other side of the center insulator.
7. Now prepare the coax by stripping off the outer insulating jacket off one end for about two inches. Then undo the braid of the coax from around the center insulation, and twist it into one thick strand, as shown in Figure 1. Remove the center insulation of the coax from the center conductor of the coax for about one inch.
8. Attach and solder the center conductor of the coax to one conductor of the unattached end of the twinlead cable. Attach and solder the other twinlead conductor to the thick strand of coax shield (see Figure 1).
9. Now use black plastic tape to tape the connection between the coax and the twinlead so that there will be no
touching of wires that should not touch each other. Also make the taping as watertight as possible.

10. Cover the taped section with coax-type seal to prevent moisture from entering the connections.

11. If you live in lightning country, don’t forget lightning protection. The minimum is to never use the antenna during stormy weather, and disconnecting and grounding the antenna when it is not in use.

12. Now you can connect the connector end of the coax to your rig and enjoy some G5RV communications.

RADIO RIDDLES

Last Month: Last month I reminded you that recently this column had reference to “romantic antennas,” (the rhombic antenna which is constructed of two “mouth-to-mouth” V antennas). And we’ve all heard of “active” antennas, haven’t we? Then last month we discovered “lazy” antennas. So, noting that antennas possess these human traits, I asked you to guess “just how human an antenna can get?”

Well, as surprising as it may seem, an antenna can be totally human! That is, an antenna can be a human! Better said, a human can be an antenna. Of course, anyone who tinkers with the innards of a radio soon finds that they can disconnect a radio’s antenna, touch a finger to the antenna connection inside the set, and hear signals as their body, connected to the set via their finger contact, serves as an antenna. But I’m not talking about just that.

Did you know that serious research has been done on the use of the human body as an antenna? For instance, Rudge et al report work which indicates that “...in the range of 30-80 MHz, the human body behaves in a manner similar to a lossy dielectric cylinder. Suitably fed, it can act as a moderately efficient radiator...” They then show a graph of “man as antenna, relative gain of base-fed man compared to base-fed whips.”

The gain of such a “base-fed man” ranges from around -9 dB at 30 MHz to 0 dB at 80 MHz. How about it folks, anyone want a career in communications as an antenna? Of course, watch where you put your finger. One wrong move and you could be a dead human antenna.

This Month: Well, I was surprised when I read the reference on the study of "man as a base-fed antenna." But then I got to thinking, and realized that radio is a very human endeavor indeed. That is, various other radio functions, other than the antenna function, can be served by various parts of the human body.

Next month I will report to you some amazing, even shocking (pardon the pun) applications of the human body to serve as parts of a radio communication system. And these are applications which have been tried, have worked, and been reported in the radio literature.

So tune in next month for some surprises. Till then, Peace, DX and 73.

The Best* Just Got Better!

The Best* now includes our new Zap Trapper™ Electronic Gas Tube Lightning Arresters. Recovery design shunts damaging transients to ground at only 1/10th the voltage buildup of the available 200 watt transil-type arresters, providing maximum solid state receiver protection.

Protect your investment - combine an excellent shortwave receiving antenna with the best receiver protection money can buy.

- Completely assembled and ready to use
- Only 42" overall length
- B tap circuits permit reception on all shortwave bands. 11-30 meters
- All connections soldered and enclosed in ultrasonically-welded, hermetically-sealed trap covers
- Includes 50' of 450 lb. test nylon rope

**The best... built like an antenna should be ** -Larry Menge in World Radio TV Handbook

"Our best seller." Feeds in that recent ads and catalogs.

"Now in use in 45 countries." -Gillet Shortwave in 1983

Antenna Supermarket
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What if my MT is late?
If your copy of MT doesn’t show up on your doorstep, give it until the 10th of the month, and then call us. We can replace up to two issues per year, but give the Post Office a chance!
Q: My property deed restricts me from erecting a high antenna. Can I run the wire along the top of an eight-foot fence, including around the corners? (Mark Widerstrom, Houston, TX)

A. Yes, if the fence is not metal, with some additional caveats. A shortwave receiving antenna close to the ground is not as effective for receiving great distances as a high antenna. Bending the wire at right angles has unpredictable directional effects. Bending it back on itself will reduce signals at some wavelengths unless the spacing is large.

Q: I have an old Bearcat crystal scanner; where can I buy crystals? (Roger Turner, Bassett, VA)

A. You might try calling Uniden's parts department (1-317-842-1036) to see if they still stock crystals. Many companies specialize in custom crystals and advertise in the ham magazines. One reliable private source is Gerry Oliver (G&G Communications, 9247 Glenwood Drive, LeRoy, NY 14482; ph. 1-716-768-8151).

