How to Monitor the Excitement

The Blimp's In Town

How to Monitor the Excitement

ALSO...

- My Reviews ICOM's Superset IC-R9000
- Choosing A Programmable Scanner
- DXing The Balkans
The Scan dial channels, R and f services safety services, fire, Monitor local police, foreign R MHz receivees: Specifications. Marine channels, The -5000, the -line -5000 R -1. RZ VHF The Wide mode selection function narrow -2000. R and commentary. Listen on foreign music, news, and Marine channels, and the many other services 50 MHz and above. (For VHF, converter options must be used in the R 5000 and R 2000.)

R-5000
The R-5000 is a high performance, top-of-the-line receiver, with 100 memory channels, and direct keyboard or main dial tuning – makes station selection easier. One hundred memory channels with message and band marker, direct keyboard or VFO frequency entry, and versatile scanning functions, such as memory channel and band scan, with four types of scan stop. The RZ-1 is a 12 volt DC operated, compact unit, with built-in speaker, front-mounted phones jack, switchable AGC, squelch for narrow FM, illuminated keys, and a “beeper” to confirm keyboard operation.

RZ-1 Wide-band scanning receiver

The RZ-1 wide-band, scanning receiver covers 500 kHz-905 MHz, in AM, and narrow or wideband FM. The automatic mode selection function makes listening super easy! Other useful features include programmable scanning, large, built-in speaker, 110 volt AC or 12 volt DC operation (with optional DCK-2 cable), VHF capability (108-174 MHz) with the VC-20 option, dual 24-hour clocks with timer, and even voice frequency readout with the VS-1 option.

Optional Accessories
- VC-10 VHF converter
- DCK-1 DC cable kit for 12 volt DC use.

R-2000
The R-2000 is an all band, all mode receiver with 10 memory channels and many deluxe features such as programmable scanning, dual 24-hour clocks with timer, all-mode squelch and noise blankers, a large, front-mounted speaker, 110 volt AC or 12 volt DC operation (with the DCK-1 cable kit), and 118-174 MHz VHF capability with VC-10 option.

Other Accessories:
- SP-430 External speaker
- SP-41 Compact mobile speaker
- SP-50B Mobile speaker
- HS-5 Deluxe headphones
- HS-7 Mini-headphones.

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Monitoring the Goodyear Blimps
by Dave Jones

For many, the Goodyear blimp brings back childhood memories, long, lazy summer afternoons punctuated by the excitement of seeing one of these lighter-than-air crafts gliding through the blue sky. The Goodyear blimp still flies -- and makes memories. The next time "The Blimp" is in your area, tune it in. Dave Jones tells you how.

The New ICOM IC-R9000 by Lawrence Magne

Not every radio that comes out gets featured in the front of Monitoring Times. Fact is, only one has been so honored in the history of the magazine and that happened only two months ago. This month, we feature yet another super radio, the ICOM IC-R9000. Says Larry Magne, it's "the best SW communications receiver we have ever tested." And, as long-time MT readers well know, Magne is not easily impressed. If you're really serious about your radio -- and have 5,000-plus dollars -- this could be the radio for you.

Improving Receiver Audio Quality by Roger Dowd

An easy and effective way to improve the audio quality of your shortwave receiver or scanner is to use already-existing technology -- the graphic equalizer. Whether you use a plug-in, or wire it into the circuitry, it's bound to make a difference in picking signals out of the hash, as well as making it more enjoyable to listen to.

DXing the Balkans by Charles Sorrell

The Balkans. To the astute observer of world affairs, it's a place of palpable tensions, a potential flash point for ethnic unrest. The Balkans are not new to this sort of situation. A crossroads of cultures, it was held by the Turks until 1912. Shortly thereafter, World War I cooked out of its cauldron. Well represented on shortwave, the countries of the Balkans -- Albania, Bulgaria, Turkey Greece, Romania and Yugoslavia -- make for interesting summertime listening. Check 'em out.

Television's First Fifty Years

Speaking of memories, TV is 50 years old. For many, it is a time of great celebration, a chance to look at the development of a piece of technology so powerful that it has changed the very structure of society. From the first clunky sets exhibited as electronic curiosities at the 1936 Worlds Fair to today's "Surround Sound" large screen, high-definition TVs, TV's First Fifty looks at the history of television on its 50th birthday.

ON THE COVER: The Goodyear blimp courtesy Goodyear Tire & Rubber Company
Airborne ferry operation!
Several times every year, the U.S. Air Force ferries short range aircraft across the Atlantic and Pacific Oceans to replace aging craft, for exercises or a variety of other uses. Needless to say, Utility World columnist Larry Van Horn and his readers have ferreted out the best of the frequencies.

Voices in the sky
In an exclusive interview, Jean Baker interviews a busy air to ground communications and support service, Atlanta Flight Support. From modest beginnings, they now operate practically worldwide.

The timeless voice of New England
For 46 years, Bob Steele has been waking people with his warm, familiar voice. The morning announcer and personality at Hartford, Connecticut's WTIC, Steele earns a good 27 percent of the area's listening audience. But now, Steele is thinking of retiring... Meet the man behind the microphone in Karl Zuk's American BandScan column.

Choosing a scanner
If you're confused about where to start in looking for a scanner, Bob Grove will help you sort it out. What kind of listening do you want to do? How populous is your neighborhood? Answer a few of these questions, and chances are, you'll have a good idea what to buy.

Converting to low frequency
Those interested in picking up soldering iron might want to try their hand at this month's project by Doug DeMaw. DeMaw lays out plans for a low frequency converter. The project, which DeMaw says is simple and low-cost, will allow you to use your radio to hear stations below 550 kHz. It's kind of weird down there but there are some exciting radio catches waiting to be had -- from maritime beacons to low-powered experimental stations.

Build your own discone
Finally, we show you how to build a wideband omnidirectional discone antenna. It's often referred to as the most commonly used low-gain, wideband base station antenna. And as such, it's worth your while to review. There's easy-to-build, easy-to-understand instructions from the father of antenna projects, Clem Small.

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Never again!

Ian Geddes of Bel Air, Maryland, had quite an experience during a recent flight to London. Geddes was en route to Glasgow, Scotland when security personnel stopped him before boarding at Baltimore-Washington International airport.

"I was told that the x-rays did not penetrate a 'large mass' -- my PRO-2004 scanner -- in my shoulder bag. I took the radio out and was told by the security officer that I was not allowed to take it on board. Naturally, I questioned the decision. "This brought about a conference of security personnel. The next thing I know, the pilot gets off the plane, takes the radio, and disappears through the gate. "After ten minutes or so, I went back to security to enquire as to the whereabouts of my $400 radio. Nobody knew. So I demanded to talk with the pilot. Another huddle of security personnel began. "Finally, I had my answer. The pilot, in his infinite wisdom, had decided to keep the radio in the cockpit where it would remain until we landed in London! Ian got his radio back but when he tried to board the connecting flight to Scotland, he was once again stopped. "Once again I was asked to remove the radio from my shoulder bag." This time, however, the dialogue was altogether different: "What is it?" asked security. "A radio," Geddes replied. "Plug it in." "I can't, unless you have a 110 volt outlet," he told them. "OK. Don't worry about it," they decided, waving him through. "Sorry for the inconvenience."

Not wishing to go through security with his '2004 again, Geddes found a different way to get his radio home. "The day before we departed for the States," he said, "I carefully packed the radio, addressed it to myself, and took it to the local post office."

Geddes' conclusion: "Never again!"

Paul Mitchell also decided to take a radio -- in his case a trusty Sony ICF-2003 -- aboard a flight, "unthinkingly hoping to receive some air-to-air communications."

"After strapping in, I was browsing through the literature in the pouch on the back of the seat when I happened to glance at the back of the "seat occupied" card. "It plainly and reasonably lists the electronics devices which may be operated in-flight and excludes all others, making reference to '14 CFR 91.19,' and pointing out the danger involved."

Paul, who is a professional law librarian, hit the books. "91.19 specifically allows the use of several harmless devices and lets the 'air carrier' or pilot make the judgment call on the use of any others."

Mitchell's conclusion: "I gave myself a good scare and put the radio away. However, I think a more prominent warning might be in order."

Many thanks to both Ian and Paul for passing along that information.

"I hear that they're going to be shutting down all of those traveler information stations (TIS) on 1610 kHz" says AM DXer Mark Abbott of Los Angeles, California. "True or false?" he asks.

True. If you've ever been on an interstate near a large city or tourist attraction, you've probably seen signs for these low-powered stations: "Tune 530 kHz for traffic information" or whatnot.

Under a new international agreement to expand the AM broadcast band, TISs on 1610 would find themselves wiped out by considerably higher powered commercial stations on 1620 kHz.

Those currently on 1610 kHz can stay for now but eventually may be forced to move up to 1700 kHz (a channel with limited potential since few receivers can pick it up), drop down to 530 kHz or cease operation altogether.

"The June issue of Monitoring Times carried part of a letter from Marty Blaise concerning (AM) DXing in the standard broadcast band. I'm writing this to let him (and others) know that there are others who share his interest. Those words of encouragement come from Al P. LaPlaca of Centerereach, New York. "I have two set-ups for BC band DXing," Al continues. "The one in my ham shack consists of a Collins R-390A receiver and a homemade transmatch (a 28 uH roller coil and up to 17,000 pF-variable) which is an L-section tuner with the ability to switch the capacitance to the input or output side of the tuner. "The setup in my bedroom (built into the bookcase headboard) consists of a Yaesu FRG-8800 with Yaesu FRT-7700 tuner. Through a coaxial switch, either setup gets connected to a G5RV inverted-vee on the roof (apex at 41 feet)."

LaPlaca doesn't do too bad with these arrangements. We'll let him tell you the totals: "So far, I have logged 314 stations in 33 states and 6 countries. I also DX the 160-520 kHz range where I have logged 73 stations in 28 states and 18 countries."

How about a photo of that set up, Al? In fact, how about a picture of you and your radio? We could sure use them. Color shots are OK. Just send 'em along to Rachel Baughn in care of Monitoring Times, P.O. Box 98, Brassington, NC 28902. Hey! And don't be shy. No one around here is all that handsome, either.

"I'm looking for a real DX challenge," says Ed Kuscik of Chico, California. "Stump me if you can."

Well, Ed, after you've heard all of the stations in our monthly frequency list, try for the Central Pacific island republic of Kiribati (pronounced kiribas) on 14918 kHz. It's been heard recently between 0745 and 0915 UTC.

"The May issue of Monitoring Times was excellent!" says Michael Urbano of Sacramento, California. The article on air shows was informative. I live near McClelland Air Force Base and was able to monitor the air-to-air communications of the Thunderbirds. The frequencies you had were to the number. Thanks for an excellent magazine!"

[Cont'd on page 100]
FEMA Wants You
And If They Get You, We Want You

Looking for work? The Federal Emergency Management Agency (FEMA) is recruiting reserve military personnel for duties in civil emergency response planning. Military or civilian training and experience in operations, communications, intelligence, transportation, supply and radiological defense are sought.

For more information, apply at your local, state or regional FEMA office or contact FEMA headquarters, IMA Program, Room 613, Washington, DC 20472. And by the way, if you do get hired, remember your friends at Monitoring Times and drop us a note to let us know what’s going on with FEMA. (The Retired Officer)

Woodpecker Bogs
Submarine Network

After surviving years of opposition from environmentalists, the U.S. Navy has found that its $360 million ELF submarine communications network has a new and even more determined foe: the pileated woodpecker.

The crow-sized birds, black and white with a red crest, have been pecking melon-sized holes in some of the 1,500 telephone poles that support ELF’s 56 mile antenna. Several poles have had to be replaced. Officially, however, the Navy is playing down the bird threat. Says ELF commander John Smythe, "It's not a significant problem."

Two ELF systems, one at Republic, Michigan and the other at Clam Lake, Wisconsin, are scheduled to be fully operational in October. (Chicago Tribune)

Naughty, Naughty

Four Fort Lauderdale, Florida, police officers were fired recently after supervisors overheard them broadcasting vulgar conversations on the CB. Using portable units plugged into their cruisers, the officers used derogatory sexual language to describe a female sergeant, used racial slurs and talked about hiding their cars rather than patrolling.

"Said Chief Joe Gerwens, "These are the people we entrust with the safety of the community."

Good News for Monitors

The FBI's plan to build a nationwide DVP (Digital Voice Privacy) radio system is running behind (in terms of time) and ahead (in terms of budget). Fed up with citizens, the media and even criminals monitoring their radio calls, the FBI began an ambitious project in 1982 to build a nationwide radio system whose signals could not be intercepted.

In just two years, the cost of the program leapt from $79 million to $204 million. The FBI admits that the total could run as high as $300 million.

Meanwhile, the General Accounting Office has reported that to service the system, the FBI wants $700,000 a year for 50 technicians and $450,000 more to buy 30 new vehicles for them to drive. The completion date, originally set at 1987, has been moved forward to 1992. (U.S. News and World Report)

New HC-100 Transmitter

HCJB, the powerhouse evangelical shortwave broadcaster in Quito, Ecuador, is nearing the completion of the design and fabrication of a new brand of shortwave transmitter. The new units, which will be called HC-100s, will provide 100 kW of power and can operate in any shortwave bands from 13 to 19 meters.

According to station officials, the transmitters are state-of-the-art, providing very high efficiency and thus reducing operating costs.

If you'd like to add one of these little beauties to your shack, contact the station's engineering center at the
I Have a Request:
Get in the Car

A cool-headed broadcaster's on-air plea for help led to the quick arrest of a man who broke into the station and took the program director away at gunpoint.

WBNZ News Director Chris Holbrook Anderson says she wasn't thinking of her safety when she quietly flipped on the microphone and asked listeners to call the sheriff. The sheriff received about 300 calls as the result of the broadcast.

Anderson said she and program director Phyllis Minor were alone at the station when Minor's husband, Ed Bartkowiak, broke down the door with a tire iron. Bartkowiak used to tire iron to smash the telephone Anderson was using to try and call police.

Anderson then went into another studio and made the on-air request, cautioning listeners that this was "no joke."

There were no injuries reported and police pulled the gunman over some two miles from the station. The couple had been arguing for a few days and "it just blew up into this," said DJ Gina Von.

GWEN Site Selection
Narrowing

The Air Force has announced that it has narrowed its search for 40 radio towers site for the controversial GWEN or "Doomsday" radio network. Construction is envisioned from Maine to Georgia and from Virginia to California. In all, 26 states will probably have one or more of the final 40 towers.

The Ground Wave Emergency Network is an automated system of radio transmitters consisting of 56 radio relay towers that link 38 terminals at military bases.

The center of the system is at Strategic Air Command headquarters in Omaha, Nebraska and is designed to ensure adequate communications links in time of war. Local protesters have objected to the sites because they might increase the likelihood of their towns becoming nuclear targets.

The Air Force said it would spend the next year conducting environmental studies, holding public hearings, and picking specific 11 acre sites needed within each state. Only after a specific site is approved can construction of the low-power, low-frequency radio towers begin.

All 96 sites are expected to be operational by 1992. The system carries a price tag of some $700 million dollars. (AP)

Space Station Freedom

The permanently manned space station Freedom program now has its own official logo. The stylized graphic depicts the pressurized modules where the crew members will work and live and the solar panels. The circular shape represents both the Earth and other planets.

Space Station Freedom will be an international space complex used for fundamental research in the materials and life sciences and to explore Earth and outer space.

Listening in on Mir

As the U.S. space station struggles to regain its impetus, the Russian program is having problems of its own as evidenced by the termination of the Donbasy in April of this year. Chris van den Berg of The Hague, Netherlands, suspected this would happen.

Chris monitors the Russian space program; his knowledge of the Russian language permitted him an inside look at the module as he heard the cosmonauts allude to low voltages, high humidity, water leakage in the electrical system and, finally, directives to return to Earth.

Chris notes that voice traffic could be monitored on 143.625 and 121.750 MHz.

While the MIR is unmanned, various telemetry status transmissions can be heard on 165.875 and 166.125 MHz as well.

Thanks to Fred Chesson, Waterbury, Connecticut; William T. Clark, Chico, CA; Steve Forest, Cincinnati, Ohio; Howard Lash, S. Holland, Illinois.

You can communicate with other Monitoring Times readers. The next time you see an item about radio in a magazine or newspaper, clip it out and share it with the rest of us! Send it to Communications Editor, P.O. Box 98, Brasstown, NC 28902. You'll be glad you did.
Monitoring the GOODYEAR Blimps

by Dave Jones

For many, the first sight of a Goodyear blimp is an unforgettable event, a delicious slice of childhood that can be savored over and over.

Despite the onrush of technology, these airships still fill those lucky enough to see them with awe and wonder. Children chase them on bicycles until the road ends, just so they can watch them for a few minutes longer. Adults, driving on busy highways, slow, stick their heads out the window and unabashedly gawk. There's no reason to be ashamed, either. Goodyear blimp watching goes back quite a few years.

PROUD HERITAGE

Goodyear has been producing lighter-than-air (LTA) airships since 1911. And during that time they have produced more of them than any other company.

It all started when the company, just after the turn of the century, began to use its expertise in rubberized fabric technology to build its first airship envelope. The airship envelope was gigantic -- 400,000 cubic feet -- and it used hydrogen as the lighter-than-air element.

Blimps were called into service in World War I and Goodyear was able to supply the Allies with nearly 100 airships and 1,000 observation/barrage balloons. Balloon technology surged forward.

The decade after World War I ushered in the first Goodyear company airship. In 1925, Pilgrim was built, inaugurating a long line of company airships. Instead of the more flammable hydrogen, Pilgrim used helium as its lighter-than-air element.

Goodyear operated the world's first and only airship mass-production line during World War II. The company manufactured 134 K-class airships from 1938 to 1943 in a special 1,175 foot marvel known as "The Airdock."

The airships were used by the Navy to perform coastal patrol, escort convoys, and conduct anti-submarine warfare. A total of 154 Goodyear-built Navy airships escorted 89,000 ships laden with millions of troops and billions of tons of cargo, all without the loss of a single vessel to enemy submarines — an impressive wartime record.

When the Cold War erupted in the 1950s, airships built by Goodyear were once again called upon again to serve their country. Four Navy ZPG-3W airships were built in the late fifties. Each carried electronic early warning equipment for the nation's defense. In addition to the ZPG-3W early warning airships, Goodyear built ZS2G-1 and ZPG-2.
patrol airships in the 1950s.

Not all blimps go to war. Goodyear, seeing the publicity value of the airships, began to use them as aerial goodwill ambassadors. Anyone who has watched a professional football game has seen them. At major events, such as the bicentennial and Statue of Liberty birthday celebrations, the blimps played major roles—but never forgot their military applications.

That's why, in the 1980s, when the government called, Goodyear answered. On several occasions the blimps cooperated with the U.S. Coast Guard and U.S. Customs Service in coastal surveillance and rescue exercises.

The 1980s also have seen several new blimp manufacturers enter the arena; however, they are not the Goodyear Blimp.

**BLIMP OPERATIONS**

Currently Goodyear operates three blimps in North America. A fourth formerly operated in Europe.

The American blimps are stationed at three locations—one on each coast and one in-between. The Enterprise, tail number N1A, is based in Pompano Beach, Florida; the America, tail number N3A, is based near Houston, Texas; and the Columbia, tail number N4A, is based in Los Angeles.

The home bases serve as winter homes for the blimps. During the winter months the blimps undergo maintenance and may make local appearances. The remainder of the year is touring season for the blimps and their crews.

A fourth blimp, the Spirit of Akron, is currently undergoing FAA certification which is anticipated to be completed this year. When completed, the Spirit of Akron will replace the Enterprise in Pompano Beach.

A blimp was operated in Europe named the Europa, which was based in Rome. The consolidation of Goodyear Tire & Rubber (GTR) company in 1986 after an attempted hostile takeover forced the demise of Europa operations.

A twenty-two person ensemble consisting of sixteen ground crew members, five pilots and a public relations representative accompany each blimp during their touring season. (The blimps actually have 22 public relations representatives as each member represents the GTR blimp operations. Once you have talked to or listened to several members, you realize that being a blimp crew member is more than a job—it is an exciting adventure which they eagerly share with the public.)

Ground crew responsibilities include the maintenance of the blimp and ground vehicles, as well as assisting during take-offs and landings. Each blimp is accompanied by a three vehicle ground fleet consisting of a van, a tractor-trailer, and a Greyhound-like bus.

The van is utilized for ferrying personnel and running errands while in town. The tractor-trailer contains work shops and provides for parts storage and storage of the mooring mast. The bus serves as a mobile command post with air crew quarters and provides the main mode of ground transportation for the blimp crew.

Each of the vehicles are custom painted in blue and white depicting scenes of airship operations. All vehicles are equipped for communications with each other and the blimp.

**MONITORING THE BLIMP**

The ground vehicles are all equipped with CB and VHF highband FM radios. The ground based communications corral also contains VHF AM aircraft band radios which I believe are limited to portables with the recent addition of UHF FM radios. The VHF FM radios currently utilized are Motorola units utilizing their Private Line (P.L.) tone encoded squelch.

The blimp utilizes a 10 watt output version while the bus, van, and tractor-trailer mobile

**BURSTING THE BALLOON**

The dictionary will tell you that the probable origin of the name "blimp" is a contraction of the British airship known as "Balloon, Type B, limp." Others maintain it's a contraction of "bloody limp!"

Now it appears neither explanation is likely.

Dr. A.D. Topping brought to light the evidence which gives credit for the name to Lt. A.D. Cunningham of the Royal Navy Air Service, commanding officer of the British airship station at Capel in 1915. While conducting a weekly inspection of the station, he playfully flipped his thumb at the gasbag of His Majesty's Airship SS-12. On hearing the resulting noise that echoed off the taut fabric, he humorously imitated the odd sound: "Blimp!" Believe it or not!
units utilize 50 watt output models. Hand-held portables are also utilized in addition to the vehicle mobiles.

The communications between the blimp and ground crew are normally held on 151.625 MHz. Table 1 lists the frequencies in use by the Goodyear Blimps. Typical transmissions during transit are of the nature concerning motel reservations, weather conditions, and details about upcoming operations.

Transmissions during events are typically cues from the television producer to the pilot requesting "shots" of aerial views. The networks typically provide the camera personnel, with an exception being ESPN which uses Goodyear personnel to operate the camera.

The camera movement is controlled by two joysticks -- one to control the zoom function and a second for azimuth/elevation control. It is possible to clearly view a yard line on a football field when the blimp is at an altitude of 1000 feet and a distance of one mile away.

Weather reports and updates also will be monitored as the blimp and adverse weather conditions do not mix well. The blimp radio communications are not just limited to 151.625 MHz, however, as VHF AM aircraft band and new UHF FM channels are also utilized.

Blimp communications can be monitored on the GTR company frequency of 132.000 MHz in the AM mode in addition to the VHF FM frequency. The company frequency is utilized infrequently and mainly when there are problems with the 151.625 frequency either from interference or communication equipment failure.

The company frequency is not without its own problems as interference from feeder and commuter airline on 132.000 occur. Blimp crew members favor the VHF FM as the range and transmission quality are much better than the VHF AM with typical communication ranges of 50 miles with 100 miles not being uncommon.

**NEW FREQUENCIES**

The use of split-channel low power UHF FM frequencies have found their way into blimp radio communications. The split-channel frequencies are located between standard 25 kHz assignments in the UHF land mobile band and are listed in Table 1. The UHF frequencies will be utilized for on-location operations as they are low power and the VHF FM will still be used in transit operations.

The blimps also can be monitored communicating on VHF AM commercial aircraft frequencies. The current blimps utilize two Narco brand two channel AM aircraft radio units. The radios are typically configured with a VOR and tower frequency and the GTR company frequency (along with another VOR-VHF Omni-Range). The radios are programmable to standard channel settings in the VHF AC band. The blimps fly under VFR - Visual Flight Rules and do not use or have assigned a special squawk code.

All blimp radio traffic is in the clear with no special or ten codes in use. Each blimp identifies itself with a call based on its tail number. The N-November portion of the tail number is generally dropped and the blimp call is usually #-Alpha.

The Enterprise pilot calling the tower will state "This is 1-Alpha Goodyear Blimp." The ground vehicles identify themselves in a similar manner as "1-Alpha Bus" or "1-Alpha Van." Crew members appear to have two digit number identifiers which are used at times; however, first names are most often used.

**A THOUSAND LIGHTS**

The current blimps each use 7560 lamps to convey the messages presented on their "electronic billboard." The Spirit of Akron will utilize 8064 lamps on its electronic billboard. The lamps are connected by several miles of wires to a control unit located in the gondola car. The billboards are viewable from a mile away with the blimp flying at a thousand feet altitude.

The Goodyear Blimps are familiar aviation sights in America, yet they always attract crowds of all ages and sizes as they journey across America. So when the blimp comes to town during these dog days of summer, grab your scanner, your camera, your children and the spouse, and have an enjoyable time watching a part of America.
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www.americanradiohistory.com
ICOM'S New IC-R9000 Professional Receiver

By Lawrence Magne
Editor-in-Chief
Passport to World Band Radio

For six years, you’ve tried in vain to hear your favorite island paradise, Tristan da Cunha. You’ve monitored the static-filled channel for thousands of hours, become a member of the super-secret DX club Uno Tuno, and suffered through interminable broadcasts of DX news. Still, Tristan Radio eludes your grasp.

Finally, you decide on one of two options. You’ll get some really hotshot receiving equipment, or else you’ll hire a boat and anchor it next to the island.

You choose the first option, hock the Bulgari watch Aristotle Onassis gave you when you saved his pet ocelot in France, and head to your favorite shortwave radio dealer. The lovely lady at the store sells you a spanking new receiver for five thousand smackers.

Now, with sweaty palms and pangs of hunger, you wonder, “What have I gotten for all this money?”

Broad Coverage of Radio Spectrum

ICOM has given us all a chance to find out. They recently introduced the model IC-R9000, which lists in the US at $5,459. That’s dollars, not Polish zlotys, and the price tag is about the same as a new Hyundai.

This professional-grade superset, which is derived from ICOM’s established IC-781 ham transceiver, operates in its U.S. version all the way from 100 kHz to just under 2,000 MHz -- “almost dc to daylight,” as the cute saying goes. This fits in with the recent movement by Japanese manufacturers away from specialized receivers to those that cover all kinds of bands.

The reason for this is that, in principle, the market potential should increase as band coverage increases. After all, the '9000 can be used not only by shortwave freaks, but also by “lowfers,” BCB DXers, VHF/UHF scanner enthusiasts -- even satellite eavesdroppers.

But the problem is that all this band coverage is expensive, which almost certainly reduces demand outside the confines of the Pentagon. After all, how many $5,000 radios have you seen at friends’ homes lately?

So the '9000 is not just a shortwave receiver. It’s also a VHF and UHF scanner (we didn’t test those specialized functions, but initial secondhand reports are not encouraging), with an unusual plus: It has a video display that not only indicates the frequency, time and the like, but also shows signals on nearby frequencies.

Video Display Shows Spectrum Occupancy

Let’s start with the display, since that’s the most unusual feature of this set.
What it does is to show an amber pip on the screen for each station that’s on the air within the viewing range of the display. That range is chosen by the listener, and can be plus or minus 25, 50 or 100 kHz. Which is to say, you can see 50, 100 or 200 kHz of spectrum at one glance. This is just fine for shortwave and the AM band, but is not wide enough for some VHF and UHF applications.

Of course, all you see for each signal is a pip. The display doesn’t tell you the names of the stations whose pips you’re seeing.

On the face of it, this would seem to be just gimmick, especially as it is more like a series of slightly delayed snapshots of the spectrum than it is a continuous real-time display. But what we found in weeks of listening is that it can help a bit in bandscanning when you’re DXing.

On shortwave, the display shows even faint signals that you might otherwise tend to pass over when tuning around by ear. In fact, the display is so sensitive that it picks up static and other background noise and spurious signals, as well. But, all in all, for serious DXing the display does have at least some value.

**Big, Beefy Set**

Another unusual characteristic of the '9000 is its weight, and to some extent its size. At 44 pounds, or 20 kilos, this set weighs the same as hefty tube-type sets used to weigh. Its front panel is large, too, so that the display can be fit in.

There’s also lots of room for the knobs and buttons, so it’s not cramped and clunky to operate, the way ICOM’s less expensive IC-R71A is. In general, greater weight and spacious size are pluses, as they often suggest more complex, rugged construction.

**Cornucopia of Features**

Additionally, the '9000, like the 'R7I, has features of real interest to DXers. For example, there’s a breathtakingly deep notch filter that goes to greater than sixty - yes, 60! -- dB down to wipe out heterodynes.

There’s also what ICOM calls IF shift, but which Drake receiver users will recognize immediately as passband tuning -- and it works not only in the SSB mode, but also in the AM mode.

This nomenclature is confusing because on some models what is called passband tuning is what is called IF shift on other models, whereas what is called passband tuning on yet other models is actually a continuously variable bandwidth.

But what it comes down to is that the '9000's IF shift allows you to adjust the receiver to exactly where it provides the best mix of tonal quality and interference rejection for the specific signal you’ve tuned in. It's a real plus.

There are so many other features -- two shortwave antenna inputs, a sophisticated noise blanker, complex scanning facilities, and a thousand tunable memories, for example -- that we'd have to take up a whole article just to cover them. There is a wide variety of I/O ports for computer and other use, and even separate brightness controls for the signal meter and the video display.

Suffice it to say that if there's something you want on a communications receiver, the '9000 probably has it. One of the few shortcomings is that once the set is tuned to a memory channel, you can’t simply switch back to the frequency the set was tuned to before the memory was called in.

**Superior Audio Quality...**

The audio quality of the '9000 is above average for a communications receiver, especially in the lower audio frequencies - even if the built-in speaker, which faces upwards, seems almost like an afterthought. A good external speaker would be a fine addition to this set.

In addition to the tonal plus brought about by the IF shift, the '9000's audio is also helped by the inclusion of powerful...
separate bass and treble tone controls. So, all in all, this is not just a DX receiver - it's also a gift-edged program listening set, as well. When you compare the '9000's commendable audio to the muddy audio found, for example, on the Japan Radio NRD-525, it's like night and day.

...but No Synchronous Detection

This is despite the fact that the '9000 doesn't have synchronous detection. Normally, this would be a real drawback - especially at this price, where you don't expect shortcuts.

But in practice, the set tunes so precisely that you can use the single-sideband controls to select only one sideband with results that are reasonably close to those of a synchronous detection arrangement with selectable sideband. It's not ideal, but it's certainly more than acceptable.

Best Overall Performance of Any Set Tested

Of course, what counts at this price level is performance and quality of construction.

As to performance, the '9000 passed Passport's lab tests better, overall, than has any other receiver we have ever tested. Sensitivity is excellent-to-superb, dynamic range good, and nearly all other measurements are either excellent or superb. Across the board, we found that this attention to good engineering practice translated to DXing reception quality of the highest order.

Certain Excellent Construction Characteristics

As to quality of internal construction, it's clearly above average, with rugged construction throughout and excellent circuit shielding. I was recently at a commercial receiver manufacturing facility, where the sets being made cost as much as some houses, and saw much of the same sorts of construction characteristics that are found within ICOM's '9000.

Another plus is that, unlike ICOM's lesser IC-R71A, the '9000's software makes use of a ROM, rather than a battery-dependent RAM chip. This means that the '9000 will not cease to function because some tiny battery goes dead after years of use.

Nevertheless, the '9000 doesn't have the sort of handy, clean modular circuitry that's found in many other models of professional receiving equipment. Instead, the '9000's boards are interconnected in part by plug-in cables.

Some Unusual Bandwidths for Shortwave Listening

Of course, for this kind of money, you expect something special. But we did find some disappointments.

Easily the main performance shortcoming concerns the bandwidth filter choices. There are three AM bandwidth filters, which is more than the two normally found on communications receivers. These measure 11.3, 7.8 and 2.6 kHz.

All perform superbly, with excellent-to-superb shape factors and superb ultimate rejection of between 90-100 dB down. But while the narrow bandwidth is well-chosen, the medium is too wide for most shortwave listening purposes, and the wide is simply useless except for listening to local mediumwave AM stations.

Indeed, with the medium -- much less the wide -- filter, you can hear a station on an adjacent channel, fully 5 kHz away, almost as loud and clear as if it were on the channel the set is tuned to!

On the '9000, bandwidth choice is dependent on mode, so the AM bandwidths can't be switched in independently for single sideband, which has its own bandwidths. SSB filter performance is superb, but the two bandwidths have almost identical characteristics: The wide measures 2.8 kHz, while the narrow is an almost-identical 2.5 kHz. You can hardly tell the difference.

We've talked with two major American ICOM dealers, Electronic Equipment Bank and Universal Shortwave, and both have indicated that they plan to make available substitute filters with more suitable bandwidths in the very near future.

EEB's Collins AM filters will have bandwidths of 4 and 6 kHz, which should clear up the problem nicely. Nothing has yet been determined concerning a more suitable second SSB bandwidth, but presumably this will be made available, too.

Distortion Occasionally Found with Powerful Signals

The other performance shortcoming is that when very powerful signals are received and a good outdoor antenna is used, on our unit there was "breakup" distortion -- regardless of how the AGC and other non-attenuator controls were adjusted. This disappears when either or both of the attenuators are switched in, but this really shouldn't be happening on a set with this kind of price tag.

Quality of Front Panel Controls Only Average

Similarly, the quality of the front-panel controls is only average. Plastic knobs are held onto short shafts only by friction, and when our set arrived from ICOM one knob was already loose. Additionally, the keypad -- although it is laid out in the familiar sequence found on telephones -- is
small, with buttons that are too wiggly and vague for a device that is supposed to be of professional caliber.

**Power Supply Runs Hot**

Worse, the power supply, even though it has a large heat sink, runs quite hot, and heat is a great enemy of component life. On our sample, we found the set failing after it had been turned on for a half hour after we had had it for only a few weeks. Eventually, it died altogether.

Apparently no other samples sold have had this problem, and as our set was only the 15th one built, presumably what we encountered was a teething problem not uncommon in early production of complex new devices. But high heat shortens component life and, again, major dealers are coming to ICOM's rescue by devising ways -- better heat dissipation or the addition of computer-type fans -- to make the set run cooler.

**The Bottom Line**

All that having been said, the bottom line is this: The ICOM IC-R9000, with at least one changed bandwidth filter and better cooling, qualifies as the best shortwave communications receiver we have ever tested.

Although *Passport*'s chief monitor finds the Japan Radio NRD-515's controls to be more appropriate than those of the '9000 for hour-after-hour bandscanning, the rest of us that operated the '9000 all enthusiastically give it top honors. This set, with the dealer changes mentioned, should be a gem.

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**MONITORING TIMES**

August 1989
Improving Receiver Audio Quality with an Audio Graphic Equalizer

by Roger D. Dowd

An easy and effective way to improve the audio quality of your scanner or shortwave receiver is to use an audio graphic equalizer.

While more expensive shortwave receivers provide sharp filtering for Continuous Wave (CW) and Radio Teletype (RTTY), they may provide little or no audio filtering or only fixed Single Side Band filtering. Less expensive shortwave receivers and most scanners often come with no audio filtering at all.

CW and RTTY filters are much too sharp for audio filtering and SSB filters, as mentioned, are fixed and cannot be varied for other types of signals. By using a graphic equalizer, we can tailor the audio to our particular need.

A graphic equalizer is a device that consists of a number of fixed audio filters, each having its own volume control. Graphic equalizers are used mainly in home and auto stereo systems to compensate for excessive loss or boosting of frequencies because of inadequate speaker systems, amplifiers, poor room acoustics, and so forth.

Each filter frequency is called a "band." Graphic equalizers may have as few as three bands or as many as 20. Different manufacturers often select different frequencies to represent the bands. For example, one graphic equalizer may have 500 Hz, 1 kHz, 5 kHz, etc., while another manufacturer may have 450 Hz, 1.5 kHz, and 5 kHz, etc.

With careful adjustment of the graphic equalizer controls, we can boost useful information while attenuating everything else. Or, if we desire, we can notch out one or more select frequencies, leaving the others alone or even boosting them at the same time.

In effect, what we have is a variable bandpass filter and a variable notch filter all in the same box. Obviously, the more bands that the graphic equalizer has, the sharper each band will be increasing the notch and bandpass resolution of the graphic equalizer.

As mentioned earlier, the better receivers will provide filtering for CW and RTTY, but what about Facsimile (FAX), Slowscan TV (SSTV) and other forms of telemetry, each of which have different bandpass characteristics? The graphic equalizer will allow you to change the audio bandpass of your receiver to meet a particular need.

When used with a scanner, a graphic equalizer can work wonders on weak and noisy signals. A signal that is barely discernible through all the popping, frying and other forms of static will come through loud and clear with the proper equalizer settings.

Two Types of EQ

There are basically two types of graphic equalizers on the market. One is an "inline" type commonly found in home stereo systems. It needs an external power amplifier to drive the speakers. This type of graphic equalizer is most often found to have ten to twenty bands.

The other type, which I like to refer to as an "outboard" type, is most commonly found in car stereo systems, and usually has only three to seven bands. The car stereo graphic equalizer almost always has a power amplifier to drive the speakers directly. Its input is taken from the tape player or radio speaker outputs.

Home stereo graphic equalizers usually come with separate controls for the left and right channels, while the car stereo graphic equalizers usually have one set of controls for both channels. Combining the two channels into one set of controls as well as the reduced number of bands makes it easy to adjust the car stereo graphic equalizer while in traffic.

Wiring up the equalizer is fairly easy and straightforward. But before you tear open your receiver/scanner and rip the graphic equalizer out of your car, read this article thoroughly! Be aware that opening your equipment may void any existing warranties! Neither the publisher nor the author will assume any liability for any damages to your equipment relating to this article.

Connecting the "Outboard" Model

The outboard or car stereo graphic equalizer is the easiest to use and requires no modification of either the scanner/receiver or the graphic equalizer. If you are (understandably) squeamish about performing surgery on your receiver/scanner, then the outboard or car stereo graphic equalizer is for you. It will require a 12.6 VDC 2 AMP (at least) power supply. Booster type equalizers may require a higher amperage.

Nearly all receiver/scanners are equipped with an earphone jack. Use the audio from the earphone jack to drive the outboard graphic equalizer. The typical car stereo graphic equalizer comes with a minimum of six wires not including the power supply leads.

Some models may have more wires and may come with auxiliary power leads intended to power another device through the equalizer. These wires are often identified somewhere on the graphic equalizer. Be very sure you know what each wire is before you start hooking up the graphic equalizer to your receiver/scanner or you could wind up "smoking" the graphic equalizer and/or the receiver/scanner.

Follow the same procedure for wiring up the outboard graphic equalizer to the receiver/scanner as you would for wiring up to a car stereo. Only one channel of the graphic equalizer will be used. Be sure that if you use the LEFT channel input, that you also use the LEFT channel output.
Wire a connector that matches the earphone plug of your receiver/scanner to the AUDIO input wires of the graphic equalizer. Solder an 8 to 16 ohm load resistor to the output of the unused channel. This load resistor must be EQUAL to or GREATER in wattage than the channel it is wired to. Failure to install the load resistor may destroy the power amplifier for that channel.

(If it is quite possible, if you wish, to wire one channel up to a scanner and the other channel up to a shortwave receiver. This might make it difficult, however, to use both receivers at the same time.)

Before you apply power, be very sure you have everything wired up properly and that the volume control of the receiver/scanner and the graphic equalizer are at a minimum. If the graphic equalizer has a fader control, set the fader control to mid range position. Apply power and slowly adjust the volume controls of the receiver/scanner and graphic equalizer. If the graphic equalizer has a BYPASS switch, make sure it is set in the "equalize" position.

If you get no sound, immediately turn everything off and recheck ALL your wiring. Once you have everything working, adjust the graphic equalizer for the best sound possible.

Experiment with different settings and adjustments. Even similar devices, such as two-way radios, will have different band-pass characteristics. Compare the difference between "normal" audio and "equalized" audio by alternating with the BYPASS switch. You can really appreciate the difference on weaker signals.

**Wiring the "In-line" Equalizer**

The in-line home stereo type equalizer will require some modification to your receiver/scanner. Despite this fact, the inline graphic equalizer is the one I prefer. This is because, at will, I can hook up practically any kind of inline graphic equalizer simply by plugging in the one I want. This modification also provides a handy output for a tape recorder or external power amplifier.

First, drill two 1/4-inch holes approximately 1 inch apart at some convenient place on your receiver/scanner, and install a female phono plug in each hole. You will then need to locate the volume control potentiometer (pot). It is here that you will "break in" and "place" the graphic equalizer (see fig. 1).

Turn on the receiver, and using a signal tracer, find the "high" side of the pot. This is the contact that has a signal that does not vary with the pot setting.

If you don't have a signal tracer, you can make one just about any cassette tape recorder. Make up a test cable from about two feet of microphone cable. On one end install a connector to fit the AUXILIARY (AUX) or MICROPHONE
(AUX) jack of your cassette recorder. On the other end of the cable, solder a .01 uf 25V or greater capacitor (CAP) and place some heat sink or sleeving on the free lead of the CAP leaving about 1/8 inch of lead bare.

Use this lead as a simple probe to find the "high" contact (see fig. 2). Plug a small speaker or headphones into the EAR jack of the cassette tape recorder and put the cassette tape recorder into RECORD mode by inserting a blank cassette and pressing RECORD and PLAY.

Be very careful not to short any pins or contacts while probing around.

Once you have found the "high" contact, desolder the wire from this contact and run it to one of the phono jacks. Label this jack OUTPUT (to equalizer). Using only the shortest length of wire necessary (AWG 28 gauge), run a wire from the contact left bare to the other phono jack. Label this jack INPUT (from equalizer).

If the pot is mounted on a circuit board (as was the case with my scanner), find the "high" contact on the circuit board in the same manner described previously. Once you have found the "high" side contact on the circuit board, locate the trace that runs to this contact. Carefully cut completely through this trace using a sharp craftsman knife and remove approximately 1/16 inch of trace.

