Inside this Issue:
- KVOH: The Little Station That Wouldn't Quit
- Who's Listening to Shortwave? An Interview with the BBC's Graham Mytton
- KKN39: Federal Mystery Revealed
- See What You Can Hear! Program details and all the frequencies at a glance

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www.americanradiohistory.com
AIRSHOW! by Dave Jones
The thrills and chills of this summer’s airshow can be doubled with the addition of a scanner and some careful preparation.

KVOH: Neither Bombs nor Bullets by Everett Slosman
If you’re a Christian ministry that builds a station four miles north of the Israeli border, what you get is High Adventure!

Who’s Listening to Shortwave?
An Interview with Graham Mytton
BBC’s Head of Audience Research makes it his business to keep his finger on the pulse of the listening public -- worldwide!

KKN39: A Mystery Resolved by Al Zilman
For some time utility listeners have speculated about the location of the State Department’s KKN39. Bingo! We’ve found it!

The Proper TV Antenna by Bob Grove
Just in time for TV DX season, Bob clues you in on how to evaluate your equipment in light of your listening quarry.

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ON THE COVER: The Navy Seal team performs for the public (Photo by Steve Douglass)
**Inside this Issue**

- You're watching TV. Your favorite, *The New Dating Game*, is on. And just as lovely nineteen-year-old Bonnie Baker is about to select bachelor number three (the guy who listens to shortwave and raises Africanized bees as a hobby), the picture goes left, then right and rolls a few times before suddenly it's replaced by a Russian-language report on Soviet agriculture. Holy cow! Soviet Television! It's TV DX time again!

  Well, actually, it's not quite that dramatic but **almost**. This month we take a look at this fascinating hobby, complete with a "how to buy" report on TV aerials.

- Even more thrilling is our profile of High Adventure Ministries Middle East outlet, King of Hope. After you read about this little operation in southern Lebanon, you'll understand why they call it *High Adventure Ministries*. Why, one time, when chief engineer Paul Hunter found himself short a couple of coax connectors, all he needed to do was wander out behind the station and take some from the downed MIG jets that littered the ground.

- Airshow! To millions of Americans, the very word raises the hairs of anticipation on the back of the neck. To the select few who also know how to tune in the "behind the scenes" action on their radios, it is -- and these are Dave Jones' words -- "pure ecstasy." Join Dave as he shares some tips on how to get the most out of your visit to the aerodrome.

- If you're one of those top-gun utility buffs who's got to know everything about everything, then you'll want to read Al Zilman's exciting expose on KKN39. No, says Al, KKN39 is not in Washington -- not even close. It's on page 18.

- And speaking of the ever-so-slightly off-beat, check out the report on an FM station called "W I DON'T KNOW" in this month's *American BandScan* column. It's put together by an electronic genius, run by his wife and staffed by a...robot!

- Larry Magne is out scanning the world for shortwave radios. And look at what he found on the front cover of *The Sharper Image* catalogue. It's a shortwave radio that costs a little over $200! And is the "Tunemaster Classic Radio" worth two "C" notes? As usual, Larry doesn't mince words.

Well, that's about it for this month.

- Oh, c'mon. Don't you believe that for a second! Bob Kay is hip deep in a contest where you can win some incredible prizes, including two frequency counters from Opto Electronics. *Monitoring Times* presents an in-depth review of the AOR AR2515 Wide Coverage Scanner, Doug Demaw explains crystal oscillators and Letters uncovers a mysterious station at a nudist camp. And there's more. But we are out of space this time -- no kidding.

- So take a few minutes and explore. There's something for everyone in America's favorite monitoring magazine, *MT*. And good listening!
A Whiff of Irony

Robert E. Johnston of Seattle, Washington, says he caught a whiff of irony when he read our March 1989 "Letters" column. In it, we discussed the possibility that U.S. Government agencies such as the FBI might have a special interest in those who monitor the radio for a hobby. Laughs Robert, "If you are engaged in intensive monitoring of government communications, what's wrong with the government monitoring you?"

Robert further challenges us. "Publish the names and addresses of every employee or agency of the Russian government in the United States (UN delegation, Soviet Embassy, consulates, etc.) that has subscriptions to Monitoring Times. Is this information a matter of public record or would we have to go the Freedom of Information Act route?"

"And while you're at it, also publish the specifications, frequencies and so forth of the signals emanating from those antennas on top of the Soviet Embassy and from the antenna-studded piece of Soviet real estate on Long Island. We expect, or hope, that our own NSA has these massive arrays pretty well cased. But some of us ordinary loyal Americans would like to know more about them."

In order to preserve the privacy of subscribers, the Monitoring Times mailing list is neither given nor sold to anyone in any form. You will never receive solicitations from any other organization as a result of your purchase of this Grove Enterprises publication. As a privately held list, it is not subject to the Freedom of Information Act.

Second, we would dearly love to know more information about Soviet communications in the United States -- a topic scanner columnist Bob Kay explored a couple of months ago in his column.

In fact, Kay's seeming obsession with anything Soviet is not appreciated by reader Howard McFann of North Palm Beach, Florida. "I enjoy Monitoring Times very much and have been pleased to see the coverage expand to include all phases of radio."

"However, I believe it is unprofessional for your writers to insert their personal beliefs into what should be technical or informative articles. A case in point is Bob Kay's diatribe about the Russians which appeared in a recent issue. I'm sure he was piqued because they would not let him roam the Soviet Embassy, but in all fairness, I doubt if our own State Department would let him snoop in any of ours." In closing, says Howard, "Remarks such as his belong on the editorial page."

Bruce Elving's article on listening to FM SCA broadcasts brought some comment, as well.

Ken Osbourne says that he's confused by Dr. Elving's article. "While I agree with Dr. Elving that listening to SCA signals is quite legal, in the article he says that 'it is even legal to eavesdrop on cellular telephones, using commonly-available UHF-TV sets in the channels 79-83 range.' I thought that all cellular phone monitoring was off-limits."

As has been said many, many times before, the whole ECPA -- the Electronic Communications Privacy Act -- is very confusing. I have seen as many different interpretations as there are involved parties and I certainly don't have the definitive answer.

18 U.S.C. 2511(2)(g)(i) permits interception of electronic communication that is "readily accessible to the general public." I am assuming that Dr. Elving is reading "readily accessible" as it is understood by common mortals, i.e. if you can pick them up on a cheap black and white TV set, then they're readily accessible and it's ok to tune them in.

Unfortunately, those same two words -- readily accessible -- mean something entirely different and quite unfathomable to lawyers, legislators, lobbyists and other higher life forms. Further, there appears to be a specific restriction on subcarriers such as SCA.

Dr. Elving is an internationally-recognized authority on FM and FM SCA and that provides certain validity to his interpretation. Further, we were pleased with the cautionary caveats -- "Anybody questioning the legality of tuning in SCA should contact local broadcasters for a letter of permission..." -- laced throughout the text. In short, these are his opinions, which are as good as anyone else's in these final days of freedom.

[Continued on page 100]
WWV Unscrambles LA Traffic

Shortwave station WWV, operated by the National Institute of Standards and Technology, has for years been broadcasting highly accurate time signals from Ft. Collins, Colorado. Now those very same signals will be helping to unscramble the car-clogged routes of Los Angeles.

According to Popular Science magazine, when an individual traffic light drifts out of sync with other lights, chaos results in the form of back-ups. Now, WWV will be used to synchronize the traffic lights in selected corridors by means of controllers installed at each location and tuned to WWV. (Via Ed Chichorek, Somerset, NJ)

Bernard Goetz:

Vigilante Technician

When Bernard Goetz, the subway gunman, was put in jail, many people were angry. After all, they claimed, he was only protecting himself when he opened fire on several young thugs. The City of New York is happy, though, and not for the reason you might think.

Bernard Goetz is highly trained in the field of electronic calibration and while he is doing time at Riker’s Island, the Department of Corrections is putting him to work on the City’s radios.

What would normally cost the Fire Department between $800 and $1,200 a unit, is now being accomplished by Goetz at the standard jailhouse rate of fifty cents an hour. Anticipated savings to the city thus far: $12,000. (New York Daily News via Cathy Turner, Yonkers, NY)

Next Time, Write

Tugboat crewman Tom Scott knew that the credit card phone call he made to his wife via a marine-telephone wouldn’t be cheap, but when he got home to find a bill for $11,178.84, he “about fell on the floor.” The bill ran for 244 pages.

Oddly enough, the problem wasn’t caused by some computer-run-amuck. It happened when Scott read his credit card number over the radio to the marine operator. Someone else who was listening quickly appropriated it, ringing up calls to numbers as far away as Mexico City.

Scott will have to pay only for the original $4 call. (Chicago Tribune via Howard Lash, South Hooland, Illinois)

Police Pull Plug on Woodbury Base

His handle was “Woodbury Base” and he filled the CB airwaves of Nassau County, New York, with music and salty language. But annoying as that was to the local REACT Club, it wasn’t what got 34 year old Michael Todd in trouble.

For the past two or three months, Todd is alleged to have sat in his car listening to his scanner and using his CB to warn people who were about to be arrested by police.

It all came to an end when a truck driver stopped police to tell them that he saw Todd sitting in his car just off the Long Island Expressway.

When officer Don Meyer got to the car, he looked inside and saw an open bottle of wine and an installed police scanner, both illegal, according to police. He asked Todd to open up but he refused saying he was “afraid something’s going to happen to me.”

Meanwhile, another officer tried to open the driver’s door with a “slim jim,” but Todd kept his finger on the lock. Another officer went to the passenger side but Todd reached over and held that lock, too. Finally, a third officer tried the rear door; since Todd was out of hands, they got in. It took about 15 minutes to pry him out of the car.

Todd, who is unemployed, was charged with operating a motor vehicle with a revoked license, resisting arrest, possession of a police scanner, obstructing government administration and various vehicle and traffic law violations. (Newsday via Herbert Gesell, Amityville, New York)

Marconi Bust Returned

Marconi is back! On March 29, a couple walking at the site of the first transatlantic wireless cable transmission noticed the bronze bust lying on the ground near the pedestal from which it had been stolen last January (see Monitoring Times, March 1989).

The bust was irreplaceable, having been cast from a wax mold. Tony Bonanno, chief ranger at the Cape Cod National Seashore, said the bust was “scraped up a bit here and there,” and indicated that a better way to prevent theft would be explored before remounting the bust.

The $2500 reward for information...
leading to arrest of those who took the bust is being returned to the agency's operating funds and other contributors, although an investigation is still continuing into the theft. (Cape Cod Times via Duncan Edes, Dennis Port, Massachusetts, and National Park Service release)

Sea Lions Say "Thanks"

Federal fisheries officials have been trapping sea lions at Shilshole Bay in Washington state. The problem is that the animals have been hanging out at the entrance to Ballard Locks, feasting on Lake Washington's wild steelhead trout.

All this is well and good for the trout. However, before any captured sea lion was released, state Department of Wildlife officials sewed small radio transmitters to the animal. After receiving a number of protests (a large number of which undoubtedly came from the sea lions), the radios will now be attached with super glue instead (via Hugh Miller)

Owls Say "Thanks"

Is the spotted owl really an endangered species or are the small 20 gram radio harnesses that have been placed on them killing the owls off? That's the question facing officials in a dispute between environmentalists and the timber industry in the Northwestern U.S.

Since the early 1980s, biologists have been strapping the transmitters on the back of both juvenile and adult owls. Some scientists hypothesize that the radios, which weigh as much as two quarters, interfere with the bird's reproductive habits.

Environmentalists say that the 2,500 remaining breeding pairs of the owls nest only in old growth or "ancient" forests, which need to be protected to ensure the survival of the species. The timber industry warns that such a ban would threaten the forest products industry in the Northwestern U.S.

Says deputy director of wildlife and fisheries at the U.S. Forest Service, "[The owls aren't] on the edge of extinction, but they aren't as numerous as robins, either."

Car Phone Callers Want Eavesdropping Stopped

As you cruise down the freeway chatting to your sweetheart, lawyer, bookie or broker, remember that anyone can listen to a cellular phone -- for now. So warns a recent Associated Press article.

The fact that conversations on cellular telephones can be easily pulled from the airwaves with "inexpensive radio scanners" upsets a lot of people, "including a few Washington state legislators who have proposed a measure to make eavesdropping on cellular phones illegal."

"If there's no prohibition against listening in, why not just go to CB?" asked lobbyist Steve Duncan at a recent hearing. Duncan did acknowledge, however, that a state law might not stop eavesdroppers, especially since a 1986 federal law, which carries a $500 fine, seems to have had little effect.

But "at least bragging rights would stop," said Duncan, who says that cellular eavesdroppers have been known to tape conversations and play them on commercial radio stations for entertainment.

Action on the bill has been put off for a year while a legislative committee studies it. (Via W.E. Doan, Collingswood, New Jersey)

Police Hoaxes Continue

It was a Thursday night some weeks ago when Los Angeles police were on their way to a call for help in Pacoima. Suddenly, a voice cried out from the police radio, "I'm hit!" Officers anxiously conducted a roll call on the radios to determine whether any officer was in trouble. It was determined that the call was a phony.

In an earlier incident, two dozen officers, two helicopters and special K-9 units swarmed over a neighborhood in the Mid-Cities area after a man using accurate police lingo reported an officer down and in need of help.

The hoax apparently involves a stolen Rover radio. "We hear them on these restricted frequencies from time to time -- people saying 'hello' or causing a little mischief," says Sgt. Hal De Jong, "but I can't recall another case where there's been this kind of malicious hoax."

"The wasted money is important," adds spokesman Jay Frey, "but it doesn't even speak to the important calls that went unanswered while officers were responding to the hoax."

Engineers are now trying to lock out missing Rover radios, an unknown number of which have been lost or stolen citywide. (Los Angeles Times via Bradford Smith, Carpinteria, California)

Uniden Gets 938 MHz Frequencies

Uniden Corporation of America has obtained three frequencies at 938 MHz for testing a new type of trunked radio system. According to Federal Communications TechNews, it will employ a microcomputer-controlled repeater "capable of distributing traffic loads equitably between all transceivers in the system." Uniden hopes the new system will be more economical and efficient than current types.

Uniden hopes the new system will be more economical and efficient than current types.

You can communicate with other Monitoring Times readers. The next time you see an item about radio in a magazine or newspaper, share it with the rest of us! Send it to Communications Editor, P.O. Box 98, Brasstown, NC 28902.
AIRSHOW!

Thrills! Chills! Excitement!
The day of the air show is near and each night’s sleep is more difficult.

by Dave Jones

Your thoughts are filled with aircraft and radio communications. The feeling is like that of a child anxiously awaiting the arrival of Christmas morning.

Attending an air show, large or small, for the first time or even the tenth time, re-awakens those Christmas-like memories for many monitors. The fact is that there are no adults at airshows -- only children of various sizes and ages.

Preparing for the Big Day

Preparation, according to Webster’s dictionary, “is something done to prepare.” While that isn’t the most helpful definition in the world, it does remain an essential ingredient to an enjoyable and informative air show. The investment of an hour or two of one’s time prior to the show date will increase your yield of excitement on the day of the show. Preparation. Remember the word well.

A week before the air show, telephone the base Public Affairs office and inquire about the details of the show or open house. Find out when the gates open, the time of aerial demonstrations, type of equipment to be displayed and so forth. The Public Affairs office will be most happy to assist you with your questions and supply you with the necessary data.

Also inquire about general frequencies that may be in use at the show such as the tower frequency or show control frequency. Explain to the Public Affairs official that one of your hobbies is radio communication monitoring. The information obtained from Public Affairs will help in the preparation of attending the show.

There’s no doubt that viewing an aerial demonstration is exciting, but to monitor the radio communications while viewing it is ecstasy.

Frequency data is available from a multitude of sources including Monitoring Times. The frequencies for aerial demonstration teams are listed below; Table 1 for military flight demonstration teams and Table 2 for non-military.

Other frequencies of interest would be those of the base or airport at which the show is held and the public safety frequencies that may be obtained through published frequency directories or scanner clubs (refer to this month’s Federal File for traveling with a scanner while monitoring military or federal activity).

Pack Those Bags
(And Charge Those Batteries...)

A day or so before the show, precheck the equipment that you plan to take along to the show. Preprogram your scanner(s) with the frequencies found during research and for the portables, insure a fresh charge of the battery pack or new batteries. Blow the dust off of your camera and its accessories and also insure that all its batteries are fresh.

Purchase film for your camera at a local discount store and load the first roll in the camera so it will be ready. The same goes for video equipment. Table 3 lists items to consider when preparing and packing for the air show.

The Early Bird...

When the day of the show arrives, get an early start on the day. Plan to leave for the show so that you arrive 30 minutes before the gates are scheduled to open. First of all, parking is easier and a lot less of a hassle for the early bird. Along with parking nightmares, traffic snarls are also avoided. A late arrival to an air show can be spent on the access road or in search of parking while the aerial demonstrations are being performed.

Early arrival also has several other benefits. At times early arrivals are permitted entrance to the show area which allows for photographs of aircraft without the “crowd scenes.” Crowd scenes are those photographs where the aircraft is located behind a mass of bodies or by the passerby who cannot resist getting into
your photograph. (I sometimes wonder why they don't stop and ask if you would like them to autograph the photo.)

Another benefit is the opportunity to scan the base or airport frequencies that are preprogrammed into your scanner. The aerial demonstration frequencies probably will not be active; however, the base and public safety frequencies should be alive with action.

This time period will permit you to determine the active frequencies and their usages which can be noted for either continuous monitoring throughout the day or periodic monitoring. Also, the opportunity for searching of active frequencies with your scanner's search feature is availed. No matter how good the source of your researched data there always seems to be one frequency that eludes you.