Q. I would like to receive weather pictures from 137-138 MHz satellites, but I need to filter out the strong terrestrial interference outside of that range. Is there a filter available to remove these "outside" frequencies? (John Pyle, Peterborough, England)

A. Yes. The TVRO industry manufactures in-line filters for a wide variety of narrow frequency ranges. Contact a commercial supplier of home-satellite accessories for a bandpass filter for the frequencies of your interest.

Q: Have the Soviets stopped jamming American shortwave transmissions? (Donald Michael Choleva, Euclid, OH)

A. At this writing, yes. There are occasional jamming transmissions made by the Soviets against countries in their zone of doctrinal influence when radio is fueling political unrest.

Q. I am hearing the image of a local repeater 43.2 MHz higher than its actual frequency. Does that mean my scanner has a 43.2 MHz intermediate frequency (IF)? (Robert Barker, Austin, TX)

A. The primary image frequency will always be twice the IF, so your scanner's IF is 21.6 MHz.

Q. What are the minimum equipment requirements to hear satellite subcarrier services like "elevator music", stock market reports and news services? (Barney Fontenot, San Antonio, TX)

A. For signal reception you will need a standard TVRO terminal (satellite TV dish and receiver) with baseband audio output (usually about 6.8 MHz center frequency) and a general coverage shortwave receiver with stable SSB capability. For printed news copy you will need a demodulator like an InfoTech M7000 and video monitor (and/or printer). Alternatively, you could use an AEA PK232 demodulator with an IBM-PC compatible computer (and printer for permanent copy).

Q. Can a frequency counter be connected to my Realistic DX160 receiver so that I can have digital frequency readout? Can I improve the BFO so that SSB signals won't drift? (Robert Plumlee, San Bernardino, CA)

A. A frequency counter can be connected to the oscillator of any receiver, but the readout will be that of the oscillator, not the signal frequency. You will need to subtract 455 kilohertz from the display to know the tuned frequency.

The BFO circuit is not necessarily the culprit in signal drift; the receiver's main
oscillator may drift as well. Both of these circuits would have to be monitored by a frequency counter over a period of time to determine whether either, or both, is at fault. Then appropriate drift-cancellation measures would have to be taken to correct the design deficiencies in the receiver—not any easy task.

Unless you feel competent to take on this formidable challenge, get the old DX160 alone and get an inexpensive modern radio like the Sangean ATS803A which has much better stability and digital frequency readout as well.

Q. If I hold my PRO2005 scanner in a certain light, I can see a 30 kHz search stop on the display, yet when I try searching the 870-890 MHz spectrum where 30 kHz is proper channel spacing, the interval never comes up, even with full frequency range restored. How come? (M. M., Poughkeepsie, NY)

A. We have tried to find out, too. It may be that different manufacturers of the microprocessor chip had variations with regard to that search step. Frankly, we don’t know, and can’t seem to find out from Radio Shack service centers.

Q. Can you give me the dimensions of a Yagi antenna for the aircraft band? (Melvin Gorr, Sheboygan, WI)

A. Sure. The rear reflector is 46-1/2” long, the driven element is 44” long and the forward director is 43” long. The reflector is spaced 18” behind the driven element and the director is 17” in front of the driven element. The driven element is fed at the center with coax.

Q. I have a Sears programmable scanner. Can I replace the microprocessor chip with another to extend the frequency range and memory capacity? (Roger Wofford, Crystal Lake, IL)

A. No. CPU chips on scanners are proprietary, custom components rather than off-the-shelf standards. While it is true that some different scanner models from one manufacturer may share a common chip, there is only enough support circuitry on the board to allow it the functions advertised.

Q. What is the purpose of “line load telemetry” such as may be heard near 154.465 MHz and 189 kHz? (Robert Barker, Austin, TX)

A. Power companies need to monitor actual usage on their lines. Overloads may damage transformers and wiring as well as trip circuit breakers. Even if the equipment is capable of an overload, extra customer usage may require another generator to be brought on line to supply the demand.

Line load telemetry is a digitized system of signaling the dispatcher by radio or carrier current so that he can respond to changing power requirements.

When the dispatcher senses the need of another generator to be brought on line, whether from his own equipment or from an interlinking power company, he slowly matches the voltage and phase of each system before connecting them in parallel; this prevents massive damage which would occur if the two systems were unmatched when they were connected.

Q. Why wouldn’t the old “Q multipliers” found on Hammarlund communications receivers work as continuously-variable bandpass filters for all modes on modern receivers? (Henry Johnson, McLean, VA)

A. Q multipliers are inherently very sharply tuned, responding best to narrow-band signals like CW. Wider-bandwidth (modulated) signals would have their sidebands clipped, causing reduced fidelity (muffled voices). If the Q multiplier is adjusted wide enough to accommodate those wider bandwidths, then its selectivity goes to pot, allowing interference from adjacent channel signals.
their lives besides sit on their fat ***** and
talk about their rigs.