Scrape back the lands at the break point about 1/4 inch on each side of the break until the copper is shiny. Carefully tin the exposed copper surface on each side of the break, taking care not to bridge the break with solder (see fig. 3).

Locate the trace that connects to the pot. Using the shortest length of wire necessary, solder one end of the wire to one of the phono jacks and label this jack INPUT (from equalizer). Using the same procedure, solder a wire to the tinned area of the remaining trace. Solder the other end of this wire to the remaining phono jack and label this jack OUTPUT (to the equalizer).

Next, make a jumper by taking a 2-inch piece of AWG 20 gauge wire and solder a male phono jack at each end (see fig. 4). This jumper will be needed whenever you use your receiver/scanner without the graphic equalizer.

When you're all done, double-check your work, making sure your solder connections are good and that there are no solder bridges anywhere. Once you are sure that your work is okay, apply power to the graphic equalizer and the scanner/receiver. If you get no sound turn everything off and recheck your work.

If you get sound but the equalizer controls have no effect, make sure that the BYPASS switch is in the proper setting. Most graphic equalizers come equipped with a bypass switch to let you return to a "normal" setup. BYPASS may be part of the ON/OFF switch function.

If you still aren't getting any sound, make sure you have the patch cable going to the proper inputs and outputs of the graphic equalizer and the receiver/ scanner. When you are positive everything is working okay, put your receiver/scanner back together.

Where to find a graphic equalizer

Graphic equalizers are relatively inexpensive, depending on the type and size (number of bands) that you purchase. More often, you will find bargains on used graphic equalizers through yard sales and flea markets.

You may find "giveaways" with only one channel working because it is cheaper to replace it with a new one than to have it fixed, and since you will likely be using only one channel, you can't go wrong. I picked up a little five band equalizer for $3.00. One channel was burned out, but the other channels works great.

I also picked up an inline seven band Realistic (Tandy Corp.) at a ham fest for $5.00. I repaired a cold solder joint in it and now it works like brand new. The outboard equalizer is hooked up to my shortwave receiver while the inline equalizer is hooked up to my scanner. As mentioned, both work great.

An advantage to the inline graphic equalizer that I did not mention earlier is the ability to cascade the left and right channels (providing both channels work). By feeding the left channel into the right channel (or the other way around), this will increase the overall selectivity of the graphic equalizer (see fig. 5).

The Realistic equalizer that I am currently using is a model 12-1867 seven-band Car Stereo Frequency Equalizer. It currently sells for less than $50.00 new. The specification sheets on this particular equalizer say that the unit will boost the signal 12 dB and attenuates the signal 12 dB (from flat response). Combining the left and right channels will increase this range, if not double it (I don't have the test equipment to say precisely).

Every graphic equalizer is different, so check with the manufacturer's spec sheet if it is available. I do not recommend this procedure for the outboard type equalizer!

Remember that although the graphic equalizer will enhance your receiver/ scanner's audio, it can do little to improve poor receiver design. The graphic equalizer will not increase receiver selectivity (adjacent channel interference). Only good IF filtering can effectively do that. The graphic equalizer will reduce noise and other unwanted interference.

My thanks to Kevin Haywood, N4QVC, and John Huff, KE4WT, for their help and encouragement. I hope you will find this project both useful, informative and fun. Enjoy!

About the author: Roger Dowd, WA4QAS, is an Electronic Technician and an Advanced Class Amateur Radio Operator. His hobbies include packet radio, computers, SWLing and building and experimenting with all types of electronic projects.
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www.americanradiohistory.com
by Charles Sorrell

Balkanize: to break up (as a region or group) into smaller and often hostile units. So says the dictionary.

That about sums up the story of the Balkans, a collection of small states that periodically break up into even smaller units, combine into larger empires, and break up again. The process can be as fascinating as it is tragic to watch.

The early history of the region showed the Turks winning and holding area from the 1300s until 1912. Several years later, the Balkans -- specifically Yugoslavia -- hosted the opening ceremonies for World War II, the assassination of Archduke Ferdinand, the heir-apparent to the Austro-Hungarian throne.

But this is the kind of hand that history dealt to the Balkans. Certainly not bad hands, like those dealt to Bangladesh or Ethiopia, but enough to cause friction today. Border changes after World War II, for example, left more than half of Albania's population in present-day Yugoslavia. Today, Yugoslavia is accused of repression, even genocide, against this minority. Romania is accused of mistreating its Hungarian minority. And on it goes.

All of its failings and troubles aside, the Balkans are at least well-represented on shortwave. All six nations of the region can be tuned in with English programs beamed to North America. And each allows us to sample some of the region's flavor through the features and music they air. We also can get a healthy helping of the mutual hostility that still pervades this region.

Here's a look at where and when to tune for the Balkan broadcasters:

Albania

Good old Radio Tirana -- the butt of shortwave listeners' jokes for decades -- airs five half hour broadcasts in English to North America daily. These are from 2330-0000 on 9760 kHz, 0230-0300 on 9500, 0330-0400 on 9500, 0430-0500 on 9480 and 0530-0600 on 9500 kHz.

There have been some signs of improvement in Tirana's programs but most listeners would probably agree that with the exception of the music, Radio Tirana is as dull as ever. One mainstay of the station's programming -- long readings about or by Albania's revered leader, Enver Hoxa -- remain, despite the fact that he died some time ago.

To be fair, however, Albania has been opening its doors ever so slightly. There even seems to be a good chance that the first ham radio DXpedition to this country may occur next month.

DXers will want to try for the home service outlet, Shqiptar Radio at Gjirokaaster, which operates on 5057 kHz from 0400 to 2200 UTC in Albanian. Chances are you won't understand a word of the program but long stretches of local music speak a universal tongue.

Bulgaria

The Soviet Union's closest Eastern European ally still maintains a pretty hard line despite Russia's requests to "ease up" a bit. On shortwave, Bulgarian radio broadcasts to its Balkan neighbors in all applicable languages except Romanian.

Sofia's 250/500 kilowatt transmitters beam English to North America at 0300-0400 UTC on 11735 kHz, 2300-0000 on 9700, 11720 and 11735 and to Europe and North America at 2030-2100 on 9700, 11720 and 11735 kHz.

Like Albania, Bulgaria also transmits local programs over shortwave and DXers will want to check out the home service transmitter at Stolnik which is on the air with 150 kilowatts from 0400 on 7670 and from 0830 on 11765 kHz. Some of the foreign service programs are from transmitters at Plovdiv, also used by the Soviets to relay broadcasts of Radio Moscow.

Greece

The Voice of Greece airs English to North America in little ten minute news lumps that are nestled within an otherwise all-Greek-language broadcast. English is on at 0130 on 7430, 9420 and 11645; 0340 on 7430, 9395 and 9420; 1235 on 9905, 11645 and 15630; and 1535 on 11645, 15630 and 17565. Incidentally, there is a service intended for the Balkans at 2000-2050 UTC on 7430, 9395 and 9425 kHz.

Regional station Radiofonikos Stathmos Macedonias at Thessaloniki, a one-time Voice of America relay, is no great challenge. You can hear this one in Greek from 1000 (Sundays from 0600 ) to 2255 UTC on 9935 and 11595 kHz. The Voice of Greece makes use of the 250 kW VOA Kavala relay, in addition to its own 100 kW station at Avlis.

Romania

Romania still marches to Stalin's tune and seems uninterested in loosening up, unlike some other East Europeans. Radio Bucharest has, for years, aired an hour of English to North America at 0200-0300 and has been pretty stable in its frequency usage as well. On the other hand, it is one of the toughest stations to receive clearly. Try 5090, 6155, 9510, 9570, 11830 and 11940 kHz. A half hour English segment airs at 0430 UTC.

Turkey

The Voice of Turkey is an easy tune. English to North America is at 2200-2300 and 0300-0400 on 9445 kHz. If you're interested, there's a service in Turkish intended for the Balkans which airs from 1700-2100 on 5980, 0300-0500 on 6140 and 1000-1230 (in various languages) on 11875 kHz.

Programs on the Voice of Turkey are rich in history and culture but short on animation. One visitor to the station reported bored announcers reading articles out of newspapers, magazines and even encyclopaedias in...
an effort to fill air time. Still, the station treats its listeners well in other ways, providing a number of all-expense-paid trips to the country each year.

DXers will also be interested in a couple of more difficult targets -- Turkish Police Radio (a broadcaster, despite the name) on 6340 kHz from 0558 UTC sign on, all in Turkish, and Turkish Meteorological (also a broadcaster and not a utility station) on 6900 kHz from its 0358 sign on. Both of these can sometimes be received at quite good levels.

**Yugoslavia**

It used to be one of shortwave journalism's standing jokes. For years, whenever there wasn't any news to report, writers used to fill with "Radio Yugoslavia is expecting to put its new facility on the air shortly..."

Well, after what seemed like decades of waiting, the station did get its 500 kW behemoth on the air -- and in the process added some new times and frequencies for English broadcasts to Europe and North America. Currently, the 0000 airing on 7215, 11735 and 15105 is being heard well on the latter two frequencies.

The station also recently began using the 11 meter band and has been heard signing on at 1158 UTC on the dizzyingly high frequency of 25795 with an English broadcast.

Radio Yugoslavia gives shortwave program time to local radio stations as well. Even though there is virtually no English used, it's still fun to try and hear all of these.

The overall schedule is somewhat cumbersome so we'll present just the most widely heard one here: 5980, 7240 and 9620 kHz from 2100 to 2130 (winter) and 2000-2030 (summer). Winter offers the better opportunity to hear these. Check for the following:

Radio Beograd in Serbo-Croate on Sundays; Radio Lubljana in Slovene, German and English on Mondays; Radio Zagreb in Serbo-Croate on Tuesdays; Radio Sarajevo in Serbo-Croate on Wednesdays; Radio Pristina in Albanian on Thursdays (2100-2115) and Radio NoviSud in Hungarian on Thursdays at 2115-2130. Radio Titograd is in serbo-Croate on Fridays and Radio Skopje in Macedonian on Saturdays.

QSL hounds will enjoy trying to verify these. Most of them do reply and some have quite nice QSL cards. Radio Yugoslavia itself, on the other hand, can be in a "yes" mode today and a "no" mode tomorrow so getting a QSL out of them is largely a matter of luck and persistence.

The rest of the foreign services from the Balkans are pretty easy to QSL. Radio Sofia, however, doesn't like to issue cards for the Plovdiv or Stolnik sites and the two Turkish 6 megahertz broadcasters can be troublesome.

By and large, though, hearing and QSLing the Balkan broadcasters isn't something you'll have to sweat over very much, which makes it a perfect DX activity for what's left of the summer.

Radio Bucharest, Romania

Radio Sofia, Bulgaria

Radio Tirana, Albania

MONITORING TIMES
August 1989

19
Television’s First Fifty Years

On April 29, 1939, David Sarnoff, president of the Radio Corporation of America (RCA), stood before television cameras at the opening of the New York World’s Fair and proclaimed “the birth of an industry.” Ten days later, Franklin Delano Roosevelt became the first president to appear on commercial television, formally dedicating a fair whose theme was “The World of Tomorrow.”

Only a few viewers — mostly connected with the broadcasting industry — were able to witness this historic event on television, and they were confined to New York and vicinity. Many more spectators witnessed the event live at the fairgrounds at Flushing Meadows, Queens.

Sarnoff’s proclamation, followed by the start of regular televising by NBC, is generally regarded as the birth of commercial television in the United States. The RCA Pavilion demonstrated to fairgoers some of the first televisions, which formally went on sale at the fair’s opening. There were two principal models: a five-inch set for about $200 and a “giant-screen” 12-inch for $500.

The 12-inch tube, with a round face masked off into a pumpkin shape, was so long that it had to be mounted vertically so the cabinet would fit through a standard doorway. Its screen faced upwards and was reflected in a mirror in the hinged lid of the cabinet.

The RCA televisions were joined at the fair by several other all-electronic receivers. There were sets bearing the logo of Allen B. DuMont Laboratories, and these actually were the first ones to appear on the market, beating the RCA models by a matter of days. Also supplying sets at the time were Andrea Radio Corporation, General Electric, and Philco.

On the Air!

The debut of commercial television broadcasting was the result of many years of experimentation. “Television” itself had become a familiar word long before there was an available product or service by that name. In fact, the first recorded use of the word dates back to 1900.

Television, it turns out, was the result of several inventions which took place throughout the world. As early as 1884, experiments were being conducted in Germany which led to the formation of mechanical television. Scientists in Russia and England also worked toward the development of television during the early 1900s.

But it wasn’t until the 1920s, however, that TV really began to take shape. In the United States, two pioneers, Philo Farnsworth and Vladimir Zworykin, simultaneously developed electronic television systems. The first experimental station permits were issued by the government in 1928, and after a few sporadic broadcasts, regular weekly broadcasts were presented in Washington by Charles Francis Jenkins, a TV pioneer who also was the inventor of the modern motion picture projector. Prior to the 1939 fair, however, television was an innovation enjoyed only by hobbyists from within the radio industry.

Once TV was introduced to the public, however, the Federal Communications Commission (FCC) realized the potential for rapid growth and asked that proposals be developed for standardizing transmissions.

Hardly had the FCC finalized the specifications for television broadcasting when the United States entered World War II, and all TV set makers converted to military electronics. The lessons of wartime production sharpened the skills of the manufacturers, and after returning to television production, sold 6,000 TVs in

When David Sarnoff dedicated RCA’s pavilion April 20, 1939, it marked the first time a news event was ever covered by television cameras. General Sarnoff’s speech, “Birth of an Industry,” predicted television would become an important entertainment medium.
1946. By 1948, television was a 226 million dollar peacetime business with the total number of receivers produced rising to three million in 1949. Consumers stood in line to buy them.

In light of this boom, it was obvious that more stations would be added to the 107 already in existence across the United States. In 1948 the FCC instituted a freeze on all new station grants while it formulated plans for the orderly expansion of television. Four years later, it came up with a nationwide allocation plan which allowed for 70 channels in the new ultra high frequency (UHF) spectrum. Up to that point, all stations were in the very high frequency (VHF) spectrum, and the VHF band simply could not accommodate the many stations destined to appear in the future.

America’s television viewing audience also expanded during this time, thanks to the emergence of cable TV in 1948. The origin of cable has been traced to both Mahoney, Pennsylvania, and across the country to Astoria, Oregon, where enterprising individuals in areas too remote to receive broadcast signals began to devise ways to use coaxial cable to bring the signals down from nearby mountain tops into their towns. Word of the wonders of television spread quickly, and despite a rocky history, the cable industry has grown to the point where 52 percent of American households now utilize cable.

The first movement toward color television occurred around the same time cable was getting started. In 1947, the Columbia Broadcasting System (CBS) approached the FCC to issue standards for color television based on a system developed by CBS engineers. Many broadcasters and most television manufacturers, submitted to the Federal Communications Commission (FCC).

1939 - (April 20) The first public broadcast of television takes place at the New York World’s Fair.

1940 - (January) FCC holds hearings on proposed television standards. Controversy over the standard setting process leads to the creation of the National Television System Committee (NTSC) to study alternatives and recommend a final standard to the Commission.

1941 - (July 1) The NTSC proposed monochrome standard (525 lines per frame; 4:3 aspect ratio; 6 MHz channel, etc.) is adopted by the FCC.

1945 - Nine commercial TV stations are on the air.

1947 - Annual television production reaches 175,000 receivers.

1947 - RCA, working with the FCC, forms three engineering committees to analyze feasibility of color telecasts.

1948 - (April 18) The RCA helps form a Joint Technical Advisory Committee (JTAC) to study the possible allocation of frequency from 216 to 300 megacycles for color television.

1949 - (September 19) At its Board of Directors meeting, the RCA announces a broad policy outline to govern RCA recommendations to the FCC on color television. Among other criteria, RCA supports "a compatible color system in which monochrome will not deteriorate in quality."

1950 - The FCC chooses a color TV system incompatible with existing black and white sets as the national standard.

1950 - A second NTSC is formed to develop standards for color broadcasts, as RCA believes the color broadcast situation is more complex than monochrome and calls for a monochrome compatible standard.

1950 - Television receiver production reaches 5.2 million per year.
The RMA, opposed the CBS standard, because it was incompatible with the existing black-and-white system.

The RMA was successful in blocking this first attempt, but in 1950, midway into the FCC freeze on TV station expansion, the FCC heeded pleas by CBS that color broadcasting be permitted. The Commission accepted the CBS field-sequential system, as it was the only color system ready for use at that time.

The CBS system provided good color, but because no color tubes had been developed at the time, it required a spinning disc divided into red, green, and blue transparencies in front of a black-and-white picture tube, known throughout the industry as the CBS 'Fly Wheel' system. Because it was incompatible with the current black-and-white system, however, the vast majority of viewers could not watch the broadcasts, even in black-and-white, without modification. Industry dissatisfaction with the CBS system led to the formation of a second NTSC which was compatible with existing sets.

Meanwhile, major changes were occurring in the technology of the TV set. The most important, starting in 1967, was the elimination of receiving tubes, and the emergence of the solid-state TV set, with no tubes except the picture tube. This move resulted in substantial energy saving, longer equip-

1950 - 140 firms are manufacturing TVs.
1951 - "I Love Lucy" series begins.
1953 - NTSC color system approved by FCC.
1953 - (December) The FCC reverses its 1950 decision and adopts the NTSC developed compatible color television system after a three year battle over the standards.
1954 - Regular transmission of color programs begins.
1956 - The first generation of color receivers enters the marketplace.
1956 - Start of black and white portable era.
1956 - Only 50 companies are still manufacturing TV's.
1956 - Videotape recording introduced to TV stations.
1960 - First battery-operated transistorized TV is offered to the public.
1962 - Color television penetration of U.S. households reaches 1.2 percent.
1962 - Congress passes a law requiring all new TV sets to be able to tune all channels.
1963 - Annual factory sales of television sets, including color TV, passes the $1 billion mark.
1963 - First home videotape recorders demonstrated.
1964 - The all-channel receiver bill becomes law ending the VHF vs. UHF battle that has raged for a decade.
1964 - (April 30) Complete conversion to all-channel receiver production (capable of receiving both the 12 VHF and 70 UHF channels in existence) is made resulting from the FCC adoption of EIA's recommendations.
1965 - An all time peak of 8.4 million units for monochrome television factory sales is reached. After 1965, monochrome sales figures decline while color TV sales increase.
1967 - 94 percent of the nation's estimated 60 million households have one or more TVs.
1967 - Solid state color sets marketed.
1967 - For the first time, the Consumer Price Index (CPI) includes TV set prices in its statistics.
1968 - First generation of automated television assembly equipment (a technology perfected by Japanese firms) is in operation. This leads to drastic reductions in assembly manhours.

Late 1960s - Technological thrust of American and foreign TV manufacturers is heading in opposite directions. U.S. manufacturers rely upon tried and true tube technology and concentrate on producing large sets. Japanese firms specialize in smaller units which incorporate semi-conductor technology and automate the assembly process to cut production costs.
1970 - First all electronic TV tuners, without moving parts, introduced in the U.S.
1972 - First home color videocassette recorders marketed.
1973 - Two landmarks in color TV sales are reached; production exceeds ten million sets and factory value passes the $3 billion mark.
1974 - Home projection TVs introduced.
1976 - 35 percent of color TVs sold in the United States are imports.
1978 - The number of color sets in use exceeds black and white.

TV camera men at the 1939 New York World's Fair. Only a few people in the New York area -- mostly connected with the broadcasting industry -- were able to view this historic event on actual television sets.
ment life and the virtual elimination of many -- perhaps most -- TV set failures.

Technology's advance is continuing -- even accelerating. In 1984, the FCC approved the start of true stereo audio broadcasts by TV stations. Though the Commission did not specify a standard, TV set manufacturers and broadcasters adopted the system recommended by the EIA Multichannel TV Sound Subcommittee.

All three commercial TV networks, the Public Broadcasting System (PBS), and many local stations now feature stereo audio on regularly scheduled and special broadcasts. In addition, some big-screen TVs now include surround sound, making use of matrixed directional clues in the sound channel. Digital television circuits have made possible improved definition TV (IDTV), which doubles the number of scanning lines, giving the impression of higher resolution.

Now, 50 years after its introduction to the American public, television is on the brink of yet another revolution as significant as any in its history -- the move to high definition television (HDTV). Once introduced, HDTV will provide viewers with a widescreen picture sharpness equal to a 35mm motion picture and the audio quality of a compact disc. It will encourage the development of life-size screens, and because of the greater resolution, it will invite viewers to sit closer, to immerse themselves in the picture.

With more than 160 million TV sets now in use and a record number of color TVs sold in 1988 (over 20 million), it is undisputable that television has become a major part of the American lifestyle.

1980 - Closed captioning of TV programs for hearing-impaired begins and decoders go on sale.
1980 - Only five U.S.-owned companies still manufacture TVs.
1982 - First flat-screen personal portable TV introduced.
1984 - The FCC approves stereo audio broadcasts by TV stations, by protecting stereo transmission signals. TV set manufacturers and broadcasters adopt the standard recommended by EIA.
1984 - Black and white "pocket" TVs are introduced.
1984 - First stereo TV broadcasters begin and sales of MTS color TV receivers and adaptors start.
1986 - 90 percent of American homes have color TV.
1987 - Over 3.5 million black and white television sets are sold to retailers in the United States. All are imported, virtually all are portables or table models, and more than 50 percent are designed for battery or battery-AC operation.
1987 - First Advanced Television (ATV) and High-Definition TV (HDTV) systems demonstrated in the U.S.
1987 - More than 19 million color TV sets are sold to retailers.
1987 - (December) General Electric's consumer electronics manufacturing facilities are sold to Thomson Consumer Electronics.
1988 - Twenty companies are manufacturing color televisions in 30 U.S. cities. Only two of these companies are U.S. owned. Annual domestic television production is over 16 million.

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**AFGHANISTAN** Radio Afghanistan, in English at 1900-1930 UTC is now on 15510 and 11755 kHz (Dave Kernick, England, RCI SWL Digest) This is probably still via relay transmitters in the Soviet Union though political changes may put an end to this arrangement.

**ALASKA** KNLS has big plans. The station says that by 1992 it will not only move its production facilities from Ohio to Nashville, Tennessee, but that it will find a relay site capable of enabling the station to cover the Mediterranean and Europe. (My Wave, via SW DX Guide, via Australian DX News)

**ARGENTINA** (?) Gabriel Ivan Barrera of Argentina reports that a mysterious pirate called “Aeromusica” has been heard almost daily in Santiago, Chile. The station, which has 1000 watts on 6544 kHz, broadcasts from around 0200 to 0220 UTC with a program of melodic music. The announcer does not give his name or the station’s location, however, his accent points to the Argentine border area with Chile. (Radio Nederland Radio-Enlarge)

**ASCENSION** The BBC relay here is adding two new transmitters to the four already in use; also, antennas for Africa, South Africa, Central Africa, South America should be ready sometime this month.

Improved audio processing has been originating from London but now each relay station will get Optimods specially made for shortwave. (Jeff Spells, BBC Transmitter Planning Unit, Radio Netherlands Media Network) This should also allow more flexibility and increased relay swapping with VOA, perhaps other stations. Though never designated for North America, Ascension often provides better BBC signals in parts of North America than any other site.

**AUSTRIA** Radio Canada International seems never to have solved the problem of keeping its own and relayed station program feeds straight. More than once, the BBC relay on 9515 after 1200 has been replaced by Austria in German. (William Westenhaven, Quebec, World of Radio) If you find Moscow in Chinese blocking Austria in English as usual on 17870 at 1130, give 9515 a try for another slip-up!

**BELIZE** Radio One was surprisingly strong around 0200 on second harmonic 6570, and again at 1140 (not to be confused with Burma): new transmitter? (Bob Wilkner, DX South Florida via Radio Nuevo Mundo)

**BOLIVIA** A new station is Radio Perla del Agro, in Cobija, Pando, on 4600.0 kHz, heard from 0150 to sign-off at 0252 UTC, another closing abruptly at 0229. (Gabriel Ivan Barrera, Argentina, W.O.R.)

**BRAZIL** Another new station is Radio Nova Esperanca, Porto Alegre, heard at 1900-2001 on both 6160 and 9550; gospel programs. (Barrera, ibid.)

Radio Anhanguera on new 6080 from 0130 to fade at 0300, perhaps a move from 4915 though Rado Maruni planned to use 6080; parallel to weaker 11830. (Ernie Behr, Ontario, SWLD)

Radio Globo, Sao Paulo, heard at 1943 on fourth harmonic 24480; then at 1947, Radio Globo in Rio was heard on 24830, which does not work out to be a harmonic. (M. Molano, Spain, Play-DX)

BBC Spanish relay via Brasilia is to stop in September due to the high cost of feeding programs to the site. (Jeff Spells, BBC, RNMN) This has been on 15175 at 1100-130, following two hours of English. A roundabout routing has had to be used, with poor audio quality resulting.

**COLOMBIA** The station on 6150 has a new ID, Radio Reloj de Neiva, no longer CARACOL, and not parallel to 4945.3; heard all night from 0300 past 1000. (Ernie Behr, Ont.) La Voz de las Canas is the correct name for last month’s station on 5068. (Giessepe Zella, Italy, Play-DX)

**COSTA RICA** TIASD, Radio Mundial Adventista (Adventist World Radio), also known as Radio Lira Internacional, showed up with a good signal on 11870, including English around 2200-2400, Spanish at 0000-0400, some of it nonreligious; also noted in French from opening at 1210. The schedule may vary on weekends. The first few days it was actually on 11866.7, and announced incorrectly as if on 9725.

**CZECHOSLOVAKIA** Radio Prague moved unexpectedly to 15540 (mixed with Moscow) and 13715 (bothering WRNO 13720 before 0000) including English at 0100 and 0300. Perhaps these replace the poorly-heard 9 MHz band outlets, as it is still on 5930, 7345, 11990.

**CHILE** An experimental Christian action station in Maipu with 70 watts and a 15 meter high antenna is heard daily at 0200-0400 on 1625.3 varying to 1630 kHz; address is Casilla 372, Correo Central, Santiago. (Gabriel Ivan Barrera, Santiago, RN Radio Enlace)

Radio Universidad de Concepcion, 6135 opened at 1010, stronger than the Bolivian Radio Santa Cruz, on 6134.77. (Ernie Behr, Ont.) Our summer/their winter means a nice darkness path as late as 1100, when we heard a traffic report during a network newscast, Correo Matinal de Mineria.

**ECUADOR** Radio Catolica Nacional noted on 5030.1 instead of 5055 until 0205. (M. Molano, Spain, Play-DX) This may be why Radio Impacto, Costa Rica, shifted from 5030 to 5044, at least until 0500.

**EQUATORIAL GUINEA** Radio Africa found on new 7188.9 (occasionally 7188.8) from around 2130 with fundamentalist Gospel programs. Sign-off times vary considerably depending on day of week, as late as 2258 on a Saturday, by which time the signal is outstanding. Still claims to be on 9852. (Bob Hill, MA, W.O.R.) Even though it had
been on 9582 instead for some time.

**Gabon** A late addition to Radio Japan’s schedule was 0000-0030 in Japanese on 21635, via this relay. (Bob Padula, Australia) English heard at 0325 on 21375, a third harmonic from here. (Ed LaCrosse, CA, SWL Digest) Africa Number One replaced 15475 with 9580 at 2100-2300. (William Westenhaver, Montreal, SWLD)

**Guam** KTWR is now scheduled in English: 0805-0930 to Far East on 15210; 0930-1100 to Australia on 11805; 1500-1635 (Monday 1705) to India on 11650. The only program departing (partially) from evangelism is Pacific DX Magazine, Saturday 1000 and 1515, Sunday 0845. (via John S. Carson, OK, W.O.R.)

**Hawaii** KOMQ, Honolulu, which broadcasts only on AM 690 and FM 93.1 says it is not responsible for relays on a military frequency, shortwave 11003 USB, at 0500. Reports are wanted, however, to help track down whoever is doing this. Phone 808-946-2869, or fax 944-0600. (RNMD)

**Indonesia** Programa Nasional is heard on new 15155 at 2200-0100, and again from 0800, apparently replacing 11865. (Craig Seager, Radio Australia) Probably due to the Japanese invasion of 11865 after 1200; but what about Indonesia’s external service on 15150?

**Lebanon** Even after Ramadan ended, Voice of Lebanon, 6549.5, was heard in Arabic from 2300 past 0200, so it seems to be 24 hours. (Bob Hill, MA, SWLD)

World Movement for Liberation of Lebanon seems to be a genuine clandestine, heard on CB calling frequency 27555 USB saying it would broadcast at 0815 on 27855. The five-minute live attack on Syria came on again at 1015, not a taped repeat; in poor English, on a Sunday. (David Ward, England, RNMD)

**Malay** Radio Beijing relays, from 0000 in English, 0100 to 0256 in Chinese languages, heard with superpower signals on 15128.8 and 17714.7, both variable. I don’t believe these arehaled’s old 50 kW transmitters; must be 250 kW or more, though China has never admitted this. 15128.8 puts out strong, noisy spurs on 15006, 15067, 15190, 15252. (Ernie Behr, Ont, W.O.R.) Also at 0300 in English on 15129 and 11715, continuing after the massacre.

**Mexico** Six years ago there was a Mexican broadcaster using the FM mode on 14920. Now an unidentified outlet has been heard around 14570 to 14575 kHz at 0614-0659. (Ed LaCrosse, CA, W.O.R.)

**Nigeria** The “permanent” closing of Voice of Nigeria was short lived. A few weeks later, it was back on 7255 to West Africa at 0830, still a far cry from its heyday of multiple frequencies and targets on higher bands.

**Philippines** Radio Veritas Asia, in English at 1500-1530, keeps changing frequencies; try 15445 and 11740. (via Bruce MacGibbon, OR, DX Spread)

**Sierra Leone** SLBS has reactivated 3316 kHz, fading in at 1950, and with a clear ID at 2110. (Roland Schulze, West Germany, SWL Digest)

**Syria** Damascus concluding English at 2210 on 17710, also noted on equally strong spurs of 17510, 17610, 17810, 17910. (Dave Kernick, England, SWL Digest)

**United Arab Emirates** Abu Dhabi in English at 2200-2400 moved from 11965 to 11985, still parallel 13605. (Mrs. Leslie Edwards, PA, and Ernie Behr, Ont.)

**USA** Don’t forget it’s still possible to hear AFRTS at times on shortwave via SSB feeders, probably in England. 13651 was heard on a Saturday from 2100 with “All Things Considered,” still going strong at 0400 with baseball. (Tim Hendel, FL, W.O.R.) Also heard at various times on lower sideband: 7572, 9242, 9929. Unlike VOA feeders, these drift somewhat, and may be 0.1 kHz higher. (Jim Wishner, IA, W.O.R.)

Here’s the answer as to when KGEI broadcasts in Romany: Saturday 2300-2330 on 5250, UTC Sunday 0500-0530 on 9615. (George Thurman, IL, W.O.R.)

The VOA “bicycle program” tests at 0930 on 9560 came from Delano, they say, so the same may be true of 0700 on 6020 and 2200 on 21535. (Thurman, ibid.)

**Vatican** English to North America is at 0050 on 9650, 11780, 15180; at 0310 on 11725. Try the 21 MHZ band for some off-the-back broadcasts: 1115 and 1200 on 21485; 1200 weekdays on 21515; 1545 on 21650.

**Vietnam** Lai Chau, 6252 at 1215 is one of very few Indo China regionals audible currently. (Peter Bunn, Oz DX) Bac Thai has reactivated 6690 at 1300, and an unID on 4821 at 1215 could be Ha Tuyen. (Hiroshi Fujita, Japan, radio Australia)

**Yugoslavia** Radio Yugoslavia booms in at 0000 on 15105, also announcing 11735 and 7215; also at 2100. (Eric Sweedberg, OR, DX Spread) It seems each frequency goes to widely separated target areas. Judging from comparative reception, 17740 is for North America at 1200-1230.

Read much more about shortwave broadcasting in REVIEW OF INTERNATIONAL BROADCASTING and/or DX LISTENING DIGEST. Samples are $2 each in North America; 7 IRCs or US$3 each overseas airmail. US funds on a US bank, from Glenn Hauser, Box 1684-MT, Enid, OK 73702.

Monitor Glenn Hauser’s broadcasts each week for the latest shortwave and other media news. WORLD OF RADIO is on WRNO, New Orleans, Thurs at 1530 UTC on 11965; 2330 on 13720; UTC Sat 0300 on 6185, 2330 on 13720; Sun 2030 on 15420; also at numerous times on Radio for Peace International, Costa Rica, on 13660, 21566, 25945; listen for announcements.

A separate DX news report concludes each SWL DIGEST on Radio Canada International: Sat 0337, 2107, 2137; Sun 0007, 0107, 2307; Tues 1233, 1907; Wed 0407. See schedule pages.
Shortwave Broadcasting

Broadcast Loggings

Let other readers know what you’re enjoying. Send your loggings to Gayle Van Horn
P.O. Box 1088, Gretna, LA 70053-1088

English broadcast unless otherwise noted.

0000 UTC on 9620
Yugoslavia: Radio Yugoslavia. International news, "The Last Week In Yugoslavia" program, followed by "People and Events" and music. Monitored to 0030 UTC. (Bob Hurley, Baltimore, MD)

0035 UTC on 6755
Clandestine: Radio Patria Libre. Spanish. News, Latin music, and ID at 0042 UTC. (Bob Doyle, Shelton, CT)

0037 UTC on 9630
Spain: Spanish Foreign Radio. Beautiful Spanish instrumental. "Film News" program features movie filmed in the Canary Islands, and interview with Anthony Quinn. News on the Spanish National Theater and an opera selection. (Rod Pearson, St. Augustine, FL)

0046 UTC on 9605

0100 UTC on 6549.4
Lebanon: Voice of Lebanon. (tentative) Arabic. Male/female announcer duo to 0125 UTC. Arabic music selections to signal fade-out. (Bob Doyle, Shelton, CT)

0102 UTC on 9565
West Germany: Deutsche Welle. European news headlines and brief ID break. "Newswline Cologne" magazine show. (Rod Pearson, St. Augustine, FL)

0110 UTC on 6020
Netherlands: Radio Netherlands. "Youth in Holland" program, discussing their attitudes on sex, marriage, and other social matters. (Bob Hurley, Baltimore, MD)

0115 UTC on 6666
Clandestine: La Voz de Alpha 66. Spanish. Discussion about Castro and Gorbachev. Station ID at 0139 UTC. (Bob Doyle, Shelton, CT)

0120 UTC on 4835
Guatemala: Radio Tzulatan. Spanish. Marimba music program. IDs with frequencies at 0136 UTC. Audible on parallel frequency 3370 kHz. (Bob Doyle, Shelton, CT)

0120 UTC on 7355
United States: WRNO. Rock music from Survivor and Chicago. Commercial for Air and Space Smithsonian magazine, and Howard Cosel's sports news. Greyhound Package Express commercial and rock from Poison and Motley Crew. (Frank Hillton, Charleston, SC)

0130 UTC on 7345
Czechoslovakia: Radio Prague. "News Magazine" program with news on summer sports activities and station ID. Weekly report on national economics and featured Czech folk tunes. Audible on parallel frequencies 5930 and 9540 kHz. (Frank Hillton, Charleston, SC)

0130 UTC on 15084

0146 UTC on 9590
United Kingdom: BBC. Country and western music in progress at tune-in. Following by international newscast at the hour. Parallel frequencies audible were 9515, 9410 (fair), 7325, 6175 (fair), 5975, and 6005 kHz (with RSA interference). (Rod Pearson, St. Augustine, FL)

0153 UTC on 5960

0157 UTC on 11745
Brazil: Radio Nacional Brazil. English sign-on with regular program/feature schedule. National news headlines and featured Brazilian musical selections. (Rod Pearson, St. Augustine, FL)

0159 UTC on 13660
Costa Rica: Radio for Peace Int'l. Talk with a physician on public health care. Barely audible under Morse code and utilities interference. (Bob Landau, Secaucus, NJ) Monitored on 25846 kHz from 2151-2141 UTC. (Harold Frodge, Midland, MI)

0200 UTC on 7418.5
Pirates: Radio Free America. Very professional format with taped phone-in program. Business news at 0206 UTC with abrupt sign-off at 0210 UTC. (Harold Frodge, Midland, MI)

0205 UTC on 9475
Egypt: Radio Cairo. Instrumental Egyptian music at tune-in. Discussion on the national economy and station ID. (Rod Pearson, St. Augustine, FL)

0210 UTC on 11730
South Africa: Radio RSA. Political editorial on Mandela. "Africa South" magazine show. (Harold Frodge, Midland, MI)

0210 UTC on 15115
Ecuador: HCB. "Ham Radio Today" looks into the amateur radio hobby in Japan. Weak signal. (Bob Hurley, Baltimore, MD) (Lance Micklus, Essex Junction, VT)

0215 UTC on 12035
Switzerland: Swiss Radio Int'l. "Dateline" with international news. "Swiss Showdown Merry-Go-Round" mailbag show to 0227 UTC. Swiss music to 0230 UTC, switching to German service. (Bob Hurley, Baltimore, MD) Monitored at 2115 UTC on 13635 kHz. (Bob Doyle, Shelton, CT)

0215 UTC on 6215
Pirate: Radio Caroline. Rock music with British announcer. Weak signal under excessive interference and fading. Recheck at 0300 UTC included a clear ID. (Bob Landau, Secaucus, NJ)

0215 UTC on 15140
Chile: Radio Sistema Nacional. Spanish. Music mix of Spanish and English selections to station ID. (Harold Frodge, Midland, MI)

0230 UTC on 11620
Romania: Radio Sucheval. Featured selections from a social poet of Bucharest. Considerable interference from co-channel stations. (Bob Hurley, Baltimore, MD)

0235 UTC on 4955

0239 UTC on 4895

0300 UTC on 9780
Yemen Arab Republic: Radio San'a. Arabic. Open carrier prior to tone and sign-on routine. Marital national anthem, and IDs repeated several times. Frequency quote from announcer to knock rectifications. (Abe Thalpei, Batang, Indonesia)

0303 UTC on 5095
Colombia: Radio Sulatena. Spanish. National Colombian news closing with a time check. Canned station ID and intros for international news topics. (Rod Pearson, St. Augustine, FL)

0304 UTC on 9445
Turkey: Voice of Turkey. Newscast to 0306 UTC "Turkish Press Review." Program feature on National Children's Day. (Harold Frodge, Midland, MI) (Stephen Price, Conenough, PA)

0314 UTC on 5040
Venezuela: Radio Maturin. Spanish. Latin music with station IDs between songs. Poor signal with fading, but clearly audible through bottom of the hour. (Bob Landau, Secaucus, NJ)

0317 UTC on 9690
Spain: Radio Bilingen relay. In-depth discussion about an ongoing archeological dig in northern China. (Harold Frodge, Midland, MI)

0345 UTC on 17705

0345 UTC on 15425
Australia: Australian BC Corp. (ABC). Classic rock music and ABC news at 0900 UTC. Moderate signal. (Bob Landau, Secaucus, NJ)

0346 UTC on 9735

0445 UTC on 3976
Indonesia: Java. Radio Republik Indonesia-Surabaya. Indonesian. Discussion on agriculture to 1008 UTC. Station ID as, "Iniital Radio Republik Indonesia Surabaya program regional Java Timur." Pop music program by Nari Sudarso. (Abe Thalpei, Batang, Indonesia)

0950 UTC on 4881.7
Peru: Radio Nuevo Mundo. Weak signal during Peruvian vocals to 0957 UTC. Male announcer with top of the hour ID. (Frank Hillton, Charleston, SC)

0953 UTC on 6116
Colombia: La Voz del Llanos. Spanish. Local time check and ID for station and Cadena Super network. (Frank Hillton, Charleston, SC)

1000 UTC on 3375

1013 UTC on 11805
Guantanamo: broadcasters. "Radio Bible Class" program, with moderate interference until 1055 UTC for ID and sign-off. (Bob Landau, Secaucus, NJ)

1040 UTC on 11865
Indonesia: Java. Radio Republik Indonesia-Jakarta. English language
program with American pop music and poetic scenario about the sun and mountains. Station ID at 1058 UTC, and interval signal tune ("Song of the Coconut islands") with time tips at 1100. ID as "Radio Indonesia Jakarta program Nacional." Monitored for several consecutive days. (Nick Terrence, Huntington, NY)

1055 UTC on 12015

1100 UTC on 9455

1110 UTC on 3215
Indonesia: Sulawesi. Radio Republik Indonesia-Manado. Closing Jakarta news relay into Indonesian music. Local programming with chimes at 1115 UTC. (Abe Thalip, Balang, Indonesia)

1113 UTC on 11835
Sri Lanka: Sri Lanka BC Corp. (SLBC) News and current affairs to quarter hour time signals and IDs. Extreme co-channel interference and fading until sign-off. (Bob Landau, Secaucus, NJ)

1119 UTC on 3315
Papua New Guinea: Admiralty Islands. Radio Manus. Piggin. Talk from DJ type formal. Typical country and western music to island choral music. Id at 1130 UTC to American pop tunes. (Frank Hillion, Charleston, SC)

1120 UTC on 3220

1210 UTC on 48740
Indonesia: Java. Radio Republik Indonesia-Sorong. Indonesian. News relay from Jakarta, interval signal at 1215 UTC, including time tips. Pop music program suffering interference from PBS Jining on 4875 kHz. (Abe Thalip, Balang, Indonesia)

1215 UTC on 5030
Malaysia: RTM Sarawak, Malay. Lady announcer introduces native Malaysian music. Station ID at 1230 UTC, including time-pips. (Abe Thalip, Balang, Indonesia)

1300 UTC on 9580
Australia: Radio Australia. Newscast followed by "News Weekly" magazine show on credit card rates increasing, as well as tunnel tolls and embarking coast. (Bob Hurley, Baltimore, MD) Heard on 21740 kHz at 2159 UTC. (Harold Frodge, Midland, MI)

1320 UTC on 9775
Bangladesh: Radio Bangladesh. Nepali. Station ID, "yo Radio Bangladesho." Bengali type music with a lady vocalist. Monitored on 4890 kHz from 1410-1420 UTC. (Abe Thalip, Balang, Indonesia)

1330 UTC on 15160
Philippines: Voice of America. World news in special slow-speed script. "Words and Their Stories" program, discussing that soap was invented 2600 years ago by the Phoenicians, as a dressing for wounds. (Bob Hurley, Baltimore, MD)

1350 UTC on 15390
Finland: Radio Finland. "Good Morning North America" show with music and commentary on human behavior. (Bob Hurley, Baltimore, MD) Monitored on 15165 kHz at 0230 UTC. (Harold Frodge, Midland, MI)

1530 UTC on 15630
Greece: Voice of Greece. English newscast until 1539 UTC. Barely audible with extreme noise through the news, with fading. (Bob Landau, Secaucus, NJ)
USAF Coronet Deployments

Several times each year, the U.S. Air Force ferries short range aircraft across the Atlantic and Pacific Oceans. These deployments are needed to get aircraft replacements overseas for exercise purposes, or a variety of other reasons. This month, Mr. U.K. checks in with the story of the "USAF Coronet Deployments."