Once on the base grounds, obtain a copy of the day's schedule so that you can be ready to photograph the SR-71 "Blackbird" when it performs a flyby. Even though you may have contacted the base Public Affairs office earlier, schedules are subject to change. Based on the schedule and your interests, quickly plan your day mentally and perhaps jot down important times of aerial demonstrations or flybys.

Seek out your favorite aircraft on display and take those photographs before the masses arrive. Also, be sure to look at the exhibits and pick up any free literature or photographs available. There are usually some very interesting and informative flyers available at the exhibits.

An early arriver also has the opportunity to more leisurely view the exhibits and aircraft on display. When aircraft such as cargo planes or tankers are present, the public is usually permitted inside the aircraft. It is much more enjoyable to view the aircraft at your pace versus that of a large crowd.

Don't be afraid to ask the pilots and crew questions about their aircraft or basic mission. On the day of the show, it is one of their jobs. Remember, air shows at military bases are for you, the taxpayer who paid for the planes.

Airshows are often noisy. Along with your portable scanner, pack its earphone. The earphone will allow you to hear radio traffic without burning up the batteries.

| TABLE 1 |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| **U.S.N. BLUE ANGELS** | **121.900** | **Ground support (refueling)** | **142.000** | **"Alpha" Air-to-air tactical, primary** | **142.025** | **Ground support (NBFM Repeater Out/In 142.625)** | **143.000** | **"Bravo" Air-to-air tactical, secondary** | **143.600** | **Maintenance "Channel 10"** | **241.400** | **Air-to-air** |
| **250.800** | **Air-to-air** | **251.600** | **Air-to-air Aircraft 5-6 "Channel 19"; also Air-to-ground** | **275.350** | **Air-to-air Aircraft 1-4; also Air-to-ground** | **360.400** | **Air-to-air** | **384.400** | **Air-to-air** | **391.900** | **Air-to-air** |
| **395.900** | **Air-to-air** | | | | | | | | | | |

| **U.S.A.F THUNDERBIRDS** | **120.450** | **Reported operations** | **140.400** | **Air-to-air tactical** | **141.850** | **Air-to-air tactical, primary** | **236.550** | **Air-to-air, Solo 5-6** | **236.600** | **Air-to-air** | **241.400** | **Air-to-air reported** |
| **250.850** | **Team leader reported** | **273.500** | **Air-to-air reported** | **283.500** | **Air-to-air reported** | **294.700** | **Air-to-air reported** | **322.300** | **Air-to-air reported** | **322.600** | **Air-to-air reported** |
| **382.900** | **Air-to-air reported** | **394.000** | **Air-to-air reported** | **413.025** | **Ground support (NBFM), Low power** | | | | | | |

| **U.S.A. GOLDEN KNIGHTS** | **32.30** | **Operations - secondary** | **42.35** | **Operations - primary** | **123.400** | **Air-coordination** |

| **CANADIAN SNOWBIRDS** | **1** | **275.800** | **11** | **245.700** | **2** | **295.600** | **12** | **316.500** | **3** | **316.800** | **13** | **344.500** |
| **4** | **227.600** | **14** | **356.600** | **5** | **243.400** | **15** | **363.600** | **6** | **245.000** | **16** | **283.900** |
| **7** | **378.500** | **17** | **363.800** | **8** | **266.300** | **18** | **289.400** | **9** | **294.500** | **19** | **245.000** |
| **10** | **322.800** | **20** | **239.800** | | | | | | | | |

**MONITORING TIMES**

| **Table 2** |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| **NONMILITARY FLIGHT TEAMS** | **123.400** | **Common airshow control** | **123.450** | **Common airshow control** | **123.450** | **Royal Albanians primary** | **123.475** | **Royal Albanians secondary** | **123.475** | **Team America** | **126.400** | **Showtime control** |
| **130.550** | **Brazilian A.F. Prop power** | **130.655** | **Brazilian A.F. Prop power** | **132.250** | **Brazilian A.F. Prop power - Solo 6-7** |

**Table 3**

**PACKING LIST**

| **Camera** | Film - several rolls and speeds, flash, fresh batteries, camera bag. Load first roll prior to departure. |
| **Scanner** | Handheld - Charge batteries, earphone plug, rubber duckie antenna, preprogram. Base/Mobile - 12V power cord, antenna, preprogram. Frequency lists and directories. |
| **Utility** | Road maps/atlases, small pocket size notebook, two pens. |

Stay late: departing display aircraft may give you some unique shots.
since the volume on the radio can be at a lower setting.

Also, the earphone plug will draw less suspicion and attention than someone waving a handheld scanner near their head to listen to a radio message. I might add that I've never been stopped or questioned by security personnel while attending air shows or open houses with scanner in hand.

Don't forget to use the small pocket size notebook and pen you packed. When taking photographs of aircraft and exhibits, create a table that lists roll and frame numbers. Next to each, jot down aircraft type or special features about the aircraft or exhibit. Then when the film is developed and received, you can correctly annotate your photographs.

The notebook and pen also are quite useful for noting of confirmed frequencies monitored, channel or unit numbers heard, or even the quick jotting of a new frequency monitored during a transmission between the tower and demonstration aircraft.

As time for the aerial demonstrations nears, choose your observation spot and don't wait until the last moment. Find the show's center and camp as close as possible. This is where all the action takes place.

If you want to avoid the crowd, then locate areas at either end of the show center; sometimes you can secure a spot by yourself. The end locations provide photographs without the crowds in them; however, often the aircraft may be at odd angles to you. If you have your handheld scanner along with you, and it is capable of receiving AM signals be prepared for a crowd regardless of where you locate.

Meet People and Make Friends

An excellent way to meet people and make friends at air shows is to let them monitor some radio traffic from your scanner, especially that of flight demonstration teams. Remember that the average non-radio hobbyist attending the air show is already in a state of awe from the aircraft and flight demonstrations. Introduce the fact that you can actually hear what's going on and many people will have nervous breakdowns.

People will move closer to you and ask if you can raise the volume on your radio so that they can also hear. Naturally, when people see a crowd forming, they become interested and want to see what is happening. Soon you will have your own groupies.

Some are possible converts to the radio monitoring hobby (not to mention subscribers to Monitoring Times) so be nice to them and answer their questions. Be patient. Remember that at one time you just like them: an outsider looking through a window and being interested in what is seen.

FILO Principle

When the final aerial demonstration is over, do not leave. The FILO principle is to be applied -- First In Last Out. While most of the crowd is heading for the exits, this gives you an opportunity to see something you missed earlier in the day or talk to a pilot or crew who were previously busy.

Also, some of the display aircraft may be preparing for departure to their home base. Sometimes you can get close to these aircraft as they taxi out to the runways lending themselves to unique photographic opportunities. Frequencies not heard throughout the day now become active as the aircraft start to depart.

Additional VHF NBFM frequencies assigned to the base may become active as cleaning personnel start their rounds and as security begins sweeps of display or exhibits areas are closed.

Now when you are ready to leave, the crowds have dissipated and the traffic exiting the lot does not resemble a western movie scene where thousands of cattle are being lead into the stockade.

It is time now to monitor those public safety frequencies and learn of traffic flows and any accidents that may have occurred. Last, but not least, you can quietly sit back and reflect on what a great day it was at the air show!
Uniden Corporation of America has purchased the consumer products line of Electro Communication Electronics, thus chancing the consumer products line of a $12,000,000. To celebrate this purchase, we’re having our largest scanner sale in history! Use this coupon in ad for big savings. Hurry...ends September 30, 1989.

Uniden CB Radios

- The Uniden Line of Citizens Band Radio transceivers is styled to complement other mobile audio equipment. Uniden CB radios are so reliable that they have a two-year limited warranty. There is no better Citizens Band radio on the market that compares even to the $1300 Sangean FR810E to the 310E handheld, there is no better Citizens Band radio on the market.

- PRO310ET-T Uniden 40 Ch. Portable/Mobile CB...$68.95
- PRO330ET Uniden 40 Ch. Remote mount CB...$104.95
- PRO340ET Uniden 20 Channel CB Mobile...$55.95
- KARATE7 Uniden channel rescue radio...$55.95
- GRANT7 5 MHz. channel CB Mobile...$168.95
- MADISON7 Uniden 40 Channel SSB CB base...$24.95
- PC121-T Uniden 40 Channel SSB CB mobile...$19.95
- PRO520XL Uniden 40 Channel CB Mobile...$56.95
- PRO530XL Uniden 40 Channel CB Mobile...$79.95
- PRO540ET Uniden 40 Channel CB Mobile...$97.95
- PRO550XL Uniden 40 Channel CB Mobile...$137.95
- PRO710ET Uniden 40 Channel CB Base...$119.95
- PRO810ET Uniden 40 Channel SSB CB Base...$174.95

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- KARATE7 Uniden channel rescue radio...$55.95
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- PC121-T Uniden 40 Channel SSB CB mobile...$19.95
- PRO520XL Uniden 40 Channel CB Mobile...$56.95
- PRO530XL Uniden 40 Channel CB Mobile...$79.95
- PRO540ET Uniden 40 Channel CB Mobile...$97.95
- PRO550XL Uniden 40 Channel CB Mobile...$137.95
- PRO710ET Uniden 40 Channel CB Base...$119.95
- PRO810ET Uniden 40 Channel SSB CB Base...$174.95

Beardcat 200XLT-T

- List price $509.95/CE price $254.95/SPECIAL 12-Band, 100 Channel • Crystalless /AC/DC Frequency Coverage 406-512 kHz. Includes 823.975-840.125 kHz and 850.575-891.025 kHz. The Beardcat 200XLT is a 12-Band, 100 Channel programmable scanner covering ten frequency bands and 12 band coverage. If you want a very similar model without the 800 MHz. channel, order the BC 100XLT-T for only $189.95. Includes antenna, carrying case with belt loop, nic-cad battery pack, AC adapter and remote, keyboard scanner now.

Beardcat 800XLT-T

- List price $549.95/CE price $259.95/SPECIAL 12-Band, 40 Channel • No-crystal scanner Priority control /Weather search /Weather Condition /AC/DC Bands: 29.9-30.1, 28.9-32.7, 162-168, 122-137, 806-901 kHz. The Beardcat is a 12-Band, 40 Channel programmable scanner covering ten frequency bands. The unit features a built-in delay function that adds a three second delay on all channels. A mobile version called the BCX800XL-T featuring priority, weather, condition, mobile, and remote scanner now.

President HR2510-T

- List price $499.95/CE price $299.95/SPECIAL 10 Band, 16 Channel • No-crystal scanner Priority control /Weather search /Weather Condition /AC/DC Bands: 29.9-30.1, 28.9-32.7, 162-168, 122-137, 806-901 kHz. The President is a 10 Band, 16 Channel programmable scanner covering ten frequency bands. The unit features a built-in delay function that adds a three second delay on all channels. A mobile version called the BCX2010L-T is available for $178.95.

President HR45XL-T

- List price $199.95/CE price $94.95/SPECIAL 12-Band, 40 Channel • No-crystal scanner Priority control /Weather search /Weather Condition /AC/DC Bands: 29.9-30.1, 28.9-32.7, 162-168, 122-137, 806-901 kHz. The President is a 12-Band, 40 Channel programmable scanner covering ten frequency bands. The unit features a built-in delay function that adds a three second delay on all channels. A mobile version called the BCX45XL-T featuring priority, weather, condition, mobile, and remote scanner now.

Regency RH256B-T

- List price $799.95/CE price $299.95/SPECIAL 16 Channel • 25 Watt Transceiver • Priority The RH256B is a high performance, high power, mobile transceiver designed to cover any frequency between 150 to 182 MHz. Since this radio is synthesized and has crystals, you will need to store up to 16 frequencies without battery backup. All radios come with CTCSS tone and scanning capability on UHF and VHF. The RH256B is a two standard. This transceiver even has a priority function. The RH256 makes an ideal radio for any police or fire emergency worker because of its low cost and high performance. A 60 Watt VHF 150-162 MHz, version called the RH606B-T is available for $429.95. A UHF 15 watt, 16 channel version of this radio called the RU156B-T is also available and covers 450-482 MHz but the cost is $454.95.

President HR2600-T

- List price $599.95/CE price $299.95/SPECIAL 10 Channel Mobile Transceiver • New Features Delivery for new products takes until June 1989. The new President HR2600 Mobile 10 Channel Transceiver is similar to the Uniden HR2510 but now has repeat offset, fast forward, and CTCSS encode.

BCC760XL 800 MHz mobile scanner, SPECIAL!

Extended Service Contract

- If you receive a scanner from us, you will have an extended warranty on your scanner from us. Warranty is extended for one year from the date of the first purchase. Warrantech will pay for return shipping. Extended service contracts are not refundable and apply only to the original purchase contract on a mobile or base scanner is $29.99 and three years is $1,099.99. For radar detectors, two years is $29.99. For CB radios, 2 years is $99.99. For cordless phones, 3 years is $14.99. Order your extended service contract today.

Other Radios and Accessories

- BB90-T Regency 40 channel scanner...$269.95
- CEI-T Regency 75 channel scanner...$269.95
- CEI-T1 Regency 60 Watt VHF Mobile...$38.95
- CEI-T2 Regency 50 Watt UHF Mobile...$38.95
- CEI-T3 Regency 40 Watt UHF Mobile...$38.95
- CEI-T4 Regency 25 Watt UHF Mobile...$38.95
- CEI-T5 Regency 6 Watt VHF Mobile...$38.95
- CEI-T6 Regency 6 Watt UHF Mobile...$38.95
- CEI-T7 Regency 3 Watt UHF Mobile...$38.95
- CEI-T8 Regency 1 Watt UHF Mobile...$38.95

BUY WITH CONFIDENCE

To get the latest delivery from CEI of any scanner, send or phone to your nearest CEI Distributor Center. Michigan residents please add 4% sales tax or supply your tax I.D. number. Written purchase orders are accepted from government agencies and most well rated firms at a 10% surcharge for net 10 billing. All items are subject to availability, acceptableExtract text from the image.
KVOH NEITHER BOMBS NOR BULLETS

by Everett L. Slosman

In most countries, if you want to start a radio station, you fill out the proper applications, negotiate with the authorities, and find financial backing. But there are no application forms, no central authority, and no financial institutions in Lebanon.

Therefore, if you’re a Christian ministry that wants to build a radio station four miles north of the Israeli border, you find a frequency, ask for donations, and pray a lot.

The station is WORD -- The Voice of Hope, operating from Marj-Ayoun in southern Lebanon. It is run by the California-based High Adventure Ministries.

They have another radio station in Los Angeles. Working in California is not as much of an adventure as working at WORD.

WORD is now in its tenth year, broadcasting messages of peace and love in a land more accustomed to blood feuds and byzantine plots. Lebanon is where despair and hatred are as much a part of daily life as kibbi, the raw, spiced, ground meat sold by street vendors.

High Adventure Ministry is headed by George Otis, a business executive-turned-evangelist. The idea of building a Christian station in the Holy Land began in 1978, during a tour of Israel.

Though there were many stations broadcasting Gospel programs to the Middle East, none were located within the area.

To Otis, a station in Lebanon would be a natural progression of his beliefs. In that area of the world, a majority of the broadcast stations exist as propaganda outlets for the government. He felt compelled to offer a facility that aired the voices of reason and hope.

Otis found support for the project from people such as "Stormy" Weathers, the owner of a radio antenna plant in Oklahoma, and Paul Hunter, a Canadian engineer who became High Adventure’s chief engineer.

Armed with contributions and faith, they began building on a site just north of the Latani River in Al Janub province.

This area is full of biblical history. The transmitter is located in the "Valley of The Springs," so-named because the land is watered by melting snows from Mount Hermon. The antenna radials are in a field known as "The Heads of Kings." This is where the Old Testament general, Joshua, beheaded the Kings of Mizpah during one of his campaigns.

Overlooking the site, to the west, is Beaufort Castle, a twelfth century Crusader fortification. During the time WORD was being built, it was under the control of the Palestine Liberation Organization.

The PLO used Beaufort as a base from which to shell the northern Israeli towns like Matulla and Kiriat Shemona. They also

To build a radio station four miles north of the Israeli border takes special people. George Otis stands in front of the KVOH antennas with one of them: chief engineer Paul Hunter.
Mark Gallardo is the Spanish language announcer, broadcasting daily on KVOH

maintained it as a supply depot and ammunition dump in their war against Major Saad Haddad, the commander of the Christian forces in "Free" Southern Lebanon.

It was from there that they directed artillery fire and Katyusha rockets in the direction of the partially completed station.

One night, the ammunition dump blew up. No one has been able to pinpoint why. Otis believes it was a miracle. Other people credit an attack by forces under Colonel Yoram Hamizrachi, the military commander of Israel's northern border.

The truth may never be known. But interference with construction on the Voice of Hope lessened considerably.

The construction crew turned a former French customs office in Marj-Ayoun, on the main road to Beirut, into a modern studio. An abandoned pumphouse in "Heads of Kings" became the transmitter room.

Singer transmitters were shipped by sea to Israel. Then, with the help of Colonel Hamizrachi, they were transported by truck to Metulla. They went from there, under the watchful eye of Major Haddad, into Lebanon.

There are no electronic parts stores in southern Lebanon; no nearby Radio Shack to pop into for a condenser or some hookup wire. It's "wait for a shipment from the states or scrounge-it-yourself."

So, when the station engineer, Charbel Younes, needed two coaxial connectors that would take up to eight weeks to come from the U.S., he cannibalized the tail section of a downed Syrian MIG.

"I prayed and asked God to send me some," Younes said, referring to the connectors. "And He did, by airmail."

Parts were not the only problem. Weathers needed eleven cubic meters of concrete for the antenna bases. However, there wasn't a bag of cement to be found anywhere in southern Lebanon. But there was a cement plant near Kiriat Shemona.