"I, for one, will applaud as Congress
divides their once sacred frequencies and
gives them away to companies who will use
them to dispatch taxicabs."

Monitoring Times' own Ken Reitz,
KC4GQA, was not nearly so bitter, looking at
the problem this way: "[The ham radio
community] is no different than any other
subculture or social group and is thereby
doomed to have a small segment of its
population represent the equivalent criminal
community in the larger society.

"These miscreants appear more noticeable
because they enjoy a statistical advantage.
While the percentage of this element is the
same now as in 1920, the number of people in
that element is large indeed. As the hobby has
expanded, so has the number of imbeciles.
And we may look forward to sharing our
decreasing band space with ever increasing
idiocy.

"The solution," counsels Ken, "is to do
what 95 percent of this honorable community
has always done: set a good example for
the newcomers, fight for our rights to the public
RF spectrum, and against those who would
dishonor the rest."

Hear, hear! Bravo! Speech! Speech!

And while we're at it, reader A.R.
Utilitz of Boca Raton, Florida, has a few
suggestions for the advancement of ham
radio. Says A.R., "It would be a great deal
more enjoyable for the shortwave listener if
the person talking would slow down. People
don't talk this fast in normal face-to-face
conversations. And at sign off time, it'd be
great if the operators would mention their
town and state."

"I recently received my first copy of
Monitoring Times. I think it's a great
magazine" says Frank E. Clark of Neptune
City, New Jersey. 'There is one exception,
though. The 'program guide' lists times and
countries but no frequencies. I don't see how
it could be of any use to anyone. On the other
hand, the 'frequency guide' is excellent."

We get this letter from readers from time
to time. The answer is to combine the two
sections, program and frequency. If you see a
program you'd like to listen to, simply look up
the broadcaster's listing in the frequency
section under the proper time. Presto! The
proper frequency. Yes, it's a little
inconvenient but it gets the job done.

Another question we frequently get is a
request for information on DX programs. We
do, from time to time, try to spice the
program listing with DX shows. But we also
try to present a wide variety of program
listings in an effort to give what we feel is a
representative sampling of what you can
actually hear on the air. An article devoted
exclusively to DX programs -- including times
and frequencies -- is in the works.

New subscriber Marvin Seidman of
Beverly Hills, California, checks in with some
words of praise for the frequency section. "I
really appreciate that section for my
shortwave listening. Bought my first copy of
MT at Henry Radio in L.A.,” says Marvin,
"and then sent in my subscription."

Paul Stecher of Pensacola, Florida, would
like to see a critical review of headphones
suitable for use with communications
receivers. Paul wants to see brands and prices.

Karl Heil passes along a map showing
the locations of all ten of the Wisconsin
Tourist Development Board's low-power
transmitters that we mentioned in last
month's "communications" section. As the
map indicates, all sites broadcast on 530 KHz
except for Kenosha, which is on 1600 KHz.

Paul Stringer of Christchurch, New
Zealand, drops us a note saying that a friend
has lent him some back issues of Monitoring
Times. "And let me say that it's the best
DXer's magazine in the world," opines Paul.
"Would you print VHF, UHF and HF
frequencies from this side of the globe?" he
asks. Paul, we would be delighted to have
your participation just as we welcome the
participation of radio listeners from around
the globe. It would be our pleasure to hear
from you again.

Checking in from South Humber-
side, England, is Mr. F. L. P. Stampton. He recalls a letter that we printed some time ago in which a reader said that he did not receive any response to correspondence he sent in to HCJB in Quito Ecuador. Mr. Stampton says that he has listened to HCJB "every day for the past four years." And, he says, he has sent reception reports for all that time, "including a spell in the hospital."

The result of this dedication is that Mr. Stampton has "132 QSLs plus calenders, personal letters, and signed, autographed pictures of many of the staff. I look upon the staff as very caring people and count them among my friends." Mr. Stampton, we agree. When it comes to HCJB, we here at Monitoring Times feel as you do.

Interested in the shadow world of clandestine broadcasting? Check out Harald Kuhl's monthly Clandestine Calling, available for only US$15.00. Each month Harald brings you the latest news on clandestine radio stations, a comprehensive and up-to-date frequency list, QSL information, background reports, logs and more. For a sample, send US$1.00 to Mr. Kuhl at Weender Str. 30, D-3400 Gottingen 1, West Germany.

Steve Forest has a tip for wrangling QSL cards out of reluctant broadcasters, specifically, state-run broadcasters. "Forget calling overseas," says Steve. "Try the local embassy."

Steve thought of this after spending a fortune chatting with someone at Radio Luxembourg, trying to talk them into sending him a QSL. When the same problem arose with a recallant Radio Yugoslavia, "I called the embassy and spoke to the press attache." A creative idea, Steve, that can, from time to time, bring impressive results.