Coronet deployments which cross the Atlantic Ocean are termed "Coronet East" and those that cross the Pacific, "Coronet West." What follows is the description of a typical Coronet East deployment.

Normal procedures

Aircraft callsigns -- "Retro **" where ** is 11, 21, or 31, etc., for each cell of fighter aircraft. For larger deployments, word callsigns may be different. Tanker aircraft use color type callsigns, i.e. -- "Gold **" or "Blue **."

The larger Coronet deployments use an airborne command post which flies with one of the fighter cells, and uses the callsign "Head Dancer." This aircraft will normally be an EC-135K of the 8th TDCS at Tinker AFB, Oklahoma. The tail numbers are 53118 or 91518 and their general air traffic callsign is "word 10" or "word 20" etc., or they may use numbers 98 or 99.

The "Head Dancer" works through Global Command and Control Stations such as MacDill, Lajes, and Croughton, etc., either using published frequencies or nonpublished discrete frequencies. Discrete frequencies to look out for are 5710, 6757, 9017, 9023, 11180, 11226, 13201, 15038, and 17972.

If a Head Dancer is heard establishing contact with a GCCS station on its published frequency at the beginning of its flight, careful monitoring is required in case the discrete frequency is passed to the flight.

Head Dancer is used for running phone patches to various agencies concerned with fuel offload reports, weather observations, status of the aircraft, estimated time of arrival, and so forth.

Offload reports are relayed from a tanker to the Command Post on military UHF frequencies, but if great distances are involved, discrete frequencies in the HF spectrum are used.

Offload reports are relayed by the Head Dancer aircraft to 2nd ADG Langley AFB (callsign Raymond 01) using a standard format. These are often referred to as JJ reports.

A sample JJ report follows:

Item #1 -- 05 (This refers to the number of the message sent by Head Dancer to Raymond 01, i.e. -5)
Item #2 -- Combo 51 (This refers to the callsign of the lead aircraft in the cell that is being refueled -- they may use the full callsign or just the number)
Item #3 -- 03 (This is the number of the refueling taking place)
Item #4 -- 1225 (This is the on boom time of the first receiver aircraft to be refueled)
Item #5 -- 1248 (This is the off boom time of the last receiver)
Item #6 -- (Estimated landing time -- normally omitted)
Item #7 -- 4.8, 5.3, 5.5, 5.0, 5.1, 5.0 (Amount of fuel off loaded to each aircraft in thousands of pounds, i.e. 4.8 is equal to 4800 pounds)
Item #8 -- On 5459N 04638W Off 5456N 04138W (Position of the start and finish of refueling)
Item #9 -- Ops normal (Any other remarks)

This flight was monitored on 9017 (Croughton) on September 2, 1988, and was the first of two cells (six aircraft per cell) of A-7 Corsair light attack aircraft. These aircraft were flying from Sioux Falls, South Dakota, to St. Truiden, Belgium.

By careful monitoring of items 7 and 8, the direction of the flight and numbers of aircraft can be determined. The amount of fuel offloaded can also provide a clue as to the type of aircraft. For example, 10,000 pounds of avgas is surely the gas guzzling F4 Phantom.

The Head Dancer also maintains contact with "Raymond Metro" (Langley weather) where weather reports are issued using station numbers beginning at one and working upwards.

As the flights progress, station weather reports are dropped or added for relevant airfields in their sector, although destination weather is always included. It is possible to work out some of the stations by the conversations between the Command Post and weather observer, but they are not fixed and vary with each deployment.

As weather is updated from airbases worldwide on the hour, the Meteo officer on board the Command Post aircraft allows a little time for this data to be correlated by the USAF Global Weather Center and for the meteo officer at Langley AFB to extract the weather for the stations of particular interest. Because of this, "Head Dancer Metro," as he is known, usually requests phone patches to Langley at about 20 to 30 minutes past the hour.
A typical report might sound like this:

"Station 12, 2500 scattered, 3500 broken (cloud heights), 7 miles (visibility), 300/15 (surface wind direction/speed in knots)."

Tanker color calligns: tasked from the following bases --

| BLACK  | Seymour Johnson | GREEN | Zaragoza |
| WHITE  | Barksdale       | BLUE  | Mildenhall |
| GOLD   | Pease           | BROWN | Fairford  |
| TAN    | McConnel        | FAWN  | ?? ??     |
| RED    | Loring          | SILVER| Loring    |
| PINK   | Warner Robins   | ??    | March     |

I believe that Coronet West operates in much the same fashion. Since TAC AF is responsible for these operations, and knowing the U.S. government's love for standardization, I fully believe that the west ops would be along much the same line.

Another reader, Mr. GB, has also passed on some information on Coronet operations. The EC-135Ks are also known as TDCA (Tactical Deployment Control Aircraft) and have been in USAF service for a large number of years. In fact, EC-135K (S3118) was the first production KC-135A ever to be handed over to the USAF and was converted to the Command Post role much later in its life. Obviously this aircraft has clocked up a large number of flying hours!

From his own experience, Mr. GB states that the EC-135Ks have stopped using the numbers 98 and 99 in favor of 10 or 20. He does mention, however, that there are exceptions. For instance, while flying VIPs to Europe, the KC-135Ks normally use the callsign "TAC 01." He does mention, however, that these aircraft rarely visit Europe in this role.

Also from his experience, when supporting deployments, the calligns used are changed on a regular basis. Lately these aircraft have been using the calligns "Relay 10" or "Relay 20."

As well as the two EC-135Ks, the job of the TDCA has over the past five years or more seen an increase in the use of the KC-10 extender in this role. This particular aircraft has an impressive suite of UHF, VHF, and HF radios and is ideal for the job.

One of the reasons for the more common use of the KC-10A, however, is due to the fact that in time of "International Tension," as it is commonly referred to, the EC-135Ks could not cope with the vast amount of reinforcement aircraft requiring escort to their European and Pacific wartime locations. It is also plausible that they have normal Command Post duties assigned for wartime, but this has not been confirmed.

The KC-10 is able not only to act as escort, but can fly direct with the fighter squadron to the required base with both the unit's support equipment and personnel on board. This is so the aircraft under escort can go straight into a wartime scenario as soon as they land.

Mr. GB also adds that the "JJ reports" are sometimes referred to as "MSR" reports which is an acronym for "Mission Status Report."

I would like to thank both Mr. U.K. and Mr. GB for their assistance in preparing this informative look at "USAF Coronet Operations." Mr. GB would also like to pass along the information that any monitor on the west coast who is truly interested in Coronet West operations and would like to correspond with him is invited to send him a query via this column. I will forward all correspondence to him directly.

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Salute to a Top DXer

Hank Holbrook saw his name mentioned in the June column and dropped me a very nice and interesting letter about his years of Utility DX experiences and QSLs.

Hank started DXing in 1959 and reported ships mainly on 500 kHz and 2 MHz (especially 2182 kHz). In those days 500 and 2182 kHz were very active.

At one time Hank used the Lloyds of London list for ship information. Hank says that the Lloyds list has become very expensive to get now. "I also have an ITU list which is way out of date so I just recently purchased a new call and ship list from the ITU. I also use a good U.S. list of ships/boats on microfiche which I purchased through the following address: U.S. Department of Commerce, National Technical Information Service, Springfield, Virginia 22161."

Is Hank successful at QSLing? My humble opinion is, yes. Anyone that has 13,951 station all band QSLs has done a lot of QSLing. Hank has 4,322 ships/boats QSLed with 491 on VHF, over 1,000 on 2182 kHz, and 1,158 on 500 kHz.

Hank's top country for ship QSLs is, of course, the United States, with 2,013 ships/boats. He has collected QSLs from 61 different flags, or countries.

"Many radio officers that answer me now tell me that most transmissions are via satellite, etc., and they seldom use 500 kHz anymore except on rare occasions," Hank says. "That would seem to go for HF as well, as you might hear mainly Liberian and Greek ships. It's been years since I have noted a Norwegian ship (Norway was a very good verifier but Liberia just passed them, but I only get 50 percent back from Liberia while Norway was about 75 percent)."

What does Hank rate as his top Ute ship QSLs? Well, here they are:

- On 2182 kHz: DJCH Freighter Karl Gunther Lothse in the English channel, 15 miles WSW of Dungeness.
- On 2716 kHz: NFPS USS Forrest Sherman 200 miles east of the Azores, only 30 watts sideband phone.
- On HF: WLNK Research vessel (Australian Navy) Kimbla off Sydney, Australia, on 8373 kHz, only 40 watts on CW.
- On VHF: Most distant is CG-161507 (16 ft Boston whaler USCG) 156.8 MHz (VHF channel 16), 20 watts at about 120 air miles. Also WYE-8850 Ferry, New Jersey Cape May canal, NJ 156.8 MHz 25 watts.

The most interesting part of this story is Hank's receiving equipment. I figured it would be state of the art, but here is the real story:

Receivers (mostly old) National RLB2 and RBL5 (for 500 kHz), Hammarlund SP-600 (two of them) for 2 MHz and HF. SP-400 (mostly for LW broadcast as it does not have 500 kHz. On VHF Hank is using Sony Air-8 (excellent for VHF ships and an older Regency DR-200.

Hank also adds that he has QSLed close to 2,000 LW beacons since the mid fifties. Thanks, Hank, for the QSL tips and a fascinating look at your years of DX activity. You are truly a Dean of Utility DXers, and with that, it's time to check what else our readers are hearing in the Utility World.
Utility World

Utility Loggings

Abbreviations used in this column:

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All times UTC, frequencies in kilohertz. All voice transmissions are English unless otherwise noted.

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Military Tactical comms by M2V/11P/YU4U in USB at 2200. (Bill Frantz, Thomasville, GA) Welcome back, Bill, this one’s probably a Navy channel.

German female five-digit number station heard at 0444. (Harold Fodger, Midland, MI)

USAF Regional broadcast station (Elkhorn? ed.) with FAX weather maps 120/576 at 0200. (Tom Sundstrom, NJ)

Convosations and relays among AAR46X, AAR66X, and AAR72X opened when the Bravo net was on. Questions on item to the region manager. The net control station was gone and there were general discussions of weather and opening the Bravo net during the period from 0100 to 0300. In USB. (John Gilbert, Kansas, MO)

USCG COMSTA Kodiak, Alaska, working the vessel Amatika II in USB at 0834 with medical emergency. CG giving instructions by the numbers.

English female five-digit number station heard at 0440. (Frodger, MI)

English female five-digit number station heard at 0439. (Frodger, MI)

English female three-digit number station heard at 0436. (Frodger, MI)

USAF Regional broadcast station (Elkhorn? ed.) heard at 0200 with FAX weather maps 120/576. (Sundstrom, NJ)

English female five-digit number station heard at 0437. (Frodger, MI)

CMLS-Havana, Cuba, heard at 0044 in RTTY 425/50R with "Quick Brown Foxes," and 1243567890 count. (Art Blair, San Francisco, CA)

CCM-Magalaines, Chile, with RTTY RY's at 0155. 170/50N also switched to 100 baud. (David Kimpton, Thunder Bay, ON)

6VY11-Dakar Meleo, Senegal, with RTTY weather reports for north and east Africa at 0206. 941/50N. (Kimpton, ON)

TUH-AFTN Abidjan, Ivory Coast, with RTTY RY's at 0159. 425/50. (Ricks, PA)

BJ221-Hangzhou, PRC, heard at 1223 in RTTY 425/50R with coded messages. There were no messages heard in the 250/50R band. (Blair, CA)

UPEU-Soviet M/V Captain Hmykowsky heard at 0535 working CLJ with messages for Havana and Klajpedia (Lithuania). (Garle Halstead, Saint Albans, WV) Welcome back, Garle.

P3012-Cygnol M/V Gull heard in USB at 0753 working TAQ with a

Several ship coms are reported on this month, including one from the giant spacetrackship "Yuri Gagarin," pictured above.

SBX-R-M/V Aikon Estin of Cypriot registry heard in CW at 0642 working 7TA with an ETA message for Oran. (Halstead, WV)

SBU-Cygnol M/V Beleta Star heard in CW at 0503 working WLO with a message for Boca Raton asking if the Limon cargo was on pallets or loose. (Halstead, WV)

SZG-I-Soviet M/T Kanipoksi heard in CW at 0553 working SHU with a message for Cairo. Message gave an ETA for Alexandria and a cargo of kerosene. (Halstead, WV)

ULFU-Soviet M/V Fedor Varaksin heard in CW at 0555 with an OBS message for WLO. Vessel located at 40N/46.2W in North Atlantic. (Halstead-WV)

UUKU-Soviet M/V Karogory heard in CW at 0655 working OBC3 with a SHREP message for harbor master at Callao. Vessel located off Ecuador. (Halstead, WV)

UUIR-Soviet M/V Leningradskaya Pravada heard in CW at 0642 working OBC3 with a SHREP message for the harbor master at Callao. (Halstead-WV)

ULRD-Soviet trailer (M/V Simonok) heard in CW at 0555 working OBC3 with a message for Callao Concordia. (Halstead, WV)

UF-K-Soviet spacetrackship Kosmonaut Yuri Gagarin calling UISZ, AKADEMIE SERGEI KOROLEV in CW at 0305 on net frequency. The Gagarin, world’s largest research ship, was replacing the Kureplov off Canada. (Ricks, PA)

ATC Tokyo, Japan, working Casse (Cathy?) 800 in USB at 0830. (Halse, OR)

Ironclaw calling McClellan with a TTY (the military slang for RTTY ed.). McClellan requests getting to 7992, but Ironclaw remains too weak for McClellan, who asks for location. Ironclaw says southwest of McClellan. McClellan says to go back to 8989, then when on 8989 says to go to 6730, where both say they are strong enough to initiate TTY. Heard in USB at 0403. (Gilbert, MO)

McClellan working Presidio in USB at 0610. Presidio requests a CB176 check. McClellan moves to 8922 USB where at 0811 following voice contact Presidio begins sending RTTY data. (Halse, OR)

Andrews AFB, Maryland, working SAM 582 in USB at 1745. (Frantz, GA)

Edwards AFB, California, working SAM 582 in USB at 1845. (Frantz, GA)

Unknown station with an FDM transmission at 1350. AP news and weather on channel 1, 75 baud five letter groups on channel 2. Anybody know who this is? (Sundstrom, NJ) My guess is another Croughton AFRTS/MI channel Tom, anybody else? ed.

ATC Tokyo, Japan, calling ATC Honolulu on "one zero" in USB at 0831; no reply heard. (Halse, OR)

2/4 Captain, South Africa, heard at 0105 with AMVEHS RTTY traffic. (Kimpson, ON)

Unknown station with clumsy military type IDs. Sometimes they pass personal/humorous messages to other parties. Other coms concerned with setting up antennas, finding a good location for the transmitter, signal reports with various antennas, any ideas on this

www.americanradiohistory.com
10390.0 FSBS7-Interpol Paris, France, with CW marker followed by ARQ ider at 0043. (Klinton, ON)

10580.0 HMF46-Pyongyang, North Korea, heard at 1542 in RTTY with 250/50R with KCNA news in English. (Blair, CA)

10850.0 Buenos Aires, Argentina, heard at 1200 in RTTY 800/75R with “Noticias Argentinhas” news in Spanish. (Blair, CA)

10935.0 LRBB3-Buenos Aires, Argentina, heard at 1148 in RTTY 800/50R with TELAM news in Spanish. (Blair, CA)

11073.5 Singshot and several others here in USB at 1535. DEAfreq! (Frantz, GA) Customs, Bill. -ed.

11157.5 USCG COMSTA Portsmouth working the cutter Escanaba in USB at 1410. Not in any directories. (Frantz, GA)


11241.69 UNID RTTY with long messages of five letter groups from “Bustan Washington” to “Khargia Cairo” at 0020/ARQ/170/100. Occasionally goes into plain language in the middle of a message. Signed “Ambassador Abdul Rouf El Reedy.” Would like some help on this one. (Klinton, ON) Looks like an Egyptian embassy link to KH29 in Washington, DC. They might have moved from their 11250 frequency. Anybody in DC can find out who Ambassador Reedy works for? —ed.

11255.0 AI 1323 In USB heard several units using Navy TAC type calls conducting radio checks. (Gilbert, MO) Sounds like a Navy TAC channel—ed.

11600.0 CLN327-Havana, Cuba, with 400/50N RTTY telegrams in Spanish to Florida addresses. (Sundstrom, NJ)

12505.4 UKOS-Soviet hydrophysical, biological, chemical research ship NIS AKADEMIIK SERGEI VAVILOV with a water temperature, salinity table and several 5-letter groups, French Hydrographic admitted to Mostaganem. (Sundstrom, NJ)

12579.0 SPTO/M/S Lenino heard in CW at 0706 working SPh. Message text (in Polish) stated the “group has elected Zubgiew Dachniewski.” Message was signed Grupowy Kapltan (Group Captain). (Halstead, WV)

12588.0 BKCO-Chinese vessel “Oryong No. 501” heard in CW at 0547 working KFS with a lengthy message (check of 110) reported to Profilist in Seattle. Message contained the weekly catch report. (Halstead, WV)

12590.0 CLDO-Cuban vessel “Juarez” heard in CW at 0609 working XFM with an O8S message for Mezzo Manzanillo. Vessel located in the Pacific at 16.3N/132.8W. Advised XFM he was QID from Panama bound Japan. (Halstead, WV)

13247.0 AI 0233 heard GLB to TAC 0, Goodacre, Larcop (?) and Election conducting radio checks. These were followed by a Strike Command Control message for DYOY8. This message was also repeated on 440/478, 1381 at 0323. (Gilbert, MO) This frequency seems to be getting more bizarre by the minute. Think I’ll trip on over before the receiver for an extended stay on this one. —ed.

13291.0 General Motors 5103 and Speedbird Concorde 188 working UTC New York Aero with position reports in USB at 1903. (Miller, ON)

13553.0 UNID FDM station sending AP news and weather on channel 1 and 75 baud KAWN coded weather at 1600. Parallels to 99610. (Sundstrom, NJ) That convincts me that much more, Tom, Props, etc., suggest Europe and the traffic mirrors Croughton traffic on other channels. —ed.

13844.0 KRH51-U.S. Embassy London, England, with RTTY boxes at 0209. 850/75R. (Ricks, PA)

14495.0 Male English five-digit number station heard at 0402. (Gilbert, MO)

14556.0 RIW-Soviet Naval Radio station Khiva, USSR calling “RMGB QTC” at 0128 in CW. (Klinton, ON)

14600.0 CAK-Santiago Air, Chile, with RTTY weather reports from South America at 0140. 850/50R. (Klinton, ON)

14722.0 TNI-AFTN Brazzaville, Congo, RTTY RYs at 0045. 425/50. (Ricks, PA)

14823.0 XVH-Hanoi Meleo, Vietnam, with coded weather and RYs at 0047. RTTY 425/50. (Ricks, PA)

14875.0 RFI-French Naval Radio-Port de France, Martinique, heard with ARQ-E3 at idle at 2300. Monitored two ZNR messages passed at 2345. 425/48. (Sundstrom, NJ)

14925.0 RFT-J-French Naval Radio-Dakar, Senegal, at 0030 with ARQ-E3 broadcast at Idle, then news, messages in French. (Sundstrom, NJ)

14958.2 Unknown station heard with an ARQ-M@ idle using 850/96 at 2300. Both channel A and B idle through 0045 time out. (Sundstrom, NJ)

14967.0 Idling on the same frequency as the “U” beacon traffic for several U...
Immediately upon stepping up to the front desk, I was greeted by a young and very friendly hotel employee.

"Welcome to the Hampshire Hotel. May I help you?"

"Yes, I’m checking in."

"Your name please?" she politely asked.

"Bob Kay."

"Bob Kay with Monitoring Times magazine?"

"Yes, that’s right."

Typing my name into the computer, she stared at the screen for a moment and then handed me a room key.

"Your reservations call for a suite on the top floor, Mr. Kay. It’s room 1001."

Taking the key from her hand, I couldn’t help but to ask how she instantly made the connection between my name and Monitoring Times magazine.

"I make it a point to review the daily guest list," she replied. "Since you were on the VIP list, it wasn’t hard to remember the name."

After thanking her for the warm and courteous welcome, I turned to pick up my bags, but the porter was already carrying them toward the elevator.

The tenth floor suite was exquisitely furnished and decorated in eighteenth century styles. My two daughters loved the hair dryers, full length mirrors, AM/FM alarm clock radio and color TV with HBO movies. My wife especially liked the blue paisley bedspreads, drapes, and sofa upholstery that were complemented by the plush brown carpeting.

A full kitchen with a live plant, Godiva chocolates, a coffee maker, and a basket of designer toiletries also impressed the girls. As for me, I walked right across the room and opened the sliding glass doors that lead to the balcony.

The treetop view of Washington DC was quite stunning. Looking over the various buildings, the excitement of scanning the nation’s capital began to get the best of me -- it was time for MT’s scanning columnist to set up shop.

When the Antenna Specialists heard that I was planning a trip to the nation’s capital, they provided a MON 52 mobile scanning antenna. The antenna featured full spectrum coverage with enhanced 800 MHz reception.

Having been accustomed to traveling with three women and their luggage, I knew that there wouldn’t be any "spare" room in the car. Before embarking upon the three hour trip between Pennsylvania and Washington, I changed the trunk lid mount of the MON 52 to a magnetic mount. This allowed the antenna to be easily removed from the car and attached to the metal railing along the balcony. The lead-in coax was carefully routed through the sliding glass doors and connected to my PRO-2004.

For test purposes, I searched across the cellular frequencies and it immediately became evident that car phone activity in Washington DC was phenomenal. To prevent nearby signals from stepping on weaker transmissions, I had to use the dB switch located on the rear panel of the PRO-2004.

To check the antenna’s sensitivity on the low bands, I punched up the cordless frequencies and listened. There were a few distant conversations, but nothing local.

The baby monitor frequencies were my next target. When the PRO-2004 locked up on 49.830, it came in like an FM radio station! It was the strongest and clearest baby monitor signal that I’ve ever heard.

A woman was changing an infant, and I could even hear the rustling of the diaper. As she moved around, I could also hear the tapping of her heels on the floor. This was intriguing because all the rooms in the hotel were carpeted. Evidently, the baby monitor was being used in one of the nearby condominiums.

With everything in working order, it was time to do some serious scanning. But I had forgotten to pack my list of frequencies for the Washington area!

While the girls went off to check out the spa, steambath, and whirlpool, I called for my car to be brought around and I made a quick trip to the nearest Radio Shack store. To my surprise, the folks at Radio Shack didn’t have a current listing of local frequencies. When I asked for volume # 6 of the Police Call Guide, (Washington DC area), they politely indicated that they didn’t carry it.

A helpful sales clerk jotted down a few frequencies from memory, but when I returned to the hotel and punched them into my PRO-2004, they turned out to be nothing more than the local and well-known police frequencies.

How could I ever live this one down? After planning a trip to Washington DC for months and finally being invited as a guest in one of the finest hotels in the area, I had forgotten to bring my frequency list.

However, all was not lost. Right before I departed, I remembered packing the latest edition of North East Scanning News. Included in its pages was a column titled "Capitol Hill Monitors." Under that heading I discovered many interesting frequencies that I immediately programmed into my scanner. Many thanks to the DC Metro Editor, Alen G. Henney, for providing a very interesting and useful column.

Every imaginable agency from federal agents to civilian airplanes could easily be monitored from my location. Transmissions were so numerous that it took the PRO-2004 three and a half minutes to scan thirty channels!

Personally, I would have been content to sit in front of my scanner for the entire evening. But my wife had made dinner reservations at the Hampshire Hotel’s Lafitte Restaurant. Well known for its spicy and sumptuous New Orleans style of cooking, the Lafitte offered authentic French Creole cuisine.

Leaving the kids behind to make their own dinner in the full kitchen, we took the elevator to the lobby and found the Lafitte to be only a few steps away from the front desk.

At the entrance, we were immediately seated at a cozy corner table.
On top of the cream linen tablecloth, a fresh spray of flowers and a hurricane lamp candle helped to create a very romantic atmosphere. When I whispered to my wife that I was going to ask for a scanner radio to be brought to the table, she abruptly kicked my leg.

After dinner was over, we returned to the room and I resumed scanning. I knew that the scanning action would get hotter after dark but I never expected the nonstop action that filled my scanner. With my PRO-2004 in the scan mode, I had to manually step through the city police frequencies.

One of the more interesting frequencies that I discovered during my stay belonged to the National Park Service. The main dispatch frequency for Special Events taking place near the Capitol can be monitored on 166.725. This frequency provided valuable information concerning traffic jams, available parking, and the general size of the crowds.

If you go, the Hampshire Hotel can be reached toll free at 800-368-5691. For a free listing of 90 hotels offering special weekend deals, phone the D.C. Committee to Promote Washington, 800-DC-VISIT.

To receive a copy of North East Scanning News, write to Les Mattson, Editor, 212 West Broad Street, Paulsboro, NJ 08066. Interested parties can also phone the editor between the hours of 6:30 p.m. and 8:30 p.m. by dialing 609-423-1603.

When packing your bags, remember that the scanning action demands that you at least take two scanner radios. And don’t forget to take along the following list of DC frequencies:

150.725
164.80/164.625/164.60
166.725
166.85/166.95/166.925/167.075
169.20
460.10/465.10
460.15/465.15
460.20/465.20
460.25/465.25
460.025/465.025
460.275/465.275
460.30
460.325/465.325
460.350/465.350
460.40/465.40
460.50/465.50
463.15

The following is a list of frequencies that were found during a random search. Can anyone identify the agencies?

164.05 165.2625 413.725 411.625 411.825 411.925
415.10 464.00 464.375 464.575 464.725 855.312
855.5375 858.3625 859.1125 859.6375

MT Treasure Hunt

I know that it’s hard to believe, but this month marks the beginning of the third Treasure Hunt. The June/July Treasure Hunt that featured two amplified speakers is officially over. The two winners will be selected by a random drawing and notified by mail. The names of the winners will also appear in a future column.

For this Treasure Hunt, the folks at Procomm/Digitrex have provided a top of the line, wide band discone antenna. The "Supercone DX-1515" is a professional grade antenna consisting of 16 stainless steel elements. All the elements are threaded and the antenna can be easily assembled in less than twenty minutes.

Originally made for the Ham market, the Supercone also features a helically wound whip which allows for transmitting on the ten meter band, 28.0 to 29.70.

Weighing in at two pounds, the base width of the antenna is 37 inches. With the whip installed, the height is approximately 60 inches. When I first received the Supercone, I couldn’t resist placing it on my roof. The results were quite noteworthy.

Although the whip has been specifically made to transmit and receive on the ten meter band, the antenna had no difficulty monitoring the VHF low band between 30 and 54 MHz. When fed with low loss RG-6, I successfully monitored frequencies between 25 and 1000 MHz.

The Supercone is a rugged, dependable, and well-made antenna. To win this outstanding performer for your rooftop, simply find all the clues and send your answers to: Treasure Hunt, P.O. Box 98, Brastown, NC 28902.

1. WA4PYQ is the amateur call sign for whom?
2. Count the letters in the individual’s name found in clue # 1.
3. Using the number discovered in clue # 2, turn to that particular page in the May issue of MT.
4. Name the two objects that are photographed on that page.
5. List the emergency frequency for the objects found in clue # 4.

In the meantime, if you simply can’t wait to find out if you’re the lucky winner, the folks at Procomm will provide you with a Supercone for about $100.00. Write to 1948 Coventry Court, Thousand Oaks, California 91362, or call 805-497-2397.

But wait, there’s still more! When Universal Electronics discovered that we were giving away antennas, they sent along several samples of their popular Coax-Seal. Coax-Seal is a space age plastic material that effectively seals all types of coax fittings from damaging moisture.

Coax-Seal stays flexible year round and is the only sealer that adheres to poly vinyl outer coax covers. The hard moldable material comes in a one-half inch wide, 60 inch long roll.

I personally use Coax-Seal on balun connections, beam antenna parts, and wherever a watertight electrical connection is required. Best of all, access to the protected area is accomplished by simply pulling the Coax-Seal away.

The winner of the Supercone will also receive a roll of Coax-Seal that provides protection for up to nine coax fittings. To order your own personal supply, contact Universal Electronics, 4555 Groves Road, Suite 13, Columbus, Ohio 43232, 614-866-4605.

Procomm’s Supercone discone antenna will be awarded to the winner of Treasure Hunt 3.
Frequency Exchange

Robert A. Barber is a police officer in Kansas City. After realizing that most of the published frequencies for his area were incorrect, he decided to compile his own confirmed list of frequencies and verified call signs:

Frequencies for the Kansas City metro area --

151.460 Bartle Hall Security and Maintenance KIBB72
154.515 Gold Cross Ambulance KTN617
155.100 Johnson County KS Courthouse Maintenance KNID723
155.130 CMSU (Warrensburg) Campus Police KSR866
155.160 Truman Medical Center Security KAN851
155.175 Ciathe Medical Center Security KBIB844
155.220 Kansas City Ambulance KAG737
155.235 Huckaby Ambulance WSW871
155.265 Gold Cross Ambulance KNGO570
155.280 St. Lukes Hospital KQY766
155.325 Ransom Memorial Hospital KKD307
155.400 Spelman Memorial Hospital KWH479
155.400 Excelsior Springs Memorial Hospital KTR870
155.210 Blue Valley (KS) School Campus Police KNDV739
453.000 KC Star Newspaper KAJT20
453.100 Kansas State University Admin., Lawrence KS KBNB573
453.150 KCMO Housing Authority KNJL404
453.225 University of MO at KC Campus Police KUB866
453.975 KU Med Center Maintenance KWL457
460.275 KU Med Center Police KIA790
463.5625 Sunflower Ammunition Plant (KS)
164.450 EPA
171.625 St. Louis MO Arch (Natl Park Service)
173.4525 Lake City Ammunition Plant (MO)
153.995 Johnson County KS Civil Defense KAV268
155.805 Douglas County KS Civil Defense KCL884
155.820 Leavenworth County KS Civil Defense KNBV309
155.895 Wyandotte County KS Civil Defense WDP499
158.745 Shawnee County KS Civil Defense KFX281
158.820 M.E.R.S. (Metro Emergency Radio System) KNIS980
34.640 Miami County KS Sheriff/Civil Defense KAC392

Nice job, Bob; we hope that you'll share more of your confirmed loggings with us in the future!

In Far Rockaway, New York, Ben LaMagna has been trying to locate the frequency for Bayswater Security. Ben claims that Bayswater Security patrols his neighborhood. Can anyone help?

If you are ever in Reston, Virginia, keep an eye out for Bob Eisner. Bob is a fast food frequency hunter and here's his most recent list of confirmed calls:

30.84/154.57 35.020/154.60 154.57/170.245
154.60/171.105 457.5125/467.7375 457.525/467.75
457.5375/476.7625 457.55/467.775 457.5625/467.7875

Bob claims that these particular frequencies travel in "pairs" as listed above. Best of all, there's no closed season for frequency hunters. Simply pull into your local fast food chain, punch these frequencies into your scanner and good hunting!

If fast food hunting isn't your cup of tea, consider joining forces with Rich Bircher for some zoo frequency hunting. Rich has been trying for over a year to capture the operating frequencies for the Topeka Zoo in Topeka, Kansas.

Rich would also like to share two of his most recently confirmed frequencies: 464.675 for Hypermart USA and 461.6375 for the Westridge Mall.

For anyone living near the Ford Auto Assembly Plant in Chicago, Illinois, here are the three major frequencies in use at the plant: 462.350 for Production Control, 462.30 for Plant Security, and 465.00 for paging. This "inside scoop" came from a 13 year employee of the plant named Dave.

Leaky Scanning Antennas

The lady living next door to Charles Brenner in Huntington Station, New York, claims that his scanning antennas are "leaking" into her cable TV service and causing her to experience poor reception.

Charles wrote and asked me to explain that since he wasn't transmitting a signal, her poor cable reception couldn't be blamed on him.

I would certainly agree. Even if Charles were transmitting a signal, it's doubtful that it would interfere with cable TV reception. I suggest that she have her cable installation checked by the company that is charging her for her poor service.

Cordless Phones in Court

A lower court overturned the conviction of a marijuana dealer because police did not obtain a court order to record his cordless phone conversations. However, the Wisconsin Supreme Court upheld the conviction. The court stated that, "In light of the nature of technology used -- broadcast radio communication -- there could be no reasonable expectation of privacy." (News clipping from Joe Olig, Wisconsin)

Cellular Phone Scanning

According to the Boston Globe Daily News, Bostonian scanner buffs are having the time of their lives eavesdropping on cellular phones. The Secretary of Finance and the Mayor of Boston have been heard on numerous occasions.

One listener stated that at 7:00 a.m. the construction people use their car phones to complain that suppliers have delivered the wrong stuff. At 9:00, it's the lawyers telling their clients how to lie in court, and around noon the romance starts as lovers begin calling one another.

Now, I'm really surprised at you folks in Boston. While the ECPA has scared most scanner buffs away from monitoring the cellular bands, you folks are not only listening, you're publishing what you hear in the local paper!

What was that you said? The big bad ECPA man don't scare you? Boy, you guys in Boston are tuff dudes. Well, how about it, America? Are there any other areas of the country monitoring the cellular bands? If so, drop me a line. Or better yet, send me a John Wayne style picture of your scanner holster and cellular antenna hat!

34 August 1989 MONITORING TIMES
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<td>1300H/A</td>
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We are very gratified by the eagerness with which our readers await their new issue of Monitoring Times. In order to keep our news as timely as possible, we cut our deadlines very close. If your MT doesn’t show up in your mailbox, please don’t call us for a replacement issue until the tenth of the current month, just in case it’s delayed a couple of days. Our staff will be greatly appreciative.

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Guide to Old Radios

Radios today are great. Punch in the frequency on a keypad. A digital display reads it out, exactly. It’s highly polished hi-tech.

And despite all the undeniable advantages, for some, these whole-radio-on-a-chip-the-size-of-a-pinhead receivers have taken the romance out of radio. They long for the days when clusters of brightly lit tubes cast a warm orange glow on the wall behind the radio.

If you’ve ever thrilled to the sight of an antique radio -- and what red-blooded radio hobbyist hasn’t -- then this book is for you. Authors Dave and Betty Johnson have packed Guide to Old Radios with over 350 photos and hundreds of stories that bring the radios of old back to life -- names like RCA, Zenith, Westinghouse, DeForest, Crosley, and Philco.

But Guide to Old Radios is more than just a great read. It’s also tips on identifying and dating old radios. And pointers on where to find the best buys and how to check them for value.

And there’s an 83 page buyer’s guide that includes listings for over 3,000 collectible radios and related items detailing model names and numbers, descriptions, and price ranges for each.

Guide to Old Radios is available for $16.95 plus $2.50 UPS or $1.25 book rate from DX Radio Supply, P.O. Box 360, Wagontown, PA 19375. PA residents (only) add $1.17 tax.

New Repeater from ICOM

They are calling it "the ultimate in repeaters." The truth is that the ICOM IC-RP1510 VHF repeater does include a lot of the latest technology, such as local or remote control, automatic battery reverting and extensive RF shielding.

The RP1510 also offers 25 watts of power, broadband frequency coverage (144-148 MHz), an adjustable tone out timer, programmable call sign identifier and a built-in speaker and microphone connector.

Suggested retail price on the RP1510 is $1,849.00.

The "Hazer" Antenna Elevator

Towers are great for mounting antennas, but who among us really enjoys climbing them to make adjustments, repairs and installations? I, for one, do not revel at staring at the ground from dizzying heights, white knuckles clamped around small pieces of pipe!

Alternatives

Sure, there are tilt-over and telescoping towers, but they cost big bucks and are often cumbersome to use. Glen Martin has a less expensive solution: the Hazer. Consisting of a sturdy cage-type elevator, the Hazer is designed to girdle any Rohn-type triangular tower and is hoisted into position by a cable and winch assembly.

We selected the heavy duty Hazer 4, a galvanized steel unit, for our installation. If you do not yet own a tower, you may wish to consider one of the Glen Martin aluminum towers as well.

Let’s build it

The Hazer arrived in two boxes, one the pre-assembled winch, the other a carton of zinc-plate iron, aluminum and bolts – heavy-duty stuff. Nothing skimpy about the Hazer -- except the instructions! When faced with about 50 pieces of metal and 100 nuts and bolts that you’ve never seen before, it would be helpful to have assembly steps.

There is a parts list, a sheet of construction tips and a drawing of the completed assembly, but a recommended sequence would make the job go easier and avoid the necessity of later disassembly to accommodate new pieces as they randomly come along.

We discovered that a couple of short (1-1/2’ or so) scraps of lumber stuck through the tower bracing handily supported the upper and lower main frames which should be assembled first; some metal parts have holes that required no bolts; some parts, including screws, had preferred orientation to avoid interference with other parts during later alignment and tightening; the winch cable must feed between the reel shaft and mounting brackets to avoid rubbing; a few parts were unaccountably left over. Perhaps the manufacturer will see fit to address some of these oversights in future instructions.

After the Hazer was finished -- several hours later -- it was a sight to behold! The quality and craftsmanship in the design and manufacture of the elevator system is truly impressive. It is built to last.

How Does it Work?

The winch assembly is mounted as low as possible at the base of the tower; a steel cable passes up through the tower, out over a pulley and down the side of the tower to the elevator assembly. A safety latch with a pull cord assures that the Hazer cannot fall.

If the tower is not yet erected, you may wish to assemble the whole Hazer unit in a horizontal position, hoisting up the combination when totally finished. This will save having to climb the tower to mount the pulley and string the cable.

The elevator assembly is a good fit, snug enough not to rattle, yet loose enough to move freely up the tower. Enough winch cable is provided to lift the Hazer up a 50 foot Rohn tower, limited only by the height at which your tower brace or guy wires attach.

For those radio enthusiasts who do a lot of antenna experimenting, the Hazer can be a life saver -- literally! And from a convenience standpoint, being able to raise or lower an antenna system in one minute is worth any amount of aggravation putting the lot together. We rate the Hazer tops for antenna utility.

The Hazer antenna elevator systems are approximately $300 from Glen Martin Engineering, Rt. 3 Box 322, Boonville, MO 65233; phone 1-816-882-2734.

-- Bob Grove
Crystal Catalogue

Monitors that own old crystal controlled receivers and scanners might be interested in Crystek Crystals’ new catalogue. Crystek provides marine, scanner, amateur, CB and radio control crystals at prices ranging from $4.50 to $6.50 each.

For more information, call 1-800-237-3061 or write 2351/2371 Crystal Drive, P.O. Box 06135A, Ft. Myers, Florida 33906 -6135.

QSL Album from Azimuth

Throw away your shoe boxes! Shake off the dust and take your rare, hard-earned QSLs off the wall! At last, an easy way to organize and protect the cards you’ve worked so hard to get. It’s the Azimuth QSL Library.

Each album is manufactured of first quality, durable vinyl and comes with 20 crystal-clear, scratch resistant pages — enough for 120 cards. Each pocket is big enough for a 4 x 6 inch card.


FM Atlas No. 12

In the 13 months since the last edition of Bruce Elving’s FM Atlas, some 526 new stations and 240 translators have taken to the air. Add to that countless station call letter and format changes and you’ve got edition number 12 of this very popular book.

As in past years, Elving has produced a book that is useful not only for DXers but also amateur listeners and travelers as well.

Stations are arranged in two separate lists, by state (which includes frequency, call letters, primary coverage area and SCA) and by frequency (city, state, call letters, stereo, power, etc.). A separate list covers low-power translators and boosters on the FM broadcast bands.

In addition, Elving provides 90 pages of maps detailing the exact location of each station so, when traveling, you can simply page through, find out where you are, and sample the aural treats available for your consideration.

FM Atlas is perfect for local listening, DXing or traveling. Regularly $9.95, it is available for $8.95 plus $2.00 UPS or $1.00 book rate (please specify) from DX Radio Supply. Conditions apply. PA residents add 6% sales tax. DX Radio Supply, P.O. Box 360, Wagontown, PA 19376.

Hands Free Transmitting

When operating a radio, having just one more hand might be the difference between correctly copy and missing a vital piece of information. You have to scramble to tune the radio with one hand, key the microphone with the other and write with yet another hand. In some situations, the difference might be life or death.

Enter the affordable Heil FS-1. It’s a professional grade, heavy-duty footswitch that can be used to key practically any transmitter push-to-talk circuit. A top and bottom non-skid rubber pad keeps the FS-1 where you want it and frees one of your three hands for other, more important duties.