There was a complication. The plant manager refused to risk his trucks and drivers delivering cement to Marj-Ayoun. When Otis told Colonel Hamizrachi about the problem, the answer was "Inbiot" -- Hebrew for "no problem."

The next morning, Hamizrachi arrived at the site with two cement-laden trucks that had "enlisted into the army." The soldiers poured the concrete, drove back across the border, and gave the trucks an "Honorable Discharge."

Construction continued, interrupted only by an occasional stray artillery shell. By June 1979, the 30 kW medium wave WORD was ready.

Opening ceremonies drew a flock of reporters. They were anxious to see the brainchild of the man Colonel Hamizrachi had once called Ha'mahsega, "The Crazy One."

But there was still a gremlin lurking. The line from the studio to the transmitter had been run along the roadside, on the ground. Just before the official ceremonies were to start, the test transmission music went off the air.

An armored personnel carrier sent by Major Haddad, for security purposes, had accidentally cut the line. Wirecutters, electrical tape, headphones, and some fast work by the engineering staff resulted in a jury-rigged fix. The ceremonies went on without a hitch.

The Voice of Hope began regularly scheduled broadcasts on September 9, 1979, using 950 kHz.

But a major technical problem developed. Heavy military traffic rumbled by causing excessive background noise. No amount of material could soundproof the studios. It was so bad, that when some vehicles drove past, voice programs were obliterated.

Major Haddad effected a simple solution. His troops built a roadblock on the 6000-year-old road and rerouted traffic away from the station.

Another time, workers clearing weeds near the studio building found an unexploded 130 mm artillery shell. Major Haddad's troops again came to the rescue, removing the shell and...
#### PROGRAM SCHEDULES

<table>
<thead>
<tr>
<th>UTC</th>
<th>Language</th>
<th>Frequency kHz</th>
</tr>
</thead>
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<td>Spanish</td>
<td>17775</td>
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<tr>
<td>0100-0400</td>
<td>English</td>
<td>13695</td>
</tr>
</tbody>
</table>

**Call sign:** This is High Adventure's Voice of Hope to the Americas, world class radio KVOH, Los Angeles, California.

Reception reports to High Adventure Ministries, P.O. Box 93937, Los Angeles, California 90093.

**KING,** The King of Hope -- Shortwave, Marj-Ayon, Lebanon (effective 11/88).

<table>
<thead>
<tr>
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<th>Language</th>
<th>Frequency kHz</th>
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<td>1600-1945</td>
<td>Russian</td>
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<td></td>
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<td>6280</td>
</tr>
<tr>
<td>2000-2300</td>
<td>English</td>
<td>6280</td>
</tr>
</tbody>
</table>

**Reception reports:** to High Adventure, Hotel Arazim, Metulla, Israel, or P.O. Box 7466, Van Nuys, California 91409.

**Program schedules and reception report forms are available from the Los Angeles office.**

**Engineering requests DXers use the SINPO codes when furnishing reports.**

In February, 1981, the sister station, KING -- The King of Hope, began shortwave programming on 6215 and 6280 kHz using a 12 kW Singer transmitter with 60 db gain at the antenna. High Adventure now reached listeners in 50 countries, from southern Russia to South Africa.

Today, KING broadcasts in Arabic, Azerbaijani, English, French, Greek, Hungarian, Russian, Serbo-Croatian, Swedish, Tagalog, and Ukrainian.

High Adventure also has an FM station in Marj-Ayon. A 3 kW transmitter feeds the six-bay antenna atop Mount Hermon. The frequency is "around 106.0 MHz."

As Paul Hunter explains, "There is no FCC over there. You just find a clear spot and claim it. They have had to change frequencies a couple of times."

Grabbing frequencies is how these mild-mannered evangelicals put their television station, Star of Hope, on channel 12. This was the last VHF slot left in the Middle East and the PLO wanted it for a Beirut facility.

Using the carcass of an old army ambulance to house a lashed-up transmitter, the ministry managed to put a test pattern on the air before the PLO won the race. It was St. Valentine's Day, 1981.

Later, the transmitter was moved to a permanent building and a full broadcast schedule initiated. Star of Hope was eventually transferred to the Christian Broadcast Network as their Middle East outlet.

Working in Lebanon has not been without human costs. In October, 1985, a four-man Marxist Front squad used plastic to blow up the studio. "We lost everyone in the building," said Otis. "It was tragic."

As horrible as the attack was, High Adventure turned the other cheek, rebuilt, and continued their mission.

Last December, the station again came under attack. This time, extremists fired mortars and Katyushas at the studio, hoping to knock out the infidel Voice of Hope.

However, WORD and KING are still on the air, broadcasting a mixture of secular and gospel music framed in a contemporary format by their minister-disk jockeys. Otis calls the Voice of Hope "the world's most unique station."

Their experiences in Lebanon led High Adventure to build KVOH International, a 1.5 MW 16 meter band station aimed at Latin America and the Caribbean Basin.

With towers located on Chatsworth Peak near Los Angeles, they program in Spanish and English using a format similar to the one used at WORD and KING.

High Adventures has also applied to the Philippine government for permission to build a 4 MW outlet aimed at Asia and the Pacific Rim.

The proposed facility would reach the 60 percent of the world's population who are living in crowded conditions on just 18 percent of the world's land mass.

If everything goes right, Otis believes the station will be on-line this summer.

For George Otis, life has always been a series of enjoyable challenges. He was once the Chief Executive Officer of Lear Jet and was also heavily involved in the electronics and aircraft industries. Otis became interested in the evangelical ministry in 1970.

In typical Otis fashion, he plunged in traveling around the world lecturing and ministering. It was during these travels that he became fascinated with the potential for religious broadcasting. And this fascination has never stopped.

The name, High Adventure, comes "from my encounters with God. Getting in touch with God is not a dull experience. It's a high adventure."

Maybe that's why, to paraphrase the Greek writer Herodotus (circa 485 - 425 BC), neither bombs nor bullets nor terrorists keeps them from accomplishing their appointed course with all speed.
The KENWOOD R5000 is the new high performance receiver in the line of communications technology. Designed as the highest performance standards in mind, the KENWOOD R5000 will bring you all the excitement of shortwave listening! 150 kHz to 30 MHz, 10 memories. Easy entry keypad. FM, USB/LSB, CW, VHF 108-174 MHz. Opt VC20.
R5000 $499.95 + $10 UPS

The KENWOOD R2000 is an innovative all-mode receiver with a host of features to enhance the excitement of listening to stations around the world. 150 kHz to 30 MHz, 10 memories. AM, FM, USB/LSB, CW, VHF 108-174 MHz. Opt VC10. R2000 $649.95 + $10 UPS

A high-class, general coverage receiver with expandability looking to the future. The NRK-255 will change your shack in to a new universe! 0.09 MHz to 30 MHz. Pass band shift, 200 memories. Direct keypad entry. AM, FM, CW, VHF 118-174 MHz. Opt VC10.
NRK255 $179.00 + $12 UPS

The Satellit 650 International is the ultimate in German crafted portable radios. Along with excellent audio performance, the Satellit 650 also has many fine features. 0.09 kHz to 29.9999 MHz. 24 hour clock/timer. 3 Bandwidths. 60 Memories. AM, FM, USB/LSB, CW, Keyboard Entry, PLL Controlled. Nicad Battery Option.
Satellit 650 $999.95 + $12 UPS

The Satellit 400, with its rounded corners and smooth lines is the obvious "style leader" in personal portables. Beautifully crafted, this portable covers all shortwave bands plus MW and FM. It's unexcelled audio will surprise you! 16:1-620 MHz. Satellit 400 $399.95 + $6 UPS

SYENSA now offers the finest receiver in the famous FRG series. The FRG8800 offers functionality and operating conveniences for the serious shortwave listener. 150 kHz to 29.9999 MHz. Direct key- board entry. Dual Clocks/Timers. Widenarrow Filter. 12 Memories. AM, LSB, USB, CW, FM, VHF 118-174 MHz. FRG8800 $649.95 + $10 UPS

VHF/UHF General Coverage Receiver. The YAESU FRG6000 offers a mode scanning receiver with many outstanding features. Coverage 100 MHz, 100 Memories. Keyboard Entry. AM, FM, FM/Wide & Narrow. 7 Digit Readout. Video option. FRG6000 $529.95 + $6 UPS

SONY - THE ONE AND ONLY

ICF2010
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ICFSW15

ICF2010 is the market leader of portables, our best selling portable. Full coverage, 15 to 30 MHz, AM, FM, 10-115 MHz, 10 Memories. Direct keypad entry. Many Features. ICF2010 $349.95 + $6 UPS


ICFSW15. The newest in miniaturization only 2 1/4" x 4". Tests show it as smallest sub-compact size, has its own case with, active antenna, world AC Power pack, head phone, SWL Book, Travel with the "SYS- TEM" or just the 8000. Complete coverage to 100 MHz. FM 88-108. Keyboard Entry. LCD Readout/Clock. They're going fast! ICFSW15 $299.95 + $4 UPS

ICF7051. A latest version of the famous 7500. AM-FM All major shortwave bands. MS103 $139.95 + $4 UPS

ICF7000. 15 Memories. All SW Bands 90 thru 111 MHz. Digital LCD Frequencry. ICF7000 $239.95 + $4 UPS

ICF4920. A favorite with the travelers. Shirt pocket size. PW 2 A. ICF4920 $99.95 + $4 UPS

PANASONIC with/FREE STAND

RB860 Top of the line portable. 155-300 MHz coverage, 36 Memories. Scan, Rotary Tuning. Direct Keyboard Entry. Clock/Timer. Optional AC Adapter. RB860 $249.95 + $4 UPS

RB40F. Full coverage, AM, FM, SW. 27 Memories. Direct Keyboard Entry. Auto scan, Direc- tional AC Adapter. RB40F $189.95 + $4 UPS

RB20. AM, FM, LW. SW Coverage. Double super heterodyne for image rejection. Ear phone and carrying case included. RB20 $119.95 + $4 UPS

RB10. Smallest non-digital. Shirt pocket size. 8 Bands - The Traveler's Friend. Optional AC Adapter. RB10 $89.95 + $4 UPS

TOSHIBA RPF-11. 11 Bands. AM, FM, 9 SW. One of our leading portables! PCB/SCREW push buttons for band select. Travel lock. "S" Meter. Optional AC Adapter TAC05-$19.95. RPF11 $89.95 + $4 UPS

SANGEAN with/FREE STAND

ATS860A. So much HITCHEC in one package, a super value. Covers all SW Bands. Tuning 150-30 MHz + FM 88-108. 9 Memories. Auto Scan. Keyboard Entry. Stereo w/Headset or Line output. AC Adapter included. ATS860A $189.95 + $4 UPS

SG79. Slightly larger than SONY ICF4920 same coverage plus stereo headset. Power 3AA. SG79 $69.95 + $4 UPS

DIPLOMAT 4950. SAME AS SG79.

CLOSE OUT $49.95 + $4 UPS

MS101. All new mini set similar to Panasonic RB10. 9 Band, AM, FM, Band spread for easy tuning, stereo headset, made in Japan. AA. Optional AC Adapter. MS101 $79.95 + $4 UPS

MS103. Same as MS101, 9 SW Bands. MS103 $99.95 + $4 UPS

MAGNAVOX

D9299. Excellent performer, great sound (2 SPK) and other HITCHEC features make this a value packed radio. 146-26.1 MHz FM 88-108. Keyboard entry. 16 Memories. Multi-mode AM, CW, USB, FM, Scan, 12/24 Hour clock. Loads more.

D9299 $299.95 + $6 UPS


D9235. This unit is one of the finest in its class. 9 SW Bands. AM, FM, LW, Slide controls. Carrying pouch.

D9235 $79.95 + $5 UPS + $8 UPS

ANTENNAS

DATONG AD379. HF, 1-30 MHz outdoor active, rated #1 by IBS Test Labs. Dipole whips cancel some man-made noise. AD379 $129.95 + $4 UPS

SONY AN1. HF, 1-30 MHz outdoor active. Our #1 Seller for 3 years. Antenna hardware control box 40 ft. cable. AN1 $79.95 + $6 UPS

EAVESDROPPER. Outdoor passive trapped dipole. 9 SW Bands. 43 ft. long. 100 ft. lead. Everything you need. SWL $59.95 + $4 UPS

SWL. Same as above, you furnish coax cable. 25-$10.50, 30-$16, 100-$26 - SWL $59.95 + $4 UPS

EAVESDROPPER SLOPER. Rated among the best by IBS. 5.16 best. AM, DX, 2.26 MHz. SW. You provide coax as above. EAVESDROPPER $59.95 + $4 UPS

ALPHA DELTA SLOPER DKSWL $89.95 + $5 UPS

PIA, Indoor/Active. 2-30 MHz up to 20 DB Gain. Pre-Selector can reduce interference. SVDC Optional AC Adapter. PIA $74.95

MFJ1024. Indoor/Active. Many features same as above. SWDC Optional AC Adapter. MFJ1024 $79.95

NOVEX NEW PRODUCTS


CRIS R70100 $399.95 + $5 UPS

SDU 800. Spectrum Display Unit. Perfect mate to ICOM R7000. 10 MHz sweep allows you to see up & down the band for activity on a 3 inch CRT. Free SDU Flyer (CALL).

SDU8000 $599.95 + $8 UPS

RACKMOUNT. Novex RM Series Rackmount hard- ware for most popular radios ICOM, KENWOOD, YAESU receivers and transceivers.
RM1100 $79.95 + $5 UPS
Who's Listening to Shortwave?

An Interview with Graham Mytton

Head of International Broadcasting and Audience Research, BBC World Service

Who listens to shortwave? Why? How do we know? These are the kinds of questions tackled by Graham Mytton for the B.B.C., which has the largest audience research department in the free world.

Other international broadcasters buy BBC research reports in order to plan and schedule the most effective programming. Even the BBC program changes last fall were the result of audience research.

As Mytton indicates, some broadcasters take their listener mail very seriously. If listeners hope to influence the quantity and quality of programming, they ought to write with both complaints and suggestions.

Contrary to the common stereotype, many broadcasters are not monolithic bureaucracies with little regard for the listening public.

Mytton was interviewed by Dr. Quentin Schultz of the Department of Communication at Calvin College during a recent visit to the United States.

Q: What are your responsibilities as head of audience research for the BBC World Service?

Mytton: It's two-fold. Half of my job involves looking after the 500,000 letters a year we get in thirty or so different languages. I oversee the analysis and translation. We look for trends in the mail: where they come from, who writes, what kinds of
things they say, and what other matters are reported on.

The other half of the job is audience research. Letters don't tell you how many listeners you've got and what kind of people listen -- only which kinds are willing to write to us. So we commission random-sample audience surveys in countries around the world. We also buy surveys or polls commissioned by other organizations.

Our goal is to determine the size of our audience, its demographics, how frequently and for how long people listen and how much they tune in to the BBC as compared to other national and international broadcasts. It's also very important what language they listen to and what times of the day they listen.

We are increasingly interested in how much people watch television, and how TV and video have affected their radio listening habits, especially in the Third World countries where television is growing rapidly.

Related to both of these jobs is my task of monitoring the overall trends and developments in the international broadcasting scene. That comes partly out of these surveys and partly out of our other research. I should add that it's not all number crunching. We do quite a lot of ethnographic, qualitative research using focus groups or group discussions and other forms of research.

Q: Do we really know how many people around the world listen to shortwave radio?

Mytton: Yes, although we have not actually computed it that way. Instead, we at the BBC concentrate on how many people listen to the BBC regularly or how many people listen to Voice of America or Radio Moscow or whomever. We estimate that about 120 million people listen to us at least once a week in one or another of the 37 languages in which we broadcast.

Q: How do you get accurate audience information in countries such as the Soviet Union and Eastern European nations?

Mytton: It's impossible to go with a clip board down the main streets of Sophia, Bucharest, or Moscow asking questions about what radio stations people listen to!

Radio Free Europe and Radio Liberty each operate research departments which do their best to get around this problem by interviewing travelers. However, the people who travel are not typical of the populations as a whole.

It is possible to do all sorts of weighting, correcting for those parts of the population who are not fully covered by that interviewing. It's still a bit difficult.

In addition to that, we do our own interviewing, for example, among Bulgarians. East Germans are not covered by interviewing done by Radio Free Europe. So we're hoping to develop that. We hope it is becoming easier to do research actually in Eastern Europe and we are having very friendly discussions with the Polish radio and television research people. We hope to do some research in cooperation with them.

Q: Who are the major shortwave broadcasters in terms of their world-wide audience?

Mytton: Well, first of all it's the BBC, followed by the Voice of America. Then it's quite a gap. Among the worldwide broadcasters, Deutshe Welle is next. However, Radio Liberty and Radio Free Europe are very important. They have very large audiences in East and Central Europe and that makes them really the next most important ones overall after the BBC and VOA.

Q: How do you account for the relatively poor audiences for Radio Moscow?

Mytton: Radio Moscow's programming has left a lot to be desired. With a few important exceptions, it's been dull. Even when some of the programs are fascinating and are well put together, they are not up to date.

Also, they are often unreliable. Radio Moscow includes propaganda with the news. Our research shows that people are put off by propaganda -- and that includes listeners to the Voice of America.

Q: What are the favorite BBC programs in North America?

Mytton: Well, everywhere in the world, it's news. The main reason for people listening to the BBC is news. But it varies enormously from area to area. Most North Americans tune in for the bulletins of world news as an alternative to or in addition to the news available in North America.

Q: Are shortwave audiences increasing because of the user-friendly digital receivers?

Mytton: I wish I knew the answer to that. It's probably true, but the impact on the 120 million BBC listeners is tiny. Up to the end of 1987, Sony had sold one million "7600" receivers. So let's just say there's maybe two or maybe even three million digital sets. It's not an awful lot of people.