John Cassidy of Groton, Connecticut, sent us a clipping from the Honolulu Star-Bulletin that included the local radio log. We reprint it herewith for your enjoyment.

That's all for this month. Good listening.

Got a comment? Send it to Letters to the Editor, Monitoring Times, P.O. Box 98, Braststown, NC 28902. Please include your name and address. We'd like to hear from you!

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**CONVENTION CALENDAR**

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**Oahu radio log**

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All ads must be paid in advance to Monitoring Times.
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When readers are in the market, they look here to find your ad ... Will it be here?


BEARCAT 200XL T w/ extra battery pack - like new - $185.00; REGENCY HX1200 - excellent condition - $125. Christner, 306 Woodview, Cortland, Ohio 44410.

For Sale: XEROX TELECOPIER 7007 Fax machine. Cost $1100 - Sell $750. Mint condition with manual. [606] 337-6282 after 6 p.m. EST.


Wanted: Antenna/Handle assembly for ZENITH Transoceanic R1000D transistor radio. Howard Lash, 19 E. 157 Street, South Holland, IL 60473.


For Sale: BEARCAT BC760XL T 100 Channel Scanner w/BEARCAT Preamplifier, mint condition, original box - $230. REALISTIC PRO-38 Handheld scanner, mint condition - $90. Write or call: Thomas W.

Siemens, P.O. Box 52, Ishpeming, MI 49849 [906] 485-4218.

Trade modified PRO2004 for MAP or ? Stephen [402] 333-0943 7-9 p.m. CST.

ICOM R71A, loaded - $725; KENWOOD R5000 and options - $750; REGENCY HX2500 - $125; REALISTIC PRO2020 - $85; DRESSLER Active Antenna - $75; CP1 - $70. All perfect [415] 332-3742.

WANTED: IC's SN76477N, SN76488N, MM5837. Johnson, Box 1191, Johnson City, TN 37605.

Wanted: Modification information on the UNIDEN HR2510 transceiver. Write GLC, 115 Huntington Blvd., Roanoke, VA 24012.

Wanted: RADIO FREQUENCY JAMMING: Knowledge and/or equipment, also highly sensitive hearing devices: surveillance or medical. Eugene Dell, 300 Bentwood Ave., Johnstown, PA 15904.


MONITORING CORPS INTERNATIONAL, a worldwide network of monitoring enthusiasts, is recruiting all interested persons on an international basis. For additional information send an SASE to P.O. Box 2100, Corona, California 91718 USA.

For Sale: JRC CFL-233 1 kHz RTTY filter - $75. Alan N4LUS [301] 229-7069 evenings.

102 May 1990 MONITORING TIMES
Controlling your blood pressure can reduce your chances of heart disease. Have your blood pressure checked. And keep it in check for life.

**American Heart Association**

**Lower the numbers and raise your odds.**
Dear Bob:

This letter is in regard to the article, "Bob's Tip of the Month", in the February, 1990 edition of Monitoring Times Magazine. The article describes how to restore the deleted cellular band coverage in Uniden BC760XLT/BC950XLT scanning radios.

Uniden America Corporation does not endorse or authorize Monitoring Times to modify or help consumers modify Uniden scanning radios to make them capable of monitoring cellular telephone conversations. As you know, monitoring these types of conversations may violate the Electronic Communications Privacy Act of 1986. The article correctly pointed out such modifications void the Uniden product warranty.

Very truly yours,

Gary Kline
Corporate Counsel

Gary Kline, Corporate Counsel
Uniden America Corporation
4700 Amon Carter Blvd.
Ft. Worth, TX 76135

Dear Gary:

It was good to hear from you and I appreciate your comments concerning our "tip of the month" which concerned the restoration of complete frequency coverage in the BC760/950XLT series of Bearcat scanners.

The modification was presented in response to requests by scanner owners who, seeing that uninterrupted frequency coverage is available in other scanners including your own BC800XLT, would like the same capability in their scanners.

Our readers are constantly reminded that monitoring cellular (and any other mobile telephone) communications may be unlawful under the protection of the ECPA and that the modification will void their Uniden warranty.

Monitoring of ECPA-protected communications may be a violation of law, but the possession of a device (i.e., scanner) which is not primarily useful for such interception is explicitly lawful under provisions of the ECPA.

Since the sale of an article surrenders any reasonable expectation of control by the former owner (in this case the manufacturer), neither endorsement nor authorization by Uniden concerning subsequent use is sought.

Sincerely,

Bob Grove
Publisher
Computer Aided Scanning
a new dimension in communications from Datametrics

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R7000 system $299 until June 30
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Send check or money order to Datametrics, Inc., 2575 South Bayshore Dr, Suite 8A, Coconut Grove, Fl, 33133. 30 day return privileges apply.
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