The FS-1 footswitch is just $22.95 and is available from Heil Sound, Ltd., Heil Industrial Blvd., P.O. Box 75, Marissa, Illinois 62257.
I was once forced to suffer the slings and arrows of living with my mother-in-law. The woman didn’t understand me or my hobby. The truth is that she didn’t see playing with radios as being particularly productive. It was hell.

As all things go, we were eventually able to move on to our own place where I could string as much antenna wire as I wanted. No longer living together, we grew to tolerate each other in small doses. She even took to hanging on to any mail that arrived after our forwarding privileges expired.

Is there a point to all this, Uncle Skip???

In the winter of 1982, during one of my infrequent return engagements at momma-in-law’s, she handed me a pile of mail that had come addressed to me. It was mostly outdated missals with pictures of Ed McMahon on them. But in that pile was one obviously overseas postcard.

The affixed stamp told the tale. UGANDA. Uganda had verified receipt of a listening session from over three years ago! My memory being a sieve, I had to wait till I got home to check my log to figure out the circumstances surrounding this “missing” QSL.

Remember when I told you folks to keep good notes in your log books? A brief notation next to the entry for my Ugandan logging told all. I had logged and sent my verification request out one short week prior to the fall of Idi Amin’s government.

At the time I just figured that I could kiss the two International Reply Coupons I had sent goodbye. I would go after a QSL of Uganda somewhere down the log.

Life being what it can be, I just never quite got around to tracking down Radio Uganda. Like so many stations, it was one you didn’t have to dig for, so I would get around to it one of these days. (I never said diligence was one of my glowing characteristics, now did I?)

Thanks to my momma-in-law-dearest, I didn’t have to.

The point is, if you decide to enter the weird world of verification of your loggings, you can expect some interesting twists and turns as your QSL cards and letters wing their way to you. And this, of course, is an obvious entry into...

UNCLE SKIP’S GUIDE TO QSLing

There have probably been volumes written in the radio press about verification strategy. Most of what is written, however, tends to make the process sound like magic. “Send two IRCs, one American dollar, a picture of your first born child, and a hood ornament from a Buick during any month with an “R” in it...”

This tends to get the beginner somewhat confused. While some “experts” will disagree for days, most broadcasters are more than happy to verify reception if you follow a few simple guidelines. All the magic and machinations apply only to the more obscure outlets, those stations intended for internal reception and tended by folks who could care less about how well they are heard in the US of A.

Newcomers can fill a book with cards, and build some good DX savvy, long before they have to worry about extracting a card from some 25 watt domestic farm report station. Keep in mind we are talking broadcasters here, and not utility stations. The rules are somewhat different for nonbroadcasters so we will cover that subject in another column.

Why QSL?

Sending out verification reports is really a win-win situation. The station receiving the report gets an idea about who is listening and how they are being heard. In return, the monitor gets a QSL card or letter attesting to their prowess as a listener.

Old Uncle Skip maintains that QSLing solely for the purpose of verifying reception will turn you stodgy before your time. QSLing should be just as much fun as any other aspect of the hobby. Don’t let it bog you down.

The fun purpose for sending out reports is that you get all this interesting mail from all over the world that just impresses the socks off your postperson. (Mailman? Mailwoman? Femaleman? This nonsexist language is getting me confused.) Actually, you get certifiable memories of your accomplishments, and that is fun.

How to QSL

QSLing is as easy as falling off a log. (There’s a pun in there if you dig for it.) Start with a plain sheet of paper. In the upper right hand corner, type or print clearly (no cursive writing please) your name, full address without abbreviations, zip code, and United States of America.

Next put in the date. Make sure you spell out the month. This avoids confusion because, in some countries, when you put the date numerically (i.e. 5/9/89) for May 9, 1989 they will read it as if the center digit is the month (May 9, 1989, becomes September 5, 1989).

Now that the station knows who to reply to, you need to figure out who to send the report to and include this name and address in the traditional place on your letter -- the left side of the page below your address. If the station indicates an address during their broadcast, you are home free. If not, you will need to consult another source.

Gayle Van Horn’s “The QSL Report” column here in MT usually gives the addresses people have used successfully for verifications, along with additional information that might help get the card.

Another source for station addresses is the most current edition of The World Radio Handbook, available from DX Radio Supply for $19.95 + $2.50 UPS.

With the formalities of the addresses out of the way, you can concentrate on reporting what you have heard. Begin with a paragraph informing the station that you are a radio hobbyist who enjoys listening to stations from all over the world, especially those at some distance away.

In the second paragraph, restate the date and give the time you began to monitor their particular station. I always give the time in UTC/GMT. If you refer to both forms of Universal Time, you can’t go wrong; anyway, the numbers are the same. I also use a world time table to include the local time at the broadcaster’s location. This time game may
represent a "suspender and a belt" view of things but it does cut down on confusion quite a bit.

In the next few paragraphs, report exactly what you heard with as much detail as possible. Did the program have a name? What was the program content? Was the announcer male or female? Was the broadcast solely in English or did you hear another language as well? Note the times things begin and end. Take particular note of the times of any station identifications, sign-on and sign-offs.

At this point you can really make or break your verification if you are not mindful of the needs of the folks on the other end. Tell them what you thought of their program. Tell them what you enjoyed. Tell them if you liked the music. Let them know if their program was informative. If you learned something new and different about their country, be sure to tell them.

Nothing can sour the QSL process faster then making the station feel that the only thing they exist for is to wait around to send you a card. Needless to say, if you disagree with a station’s politics or religious point of view, a verification request is not the place to get into such matters. At least not if you expect a reply.

Something for the Engineer

After you report what you have heard and how much you liked it, include a paragraph about the conditions. First let them know what equipment you were using, including your antenna and any accessories that might have helped clean up the signal. You can then report the reception quality using the universal SINPO code, reporting Signal, Interference, Noise, Propagation, and Overall merit on a scale of one through five, with five indicating the best possible conditions.

In addition, stations really appreciate details about any man-made interference. Any details you can give in this area are genuinely helpful to the broadcaster. Some folks shun the SINPO code in favor of stating the facts in their own words. Doing this might give you the edge when you are going after broadcasters who are not used to QSLing. Keep this in mind.

A Strong Finish

In your closing paragraph, you can politely ask for verification of your report. Don’t push!! No station in the world is under any obligation to reply. State what you have enclosed in terms of return postage and thank the station profusely for their time and kind consideration.

Playing Post Office

In sending your report out, always use "Plain Jane" U.S. Air Mail stamps in a standard size envelope that is thick enough to avoid too much inspection in front of a lightbulb. Fancy stamps and IRCs visible through a thin envelope tend to get your mail sidetracked long before it gets to your station.

On the outside of your envelope, once again include complete addresses, both yours and the station’s. Avoid using American nicknames for countries that might be considered offensive. Mail sent to the People’s Republic of China but addressed to RED CHINA just gets put in the dumpster. Remember, the folks on the other end are just as proud of their homeland as you are of yours.

Return postage can take the form of International Reply Coupons (IRCs). These are available at larger post offices. While one is supposed to be enough to assure an equivalent return postage, most folks include two or three. IRCs, however, are relatively expensive.

Another way to cut the cake is to include mint (unused) stamps from the country you are writing to. You can get such stamps at many Stamp Collector dealers or you can utilize the DXers Stamp Service set up by William J. Plum, 12 Glenn Road, Flemington, NJ 08822. Bill can get you the appropriate return postage for most locations at very reasonable rates. An AASE will bring you a list of his latest prices.

Some DXers include an American dollar thinking that the hard currency will speed things along. Maybe it does, but it tends to mess things up for the rest of us. Sending money is not a good idea unless it is clear through sources such as Monitoring Times that it is the only way a particular country is going to cut loose with a QSL card.

Re-Reporting

As you can see from the pages of The QSL Report in this magazine, you should probably hear back from your request within about three months if you are using air mail postage on both ends. After ninety days, you might want to think about sending out another report.

If the station was not too hard to hear and the original request was not for some special reason, you might just want to listen again and send a whole new report. A copy of your first report will be just as effective in most cases, but be sure to include a note indicating that this is your second try.

Once again, include appropriate return postage. It is very seldom the fault of the station that your reply is not forthcoming, so don’t berate them about not getting your card. You might also try a multi-language report form (available from many sources) to make sure that language is not the barrier to your reply.

If you don’t get a response to your second try, you may want to see if the third time is a charm. Old Uncle Skip recommends that you don’t waste the time and postage unless it is a very rare contact, not likely to be easily heard in the future. For stations that don’t QSL, I prefer to tape the contact and maintain that as my verification.

The Best QSL Insurance

In the old movie, "Harvey," James Stewart, in the character of Elwood P. Dowd, said that a person could be successful in this world "if they are either very smart or very pleasant." Like Dowd, "I recommend pleasant." Especially if you are trying to increase your QSL quotient.
Cracking the Codes

“Critter to John-boy on C-2. The rabbit is making rabbit tracks your November, switch to the private side as outside agency is nearby.”

The opening sentence of this month’s column is: 1) the recorded ramblings of a deeply psychotic patient, 2) an English translation of a quaint Bulgarian saying about fall or 3) a tactical transmission between two FBI field agents on a surveillance.

The answer is “3.” If you guessed 1 or 2, don’t feel bad. It wasn’t meant to be understood by listeners or readers.

Similar transmissions, just like the one above, can be monitored nationwide from federal surveillances and even some local (nonfederal) agency surveillances. This month the Federal File walks through the strange world of code words, tactical transmissions, and common federal ten codes.

The monitoring of surveillance can be quite interesting, fun and even challenging. The challenging part is to translate such transmission, by way of reasoning and deduction, from a tactical level to the common English.

Let’s take a look at the conversation that two FBI agents – Critter and John-boy – are having. Critter has the surveillance subject under view and informs John-boy that the surveillance subject (the rabbit) is on the move (making rabbit tracks) to the north (your November) of John-boy’s position.

Table 1

<table>
<thead>
<tr>
<th>COMMON CODE WORDS AND PHRASES</th>
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<tbody>
<tr>
<td>Big K. The</td>
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<tr>
<td>Bird Dog</td>
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<tr>
<td>Break Off</td>
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<tr>
<td>Cave, The</td>
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<tr>
<td>C.I.</td>
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<td>Diaper Change</td>
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<td>Digital</td>
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<td>ECC</td>
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<td>Eden</td>
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<td>Eyeball</td>
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<td>Eyes</td>
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<td>F.F.</td>
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<td>Flyer</td>
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<td>H.T.</td>
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<tr>
<td>Half-Signal</td>
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<tr>
<td>Home Front</td>
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<tr>
<td>I, The</td>
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<tr>
<td>In the Clear</td>
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<td>In the Pocket</td>
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<tr>
<td>Kennel</td>
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<tr>
<td>LL.</td>
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<tr>
<td>Main Man</td>
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<tr>
<td>Mickey D’s</td>
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<tr>
<td>Nest</td>
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<tr>
<td>Noisemaker</td>
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<tr>
<td>Number One</td>
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<tr>
<td>Man</td>
</tr>
<tr>
<td>O, The</td>
</tr>
<tr>
<td>Out of Pocket</td>
</tr>
<tr>
<td>Our Boy</td>
</tr>
<tr>
<td>Our Friend</td>
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<tr>
<td>Our Main</td>
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<tr>
<td>Interest</td>
</tr>
<tr>
<td>Our Man</td>
</tr>
<tr>
<td>Outside Agency</td>
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<tr>
<td>Package</td>
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<tr>
<td>Papa</td>
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<td>Pigeon</td>
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<td>Plank</td>
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<td>Port</td>
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<tr>
<td>Private</td>
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<tr>
<td>Private Side</td>
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<tr>
<td>R, The</td>
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<tr>
<td>Rabbit</td>
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<td>Rabbit Tracks</td>
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<td>Redbaled</td>
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<td>Redboarded</td>
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<td>R.D.O.</td>
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<td>S.W.</td>
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<td>Signal</td>
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<td>Solo</td>
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<td>Standard</td>
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<tr>
<td>Staging Area</td>
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<tr>
<td>Subject</td>
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<td>Target</td>
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<tr>
<td>Ten Check</td>
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<tr>
<td>Truck</td>
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<td>Truck Garage</td>
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<td>U.C.</td>
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<tr>
<td>Uniform</td>
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<tr>
<td>Wagon</td>
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<tr>
<td>War Wagon</td>
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<tr>
<td>Wire</td>
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<tr>
<td>Walking the Dog</td>
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</tbody>
</table>
Table 2

<table>
<thead>
<tr>
<th>COMMON TEN CODES</th>
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<tbody>
<tr>
<td>10-0 Negative</td>
</tr>
<tr>
<td>10-4 Okay</td>
</tr>
<tr>
<td>10-7 Out of service</td>
</tr>
<tr>
<td>10-8 In service</td>
</tr>
<tr>
<td>10-9 Repeat previous trans-</td>
</tr>
<tr>
<td>10-10 Message check</td>
</tr>
<tr>
<td>10-15 Subject in custody</td>
</tr>
<tr>
<td>10-16 Message check (FBI)</td>
</tr>
<tr>
<td>10-20 Location</td>
</tr>
<tr>
<td>10-21 Telephone call</td>
</tr>
<tr>
<td>10-22 Report to your office</td>
</tr>
<tr>
<td>10-23 Stand by</td>
</tr>
<tr>
<td>10-26 Wanted/warrant check</td>
</tr>
<tr>
<td>10-28 Vehicle registration check</td>
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<tr>
<td>10-29 Operator's license check</td>
</tr>
<tr>
<td>10-42 Residence (agent's)</td>
</tr>
<tr>
<td>10-58 Mileage (vehicle)</td>
</tr>
<tr>
<td>10-66 Alarm (?)</td>
</tr>
<tr>
<td>10-76 Enroute</td>
</tr>
<tr>
<td>10-77 Bank alarm</td>
</tr>
<tr>
<td>10-85 Meet with agent ...</td>
</tr>
<tr>
<td>10-90 Bank robbery</td>
</tr>
<tr>
<td>10-91 Bank robbery in progress</td>
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<tr>
<td>10-95 Subjects apprehended, area cleared and secure</td>
</tr>
<tr>
<td>10-99 Assist agent</td>
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</table>

Find Hidden radio transmitters (bugs) in your home, office or car. The TD-17 is designed to locate the most common type of electronic bug - the miniaturized radio transmitter - which can be planted by anyone, almost anywhere.

The TD-17 warns of the presence of nearby RF transmitters, within the frequency range of 1 MHz to 1,000 MHz, when the RF ALERT LED turns on. The flashing RANGE LED and audio tone give an indication of the distance to the bug. The SENSITIVITY control, used in conjunction with the two LEDs helps you quickly zero in on hidden bugs.

The hand-held TD-17 weighs less than 7 oz. and is housed in a high-impact plastic case. Furnished complete with battery, antenna, instruction manual and one year Limited Warranty. Save $100 to $200 and order at our factory direct price of only $98 + $2 shipping. Satisfaction guaranteed or your money back. Catalog $1 or FREE with order.

Critter further communicates to John-boy to switch to the DES (Digital Encryption Standard) scrambling mode (the private side) because the news media (outside agency) is nearby.

The tactical transmission conveys a message that is understandable to the intended recipient but to the eavesdropper the message may be difficult -- but not impossible -- to understand. This is done not to hang a veil of secrecy over the operation but to throw off or mislead the casual listener.

After a little monitoring, however, the code words and phrases can be reasoned by the astute listener.

The code words and code word phrases often have a wit about them. Rarely are they chosen out of the blue, so-to-speak. Table 1 lists common code words and phrases. They are used to to identify landmarks, surveillance subjects, vehicles, agents, and just about anything else related to a surveillance or the operation of one.

Let's all eat at Mickey D's, then go to the Big K.

McDonald's is a favorite meeting place as well as a familiar landmark in most every community. It is commonly known as Mickey D's. Another familiar landmark through most of the United States is the Big K, or K-Mart.

Codes are not always as clear or easy to reason as was Mickey D's and the Big K. The deduction of the code word meaning can be greatly enhanced if notes are taken while monitoring, and with familiarity of the general vicinity of the surveillance.

Once I monitored a tactical transmission that I never translated which stated "We are in the right church, but the wrong pew." I took notes during the surveillance, but yet I was not familiar with the area of the surveillance.

One may, and can, conjecture about the meaning of the phrase; however, without confirmation it is just conjecture. This example, though, is more of a rarity in my loggings. After years of listening and note taking, many things have come together.

Bird Dog is a phrase for a surveillance aircraft and a bird dog is one who tracks and informs the hunter of the location of the bird(s). A surveillance aircraft performs a function that is analogous to that of a bird dog; the agent in the aircraft tracks the suspect(s) and reports the location to ground units (a la the hunter).

Another favorite of mine -- since I just recently had my first child -- is Diaper Change. The phrase is utilized by agents to indicate that the battery is being changed in a mobile (vehicle) trailing transmitter -- the agent changes the new battery for the old worn-out dirty battery.

When a word or phrase is heard that is not in Table 1, remember that in all likelihood the word or phrase is keenly related to the actual message context. The ten signals are used to convey routine, daily type of radio traffic.

The ten code usage appears to be fairly standard among the major federal agencies and commonalities exist between federal and state/local usage (i.e. 10-28 for vehicle license/registration check or 10/29 for operator's license check).

Armed with over 50 confirmed code words and phrases and over twenty 10-codes, you are well prepared to venture into the land of monitoring surveillances and being able to decipher them.

The Federal File welcomes your comments, suggestions, and inputs. Please remember that if a personal response is desired, please enclose a self-addressed, stamped envelope (SASE) with your request. Neither the Federal File column nor myself are wholesale frequency list/directory distributors -- there are several directories currently available for the federal/military monitor as well as several scanner clubs with columns on such.

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Atlanta Flight Support

"All flights calling Atlanta, please stand by. There's a phone patch working on this frequency."

The radio operator's voice was pleasant but firm as I watched quietly from my observer's seat next to the operator's console. For a Monitoring Times exclusive, Harry Kelley, Manager of Flight Support Services, and John Gerler, Chief Radio Operator, had invited me to visit the Communications Center.

Atlanta Flight Support Services is a division of Eastern Airlines, providing air/ground radio communications, flight planning and other services for flights west of Texas. Now we have 18 operators, three supervisors, and various support personnel. We have eight frequencies across the United States. From a mere 94,022 contacts during 1974, our first year of operations, Atlanta Flight Support went to 711,970 in 1988!

MT: It seems to me that you have a larger VHF network than most people realize— even those of us who are aero communications monitors. Until recently, even I wasn't fully aware of the scope of your operations. But how about your HF network—will you tell us something about it?

Kelley: Certainly! We'll start with the Lima, Peru, operation. Now, I should mention at this point that the facilities at Lima are our company's. However, those at UK Radio and Rainbow Radio stations are not. They work our flights through a contract arrangement.

Eastern Airlines bought South American landing rights from Braniff a few years back, and I went down to Lima, Peru, to train the operators. The HF station was already there, staffed with former Braniff employees. Their own flight was conducted as well as 80 or so other airlines. Kelley, who has been with the company for 15 years, is manager.

According to Kelley, Atlanta Flight Support came into being in the early 1970s. "We only had about five or six operators then and did not work flights west of Texas. Now we have 18 operators, three supervisors, and various support personnel. We have eight frequencies across the United States. From a mere 94,022 contacts during 1974, our first year of operations, Atlanta Flight Support went to 711,970 in 1988!"

MT: What did you think of it?

Kelley: I've never complained about VHF again since then! [Laughter] They had equipment down there—well, the switchboard was from 1936, and the radio equipment itself had to have been from the late 1940s. Anyway, it's since all been upgraded. They've just gotten a new antenna put in, for instance, and it's all become really top-notch now.

MT: Do you just have HF or are there also VHF facilities at the Lima station?

Kelley: There is one VHF frequency—130.700, which is just for the radius around Lima. In regard to HF, we just got a new frequency down there: 17937. Up until then, 11306 was the highest one that we had in use there. UK (United Kingdom) Radio is owned by British Telecom International, and it's a very large maritime outfit—which is their main thrust of operations. Handling LDOC air/ground communications is only a small part of it. They only came into the HF business in 1984. We worked out a contract deal with them, just as we did with Rainbow Radio in St. John's, Newfoundland, Canada (see chart). These contracted stations work not only our company flights, but those of our clients as well.

MT: Readers might be interested to know that one of our clients has flights which take them over Russia. UK Radio takes position reports from the pilots of these flights and almost instantaneously they (the reports) are transmitted to the airlines' computers at their home base—no telex or anything like that is involved. It's handled through data links and similar equipment.

Incidentally, all of the equipment installed in the stations located outside the United States is also linked to the main computer at Miami headquarters.

MT: A good many of our readers seem to be fascinated with Rainbow Radio. I think part of it is the name itself; do you know why it's called that?

Kelley: It's because the antennas are located in a place called "Rainbow Creek." I wondered about the same thing at one time. Incidentally, they have six operators, but only one is on duty at a time. As in the case of UK Radio, they're primarily a maritime station, but now work a/g communications, also.

MT: Readers of MT have asked me why an airline might have to use more than one air/ground radio service. Can you explain why this happens?

Kelley: Certainly. For example, ARINC handles communications for our ATC traffic over the Atlantic Ocean; ATC has required checkpoints—including those over places without radar coverage. When an Eastern Flight calls in a reception report, then ATC pays half and the company pays the other half. If a flight wants a phone patch, then he'll call one of our LDOC stations. Sometimes they'll give a position report to ARINC and then turn around and give the same report to one of our stations for company use.

Since we don't quite cover the globe, our clients have to talk with somebody, which is why they do talk with other stations. We're growing and eventually will work our own flights and those of our clients over the Pacific—which will give us just about complete coverage.

Jean, one of the reasons that we are where we are today is due to the high quality and low turnover of employees we have working for us. One of these employees is John Gerler, our Chief Radio Operator, who has been with us for 29 years. John will fill you in on the actual operations and nuts-and-bolts of Atlanta Flight Support.

MT: Thank you for all of this fascinating information, Mr. Kelley. I know that our readers will really appreciate it.

Kelley: I've enjoyed it too, Jean. Actually, I didn't know that there were so many people out there who were interested in listening to us!

MT: Mr. Gerler, with eight VHF frequencies giving you radio coverage from coast to coast, how many actual A/G antenna sites do you have now?

Gerler: Over 110 right now. They're all connected by telephone lines. Our equipment is located mostly at airports, but in some places—
well, for instance our station in Goodland, Kansas, is located in a little two-way radio shop in downtown Goodland, only because we don't need any on-the-ground coverage there. All we need in that location is coverage for flights overflying that area. However, we do land in Denver, so we have to have an on-site station there.

Now our Grand Cayman and San Juan sites are on satellite circuits. These work out very well. In regard to the San Juan circuit, the satellite is pointed to Washington, DC, where the equipment is located. From there, the land lines run down this way. World Communications (TT) handles this. The only problem is that there is a second-second delay on the circuit after you transmit. The same thing happens when a flight calls -- it also stays keyed for two seconds.

We have a dial access system in both Grand Turk and Nassau. How it works is that a pilot will key the microphone three times. This sends a signal to the equipment, which automatically searches for an open line and upon finding one, dials the number up here. Conversely, if we want to reach a flight in that area for a patch or whatever, we just dial that phone number and then it picks up the line and activates the transmitter. Then we'll do our SELCALs, and so forth.

**MT:** Is this Atlanta Flight Support Services' only communication's center?

**Gerler:** Yes, this is it. We work all of our VHF frequencies from right here in Atlanta. There are three frequencies for Atlanta, itself, since this area tends to get congested with flights coming in and calling from all over. There are also three freqs for the northeast part of the country, and two more for the northwest and western regions. (The eight VHF frequencies used by Atlanta Flight Support Services are 130.900, 130.875, 131.125, 130.450, 130.000, 130.700, 131.250.)

**MT:** Regarding the HF nets: one thing I noticed when you sent me the HF chart is that UK Radio uses some frequencies that are not in the usual HF aero bands. How come?

**Gerler:** That question has crossed my mind, too. The only answer that I can come up with is because their parent company, BTI, handles all of the maritime and HF air/ground comms for the United Kingdom that they have to use all of the bands assigned to them to be able to handle it -- even though some are out of band for usual a/g transmissions.

**MT:** Mr. Kelley mentioned that you have 18 operators here at the Atlanta Communications Center altogether. How many work each shift?

**Gerler:** As you know, handling air/ground communications for our customers goes on 24 hours a day, 365 days a year. We have three shifts, with six operators on the day shift; then three are on duty until 1:00 a.m. for the evening shift. At that time, we go down to two operators until 4:00 a.m., when one more person comes in just to handle the cargo traffic.

**MT:** What are the most common requests from pilots when they call in to the Communications Center?

**Gerler:** Position reports, out/off reports, requests for SELCAL checks, and phone patches. But we also get requests for ball game scores and other things. You just never can anticipate what might come up.

**MT:** While sitting here observing you and the other operators at work, I was wondering just how you know on which frequency a flight may be calling you if the pilot doesn't mention it on initial callup.

**Gerler:** Okay. Here's how it works: each radio site is represented by a small lamp cube and is labeled with the appropriate three-letter identifier for that location. Each frequency is arranged on a horizontal strip of lamp cubes. All of these lamp cubes are on a vertical panel shared by each row of consoles. When a flight calls within range of a radio site (approximately 185 nautical miles at 30,000 feet), the lamp cube on that frequency strip lights up.

To prevent a squeal being transmitted to the aircraft, some of our transmitter frequencies are alternated 6 kHz. Additionally, we key alternate transmitters in two separate combinations. This is accomplished with the two foot pedals beneath the consoles. The keying combinations are referred to as "left or right key." To aid the operator in determining which keying combination to use, all lamp cubes are colored in either red or green plastic. Red is left keying (left pedal), green is right keying (right pedal).

When you are busy, your eyes first determine if the flight is lighting red or green cubes. Sometimes, both may be lighting, in which case the operator can either key left or right and make contact with the aircraft.

**MT:** Do the radio operators work the same frequencies for their whole shift?

**Gerler:** Yes, they generally work the same freqs for their shift, but there are variations in the frequencies they may handle. During the evening hours, a particular frequency may be busier than the daylight hours; consequently, the operator would just work that frequency net by itself. Another variation depends on personnel staffing. If five operators are working, then some of them would be working a single frequency and others will work combinations. Less operators, more frequencies to work.

**MT:** I understand that you've been with the company for 29 years. You really enjoy your work, don't you?

**Gerler:** You mean it shows? Ha, yes, you're right, I really do enjoy it. This is the best job I've had since I started with Eastern Airlines.

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**Flight Support HF Int'l Comms**

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Thank you, Harry Kelley and John Gerler, for contributing to this interesting glimpse into the workings of an air/ground radio service. The flying public has little, if any, knowledge of the existence of air/ground radio services. Without these companies, air travel would be virtually impossible. They should be commended for the work that they do.

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**MONITORING TIMES**

August 1989

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www.americanradiohistory.com
Crying Shame

You study for weeks, months, even years. Finally, you pass the Morse code portion of the FCC exam and you get your ticket. And after all that hard work, the first thing most beginners do is run -- not walk -- from Morse. Why? It takes too long to send.

Here's a CW QSO I heard a few weeks ago. It went something like this:

"The name here is Homer and the QTH is Saint Louis, Mo. Your signal is RST 579. My rig is a Kenwood 130 running 100 watts to a dipole antenna. So how do you copy? Back to you."

Besides being a particularly dull transmission, there are about 130 characters that, at five words per minute, takes about five full minutes to send. Halfway into the transmission, the person at the other end is either squirming in his seat or catching a quick nap.

Try sending that same message again, only this time telescope it.

"Name hr Homer ur RST 579 in St Louis Mo Rig is Knwd 130 at 100 wts to dipole hw? K"

That's sixty-one characters, sendable in less than half the time of the original transmission.

Here's what we did, first I took out every word I could and still retain the meaning, the punctuation was discarded and abbreviations are used where possible.

While the type of rig may be important to us, it does not really mean much; a 100 watt rig is 100 watts be it a kilo buck commercial or a home brew clunker that cost 25 bucks. If in the course of the conversation the other operator shows interest in the brand of rig, go ahead and tell him.

Changes in Part 97 Rules

The last time the Part 97 rules governing ham radio got a good overhaul was 1951. At that time, most communications systems were using high-frequency, hand-keyed telegraphy and amplitude modulated telephony.

Given that background, the FCC recently set itself to the task of overhauling these laws. While the commission did not achieve the 40% reduction in size that they had hoped for (they were able to gnaw off 25%), practically every section was re-addressed and revised.

According to the W5YI Report, the revision was undertaken in order to "make the amateur service rules easier to understand ... and to provide a foundation upon which future advancements in communications can be incorporated into the amateur service. The Commission also deleted many unnecessary, obsolete and redundant rule provisions."

The changes were unveiled just before this summer's ARRL national convention.

FCC: A Big Year

Part 97 rules weren't the only thing on the FCC's mind in 1988. Former FCC Chairman Dennis Patrick has been boasting to Congress about how much work the commission did last year.

According to Patrick, the FCC responded to some 50,000 interference complaints (resolving 42,883 of them through public service efforts) and investigated 894 cases of suspected marketing violations. At the same time, four vehicles were equipped with state-of-the-art investigative/monitoring systems.

Brown Out Blues

All too often, electronic gear can do strange things -- things that defy explanation. When the frequency of our rig shifts, power drops or circuit breakers/fuses kick out, the first thing we suspect is "THE WORST"!

With summer (i.e. air conditioning) weather upon us the unusual malady can often be traced to a brown out or low AC line voltage condition.

Most modern gear will function well between 105 to 125 volts. If the voltage rises or falls beyond these limits too often we experience the strange things mentioned earlier.

It is possible to monitor our line voltage with a simple voltmeter; however, a device called an ESV (expanded scale voltmeter) is a much better choice. The ESV looks at a limited range of voltage (95 to 135 volts) and allows us to keep accurate tabs on our line voltage at all times. This can be very important to anyone using electronics gear; especially if you live in an area of brown outs.

I wanted such a device for many years, so was pleased as could be when I saw an ESV at the MFJ booth at the Orlando Hamfest. I picked one up and have been using it for the past four months.

It is quite interesting to see how the line voltage varies during the course of a day. During warm weather the voltage at this location will often drop to a bit over 100 volts. MFJ calls this gem the MFJ-850 and at a price of $19.95 it is cheap insurance.

The instructions are easy to follow. As long as the voltage is in the green area everything is hunky-dory and we can go blissfully on our way. But should the voltage swing into either red region the instructions tell us to shut off electronic gear, home appliances, and so forth, to prevent damage.

This handy device is a welcome addition to any ham shack, or anywhere electronic or electrical gear is in use. For more info stop by your local dealer, or contact MFJ at 921 Louisville Road, Starkville, MS 39759.

Ike Gets More Mail

We received a letter from a chap who was quite upset about my comments regarding the no code license. The reason for his complaint is different from what we normally hear.

"Ike, you know the no code license will fail. It will not bring thousands of hams into the hobby! You know it and should be honest about it. The ARRL no-code proposal is a farce, they know it won't work because they will not allow CB type operations on the two meter band and that is the only thing that will bring thousands of people into the hobby! They don't want thousands of new hams. They want the proposal to fail."

This person did not sign the letter as you might expect. However in reading the letter I became aware that the fellow simply did not understand the nature of the proposal and the character of the bands the No-Code licensee will receive. Let me explain a few things that may bring comprehension to others who feel the same way.
COMPUTERIZE YOUR SHACK

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KENWOOD: TS-940, 440, 140, R-5000, 680, 711, 811
YAESU: FT-767, 757 GXII, 757 GX, 747, 9600, 736
JRC: NRD 525
COLLINS: 651 S1

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- Adds frequency and associated info limited only by disk storage.
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First of all, understand that two meters simply will not support a large influx of new amateurs in some areas of the country. Secondly, other bands will provide the same type of communications that can be found on two meters.

FM operation on 220 and 435, for example, is the equal of two meters in every way. Six meters will allow the newcomer an opportunity to work DX around the world.

The basic idea behind the no-code license is to allow technically oriented individuals an opportunity to communicate and experiment with radio. It is a great chance to attract youngsters and encourage them to advance in the communications/electronics field.

It must be understood there will be a lot of folks on these bands chatting away and just having fun. And there is nothing wrong with this for there will be a large number of people who are interested in the technical end of the hobby too. And this mix is what we need to keep amateur radio strong.

Propagation

The Solar flux continues its rapid rise/fall characteristic that we have seen in the past several months. Flux levels in May and June exceeded 200 on many days and on others fell to 150 or so.

Generally good to excellent conditions, coupled with the many sessions of Sporadic E, has been producing DX opportunities on ten and six meters. Openings on 144, 220 and 430 have been excellent with many 1500 to 2000 mile contacts taking place during the peak.

We can expect conditions to continue like this for the balance of summer. DX on the HF bands should be excellent as winter sets in. Get the antennas up in the air now while the weather is nice so you can clean up on 20, 18, 15, 12 and 10 meters this fall and winter.

That's all folks. Stay cool. And please feel free to write with questions, comments, gripes or whatever (please sign your letters; if you don't want your name in print, just say so).

73, Ike, N3IK
Bolivia
Radio Panamerica, 6105 kHz. No data personal letter and full data map/logo card. Verification signer, Daniel Sanchez Rocha, Director. Received in 35 days for a Spanish report and one U.S. dollar. Station address: Casilla 5263, La Paz, Bolivia. (Richard Coday, Olddale, CA)

Bulgaria
Radio Sofia, 11720 kHz. Two full data QSL cards, without verification signer. Received in 123 days for an English report and one IRC. Station address: 4 Dragun Tsankov Blvd, Sofia, Bulgaria. (David Fields, Louisville, KY)

Denmark
Radio Denmark, 15165 kHz. Full data flower painting card. Received in 21 days for an English report. Station address: Danmarks Radio, Rosenørns Alle 22, DK-1999 Frederiksberg C Denmark. (Richard Coday, Olddale, CA)

Honduras
La Voz Evangelica, 4820 kHz. No data station form letter and color logo card. Received in 122 days for a Spanish report and U.S. mint stamps. Station address: Apartado Postal 145-C, Tegucigalpa, D.C. Honduras, CA. (Mike Mason, Toledo, OH) Welcome to Mi.ed.

Iceland
Icelandic State Broadcasting Service, 11745 kHz. Partial data scenary card with station stamps and illegible signer. Received in 22 days for an English report. Station address: Casela Postaio 300, Centro Corresponsenda, 001 00 Roma, Italia. (Thomas Maslanka, Cleveland, OH) (Fraser Bonnett, Kettering, OH)

Italy
RAI Radio Teleivisione Italy, 11905 kHz. Full data card of sculpture, without verification signer. Received in 92 days for an English report, and one IRC. Station address: Casela Postaio 300, Centro Corresponsenda, 001 00 Roma, Italia. (Thomas Maslanka, Cleveland, OH) (Fraser Bonnett, Kettering, OH)

Japan
Radio Japan, 6120 kHz. No data winter scenary card, without verification signer. Received in 31 days for an English report and one IRC. Station address: NHK Tokyo 150, Japan. (Tom Maslanka, Cleveland, OH)

Kuwait
Radio Kuwait, 11665 kHz. Partial data QSL, with illegible signature. Received in 30 days for an English report and one IRC. Station address: Ministry of Information, Engineering Dept., P.O. Box 397, 13004 Safat, Kuwait. (Fraser Bonnett, Kettering, OH) (David Fields, Louisville, KY)

Lesser Antilles
DJKL, MV Sirius (West German container ship). 16587 kHz-USB. Full data prepared form card with call sign stamp. Verification signer, Friedrich Kindel, Radio Officer. Received in 50 days for a German utility report, a souvenir post card, and one U.S. dollar for postage. Station address: C/O Flenasbuer Containshaf Gesellschaft, Postfach 1539, 2390 Flensburg, Federal Republic of Germany. (Rick Albright, Merced, CA)

Nepal
Radio Nepal, 5005 kHz. Full data card with picture of studio building in Singha Durbar. Verification signer, R.S. Karki. Received in 341 days for an English report, tape recording of program, and one U.S. dollar. Station address: Radio Broadcasting Service, P.O. Box 634, Singha Durban, Kathmandu, Nepal. (Jarm Radkte, Santa Ana, CA) Welcome to QSL Report-ed.

New Zealand
E俊J, 4368 kHz. Full data scenary card. Verification signer, H. Peseln. Received in 19 days for an English utility report and two U.S. mint stamps. Station address: Nourse Radio, Boite Postal 224, Noumea, New Caledonia. (Nick Grace, Harvard, MA)

South American Waters
DLAI, MS Europa (West German cruise ship). 16587 kHz-USB. Full data prepared form card, fact sheet, and color photo of the ship. Verification signer, H. Kuehl, Chief Radio Officer. Received in 110 days for a German utility report, souvenir postcard, and one U.S. dollar for postage. Station address: c/o Hapag Lloyd Line, 1 Edgewater Plaza, Staten Island, NY 10305. (Rick Albright, Merced, CA)

United States
KDDI-920 AM. Partial data personal letter. Verification signer, Rex C. Wilder. Station address: 601 Central Avenue, Fairbairn, MN 55021. (Harold Frode, Midland, MI)

USSR
Byelurasia SSR-Radio Minsk, 9560 kHz. Full data card with illegible signature. Received in 176 days for an English report. Station address: Minsk, Byelurasia, SSR, USSR. (Rick Grace, Harvard, MA)

Uzbek SSR: Radio Tashkent, 11785 kHz. Full data QSL card of hammer and sickle symbol, without verification signer. Also received two souvenir postcards and program schedules. Received in 58 days for an English report. Station address: 49 Khorezmir Street, Tashkent, Uzbek SSR, USSR. (Bob Landau, Secaucus, NJ) (Fraser Bonnett, Kettering, OH)

Thanks to John Delisle of N Palm Beach, Florida, for the QSL from the Lithuanian Radio Service.
Piccolog

After spending many hours during the last two months tracking down Piccolo frequencies, we were able to log 48 stations. We call it the Monitoring Times Piccolog!

MKK (London, UK)
To MSS: 9053, 10760, 13445, 14473, 16344, 17515, 18512, 18525, 19810, 19915, 20170, 23761.
To MTS: 11584, 13580, 14510, 16205, 18750, 20436, 22890, 23850

MSS (Belize City, Belize)
To MKK: 7822, 11440, 12270, 14710, 14828, 15815, 16270, 18420, 18941, 19005, 22922, 24333 (sometimes on LSB)

MTS (Falkland Islands?)
To MKK: 9265, 14593, 15855, 16390, 18879 (sometimes on LSB)

MKD (Akrotiri, Cyprus)
To MUH8844, 10249, 11465, 13968, 16233, 190565, 20124, 23374

MUH8 (location unknown)
To MKD: 10854, 16254, 23794

GEC (location unknown)
Sending: RYRY DE GEC FOXES on 14853

GYU (Gibraltar)
15870

Strange Signal (Book 2)

I copied another strange signal I thought was piccolo. I heard it on 19.154 MHz. It was comprised of an MFSK signal; however, the tones were spaced wider and the sequence repeated over and over.
The tones almost sounded like the national anthem from one of the Banana Republic’s AM broadcast during sign-on. But the same tones were repeated for hours. If you know what this is, let me know! The tune is driving me nuts!

Tandy Introduces a Computer/Sound Analyzer

Last December I decided to upgrade my computer system. I made this decision after seeing an ad in a Christmas Wish Book that came in the mail. The flyer was from Tandy and they featured their new 1000 SL and TL computers.
The thing that caught my eye was the fact that both computers have sound recording capabilities. The ad pictured the 1000 SL with an oscilloscope-like display and sound waves stretched across the monitor in dazzling color. A microphone can be plugged into the computer's front panel and a computer program can digitally record the sound and then save it to disk.

Immediately, my head started to spin as I saw all sorts of possibilities such as recording RTTY signals and analyzing the pops, beeps, and whistles that I normally hear on the shortwave bands. I made inquiries in the first Radio Shack I could find.

Two weeks later I installed the 1000 TL (Tandy's IBM AT compatible) in my listening post and I use it for Amateur Packet Radio, computer programming, receiving RTTY, or for writing this "RTTY" column.

The sound program is a very good tool for acquiring and displaying any sound that you may encounter. It has the capability of recording short sound segments and saving them to disk (the time of the recording depends on the sample rate and which Tandy model you have).
The display looks very much like an expensive storage oscilloscope (without the grid lines) that is used in a medical laboratory or hospital. You can expand the sound waves until the individual cycles can be seen (see Figure 1).

Figure 2 is a printout that was sent to me by a protege who is in the process of perfecting a program that runs on the Tandy 1000 SL/TL using the sound capabilities. The printout is a spectral display of an FDM RTTY signal. It was recorded on the computer and the program, which uses a math calculation called "Fast Fourier Transforms" (it's way over my head), printed the picture showing the individual FDM channels.

My friend said he used an ICOM R71 which was connected to the computer via the tape jack on the receiver’s front panel. Equipment to do the same thing costs well over $10,000. This can open a new field in the shortwave hobby, I'll let you know when this program becomes available.

News Flash

For the last several months the military has been switching to a VNSK (Very Narrow Shift Keying) mode on two VLF frequencies: 134.9 kHz and 88 kHz. The shift is so narrow (20 Hz or less), the M7000 had a difficult time copying it because the mark/space LEDs on the front panel wouldn't light up.

Is the military experimenting with this mode because they want to decrease the bandwidth? Or are they trying to make it harder for hobbyists, like myself, to copy their signals?

RTTY He Wrote

I recently did an article on the 6028 series FDM modem and received a letter from Clint Gilliland, the co-inventor of the system. He said the article was well written and that it explained the system very well. He also said that I made an error when I mentioned the operation of the time diversity voting system. I said that if the Unit copied "YYBRTEX", it would declare the character as a "Y" (which suggests a 2 out of 7 voting system). He said that the unit uses a 4 out of 7 channel vote system.
Chasing Away Sparklies

After as little as one-half hour of being possessed by a satellite TV system, one becomes irrevocably adjusted to the clarity of the pictures on the screen. There is no going back to the dark ages of terrestrial TV signals.