So it hasn't really made an impact on the business traveler. And if you keep your eyes open you may soon see some advertisements by the BBC in some international travel magazines actually promoting the digital set as the essential tool of the traveler.

Q: What has been the impact of the world-wide explosion of VCRs on shortwave listening?
Mytton: It's difficult to determine, and it's one of the most important things we're about to investigate in surveys in India, Pakistan, Bangladesh, and, we hope, Sri Lanka, and in the Gulf.

There are a number of projects in the field at the moment. We suspect that the VCR has not affected our weekly audience size but has decreased the amount of time that people listen to any radio, especially in the evening.

Q: Will direct-broadcast radio or TV satellites (DBS) eventually replace shortwave radio?

Mytton: No, unless something else changes. Technology isn't determinisitic. The reason why the major international broadcasters have large audiences is that we're riding on the back of the domestic broadcasting activity.

The domestic broadcasters in much of the Third World and even the Soviet Union actually still rely on shortwave in order to get national audiences. North Americans tend to think of shortwave as a hobby for the experts and the like. It isn't in much of the rest of the world.

It has been an essential communications medium for many broadcasters and listeners. The BBC has ridden on the back of that. As long as people have the radios, they will sometimes hit the BBC instead of tuning in their domestic broadcasting station.

DBS is a different kind of technology. I cannot see DBS succeeding only as an international broadcasting service. Who is going to buy the expensive equipment only for international radio broadcasting? We are not a primary activity. We are a secondary radio broadcasting and listening activity.

DBS would be the answer to the problem of national broadcasting in countries like Zaire, Peru, or Indonesia, if the technology and the sets were available. Then it could be both a national and international broadcasting medium. I see no sign of that happening now.

Q: Does the BBC World Service have any new programs planned?

Mytton: Well, in November of 1988 the BBC had the biggest shake-up of programs ever on the World Service. A whole spate of English programs were begun, including for the first time a whole hour news program.

In addition, we started new programs on business matters and changes in the presentation of programs. Our research showed that World Service had this image of being a little bit stuffy, and also a little bit clumsy in its presentation. A lot of people liked that -- or at least they liked its slowness.

It's important to remember that the BBC World Service in English is listened to by many people whose mother tongue is not English. So it's been a balancing act between sounding a bit old-fashioned and trying to sound a bit more like modern Britain, and at the same time not losing those listeners that we have because we've become too snappy, too rapid, and too quick fire.

It's a difficult thing to achieve. We hope to achieve it.

All the other languages are being subject to similar scrutiny in their programs. Are we doing the right kind of programs? Are we presenting in the right kind of way?

We are carefully examining audience research to decide if changes should be made in other language broadcasts as well. We're also paying attention to what other media are doing.

Q: Do letters from listeners influence such programming decisions?

Mytton: Yes, we especially welcome detailed and well-argued comments about programs. I would personally like to see a broader range of letters. We tend to get letters from people who tend to write letters.

I have a theory about this; people who write to the BBC just to ask for a program guide are a pretty good cross-section of our listeners, whereas people who write in with comments tend to be people who always want to make comments. I wish people who wrote in just for a program guide or schedule would add a few comments.

It's difficult to determine, and it's one of the most important things we're about to investigate in surveys in India, Pakistan, Bangladesh, and, we hope, Sri Lanka, and in the Gulf. There are a number of projects in the field at the moment. We suspect that the VCR has not affected our weekly audience size but has decreased the amount of time that people listen to any radio, especially in the evening.

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A Strange Coincidence

While on vacation in March, Harry and associate editor Rachel Baughn kept their eyes open for radio-related photo opportunities. They quickly discovered that Florida is a bonanza of monster antennas! Shortly after snapping several shots of a huge array from AT&T, they happened upon a National Communications System facility just south of the intersection of 94 and 997 with several eye-catching antenna towers.

Speaking with the private security guards on both the outgoing and return trips uncovered tidbits of information. One guard admitted his ignorance as to the primary purpose of the installation -- and he wanted to keep it that way -- but, he said, they "use computers a lot," (as opposed to voice transmissions?) in communications directed toward South America. He also said the facility was only two or three years old, and that two more towers were yet to be added to the array.

Another guard indicated that, although it was an Army facility, the majority of personnel were civilian, and that it was a transmitting site; a receiving site being located elsewhere to avoid interference. Personnel were present at the site around the clock.

Imagine the shock of recognition when Rachel returned to the office to find that that very same site had been identified as State Department KKN39! As Dave Jones will tell you in "Federal File," it pays to be prepared to capture the unexpected, wherever you may be!

KKN39:

by Al Zilman

Many utility shortwave listeners have heard the CW station KKN39 on 4956.5, 13387, and 17413.5 kHz. Although some have listed KKN39 as being located in Washington, D.C. (as KKN50 is at Remington, Virginia, 50 miles southwest of Washington), others have speculated that, based on propagation, KKN39 is in Florida.

In particular, mention has been made of a site just west of the Dade County Zoological Park/Gold Coast Railroad. This location off Coral Reef Drive, SW 152 Street, is also called the Richmond Naval Air Station. The property has a sign listing various military units as well as "USARCA/NCS."

Note that "USARCA" and "NCS" (National Communications System) have separate phone book listings. In fact, the phone book lists "NCS-Regional Communication Systems, Richmond Naval Air

NCS/Richmond NAS - Not KKN39 after all, but probably the receive facility
A Federal Mystery is Resolved

Log periodic at KKN39 (Krome Ave)

Station" (KKN50 at Remington, Virginia, and its receive site/satellite facility at Brandy Station, Virginia both have NCS signs).

The NCS/Richmond NAS facility has various HF antennas, including several log periodics, and two satellite domes. (There is also a USAF radar dome on the property.) The tall structure at the Gold Coast Railroad museum has many VHF/UHF antennas, but perhaps only the parabolic microwave dish on it belongs to the NCS activity -- more on this in a moment.

But where is KKN39? At the NCS/Richmond NAS facility described above, the signal levels of KKN39 were a rock steady S9 on 13387 kHz regardless of time of day using a short antenna. Experience with that particular setup would indicate that KKN39 was about five to 15 miles away. (After that, the signal drops off to unimpressive levels until one is several hundred miles away.)

This author then initiated a successful "fox hunt" that found the transmitter facility. It is about 1.5 miles south of US 41, SR 90, SW Eighth Street, Tamiami Trail on Krome Avenue, SR 997, SW 177th Street, old SR 27. (Most major Miami streets have several names causing confusion with different maps. In fact, the Dade County phone book map mistakenly refers to Krome Avenue as 977th Street.)

This is seven miles northwest of the NCS/Richmond NAS site and about 15 miles west of downtown Miami. The sign says "Transmitter Facility, Regional Communications Activity, National Communications System, U.S. Army," and KKN39 signal levels were 60 dB over S9 (full scale).

This site has various HF antennas, including log periodics, and is surrounded by a barbed-wire topped fence. A parabolic microwave dish showed it to be the other end of the NCS/Richmond NAS link. (It now appears that the NCS/Richmond NAS facility is the HF receive/satellite facility.)

No "numbers transmissions" were found to originate from this facility. In fact, it is at a distance from Cuba that would make it a poor choice as an HF facility to hit Cuba -- it is too close for any but the lower HF frequencies.

Monitoring of the common five digit Spanish broadcast in the Miami area indicated that they were not local and were consistent with a Cuban source.

Can anyone precisely locate KRH50? Is it actually London?
Choosing the Proper TV Antenna
by Bob Grove WA4PYQ

VHF-TV: CHANNELS 2-13

As television stations proliferated in the 1950s, rooftops all over the city mushroomed with VHF-TV antennas - usually the conical array or "Lazy X", designed for broadband 54-216 MHz response. Later, as rural and fringe areas struggled to receive these stations, higher gain arrays were concocted. Most common was the Yagi-Uda array, or Yagi "beam".

The Yagi classically comprises three parallel elements: a central "driven" element to which the feedline is connected; a slightly longer rear reflector; and a slightly shorter forward director. Additional directors provide increased gain and directivity.

Since Yagis are typically very narrow bandwidth, working on just one 6-MHz-wide TV channel, it was often necessary to stack Yagis for additional channels. This led to the popularity of the broadband log periodic dipole array (LPDA). Its characteristic trapezoid outline of graduated-length elements is interconnected by a zigzag "shoelace" pattern of aluminum wire - its phasing harness.

It is possible to combine the advantages of both types of antennas. A log periodic may have parasitic elements of varying lengths spaced along the boom to direct and reflect additional signal strength.

UHF-TV: CHANNELS 14-83

At UHF-TV frequencies (470-806 MHz), large reflector surfaces focus their collected signals into small dipole antennas. The parabolic dish, corner reflector and bowtie-screen combination are the main contenders.

As with VHF antennas, manufacturers often combine UHF techniques; for example, a dish or corner reflector may be focused into a Yagi for additional gain or directivity.

ROTATORS

Unless you are interested in looking at one specific direction with your antenna, you will probably want to consider turning it to favor surrounding cities with competitive programming.

Due to their horizontal polarization, TV antennas don't endure as much wind loading as vertically-polarized VHF/UHF ham antennas; they do, however, suffer more ice loading.

Rotators commonly use small motors coupled to high-ratio gear boxes to build up their torque at slow speeds. Some models employ replaceable sacrificial gears which crumble under overload to save the motor. Thermal circuit breakers may also be used to interrupt the voltage line when the motor has been stressed.

Be sure that you select a rotator that is strong enough for the antenna you have selected for your TV reception. This is especially important if you will be stacking antennas for different channels.

PREAMPS

As with scanner monitoring, preamplifiers must be chosen on a basis of low noise and immunity to strong-signal overload. Not all preamps are equal.

Mast-mounted ("head end") preamps are theoretically superior because they can amplify the received signal before any loss occurs in the downlead. They are, however, vulnerable to burnout from nearby lightning strokes and deterioration from the weather.

If you are planning to feed several outlets you may wish to consider a distribution amplifier. Remember, each splitter divides the signal in half (3 dB signal reduction).

This UHF Yagi uses a corner reflector for its rear element.
The outdoor preamp is powered from indoors by a separate power supply.

LOCATION

Any antenna should be high and clear of major obstacles in its signal path. If you can see the horizon over rooftops, you’re probably high enough. Keep away from electrical power lines (avoiding electrostatic loads with corrosive salts – it is the lossiest! Short, interconnecting lengths of twin-lead between the antenna and mast-mounted preamp are acceptable.

LEAD-IN

Rather than running 300 ohm twin-lead all the way to the TV set, use a high quality RG-6/U coaxial cable coupled to the antenna through a VHF/UHF balun transformer. New 300 ohm ribbon is the lowest-loss transmission line, but once it gets wet – especially with age as it cracks in sunlight and loads with corrosive salts – it is the lossiest! Short, interconnecting lengths of twin-lead between the antenna and mast-mounted preamp are acceptable.

A distribution amplifier may be necessary for multiple sets.

SOURCES

Buy your antenna system from a reputable dealer. Check the warranties to be sure you are protected in case of failure. Is the antenna flimsy or rugged? Will the outside preamp withstand weather and nearby lightning strokes? Does it have a low noise figure and wide dynamic range? Are there traps available to remove undesirable local broadcasters which may produce interference? Not all these questions apply to every installation, but be aware.

Some antenna manufacturers private-label their products for major clients such as Radio Shack (made by Antenna Craft and TDP). We know one manufacturer, Kay-Townes, who custom-manufactures the popular Grove Scanner Beam and Omni antennas.

Because of their reputation for quality merchandise, friendly service and competi-

MONITORING TIMES May 1989
itive prices, we decided to test several Kay-Townes' TV products as well. Prices are manufacturer's recommended retail.

**CP36 VHF-TV ANTENNA**  
($148.84)

Measuring 15 feet long and sporting 24 elements, this husky Kay-Townes VHF-TV/FM combination antenna utilizes tandem booms for rigidity when suspended from a mastpipe. Highly directional and designed for deepest fringe channel 2 through 13 and FM broadcast reception, 300 ohm feedpoint.

**SBS-1432 UHF-TV ANTENNA**  
($54.99)

Essentially a Yagi with a corner reflector for a rear element, the Super Band Spanner, as this antenna has come to be known, has 14 director elements for razor-sharp directivity and enhanced gain. Like the CP36, it has a 300 ohm feedpoint impedance.

**SSK-3237 PREAMPLIFIER**  
($84.85)

This "booster" offers the highest gain and lowest noise in the industry and will withstand signal levels up to at least 20,000 microvolts. With gain of up to 23 dB and a noise figure at a low 3 dB, this preamp, connected to appropriate splitters, can feed up to 4 TV sets.

Dual VHF/UHF 300 ohm inputs match separate antennas, and a 75 ohm output connects directly to a coaxial cable downlead.

Lightning protected by dual diodes and a shunt coil, the 3237 includes a remote power supply with voltage surge protection. An FM trap is incorporated to avoid TV signal interference from FM broadcasters.

VHF amplification is automatically gain controlled to prevent overload in strong signal locations.

**AB5800P INDOOR AMPLIFIER**  
($92.84)

While high gain preamplifiers do a superb job for up to three or four TV sets, if you are planning a master antenna system (MATV) for a dwelling or other large building, multiple outlets will quickly use up the tiny signal voltages. You will need a distribution amplifier.

The AB5800P has an internal AC-operated power supply which is capable of powering up a remote preamp through the coax. Featuring standard type F coax fittings for input and output, the amp measures an average of 5 dB noise figure with VHF gain of 14 dB (16 dB UHF).

This rugged amplifier is capable of accepting up to 150,000 microvolts of signal at VHF, outputting up to 61 dBmV. If you aren’t in the far fringe, the AB5800P can stand alone as a preamp and distribution amplifier for up to six or eight TV sets. Used in tandem with a masthead preamp like the SSK-3237, you can run up to 14 sets!

**KT-500 ROTATOR**  
($59.95)

Looking for a powerful, low cost rotator? The KT-500 will provide 200 pound-inches of torque for the largest TV antennas, and operates smoothly without the annoying "clunk-clunk" steppers found in competitive control units. The control knob rotates through a 360 degree arc with a compass-type legend on the panel for recognition.

Powered by 120 VAC, 50/60 Hz and UL listed, a three-wire cable is required to send 18 VAC to the rotator motor from the controller. Rotation time is 65 seconds and the motor housing will accommodate 1-1/8" to 1-3/4" mast diameter and an antenna weight of almost 100 pounds!

There are many excellent values on the market for the serious TV and FM DXer. Your dealer can provide details of systems and components with which he is familiar. If you would like the name of a Kay-Townes dealer in your area, or if you are a dealer looking for a reliable source of TV and FM antennas and accessories, contact Kay-Townes at PO Box 593, Rome, Georgia 30161 or phone 1-404-291-9871.
TV DX ...

Off to a Roaring Start

Karl Zuk is not an easy man to impress when it comes to TV. As an engineer at ABC, he's seen just about everything. Still, when we talked on the phone, he absolutely bubbled with enthusiasm. "I turned on the TV last night and watched a PBS show on channel 3. That's crazy because there is no PBS station on channel 3 in New York. The station I was watching came from Nebraska!"

MT editor Larry Miller monitors communications for a living and for fun so it's a 24 hour a day job. But despite all the things he's heard, he still loves to tell people about his TV DX experiences. "Just the other day I sat down and watched a documentary on tornados; 45 minutes of non-fading, full-color, local-quality signal. At the end, the station ID'd as WPBT, Miami. I watched it in Philadelphia! Now that's exciting."

Normally, this phenomenon -- the reception of unintended, long-distance TV signals -- does not get under way in earnest until early summer. This year, however, with many propagation indicators going off scale, TV DX season got under way early. The best, it is almost certain, is yet to come.

Although your location is a determining factor in how many "short hop" stations you can see, it is not uncommon for TV signals to "skip" a couple of hundred miles. Viewers in Philadelphia, for example, often have the chance to see New York (100 miles), Baltimore (96 miles) and Washington, D.C. (133 miles) TV. Reception of stations from these areas is not predictable but it is relatively commonplace.

What really gets the blood pumping is something called E skip reception. E skip occurs when the E layer of the ionosphere becomes highly ionized and TV signals are scattered off it like billiard balls taking off on the break. When conditions are right, reception of signals from as far away as 1,200 and 1,500 miles are possible.

So what kind of equipment do you need to take part in the fun? A 800 foot tower mounted at the top of Mount Mitsubishi? An antenna that's bigger than your house? A top-of-the-line TV with a 4-digit price tag? No.

For the most part, TV DX is nondiscriminatory -- it doesn't care if you're rich or poor. Says Miller, "I've got some of my best TV DX on one of those $49.00 black and white Korean cheapies. My kids broke off the telescopic antenna so I use a set of rabbit ears. Very un-chic but very effective."

Jeff Plotkin, writing in Popular Communications, is also a fan of rabbit ear antennas but mounts his on a camera tripod. "This allows me to rotate the antenna through 360 degrees, tilt it up and down, and make various adjustments to the antenna's angle."

Jeff's results also testify to the "you don't have to be equipment-rich to TV DX" theory, although he recommends late model Sony TVs "since they have a very good tuner with a hot front end."

Still, an outside antenna and a rotor can be helpful in pinpointing a signal (See preceding antenna review) and many DXers spend considerable time debating the relative worth of such equipment in the snagging of long-distance TV DX.

Location isn't necessarily a handicap either, as Plotkin's logbook testifies. "I live in the metropolitan New York area...approximately 20 miles from the World Trade Center, the originating point of New York City's local TV stations."

So you obviously don't have to be camped out in an open field in Kansas for this to happen to you -- although the more open channels you have, the better your chances.