The problem with this adjustment comes in the second half hour of dish ownership when it becomes apparent that all channels on all satellites do not have the same signal strength. Some channels have "sparklies.”

To the uninfected, these little dancing points of white upon the screen may not even be noticeable. But to the jaded dishowner it’s enough quality to make one hysterical.

Sparklies are present when not enough signal is gathered in at the dish and fed to the receiver. The less signal received, the more sparklies show. It’s video noise and it shows up in the audio as well.

Your local cable company or TV station does not suffer from sparklies. The reason is that they’re using much bigger parabolic reflectors (dishes), stationary mounts (no moving parts), and better hardware (feed horns, LNBs, etc.). In fact, it’s a tribute to designers of TVRO gear that you’re seeing so few sparklies on your marginal home equipment.

Fighting Sparklies

The pursuit of satellite TV is foremost a pursuit of the sparkle free picture. But it may not be necessary to rush out and buy a big dish. You could already have good enough quality components to give you sparkle free pictures. It could be that all you need is a tune up.

Getting Off the Track

During the course of a year your dish has plenty of mechanical parts that can loosen up and cause it to start drifting off the Clarke belt track. This doesn't take much. In fact at Ku frequencies, such misalignments, while imperceptible, can make the picture unwatchable.

It may also be that during the initial installation the dish was not properly peaked. This is particularly true of do-it-yourself installations.

Two Solutions

Luckily there are two solutions to the problem. One is to contact your local satellite TV service company. Expect to wait a week or more to schedule an appointment and expect to pay $50.00 per hour plus transportation for quality service. Or you can do-it-again-yourself.

Doing it yourself can be a time-consuming pain or a relatively easy procedure. The first time I peaked my dish was a nightmare. Not having a cable long enough to go from the house back to the dish so that the picture could be observed while making adjustments, I had to erect a scaffold on which to set the TV facing out of a window so that I could view it through binoculars while adjusting the dish. Not recommended.

I've also tried having an accomplice inside the house viewing the picture and relaying comments via walkie-talkie as I made adjustments at the dish: "(Crackle) How’s that look?” "(Beep) Mmm... I think it was better before.” "(Crackle) What?” Not recommended.

I've also done the old "peak and run" method whereby one makes a one-tenth turn on a bolt and then dashes into the house to the TV and tries to figure out if it looks any different than it did two minutes ago. Again, not recommended.

No Help From Designers

Don't look to your receiver for assistance. While there are exceptions, most signal strength meters on satellite receivers are a joke. Consisting of a few LEDs or an LCD panel, these meters are useless for sensitivity purposes but they do look real neat. Some receivers don't even have meters.

(a 9 volt battery must be installed).

Now set the sensitivity adjustment knob to an easily read mark and begin peaking the dish. As adjustments are made and signal improves, the meter will read higher. It’s that simple.

Making It Clear

Use the meter to make sure your north-south alignment is correct, that your feedhorn is properly centered, that the focal length is right, that the Polarotor is in the middle of the probe’s travel ability, and that the elevation angle is set.

You will be amazed at the improvement in the performance of your antenna just by being able to peak the dish. And you’ll find that the $104.00 price tag will be justified the first time you use it.

Bulz-l-Meter III

While professional satellite TV installers have the benefit of expensive test gear and portable equipment to peak the system at the dish, such a solution has not been practical for the home TVRO owners until now.

To the rescue of the home dish owner comes the Bulz-l-Meter III. The meter, which measures 3-1/4” x 6” x 1-1/2” and weighs about a pound, is the answer to the headaches of peaking your satellite TV system. Simply put, the meter is a low power relative strength meter which measures the signal from the down-converter at the dish and before it gets to the receiver.

Setting It Up

To use the meter simply feed the signal from the LNB into the "F" connector marked "Ant In." Now feed the coax going to the receiver out of the "Rec Out" "F" connector. Put the toggle switch into the "Block" position for systems using block downconversion (the "power" LED will light up using line voltage in the cable). For older single conversion systems put the switch in the 70 MHz position.

With the Bulz-l-Meter, an inclinometer, and a couple of wrenches, you can peak the sparklies right off your screen!
MAILBAG: SCPC and TVRO On the Go

"I graduated to a Uniden 9000 receiver and bought a VideoCypher II separately. I can still receive SCPC/SSB signals by running a lead from the composite out jack on my receiver to my shortwave radio but SCPC/FM signals now elude me entirely." -- David Brooks, Athens, GA

One of the problems with the more sophisticated contemporary satellite receivers such as the UST 9000 is that manufacturers are dispensing with the 70 MHz loop out of the back of the receiver. This loop was originally provided so that consumers in high terrestrial interference (TI) environments could add a filter which would reduce the offending signal.

Tuning the 70 MHz loop was the way to get the SCPC/FM signals because your TV audio radio tunes either side to the 70 MHz IF. Your TV audio radio will not tune through the frequencies coming out of the composite video port because this contains the "raw" signals of everything from 950-1450 that's coming from the satellite.

But don't worry, David, you can still get SCPC signals by using method four in the SCPC diagram in the October 1988 Monitoring Times. This method employs a 950-1450 MHz splitter (it must allow only 950-1450 and have a DC block on one leg) which feeds your UST 9000 (the master) and a separate receiver which has a 70 MHz loop (the slave).

I suggest using another of the Unidens such as the 7000 which can be bought used for about $200.00. This will also provide you with a back-up receiver for that inevitable lightning hit which will see your new receiver in the shop for six weeks.

In addition, Heil Ltd. has a new SCPC/FM audio only receiver called the SC-1 which features a built-in tuner for 950-1450 MHz and will tune SCPC signals without needing another satellite receiver. I'll report on this unit in detail as soon as I can get hold of one.

Have Dish Will Travel

"Enclosed is a clipping from J.C. Whitney's Auto Parts catalog about a satellite TV system... What do you think I could realistically expect from such an outfit?" -- Elmer May, Baltimore, MD.

Well, Elmer, it's a great idea. In fact, a lot of folks who have home dishes find watching anything else even on the road totally unacceptable. Hence, there are a number of systems which have been put together with the RV owner in mind. But I have to say that this particular system is probably not what you need.

The problem with the ad is that it's uncomfortably vague. But it is possible to deduce enough to make the following observations: 1. The receiver, which looks like the old "Sky Eye" series made by KLM years ago, features the woefully lacking analog tuning similar to that used on AM/FM radios. 2. It uses the old style LNA/downconverter which, while probably adequate, is not as good as you might get at a similar price. 3. The 4-1/2 foot dish may work well on the high-powered satellites if you are traveling through the lower midwest but don't expect much from it at your home on the east coast. 4. The "mounting ring for exceptional stability" as they phrase it is questionable. Gentle gusts of wind swirling around the campground may not toss the dish around but it won't take much to shift the dish off the bird you're trying to watch.

The biggest problem with it is that you want more from this system than it is prepared to deliver. You would probably want this system to serve as a home dish too, for which it is not acceptable in your location. In short, what you're being offered is liquidated gear with which I think you would soon be disappointed.

There is a company that makes dishes designed for mounting on top of RV's. While I have not seen their products in action, their 6-1/2 foot dish looks like it might do the job. It is also motorized and folds to only 18 inches on the roof.

You'll have to provide the electronics (feedhorn, LNB, receiver, etc.) but good used gear shouldn't cost more than what you'd pay for the liquidated stuff, and you'll have started off on the right foot. You might be a lot happier and you can probably use the system with some satisfaction at your home. Write to The Dometic Corp., P.O. Box 490, Elkhurst, IN 46515. Ask about the Travel-Sat.

Transponder Notes

CBS has had problems with its scrambling system. The result is that most of its services remain in the clear.

That network is not alone in technical malfunctions. Many Major League Baseball backhauls have been observed in the clear.

In addition, cable Pay Per View (PPV) movie channels have had their problems. It's not uncommon to find these services in the "fixed key" mode which means that authorization is not functioning and any VCR will descramble the picture.

If you're not watching "Sunday Night Satellite," you're losing the best TVRO-only show on today. Featuring industry news, programming reviews, editorials on current TVRO issues, and other subjects, it is also a show window for TVRO oriented products. Look for "Sunday Night Satellite" Sundays and Thursdays at 9:00 p.m. ET on WS-4.
The Timeless Voice of New England

Bob Steele, WTIC's friendly wake-up call

Bob Steele visits hundreds of thousands of bedrooms every morning. Many consider him to be the most popular man in New England. Almost everyone knows him and considers him an old friend.

For the past 46 years, Bob Steele has been waking people with his warm familiar voice. He is the morning announcer and personality at 50 kilowatt clear-channel WTIC, 1080 radio in Hartford, Connecticut. With fierce competition from dozens of stations in southern New England, 27 percent of the listening audience tunes to Bob. At any given time in the morning, he has about 80,000 pairs of ears hanging on his every word!

What's his secret? "I don't know what it is. I feel I know my audience. I walk up to people I don't know and I talk to them, and we feel like we're old friends." Although he gets 40 to 100 letters a day, he reads them all himself and personally answers the ones that require a reply. "You keep in contact with your audience. When people receive answers, like a copy of a letter, he'll tell his friends that I answer my mail and he lets other people know I do."

Answering letters is only part of his style. Every morning, his warm and comforting voice is an unusual treat. Steele doesn't scream or tell off-color jokes. He doesn't use heavily produced jingles or comedy routines. He talks slowly and with authority.

One of Steele's simplest, yet most timeless features is "The Word of the Day." "I'm not into grammar but I look for a word that people mispronounce. Something that people should know better. It's the perfect medium to help people. Face to face, you can offend someone, but on the air you don't offend anybody. You don't have to look them in the eye and tell them that they mispronounce words like 'etcetera'."

People trust and admire Steele. He sounds like your favorite grandfather or, maybe, Kris Kringle. Few people are more consistent. He's been getting up at four every weekday morning since March of 1943 to be the master of ceremonies at WTIC's 6 to 10 a.m. show. That's a 46 year stretch, amazing in itself. But Steele's tenure at WTIC goes back even farther.

In the summer of 1936, Steele travelled from California, where he was an announcer for radio station KGFJ, and a public address announcer at motorcycle races. He needed a job and a friend of his found him one in Connecticut, again announcing at a motorcycle racetrack.

The motorcycle season ended in September and he was out of work. He always wanted to be in radio, so on his last day before going back home, he walked into WTIC and asked for an audition. "I didn't have another job, so I decided to give it a shot."

The station was owned by the Traveller's Insurance Company, which was how the station got its call letters. Luck was with him, and he was hired on the spot for $30 a week as a staff announcer. Six and a half years later he was promoted to morning personality and has been there ever since.

Steele is contemplating retirement next year after 54 years at WTIC. How does he want to be remembered? "As a friend of the audience with their best interests at heart."

Steele will be 78 years old this month. Happy Birthday, Bob!

The FM Authority

If you need an excellent guide through the jungle we know as FM, Bruce Elving is your man. There may be no better authority on the 88 to 108 megahertz band. He has been listening to FM since 1948 and became fascinated with it. "Back then, there was only one station on the air, and the band was wide open."

In his Duluth, Minnesota, home, Bruce began to hear stations from hundreds of miles away by skip. "The first time I heard skip, it was great! I heard a station from Jacksonville, Florida, briefly, and then it faded away. I couldn't understand why I couldn't hear it the next day. Later I heard Wisconsin and Winnipeg, Manitoba. It was only 300 miles away, but it was rare skip. It was amazing."

Much later, he discovered that many other people had the same experiences and were curious about what they were hearing. Bruce decided to meet the needs of these long distance listeners. In Milwaukee, Wisconsin, in 1971 he published the first edition of the FM Atlas, and the new twelfth edition has just been published. Almost 200 pages long, it features very detailed listings of all the FM stations in the United States, Canada, and Mexico.

He also started writing about changes in ownership, call letters, and frequencies of FM stations for a listener's club, the Worldwide TV-FM DX Association. The informative monthly column is now also published as a newsletter called FMedia!

Elving decided to go into the printing business simply because he collected so much information that he didn't know what to do with all of it. Elving says his sources are "From everything and anything: FCC news releases, The M Street Journal (which now publishes its own annual station directory), reporters in clubs, and directly from broadcasters. It's a great source of information."

Bruce really enjoys comments from appreciative people, and that's what makes it all worthwhile. "I get lots of letters with praises from people. It makes me very happy! I almost get too many! It's hard for me to reply to them all, but I do!"

Elving works on many other projects as well. He's married and an active Christian. "Radio can take over one's life and I try to keep it in perspective. Radio is only one of my many interests."

Bruce is also an expert on the reception of SCA subcarriers of FM stations. These are the signals that carry Muzak, and radio services for the blind, or in foreign languages. Bruce sells kits and adaptors to pick up these interesting signals.

If it's on FM, ask Bruce! Better yet, get a copy of his new FM Atlas. It's available from DX Radio Supply (P.O. Box 360, Wagonont, PA 19376) for $9.95 plus 2.00 UPS. PA residents add 6% sales tax.

Look, Maw, no tubes! The Harris DX-50 is really 128 AM transmitters in one!
Bits and Pieces

It’s really 128 transmitters in one! The digital age has come to AM broadcasting. Harris Corporation is now marketing a 50 kilowatt transmitter with no tubes whatsoever! Their new DX-50 transmitter features 128 transmitting modules that are digitally combined to create a high-powered AM signal. They also have lower powered models: the DX-10 and the DX-25U.

This new technology may be very important to thousands of stations with very tight budgets. The DX-50 operates at 85-90 percent efficiency. Older transmitters run with 55-60 percent efficiency or less. The amount of money saved on power consumption could keep a station with marginal finances on the air. And its new, clean sound is very easy on the ears.

“A Prairie Home Companion” host, Garrison Keillor, returns to American Public Radio network stations on Saturday night, September 30, at 6 p.m. He’ll be doing 12 new shows for the network this fall, and another 12 next spring.

Mailbag

Ron Carruthers of Edinburgh, Scotland, sends in a long-distance question this month. “What exactly is an FM translator station?”

Ron, this could be one of the strangest arrangements for broadcasting around. An FM translator is a very low-powered transmitter that rebroadcasts another radio station continuously. East of the Mississippi River they are limited to one watt output.

Their antenna height and gain are almost unlimited, as long as they don’t interfere with stations making their primary broadcasts on a channel. For example, W276AQ in Fort Lee, New Jersey, on 103.1 MHz rebroadcasts WALK 97.5 MHz from Patchogue, New York. The station uses a one watt transmitter and a 13-stacked-element antenna, and can be heard for at least 15 miles around.

Another quirk: the translator’s operator and licensee cannot be the same. The owner and operator of the station it repeats. Gerry Turro owns and operates W276AQ and hopes, someday, to be able to become a low-powered independent FM broadcaster, should there be a change in FCC rules and regulations to allow for very local FM stations.

Western U.S. translators can be authorized to operate with up to ten watts. All translators can broadcast 30 seconds of programming an hour that they don’t rebroadcast from the mother station, but few do. There are almost 2,000 translator stations on the air in the United States today. Thanks for asking, Ron!

New Station Grants

Here’s a real odd one! The FCC has granted WNZK-AM in Westland, Michigan, the right to operate on a split frequency! They will broadcast on 690 kHz during the day, and on 680 kHz at night. Look for these new stations: Dahlonega, Georgia, on 104.3; Pearson, Georgia, on 101.9; Vidalia, Louisiana, on 104.7; Henderson, Tennessee, on 107.7; Farmville, Virginia, on 101.3; and Woodbury, Tennessee, on 104.9.

Be an American BandScan Reporter.

See any stories about radio in the local paper? Send them to Monitoring Times, P.O. Box 98, Brassostrn, NC 28902.

For Sale

A 10 kW AM is on sale in the tri-cities of Kingsport, Johnson City, and Bristol, Tennessee. All the equipment is four years old or younger. Call Jim Charron at 615-349-6133.

The owner is ready to retire and wants to sell now in a small West Texas town. He’s ready to sell his profitable AM-FM station, and will consider all serious offers. Call him at 806-272-5378.

An Illinois Class A FM is for sale, including buildings and real estate. The owner must sell before July and will accept the best cash offer over $600,000. Write to the General Manager, P.O. Box 583, Wilmette, Illinois 60091.

And an AM/FM combo station is available in Michigan. Including real estate, the owner is asking $250,000. Contact T.L. Laidlaw at 701-256-1080.

New Station Grants and For Sale information courtesy of Broadcasting magazine.

International Bandscan

The United States and the United Kingdom are not the only places where deregulation has dramatically changed what people hear on the radio. Mulungushi Radio became Zambia’s first commercial radio station in February. Singapore residents are now enjoying “ZOO 101.6” from nearby Indonesia, their first taste of commercial radio.

In Spain, a recently approved FM Radio Technical Plan will double the number of commercial radio stations. The public stations, Radio Nacional de España and Radio Cadena Española, will go from 256 transmitters to about 1500 total. Spain currently has only one private AM radio station, known as "107."

And in Argentina, Buenos Aires has a new FM station, "FM Municipal" on 92.7 MHz. They broadcast from 6:30 a.m. to half-past midnight daily. This is the twelfth FM station in that nation’s capitol.

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Please send your comments, questions, suggestions, and news items, or anything else of interest to: American Bandscan, Monitoring Times, P.O. Box 98, Brassostrn, NC 28902. Until next month, happy trails!

Credits: Thanks to Bob Steele at W1TC, Hartford, Connecticut; Bruce Ewing, Broadcasting, Radio World, and World Broadcast News magazines, the British DX Club; The Worldwide TV/FM DX Association: The Harris Corporation; and to Ron Carruthers of Edinburgh, Scotland, for their generous contributions to this month’s column.
Government Games

THOUGHT FOR THE DAY: "A final thing to ponder involves the motives behind the deception over the actual locations of the KKN stations. What is the point? Surely the KGB, DGI, and other "enemy" intelligence services aren't fooled for a second by such ruses, and probably know the exact locations and purposes behind these stations. The one's the deception is being aimed at are people like us." -- Harry Helms in the May issue of his newsletter, UMBRA ET LUX.

Harry raises an interesting and vital point. Recent revelations in Monitoring Times and elsewhere have shown that all is not what it is claimed to be in regard to such alleged State Department stations as KKN39 and KKN44. They appear to use multiple transmitting sites, and at least in certain instances seem to be closely associated with numbers stations. Increasingly it is evident that they are utilized by government agencies other than the State Department.

You can consider what follows an editorial, rather than objective reporting. Why cannot our government stop playing games with us? Why cannot it admit that it is responsible for some of the numbers transmissions and that these as well as the KKN stations are involved in intelligence matters? How would such a statement compromise the security of this or any other nation? Instead, we get denials and disinformation, and we have been getting that for over twenty years. Why?

While on this subject, from Maine, Dave White writes with further observations on KKN39. On 9325 kilohertz he has found it apparently linked with another station. Whenever the unidentified "sister" station sends its numbers groups, KKN39 deliberately shuts down.

Dave notes that while there is some difference in the signal quality between the two stations, signal strength is virtually identical. He hypothesizes they may even be located in the same building! For those who want to look into this further, probably the best time to monitor the frequency would be around 1700 or 1800 UTC.

In regard to our recent report on oral CW on 13387, Dave (who did most of the monitoring on that frequency) says it can be explained by the fact that one of the operators was a pretty bad sender by key, and thus oral CW was more effective. The same explanation has been offered by Don Schimmel. In commenting on one of the operators, Don notes, "His fist was really bad." Don also provides us with the identification of two of the stations associated with the mysterious traffic on 13377.

Mark Chinsky was able to determine that ADL is the callsign of the Ethiopian Ministry of Foreign Affairs in Addis Ababa, Ethiopia, while KNY44 belongs to the Ethiopian Embassy in Washington. Our thanks to Dave and Don for their further insight on the fascinating traffic on 13377.

We welcome further observations and comments on all of the above.

Not Really Twins

Yes, folks, there are two stations which have the call letters WKND. Connecticut's Pete Kemp advises us there is a licensed station in Windsor, Connecticut, using that call. If you want to try it, the frequency is 620 kilohertz.

If there is any connection between this and pirate WKND, we do not know about it. However, a number of "Outer Limits" readers have been logging the pirate lately. Look for WKND on 1620 and 6240 kHz.

According to Ohio's Fraser Bonnett, pirate WZKP, "K-ZAP Shortwave," is also using the same maildrop. He found this one on the popular pirate frequency of 7415 at 2207 UTC with rock music and comedy parodies. New York's Christopher Kisel was another reader who logged K-ZAP, which claimed to be "commercial-free" pirate radio. Pat Murphy has also logged WZKP and says "it sounded suspiciously familiar, like WKND."

It Really Got Them Buzzing

A reader who wishes to remain anonymous recently brought to our attention a fascinating piece of pirate history. The January 31, 1982, issue of Long Island, New York's highly respected paper Newsday contained an interesting item in its radio listings. At 8:00 p.m. WBUZ on 103.1 MHz was listed as carrying the call-in show "Long Island Talks Back."

What the folks at Newsday did not discover until after the 31st was that WBUZ was a pirate! Apparently this episode caused enough of a stir that WCBS New York (880 kHz) reported it.

United World Radio

Look for some new sounds from this pirate. About two years ago it began broadcasting in true independent sideband AM stereo with 300 watts. While improvements were made during the last year, it used the facilities of the Voice of Free Long Island. UWR now has obtained a complete ISB exciter chain which should deliver outstanding stereo fidelity; and the station should be boosting power to one or two kilowatts.

UWR reports have been received here in Florida in the past. With these changes we expect to receive more. We hope at a later date, as station plans firm, to have more details for you on frequencies and times.

Meanwhile, while being relayed, UWR is being heard. Ohio's Mike Mason recently came across them on 7415 kHz at 2358, just at closing. What he monitored indicates UWR can get rather philosophical, or perhaps we should say political. There were chants of "power to the people" along with an instrumental version of "What the World Needs Now Is Love Sweet Love." In addition to UWR, Mike is another reader who logged K-ZAP.

That Venerable Old Pirate, Radio Clandestine, is showing up a great deal lately. North Carolina's Gregg Allenson advises us it also has a new address. You can reach the folks at Clandestine by writing the Pirate Radio Network, P.O. Box 3114, Kingston, New York 12401. Gregg logged Radio Clandestine on 7414. New York's Cathy Turner had them on 7415 at 2355 UTC. The legendary R.F. Burns along with Wanda Lust was hosting a "Dead Head Special," featuring music by the Grateful Dead.

* * *

In the spirit of AM Radio History, it is our tradition to list some of the top stations we have monitored on this frequency. Here is the May 16, 1982, list of pirate WBUZ.

<table>
<thead>
<tr>
<th>Time</th>
<th>Frequency</th>
<th>Station</th>
<th>Call Letters</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 PM</td>
<td>WBUZ-PM</td>
<td>Pirate WBUZ</td>
<td>WBUZ-PM</td>
<td>WBUZ-PM was heard for the first time on 103.1 MHz.</td>
</tr>
</tbody>
</table>
| 8:30 PM | WBUZ-PM | History of Rock | WBUZ-PM | Featuring "Rolling Stones" and "The Beatles."
| 8:30 PM | WBUZ-PM | "The Long Island Talks Back" Call-in Show | WBUZ-PM | Presented by WBUZ-PM. |
| 8:50 PM | WBUZ-PM | Delta Opera House Presents A "Symphony" | WBUZ-PM | Featuring a "Symphony" and "Ravel."
| 9:00 PM | WBUZ-PM | WBUZ-PM in "The Long Island Talks Back" Call-in Show | WBUZ-PM | WBUZ-PM presented a call-in show. |

* * *

Newsday's historic 1982 listing of pirate WBUZ.
Gregg and Cathy bring to our attention the fact that the above address can also be used for Radio Morania. Gregg heard them on 7389, while Cathy found them on 7415.

This writer would like very detailed reports on any monitoring of Radio Morania. We once had it on very good authority that no new Morania programs would ever be produced. In fact, there were originally only two shows done. Both have become classics, and the logs we are receiving appear to contain at least excerpts from those shows. But Morania never had a maildrop.

Radio NewYork International???

Jim Hayes also found Radio Clandestine on 7415, but he came across something else on 6240. From 2245 to 2247 he heard a station testing and claiming to be Radio NewYork International. The announcer said they were moving to another old RNI frequency, 1620, to continue testing, but Jim heard nothing there. A good friend of the genuine RNI staff advises us that it is highly unlikely the real RNI had anything to do with this. Still, it is interesting nonetheless.

and Much, Much More!

The mailbox continues to overflow these days. We try to acknowledge all communications. Please forgive us if we get behind, you are inadvertently overlooked, or your contributions have to be condensed. Everything is deeply appreciated. Without your help there would be no "Outer Limits." Here is more of what readers have come across recently.

New Jersey's Mike Bronowicz is the proud owner of a QSL from the ever popular and widely heard Falling Star Radio. You can find this one on 6240. After ten months Pat Murphy finally got his QSL from KNBS, Cannabis Radio, which claims to be run by the

"California Marijuana Cooperative." KNBS uses the Box 5074, Hilo, HI 96720 maildrop.

Less fortunate in the QSL department was clandestine chaser Scott Edwards of California. He says that anti-Khomeini clandestine Radio Flag of California cannot be reached via the 20 Rue Condorcet, Paris, address which has been given elsewhere. At least his reports keep coming back. Can anybody help Scott out on this? And we surely would love to hear from more readers on the west coast along with the mountain and plains states. How about you Canadians, also?

Quite a few other pirates are being reported to Box 1116, some for the first time. Gregg Allenson found WART on 7389 kilohertz and wants to know if anybody might have an address. Fraser Bonnett heard Free Radio One on 7415 announcing an address of 3434 North Pacific Highway, Medford, OR 97501. He also heard "Radio Free America, Satellite Radio," on 7415 at 0105 and wonders if this might be somebody relaying the programs of a real satellite. Pat Murphy has also heard something strange on 7415, the relay of a Portland, Maine, medium wave station. Anybody know what is going on on 7415 these days?

Cathy Turner reports Radio Candy on 1620 at 0313 with oldies and fake ads. She discovered WDRI on 7530 at 0215 with reggae music. The station gives its ID to the sound of drums. Still another log was WCRP with a "basic Christian religious broadcast" on 7480 at 2240. This one announces a phone number for QSLs. Cathy's loggings show the wide variety of things to be heard these days. Stay tuned! You never know what might come your way!

Across the Pond

It is great to hear from our British readers, and we have received two letters recently from England's Martin Lester. Martin advises we made a goof when, in a recent column, we referred to London's Capital Radio as a pirate. He notes it is legally licensed for operation on both AM and FM. Sorry about that, Martin. We confused it with an earlier operation we believe was a pirate.

Martin clarifies still another matter for us. A number of North American listeners did receive Radio FAX last winter on 6205. There has been some confusion as to where this was located. Martin says the studios and staff were always in England and all tapes made there. The tapes were then shipped to Ireland, and all actual transmissions took place there.

With the closing of the Irish pirates, Radio FAX is gone for now. However, Martin notes Radio Dublin seems poised for a return, at least on medium wave. We may not have heard the last from Ireland yet. Thanks to Martin, we have a good deal of other information on the British pirate scene, but we will have to hold that until later.

Thanks, everybody. Your support has been absolutely tremendous!
QSLs and Rare Events

We are into those "hazy, lazy" days of summer when a wonderful feeling of lethargy takes over. If you tune your receiver down to the low frequencies, you may get to hear some of the best thunderstorms of the year. Unless you are west of the Rockies!

It's hard to remember that summer in the northern hemisphere is winter in the other half. August-September is about the best opportunity of the year for people on the west coast to catch beacons from "down under." Australia, New Zealand, Fiji, Cook Islands, and Indonesia may be lurking out there amidst the static.

So, if you are beyond the Rockies, take a shot at the south Pacific. You will probably hear a lot of the usual summer static, but you may also come up with one of those rare moments that you will be talking about for years to come.

Those of us further to the east will have to find something else to keep us busy between baseball games and golf tournaments. This seems like a good time to discuss QSLing beacons.

For those of you totally new to the wonders of radio, a QSL is a written verification of reception. Amateurs use them to verify contact with another amateur. Because amateurs want to get a QSL from the other party, they are quite likely to send their own.

International broadcasting stations send them out, sometimes almost automatically. Originally, international broadcasters were anxious to receive reports of how well they were being heard in various parts of the world. This information was of great value to their engineering staff as guides to power usage and both type and direction of antennas that were most effective in reaching their desired area.

Today they are more interested in program content to show that their programs are reaching adequate numbers of listeners.

Both of these goals were sufficient to encourage the returning of their own QSLs to those who reported. Both amateur and international broadcast QSLs make nice wall displays or albums (like photograph albums).

Now for the bad news ...

Beacons are utility stations and utility stations are a little different. Utility stations don't really care whether you hear them; they'd probably prefer that you didn't even listen. So you start off in a down situation. But don't give up; there are ways.

The important questions are how to reach these utility stations, what to tell them, and how to get them to respond.

How to reach them -- in the case of low frequency beacons, they are either aeronautical or marine. The aeronautical beacons will be connected with an airport. You might try writing to: Airport Manager, Name of Airport, City, State.

You won't know the name of the manager, but you should be able to identify the airport. Local Airport may be enough identification in North Overseas, but it won't be adequate in a town that has two or more airports. (And it is surprising how many do have multiples.)

How to get them to respond -- there is no real incentive for this person to respond. There probably aren't a dozen beacons in the entire world that have prepared QSL cards or letters waiting to be used. So you have to make life easy for them.

Prepare a card that shows all of the known information (ID, frequency, location, date, and time of reception) already entered and has a line for their signature. You may also provide space for the other information that you would like by showing "Antenna" and "Power" with a blank line after each. The signer has to do is fill in a couple of brief items and sign it. This could be the difference in getting a return and not getting one back.

Of course, provide return postage. You can enclose a stamped self-addressed envelope or put your name and address on the reverse side of your (PFC) card along with postage stamps to cover the mailing cost.

Remember, the station is doing you a favor by signing and returning the card. Be nice to them.
If you order now, you will receive in early September the 1990 edition of Passport to World Band Radio, recognized as the leading guide to shortwave listening -- the "bible" of SWLs worldwide -- at a discount.

Why is Passport the leader? Approximately 400 easy-to-read pages provide up-to-date frequencies, schedules and languages of worldwide broadcasters; interviews with and articles by the best known names in shortwave listening; in-depth, authoritative reviews of receiving equipment and accessories.

Passport is the ultimate radio roadmap to exotic lands -- who's on what frequencies at what times, while computer-generated graphics make it easy to use. And Larry Magne's highly acclaimed, no-holds-barred, 1990 "Buyers Guide to World Band Radio" is included.

Get the most from your shortwave receiver by using the foremost guide to world band listening. Reserve your copy at a special pre-publication discount -- only $13.95 (regular price $14.95 plus $2.00 shipping) and we will prepay shipping in the U.S.! But you must order now -- before Sept. 1, 1989.

Call 1-800-438-8155 for *VISA, MasterCard or send a check or money order to, Grove Enterprises, P.O. Box 98, Brasstown, NC 28902.

The 1990 Passport to World Band Radio

* Payment will be processed at time of order. For foreign surface mail add $5.00 (Canada) or $6.00 (Europe); foreign air mail add $6.00 (Canada) or $20.00 (Europe).
Sunday
August 6, 13, 20, 27
0008 Radio Canada int'l: SWL Digest. Ian MacFarland presents DX news and features.
0011 Radio Yugoslavia: Current Affairs. Background reports and analysis on current news items.
0016 Radio Yugoslavia: Art and Culture. A look at different art displays and other cultural happenings in Yugoslavia.
0101 BBC: Play of the Week. Hour-long drama selections.
0109 Deutsche Welle: Commentary. Opinion on current issues.
0113 Deutsche Welle: Sports Report. The latest news from the world of sports.
0117 Deutsche Welle: Mailbag/To the Top/Checkpoint. Rotating features and music programs. Recent listener comments and music requests.
0127 Radio Prague: Stamp Corner. New information on the hobby of stamp collecting.
0130 Radio Austria int'l: Report from Austria. A magazine program, covering all aspects of Austrian life and events in the news.
0136 Radio Prague: Spin the Discs. A music program featuring top Czech pop stars.
0138 Radio Canada int'l: SWL Digest. See S 0008.
0139 Deutsche Welle: German by Radio. A German language course for English speakers.
0209 Deutsche Welle: Commentary. See S 0109.
0215 BBC: Global Concerns. A look at major environmental problems facing the world.
0216 Deutsche Welle: Asia in the German Press. A look at what German papers and weeklies have to say about Asia.
0223 Deutsche Welle: Mailbag Asia. Answers to listeners' queries, musical requests, and the club corner.
0230 BBC: The Ken Bruce Show. A mix of popular music and entertainment news.
0300 Radio Canada int'l: Listeners' Corner. Ian MacFarland and Francois Borel present listener comments and music requests.
0309 Deutsche Welle: Commentary. See S 0109.
0313 Radio Prague: Commentary of the Week. See S 0113.
0315 BBC: From Our Own Correspondent. In-depth news stories from correspondents worldwide.
0317 Deutsche Welle: Mailbag/To the Top/Checkpoint. See S 0117.
0327 Radio Prague: Stamp Corner. See S 0127.
0330 BBC: My Word! A quiz show filled with questions about - you guessed it - words.
0336 Radio Prague: Spin the Discs. See S 0136.
0339 Deutsche Welle: German by Radio. See S 0139.
0409 Deutsche Welle: Religion and Society. A roundup of news and developments concerning the world's major religions.
0411 Deutsche Welle: Africa in the German Press. A look at what German papers and weeklies have to say about Africa.
0430 BBC: Stuart Coiman's Record Hop. Classic and contemporary rock and roll.
0445 BBC: Worldbrief. A 15-minute round-up of the week's news headlines and other events.
0509 BBC: Twenty-Four Hours. Analysis of the main news of the day.
0509 Deutsche Welle: Commentary. See S 0109.
0517 Deutsche Welle: Mailbag/To the Top/Checkpoint. See S 0117.
0530 Radio Austria int'l: See S 0130.
0539 Deutsche Welle: German by Radio. See S 0139.
0540 BBC: Words of Faith. People share how their scripture gives meaning to their lives.
0609 Deutsche Welle: Religion and Society. See S 0140.
0630 BBC: Jazz for the Asking. A jazz music request show.
0634 Deutsche Welle: People and Places. See S 0434.
0709 BBC: Twenty-Four Hours. See S 0509.
0730 BBC: From Our Own Correspondent. See S 0315.
0730 Radio Austria int'l: Report from Austria. See S 0130.
0745 BBC: Book Choice. Short reviews of current or future best-sellers.

Rita Oliver, Margaret Rentrop, Cynthia Pesch and Hilary Dederichs answer letters at Deutsche Welle.

**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.
0750 BBC: Waveguide. How to hear the BBC better.
1109 Deutsche Welle: Arts on the Air. Reports and interviews on major cultural events and developments.
1115 BBC: From Our Own Correspondent. See S 0315.
1130 BBC: Composer of the Month. See S 0030.
1130 Radio Austria Int’l: Austrian Shortwave Panorama. Developments in communications and DX news.
1134 Deutsche Welle: German by Radio. See S 0139.
1201 BBC: Play of the Week. See S 0101.
1304 Radio Canada Int’l: Sunday Morning. A three-hour magazine program, covering virtually everything under the sun.
1309 BBC: Twenty-Four Hours. See S 0509.
1330 BBC: Sports Roundup. The day’s sports news.
1330 Radio Austria Int’l: Report from Austria. See S 0130.
1401 BBC: Feature. Programming on various subjects.
1430 BBC: Anything Goes. Sounds from the BBC archives as requested by listeners.
1509 Deutsche Welle: Commentary. See S 0109.
1513 Deutsche Welle: International Talking Point. A round-table discussion on major trends and events.
1515 BBC: From the Proms. Highlights from the Promenade classical music concerts at London’s Royal Albert Hall.
1534 Deutsche Welle: Pop from Germany. A look at the German pop music scene.
1609 Deutsche Welle: Arts on the Air. See S 1109.
1615 BBC: Khomeini’s Children or Feature. A look at Islam today (except August 29th, 27th: Feature, programming on various subjects).
1630 Radio Austria Int’l: Report from Austria. See S 0130.
1634 Deutsche Welle: German by Radio. See S 0139.

Monday
August 7, 14, 21, 28
0008 Radio Canada Int’l: Listeners’ Corner. See S 0300.

**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
- **M** = Monday
- **T** = Tuesday
- **W** = Wednesday
- **H** = Thursday
- **F** = Friday
- **A** = Saturday

We invite listeners and stations to send program information to the program manager.

<table>
<thead>
<tr>
<th>Time</th>
<th>Station/Service</th>
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<tbody>
<tr>
<td>0000</td>
<td>BBC: Newsdesk</td>
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<td>0000</td>
<td>Kol Israel: News</td>
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<td>0000</td>
<td>KVOK: UPI Radio News</td>
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<td>0000</td>
<td>Radio Moscow: News</td>
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<td>Spanish National Radio: News</td>
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<td>Voice of America: News</td>
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<td>WCSN: News [T-F]</td>
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<td>Kol Israel: News</td>
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<td>KVOK: UPI Radio News [T-A]</td>
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<td>KYOK: News [M-F]</td>
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<td>Radio Australia: World News</td>
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<td>Radio Canada Int’l: News [S-M]</td>
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<td>Radio Prague: News</td>
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<td>Spanish National Radio: News</td>
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<td>Radio Moscow: News</td>
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<td>0300</td>
<td>Voice of America: English [M]</td>
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</tbody>
</table>

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*August 1989*
0313 Radio Prague: Prague Mosaic. See M 0112.
0316 Deutsche Welle: Religion and Society. See S 0409.
0326 Deutsche Welle: International Talking Point. See S 1513.
0332 Radio Prague: Questions and Answers. See M 0132.
0338 Radio Prague: Sunday Concert. See M 0138.
0404 Radio Canada Int'l: Coast to Coast. Issues and opinions affecting Canadians.
0400 Deutsche Welle: Morning Magazine. See M 0209.
0430 BBC: Off the Shelf. A reading selected from the best of world literature.
0434 Deutsche Welle: Africa Report. Reports and background to the news from correspondents.
0445 BBC: Nature Now. Information about flora, fauna, and natural resources.
0509 BBC: Twenty-Four Hours. See S 0509.
0509 Deutsche Welle: Commentary. See S 0109.
0512 Deutsche Welle: Letter from Berlin/Bonn. See M 0112.
0516 Deutsche Welle: Religion and Society. See S 0409.
0526 Deutsche Welle: International Talking Point. See S 1513.
0530 Radio Waveguide. See S 0750.
0530 Radio Austria Int'l: Report from Austria. See S 0130.

Sara Manobla and Leila Jacobson prepare for a Kol Israel broadcast.

news guide cont'd from p.57

0130 Radio Moscow (World Service): News in Brief (S-M)
0130 WCSN: News [T-F]
0149 Radio Veritas Asia: World News [M-F]
0150 HCJB: News [T-A]
0151 Spanish National Radio: News Summary [S]
0152 Radio Veritas Asia: World News [A]
0153 Radio Prague: News Wrap-Up
0155 HCJB: News [S]
0200 BBC: World News
0200 Deutsche Welle: World News
0200 HCJB: News [M]
0200 KVOI: UPI Radio News [T-A]
0200 KVOD: News [M-F]
0200 Radio Australia: International Report
0200 Radio Berlin Int'l: News
0200 Radio Canada Int'l: As It Happens[T-A]
0200 Radio Moscow: News
0200 Radio RSA: News
0200 Swiss Radio Int'l: News
0200 Voice of America: News
0200 Voice of Free China: News and Commentary
0200 WCSN: News [T-F]
0215 Radio Cairo: News
0235 KVOH: UPI Headline News [T-A]
0235 Radio Finland: Northern Report [T-A]
0235 Radio Moscow (World Service): News in Brief [S]
0235 Radio Portugal: News [T-A]
0235 WCSN: News [T-F]
0245 Radio Berlin Int'l: News
0300 BBC: World News
0300 Belize Radio One: News
0300 Deutsche Welle: World News
0300 HCJB: News [T-A]
0300 KVOH: UPI Radio News [T-A]
0300 KVOI: UPI News [M-F]
0300 Radio Australia: World and Australian News
0300 Radio Beijing: News
0300 Swiss Radio Int'l: News
0300 Voice of America: News
0300 Voice of Free China: News and Commentary
0300 WCSN: News [T-F]
0309 BBC: News About Britain
0310 Radio Beijing: News About China
0315 Radio Cairo: News
0330 KVOH: UPI Headline News [T-A]
0330 Radio Moscow (World Service): News in Brief [S]
0330 Radio Netherlands: News [T-S]
0333 WCSN: News [T-F]
0335 Radiotelevisione Italiana: News
0340 Radio Prague: News Wrap-up
0400 BBC: Newsdesk
0400 Deutsche Welle: World News
0409 Deutsche Welle: Newsline Cologne. See M 1109.
0415 BBC: Discussion: Conan Doyle and the Edolji Case. See M 0101.
0415 Radio Beijing: Current Affairs. See M 1115.
0434 Deutsche Welle: Weekend Sport. A review of the major sporting events of the weekend.
0438 Deutsche Welle: Monday Special. An interview or report on an event or development with special relevance for Africa.
0440 Radio Beijing: Let's Learn Chinese. See M 1140.
0459 Deutsche Welle: Newsline Cologne. See M 1109.
0511 Radio Portugal: Sun and Sea. A look at tourism and favorite tourist spots in Portugal.
0515 BBC: Good Books. See M 0315.
0530 BBC: Health Matters. See M 1115.
0530 Radio Austria Int'l: Report from Austria. See S 0130.
0534 Deutsche Welle: Asia-Pacific Report. Correspondents' reports, interviews, and background news from the Asia-Pacific region.
1513 Deutsche Welle: Newsline Cologne. See M 1109.
1534 Deutsche Welle: Weekend Sport. A review of the major sporting events of the weekend.
1538 Deutsche Welle: Monday Special. An interview or report on an event or development with special relevance for Africa.
1550 Radio Beijing: Let's Learn Chinese. See M 1140.
1559 Deutsche Welle: Newsline Cologne. See M 1109.
1611 Radio Portugal: Sun and Sea. A look at tourism and favorite tourist spots in Portugal.
1615 BBC: Good Books. See M 0315.
1630 BBC: Health Matters. See M 1115.
1630 Radio Austria Int'l: Report from Austria. See S 0130.
1645 BBC: The World Today. News analysis on a selected location or event in the news.
2308 Radio Canada Int'l: Current Affairs. See M 1308.
2309 BBC: Commentary. Background to the news from a wide range of specialists.
2310 Kol Israel: Spectrum. A look at science and technology in Israel.
2315 BBC: Feature. Programming on various subjects.
2330 BBC: Multilink 1: Top 20. What's hot on the British pop music charts.

Tuesday

August 1, 8, 15, 22, 29

0008 Radio Yugoslavia: Commentary of the Week. Selected topics for commentary are discussed.
0010 Kol Israel: Concert Hall. Israeli classical music.
0018 Radio Yugoslavia: People and Events. The lives of Yugoslavian people and topics that affect their way of life.
0030 BBC: Megamix. A compendium of music, sport, fashion, health, travel, news and views for young people.
0011 BBC: Outlook. See M 1405.
0019 Deutsche Welle: Newsline Cologne. See M 1109.
0010 Kol Israel: Spectrum. See M 2310.
0013 Radio Prague: Newsview. Commentary on

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www.americanradiohistory.com
BULLETIN BOARD

"Off the Shelf"

The BBC World Service has revised its dramatic readings programs. Instead of featuring a weekly serialized reading from a (usually British) novel, the BBC will broadcast a daily reading on weekdays only. The readings, grouped under the name "Off the Shelf," will air at 0430 and 1430 UTC on weekdays.

In July, the BBC opened the new program with Charles Dickens' A Tale Of Two Cities, abridged in twenty episodes. Details for August were not available at press time.

The new program means that all broadcasts of "Outlook," the BBC's magazine program, will be the same length: 25 minutes. Previously various transmissions of the program were of different lengths. That program can be heard at 1405 and 1901 UTC Mondays through Fridays, and at 0101 UTC Tuesdays through Saturdays.

current news items in Czechoslovakia.

0122 Radio Prague: Folk Music Section. Traditional folk music from the Slovak region.


0130 BBC: Short Story. Brief tales written by BBC listeners.

0130 Deutsche Welle: Ah Yes; I Remember It Well. Reflections and reminiscences on the past.

0130 Radio Austria Intl: Report from Austria. See S 0130.

0130 Radio Prague: Sports Roundup. Full coverage of European sports, and sports commentaries.

0133 Radio Prague: Meet the People. Questions from listeners are posed to guests in the studio.

0134 Deutsche Welle: Arts on the Air. See S 1109.


0145 BBC: Europe's World. A magazine program reflecting life in Europe and its links with other parts of the world.

0149 Radio Prague: Interview Time. Interviews with tourists visiting Czechoslovakia.


0209 Deutsche Welle: Morning Magazine. See M 0209.

0215 BBC: Network UK. A look at the issues and events that affect the lives of people throughout the UK.

0230 BBC: Sports International. Feature program on a topic or person making sports headlines.

0234 Deutsche Welle: Economic Notebook. A look at the economic scene in Germany and around the world.

0241 Radio Portugal: Sun to Sea. See M 1611.

0308 Radio Canada Int'l: Current Affairs. See M 1308.

0309 Deutsche Welle: Newstline Cologne. See M 1109.

0313 Radio Prague: Newsview. See T 0113.

0315 BBC: The World Today. See M 1645.

0322 Radio Prague: Folk Music Section. See T 0139.

0326 Radio Prague: Introducing Czechoslovakia. See T 0126.

0330 BBC: John Peel. Tracks from newly released albums and singles from the contemporary music scene.

0330 Deutsche Welle: Ah Yes; I Remember It Well. See T 0130.


0333 Radio Prague: Meet the People. See T 0133.

0334 Deutsche Welle: Arts on the Air. See S 1109.


0355 BBC: Book Choice. See S 0745.

0509 BBC: Twenty-Four Hours. See S 0509.

0509 Deutsche Welle: Newstline Cologne. See M 1109.


0530 Deutsche Welle: Ah Yes; I Remember It Well. See T 0109.

0530 Radio Austria Intl: Report from Austria. See S 0130.

0534 Deutsche Welle: Arts on the Air. See S 1109.

0540 BBC: Words of Faith. See S 0540.

0545 BBC: The World Today. See M 1645.

0609 Deutsche Welle: Morning Magazine. See M 0209.

0630 Deutsche Welle: Counterpoint. The best in blues, jazz, and pop music, and talks with the performers who create it.


0709 BBC: Twenty-Four Hours. See S 0509.

0730 BBC: Europe's World. See T 0145.

0730 Radio Austria Intl: Report from Austria. See S 0130.

0745 BBC: Network UK. See T 0215.

1109 Deutsche Welle: Newstline Cologne. See M 1109.

1115 BBC: Worldguide. See S 0750.

1135 BBC: Book Choice. See S 0745.

1130 BBC: Megamix. See T 0030.

1130 Radio Austria Intl: Report from Austria. See S 0130.

1134 Deutsche Welle: Hallo Africa. See M 1134.

1215 BBC: Multitrack 1: Top 20. See M 2330.


1234 Radio Canada Int'l: SWL Digest. See S 0008.

1245 BBC: Sports Roundup. See S 1330.

1308 Radio Canada Int'l: Current Affairs. See M 1308.

1309 BBC: Twenty-Four Hours. See S 0509.

1330 BBC: Network UK. See T 0215.

1330 Radio Austria Intl: Report from Austria. See S 0130.

1345 BBC: Stuart Colman's Record Hop. See S 0430.

1405 BBC: Outlook. See M 1405.

1430 BBC: Off the Shelf. See M 0430.

1430 Radio Austria Intl: Report from Austria. See S 0130.


1509 Deutsche Welle: Newstline Cologne. See M 1109.

1515 BBC: A Jolly Good Show. Dave Lee Travis presents your record requests and dedications in his own unique way, including the Album of the Month.

1534 Deutsche Welle: Insight. An in-depth feature, giving the background to political events and international developments.

1609 Deutsche Welle: Newstline Cologne. See M 1109.

1615 BBC: Omnibus. A half-hour program on practically any topic.

1630 Radio Austria Intl: Report from Austria. See S 0130.


Yishai Eldar presents "Calling All Listeners," Kol Israel's mailbag program, on Sunday broadcasts. "Calling All Listeners" is Kol Israel's longest-running shortwave program.

Wednesday

August 2, 9, 16, 23, 30


Radio guide cont'd from p.59

0700 Radio Japan: News [S-F]
0700 Radio Moscow (World Service): News
0700 Voice of Free China: News and Commentary
0700 WCSN: News [F]
0730 Radio Moscow (World Service): News in Brief
0730 Radio Netherlands: News [M-A]
0730 KYOI: News [F]
0745 Radio Berlin Intl: News
0800 BBC: World News
0800 KYOI: News [F]
0800 Radio Australia: International Report
0800 Radio Berlin Intl: News
0800 Radio Finland: Northern Report [T-S]
0800 Radio Korea: News
0800 Radio Moscow (World Service): News
0830 Radio Finland: Northern Report [T-S]
0830 Radio Moscow (World Service): News in Brief [S-M]

0900 Radio Netherlands: News [M-A]
0900 Swiss Radio Intl: News
0900 BBC: World News
0900 BBC: Brisbane: News [F]
0900 Deutsche Welle: World News
0900 KYOI: News [F]
0900 Radio Australia: World and Australian News
0900 Radio Japan: News [S-F]
0900 Radio Moscow (World Service): News
0930 Radio Canada Int'l: News [F]
0930 Radio Moscow (World Service): News in Brief [S]
0930 BBC: News Summary
1000 Kol Israel: News
1000 KYOI: News [F]
1000 Radio Australia: International Report
1000 Radio Berlin Intl: News
1000 Radio Canada Int'l: News [M-F]
1000 Radio New Zealand Intl: News [M-F]
1000 Swiss Radio Intl: News
1000 Voice of America: News

0930 Radio Netherlands: News [M-A]
0930 Swiss Radio Intl: News
0900 BBC: World News
0900 BBC: Brisbane: News [F]
0900 Deutsche Welle: World News
0900 KYOI: News [F]
0900 Radio Australia: World and Australian News
0900 Radio Japan: News [S-F]
0900 Radio Moscow (World Service): News
0930 Radio Canada Int'l: News [F]
0930 Radio Moscow (World Service): News in Brief [S]
0930 BBC: News Summary
1000 Kol Israel: News
1000 KYOI: News [F]
1000 Radio Australia: International Report
1000 Radio Berlin Intl: News
1000 Radio Canada Int'l: News [M-F]
1000 Radio New Zealand Intl: News [M-F]
1000 Swiss Radio Intl: News
1000 Voice of America: News
1030 KYOI: News [F]
1030 Radio Moscow (World Service): News in Brief [S-M]
1030 Radio Netherlands: News [M-A]
1100 BBC: World News
1100 Deutsche Welle: World News
1100 KYOI: News [F]
1100 Radio Australia: World and Australian News
1100 Radio Beijing: News
1100 Radio Berlin Intl: News
1100 Radio Finland: Northern Report [T-S]
1100 Radio Japan: News [S-F]
1100 Radio Korea: News
1100 Radio Moscow (World Service): News
1100 Radio New Zealand Intl: News
1100 Radio RSA: News
1100 Swiss Radio Intl: News
1100 Voice of America: News
1100 BBC: News About Britain
1110 Belize Radio One: News Summary [T-F]
1110 Radio Beijing: News About China

www.americanradiohistory.com
2310 Voice of Turkey: Review of the Foreign Media. An insight into what is being reported in the media of other nations.
2313 Voice of Turkey: Letterbox. The sights of and historical background to various attractions in Turkey.
2315 BBC: Good Books. See M 0315.
2315 Kol Israel: Living Here. A look at people who have made Israel their home.
2335 Voice of Turkey: Home in Turkey. A look at social reforms in Turkey, and the Turkish people.
2340 Voice of Turkey: Music. Upbeat, modern Turkish music.

Thursday
August 3, 10, 17, 24, 31

0010 Kol Israel: Israel Mosaic. A weekly magazine on life in Israel.
0016 Radio Yugoslavia: Spotlight on Culture. A program focusing on the different aspects of Yugoslavian culture.
0030 BBC: Flying the Flag (except August 3rd, 31st: Two Cheers for...). See W 0530.
0034 Radio Kiev: News Commentary. An editorial commentary on recent matters of interest to those in Kiev and the USSR.
0038 Radio Kiev: Political Commentary. A review of current political actions in the USSR and their effect on the nation.
0101 BBC: Outlook. See M 1405.
0109 Deutsche Welle: Newsline Cologne. See M 1109.
0110 Kol Israel: Living Here. See W 2315.
0113 Radio Prague: Newsview. See T 0113.
0121 Radio Prague: Czech Scrapbook. A contest and music program, including "Rock Rodeo," a segment on Czech rock music.
0130 BBC: Waveguide. See S 0750.
0130 Deutsche Welle: Ah Yes, I Remember It Well. See T 0130.
0130 Radio Austria Intl: Report from Austria. See S 0130.
0134 Deutsche Welle: Living in Germany. See W 1534.
0140 BBC: Book Choice. See S 0745.
0200 Deutsche Welle: Morning Magazine. See S 0200.
0215 BBC: Network UK. See T 0215.
0220 BBC: Assignment. A weekly examination of a topical issue.
0234 Deutsche Welle: Living in Germany. See W 1534.
0241 Radio Portugal: Sun and Sea. See M 1611.
0306 Radio Canada Int'l: Current Affairs. See M 1306.
0309 Deutsche Welle: Newsline Cologne. See M 1109.
0313 Radio Prague: Newsview. See T 0113.
0415 BBC: Society Today. A weekly look at the changes in Britain.
0509 Deutsche Welle: Morning Magazine. See M 0209.
0515 BBC: Network UK. See T 0215.
0534 Deutsche Welle: Living in Germany. See W 1534.
0540 BBC: Words of Faith. See S 0540.
0545 BBC: The World Today. See M 1645.
0609 Deutsche Welle: Morning Magazine. See M 0209.
0630 BBC: In a Nutshell. See W 1215.
0645 BBC: The Farming World. See W 1225.
0709 BBC: Twentieth-Four Hours. See S 0509.
0730 Deutsche Welle: Aural Review. A look at the new technology behind entertainment and significance of communications.
0730 Radio Austria Intl: Report from Austria. See S 0130.
0745 BBC: Network UK. See T 0215.
1109 Deutsche Welle: Newsline Cologne. See M 1109.
1125 BBC: Book Choice. See S 0745.
1130 BBC: Play. A dramatization of a play or book excerpt.
1130 Radio Austria Intl: Report from Austria. See S 0130.
1134 Deutsche Welle: Holo Africa. See M 1134.
1215 BBC: Multitrack 2. See W 1830.
1245 BBC: Sports Roundup. See S 1330.
1309 BBC: Twentieth-Four Hours. See S 0509.
1313 BBC: Network UK. See T 0215.
1330 Radio Austria Intl: Report from Austria. See S 0130.
1345 BBC: Folk in Britain (August 3th, 17th, 31th) or Jazz Scene UK (August 16th, 24th). A look at folk or jazz music on the British Isles.
1405 BBC: Outlook. See M 1405.
1430 BBC: Off the Shelf. See M 0430.
1430 Radio Berlin Intl: Question Time. An interview

Peter Senger heads Deutsche Welle's radio frequency department.

0315 BBC: The World Today. See M 1645.
0321 Radio Prague: Czech Scrapbook. See H 0121.
0330 BBC: Brain of Britain. See M 1215.
0330 Deutsche Welle: Ah Yes, I Remember It Well. See T 0130.
0334 Deutsche Welle: Living in Germany. See W 1534.
0404 Radio Canada Int'l: Mosaic. See M 0304.
0409 Deutsche Welle: Morning Magazine. See M 0209.
0414 Berlin Radio Int'l: Commentary. East German news reports are expressed on current happenings worldwide.
0423 Radio Berlin Int'l: Pop Corner. Performances from top East German pop artists and reports on concerts.
0430 BBC: Off the Shelf. See M 0430.
0430 Radio Berlin Int'l: Question Time. An interview

2315 BBC: The World Today. See M 1645.
2315 Deutsche Welle: Living in Germany. See W 1534.
2320 Deutsche Welle: Morning Magazine. See M 1230.
2326 Deutsche Welle: Living in Germany. See W 1534.
2330 BBC: Newsline Cologne. See M 1109.
2330 Radio Portugal: Sun and Sea. See M 1611.
2330 Deutsche Welle: Newsline Cologne. See M 1109.
2330 Radio Prague: Newsview. See T 0113.
1430 Radio Austria Int'l: Report from Austria. See S 0130.

1445 BBC: Mediawatch. See H 0730.

1509 Deutsche Welle: Newsline Cologne. See M 1109.

1515 BBC: The Pleasure's Yours. Gordon Clyde presents classical music requests.

1534 Deutsche Welle: Spotlight on Sport. Background stories and coverage of important sporting events.

1609 Deutsche Welle: Newsline Cologne. See M 1109.

1615 BBC: Assignment. See H 0230.

1630 Radio Austria Int'l: Report from Austria. See S 0130.


2308 Radio Canada Int'l: Current Affairs. See M 1308.

2309 BBC: Commentary. See M 2309.


2313 Voice of Turkey: Turkey - At the Threshold of the European Community. Commentary and a look at Turkey's economic situation.

2315 BBC: Music Review. Classical music events and developments from around the world.

2324 Voice of Turkey: Music. Modern arrangements of traditional Turkish songs.

2330 Voice of Turkey: Turkish Cuisine. History of the great variety of Turkish dishes.

2336 Voice of Turkey: Songs of Love. Traditional Turkish love songs performed by local musicians.

Friday

August 4, 11, 18, 25


0030 BBC: Oratorio. A look at the form of religious drama utilized by Handel, Bach, Haydn, and others.

0101 BBC: Outlook. See M 1405.

0109 Deutsche Welle: Newsline Cologne. See M 1109.

0110 Kol Israel: Ulpam of the Air. See W 2310.

0113 Radio Prague: Newsview. See T 0113.


0125 Radio Prague: Folk Music Section. See T 0122.


0130 BBC: Folk in Britain (August 4th, 18th) or Jazz Scene UK (August 11th, 25th). See H 1345.

0130 Deutsche Welle: Ah Yes! I Remember It Well. See T 0130.

0130 Radio Austria Int'l: Report from Austria. See S 0130.

0134 Deutsche Welle: Science and Technology.

0135 Radio Prague: Letter from Czechoslovakia. A program focusing on the real personal life in Czechoslovakia, and opinions of Czech individuals.

0140 Radio Prague: DX Chat. Reception reports and DX news.

0145 BBC: Profile. Character sketches of today's public figures.

0149 Radio Prague: The World Federation of Trade Unions Calling. See T 0139.


0215 Deutsche Welle: Morning Magazine. See M 0205.


0234 Deutsche Welle: Spotlight on Sport. See H 1534.

0308 Radio Canada Int'l: Current Affairs. See M 1308.

0309 Deutsche Welle: Newsline Cologne. See M 1109.

0313 Radio Prague: Newsview. See T 0113.

0315 BBC: The World Today. See M 1645.

0325 Radio Prague: Folk Music Section. See T 0122.


0330 BBC: Focus on Faith. Comment and discussion on the major issues in the worlds of faith.

0330 Deutsche Welle: Ah Yes! I Remember It Well. See T 0130.

0334 Deutsche Welle: Science and Technology. See M 0234.

0335 Radio Prague: Letter from Czechoslovakia. See F 0135.

0340 Radio Prague: DX Chat. See F 0140.

0349 Radio Prague: The World Federation of Trade Unions Calling. See T 0139.


0409 Deutsche Welle: Morning Magazine. See M 0209.


The BBC's "Assignment" team braves small wars and exotic lands to present weekly examinations of topical issues. The program airs Thursdays at 0230 UTC, repeated on Thursdays at 1015 UTC. The team is Owen Bennett-Jones, Alistair Lock, Judy Swallow, and Matt Frei.

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1500 Deutsche Welle: World News

1500 KYOI: News [M-F]

1600 Radio Australia: World and Australian News

1600 Radio Berlin Int'l: News

1600 Radio Moscow (World Service): News

1600 Radio Portugal: News [M-F]

1600 Voice of America: News

1600 WCSSN: News [M-F]

1609 BBC: News About Britain

1615 Radio Canada Int'l: News

1625 HCBJ: News [M-F]

1630 Radio Moscow (World Service): News in Brief [S-M]

1630 Radio Netherlands: News [M-A]

1630 Voice of America (except Africa): News

1630 WCSSN: News [M-F]

1645 BBC: World News

1700 Belize Radio One: Headline News [M-A]

1700 KYOI: News [M-F]

1700 Radio Australia: International Report

1700 Radio Canada Int'l: News

1700 Radio Moscow (World Service): News in Brief

1700 Radio New Zealand Int'l: News [S-F]

1700 Swiss Radio Int'l: News

1700 WCSSN: News [M-F]

1730 BRT, Brussels: News

1730 Radio Berlin Int'l: News

1730 Radio Moscow (World Service): News in Brief

1730 Radio New Zealand Int'l: News [S-F]

1730 Swiss Radio Int'l: News

1730 WCSSN: News [M-F]

1800 BBC: Newsdesk

1800 Belize Radio One: Headline News [M-A]

1800 KYOI: News [M-F]

1800 Radio Australia: International Report

1800 Radio Canada Int'l: News

1800 Radio Korea: News

1800 Radio Moscow (World Service): News

1800 Radio New Zealand Int'l: News

1800 Radio Moscow (World Service): News

1800 Radio Portugal: News [M-F]

1800 Voice of America: News

1800 Voice of America: News

1800 Voice of America: News
A technician at the mixing board for a Voice of Turkey program.

<table>
<thead>
<tr>
<th>Time</th>
<th>Station</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>0215</td>
<td>BBC: Network UK</td>
<td>See T 0215</td>
</tr>
<tr>
<td>0230</td>
<td>BBC: People and Politics. Background to</td>
<td>the British political scene.</td>
</tr>
<tr>
<td>0234</td>
<td>Deutsche Welle: Man and Environment.</td>
<td>A program on all topics relating to the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>environment in industrial and developing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>countries.</td>
</tr>
<tr>
<td>0241</td>
<td>Radio Portugal: Mailbag or DX/Phialite.</td>
<td>See F 1611.</td>
</tr>
<tr>
<td>0309</td>
<td>Deutsche Welle: Newstnie Cologne.</td>
<td>See M 1109.</td>
</tr>
<tr>
<td>0315</td>
<td>BBC: The World Today.</td>
<td>See M 1645.</td>
</tr>
<tr>
<td>0320</td>
<td>Radio Prague: The Week's Events in</td>
<td>Czechoslovakia. See A 0120.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Deutch Welle: The Arts in Czechoslovakia.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>See A 0125.</td>
</tr>
<tr>
<td>0327</td>
<td>Deutsche Welle: Caribbean Report.</td>
<td>See A 0127.</td>
</tr>
<tr>
<td>0330</td>
<td>BBC: The Vintage Chart Show. Past top ten hits with</td>
<td>Jimmy Savile.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>See T 0130.</td>
</tr>
<tr>
<td>0330</td>
<td>Radio Canada Int'l: SWL Digest.</td>
<td>See S 0008.</td>
</tr>
<tr>
<td>0334</td>
<td>Deutsche Welle: Random Selection.</td>
<td>See A 0134.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Radio Canada Int'l: Spotlight on Science.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>See H 1234.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Deutsche Welle: Africa Highlight. A weekly feature on an important topic concerning Africa.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Deutsche Welle: Development Forum. Reports and interviews on projects and progress in Africa and Asia.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Deutsche Welle: Science and Technology. See M 0234.</td>
</tr>
<tr>
<td>0445</td>
<td>BBC: Personal View.</td>
<td>See A 0309.</td>
</tr>
<tr>
<td>0509</td>
<td>BBC: Twenty-Four Hours.</td>
<td>See S 0509.</td>
</tr>
<tr>
<td>0509</td>
<td>Deutsche Welle: Newstnie Cologne.</td>
<td>Cologne. See M 1109.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Deutsche Welle: Caribbean Report. See A 0127</td>
</tr>
<tr>
<td>0530</td>
<td>Deutsche Welle: Ah Yes; I Remember It Well.</td>
<td>See T 0130.</td>
</tr>
<tr>
<td>0530</td>
<td>Radio Austria Int'l: Report from Austria.</td>
<td>See S 0130.</td>
</tr>
<tr>
<td>0530</td>
<td>Deutsche Welle: Random Selection.</td>
<td>See A 0134.</td>
</tr>
<tr>
<td>0540</td>
<td>BBC: Words of Faith.</td>
<td>See S 0540.</td>
</tr>
<tr>
<td>0545</td>
<td>BBC: The World Today.</td>
<td>See M 1645.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Time</th>
<th>Station</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>2100</td>
<td>Voice of America: News</td>
<td>Radio Australia: International Report</td>
</tr>
<tr>
<td>2130</td>
<td>Kol Israel: News</td>
<td>Radio Australia: International Report</td>
</tr>
<tr>
<td>2130</td>
<td>KVOH: UPI Headline News</td>
<td>Radio Australia: International Report</td>
</tr>
<tr>
<td>2200</td>
<td>Radio Moscow: News</td>
<td>Radio Australia: International Report</td>
</tr>
<tr>
<td>2200</td>
<td>Radiotelevisione Italiana: News</td>
<td>Radio Australia: International Report</td>
</tr>
<tr>
<td>2200</td>
<td>Voice of America: News</td>
<td>Radio Australia: International Report</td>
</tr>
<tr>
<td></td>
<td>Commentary</td>
<td>Radio Australia: International Report</td>
</tr>
<tr>
<td>2230</td>
<td>KVOH: UPI Headline News</td>
<td>Radio Australia: International Report</td>
</tr>
<tr>
<td>2230</td>
<td>Voice of America: News</td>
<td>Radio Australia: International Report</td>
</tr>
<tr>
<td>2230</td>
<td>Voice of America: News (Special English)</td>
<td>Radio Australia: International Report</td>
</tr>
<tr>
<td>2250</td>
<td>BCC: World News</td>
<td>Radio Australia: International Report</td>
</tr>
<tr>
<td>2300</td>
<td>Kol Israel: News</td>
<td>Radio Australia: International Report</td>
</tr>
<tr>
<td>2330</td>
<td>Radio Korea: News</td>
<td>Radio Australia: International Report</td>
</tr>
<tr>
<td>2330</td>
<td>Voice of America: News</td>
<td>Radio Australia: International Report</td>
</tr>
<tr>
<td>2330</td>
<td>Voice of America: News</td>
<td>Radio Australia: International Report</td>
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<td>2330</td>
<td>BRT: Brussels: News</td>
<td>Radio Australia: International Report</td>
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<tr>
<td>0000-0100</td>
<td>Radio Moscow</td>
<td>11845 12025 17850 17880</td>
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<tr>
<td>0000-0100</td>
<td>Radio Moscow N. America Service</td>
<td>9530 9765 11710 11730</td>
</tr>
<tr>
<td>0000-0100</td>
<td>Radio New Zealand, Wellington</td>
<td>11750 11850 11930 15290</td>
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<tr>
<td>0000-0100</td>
<td>Radio Thailand, Bangkok</td>
<td>9655 11905</td>
</tr>
<tr>
<td>0000-0100</td>
<td>Radio Tonga, Tonga</td>
<td>5050</td>
</tr>
<tr>
<td>0000-0100</td>
<td>SBC Radio One, Singapore</td>
<td>5010 5052 11940</td>
</tr>
<tr>
<td>0000-0100</td>
<td>Spanish Foreign Radio, Madrid</td>
<td>9630 15110</td>
</tr>
<tr>
<td>0000-0100</td>
<td>Voice of America, Washington</td>
<td>5995 6130 9455 9775</td>
</tr>
<tr>
<td>0000-0100</td>
<td>Voice of America, New Delhi</td>
<td>7385 9495</td>
</tr>
<tr>
<td>0000-0100</td>
<td>WHRL, Noblesville, Indiana</td>
<td>7355</td>
</tr>
<tr>
<td>0000-0100</td>
<td>WRNO, New Orleans, Louisiana</td>
<td>5985 9505 15170</td>
</tr>
<tr>
<td>0000-0100</td>
<td>WYFR, Oakland, California</td>
<td>6195 7235 9570 11945</td>
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<tr>
<td>0300-0445</td>
<td>BBC, London, England*</td>
<td>15360 17875</td>
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<tr>
<td>0000-0100</td>
<td>BBC, London, England</td>
<td>5975 6005 6175 7325</td>
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<td>0000-0100</td>
<td>BBC, London, England</td>
<td>5915 9580 9590</td>
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<tr>
<td>0000-0100</td>
<td>BBC, London, England</td>
<td>9715 5920 9585 9835</td>
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<tr>
<td>0000-0100</td>
<td>Radio Moscow</td>
<td>11910 15160</td>
</tr>
<tr>
<td>0000-0100</td>
<td>Radio New Zealand, Wellington</td>
<td>5600 6005 9570 11945</td>
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<tr>
<td>0000-0100</td>
<td>Radio New Zealand, Wellington</td>
<td>5920 9520 9585 9775</td>
</tr>
<tr>
<td>0000-0100</td>
<td>Radio New Zealand, Wellington</td>
<td>9530 11905 15150 17705</td>
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<td>0000-0100</td>
<td>Radio Moscow</td>
<td>9630 15050 17875</td>
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<tr>
<td>0000-0100</td>
<td>Radio Moscow, New Delhi</td>
<td>5655 7215 9530 9900</td>
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<tr>
<td>0000-0100</td>
<td>Radio New Zealand, Wellington</td>
<td>7375 15110 15150 17705</td>
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<td>0000-0100</td>
<td>Radio New Zealand, Wellington</td>
<td>7450 15150 17705 17750</td>
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<td>0000-0100</td>
<td>Radio New Zealand, Wellington</td>
<td>9605 11780 15180</td>
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<td>0100-0110</td>
<td>Radio Moscow</td>
<td>9605 11780 15180</td>
</tr>
<tr>
<td>0100-0115</td>
<td>All India Radio, New Delhi</td>
<td>6050 6165 15315 15375</td>
</tr>
<tr>
<td>0100-0120</td>
<td>All India Radio, New Delhi</td>
<td>6100 9720</td>
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<td>0100-0130</td>
<td>All India Radio, New Delhi</td>
<td>3925 4860</td>
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<tr>
<td>0100-0140</td>
<td>Radio New Zealand, Wellington</td>
<td>15570</td>
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<tr>
<td>0100-0140</td>
<td>Radio New Zealand, Wellington</td>
<td>11715 15110</td>
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<td>0100-0150</td>
<td>Radio New Zealand, Wellington</td>
<td>5655 7215 9530 9900</td>
</tr>
<tr>
<td>0100-0150</td>
<td>Radio New Zealand, Wellington</td>
<td>6050 6165 15315 15375</td>
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<tr>
<td>0100-0150</td>
<td>Radio Moscow</td>
<td>6195 7235 9570 11945</td>
</tr>
<tr>
<td>0100-0150</td>
<td>Radio New Zealand, Wellington</td>
<td>5655 9520 9585 9775</td>
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<tr>
<td>0100-0150</td>
<td>Radio New Zealand, Wellington</td>
<td>15150 15150 17705 17750</td>
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<td>Radio New Zealand, Wellington</td>
<td>9605 11780 15180</td>
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<td>0100-0150</td>
<td>Radio New Zealand, Wellington</td>
<td>15150 17705 17750 17850</td>
</tr>
<tr>
<td>0100-0150</td>
<td>Radio New Zealand, Wellington</td>
<td>17750 17795 21740</td>
</tr>
</tbody>
</table>

### 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 (the 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 chart, 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!
<table>
<thead>
<tr>
<th>Time</th>
<th>Station</th>
<th>Frequency (MHz)</th>
<th>City/Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>0100-0120</td>
<td>Radio Sweden, Stockholm</td>
<td>15405</td>
<td>Stockholm</td>
</tr>
<tr>
<td>0100-0130</td>
<td>Korean National Radio</td>
<td>7113v</td>
<td></td>
</tr>
<tr>
<td>0100-0150</td>
<td>Deutsche Welle, West Germany</td>
<td>15145</td>
<td></td>
</tr>
<tr>
<td>0100-0200</td>
<td>CBC Northern Quebec Service</td>
<td>6195</td>
<td>Quebec</td>
</tr>
<tr>
<td>0100-0200</td>
<td>S, M</td>
<td>6145</td>
<td></td>
</tr>
<tr>
<td>0100-0200</td>
<td>Radio Berlin Int'l, East Germany</td>
<td>6040</td>
<td>Berlin</td>
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<tr>
<td>0100-0200</td>
<td>CFCF, Montreal, Quebec</td>
<td>6005</td>
<td>Quebec</td>
</tr>
<tr>
<td>0100-0200</td>
<td>CFCN, Calgary, Alberta</td>
<td>6060</td>
<td>Alberta</td>
</tr>
<tr>
<td>0100-0200</td>
<td>CBN, Halifax, Nova Scotia</td>
<td>6130</td>
<td>Nova Scotia</td>
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<tr>
<td>0100-0200</td>
<td>Christian Science World Service</td>
<td>7400</td>
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**Frequency Section**

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**East Coast to Artic Europe**

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August 1989 MONITORING TIMES

www.americanradiohistory.com
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**Summer DX Specials**

- AR-2515 Wide Coverage Scanner $679
- AR-2002 Scanner $455
- AR-900 Scanner w/cellular $276
- ICOM R-71A HF Scanning Receiver $850
- Collins R390A (Reconditioned/Calibrated) $750*
- Japan Radio NRD-525 $1,150
- Sony ICF-2010 $318
- Sony ICF-2003 $245
- Sony Pro-80 $350
- RACAL RA-6790 (GM)/R-2174 CALL
- Realistic PRO-2005 Scanner $399
- 3TF7 Ballast Tube - Brand New! $40
- Bearcat BC-200XLT w/Cel/Cellular restoration $275

*Cost includes Federal Express Shipping

**Free Delivery to Your Door!**

- WE OFFER REPAIR SERVICE  •  MANUALS  •  BROKERING
- PROFESSIONAL MONITORING STATION

Spend $2.00 FOR CATALOG CREDITED TO PURCHASE

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**Monitoring Times**

August 1989

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**East Coast to West Africa**

**East Coast to Central Africa**

**East Coast to South Africa**

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**East Coast to South Africa**

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**East Coast to South Africa**

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**East Coast to South Africa**

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**East Coast to South Africa**

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<tr>
<td>0400-0500</td>
<td>BBC, London, England*</td>
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<tr>
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<td>Radio Tirana, Albania</td>
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<tr>
<td>0400-0500</td>
<td>Trans World Radio, Bonaire</td>
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<tr>
<td>0400-0500</td>
<td>Trans World Radio, Swaziland</td>
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<tr>
<td>0400-0500</td>
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**5000 UTC**

[1:00 AM EDT/10:00 PM PDT]

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<td>0500-0515</td>
<td>Vatican Radio, Vatican City</td>
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<tr>
<td>0500-0530</td>
<td>Trans World Radio, Bonaire</td>
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<tr>
<td>0500-0530</td>
<td>Trans World Radio, Swaziland</td>
</tr>
<tr>
<td>0500-0545</td>
<td>Radio Berlin Int'l, East Germany</td>
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<tr>
<td>0500-0550</td>
<td>Deutsche Welie, West Germany</td>
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<tr>
<td>0500-0560</td>
<td>BBC, London, England</td>
</tr>
<tr>
<td>0500-0560</td>
<td>CBC Northern Quebec Service</td>
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<tr>
<td>0500-0560</td>
<td>CBU, Vancouver, British Columbia</td>
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<td>0500-0560</td>
<td>CFCF, Montreal, Quebec</td>
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<td>0500-0560</td>
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**Monitoring Times**

August 1989

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[www.americanradiohistory.com]
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<td>CHNS, Halifax, Nova Scotia</td>
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<td>Christian Science World Service</td>
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<tr>
<td>CKWX, Vancouver, British Columbia</td>
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<tr>
<td>CFRB, Toronto, Ontario</td>
</tr>
<tr>
<td>FEBC, Manila, Philippines</td>
</tr>
<tr>
<td>HCBJ, Quito, Ecuador</td>
</tr>
<tr>
<td>Radio 5, South Africa</td>
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<tr>
<td>Radio Australia, Melbourne</td>
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<tr>
<td>Radio Havana Cuba</td>
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<tr>
<td>Radio Japan, Tokyo</td>
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<tr>
<td>Radio Kuwait</td>
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<tr>
<td>Radio Moscow, USSR</td>
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<tr>
<td>Radio New Zealand, Wellington</td>
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<tr>
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<tr>
<td>SBC Radio One, Singapore</td>
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<tr>
<td>Spanish Foreign Radio, Madrid</td>
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<tr>
<td>Superpower Satellites, Utah</td>
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<tr>
<td>Swaziland Commercial Radio</td>
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<tr>
<td>Voice of America, Washington</td>
</tr>
<tr>
<td>Voice of Kenya, Nairobi</td>
</tr>
<tr>
<td>Voice of Nigeria, Lagos</td>
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<tr>
<td>WINE, Red Lion, Pennsylvania</td>
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<tr>
<td>WHRL, Nobeleville, Indiana</td>
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<tr>
<td>M-A WMLK, Bethel, Pennsylvania</td>
</tr>
<tr>
<td>WYFR Satellite Net, California</td>
</tr>
<tr>
<td>Radio Botswana, Gaborone</td>
</tr>
<tr>
<td>Radio Canada In'tl, Montreal</td>
</tr>
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<td>Radio Berlin In'tl, East Germany</td>
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<td>F FBEA, Seychelles</td>
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<tr>
<td>BBC, London, England*</td>
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<td>Radio Austria In'tl, Vienna</td>
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<td>Radio Bucharest, Romania</td>
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<td>Radio Tirana, Albania</td>
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**0600 UTC [2:00 AM EDT/11:00 PM PDT]**

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**East Coast To Indonesia**

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**East Coast To Pacific**

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**East Coast To Australia**

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</tr>
</tbody>
</table>

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**August 1989**

**MONITORING TIMES**

www.americanradiohistory.com
MONITORING TIMES  August 1989

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## Frequency Section

<table>
<thead>
<tr>
<th>Time</th>
<th>Station Name</th>
<th>Frequency (MHz)</th>
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<td>Radio Korea, Seoul, South Korea</td>
<td>6060 7275 9570</td>
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<td>0700-0800</td>
<td>Radio Kuwait</td>
<td>15345</td>
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<tr>
<td>0700-0800</td>
<td>Radio Moscow, USSR</td>
<td>9765 11845 13710 15135</td>
</tr>
<tr>
<td>0700-0800</td>
<td>A.S Radio Thailand, Bangkok</td>
<td>9655 11905</td>
</tr>
<tr>
<td>0700-0800</td>
<td>Radio Tonga, Tonga</td>
<td>5050</td>
</tr>
<tr>
<td>0700-0800</td>
<td>SBC-1, Singapore</td>
<td>5052 11940</td>
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<tr>
<td>0700-0800</td>
<td>Solomon Islands Broadcasting Corp</td>
<td>9545</td>
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<td>S Superpower KUSW, Utah</td>
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<td>0700-0800</td>
<td>Trans World Radio, Monte Carlo</td>
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<td>Trans World Radio, Swaziland</td>
<td>6070 9725</td>
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<td>Voice of Free China, Taiwan</td>
<td>5590</td>
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<td>A.S Voice of Kenya, Nairobi</td>
<td>7270</td>
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<td>Voice of Malaysia, Kuala Lumpur</td>
<td>6175 9750 15295</td>
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<td>Voice of Nigeria, Lagos</td>
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<td>M.A WMLK, Bethel, Pennsylvania</td>
<td>9455</td>
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<td>0700-0800</td>
<td>WYFR, Oakland, California</td>
<td>6065 7355 9852.5</td>
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<td>0700-0800</td>
<td>WYFR Satellite Network</td>
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<td>0715-0730</td>
<td>Radio Korea, Seoul, South Korea</td>
<td>13670 15575</td>
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<td>0715-0730</td>
<td>M.A Vatican Radio, Vatican City</td>
<td>11725 15190</td>
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<tr>
<td>0715-0735</td>
<td>S FEBA, Mahe, Seychelles</td>
<td>15115 17785</td>
</tr>
<tr>
<td>0715-0800</td>
<td>Radio Berlin Int'l, East Germany</td>
<td>6040 7195 9730 21465</td>
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<td>0720-0730</td>
<td>M.A Vatican Radio, Vatican City</td>
<td>6248 9645 11740</td>
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<tr>
<td>0730-0735</td>
<td>All India Radio, New Delhi</td>
<td>5990 6010 6020 7110</td>
</tr>
<tr>
<td>0730-0800</td>
<td>ABC, Alice Springs, Australia</td>
<td>2310 [ML]</td>
</tr>
<tr>
<td>0730-0800</td>
<td>ABC, Katherine, Australia</td>
<td>2485</td>
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<tr>
<td>0730-0800</td>
<td>ABC, Tennant Creek, Australia</td>
<td>2325 [ML]</td>
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<tr>
<td>0730-0800</td>
<td>Radio Australia, Melbourne</td>
<td>9655 15160 15395 17715</td>
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<td>BBC, London, England*</td>
<td>3975 6010 7230 9915</td>
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<td>0730-0755</td>
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<td>Radio Finland, Helsinki</td>
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<td>9600 9640 9760 11680</td>
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<td></td>
<td>11940 12096 15070 15290</td>
<td>15400 17815 21470</td>
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<tr>
<td></td>
<td>Radio Netherland, Hilversum</td>
<td>9630 9715</td>
</tr>
<tr>
<td>0730-0800</td>
<td>Radio Prague, Czechoslovakia</td>
<td>11685 17840 21706</td>
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<td>3985 6165 9535</td>
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<td>0740-0750</td>
<td>W Radio Free Europe, Munich*</td>
<td>5985 7115 9695 9725</td>
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<td>11895 15355</td>
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## Monitoring Times

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<th>Time</th>
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<th>Frequency (MHz)</th>
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<td>Radio Pacific Okean, USSR</td>
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<th>Time</th>
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<tbody>
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</table>