TV DX is most likely to be found on the VHF channels although UHF also has the potential to be seen far from their intended target. Generally starting on the low channels -- 2 is always a good indicator -- it can reach to and sometimes beyond channel 6.

Look for unusual defects in the picture of your lowest local channel. These can appear as horizontal "rips" in the picture or more subtly as a sort of herringbone pattern. In any case, anything unusual is a tip that something is up and that you should begin exploring.

When you do see this, tune up to the nearest unused channel. And wait. Adjust the antenna. And wait. Patience and luck. Patience and luck. Fortunately, because of the fact that we're at the peak of the sunspot cycle, there'll be a lot less need for patience and a lot more opportunity for amazement.

When a picture appears on an open channel, chances are it's skip!
ABU DHABI UAE Radio announces its new English service is dedicated to enlightening the West about Islam and Arab cultures, and they seem to be doing it in a noninflammatory way, 2200-2400 UTC on 6170, 9595 (or 9597) and 11965. (Bill Dvorak, W1. Review of International Broadcasting)

ASCENSION Two new 250 kW transmitters and four new high-gain antennas are being added to the BBC relay site. Tests may start in May, with full operation by September. (Waveguide, via William Westenhaver, DX Listening Digest)

AUSTRALIA Radio Australia reviews pop music of the past, emphasizing Australian artists, on "Try to Remember," Wednesday 0130, Thursday 1930, Sunday 1030, Tuesday 1530 -- a different year in order each week, with 1955 on April 26, 1989. "Taim Bilong Masta" surveys Australia's role as administrator of Papua New Guinea for almost 70 years, Thursday 0730, Friday 1530, Sunday 0930, Tuesday 0230, Wednesday 2030. A two-parter on earthquakes and volcanos airs the weeks of April 27 and May 4. (via Bruce MacGibbon, RIB)

AUSTRIA Radio Austria International at 0000-0400 is on 9870 and 13730, and via Canada at 0500-0700 on 6015. (Herbert Aischele, Sweden Calling DXers) See also CANADA.

BRAZIL Radio Cancao Nova now uses three shortwave transmitters, heard at 2300 past 0030 on 4825, 6105, and new 9675. (Ernie Behr, Ontario, N4SWA Listener's Notebook)

Trans World Radio plans to build medium and shortwave stations in Goronia. (Cesar Higa, SCXDX) Radio e Televisao Sentinela da Amazonia, in Obidos, Para, has a construction permit for 1 kW on 3265 (Claudio Moraes, SW Info)

BULGARIA Radio Sofia is running two contests: One on the United Anti-Fascist Front in World War II and Bulgaria's international prestige, with a September 19 postmark deadline; the other on postal history, deadline May 31. Prizes in the first are a visit to Bulgaria or souvenirs; in the second, stamps. Write the station or listen for further details. (via Kevin Klein, World of Radio)

BURMA Radio Kawthuole, The Karen clandestine, plans to resume transmissions after a four-year break. Previous frequency was 9775. (Sarath Weerakoon, Union of Asian DXers)

CANADA Contrary to last month's info, RCI's new relay via Xian, China, is on 9535 and 11795, in Japanese at 1330-1400; also on 15435 and 11955 in English at 1300-1330, when the Yamata, Japan, relay is also used on 17810 and 15270. Yamata's remaining schedule: 1330-1400 Russian, and 1400-1430 Ukrainian on 6150; 1930-2000 Russian on 9650; 2200-2230 English on 15440, 11705; 2230-2300 French on 11705.

The new Vienna relay is on 11730 at 0300-0400, 15275 at 0400-0500, with English at 0300-0330 and 0400-0430 weekdays, 0300-0400 weekends, the remainder in French.

RCI, Sackville, is also back on 13 meters after a long absence, 21545 Monday-Saturday 1330-1600, daily 1600-1800, including English at 1445 and 1615. (World of Radio) "SWL Digest" via Austria UTC Saturday between 0300 and 0400, repeated Wednesday after 0400. (William Westenhaver, DXLD)

CHINA Here's why Heilongjiang PBS, 4840, has a reputation as being tough to QSL -- the station I and many others thought was this, is really Haixia Zhe Sheng, Voice of the Strait. (Jean Burnell, Newfoundland, CIDX Messenger) See also CANADA.

COLOMBIA Official holidays for the rest of 1989, which may have a bearing on shortwave programming and extended schedules: May 8 and 29; June 5; July 3 and 20; August 7 and 21; October 16; November 6 and 13; December 8 and 25. (Jaime Londono Valbuena, Tolima, Play-DX)

COSTA RICA Radio for Peace International has become the only Western Hemisphere station on 11 meters, and the only station in the world on that band after 1600 UTC -- 25945 kHz has been operating weekdays 1400-1700, parallel 7375, 2100-2400 and weekends 1800-2400 parallel 21563. Weeknights 0100-0400 also on 21560 and 13663.

CUBA Congratulations to Radio Rebelde, whose 710 kHz outlet set up to block the drug-money-supported "wacky" WAQI, Radio Mambi in Miami, radiates an eleventh harmonic strong enough to be heard in Japan at 1000 by Nobuyoshi Aoi of Radio Nuevo Mundo, on precisely 7809.81 kHz -- not to be confused with RRI Merauke, Indonesia, on a measly second harmonic, 7809.80!

DENMARK is likely to become a country without shortwave as the outmoded Homstedvester transmitter closes down and external services go out via Norway. Get it while you can.

The March schedule, perhaps partially valid until May 6, included 25850 during our mornings, 15165 afternoons, 11845 and 9595 evenings -- one at a time. (via Stig Hartvig Nielsen, WOR)

ECUADOR HCJB has interrupted its North American release in English for half an hour in Japanese, daily at 0430 on 15155, 11775, 9720. The super-campy "Unshackled" is heard UTC Saturdays at 0330. (via Kraig Krist, WOR) See also NETHERLANDS ANTILLES.

FRANCE Radio France Internationale added another half-hour in English, at 1400 to India on 17695. (Bob Zilmer, NM, DXSCDX) Could this be via China?

GUAM High Adventure never could get a final go-ahead from authorities in Singapore or Philippines, but they have from this U.S. territory, for a shortwave site to evangelize China. Construction can begin once another $100,000 is collected. (WOR)

KVOH in Los Angeles also intends to commission a second transmitter this year beamed toward Asia. (Ray Greet, Radio Australia Japanese DX Time) See also ISRAEL.

GUATEMALA Union Radio, 5980 kHz, program schedule through June, all in Spanish, shows: Monday-Friday 1155-1500, Monday-Thursday 2355-0205 Tuesday-Friday 2055-0205 Saturday, Saturday 1045-0200 Sunday, Sunday 1155-1545, including Guatemala DX Sunday at 1500-1515. (via Rowland Archer, WOR)

The TGMUA DX program is "Union DX," Sundays at 1535, produced by the Guatemala DX Club, which offers special numbered QSLs for correct reports to Radio Adventista Mundial, Apartado Postal 51-C, 01915 Guatemala. And TGMUA is not on the air after 1600. (Edgar A. Oliva M., Guatemala, DXLD) Frequency usually in the 5981-5982 area.

INDIA All India Radio wants to broadcast to the large Indian communities in California and Florida, but has been unable to find adequate relay exchange facilities. India lost out to China in a relay deal with France. (Times of India via Asian DX Review)

IRAN [non!] A station calling itself "Radio Tehran, Voice of the Islamic Revolution of Iran," has been heard within 1 kHz of Iran itself on 9022 at 0930-1015 reading extracts from Satanic Verses. (SCDX)
IRAQ Radio Baghdad in English at 0230-0417 is on 9515 and new 11880. (Bruce MacGibbon, DXS, and Ernie Behr, NASWA LN) Probably one hour earlier during DST.

IRELANDS Voice of the Republic of Ireland, heard testing Fridays at 2100 on 6135, claiming 2 kW and a second transmitter on 27830. (Anthony Galagher, Ireland, SCDX) And the only shortwave hobby pirate in Northern Ireland for a sesquicentennial. Rock Radio International, 6272.5, Sunday 1000-1500; no politics. (John Campbell, Radio Netherlands Media Network)

ISRAEL [?] King of Hope, 6280, resumed broadcasting after several weeks off. Some reports say it has moved across the border from southern Lebanon to Israel. (SCDX) The High Adventure flyer quoted under Guam also says that Voice of Hope stations have started a move "out of Lebanon's war zone," without specifying Israel, though George Otis was photographed on their new "promised land" with an Israeli colonel.

JORDAN English from Amman is on new 13655 at 0500-0900. (Bryan Clark, New Zealand, Radio Australia Communicator) Also until 1415, then switching to 9560. (Edwin Southwell, England, SCDX)

MEXICO La Poderosa NX, Mazatlan, Sinaloa, was heard at 1235 on 2580 kHz, the second harmonic of 1290. (Glenn Hauser, Austin, TX)

MONGOLIA Contrary to schedule last month, Ulaanbaatar not heard on 21770. (Kunihiro Nishida and Shigenori Aoki, Asian Broadcasting Institute via NASWA LN) But the 12015 kHz transmitter puts out many spurs at multiples of plus and minus 24.2 kHz, from 11942.2 to 12087.6. (Tetsuya Kondo, ibid.) 12015 blocked by Chinese station, but clear on 11990, in English at 1215. (Richard A D'Angelo, PA, DXDL)

MOROCCO English from Rabat heard at 1602-1632 on 17595, with news until 1606, then music, and at 1619 a VOA production in Special English, "Words and Their Stories," about expressions tied to the word "dead;" after 1620 interference from Belgium on same frequency. (Kraig Krist, VA, DXDL)

NETHERLANDS ANTILLES Radio Nederland is still jamming 31 meters with noisy spurs from 9590 and 9715, but now plus and minus 40 kHz. Spurs noted since 1987, but the station continues to ignore the problem. (Ernie Behr, Ontario, NASWA LN)

Those great tacky, organ, anguished radio plays from the Pacific Garden Mission in Chicago, "Unshackled," are not only on HCJB but also TWR, Saturdays at 1330 on 11815 and 15345. (WOR)

PERU Radio Frecuencia Lider, Bambamarca, can only broadcast between 2300 and 0500 UTC, when the local electricity supply is turned on -- folk music until 0100, then message service, 0200 musical requests, 0300 romantic music, 0400 musical variety. (Oscar Peralta Rojas, secretary, and Valentin Peralta, owner, RFL, via Rowland Archer, NC)

No frequency given but originally reported on 4418 by Pedro F. Arrunategui; and in Pampas DXing by Rafael Rojas Foinquinos, Lima, on 4415.

A new station in the town of Siria in the Apurimac Valley is Estacion Siria, heard on 4830 at 2130 and 2330 with dedications. (Rojas, ibid.)

Radio Tarma, OCPX4E on 4775, operates 1000-1400 and 2000-0500 except Sundays at 1200-0500. (Julian Anerson, Pampas DXing)

SOMALIA Hargeisa, 7120, is regularly heard on harmonics 14240 and 21360 from 1200 past 1700. (Sarath Weerakoon, Sri Lanka, Union of Asian DXers)

SPAIN Spanish National Radio has been using 15110 for English at 0000, 0200, and 0500, along with 9630. (Bruce MacGibbon, DXS)

SRI LANKA A new clandestine for the election was Voice of Tamil, 0130-0215 and 1030-1115 in Tamil only, within 5 kHz of 7000. (SCDX) On 6993, by the Eelam National Democratic Liberation Front. (Victor Goonetillede, Sri Lanka, RNMM)

SWITZERLAND Red Cross Broadcasting Service will be active the following weeks: April 30, May 28, June 25, July 30, August 27. English to North America goes out the following UTC Tuesdays and Fridays at 0310-0327 on 6135, 9725, 9885, and 12035. (via Kevin Klein, WOR)

TAHITI RFO on 11822 instead of 11825 at 0318 with island music. (Bruce MacGibbon, OR, DXS) Moved down to 11822.7 to avoid interference, but now wiped out by Cuba on 11820; 0430 island music, 0600 French news parallel 15170.8. (Ernie Behr, NASWA LN)

TONGA TBC is active on 5030 kHz, with news in English relayed from Radio Australia at 0700 but mostly in the local language except for some ads and educational programs in English; probably less than one kilowatt, about the same strength here as Solomons on 5020. (Douglas Douil, New Zealand, R Australia Communicator)

UKOBANI BBC has a new transmission direct to western North America on 9915 at 2200-0530, beamed 320 degrees. (Bill Dvorak, WI, DXDL) See also IRELAND.

USA KGEI has been broadcasting in the Gypsy language, Romany, for more than a year, schedule unknown; also to be added on other FEBC stations in Seychelles, Saipan, Philippines. (Christian Zetti, Austria, SCDX)

WCSN gives studio tours Monday-Friday at 2 p.m. at the Christian Science Broadcasting Center in Boston. Visitors are also welcome at the sites in Maine and Saipan if given some advance notice. (DX Ontario)

WCSN and the new site in South Carolina, WSHB, have only one frequency in common on the schedule until May 7: 21640 from WCSN at 1600-2200, and from WSHB at 2000-2200. WCSN also uses 15580, 15390, 15300, 9870, 9850; WSHB also on 17555, 15205, 13760, 11980, 11930, 9495, 9455. (George Jacobs & Associates, WOR)

Plans for World News and Information Radio continue, with a proposed schedule of two-hour blocks containing NPR’s “All Things Considered”: 2200 to Brazil, 0000 Caribbean and Venezuela, 0200 Mexico, 0600 New Zealand, 0800 Australia, 1000 Japan, 1200 Philippines and Korea, 1400 Hong Kong, 1800 Middle East, 2000 Europe. (WOR)

VENEZUELA Radio Tachira, 4830, has an international mailbag program, “Domingo Internacional,” UTC Sundays until 0300. (Don Moore, OH, RCI SWL Digest)

Your editor’s broadcasts help keep you up to date on shortwave and other media: World of Radio is scheduled on WRNO, New Orleans: Thurs 1530 UTC (sometimes) on 11965, 2300 on 13720; UTC Sat 0300 on 0185; Sat 2300 on 13720; Sun 2300 on 15450. And on Radio for Peace Int, Costa Rica: Tues and Thurs 1700 on 25945, 7375; Tues 2300, Fri 2100, Sat and Sun 1800 and 2100 on 25945, 21563; UTC Wed 0300 and Sat 0100 on 21560, 15963.

A separate weekly DX report concludes each “SWL Digest” on Radio Canada Int’l: Sat 0307, 2107, 2137; Sun 0007, 0137, 2307; Tues 1233, 1907; Wed 0407. See schedule pages and CANADA on previous pages.

Also sample your editor’s own publications, which emphasize shortwave broadcasting – DX Listening Digest and Review of International Broadcasting, $2 each in North America, $3 or 7 IRCs elsewhere. Subscriptions are $21 each in North America, or both for $40, from Glenn Hauser, Box 1684, End, OK 73702.

MONITORING TIMES May 1989 25
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.

0015 UTC on 15115
North Korea: Radio Pyongyang. Commentary in English on the political situation in Korea. Also monitored on 15160 kHz, but signal is barely audible. (Bob Hurley, Baltimore, MD) Monitored on 13650 kHz at 0200 UTC. (Mark Seiden, Coral Gables, FL)

0023 UTC on 4588
Argentina: Radio Rivadavia. Spanish. ID as "Rivadavia" at tune-in. Commercials and Spanish romantic ballads. Additional IDs at 0035 UTC, and possible lottery information at 0037. Near grayline condition at this time. Best reception in upper sideband. (Guy Atkins, Issaquah, WA)

0030 UTC on 5030

0035 UTC on 9630
Spain: Spanish Foreign Radio. Report on Spaniards learning English by audio tapes. Parallel frequency 11880 kHz heard. (Bob Fraser, Cohasset, MA)

0040 UTC on 4889
Ecuador: Radio Centinela del Sur. Spanish. Beautiful Andean ballads to station ID. Local commercials, station jingles, and program announcements for fair signal tonight. (Larry Van Horn, Gretna, LA)

0045 UTC on 4835
Guatemala: Radio Tezulutil. Spanish. Marimba music and religious programming with hymns. Also monitored from 1145-1200 UTC on 4835 kHz. (Nick Terrence, Huntington, NY)

0052 UTC on 9925
Belgium: BRT. Pop music and details on station contest. Address information and station ID at 0055 UTC. "This is the BRT, the voice of the Flemish community." Sign-off with brief organ music fanfare. Signal noted to be of low modulation level. (Guy Atkins, Issaquah, WA)

0101 UTC on 5055
Costa Rica: Faro del Caribe. Spanish. Latin vocals with "Faro del Caribe" ID monitored at same city. (Frank Mierzewski, Mt. Penn, PA)

0115 UTC on 4820

0120 UTC on 3310
Bolivia: Radio San Miguel. (Tentative) Spanish. Two Bolivian folk tunes with chat among two announcers. No ID heard at the 0130 break however, signal was fading rapidly and may have just missed it. Will keep after this one! (Frank Hillton, Charleston, SC)

0125 UTC on 9475
Egypt: Radio Cairo. Spanish programming with features and Egyptian music to 0159 UTC. English service intro with ID and International news. (Rod Pearson, St. Augustine, FL) Heard on 15210 kHz at 1900 UTC. (Loy W. Lee and Maywood DX Team, KY)

0130 UTC on 9875
Austria: Radio Austria Intl'. American pop jazz of 1930s era and station ID. Continued monitoring to 0200 UTC. (Nick Terrence, Huntington, NY, Bob Fraser, Cohasset, MA)

0147 UTC on 4825

0200 UTC on 9885
Israel: Kol- Israel News Magazine show, followed by "Calling All Listeners" malbag show at 0210 UTC. Signal faded on 9865 kHz, switching to parallel 9435 kHz Improved for better reception. (Bob Hurley, Baltimore, MD) (Bob Fraser, Cohasset, MA)