## East Coast To...

### South America

#### East Coast

- 0000-0400
- 0400-0800

#### South America

- 0800-1200
- 1200-1600
- 1600-2000
- 2000-2400

### Alaska

#### East Coast

- 0000-0400
- 0400-0800

#### Alaska

- 0800-1200
- 1200-1600
- 1600-2000
- 2000-2400

### West Coast

#### East Coast

- 0000-0400
- 0400-0800

#### West Coast

- 0800-1200
- 1200-1600
- 1600-2000
- 2000-2400

---

**August 1989**  
**MONITORING TIMES**

[www.americanradiohistory.com](http://www.americanradiohistory.com)
<table>
<thead>
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<th>Service</th>
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<tbody>
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<td>Christian Science World Service</td>
<td>9455 - 17855 MHz</td>
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<td>0800-0900</td>
<td>CKWX, Vancouver, British Columbia</td>
<td>6080 MHz</td>
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<td>0800-0900</td>
<td>CFRB, Toronto, Ontario</td>
<td>6070 MHz</td>
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<tr>
<td>0800-0900</td>
<td>King of Hope, South Lebanon</td>
<td>6215 MHz</td>
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<td>KNLS, Anchor Point, Alaska</td>
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<td>11750 - 11770 MHz</td>
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<td>Radio Tongo, Tongo</td>
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<td>SBC Radio One, Singapore</td>
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<td>17705 - 17840 MHz</td>
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</tr>
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<td>0900-1000</td>
<td>HCBJ, Quito, Ecuador</td>
<td>6130 MHz - 9745 [ML]</td>
</tr>
<tr>
<td>0900-1000</td>
<td>King of Hope, South Lebanon</td>
<td>6215 MHz</td>
</tr>
<tr>
<td>0900-1000</td>
<td>KNLS, Anchor Point, Alaska</td>
<td>6085 MHz</td>
</tr>
<tr>
<td>0900-1000</td>
<td>Radio Afghanistan, Kabul</td>
<td>4450 MHz - 6085 MHz</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15435 - 17720 MHz</td>
</tr>
</tbody>
</table>

---

### Frequency Section

**Midwest To Eastern Europe**

- **0600** - **1140**: Christian Science World Service
- **1200** - **1740**: All India Radio, New Delhi

**Midwest To Western Europe**

- **0600** - **1140**: CFRB, Toronto, Ontario
- **1200** - **1740**: Swiss Radio Intl', Berne

**Midwest To Artic Europe**

- **0600** - **1140**: Voice of Nigeria, Lagos
- **1200** - **1740**: Voice of Greece, Athens

---

**Monitoring Times**

*August 1989*
1200 UTC [8:00 AM EDT/5:00 AM PDT]

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200-1300</td>
<td>CBC, Northern Quebec Service 6065 9625</td>
</tr>
<tr>
<td>1200-1300</td>
<td>CBN, St. John's, Newfoundland 6160</td>
</tr>
<tr>
<td>1200-1300</td>
<td>CFCF, Montreal, Quebec 6005</td>
</tr>
<tr>
<td>1200-1300</td>
<td>CFRC, Calgary, Alberta 6030</td>
</tr>
<tr>
<td>1200-1300</td>
<td>CHNS, Halifax, Nova Scotia 6130</td>
</tr>
<tr>
<td>1200-1300</td>
<td>Christian Science World Service 9495 11930</td>
</tr>
<tr>
<td>1200-1300</td>
<td>CKWX, Vancouver, British Columbia 6080</td>
</tr>
<tr>
<td>1200-1300</td>
<td>CFRA, Toronto, Ontario 6070</td>
</tr>
<tr>
<td>1200-1300</td>
<td>HCJB, Quito, Ecuador 11740 15150 17990</td>
</tr>
<tr>
<td>1200-1300</td>
<td>Radio Australia, Melbourne 5995 6020 6060 6090 7205 7215 9580 9710 9770 11800</td>
</tr>
<tr>
<td>1200-1300</td>
<td>Radio Canada Int'l, Montreal 11855 15720 9600 9875 11685 12025 15110 15130 15490 15520 15550 15585 15595 15750</td>
</tr>
<tr>
<td>1200-1300</td>
<td>Radio Moscow, USSR 17645 17665 17815 17830 21630</td>
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<tr>
<td>1200-1300</td>
<td>Radio RSA, South Africa 9585 11805 21590</td>
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<tr>
<td>1200-1300</td>
<td>Radio Tanzania, Dar es Salaam 7165</td>
</tr>
<tr>
<td>1200-1300</td>
<td>Superpower KUSU, Utah 5010 5052 11940</td>
</tr>
<tr>
<td>1200-1300</td>
<td>Trans World, Radio, Bonaire 9850</td>
</tr>
<tr>
<td>1200-1300</td>
<td>Trans World Radio, Sri Lanka 11815 15345</td>
</tr>
<tr>
<td>1200-1300</td>
<td>Voice of America, Washington 11920</td>
</tr>
<tr>
<td>1200-1300</td>
<td>Voice of Kenya, Nairobi 7270</td>
</tr>
<tr>
<td>1200-1300</td>
<td>Voice of Nigeria, Lagos 7255 15120</td>
</tr>
<tr>
<td>1200-1300</td>
<td>WHRL, Noblesville, Indiana 9485 11790</td>
</tr>
<tr>
<td>1200-1300</td>
<td>WYFR, Oakland, California 5950 6015 11580 11830</td>
</tr>
<tr>
<td>1200-1300</td>
<td>Radio Korea, Seoul, South Korea 13695 15215 15255</td>
</tr>
<tr>
<td>1200-1300</td>
<td>Radio Berlin Int'l, East Germany 7275 11740</td>
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<tr>
<td>1200-1300</td>
<td>Radio Cairo, Egypt 11710 15240</td>
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<tr>
<td>1200-1300</td>
<td>All India Radio, New Delhi 17565</td>
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<tr>
<td>1200-1300</td>
<td>Voice of Turkey, Ankara 3905 4800 4920 7280 9565 9615 11735 15120</td>
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<tr>
<td>1200-1300</td>
<td>Radio Moscow, Russia 17620</td>
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<tr>
<td>1200-1300</td>
<td>Radio Canada Int'l, Ottawa 17555 21815</td>
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<tr>
<td>1200-1300</td>
<td>BRT, Brussels, Belgium 15255</td>
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<tr>
<td>1200-1300</td>
<td>BBC, London, England* 5125 7255 8195 9635</td>
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<tr>
<td>1200-1300</td>
<td>6950 11780 12040 15270 15390 15435 17695</td>
</tr>
<tr>
<td>1200-1300</td>
<td>Radio Bangladesh, Dhaka 15195 17710</td>
</tr>
<tr>
<td>1200-1300</td>
<td>Radio Sweden, Stockholm 17405 21610</td>
</tr>
</tbody>
</table>

---

**Midwest To Central Asia**

**Midwest To South East Asia**

**Midwest To Indonesia**
<table>
<thead>
<tr>
<th>Frequency (MHz)</th>
<th>Broadcast Station</th>
<th>Country/Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>1240-1250</td>
<td>Radio Europe, Munich*</td>
<td>M</td>
</tr>
<tr>
<td>1245-1300</td>
<td>Radio Berlin Int'l, East Germany</td>
<td>15440 17880 21465 21540</td>
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<tr>
<td>1245-1300</td>
<td>Radio France Int'l, Paris</td>
<td>9805 11670 15155 15195</td>
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<tr>
<td>1235-1245</td>
<td>Voice of Greece, Athens</td>
<td>15365 17720 21645</td>
</tr>
<tr>
<td>1300-1400</td>
<td>HCJB, Quito, Ecuador</td>
<td>11740 15115 17890</td>
</tr>
<tr>
<td>1300-1400</td>
<td>KNLS, Anchor Point, Alaska</td>
<td>5995 6060 6080 7205</td>
</tr>
<tr>
<td>1300-1400</td>
<td>Radio Australia, Melbourne</td>
<td>9580</td>
</tr>
<tr>
<td>1300-1400</td>
<td>Radio Jordan, Amman</td>
<td>9625 11720 11955 17820</td>
</tr>
<tr>
<td>1300-1400</td>
<td>Radio Korea (South), Seoul</td>
<td>9560</td>
</tr>
<tr>
<td>1300-1400</td>
<td>Radio Moscow, USSR</td>
<td>9750 15575</td>
</tr>
<tr>
<td>1300-1400</td>
<td>CBC Northern Quebec Service</td>
<td>11080 11900 11955 12050</td>
</tr>
<tr>
<td>1300-1400</td>
<td>Elwa, Monrovia, Liberia</td>
<td>13710 15220 15540 15320</td>
</tr>
<tr>
<td>1300-1400</td>
<td>Radio Cairo, Egypt</td>
<td>15490 15550 15595 17570</td>
</tr>
<tr>
<td>1300-1400</td>
<td>Swiss Radio Bern, Switzerland</td>
<td>17645 17815 17830 21630</td>
</tr>
<tr>
<td>1300-1400</td>
<td>Voice of Nigeria, Lagos</td>
<td>21725</td>
</tr>
<tr>
<td>1300-1400</td>
<td>Voice of America, Washington</td>
<td>11805 17730 21590</td>
</tr>
<tr>
<td>1300-1400</td>
<td>Voice of Malaysia</td>
<td>7165</td>
</tr>
<tr>
<td>1300-1400</td>
<td>Voice of the Philippines</td>
<td>5010 5052 11940</td>
</tr>
<tr>
<td>1300-1400</td>
<td>Voice of the Philippines</td>
<td>9680</td>
</tr>
<tr>
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<td>Voice of the Philippines</td>
<td>9680 11580</td>
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<tr>
<td>1300-1400</td>
<td>Voice of the Philippines</td>
<td>11830 13695 15055 15215</td>
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<tr>
<td>1300-1400</td>
<td>Voice of the Philippines</td>
<td>15305</td>
</tr>
<tr>
<td>1300-1400</td>
<td>Voice of West Africa</td>
<td>7275 11740</td>
</tr>
<tr>
<td>1300-1400</td>
<td>Voice of West Africa</td>
<td>5955 6195 7180 9410</td>
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<tr>
<td>1300-1400</td>
<td>Voice of West Africa</td>
<td>9740 11750 11940 15070</td>
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<tr>
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<td>Voice of West Africa</td>
<td>15140 15310 17840 17790</td>
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<td>Voice of West Africa</td>
<td>17895 21470 21710 25750</td>
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<td>Voice of West Africa</td>
<td>9545 10330 11810 15335</td>
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<td>Voice of West Africa</td>
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<td>Voice of West Africa</td>
<td>15400 21550</td>
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<td>1300-1400</td>
<td>Voice of West Africa</td>
<td>5945 9540 9600 11785</td>
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<tr>
<td>1300-1400</td>
<td>Voice of West Africa</td>
<td>15455</td>
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<tr>
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<td>Voice of West Africa</td>
<td>9620 11695 13635 15570</td>
</tr>
<tr>
<td>1300-1400</td>
<td>Voice of West Africa</td>
<td>17830 21685</td>
</tr>
<tr>
<td>1300-1400</td>
<td>Voice of West Africa</td>
<td>15435 17865 21605</td>
</tr>
<tr>
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<td>9525 9685 9770</td>
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<td>1300-1400</td>
<td>Voice of West Africa</td>
<td>6100</td>
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<td>Voice of West Africa</td>
<td>12010 15010</td>
</tr>
<tr>
<td>1300-1400</td>
<td>Voice of West Africa</td>
<td>11815 15345</td>
</tr>
<tr>
<td>1300-1400</td>
<td>Voice of West Africa</td>
<td>9730</td>
</tr>
</tbody>
</table>

*MHz* (Mega-Hertz)
1400 UTC [10:00 AM EDT/7:00 AM PDT]

| 1400-1427 | Voice of Nigeria, Lagos | 15120 |
| 1400-1430 | ABC, Alice Springs, Australia | 2310 [ML] |
| 1400-1430 | ABC, Tenenent Creek, Australia | 2325 [ML] |
| 1400-1430 | Radio Finland, Helsinki | 9560 11715 11925 15185 17800 |
| 1400-1430 | Radio France Int'l, Paris | 21790 |
| 1400-1430 | S Radio Norway Int'l, Oslo | 21710 |
| 1400-1430 | Radio Polonia, Warsaw, Poland | 6095 7285 |
| 1400-1430 | R.Station Peace & Progress USSR | 11890 15220 17610 17635 17645 |
| 1400-1430 | Radio Sweden Int'l, Stockholm | 17740 21610 |
| 1400-1430 | Radio Tirana, Albania | 9500 11985 |
| 1400-1430 | Voice of Ethiopia, Addis Ababa | 9550 11710 |
| 1400-1450 | T Radio Free Europe, Munich* | 5985 7115 7695 9725 11895 15355 |
| 1400-1450 | Radio Pyongyang, North Korea | 6576 11735 |
| 1400-1455 | Radio Beijing, China | 7405 11600 11855 15165 |
| 1400-1500 | ABC, Katherine, Australia | 2485 |
| 1400-1500 | ABC, Perth, Australia | 9610 |
| 1400-1500 | Adventist World Radio, Italy | 7275 |
| 1400-1500 | All India Radio, New Delhi | 9545 11810 15335 |
| 1400-1500 | BBC, London, England | 5995 6195 7180 9740 9750 11750 12095 15070 15310 15400 17705 17640 17790 17840 21710 21470 25750 |
| 1400-1500 | CBN, St. John's, Newfoundland | 6160 |
| 1400-1500 | CBC Northern Quebec Service | 9625 11720 |
| 1400-1500 | M-A CBU, Vancouver, British Columbia | 6180 |
| 1400-1500 | CFCF, Montreal, Quebec | 6005 |
| 1400-1500 | CFCS, Calgary, Alberta | 6030 |
| 1400-1500 | CHNS, Halifax, Nova Scotia | 6130 |
| 1400-1500 | Christian Science World Service | 13760 17555 21780 |
| 1400-1500 | CKWX, Vancouver, British Columbia | 6080 |
| 1400-1500 | CFRB, Toronto, Ontario | 6070 |
| 1400-1500 | S ELWA, Monrovia, Liberia | 11830 |
| 1400-1500 | FEBC, Manila, Philippines | 9670 11850 |
| 1400-1500 | HCJR, Quito, Ecuador | 11740 15115 17890 |
| 1400-1500 | Radio Australia, Melbourne | 5995 6035 6060 6080 7205 9580 15140 |
| 1400-1500 | S Radio Canada Int'l, Montreal | 9625 11720 11955 17820 |
| 1400-1500 | Radio Japan, Tokyo | 9505 9695 11865 11815 15410 |
| 1400-1500 | Radio Korea, Seoul | 9570 9750 15575 |
| 1400-1500 | Radio Moscow, USSR | 9755 11840 11900 11995 12650 13710 15320 15490 15865 17570 17660 21630 21725 |
| 1400-1500 | Radio RSA, South Africa | 11925 17745 21590 25790 |
| 1400-1500 | A.S Radio Tanzania, Dar es Salaam | 7165 |
| 1400-1500 | SBC, Radio One, Singapore | 5010 5052 11940 |
| 1400-1500 | A.S Superpower KUSW, Utah | 9850 |
| 1400-1500 | Voice of America, Washington | 6110 9645 9700 9760 11920 15160 15205 15425 |
| 1400-1500 | Voice of Kenya, Nairobi | 6100 |
| 1400-1500 | Voice of Malaysia, Kuala Lumpur | 4950 |
| 1400-1500 | Voice of Mediterranean, Malta | 11925 |
| 1400-1500 | Voice of Nigeria, Lagos | 7255 |
| 1400-1500 | WHRL, Noblesville, Indiana | 11790 15105 |
| 1400-1500 | WYFR, Oakland, California | 5950 11830 15215 |
| 1400-1500 | WYFR Satellite Net, California | 13695 |
| 1415-1420 | Radio Nepal, Kathmandu | 3230 5005 |
| 1430-1500 | F ABC, Alice Springs, Australia | 2310 [ML] |
| 1430-1500 | F TVC, Tennant Creek, Australia | 2325 [ML] |
| 1430-1500 | Burma Broadcasting Service | 5985 |
| 1430-1500 | King of Hope, Southern Lebanon | 6260 |
| 1430-1500 | KTWR, Agana, Guam | 9780 |
| 1430-1500 | Radio Austria Int'l, Vienna | 6155 11780 13730 21490 |
| 1430-1500 | Radio Netherland, Hilversum | 5955 13770 15150 17605 |
| 1430-1500 | Radio Prague, Czechoslovakia | 9605 11685 13715 15110 17705 21505 |
| 1430-1500 | Radio Sofia, Bulgaria | 7245 9740 11735 |
| 1445-1500 | Radio Berlin Int'l, East Germany | 15240 17880 |
| 1445-1500 | Radio Canada Int'l, Montreal | 11925 15160 15305 15325 17795 17820 21545 |
| 1445-1500 | M-A Radio Ulan Bator, Mongolia | 9575 15305 |

1500 UTC [11:00 AM EDT/8:00 AM PDT]

| 1500-1505 | Africa No. 1, Gabon | 7200 15200 |
| 1500-1510 | Vatican Radio, Vatican City | 11955 15050 17870 |
| 1500-1600 | BBC, London, England | 5995 6155 6195 7180 9410 9740 11750 11775 11940 12095 15070 15260 15400 17640 17705 17740 |

Midwest To Central America/Caribbean

Midwest To South America

Midwest To Alaska
<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>Station Name</th>
<th>City, Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500-1555 MHz.</td>
<td>Radio Beijing, China</td>
<td>Beijing, China</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>ABC, Alice Springs, Australia</td>
<td>Alice Springs, Australia</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>AWR, Asuncion, Paraguay</td>
<td>Asuncion, Paraguay</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>Bible Broadcasting Service</td>
<td>Various locations</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>CBC Northern Quebec Service</td>
<td>Various locations</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>CBN, St. John's, Newfoundland</td>
<td>St. John's, Newfoundland</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>CBU, Vancouver, British Columbia</td>
<td>Vancouver, British Columbia</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>CFCN, Calgary, Alberta</td>
<td>Calgary, Alberta</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>CHNS, Halifax, Nova Scotia</td>
<td>Halifax, Nova Scotia</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>Christian Science World Service</td>
<td>Various locations</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>CKNW, Vancouver, British Columbia</td>
<td>Vancouver, British Columbia</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>CFB, Toronto, Ontario</td>
<td>Toronto, Ontario</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>ELWA, Monrovia, Liberia</td>
<td>Monrovia, Liberia</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>FEBC, Manila, Philippines</td>
<td>Manila, Philippines</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>HCB, Quito, Ecuador</td>
<td>Quito, Ecuador</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>King of Hope, Southern Lebanon</td>
<td>Various locations</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>KNLS, Anchorage, Alaska</td>
<td>Anchorage, Alaska</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>KTW, Agana, Guam</td>
<td>Agana, Guam</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>Radio Australia, Melbourne</td>
<td>Melbourne, Australia</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>Radio Canada Int'l, Montreal</td>
<td>Montreal, Canada</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>Radio Japan, Tokyo</td>
<td>Tokyo, Japan</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>Radio Jordan, Amman</td>
<td>Amman, Jordan</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>Radio Korea (South), Seoul</td>
<td>Seoul, South Korea</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>Radio Moscow, USSR</td>
<td>Moscow, USSR</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>Radio RSA, South Africa</td>
<td>Various locations</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>SBC Radio One, Singapore</td>
<td>Singapore</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>SLBC, Sri Lanka</td>
<td>Colombo, Sri Lanka</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>Superpower KUSB, Utah</td>
<td>Various locations</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>Voice of America, Washington</td>
<td>Washington, D.C.</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>Voice of Ethiopia, Addis Ababa</td>
<td>Addis Ababa, Ethiopia</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>Voice of Indonesia, Jakarta</td>
<td>Jakarta, Indonesia</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>Voice of Kenya, Nairobi</td>
<td>Nairobi, Kenya</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>Voice of Malaysia, Kuala Lumpur</td>
<td>Kuala Lumpur, Malaysia</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>Voice of Mediterranean, Malta</td>
<td>Various locations</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>Voice of Nigeria, Lagos</td>
<td>Lagos, Nigeria</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>WHRI, Toowoomba, Queensland</td>
<td>Toowoomba, Queensland</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>WRNO, New Orleans, Louisiana</td>
<td>New Orleans, Louisiana</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>WYFR, Oakland, California</td>
<td>Oakland, California</td>
</tr>
<tr>
<td>1500-1600 MHz.</td>
<td>WYFR Satellite Net</td>
<td>Various locations</td>
</tr>
<tr>
<td>1515-1600 MHz.</td>
<td>M-H Radio Budapest, Hungary</td>
<td>Budapest, Hungary</td>
</tr>
<tr>
<td>1515-1600 MHz.</td>
<td>M-H Radio Beijing, China</td>
<td>Beijing, China</td>
</tr>
<tr>
<td>1515-1600 MHz.</td>
<td>FEB, Haifa, Israel</td>
<td>Haifa, Israel</td>
</tr>
<tr>
<td>1515-1600 MHz.</td>
<td>Radio Berlin, East Germany</td>
<td>Berlin, East Germany</td>
</tr>
<tr>
<td>1530-1600 MHz.</td>
<td>All India Radio, New Delhi</td>
<td>New Delhi, India</td>
</tr>
<tr>
<td>1530-1600 MHz.</td>
<td>BRT, Brussels, Belgium</td>
<td>Brussels, Belgium</td>
</tr>
<tr>
<td>1530-1600 MHz.</td>
<td>Radio Prague, Czechoslovakia</td>
<td>Prague, Czechoslovakia</td>
</tr>
<tr>
<td>1530-1600 MHz.</td>
<td>Radio Stockholm, Stockholm</td>
<td>Stockholm, Sweden</td>
</tr>
<tr>
<td>1530-1600 MHz.</td>
<td>Radio Tanzania, Dar es Salaam</td>
<td>Dar es Salaam, Tanzania</td>
</tr>
<tr>
<td>1530-1600 MHz.</td>
<td>Radio Tirana, Albania</td>
<td>Tirana, Albania</td>
</tr>
<tr>
<td>1530-1600 MHz.</td>
<td>Radio Television Morocco, Rabat</td>
<td>Rabat, Morocco</td>
</tr>
<tr>
<td>1530-1600 MHz.</td>
<td>Swiss Radio Int'l, Berne</td>
<td>Berne, Switzerland</td>
</tr>
<tr>
<td>1530-1600 MHz.</td>
<td>Voice of Asia, Taiwan</td>
<td>Taipei, Taiwan</td>
</tr>
<tr>
<td>1530-1600 MHz.</td>
<td>Voice of Nigeria, Lagos</td>
<td>Lagos, Nigeria</td>
</tr>
<tr>
<td>1540-1650 MHz.</td>
<td>M-A Voice of Greece, Athens</td>
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<tr>
<td>1545-1650 MHz.</td>
<td>Radio Berlin, East Germany</td>
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<tr>
<td>1545-1650 MHz.</td>
<td>Vatican Radio, Vatican City</td>
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<tr>
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<td>Voice of Vietnam, Hanoi</td>
<td>Hanoi, Vietnam</td>
</tr>
<tr>
<td>1550-1660 MHz.</td>
<td>KTWR, Agana, Guam</td>
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</tr>
<tr>
<td>1550-1660 MHz.</td>
<td>SBC Radio One, Singapore</td>
<td>Singapore</td>
</tr>
<tr>
<td>1550-1660 MHz.</td>
<td>SLBC, Sri Lanka</td>
<td>Colombo, Sri Lanka</td>
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<tr>
<td>1550-1660 MHz.</td>
<td>Voice of Indonesia, Jakarta</td>
<td>Jakarta, Indonesia</td>
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<td>1550-1660 MHz.</td>
<td>Voice of Kenya, Nairobi</td>
<td>Nairobi, Kenya</td>
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<td>1550-1660 MHz.</td>
<td>Voice of Malaysia, Kuala Lumpur</td>
<td>Kuala Lumpur, Malaysia</td>
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<td>1550-1660 MHz.</td>
<td>Voice of Mediterranean, Malta</td>
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<td>Voice of Nigeria, Lagos</td>
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<td>1550-1660 MHz.</td>
<td>WYFR, Oakland, California</td>
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<td>1550-1660 MHz.</td>
<td>WYFR Satellite Net</td>
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<td>FEB, Haifa, Israel</td>
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<td>All India Radio, New Delhi</td>
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<td>Radio Tirana, Albania</td>
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<td>Voice of Nigeria, Lagos</td>
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<td>Radio Berlin, East Germany</td>
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<tr>
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<td>Vatican Radio, Vatican City</td>
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<td>Voice of Vietnam, Hanoi</td>
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**1600 UTC [12:00 PM EDT/9:00 AM PDT]**

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<td>SBC Radio One, Singapore</td>
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<td>FEB, Haifa, Israel</td>
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<td>1600-1610</td>
<td>Radio Lesotho, Maseru</td>
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**MONITORING TIMES August 1989**

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### Frequency Monitoring Times

<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>Station Name and City</th>
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<tbody>
<tr>
<td>1600-1700</td>
<td>Radio Beijing, China</td>
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<tr>
<td>1600-1700</td>
<td>Radio France Int'l, Paris</td>
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<tr>
<td>1600-1700</td>
<td>Radio Jordan, Amman</td>
</tr>
<tr>
<td>1600-1700</td>
<td>Radio Korea, Seoul, South Korea</td>
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<tr>
<td>1600-1700</td>
<td>Radio Malawi, Blantyre</td>
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<tr>
<td>1600-1700</td>
<td>Radio Moscow, USSR</td>
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<tr>
<td>1600-1700</td>
<td>Radio Riyadh, Saudi Arabia</td>
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<tr>
<td>1600-1700</td>
<td>Radio Tanzania, Dar es Salaam</td>
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<tr>
<td>1600-1700</td>
<td>Superpower KUSW, Utah</td>
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<tr>
<td>1600-1700</td>
<td>Voice of America, Washington, DC</td>
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<tr>
<td>1600-1700</td>
<td>WHRI, Noblesville, Indiana</td>
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<tr>
<td>1600-1700</td>
<td>WINB, Red Lion, Pennsylvania</td>
</tr>
<tr>
<td>1600-1700</td>
<td>WRNO, New Orleans, Louisiana</td>
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<td>1600-1700</td>
<td>WYFR, Oakland, California</td>
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<td>WYFR Satellite Network</td>
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<td>Radio Zambia, Lusaka</td>
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<td>Voice of Vietnam, Hanoi</td>
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<td>1600-1700</td>
<td>Radio Canada Int'l, Montreal</td>
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<tr>
<td>1600-1700</td>
<td>RTM Morocco</td>
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<tr>
<td>1600-1700</td>
<td>Radio Korea, Seoul</td>
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#### West Coast To West Africa

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1600-1700</td>
<td>Radio Budapest, Hungary</td>
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<td>1600-1700</td>
<td>Radio Prague, Czechoslovakia</td>
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<tr>
<td>1600-1700</td>
<td>ELWA, Monrovia, Liberia</td>
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<td>HCJB, Quito, Ecuador</td>
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<td>1600-1700</td>
<td>Radio Berin Int'l, East Germany</td>
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<tr>
<td>1600-1700</td>
<td>Radio North Int'l, Oslo</td>
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<tr>
<td>1600-1700</td>
<td>Radio Pakistan, Islamabad</td>
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<tr>
<td>1600-1700</td>
<td>Radio Polonia, Warsaw, Poland</td>
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<tr>
<td>1600-1700</td>
<td>Radio Canada Int'l, Vancouver, British Colombia</td>
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<td>1600-1700</td>
<td>Radio Australia, Melbourne</td>
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#### West Coast To Central Africa

<table>
<thead>
<tr>
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<th>Station Name and City</th>
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<tr>
<td>1600-1700</td>
<td>Radio Austria Int'l, Vienna</td>
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<tr>
<td>1600-1700</td>
<td>Radio Netherlands, Hilversum</td>
</tr>
<tr>
<td>1600-1700</td>
<td>Radio Peace &amp; Progress, USSR</td>
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<tr>
<td>1600-1700</td>
<td>Radio Canada Int'l, Montreal</td>
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<td>Radio Korea (South), Seoul</td>
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#### West Coast To South Africa

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<tr>
<td>1600-1700</td>
<td>Radio Uganda, Kampala</td>
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<tr>
<td>1600-1700</td>
<td>Radio Israel, Jerusalem</td>
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<tr>
<td>1600-1700</td>
<td>Voice of Namibia (Angola)</td>
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<tr>
<td>1600-1700</td>
<td>Radio Netherlands, Hilversum</td>
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<td>1600-1700</td>
<td>Radio Australia, Melbourne</td>
</tr>
<tr>
<td>1600-1700</td>
<td>Radio Japan, Tokyo</td>
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<tr>
<td>1600-1700</td>
<td>Radio Korea, Seoul</td>
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**MONITORING TIMES**

**August 1989**

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<table>
<thead>
<tr>
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**MONITORING TIMES**

1900 UTC [3:00 PM EDT/12:00 PM PDT]

- Africa No. 1, Gabon: 15475
- Vatican Radio, Vatican City: 6190
- Radio Bangladesh, Dhaka: 6240
- Radio Tanzania, Dar es Salaam: 9684
- Radio Netherlands, Hilversum: 6020
- Voice of Islamic Republic Iran: 9695
- ABC, Alice Springs, Australia: 2310
- ABC, Tennant Creek, Australia: 2325
- Kol Israel, Jerusalem: 11605
- Radio Afghanistan, Kabul: 7160
- Radio Berlin Intl, East Germany: 9685
- Radio Japan, Tokyo: 11865
- Radio Norway Int'l, Oslo: 15220
- Radio Sofia, Bulgaria: 7245
- Voice of Vietnam, Hanoi: 9840
- Deutsche Welle, Koln, W. Germany: 9745

**West Coast To Central Asia**

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**West Coast To South East Asia**

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<tbody>
<tr>
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**West Coast To Indonesia**

<table>
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</tbody>
</table>

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www.americanradiohistory.com
### Frequency Section

#### 2000-2050
- Radio Pyongyang, North Korea
- Voice of Turkey, Ankara
- ABC, Alice Springs, Australia
- ABC, Katherine, Australia
- BBC, London, England
- CBC Northern Quebec Service
- CBC, St. John's, Newfoundland
- CBV, Vancouver, British Columbia
- CFCF, Montreal, Quebec
- CHCN, Calgary, Alberta
- CHLS, Halifax, Nova Scotia
- Christian Science World Service
- Radio Baghdad, Iraq
- Radio Havana Cuba
- Radio Jordan, Amman
- Radio Kuwait, Kuwait
- Radio Malabo, Equatorial Guinea
- Radio Moscow, USSR
- Radio New Zealand, Wellington
- Radio Peace, Costa Rica
- Radio Riyadh, Saudi Arabia
- Radio Tonga, Tonga
- Radio Zambia, Lusaka
- Superpower KUSW, Utah
- Voice of America, Washington, DC
- Voice of Nigeria, Lagos
- WHRI, Noblesville, Indiana
- WITB, Red Lion, Pennsylvania
- WMLK, Bethel, Pennsylvania
- WRNO, New Orleans, Louisiana
- WWCR, Nashville, Tennessee
- YWFR, Oakland, California
- YWFR Satellite Net, California

#### 2005-2100
- Radio Damascus, Syria
- Voice of Kenya, Nairobi
- ELWA, Monrovia, Liberia
- RAI, Rome, Italy
- Radio Polonia, Warsaw, Poland
- BBC, London, England
- Radio Austria, Melbourne
- Radio Beijing, China
- Radio Korea, Seoul, South Korea
- Radio Netherlands, Hilversum
- Radio Sofia, Bulgaria
- All India Radio, New Delhi
- IBRA, Radio, Malta
- Vatican Radio, Vatican City

#### 2100 UTC [5:00 PM EDT/2:00 PM PDT]

#### West Coast To Central America/Caribbean

#### West Coast To South America

#### West Coast To Alaska

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**August 1989**

*Monitoring Times*
A nice collection of QSLs provided by Don Mumma of Houston, Texas. He's obviously monitored all corners of the globe, from New Zealand to All India Radio (left) to Albania (see article on Balkan stations, this issue) to Luxembourg!
<table>
<thead>
<tr>
<th>Frequency</th>
<th>Time</th>
<th>Station and Country</th>
<th>City and Region</th>
</tr>
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<td>2200-2230</td>
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<td>11875 12000 15180 15455</td>
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<td>2245-2300</td>
<td>2245-2300</td>
<td>Radio Prague, Czechoslovakia</td>
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<tr>
<td>2230-2300</td>
<td>2230-2300</td>
<td>Radio Sofia, Bulgaria</td>
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<td>2300-0000</td>
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<td>Radio Vietnam, New Delhi</td>
<td>6050 7215 9535 9910</td>
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<td>Radio for Peace, Costa Rica</td>
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<td>Radio Havana Cuba</td>
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**2300 UTC [7:00 PM EDT/4:00 PM PDT]**

- 2300-2300 | Kol Israel, Jerusalem | 11605 15615 15640 |
- 2300-2300 | Radio Canada Int'l, Montreal | 9755 11730 |
- 2300-2300 | Radio Mediterraneo, Malta | 6110 |
- 2300-2300 | Radio Norway, Oslo | 15190 |
- 2300-2300 | Radio Prague, Czechoslovakia | 13715 |
- 2300-2300 | WINB, Red Lion, Pennsylvania | 15145 |
- 2300-2300 | WRFC, Oakland, California | 5965 11580 15170 |
- 2300-2300 | Radio Pyongyang, North Korea | 13650 |
- 2300-2300 | All India Radio, New Delhi | 6050 7215 9535 9910 |
- 2300-2300 | Voice of America, New Delhi | 6050 7215 9535 9910 |

**DID WE MISS SOMETHING?**

Let us know your corrections and additions by sending them to frequency manager Greg Jordan at 7009-B Brandemere Lane, Winston-Salem, NC 27106.

Send your special QSLs or good photocopies to share with other monitors as we have space. We'll copy the QSLs and return them to you within the month. Send to QSL, P.O. Box 98, Brattleboro, VT 05301-0098.
The Scan-tastic Duo!
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Are Grove’s Choice for VHF/UHF’s ‘Perfect Partners’

Now used by government and military agencies worldwide, the ICOM R7000 provides total spectrum 25-1000 (triple conversion) and 1025-2000 (quadruple conversion) MHz frequency coverage with 100 Hz fluorescent readout accuracy!

Add to this enormous tuning range 99 memory channels with priority function, keyboard entry or dial tuning (±5 ppm stability, -10 to 60°C), FM/AM/SSB modes, five tuning speeds (0.1/1/5/10/12.5/25 kHz), S-meter/center tuning meter, 2.8/9/15/150 kHz filter selection, noise blanker, internal speaker with 2.5 watts of audio power, spurious signal suppression greater than 60 dB, high sensitivity (0.5 µv @ 12 dB SINAD FM), and programmable scanning with auto-write memory, and you have the most advanced scanning receiver ever designed for the serious VHF/UHF listener.

But the features don’t stop here. Optional accessories include the RC-12 remote controller, ACC 67 extendable whip antenna, a voice synthesizer to announce frequency settings, and even an access port for external computer control!

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DIMENSIONS: 11¼"W x 4¾"H x 10¾"D; WEIGHT: 16 lbs.; POWER: 117/240 VAC, 1.5 A

Professional Wideband Discone
Best Discone on the Market for VHF/UHF Receivers

The discone antenna is used by government and military agencies worldwide because of its recognized high performance, wide bandwidth characteristics. Now ICOM offers a professional grade discone at a popular price.

Designed for use with the ICOM R7000 receiver (25-2000 MHz continuous coverage), the AH7000 discone consists of 16 rugged, stainless steel elements and is capable of transmitting up to 200 watts in the amateur 50, 144, 220, 432, 900, and 1200 MHz bands.

As a receiving antenna the AH7000 is superb, outperforming any omnidirectional antenna we have ever used for continuous 25-1000 MHz (and above) coverage. A base-loaded, vertical top element is used as a low band (30-50 MHz) frequency extender.

The elements are arranged on a 24-inch support pipe equipped with two strong mounting brackets to accommodate any standard mast-pipe (1" to 2¾" diameter). Included is approximately 50 feet of low loss 50 ohm coaxial cable with N connectors factory installed. Receiver adaptors available at additional cost at time of order: Order ANT-3

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What's the best programmable scanner for you?

One of the most difficult questions we get asked here at MT headquarters is, "What is the best scanner?" Since different listeners have different applications and expectations, there is no simple answer.

For example, if you are in a crowded metropolitan area and strong signals come bursting through with ease, you need a scanner with high intermod rejection and plenty of memory channel capacity for all those frequencies. Try the Realistic PRO2005, AOR AR2002 or 2515 - all three are noted for high signal level tolerance as well as ample memory space.

Out in the boonies where signals are hard to hear even with an outside antenna? Try a Bearcat BC800XLT or BC760XLT. If you don't have 800 MHz systems in your area and don't anticipate any or care to listen for them, the BC 580XLT should fill the bill.

Base or Mobile?

All base scanners on the market operate from 12 volts DC, allowing for mobile applications. This doesn't mean, however, that they are all suitably equipped for mobile installation. If you wish to mount your scanner under the dash, better check to make sure it will fit -- and that a mobile mount kit is available for it. Even if the scanner of your dreams doesn't come with a mobile kit you can still purchase a universal mobile mount from autosound specialty shops, department chain electronics departments and even CB vendors.

What do handhelds sacrifice?

Audio quality. Other than that, they are just as sensitive, selective and "powerful" as their grown-up cousins. For this reason they are popular choices for those monitors on the go who want handheld readiness, but mobile or base performance. Their BNC connectors allow them to be attached to rooftop or mobile antennas with ease and they may even be powered from the car battery -- with an appropriate adaptor if necessary.

Crystal versus programmable

We generally don't recommend replaceable-crystal scanners. Even manufacturers are gradually phasing them out of production. Unless you never plan to change frequencies, the programmables are the way to go. You never have to order crystals, they have equal (or better) performance, and introductory-level programmables are as affordable as the crystal types.

What about those entry level scanners?

Consumer electronics is a tightly competitive marketplace and you usually get what you pay for. With scanners, the compromise is usually in quality of packaging (lots of plastic, slide controls instead of quality rotary controls); functional options like channel -- but not frequency -- readout, no search capability, small memory capacity; and signal handling ability (image and intermod rejection, even with a 4096 memory).

If you're in the boonies and don't need 800 MHz, the BC 580XLT should fill the bill.

Besides Uniden, AOR is the only other manufacturer with a strong presence in the scanning market.
adjacent-channel interference mediocre signal handling capacity (intermod, images and desensitization from strong signal overload).

Oddly enough, sensitivity, which seems to be everyone’s primary concern (although it shouldn’t be) in a scanner’s performance, is virtually identical at all pricing levels.

**How many scanner manufacturers are out there?**

Uniden and AOR -- that’s about it. Even other labels like Regency, Cobra and some Realistic models from Radio Shack are Uniden products. It has been estimated that the Uniden Corporation now controls about 80 percent of the American scanner market.

AOR is imported from Japan by Ace Communications and their products are available factory-direct as well as from several MT advertisers.

**How do I choose a reputable dealer?**

There are two ways to shop: by price and by reputation for service. If you’re lucky, you may get both.

There are dealers who play the numbers game, offering enticing prices and operating on a small margin, profiting in volume. They are not interested in answering questions. If you know what you want and price is the most important consideration, you may wish to buy from them.

If you want a friendly dealer who will take the time to answer your questions and provide post-sale support in case of difficulty, then shop by reputation. If you’re a newcomer, ask other scanner owners. It’s amazing how often the same names come up!

**What’s in store for Scannies?**

While it is always dangerous to make long-term predictions in an industry as volatile as consumer electronics, we venture: wider frequency coverage, more modes, more memory channels, faster scan speeds, return of cellular frequencies, smaller size, better dynamic range, better adjacent-channel selectivity, signal strength indicators and computer controllability.

Some of these features are already found on some scanners; the path has been set by product acceptance and, if the manufacturers are willing to listen to us, will be implemented in scanners of the future.

If strong signals abound in your area, could be what you need is the Realistic PRO-2005.
This summer's Consumer Electronics show in Chicago experienced a rather light turnout this year. But CES officials claim exhibitors were satisfied with the traffic. Some 94 percent of top industry retailers reportedly attended the show. Casio Inc. president John McDonald responded "excellent" when asked how the show went for his company. "We had nothing but quality buyers," he said. "As long as they were here, that's fine."

Toshiba's Richard Meidenbauer found a high level of interest in larger screen televisions and sets with upgraded sound. "We also found a lot of interest in our car audio products."

Overall, said Wayne Jacobs, president of the marketing and research firm of Jacobs, Jenner and Kent, "the mood was optimistic."

**YOUR RADAR DETECTOR JUST BECAME OBSOLETE.**

So reads an ad for the Trident System radar detector currently running in a number of magazines around the country.

According to the manufacturer, the Trident is based around a "hypersensitive" X, Y and instant-on band radar detector.

Of course, there are times when that isn't enough. "In typical situations," says the ad, "radar detectors are not effective beyond three-quarters of a mile."

So the people at Trident have built a police scanner into their radar detector "and pre-programmed it with every state, county and city police frequency for all 50 states."

You press a button to tell the unit what state you're in and then "when you hear any police communications (For example: 'Blue Chevy two door clocked at 70'), you know there's probably a speed trap within the next seven miles."

There is also a CB that lets you "hear about speed traps from other drivers in the area."

The Trident is a compact 5-5/8 inches wide, 4-7/8 inches deep and 1-3/4 inches high. It is offered on a 30-day, no hassle, money back guarantee plus a full 3-year limited warranty on parts and service. It retail for $364.00. To order, call 1-800-874-3465.

The quality of movie theatre audio can now be recreated in your home with a Heath Surround Sound Processor unit. When combined with two speakers placed in the rear of the room, the processor transforms any home stereo audio/video installation into a surround sound system.

"Surround sound" puts the viewer/listener into the center of the action, lending a threedimensional feel to surround encoded video tapes, laser discs and MTS stereo broadcasts.

But sakes alive! This thing comes in kit form! Yep. But don't worry. Says Heath product manager Paul Gehl-bach, "This is not a difficult kit. You need only minimal kit building experience, basic soldering tools and two to three free evenings to experience the excitement of surround sound."

The Dolby Surround Sound Processor kit, model AD-2550, measures 2-3/4" high x 17" wide x 8-1/2" deep and sells for $199.95. For more information or to order Heath's free catalogue, call toll-free 1-800-44-HEATH or write to 350-043, Benton Harbor, MI 49022.

Voice and data communications are becoming more and more susceptible to interception. Confidential information falls into the hands of competitors. Foreign governments tap into your technology. And information is "leaked" to the general public.