0201 UTC on 11940
Romania: Radio Bucharest. International and national news of Romania, with cissing main points. Pop music interludes and station ID. Editorial on socialism. Co-channel interference with Radio Canada Intl'. Parallel frequency 11830 kHz fair. (John Bougerois, Thibodaux, LA) (Harold Fodge, Midland, MI)

0210 UTC on 4970
Venezuela: Radio Rumbos. Spanish. Beautiful piano instrumental, and easy-listening Spanish soles, to canned "Rumbos" ID. (Frank Hillton, Charleston, SC) (Loy W. Lee and Maywood DX Team, KY)

0211 UTC on 17730
Brazil: Swiss Radio Intl' relay. Report on the Paris conference on chemical weapons, followed by sports report. (James Kline, Santa Monica, CA)

0214 UTC on 5010
Madagascar: Radio Madagaskara. Malagasy. Native African and highlife music at tune-in. Announcements sounding like news briefs followed by clear "Radio Madagaskara" ID at 0230 UTC. More chat from announcer. Fair signal with interference; however, able to monitor continued music until 0250 UTC. (Frank Hillton, Charleston, SC)

0215 UTC on 4830

0223 UTC on 9600
Portugal: Radio Portugal. News on the first Master's Degree awarded in Portugal. (George Neff, Tampa, FL) Monitored on 15250 kHz at 1930 UTC. (Loy W. Lee and Maywood DX Team, KY)

0240 UTC on 9580
South Africa: Radio RSA. Interview with South African winery operator. (Bob Hurley, Baltimore, MD)

0300 UTC on 5049
Colombia: La Vo de Yopal. Spanish. Latin vocals and station ID at 0307 UTC. Strong signal interference! (Frank Mierzewski, Mt. Penn, PA)

0300 UTC on 11695

0310 UTC on 6210
Japan: Radio Japan. National news of Japan and "Commentary" program on economic outlook. Interference from HCBJ on 6205 kHz. (Harold Fodge, Midland, MI)

0320 UTC on 5040
Venezuela: Radio Maturin. Spanish. Local time check and two commercials, for a bank and a market. Latin pop and instrumental, with "Maturin" ID during breaks. (Frank Hillton, Charleston, SC)

0325 UTC on 11715
China: Radio Beijing. Commentary on the Chinese tobacco industry. Noted that China is the world's largest producer of tobacco, with 200 million smokers. Government has enacted laws to restrict smoking in public places. Program ended at 0335 UTC. (Bob Hurley, Baltimore, MD) Monitored at 0332 UTC on 9770 kHz. (George Neff, Tampa, FL)

0327 UTC on 13675

0332 UTC on 3215
South Africa: Radio Oranje. Afrikaans. Local commercials for beer and cigarettes. Station ID, time check, and 60s era pop music. (Frank Hillton, Charleston, SC)

0335 UTC on 11670
France: Radio France Intl'. "Counterpoint" program, with discussion on Martin Luther King and the situation of today's black Americans. (Bob Hurley, Baltimore, MD) Audible on 25820 kHz at 1330-1345 UTC. (Frank Mierzewski, Mt. Penn, PA)

0335 UTC on 17775
United Arab Emirates. News and local weather report. "That's the news from UAE Radio in Dubai," at 0341 UTC. Request for reception reports into discussion on Arabic art. Poor to fair audio. (Guy Atkins, Issaquah, WA) "Through Western Eyes" program monitored in English on 11865 kHz at 1600 UTC. (Mary Knowton, Beaver Falls, PA)

0345 UTC on 4820

0351 UTC on 9515
Baghdad: Radio Baghdad. Feature discussion on international music festival and Iraqi music tunes. Station ID. Easy-listening music to 0410 UTC editorial. Nice signal level! (Guy Atkins, Issaquah, WA)

0400 UTC on 4910
Zambia: Zambia Broadcasting Service (ZBS). Brief commentary and native chanting. Lady with English news, followed by continued African music and occasional gospel vocals. (Harold Fodge, Midland, MI)
0425 UTC on 9637
Mozambique: (Tentative) Emissao de Sofala-Beira. Vernaculars. Native African music amid absolutely dreadful conditions! Male announcer with brief comments at 0430 UTC, although no clear ID discernable. Highlife music fading by 0435 UTC. (Frank Hilton, Charleston, SC)

0530 UTC on 9022
Iran: Voice of the Islamic Republic of Iran. (V.O.I.R.I.) Spanish. Interval signals, three gongs and ID. National anthem and opening announcement with frequency information and target areas, followed by Holy Koran recitations. (Garle Halstead, Saint Albans, WV)

0545 UTC on 7225
Nigeria: Voice of Nigeria. Station commentary and discussion on the unemployment problems and housing situation for the nation. Distinctive audio hum present, as always! (John Bougeois, Thibodaux, LA)

0613 UTC on 4915
Ghana: Ghana Broadcasting Corp. (GBC). Sports news concerning the Ghana Boxing Authority, asking for those holding National Titles to defend their crowns within two months. ID at 0615 UTC, and home news in Akan, one of many Ghanaian languages. (Garle Halstead, Saint Albans, WV) Monitored on 3366 kHz at 2140 UTC. (Loy W. Lee and Maywoods DX Team, KY)

0635 UTC on 4835
Mail: RTV Maillenne. French. Childrens' chorus of native African songs. Announcements with local time check and ID included. DJ announcer format with music introductions for African highlife music program. Parallel frequency 4783 kHz not audible. (Frank Hilton, Charleston, SC)

0650 UTC on 11550
Tunisia: Radio Tunisienne. Arabic. News at the hour and discussion, sprinkled with Middle Eastern music. At least two hours of this format noted each night. (Chris Muse, Eugene, OR)

0700 UTC on 4890
Senegal: CRT du Senegal. French. News broadcast suffering from occasional poor audio and interference. World and national news, time check for Dakar and musical interludes. (John Bougeois, Thibodaux, LA)

0747 UTC on 6020
United States: Voice of America. Service for Africa with commentary on Sudan. Comments indicated that rebels had established a town called Nasir near the border with Ethiopia. Parallel frequencies 5845 and 11840 kHz audible. (Garle Halstead, Saint Albans, WV) Thanks for the logs, Garle-ed.

0918 UTC on 11780
New Zealand: Radio New Zealand. Station ID and folk music. Radio drama at 0930, parallel frequency 9850 kHz heard. (Jane Kline, Santa Monica, CA)

1020 UTC on 4910
Peru: Radio Tawantinsuyo. Spanish. Beautiful Peruvian yipping vocals. ID at 1030 UTC which sounded like "transmite Radio Tawantinsuyo primera del pueblo." Local area commercials and continued Peruvian tunes. (Rod Pearson, St. Augustine, FL)

1022 UTC on 2310
Australia: VBLA-Alice Springs. "Scott Metat" and other music selections described as "rock n'roll" from Sydney Top 10 List. Promotional for upcoming live TV broadcast. Good signal for this frequency and distance! (Jim Boehm, Issaquah, WA)

1035 UTC on 4980
Venezuela: Ecos del Torbes. Spanish. Latin tunes, announcements, and ID with station jingle. (George Neff, Tampa, FL)

1110 UTC on 5975
Colombia: Radio Macarena. Spanish. Latin music and commentary to ID at 1115 UTC. Music intros with comments. Fair signal this morning suffering from interference. (Mark Seiden, Coral Gables, FL)

1130 UTC on 3360

1200 UTC on 11945
Finland: Radio Finland. "Northern Report" including news on neighbor Sweden's new budget. Weather report, press reviews and sports news. Parallel 15400 kHz announced, but not heard. (James Kline, Santa Monica, CA) (Nick Terrence, Huntington, NY)

1400 UTC on 21700
Norway: Radio Norway int'l. Station ID, news and local weather; 1415-1417 UTC easy-listening music. Commentary on the "Children's Hour" radio program for kids. English service closing at 1430 UTC, suffering from considerable signal interference. (Bob Hurley, Baltimore, MD)

1648 UTC on 9560
Jordan: Radio Jordan. Pop music and male announcer to time tips at 1700 UTC. Local Amman and GMT time check, with station ID. Trumpet fanfare into news with an anti-Israeli slant. Monitored to 1805 UTC. (Guy Atkins, Issaquah, WA) English show heard on 9760 kHz, at 1950 UTC.

Radio Norway International sent this QSL to reader John Spencer Carson of Oklahoma

(Barry Hurley, Baltimore, MD)

1737 UTC on 1734

1809 UTC on 11665
Kuwait: Radio Kuwait. Commentary on the dangers of powdered milk used by mothers in Third World countries. Brief jazz interludes, and news of Prince Charles' financial assistance for parapsychology research. Station ID with time tips. (Guy Atkins, Issaquah, WA)

1910 UTC on 15215
Algeria: Radio Algeria. International news, with poor signal. (Barry Hurley, Baltimore, MD) Monitored on 1744 kHz at 1830 UTC in French. (Loy W. Lee and Maywoods DX Team, KY)

2010 UTC on 12085
Syria: Radio Damascus. News coverage on the Middle East to 2030 UTC. (Nick Terrence, Huntington, NY)

2050 UTC on 11620
India: All India Radio (AIR). "Press Review" feature on Punjab to Instrumental music. Station ID and news of sponsored trip to Antartica. (Harold Frodge, Midland, MI) (Loy W. Lee and Maywoods DX Team, KY)

2100 UTC on 6240
Pirate: Voice of Tomorrow. Station ID as "When you hear the cry of the wolf, you're listening to the Voice of Tomorrow." Classical music to racial speech. (Harold Frodge, Midland, MI)

2100 UTC on 11910

2130 UTC on 5003

2130 UTC on 7325
United Kingdom: BBC. "The Pleasure's Yours" musical request program. (Bob Fraser, Cohasset, MA)

2235 UTC on 7281
Iraq: Radio Baghdad. Arabic. Middle-eastern music with breaks for program announcements. Station ID at 2300 UTC as "fragyliya t Baghdad." News headlines, and Holy Koran recitations at 2305 UTC. Station ID and sign-off at 2310 UTC. Did not hear their usual closing national anthem this time. (Stephen Price, Conemaugh, PA)

2300 UTC on 9800
USSR (Lithuania): Radio Vilnius. Five minutes of English news; discussion on national census taking by U.N. rules. Report on the 1940 Soviet annexation of Lithuania, and "DX Club" mailbag show. Minimal signal interference from Radio Canada int'l on 9755 kHz. Also monitored on 13645, 15180, and 15455 kHz, but all signals weak. (Bob Hurley, Baltimore, MD) Audible on 7400 kHz at 2305 UTC. (George Neff, Tampa, FL)

2355 UTC on 4845
Mauritania: RTV Mauritanie. Arabic. Islamic recitations to Arabic announcements at 0000 UTC. ID sounding like "Islamiaa Al-Maariatii." Sign-off with brass-instrumental national anthem. (Guy Atkins, Issaquah, WA) (Loy W. Lee and Maywoods DX Team, KY)
IFE: In-Flight Emergency!

One of our readers in New Hampshire recently passed along a very exciting intercept of a U.S. Air Force IFE (In Flight Emergency). While the frequencies he monitored are not in the shortwave range, there's little doubt that USAF HF frequencies were buzzing with activity during this serious emergency. Our New Hampshire reader writes:

"Since I live within 25 air miles of Pease Air Force Base, I monitor Pease's air and ground nets frequently on my scanner. Recently I heard the Pease Fire and Crash net mention that an in-flight emergency aircraft was due in and their estimated time of arrival (ETA) was one hour. The aircraft was an E-3A. It was apparently out of Tinker Air Force Base, Oklahoma, and headed overseas when all its internal hydraulics were lost. The aircraft was inbound to Pease from the Atlantic Ocean. On board the aircraft was the 28th Air Division Commander, a general, and two colonels. The aircraft's callsign was SPUN 51 for that evening. The aircraft arrived about 0620 UTC and after making one approach, it went around again. The aircraft landed about 0640 UTC and the landing gear had to be lowered manually. The aircraft finally stopped just 2,000 feet short of the end of the runway.

"After it stopped, hydraulic fluid was leaking heavily from the aircraft onto the hot brakes and a fire broke out. The crew aboard the aircraft was evacuated using the emergency slides on the aircraft at 0643 UTC. The fire was extinguished within one to three minutes and everyone was evacuated safely.

"The Pease units did an excellent job of keeping a very dangerous situation under control. Too bad Pease is on the Secretary of Defense's list of bases to be closed. I would imagine, though, that the crew of SPUN 51 was glad that Pease was still an active base."

Our listener in New Hampshire reports that he was using two scanners to keep up with the radio traffic. The following frequencies were monitored:

- Fire and Crash: 173.5875
- Command Post: 149.575
- Pease Tower and SPUN 51: 133.050

As I mentioned before, HF frequencies were surely active during this in-flight emergency. The U.S. Air Force Global Command Control System (GCCS) Stations are a great place to hang out during in-flight emergencies. Some of the best and most interesting aircraft traffic is passed on frequencies used by GCCS stations.

The U.S. Air Force GCCS provides air-to-ground HF radio communications between ground agencies and U.S. military aircraft for passing command and control information. Allied aircraft and other aircraft are also provided support.

Prior to October 1, 1983, the system was called the U.S. Air Force Aeronautical Station System. The biggest function of that old system was to provide air traffic control of military aircraft. On October 1, 1983, that function was turned over to civilian air traffic control authorities.

Recently, one of the stations that has been heard for a number of years, Scott AFB, Illinois, left the airwaves. Now there are only 14 GCCS stations worldwide on the air.

Since the air traffic control function is no longer done by these Air Force stations, GCCS channels have really quieted down. But I do not want to downplay the importance of these frequencies. U.S. Air Force outfits such as the Hurricane Hunters out of Keesler AFB, Mississippi, use GCCS frequencies to relay their vital weather data back to the National Hurricane Center in Miami.

All sorts of military and U.S. government aircraft utilize GCCS channels for phone patches, weather information, and command messages. Listeners familiar with SAC Foxtrot messages will also hear these cryptic messages being passed on this worldwide network.

Table 1 is a listing of all 14 U.S. Air Force GCCS station and their frequencies.
Rainbow Radio Identified

In several recent issues of Monitoring Times' Utility World column, I have listed quite a few loggings for a "Rainbow Radio." Up until now, I did not have any listings or information as to what "Rainbow Radio" was. Longtime Ute World logging reporter Bill Battles in New Hampshire has come to the rescue. Bill recently received a verification (OSL) from Rainbow Radio and has shared the reply that he received from the station with Utility World readers.

Rainbow Radio is the callsign used by Sea Link, Ltd, St. John's, Newfoundland, Canada. It is a private radio company that provides ship and aircraft communications relays. The actual location is Tors Cove, a small, scenic community on the most easterly shoreline in North America. Nearby is the site of Marconi's first wireless radio overseas message. (This is quoting from their reply brochure.)

The main control center is nestled on 14 acres surrounded by trees and ocean. The building is 3600 square feet and it houses the station's operators. A four acre remote site at Bear Cove in Witless Bay (10 kilometers away) handles the surface wave system.

Transmitting equipment for the station was built by Rockwell Collins. The station's log periodic curtain and marine whip antennas were built by Valcom.

The marine side of Rainbow radio goes by the callsign of Tors Cove Radio. The surface wave system will support Group III FAX and 2400 baud data. The aircraft side of the station is fully integrated with international airline computer networks. It is also connected to the SITA network to allow message relays to any airport with hard copy at both ends.

Rainbow Radio can also send and receive up-to-date weather information to all major airports. The station has a phone patch as well as ICAO SELCAL capability.

The station uses ICOM R-71A receivers as backup monitors. They also use an ICOM M-700 marine transceiver and a Harris RF-3200 (1,000 watt PEP) transmitter as a backup.

Mr. Glenn R. Tobin is the Chief Operator for Rainbow Radio and for verification chasers the following mailing address should be sufficient:

Sea Link, Ltd,  
P.O. Box 5754  
St. John's, NFLD  
Canada A1C 5X3

Operating frequencies for Tors Cove and Rainbow Radio are as follows:

<table>
<thead>
<tr>
<th>TORS COVE RADIO</th>
<th>RAINBOW RADIO</th>
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<tr>
<td>Marine Calling Freq</td>
<td>Aeronautical Calling Freq</td>
</tr>
<tr>
<td>2487.0 kHz</td>
<td>3485.0 kHz</td>
</tr>
<tr>
<td>7460.0 kHz</td>
<td>5604.0 kHz</td>
</tr>
<tr>
<td>8819.0 kHz</td>
<td>12285.0 kHz</td>
</tr>
<tr>
<td>VHF Air-to-ground Freq</td>
<td>130.9 MHz</td>
</tr>
</tbody>
</table>

Bill and I have personally monitored Rainbow Radio on 13420.0 kHz. This frequency seems to be used as a phone patch frequency by Rainbow. This frequency is not listed in the information sent to Bill by the staff of Sea Link, LTD.

Another HF station that Bill has heard from Canada is Wardair Toronto Ops. The frequency most commonly heard is 13286 kHz. Bill would like for anyone who has heard them on any other frequency or has any information on their HF radio operations to write to Utility World in care of the address in the masthead. I will forward the information to Bill and all of our Ute World readers as the information becomes available on Wardair.

What's New With SAC???

SAC military reporters have noticed what might be the beginnings of a wholesale change in the channel designators for the Strategic Air Command channels.

Bill Battles and others have reported SAC channels being referred to as "Whiskey" channels. Recently, Bill monitored 13247 kHz and heard it referred to as W-109. On 13247, Bill heard Freehand working Ore Mine on "Whiskey 109" in USB around 0024 UTC. Other designators heard mentioned include W-102, 104, and 105.