The Secureline 440 encryption system insures the confidentiality of your telephone calls and data transmissions. It transforms voice signals into a stream of digits which are then encrypted by a three-level, randomly generated key system. It is virtually impossible, say the manufacturers, to unscramble.
Electronic Specialists' Computer Survival Kit

On-the-go computers will appreciate the Portable Computer Survival Kit from Electronic Specialists, Inc. of Natick, Massachusetts. Included in this kit are often-needed adapters, tools and cables for the traveling computer.

Along with a portable AC power and modem security unit are screwdrivers, clip-lead modular phone taps, RJ-11 "tee" adapter to expand a work site phone jack into two phone jacks, 25 foot modular-type phone extension cord, AC power 2 prong to 3 prong adapter plug and an AC power triple tap outlet adapter.

The price tag on the Portable Computer Survival Kit is $229.95 from Electronics Specialists, 171 S. Main St., Natick, Massachusetts 01760. For more information call 1-800-225-4876.

Mailbag

Reader Bob Fraser of Cohasset, Massachusetts, writes to say that he noticed a similarity between Alexander Popov's radio receiver of the 1870s and the Storm Alert mentioned in this column back in June.

Surprisingly, Popov's unit was called a "lightning detector." Bob had tried to find out more about the receiver some ten years ago, even writing to (and receiving a reply from) Radio Moscow's Paul Kuznetsov.

If you see a gadget that catches your attention, we'd like to hear about it. Send it to Larry Miller, Consumer Electronics, P.O. Box 98, Brasstown, NC 28902. Our thanks this month to Bob Fraser and Sly Kapchinski.

For more information on Secureline 440, write CS Communications Control, Inc., 160-A Midland Ave., Port Chester, NY 10573.

And it's designed to fit into any office decor.

It's more expensive than wetting your finger and holding it up to the wind. Then again, it'll tell you a lot more than your finger will.

Whether you'd just like to keep up with what's going on outside or if you're involved in public safety communications, the computerized Azimuth TWR-3 weather station allows you to monitor local weather conditions from inside your radio room.

The TWR-3's 5/8 inch LCD readout gives you wind direction (2 or 10 degree increments), wind speed (MPH or KPH), records high wind gusts, external temperature, wind chill, low and high temperatures, plus daily and yearly rainfall with optional self-dumping rain collector.

For more information on the TWR-3, call Azimuth Communications Corporation at 1-800-882-7388.

Alexander Popov's 'lightning detector' (early wireless) - from Radio Moscow 1979

Boost Your Signals with the NEW A-10 Outdoor Antenna

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Unique mounting base and clamp...

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Just clamp the support bracket in place and insert the lightweight, efficient aluminum tubing elements. With end capacity hats, the elements are only 7 ft. (for 10M) or 9.5 ft. (for 15M) long.

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Improves reception of shortwave and scanner signals!

Ham radio & CB operators: An excellent transmitting antenna! The A-10 has a low SWR and wide bandwidth. It's a half-wave vee or dipole with no radials or grounds!

Take it with you:
The unique clamping design lets you mount the A-10 just about anywhere, and take it apart in minutes.

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Monitoring Times August 1989 91

www.americanradiohistory.com
Listening below the BC band

Simplicity is often the byword for experimenters. I agree with that thought. It's more fun to build a simple project because it takes less time and the cash outlay is minimal. I'm sure you will find this project easy to build and get working. It can be tacked together in a few hours and ready to use.

The circuit is for a low-frequency converter that you can use with an existing receiver if that receiver tunes from 1600 to 2000 kHz. Many WW II surplus receivers cover that range. New general coverage receivers are suitable also as the tunable intermediate frequency (IF) for this converter.

It's fun to explore the frequencies below 550 kHz. There are all manner of aircraft and marine beacons, plus signals from experimenters who operate 1-watt transmitters between 160 and 190 kHz. Many of them operate their transmitters as beacons with a CW identifier. This is permitted by unlicensed experimenters under Part 15 of the FCC rules. Maximum antenna length is 50 feet for those frequencies.

The Circuit

Figure 1 shows a two-transistor converter that will allow you to tune your main receiver from 1600 to 2000 kHz for coverage of the 100-500 kHz LF range. C1A/C1B of Figure 1 is the converter front end peaking control (preselector). It is tuned for maximum received signal at the frequency of interest. The converter IF output is broadly resonant at 1800 kHz.

A dual-gate MOSFET (Q1) functions as the mixer. This is the simplest mixer we can use to obtain good performance and 10-15 dB of conversion gain. L1 is a 1-mH RF choke. It is easier to use it for L1 than trying to wind a massive 1000 uH coil!

Figure 1 -- Schematic diagram of a practical LF/VLF converter that can be used with a general-coverage receiver. Resistors are 1/4-W carbon composition. Fixed-value capacitors are disc ceramic, 50 V rating or greater.

C1 -- Dual section broadcast-radio capacitor, 365 pF per section.
C2, C3 -- See text.
D1 -- Small signal silicon diode, type 1N914.
J1, J2 -- Chassis-mount coaxial jack of builder's choice.
L1 -- Miniature 1-mH RF choke (see text).
L2 -- Miniature 100 microhenry RF choke.
Q1 -- Dual-gate MOSFET. Type 3N211, 3N212, or 40673.
Q2 -- VHF JFET. Type MPF102 or 2N4418.
RFC1-- Miniature 2.5-mH RF choke.
Y1 -- 2.1 MHz crystal. Check surplus dealers for low cost unit.
C1 tunes L1 to resonance at the desired receive frequency. The 47- and 270-pF input capacitors form a divider for a low-impedance antenna input to the converter (50-100 ohms). Terminal A, shown with dashed lines, is an optional antenna input for use with a random length of wire. Anything from 50 to several hundred feet of wire will suffice. The longer the wire the stronger the received signals.

Junction field-effect transistor (JFET) Q2 operates as a crystal-controlled Pierce oscillator. Y1 sets the frequency at 2100 kHz. C2 and C3 are feedback capacitors that ensure crystal oscillation. These values may be experimented with if your crystal is sluggish and does not oscillate reliably (slow starting or no starting).

Q1 should not have more than 6 volts peak-to-peak at gate 2. Should you have excessive RF injection voltage at that point in the circuit, simply reduce the size of C4 until the P-P voltage is less than 6 at gate 2 of Q1. Do not use less than 4 volts P-P, because the converter gain will be reduced at the lower injection voltage levels.

Diode D1 in Figure 1 acts as a bias clamp. This helps to ensure a cleaner waveform from the oscillator by reducing harmonic currents. Excessive harmonic energy, when fed to a mixer, can cause unwanted responses from signals that aren’t in the band of interest.

Practical Considerations

L1 and L2 of Figure 1 can be miniature RF chokes with powdered-iron or ferrite cores. The Q will be quite acceptable from 100 to 500 kHz. The older pi-wound RF chokes (larger) may offer even better Q, which will improve the front-end selectivity. You may wish to experiment along these lines.

Both sections of a two-gang broadcast radio tuning capacitor (C1) are used in parallel to obtain a capacitor range of 50 to 730 pF. This tunes the desired LF range in combination with L1. There are a number of multisection surplus tuning capacitors that may be adapted for use in this circuit.

This converter can be wired on a piece of perforated board if you keep the leads short and direct. You may also use a home made PC board for the foundation. Simply use a hacksaw to cut through the copper on one side of a blank PC board to form numerous small, isolated copper islands. It is easy to form a grid of squares in this manner.

If you do not have a 12-V dc power supply, you may power this converter with a 9-V transistor-radio battery. The converter gain will be less at 9 V. Battery life should be

You should be aware that this frequency scheme results in “backwards” tuning of the LF band. Specifically, 100 kHz will appear at 2000 kHz on the main receiver dial and 500 kHz will be heard at 1600 kHz. You may listen below 100 kHz if your receiver is capable of tuning up to 2100 kHz. However, you will hear the oscillator (2100 kHz) at that frequency. It should cause you no problems, since 2100 kHz represents 0 kHz in the VLF band!!

Final Comments
You can use other tunable IF ranges by changing the frequency of Y1 accordingly. For example, Y1 needs to be on 5500 kHz if you use a tuning range of 5000 to 5400 kHz on your main receiver. C2 and C3 of Figure 1 would then be reduced to 47 pF. L2 would need to be reduced to 12 microhenries. No other changes would be necessary.

This converter represents simplicity and low cost. It is not the world's best converter in terms of being able to reject strong signals without overloading and IMD (intermodulation distortion) products. But for casual LF and VLF listening, you will find it adequate.
Getting Good and Grounded!

One of the neat things about doing this column is the access I have to all sorts of information that seldom sees wide distribution. Such is the article by C.F. Rocky, W95CH, which appeared in The Five Watt (TSW), quarterly publication of the Michigan QRP Club, regarding the "Terragator."

I've known "The Rock" for about 20 years. He has written many fine articles on QRP (low power operating) projects in The Milliwatt, QRP Journal (now defunct), QRP ARCI Quarterly newsletter, and other publications including TSW. Rock's involvement with the radio hobby goes back quite a ways (note the call sign!) and his grassroots approach to the hobby is refreshing. When I saw his article on the Terragator, I just had to pass it along to the readers of MT.

"Tuning" Your Ground System

You've got a ground rod pounded into the sod and you're "grounded" ...right? Wrong! Depending on whether you are talking about RF or DC ground, you could have a solid DC ground path but be well "above" ground when it comes to RF applications.

"True ground" on an antenna system is about as easy to find as the Holy Grail. Those of us who have a second story ham shack are hard pressed to have a good RF ground at all HF operating frequencies. At last, there is a solution, a tunable ground system called "The Terragator."

The Terragator will tune your ground system and alleviate RF "hot spots" and "tingles" that occur when the radio equipment is isolated above RF ground. While I seldom run more than five watts RF output power in my shack now, there have been times in the past that K7YHA had been known to run 500 watts.

It only takes a couple of good RF burns due to an inefficient RF grounding system to convince one that things need to be changed! Basically, all the Terragator does is act as an antenna tuning unit for the ground path. Instead of tuning the antenna, the Terragator tunes the ground system.

Well-grounded Theories

In order to fully understand how and why the Terragator works, let's review some basic principles about RF current and associated ground systems. For those of us who have second or third floor ham shacks, the following information will not be a surprise.

When you try to establish a ground system by grounding to a cold water pipe or running coax braid out the window to a ground rod (or two) several stories below, the RF current generated by your transmitter may follow a random path on its way to earth (that point of minimum RF potential that constitutes "true ground").

If this path is close to a quarter-wavelength (or odd multiple thereof), your transmitter may be insulated from ground at certain frequencies. If, on the other hand, this path length is approximately close to a half wavelength (or even multiple thereof) you may find that you have a very good ground at the equipment end of the ground cable and no RF "floating" around the shack.

For most of us, these two situations won't exist. Actually, we will have something between the two extremes. Since it would be physically impossible to shorten most ground systems to overcome the quarter wavelength scenario, the only option left is for us to electrically lengthen that ground run to approximate a half wavelength ground run.

We can add an "extra" quarter wavelength (1/4 + 1/4 = 1/2 wavelength) electrically by placing a coil/capacitor arrangement in the ground lead next to the antenna tuner. (You don't use an antenna tuner? For shame!).

If we make this coil/capacitor arrangement tuneable (tapped coil and variable capacitor) we can then tune the ground system to resonance at various frequencies of operation, assuring an adequate RF ground anywhere on the bands that we operate.

Using the Terragator

The Terragator connects between the ground lug of the antenna tuner and the ground wire. A #48 bulb is connected in series with the ground wire. Power is applied to the antenna and the Terragator is tuned for maximum RF current indicated by a maximum glow in the lamp. (REMEMBER: maximum RF current = minimum RF voltage or "true ground").
Figure 2: A more sensitive circuit

Adjust C1 and L1 (see Figure 1 for max brightness).

Figure 1 shows what the Terragator looks like in schematic form. Note that there are only two parts to the unit: a variable capacitor (C1) salvaged from an old BC radio and a hand wound coil (L1). If you want to get fancy, add a switch to select the coil taps in place of using an alligator clip.

The RF indicator is B1, a #48 bulb with a shunt coil (L2) across the leads. Coil data: L1: 1.5 inch OD PVC pipe with turns as shown on Figure 2. L2: 10 turns of #22 wire on 1/4 inch OD coil form (BIC pen body or similar).

Construction is straightforward and basically noncritical. Any form of layout can be utilized, just remember to insulate the capacitor frame from ground and keep L1 its own diameter away from any metal sides or chassis bottom.

If you use a switch, make it a NONshorting type, with at least 6-8 poles. Chassis can be a piece of stained and finished wood, old metal chassis, or you can buy an enclosure.

Cost of the entire project (if you scrounge everything) will be minimal. If you bought everything new, the cost should be no more than $20. Hamfest flea markets are great places to find high quality ceramic capacitors, rotary inductors (yes, you can use a rotary inductor in place of a tapped coil), B&W coil stock, chassis, etc. Look around and be creative. After all, this is a fun project and half the fun is scrounging the parts necessary to build the project.

Operation of the Terragator goes like this. Set up the coil tap for the frequency that you are going to operate (Tap A or B = 10 and 15 meters, Tap C for 40, 30, and 20 meters, Taps D, E, and F for 80 meters), adjust the coil taps and capacitor for max brilliance of the bulb when the transmitter is key down.

That's all there is to it. Once you have maximum brilliance on the bulb, you have tuned the ground to an even multiple of a half wavelength and your equipment is now at "true" ground.

NOTE: the RF path to earth must be a low resistance path. The Terragator cannot correct for resistive losses in the ground system. An interesting exception exists when the ground system you are connecting to is well insulated: the Terragator can tune the insulated ground as a counterpoise instead of a conductive ground.

Figure 2 shows a more sensitive circuit which replaces the bulb and shunt coil. M1 is a 0-1 ma meter movement. R1 is a 10 K pot (sensitivity control), C1 is a .01 mf bypass cap, D1 is a 1N34 diode (for RF rectification) and L1 is 10 turns on a 1/4 inch OD form (BIC pen barrel or equivalent).

This new circuit goes in series with the coil and capacitor of the original circuit. The new circuit will provide a much more sensitive indicator as to when the maximum RF current has been reached.

A Word of Caution

A couple of things that the Terragator is NOT: the Terragator will not act as any form of lightning protection, nor will it eliminate an AC induced hum problem currently encountered in your station. Both these applications require a solid, low resistive ground path. It will not take the place of a truly effective ground radial system or effective counterpoise.

Well, that's it for this time. Hope you enjoyed this look at the Terragator. My thanks to C.F. Rocky, W9SCH, for doing the groundwork on the Terragator, and Jerry Totten, K8JRO, of the Michigan QRP Club for allowing me to reproduce the contents of Rock's article.

Remember, I need to hear from you readers out there to be sure that this column is providing the kind of information that you find usable. Whether you're a scanner freak, a shortwave listener/DXer or ham fanatic, Tech Topics is your column, so I want to hear from you. 73s es Gud DX.
The Discone: A Wideband Omnidirectional Antenna

"The discone and its variants are the most commonly used low-gain wide-band base-station antennas." This quotation comes from possibly the most comprehensive antenna engineering manual ever written. So, if you've never tried a discone antenna, such a statement in such an impressive manual might just make you wonder what you're missing!

First, don't let the term "low-gain" scare you off. "Low-gain" means that the discone has somewhat less gain than our standard-of-reference, the half-wave dipole. However, the discone has gain comparable to the respected and popular groundplane antenna.

And, also like the groundplane, the discone has a nondirectional response to signals in the horizontal plane. Thus it gives good all-around coverage so desirable at a base station.

Why would we choose the discone over a groundplane antenna at times?

Well, whereas the groundplane is a resonant one-band antenna in its basic design, the construction of the discone gives it one of the widest bandwidths of any antenna: up to a 10 to 1 frequency spread. This means that a discone can be designed to cover a chunk of RF spectrum such as 100 MHz to 1000 MHz. We're talking real bandwidth here!

So, if you want a base-station antenna with good all-around coverage and a super bandwidth, maybe you should consider building this month's antenna: a discone designed to cover from just above the FM broadcast band (110 MHz) well on up into the UHF band.

Just how high in frequency this antenna will function effectively depends on the care you use in making it. I suspect that most readers will be able to construct this antenna to function to at least 500 MHz, and possibly higher.

For the hams among us, that means that it should also give good service on the 2 meter, 220 MHz, and 440 MHz ham bands.

Let's make a super-wide-band antenna ...

To construct this antenna, we need a ten foot length of three foot wide, small mesh (1/2 inch mesh or smaller) hardware cloth. Hardware cloth is a type of screening wire, and yes, you get it at the hardware store! You also need a tin can lid three or more inches in diameter (make sure it is bright tin, so that you can easily solder to it), and an SO-239 coaxial cable female socket.

To begin, lay out and cut the parts of the antenna from the hardware cloth as shown in Figure 1. Be prepared to use patience on this job, it is tedious. A magic marker on a length of string makes a good compass for drawing the curves.

Next, join the small piece-of-pie-shaped wedge to the half-circle piece to make the completed cone-piece as shown in Figure 1. The cut wire ends of the hardware cloth are sharp, and the help of a friend to handle the wire would be nice.

The overlapped junction of the two pieces overlaps two inches. You may bolt, tie, or solder these pieces together, as the electrical conductivity important to the cone is down the cone, not across it.

Next, shape the completed cone-piece into a cone shape. Overlap the joining edges two inches and then bolt, tie, or solder this joint together permanently.

You are now ready to mount the coax socket in the tip of the cone. Cut the tip of the cone off so that the flange of the socket just fits snugly inside and can be soldered in place. Mount this connector with its threaded portion downward into the cone, and the axis of the connector-body vertical.

The connection between the socket-skirt and the cone-tip should be soldered well at as many places around the connector skirt as possible.

Now take the tin-can lid and put a small hole in its center. Make the hole so that the center-connector of the socket fits snugly in it. Solder up (fill with solder) the hole in the lid, and "tin" the coax center-connector (cover it with solder preparatory to mounting the disc on it).

This gets these two parts ready for soldering them together. Solder the lid in place, being careful that it is in a horizontal position.

Take care to make the height of the disc above the cone tip (socket base) correct. I know we can't judge .44 inch accurately, but make sure that the height is
just a wee bit less than .5 inch. To get the proper spacing on mine, I had to mount the lid out on the end of the socket center-connector.

Now lay the disc on the lid with the disc-center directly over the hole in the lid. Solder the disc to the lid in as many places as is practical around the edge of the lid. This soldering is for both electrical conductivity and for mechanical strength.

Your antenna is now ready to use!

**Using the antenna:**

Although you can mount this antenna outside, it will need to be protected from the weather in some way if you do. Mounting it indoors is the preferred mode. It can be put in an attic, crawl-space, or even in your operating room.

An enclosure of fiberglass or box frame covered with sheet plastic should be OK for outdoor mounting. Commercial models are sometimes covered with a fiberglass or plastic dome.

As always, if your building has a lot of metal in its construction, you may find that indoor mounting is not too effective. And the old antenna rule of "the higher the better" should be kept in mind. I used mine sitting on the floor of my secondary operating room with good results, but better results were had with it in the attic.

**RADIO RIDDLES**

Last month we discussed a rabbit-ear antenna, and then I asked if you had "...ever heard of the 'big ear' antenna? What is it, and who made it famous?"

Well, the "big ear" was the work of John Kraus, who is responsible for so many other antenna designs which we now happily enjoy. The "big ear" was a radiotelescope antenna which Kraus used in much of his early work in radio astronomy.

"The Big Ear" is also the name of Kraus's autobiography, which makes very interesting reading for anyone interested in the development of radio or radioastronomy, antennas in particular.

Kraus is also the author of perhaps the most widely-read engineering antenna text published. Coincidentally, most of the equations used in designing this month's discone came from this very useful book.

This month's riddle: What is a "volcano smoke" antenna, and how does an antenna get such a name?

Find the answer to this month's riddle, and much more, next month in your copy of *Monitoring Times*. Till then, Peace, DX, and 73.

**REFERENCES**

Q. Since I live in a major metropolitan area, my scanner suffers considerably from overload intermodulation. Is there any relief that doesn't require major surgery? (Gary Hanney, Vancouver, BC)

A. Yes. When I served as a consultant to the old Electra Bearcat organization, I asked the chief engineer about preamps for scanners. His reply was, "Scanner listeners don't need preamps, they need attenuators!"

A number of consumer electronics outlets (including Radio Shack) offer TV attenuators in an F style package. If you are besieged with intermod, purchase one of these, equip it with appropriate adaptors to fit your antenna cable and scanner and enjoy better reception!

The fix usually works well in the city where signal levels are all high to begin with. A minor reduction (6 dB for most attenuators) won't be noticed, but each decibel of signal reduction will reduce intermod by 2-3 dB!

Q. I often see listings in the utilities section of MT for voice transmissions in the HF (short-wave) spectrum. If the mode is not given, how do I know if these are AM, FM, USB, LSB, or what? (Francis Reignier, Waterbury, CT)

A. Excellent question. Let's try to establish some ground rules. First, AM is virtually abandoned as a mode of two-way communications except in the CB band (26.965-27.405 MHz and illegal freeband above and below that range), ten meter amateur band (usually near 29 MHz) and, of course, in the VHF and UHF aeronautical services (118-136, 225-400 MHz).

AM is still allowed on the amateur radio bands but, except for a few venerable operators late at night in the 160 and 75 meter ham bands, it is rarely encountered. Even though AM is the mode for international broadcasting at the moment, there is a strong move toward single sideband broadcasting in the near future.

SSB is the exclusive voice mode between 2 and 25 MHz, with upper sideband (USB) dominating. Lower sideband (LSB) will be found in ham bands under 10 MHz, some Military Affiliate Radio Systems (MARS) networks below 10 MHz, and on the US Air Force Mystic Star network (VIP flights).

FM (narrowband mode) may be occasionally heard near 25-26 MHz (petroleum exploration and remote broadcast links), from 29-29.7 MHz (amateur ten meter band) and above 29.7 MHz (land mobile services). FM is not allowed below 25 MHz.

Q. Are any manufacturers planning to release a continuous coverage, hand-held scanner in the near future? (Joe Rotman, Arlington Hts, IL)

A. No.

Q. What portion of the 108-136 MHz civilian aircraft band is assigned to commercial airlines? (Dal Watson, Lubbock, TX)

A. 128.225-132.000 MHz; these air-to-ground links are maintained by Aeronautical Radio Incorporated (ARINC) on a worldwide basis.

Q. How can I measure the signal voltage of TV stations at my location? (Reijo Silvonen, Rauma, Finland)

A. While you can use any receiver with a signal strength meter, several manufacturers provide test sets for the TV industry. These field strength meters are nothing more than tuneable, battery operated receivers with calibrated S-meters. They continuously tune wide frequency ranges, showing both aural and video carrier strengths for each VHF and UHF channel. They usually have FM detectors as well for monitoring the sound channel.

Such companies include Blonder-Tongue Labs (1 Jake Brown Rd., Old Bridge, NJ 08857) and Sencore (3200 Sencore Dr., Sioux Falls, SD 57107).

Q. Does anyone make subsidiary carrier authorization (SCA) radio receivers? (Alfred DiCostanzo, Brooklyn, NY)

Bob's Tip of the Month

The PRO2004/2005 as a UHF Signal Generator

Scanner hobbyists have long noted that when their scanners are set on certain frequencies, their radiating oscillators may cause “lockup” on other nearby scanners. This may be annoying, but in some instances provide a useful, predictable source of signals for test purposes.

Recently, Edward Taylor, KA4VMP, of Palmyra, Virginia, noticed that his Realistic PRO2004 scanner would sometimes cause interference on his UHF-TV screen. A series of experiments revealed a predictable pattern based upon the scanner’s first intermediate frequency (IF), 610 MHz.

By adding any frequency being received by the scanner to 610 MHz, that sum frequency will radiate. For example, programming in 119.250 MHz will result in interference to the video of UHF channel 57, 729.25 MHz (119.250 + 610 = 729.250).

What do the Diodes Do on the PRO2005?

Ever since the release of the Radio Shack PRO2004, scanner enthusiasts have become understandably suspicious about the mysterious diodes which surround the microprocessor. They could enable cellular reception, change frequency ranges, increase scan/search speed and add memory capacity.

Now, with the release of the PRO2005, the same questions are being asked. Lester Jernigan of LESCOM recently did some experimenting and here is what he discovered.

Diode D501 increases scan speed to 20 channels per second; D502 deletes cellular telephone reception; D504 deletes 66-88 MHz reception (unlawful in Europe); D503 remains a mystery — any challenges?

For those stalwart enthusiasts who believe that happiness is a hot soldering iron, other improvements revolve around tighter squelch (change R152); delete the key-press "beep" tone (R221 or R222) and add an S-meter (AGC voltage on collector of Q8).

Remember, however, that any modifications to your radio will void your one-year warranty.
A. Certainly they are available for subscribers to SCA services which are transmitted as a subcarrier by FM broadcasting stations in large metropolitan areas. You may wish to contact several local stations to see if they offer the service; if they do, they can tell you whom to contact for receivers.

Keep in mind, however, that most of these transmissions are subscriber services and the receivers offered may be limited to the particular use intended by the vendor (stock market quotations, background music, paging, etc.).

For a catalog of hobby monitoring accessories for SCA, send an SASE to Bruce Elving, FM Atlas, Adolph, MN 55701-0024.

Q. Why can't a graphic equalizer be connected between a shortwave receiver and an external speaker to improve sound? (Harry Simpson, Jr., Kansas City, KS)

A. It can, as discussed in the February 1989 issue of MT. Be sure to match the impedances properly, since an equalizer designed to be placed in the high impedance (low level) circuit will not perform properly (and could be destroyed) if placed in the speaker output line.

Some listeners simply buy a low-cost amp or receiver with a built-in equalizer and connect it to the record output jack on the shortwave receiver.

Q. My Kenwood R5000 gets quite hot after several hours; is this condition healthy for the receiver? (Robert Gallardo, San Jose, CA)

A. No, but it is common. Commercial equipment is often given an "MTBF" (mean time before failure) rating. Heat is recognized as a primary cause of equipment failure, although we are not aware of it being a problem with the comparatively recent R5000.

Any heat-generating electronic equipment should be well ventilated. One way to accomplish this is to mount the radio away from snug walls or enclosure corners and don't stack them with other equipment. Lift the unit off the table an inch or so to encourage air circulation; a small muffin fan is recommended for additional forced air cooling.

Q. Even when squelched, there is a prominent hiss heard from my BC200XLT handheld when listening with an earphone plugged in. Can it be cured? (Gary Hanney, Vancouver, BC)

A. The hiss, present on several model scanners, is barely noticeable except when in a quiet room or using an earphone. The distortion has a simple cure. Cut one wire (not both) of the earphone lead and insert a tiny (1/4 watt or less) resistor of 10-100 ohms in series.

The resistance is chosen experimentally, using the lowest resistance which reduces the hiss to a satisfactory level. Solder it in place and wrap it tightly with several turns of plastic tape (or, if available, heat shrink tubing).

The fix is simple, effective and doesn't void the warranty.

Questions or suggestions sent to Bob Groce are printed in this column as space permits. If you prefer a reply by return mail, you must include a self-addressed, stamped envelope.
Letters continued from page 3

Thank you for the compliment. One warning, though: The Thunderbird's main frequency, 141.85 MHz, can often be tricky. The problem is that they are in the AM mode and most scanners automatically switch to the FM mode when listening outside the 118 to 136 MHz AM civilian aircraft band.

Reader Mike Bumford has an answer, though. When you attend a Thunderbird demonstration, enter the lower image frequency (either 120.15, 120.25 or 120.45 MHz depending on your make and model scanner). The image will be heard in the AM mode and since you'll be sitting right in the thick of the action, the signal should be loud and clear.

One of the members of Tom Pailloz's group, the World Radio Listener's League, was able to obtain a copy of a Lithuanian DX Club bulletin. "One of our members managed to secure a pen-friend in Lithuania. The pen friend turned out to be an avid shortwave listener and he sent along a copy of the club's newsletter. I understand that the [print] quality isn't all that good; however, it should be readable. I thought that you might be interested."

You bet! We've reproduced a reduced version of the front page for you to see. And thanks, Tom!

Readers living in the Cincinnati, Ohio, area, have probably seen a fellow DXer on TV and not even known it. Not only does WLWT-TV (Channel 5) reporter Steve Forest enjoy DXing in his spare time, he also uses shortwave in his work. Like much of the domestic media, Steve has been known to use shortwave audio to illustrate stories. And that's great publicity for the hobby.

"You might mention to your readers the advantages of taping SW broadcasts and relaying them to local radio stations," suggests Steve. "Many stations are more than happy to take the tape, assuming, of course, it's decent quality."

"I read your article on KKN39 in the May issue," says a reader in Warwickshire, England, "and thoroughly enjoyed it."

"In the article, the author asked about the location of KRH50 which is listed as London. As you correctly surmised, the signals with this call sign do not originate from the capital city. Because of their signal strength at my location, I began to suspect that they were actually transmitted from RAF Barford St. John near Banbury in Oxfordshire. The signals were constant on all frequencies from 4589 to 16458 MHz at any time of the day or night. A visit to the facility with my Sony ICF-7600D confirmed my suspicions."

"Recently, I was lucky enough to visit the receive site for this facility some 7 miles to the east of RAF Croughton. It proved to be a fascinating 2 hours. Unfortunately, all of the hundred or so receivers in use at the facility had small rectangles of yellow paper covering the frequency readouts! They were aware I was coming!

The British reader concludes by asking, "Isn't it time we utility buffs got organized and did some serious work to verify the locations of those stations on which we do not have precise information? I'm sure that we could even find the exact transmitter sites of some of those elusive number stations if we really tried. Do you have any idea on how we could encourage some cooperation in this area?"

We sure do. Anyone interested in doing serious DF work should drop a line to utility columnist Larry Van Horn. Van horn has already uncovered two numbers sites for Monitoring Times readers. And he'd love to hear from you.


Ham radio operators were, at one time, known for their generosity. Not necessarily with their money, but with their time and willingness to share their hobby. And just about every current radio enthusiast had an "Elmer," a friendly neighbor or relative who helped them and nurtured their interest in radio.

Mine was a neighbor in Wallingford, Pennsylvania, named Peters. I don't know his first name; in those days it was "Mr."

Despite this formality, I remember some wonderful times in Mr. Peter's basement, surrounded by Hammarlunds and home-built Heath kits.

A lot of people say that one of ham's big problems is that all of the Elmers are gone. Reader Tony Goldish is one such person.

"Hams don't want to help young people get into their hobby. I've talked with a number of hams, either around the shack at college, or at electronics stores, and they all give brief answers to my questions or refuse to talk. I even got a couple of phone numbers but only one returned my call. Is it too much to expect a ham to let me come to his shack and watch him operate for a night?"

Tony raises other points but let's take care of first things first. Do we have any ham readers in the Skokie, Illinois, area that'll give Tony a hand? C'mon, folks. We have an intelligent, interested young man with quite a bit of computer knowledge to share. And he wants to be a ham. Let's not let him get away.

As Tony says, "I have always been told how much the young can learn from their elders. Please give me a chance and I might be able to teach you something in the bargain!" Hams? Drop us a line at MT, Box 98, Brasstown, NC 28902 and we'll hook you up.
Finally, a note from County Cork, Ireland. William R. Kiely writes to say that, as a subscriber to Monitoring Times for almost a year, "that I think your magazine is the best that I have ever read. As my subs 'run out' on other radio magazines, I will not be renewing them as MT gives me everything I need. Keep up the good work!"

Thanks to William R. Kiely and to everyone who wrote in this month. As always we welcome your thoughtful comments on any aspect of the radio listening hobby. Address your letters to "Letters to the Editor", Monitoring Times, P.O. Box 98, Brasstown, NC 28902.

Please include your address and telephone number. Not all letters can be used. Those that are will often be edited and excerpted. Because of the volume of mail received, personal replies are not always possible.

These are just some of Dave Ronecker’s radios. He also possesses, for example, an old Schablorenz complete with the names of cities on the dial. In case his shack looks a little different than yours, it could be because Dave is a blind DXer. Dave belongs to a newly-formed monitoring club called the San Antonio (Texas) Knobtwisters.

Proud of your post? Send us a pic of you and your radios to MT Monitoring Post, P.O. Box 98, Brasstown, NC 28902, and we’ll do the rest!

CONVENTION CALENDAR

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Club/Contact Person</th>
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| Aug 5-6| Jacksonville, FL | Jacksonville Hamfest Assn/ Billy Williams N4UF  
P.O. Box 9673, Jacksonville, FL 32208 |
| Aug 6  | Randolph, OH     | Portage ARC/ Joanne Solak KJ5O  
9711 Diagonal Rd, Mantua, OH 44255 |
| Aug 6  | Berryville, VA   | Shenandoah ARC/ John Kandoe N4MM  
RFD 1 Box 73A, Boyce, VA 22620 |
| Aug 11-12| Milwaukee, WI   | 10-10 Intl Net/ Joseph F. Williams WA9TSG  
PO Box 93181, Milwaukee, WI |
| Aug 12 | Springfield, MO  | SW Missouri ARC/ Linda Baxter KA0NXJ |
| Aug 13 | Lexington, KY    | Bluegrass ARC/ Ch KY/ Bill DeVore N4JIT  
112 Bigcadon Pkwy, Lexington, KY 40503 |
| Aug 19-20| Huntsville, AL  | SE Div Conv/ Jim Brashear WB4EKJ  
3002 Boswell Dr, Huntsville, AL 35811 |
| Aug 19-20| Tacoma, WA       | NW Div Conv/ Jerry Seligman WB7BUN  
12306 80th Ave E, Puyallup, WA 98373 |
| Aug 19-20| High Point, NC  | High Point ARC/ Mark McMahan KB4MFP  
122 Avondale Dr, High Point, NC 27260 |
| Aug 25-27| Los Angeles, CA | Confederate Signal Corps/ Roy Jordan WB4YF  
902 Cheyenne, Costa Mesa, CA 92626 |
| Aug 25-27| Madison, GA     | Sandi Heyn WA6ZWN |
| Aug 26-27| Saginaw, MI     | Mi State Conv/ Bob Granata WBBNBO  
413 Wilson Dr, Midland, MI 48640 |
| Aug 27 | Marysville, OH  | Union CO ARC/ Gene Kirby WB4UN  
Marysville, OH 43040 |
| Aug 27 | St. Charles, MO | St. Charles ARC/ Eric Koch NF0Q  
2805 Westminster, St. Charles, MO 63001 |
| Aug 27 | Danville, IL    | Vermillion ARC/ Chris Stonecipher KASVMN  
RR 3 Box 117, Danville, IL 61832 |
| Sep 2-3 | Shelby, NC      | Shelby ARC/ Dale Mauney WA4BNN  
1158 E. Marlon St, Shelby, NC 28150 |
| Sep 9  | Windsor, ME     | Augusta ARC/ Joseph Kozak WA2CJO  
17 Carlisle Ave, Augusta, ME 04330 |
| Sep 10 | Harrisburg, IL  | Shawnee ARC/ Mike Hoshiko W9CJD  
707 S James, Carbondale, IL 62901 |
| Sep 10 | Butler, PA      | Butler Co. ARA/ John Varlen K3HJH  
174 Oak Hills Heights, Butler, PA 16001 |
| Sep 10 | Findlay, OH     | Findlay ARC/ Pat Tenam K5BCXC  
2534 Greenacre Dr, Findlay, OH 45840 |
| Sep 16 | Wichita, TX     | Ozarks ARC/ Charles M. Young WB0YUI  
Route 1 Box 29D, Republic, MO 65738 |
| Sep 16-17| Va Bch, VA     | Wichita ARC/ Edward Fernandez W6SBNB  
2415 Elmwood Cr. N, Wichita Falls, TX 76308 |
| Sep 16-17| Va Bch, VA     | VA State Conv/ Art Thiemens AA4AT  
2836 Greenwood Rd, Chesapeake, VA 23321 |
| Sep 17 | Mt Clemens, MI  | L'Anse Creuse ARC/ Ralph Wilcox K4SYGJ  
30610 Chart, Mt Clemens, MI 48045 |
| Sep 17 | Canfield, OH    | 20/9 ARC/ Don Carlson N6GJZ  
7448 Glenwood Ave, Boardman, OH 44512 |
| Sep 17-18| Cincinnati, OH | Cincinnati ARC/ John Haungs WABSTX  
10615 Thornview Dr, Cincinnati, OH 45241 |
| Sep 23-24| Grayslake, IL  | Chicago FM Club/ Richard Hersh K9FFY  
6614 N Francisco Ave, Chicago, IL 60645 |
| Sep 23-24| Milton, GA      | Walla Walla Valley ARC/ Jack Babbitt W5AY  
1401 Pleasant, Walla Walla, WA 99362 |
| Sep 24 | Gainesville, GA | Lanierland ARC/ Eddie Keith KK4IG  
3137 Lake Ranch Circle, Gainesville, GA 30506 |
| Sep 24 | Willimatic, CT  | Natchaug ARC/ Ken Carvel KC1EW  
P.O. Box 19, Coventry, CT 06238 |
| Sep 24 | Berea, OH       | Cleveland ARC/ Glenn Williams AF8C  
513 Kenilworth Rd, Bay Village, OH 44140 |

Monitoring Times is happy to run announcements of radio events open to our readers. Send your announcement at least 60 days before the event to: Monitoring Times Convention Calendar, P.O. Box 98, Brasstown, NC 28902.
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For Sale: COMMODORE 64, MFJ-1225 RTTY/ASCII/AMTOR/CW Interface, MFJ software, SWL Text cartridge, $199.00 talks it all. J. Mtecalfe [606] 365-9042.


For Sale: J.L.L. SX-400 scanner, with power supply, no manual - $100 + UPS. Walt Joyce, 20145 Morgan Lane, Gulfport, MS 39503 [601] 832-6420.

Wanted: Copy of instruction manual for AUTEK RESEARCH QF-1A SSB/CW/AM active audio filter. Will pay associated costs. Fraser Bonnett, 3033-H Brickwell Drive, Kettering, OH 45420.

For Sale: BEARCAT COMPUSCAN-2100 with software/interlace for Commodore. See Scan Magazine Dec.83 for review. I have three new units for sale. Will ship UPS. Call Dennis [404] 429-1703 for a chance to own one of these rare collector items.

ICOM R7000 SCANNER w/Speech + Fast Scan - Like new - $799. KENWOOD R5000 SW Receiver w/VHF - Like new - $750. REALISTIC PRO-2004 w/Fast Scan + Cellular + 400 Ch. - $299. YAESU FT-727R H/H 2-way w/dop-in charger + X-battery + speaker mike + headset/mike - $475. LORAD XR-70 - All Ch. VHF Marine 2-way - $199. HAMTRONICS 406/425 MHz converter - $35. DSI Hand-Held Frequency Counter - Needs work - $45. DSI - Thru 800 MHz preamplifier - $40. Bruce Gustafson, 10294 Anwood Road, Roscoe, IL 61073.


Man, in fifties, unable to work due to back injury, cannot afford to buy scanner or shortwave. Please donate any working scanner or shortwave. Anything will be appreciated. John Pierce, 309 So. Singleton Ave, Titusville, FL 32796.


For Sale: ICOM R-71A Mint condition, manual, original carton - $650 includes UPS. No calls after 8:00 PM E.S.T. [614] 633-5960.

ICOM R7000 - Has scan delay and speed modifications, high performance package, service manual. Excellent condition - $800. Tom Ernst, P.O. Box 938, Springfield, NJ 07081 [201] 378-2028.

Utility monitors, also from Europe, are invited to contact me by letter. Would like to discuss monitoring problems, identity of signals and stations, technical matters, etc. Henri Walser, HB9DBW, P.O. Boxes 213, 4009 BASEL, Switzerland.


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A Look Forward . . . and a Glance Back

We've had to expand again. As Monitoring Times continues to grow and Grove Enterprises prepares for production of our new SR1000 super receiver, we've had to double our work area.

During the move, I discovered a yellowing pile of newsprint: the early editions of Monitoring Times. Many of you remember them -- a few thin pages of scanner and shortwave information set in type by our country newspaper and run off on their presses.

The first couple of issues were free, sent in appreciation to Grove clients who trusted us, knowing that we were trying hard to provide the best service at the lowest prices we -- and you -- could afford.

Reader input was vital, and you never disappointed us. You told us what we were doing right, and what we were doing wrong -- in no uncertain terms! As a result, MT has become your magazine, sculpted and honed by the guiding forces of our specialized industry: our readers.

As we grow we continue to keep in mind that trust. MT retains its integrity, a commitment to responsible journalism, presenting the issues and the information as accurately and as timely as possible. To do this we retain a nucleus of highly regarded authors whose names have become synonymous with authority.

The Challenges

It may be fun, but it isn't easy. Making sure that each issue contains a balance between scanner and shortwave, technical and tutorial, frequencies and profiles, advertising and text.

Another challenge is, of course, to maintain the editorial insulation between MT and its owner, Grove Enterprises. Grove's commercial products necessarily appear, but they don't dominate the other fine firms whose merchandise also appears in every issue. Grove also pays the same advertising rates as everyone else!

So how about reviews? Won't every Grove product get a glowing report in the pages of MT? Yes and no. If a new product deserves release from Grove, it has been thoroughly tested and does the job well. This part of the review is bound to be positive. If it has a few warts, our readers will know that, too. After five years of development, we hope that the imminent SR1000 won't have too many warts!

Reading back over what we've discussed so far, the bottom line appears to be this: MT will continue to grow in response to your needs. We love to hear from you and know that you feel you are just as much part of the team as our staff. After all, MT has always been, and will continue to be, your magazine.

-- Bob Grove, WA4PYQ
Publisher

The upper office, formerly housing both Grove Enterprises and Monitoring Times, has been dedicated to manufacturing in anticipation of the SR1000. The lower house, joined to it by a covered walkway, has now become the main office building.
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