Anyone hearing any of these new "Whiskey" designators with frequencies are asked to record the frequency, designator, time, unit, and callsigns using these designators and send them to Utility World. I will compile all the information and when the picture becomes clear, will present it to all in this column.

"BRAVO 09??"

Utility station listening is always full of mysteries. Just about the time a mystery such as Rainbow Radio is solved, several more mysteries will crop up to take its place.

One such mystery is that of USCG scrambled HF air channel "Bravo 09." This mystery channel remains a mystery and several of our readers could really use some help finding it.

Also, the DEA has recently popped up in some unusual places. Several nights ago they were heard using 11494 kHz (SAC channel Lima). I agree with the monitor who reported the listing that, "This is strange." They were on for quite some time using their typical "Slingshot" and other tactical callsigns. The stations involved were passing radar position reports of targets to an intercepting aircraft.

The DEA/Custums folks have also been heard on 11073.5 kHz. Seems as though these folks are popping up like late spring flowers all over the HF spectrum. Listeners might also want to keep an eye on 11288 and 13312 kHz for these agencies' activities. This just goes to show that the government can use just about any frequency it wants for any agency.

From the Mailbag

Utility World reader Ken Beresford, in England, would like to know if a list of aircraft SELCAL codes exists and where such a list could be obtained. Well, Ken, I haven't heard of such a list but if any of our readers can help, please drop me a note so I can pass it on to Ken.

John Henault answers a query from several issues ago. Terry Colgan was wondering whether the radio ID "Bandsaw Gulf" or "Golf" represented? According to John, that is the callsign for an E-3 AWACS aircraft. John noted that there is some ambiguity over the other callsigns mentioned by Terry in that column.

John believes that they were tactical in nature and probably changed like most do on a daily basis around 0001 UTC. I think that more than likely they are airborne command post tactical callsigns that you hear on SAC channels quite frequently. These aircraft pop up all over the band on different agencies' frequencies. Thanks for the background, John.

MONITORING TIMES  May 1989  29
### U.S. Navy NAVCAMSLANT Schedule

Jim Boehm in San Antonio, Texas, has sent along the transmission schedule for U.S. Navy communication station NAM in Driver, Virginia. Jim says that NAM is a good place to camp out during hurricane emergencies.

"Monitoring this station's weather segments provides me with the best hurricane information I could obtain," Jim said. To boot, Jim says that the drill segments are super for those of you needing code practice for your amateur radio license.

The 0200 segment starts with code sent at five words per minute and ending up at 25 words per minute. By copying these practice messages, utility buffs can also get practice in copying unclassified Navy messages that will give the monitor practice in copying and recognizing Navy message formats.

Here is the schedule and frequencies for NAM:

**Frequencies:** 8090.0, 12135.0, 16180.0, 20225.0 kHz.

**Mode:** Morse Code (CW) simul-keyed at all frequencies.

### Utility Loggings

**Abbreviations used in this column**

<table>
<thead>
<tr>
<th>AM</th>
<th>ARQ</th>
<th>CW</th>
<th>FAX</th>
<th>FPEC</th>
<th>ID</th>
<th>ISB</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMplitude modulation</td>
<td>ARQnator</td>
<td>Morse code</td>
<td>Facsimile</td>
<td>Forward error correction</td>
<td>Identification</td>
<td>Independent sideband</td>
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</table>

<table>
<thead>
<tr>
<th>UTC</th>
<th>Broadcast</th>
<th>UTC</th>
<th>Broadcast</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000</td>
<td>Weather</td>
<td>1200</td>
<td>Weather</td>
</tr>
<tr>
<td>0100</td>
<td>NUKO/LCMP-2</td>
<td>1300</td>
<td>NUKO/LCMP-1</td>
</tr>
<tr>
<td>0200</td>
<td>Drill</td>
<td>1400</td>
<td>NUKO/LCMP-2</td>
</tr>
<tr>
<td>0300</td>
<td>Drill</td>
<td>1500</td>
<td>NAVAREA-IV</td>
</tr>
<tr>
<td>0400</td>
<td>Drill</td>
<td>1600</td>
<td>Hydrofalt</td>
</tr>
<tr>
<td>0500</td>
<td>Drill</td>
<td>1700</td>
<td>Weather</td>
</tr>
<tr>
<td>0600</td>
<td>Drill</td>
<td>1800</td>
<td>NUKO/LCMP-1</td>
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<td>Drill</td>
<td>1900</td>
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<td>Hydrofalt</td>
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<td>Weather</td>
<td>2200</td>
<td>Weather</td>
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<tr>
<td>0100</td>
<td>Weather</td>
<td>2300</td>
<td>Weather</td>
</tr>
</tbody>
</table>

Well, that is about it for this month. Now it's time for your loggings from the Utility World.

---

### Other Loggings

- **Vienna to Miami.** (Garie Halstead, Saint Albans, WV) Welcome back, Garie. Thanks for the great logs. -ed.
- **5657.0** UUXC heard in CW at 0726 calling CQ (a general call for any station-ed.) then sent an aviation weather message (repeated twice) from 877. The 877 triangle is believed to be a destination for a particular airport. Message mentioned SNEG (Russian for snow) and a temperature of minus 35. At 0731 UUXC was heard with weather from 707 in CW with abbreviated weather terms VFD BOLEE 10 (visibility more than 10 km). The conditions sound a bit Siberian (brrrrr-a bit-ed!!). The polar flogger heard on the signal probably confirms this probable location.
- **5579.0** 70C-Khormaksar Aeradio, Aden, South Yemen, heard with RYS at 0341. RTTY 425/50R. (Ricks, PA)
- **6269.6** UVEH-Pavel Vavilov, Soviet ice strengthened bulk carrier, with traffic for Murmansk Radio via UAT Moscow Radio at 0315. In the Sargasso Sea, Mid-Atlantic enroute to Riga. RTTY 170/50. (Ricks, PA)
- **6268.0** Heard at 0416 a female English five-digit number station. (Frodge, MI)
- **6784.0** Female English 3/2 digit number station heard at 2126. Very poor reception. (Frodge, MI)
- **6825.0** Female Spanish five-digit number station heard at 0306. (Frodge, MI)
- **6955.0** Female English 3/2 digit number station heard at 0320 with a prefix of 110. (Frodge, MI)
- **6961.0** USCG group Key West heard in the clear/DVP traffic also heard on this frequency in USB at 0506. (This may be one of the Bravo frequencies for CG law enforcement ops). (Battles, NH)
- **6965.0** Male English 3/2 digit number station heard at 0417. (Frodge, MI)
- **7353.0** USS John F. Kennedy (CV-67) working Norfolk Seaset in USB at 1502. USS Saipan working Norfolk Seaset at 1550 in USB. (Battles, NH) Interesting. -ed.
- **8101.0** Stringer working Valhalla with 369 message of eight groups in USB at 2334. (Battles, NH) SAC channel Alpha Papa. -ed.
- **8153.0** Transmitting in USB-FOB13 repeating voice announcements telling AS23 to shift to guard frequency 4929 for "real world" contact point as a link up for the exercise control group at 0305. (Bob Grove, Brasstown, NC) Well, well, the boss checks in with an interesting intercept. I really don't know who these folks are, any help from our readers? -ed.
- **8348.0** UMFW-Soviet Hydromet weather research ship, Nis Professor Zubov, heard with coded weather for RNO-Moscow Arctic/Antarctic Meteo Radio at 0143. RTTY 170/50. (Ricks, PA)
- **8378.0** YTSK-A vessel of Yugoslavian registry, the "Hercegovina," heard using USB at 0541 with three messages for "YUR." All messages in Serbo-Croatian (studying a new language, Garie? -ed.). Last message gives a female name indicating she is okay and going to Lake Charles. (Halstead, WV)
- **8378.5** UYDO-Soviet M/V Karaganda heard sending CW at 0527 and working VCS with an OBS message for Halifax Meteo. The vessel was located southwest of the Azores. (Halstead, WV)
8390.5 UEWA-Soviet M/V Nikolay Tupilin heard working HPP in CW at 0615 with a message for Cristobal. Message requested ten liters of Xylene for an apparent engine problem. (Halstead, WV)

8404.0 UFGJ-Soviet vessel Narimanov heard in CW at 0623 with a message for Baku: Message advised PRIBLY WKOCH BOSFOR (approaching the entrance to the Bosporus straights). I believe the vessel was working a shore station at Askarakan on the Caspian Sea. (Halstead, WV)

8417.0 UZZV-Soviet Georgi Dobrovolski, Soviet spaceflight tracking ship with "blind" traffic for all "IKI vessels," in CW at 0313. IKI is the Russian acronym for Institute for Space Research. (Ricks, PA)

8482.0 Aerolot 435, aircraft registration number 86474 heard in CW at 0647 working COI in Havana. Gave an ETA (ORE) as 0704 for Luisana, Angola. (Halstead, WV)

8536.0 Skyways N707 working Berne Radio, Switzerland, with a food order in USB at 0708. (Battles, NH) This is a Swiss company channel. -ed.

8589.0 MAC 70022 working McCiellan GCSF AFB, California, for a radio check at 1003. MCCchord AFB weather broadcasted at 1606, then a Skyking broadcast from Elemendorf AFB, AK at 1613 with the operator stating a yarn, audibly fumbling with the microphone, stilling another yarn, then even another. And, oops, a fourth and most blatant yarn. Where's Juan Vaidez to bring on the coffee IV, ay? (Chris Hulse, Eugene, OR)

9023.0 Bandsaw Juliett (AWACS aircraft) working Oakgrove (NORAD SE) and DragNet Uniform at 2112 in USB during tactical maneuvers near Florida Keys. NORAD air refueling operation. Also see 11186. (Larry Riffle, Key West, FL) Welcome to the column, Larry. Glad you could join the crowd. -ed.

Big Daddy Oscar 90 calling Bigfoot at 1720 in USB. Huh?! (Hulse, OR) Ah-huh. -ed.

10196.0 Zero, One and Three in communications and advised to go to correct working frequency of 10195.0 in USB at 1844. (Sound like a Tactical Canadian net.) (Battles, NH) Might also be the bunch from FEMIA, BLM. This is right around channel 27. -ed.

10478.0 XY, XR, ZU, and UK heard conducting radio checks in USB at 2048. Also heard in USB at 2108 several tac calls cycled by Gulf Bravo followed by an EAM message type traffic. (Battles-NH)

11045.0 Unidentified tactical net heard with air operations traffic at 2042 in USB. (Battles, NH)

11060.0 HG1 working G7P in USB at 1947. (Female operator advised a male operator that she had a surprise for him, but they would have to go to RTTY as it couldn't be put out over voice. She also asked him if he missed her - answer YES!) Could this be the Love Connection? (Battles, NH) Probably not, Bill. Sounds more like a long-distance Navy Newfied Gaye. -ed.

11141.0 Unidentified units calling EASTCOM in USB. This same group was heard later in the evening on 6530 LSB with RTTY sets, etc. (USN?) at 2131. (Battles, NH) No, I think this one is USAF. The 11 MHz is Norad and the 6 MHz channel is a Mystic Star channel. -ed.

11180.0 Spartan (USN Lexington) working HOTPAD and BLUEGHOST (NAS Key West) from 1200 to 2400 in USB during tactical maneuvers near the Florida Keys. Also see 9023. (Riffle, FL)

11248.0 TAC COM 40 working MacDouglas with a very strange phone patch from Airborne Battle Staff in reference to WARGAMES. They made some comment about Aliens in USB at 2108. (Battles, NH) Wonder who we were fighting this time, maybe Khalid is really from outer space!!! -ed.

11300.0 Airliner Trans-Asian 901 heard in USB at 0606 working Khartoum with a position report over Mike Lima (Malaya). Gave ETA for Khartoum as 0655. Middle East 375 heard in USB at 0442 working Jeddah requesting actual weather and giving a Jeddah ETA as 0528. Heard later at 0506 working Khartoum reporting over Papa Sierra Delta (Port Sudan). Kenyan 1136 heard in USB at 0541 working Cairo with an estimate for Sierra Mike Lima (Abu Simbel) advising it had departed Mombasa, Kenya. (Halstead, WV)

11306.0 Catel ZE working an unidentified aero operator with a phone patch to Gatwick at 0141 using USB. The pilot said Gatwick was "very broken" as he was not sure about a Cuban overtight. His current location was Monteego Bay, Jamaica. The pilot remarked that nothing was working down there (i.e. phones). I heard Gatwick but they were not audible due to the same break up the pilot was hearing and due to the operator's accent. (Chris Hulse, Hoomee, OR)

11312.0 Crossbow 2 called by Green Truck in USB at 1734. (Battles, NH)

11494.0 Omaha 69 working Hammer with a radar track of the "target" aircraft in USB at 0100. (Noted Hammer's 2-tone roger beep same as that used by Slingshot. I believe this was Custom's traffic on SAC Lima channel -- new twist?) (Battles, NH) Well, Bill, sure looks like Customs on SAC Lima, are they getting weird or what? -ed.

12133.0 Speedbird 217 over Gander, Newfoundland, Canada, with a phone patch to GXX51, Porthead Radio, England in USB at 2119. (Ricks, PA)

12135.0 NAM-U.S. Navy Communications Station, Driver, Virginia, with a NAVAREA IV warning in CW at 2100. (Ricks, PA)

12506.5 UFN0, AMSB Kastitis, Soviet Purga class submarine with Barents Sea/Alaska coordinates. (Larry Riffle, AK) This is a roll call for Cristobal. Message requested ten liters of diesel fuel. Message advised to expect 2108. (Battles, NH) I am curious, Sam, if you still have notes on this one, which Cosmos satellite were they referring to? -ed.

12525.0 UIVZ-NI5 Kosmonaut Vladislav Volkov, Soviet spaceflight tracking ship with zone forecast at 0331. Zone forecasts are the planned tracking ship positions for the next 50 orbits of the Soviet MIR orbiting space station. RTTY 170/50. (Ricks, PA)

12525.0 UIVZ-NI5 Kosmonaut Vladislav Volkov, Soviet spaceflight tracking ship heard sending look up angles for a Cosmos series satellite at 0309. RTTY 170/50. (Ricks, PA) I am curious, Sam, if you still have notes on this one, which Cosmos satellite were they referring to? -ed.

12900.0 9 VN J-M/V Marilyn O. of Singapore registry heard in CW at 1507 working MNM with an AMVER message. Vessel's port of departure was Abaco Light (Bahamas) and port of destination is Key West. Heard many Rhumb line references. (Halstead, WV) Rhumb lines are points on a mariner's compass. -ed.

13112.2 NMO-USCG communications station, Honolulu, Hawaii, heard at 1804 in USB with a weather broadcast; good signal over some other radiotelephone comms causing interference. (Hulse, OR)

13217.0 SAM 26000 working Andrews AFB, Maryland, at 1433 In USB. SAM 26000 was enroute from Maine to Washington, DC along with Air Force One. (Ricks, FL) The old SAM backup aircraft traffic. -ed.

13247.0 Freerhand Ore Mine on "Whiskey 106" with EAM traffic in USB at 0004. (Other Whiskey IDs referred to lately on SAC channels are W-102, 104, and 105. Anybody else heard or figured out these channel IDs? Not here, Bill, any help readers? SAC must be an MT subscriber!! -ed.

Fort McCoy, Wisconsin, calling Andrews from mobile units in USB at 2010. (Andrews was on USB working SAM 27000 then switched to a new frequency and FL, McCoy continued to call for approximately one hour with no results.) (Battles, NH) Some weird things are going on on this frequency, might be interesting to watch for a while. -ed.

14356.0 GFL24-Bracknell Metro, England, with coded ship reports. These are surface weather reports at 2013. RTTY 425/500. (Ricks, PA)

14384.5 VX99-Canadian Forces CFARS station Golan Heights, Syria, with traffic for V29 and CW608 Canadian Forces stations in USB at 2021. (Ricks, PA)

15680.0 Navy 460 reporting position and operations to (Andy) Andrews AFB, Maryland, in USB at 2045. (Ricks, PA)

16700.0 UKKI-NIS Geolog Forsmans, Soviet Research vessel with traffic for Providenya Radio at 0021. Position west of Clipperton Island, a French possession in the North Pacific off Mexico. RTTY 170/50. (Ricks, PA)

16705.0 UNJY-Konstantin Dushenov, a 4500 ton Soviet stern trawling factory ship heard with coded weather for the Murmansk weather station via Murmansk Fisheries Radio at 0133, MT at MA-0059. Was entering the Panama Canal. RTTY 170/50. (Ricks, PA)

18686.0 Atlas working Panther 17A, (garbled) 510 and 480 in 1709 In USB. Heard only Atlas working during the last hour period, all comms heavily coded. Would be interesting to learn the lingos. (Hulse, OR) This is a DEA channel and that's probably why it's coded to many folks listening, including the wrong crowd. -ed.

20685.0 US Military Assistance Group-Echo 21 working Fox 4 with diplomatic phone patch traffic in USB at 2035. (Battles, NH)

22707.6 WLO-Mobile Radio, Asab, Ethiopia, working the Atlantic Bay/Sovereign of the Seas/Seas of America with phone patch traffic at 0936 in USB. Duplex channel parallel with 22111.6. (Hulse, OR)

23403.0 Atlas working Flint 620 -- Atlas advised to use this channel as primary and Hotel as secondary. In USB at 1620. (Battles, NY) This one is Romeo and Hotel is 18666 for DEA. -ed.
Scanning Secrets

As a carpenter, my father raised five sons by working with his hands. Of the five, I was the instigator. I lived to cause trouble. There was nothing more rewarding than watching my brothers being scolded as I meekly watched from the sidelines.

The dinner table was my favorite area to raise havoc. I could deliver a Shin Busting kick without moving the upper part of my body. As soon as the injured party began bawling, I’d quickly set the blame onto another brother and then watch as they all got scolded.

Exactly why my father started taking on odd jobs in addition to his regular job, I don’t know. Maybe he figured that my mother needed a break. At any rate, he started dragging me along. However, I wasn’t interested in learning how to hang a door, miter a corner, replace a window, or panel a room. I wouldn’t need all that. I was going to grow up and be rich.

Whenever I made those ridiculously stupid remarks, my dad would just laugh and keep on working. “A good helper always keeps one step ahead of the craftsman,” he would say. That simply meant that I was supposed to hand him the next tool without having to ask.

Usually, I’d be sitting on my rear and my mind would be a million miles away. “Pay attention, boy,” he often remarked. "If you learn a trade, you can always make a buck.”

That was nearly twenty-five years ago. And while I never did become a full-fledged carpenter, I made quite a few bucks hanging doors, replacing windows and paneling rooms.

So what does all this have to do with scanning? Actually quite a lot. During a recent visit, my dad remarked that he had taught me all the “trade secrets.” Most tradesmen wouldn’t share them, because they take so long to learn,” he said.

His comment started me thinking. Were there “trade secrets” in scanning? My dad seemed to think so. "You probably do them without even knowing it," he said. "To you, they may seem trivial and insignificant. But to the novice, they can be of real value."

Not long after that conversation, I relocated to a new house. As I went about, installing a new scanning shack, I made mental notes of everything I did. To my surprise, there were certain methods that I used to perform routine tasks. And my dad was right; to me, they seemed trivial — hardly worth mentioning, much less "secret."

At any rate, here are my Top Ten Secret Scanning Tips:

1. Clean your PL 259, F, and BNC connectors. That includes the connector on your antenna as well as the chassis connector on your radio.
   To get inside a connector, use a Q-tip moistened with electrical cleaner. Radio Shack sells a "Cleaner and Degreaser" Catalog No. 64-2322 that works well. Keeping your connectors clean guarantees that every little whimper of a signal will find its way to your scanner radio.

2. Lubricate your connectors. But don’t get carried away. A very light coating of WD-40 displaces moisture and especially helps when connecting threaded "F" connectors.
   Some folks will substitute CRC for this purpose, but I prefer WD-40 because it doesn’t leave behind an excessively oily residue. Regardless of your preference, remember to oil lightly, very lightly.

3. Waterproof your outside antenna connection with plastic electrical tape and urethane. After tightly wrapping the connector with electrical tape, brush on a few coats of outdoor urethane. The coating locks out moisture and prevents the tape end from coming loose.
   Another good choice would be a marine spar varnish. This varnish is specially made to perform in wet conditions aboard boats. But don’t buy a gallon. A pint is much cheaper and it will last several seasons.

4. Remember to provide a "drip loop" where the coax enters the house. Otherwise, the rain or melting snow will run along the cable and may seep into the walls of your home.

5. Install new cable every two years. Some hobbyists prefer to do this once a year — usually during the spring. Here in the northeast, a yearly change is a good idea. After a year of being exposed to the elements, most coax in this part of the country should at least be checked very closely, if not entirely replaced.
6. Leave some "Slack" in the "Shack." When installing new cable, leave about two or three feet of excess in the shack. This allows for movement of the scanner radio on the table top and it also permits several "mistakes" when preparing coax for connectors.

7. Separate AC power cords from antenna coax. Don't run power lines adjacent to or near antenna coax. Power cords can generate noise that may be picked up by the coax and delivered to your scanner radio. Power cords can also short out, instantly burn a hole into your coax, and introduce 115 volts into your scanner's antenna connector. Rigs that have been "fried" in this manner cannot be repaired.

8. Test your knowledge. Reach behind your multiple scanner set-up, grab a wire and identify it in less than five seconds. Can't do it? Well that's about four seconds more than you'll get if something does go wrong.

   By labeling all the wires, an emergency can quickly be identified and corrected without having to call the fire department. Labeling also adds a professional appearance to your shack.

9. Have an emergency power source for at least one scanner radio. When the lights in your town go out, there won't be time to hunt around for two six volt lantern batteries or for that old car battery. Have an alternate power source available and ready to go at all times. This is especially true during the thunderstorm season.

10. Safety is paramount. Don't climb without a safety belt. Sure, I know what you are thinking, "You've been on that old roof so many times, you could climb it blindfolded." I felt the same way until I stepped on a loose shingle and went sliding down my three story roof.

   There's a funny thing about roof shingles. They seem to provide positive footing until one starts sliding down them. I did everything in the world to slow my descent, but nothing worked. When my heels were about to slide over the edge, the rope that I had tied onto my safety belt suddenly stopped my descent.

   During the accident, I had forgotten that I had the safety belt on. I had purchased it at a flea market for two bucks and I was wearing it more out of curiosity than for safety. When I realized that a two dollar belt and a length of K-Mart rope tied to the chimney had saved my life, I vowed never to climb without a safety belt again.

   Anyone have a few scanning secrets of their own that they would like to share? If so, please send them along so I can list them in the pages of the Scanning Report.

Treasure Hunting in MT

Still trying to locate last month's treasure? If so, you better hurry. This month is the last for this particular hunt. In June, we start another one with different prizes.

For anyone that missed last month's clues, here they are again:

1. Open the September issue of Monitoring Times.
2. Locate the frequency for the Roanoke Times newspaper that was provided by Howard Weaver.

3. Subtract 417.340 MHz from that frequency.

4. The resulting answer is a very popular frequency among scanner buffs. What common household device uses this frequency?

5. Be sure to send an SASE with your answer to P.O. Box 173, Prospect Park, PA 19076.

   For providing the correct answer, I'll send you a very handy scanning aid. Good luck!

Reader Frequency Exchange

Monitoring the FBI is Arthur P. Heely's cup of tea. Arthur would like to inform everyone that in eastern Connecticut, he hears the FBI operating on 163.8875, 414.575, and 167.7125. Arthur also noted an FBI repeater operating on 167.425.

Although he has been trying for years, Bert Morton hasn't been able to come up with a frequency list for Rutland, Vermont. Bert is interested in all types of frequencies between 29 and 800 MHz.

And here's more good news for the folks living in the New England area. Tom Holleran wrote in and gave the following confirmed frequencies for the New York and Connecticut area:

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Description</th>
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<tbody>
<tr>
<td>49.80/49.90</td>
<td>Rhode Island National Guard</td>
</tr>
<tr>
<td>251.90/252.80/287.50</td>
<td>Air National Guard Rescue and Recovery</td>
</tr>
<tr>
<td>349.70</td>
<td>National Guard Bradley Field-Hartford</td>
</tr>
<tr>
<td>393.70</td>
<td>National Guard A-10 and Helo's (informal talk)</td>
</tr>
</tbody>
</table>

A reader who calls himself "S.G." wants to enter a correction. S.G. indicated that the following frequencies do not belong to the Boston, Massachusetts, Police:

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>856.7125/857.7125</td>
<td>Rhode Island National Guard Rescue and Recovery</td>
</tr>
<tr>
<td>856.7375/857.7375</td>
<td>Rhode Island National Guard Rescue and Recovery</td>
</tr>
<tr>
<td>856.9625/857.9625</td>
<td>Rhode Island National Guard Rescue and Recovery</td>
</tr>
</tbody>
</table>

S.G. points out that the above frequencies, which appeared in the December 1988 Scanning Report, are used by the Boston Metro Police. S.G. indicated that the Metro Police patrol highways, expressways, and parks that belong to the Metropolitan District Commission. Has everyone made that correction in their logs? Ok, let's move along.

From way down in the land of Dixie, Mark Ray asked if anyone had a frequency listing for Berrien County, Georgia.

Moving west, John Hays checked in with a request for the Palm Springs Aerial Tramway frequencies. Using a PRO 2004 and PRO 32, John also indicated that he likes to hang around the baby monitor band on 49.0 MHz.

While the rest of the world may be on a diet kick, Kevin Jackson has been riding around and logging fast food frequencies. Here are some of his recent sightings:

<table>
<thead>
<tr>
<th>Frequency</th>
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<td>Hardee's</td>
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<tr>
<td>460.8875</td>
<td>Taco Bell</td>
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</table>

Kevin would also appreciate other confirmed fast food frequencies from scanner buffs.
Readers are invited to send their frequency loggings and requests to the Frequency Exchange, P.O. Box 173, Prospect Park, PA 19076. Please indicate if your name and address can be passed on to other interested scanner listeners.

**Scanning Shortwave**

In central New York, there is a shortwave listener's net operating on 147.105 MHz on Friday nights at 8:00 p.m. Control of the net is handled by N2DCI, John Starsberg of Clay, New York.

**Hot Scanning From Hot Springs**

Jeff Weston sent in the following frequencies for Hot Springs, Arkansas, and the surrounding areas:

- 37.54 Arkansas Power and Light
- 44.62 Hope State Police
- 44.74 Hot Springs State Police
- 151.010 Highway Patrol
- 151.385 Arkansas Game and Fish Commission
- 151.460 Forestry Division
- 155.415 Hot Springs local police
- 166.325 Hot springs National Park

Jeff also asked if someone could send him a scanner recording of the New York City police. Although I can certainly appreciate Jeff's desire to hear big city action, the Communications Act of 1934 prohibits scanner listeners from swapping taped recordings. Sorry, Jeff.

**Scanner Baby Sitting**

There's a lot of fun in making unattended tape recordings of your favorite scanner frequencies. When using a voice activated recorder, my biggest complaint was the "dead space" between transmissions. Most voice activated units simply waste too much tape.

Since I already had a good quality tape player, I went looking for a separate unit that would turn my player on and off with lightning speed. I didn't want any dead space and I wouldn't tolerate a slow start time that missed some of the initial action.

**The Tape Saver (TS-1), by Electron Processing controls a cassette tape player**

Electron Processing, P.O. Box 708, Medford, New York, responded to my request by providing their Tape Saver, TS-1. The TS-1 is a small black box that operates off 115 VAC. The remaining three cables connect in the following manner: One cable plugs into the scanner's extension speaker jack or headphone jack. The second cable connects to the Mic Input of the recorder and the third cable is connected to the remote control jack (REM) of the recorder.

Operation was simple and straightforward. After it baby sat my scanner overnight, I played the tape back the next morning and was impressed. The TS-1 fired up, recorded every word and then shut down right behind the last word. No missed action and no wasted tape.

The unit also featured an adjustable "hang time." If it hadn't shut down quickly, I could have simply turned a potentiometer located inside the black plastic case. Overall, I liked it.

I didn't like the small front panel speaker that allowed the monitoring of my scanner without having to unplug the cable from the extension or headphone jack. Since the TS-1 would not work when plugged into my scanner radio's "tape monitor" jack, I was forced to listen through the aforementioned 1-1/2 inch speaker.

Electron Processing did offer "detailed modification instructions" for anyone desiring to change the unit's sensitivity. Since I didn't send for the instructions, I can't say if they could be accomplished by someone without a degree in electronics.

Overall, the TS-1 worked beautifully for unattended recording when you're sleeping or away from the shack. I easily captured seven hours of reasonably active scanning on a 90 minute tape.

The TS-1 retails for $49.95. To order one for your shack or to obtain more information, the phone number is 516-764-9798.
Tune in exotic signals from unusual places with Bob Grove’s new Shortwave Directory (Fifth edition, 1989). You can hear Air Force jets on strategic maneuvers, ocean liners cruising the world, exciting Coast Guard rescue missions, mysterious spy transmissions, hurricane hunters in the eye of the storm, and Space Shuttle launch communications.

An exhaustive glossary of communications terms, call sign prefixes, procedural signals and abbreviations makes the Directory doubly informative. Sorted by agency and cross-referenced by frequency to make identifications quick and easy.

Don’t miss another exciting moment of monitoring intrigue! Only $14.95 plus $2 shipping from Grove Enterprises, PO Box 98, Brasstown, NC 28902. Credit card orders call 1-800-438-8155.

Super Converter™ 8001

Have your favorite communications (Police, Fire, etc) moved to the 800 MHz band? Are the scanners available which access this band too expensive? If you are like many scanning enthusiasts, this can be a real dilemma.

Introducing the Super Converter™ 8001 from GRE America, Inc. The Super Converter™ 8001 once attached allows any UHF scanning or monitoring receiver to receive the 810 to 912 MHz band.

For more information or a dealer near you please contact:

GRE America, Inc.
GRE America, Inc.
425 Harbor Blvd.
Belmont, California 94002

Telephone (415) 591-1400
Outside CA. (800) 233-5973
Telex GRE BLMT 17-2069
Fax (415) 591-2001
what's new?

Hot $1.00 Catalogue

Ever want to build an FM broadcast transmitter? How about a satellite dish antenna? Or a converter so that you can tune in on all those Lowers that Monitoring Times "Below 500 kHz" columnist Joe Woodlock writes about?

This is one of the most exciting catalogues we've seen in some time. It's a collection of kits, plans and books for electronics and communications.


This is some fun stuff. Prices are low. Quality of plans and kits is high.

Send for the catalogue. It's available for $1.00 from Pan-Com International, P.O. Box 130, Paradise, California 95967-0130.

Golden Age of Ham

They were the best of times and the worst of times. Young men, most with more time than money, scavenged Depression-era America for dead radio receivers and, with little more than ingenuity, turned them into transmitters that challenged the ionosphere with 10 watts.

The bands boomed with DX action -- India, China, Liberia, Australia and many, many other areas rolled in with phenomenal signal strength. These were the "golden" days of amateur radio, days that are gone, regretably, not only in terms of time but in terms of spirit.

In Golden Classics of Yesteryear, Dave Ingram takes you on a ride back into time, back to when now-illegal spark rigs blasted their crude signals across enormous swaths of the radio spectrum, through the years of National and Hammarlunds and the 1940s and 50s.

It is a lighthearted romp, one that the author readily admits is not a precise historical document. It is a story of unique and often forgotten "collectors specials" that you can build, rigs that Ingram says are "hotter'n peppers" and can "chase everything from DX to young single girls."

If you've ever wondered why old timers wax nostalgic over the old days of ham radio, this is a books for you. If you're a ham whose less then enthused about his hobby, this book will put some spark back into your transmitter.

Golden Age is published by MFJ Enterprises and is available from your favorite radio store.

New Midland UHF Portable

Midland LMR has introduced a compact new UHF portable specifically designed to provide rugged, basic portable radio communications at an economical cost. The new 70-243 has a one-piece die-cast chassis and stainless-steel front and back. RF output is 5 watts, tunable to 2 watts. Users can choose up to four crystal-controlled channels between 450 and 470 MHz.

The 70-243 is about 5 inches high by 2-1/2 inches wide by 1-1/2 inches deep and weighs some 22 ounces without antenna. For more information, call Midland LMR at 1-800-643-5263, extension 1690.

New Cellular Antenna for Trucks

A new mirror or side body mount antenna, model ASPD913, designed for trucks, vans and motorhomes, is now available from The Antenna Specialists Co. The high performance antenna, originally designed in cooperation with Bell Laboratories, provides omni-directional coverage in any clear mounting location.

Just 24 inches long, the antenna is ground-plane-independent, allowing installation on horizontal or vertical mirror supports or the side of a cab.

The ASPD913 comes with a 17' RG-58/U cable and mini-UHF male (ASPD913M) or TNC male (ASPD913T) installed.

For more information contact The Antenna Specialist Company, 30500 Bruce Indus-
Dallas/Ft. Worth Frequency List

Since its skimpy beginnings as a scanner frequency newsletter several years ago, this sixth edition by Ken Winters has really grown.

Originally concentrating on Dallas/Ft. Worth regional entries -- and that is still its primary strength -- the book now includes wide area monitoring information, much of it nationwide, including shortwave as well as VHF/UHF.

Over 5600 frequency entries include everything from VLF cave explorers and U.S. Navy submarine communications to microwave relays and radar. It is certainly the widest-frequency-coverage directory in publication!

The girth of listings is ambitious. Where else will you find such entries as the resonant frequency of planet Earth (7.6 Hz), cave radio Molephone (102.4 kHz), Goodyear blimp ground operations 161.640 MHz), Bobby Allison's NASCAR frequency (469.3125 MHz) or NASA's TDRS satellite downlink (2205/2217 MHz)?

Clearly, listings are not confined to the usual police, fire and BBC pap, but include sensitive federal government and esoterica as well. Quite an eyeful for the spectrum connoisseur.

$19.95 from Basic Computer Services, PO Box 14193, Arlington, TX 76004-1193.
The Tenacity Factor

As Old Uncle Skip travels through the monitoring world, I like to think that I work hard to stay in touch with the "Silent Majority" of our shared hobby. I feel I try to keep the interest level up when the wallet runs dry.

You can check out the pages of any of the "club" magazines and newsletters and read about some guy who confirmed a contact with Radio Nibi Nibi on the far side of the planet thanks to his kilobuck listening post. All too many folks who read these exploits begin to believe that you can solve all the problems of the monitoring hobby by throwing money around.

By the way, have I not mentioned on several occasions that Old Uncle Skip finds quite a few of the multidollar DXers to be rather boring? Instead, I enjoy hanging out with those hobbyists who are still getting a rush from hearing their first fifty or so countries. These people tend to have a gleam in their eye instead of a dull stare. They tend to be people who are wringing out modest equipment to its limits and beyond to hear just about everything the guy with the supershack is hearing.

Maybe I get such a kick out of the "regular" listener because, on the whole, I find them to be a very happy group of people who seem to be having gobs of fun.

Get to the point, Skip!!!

I think what I see in the common garden variety of monitoring person that I tend to miss in the high price tag DXer is a large dose of Tenacity.

Tenacity is defined, in part, as persistence, determination, stubbornness, and several other pseudo-verbs best left out of a family magazine.

Old Uncle Skip has often given advice about what to look for when purchasing equipment. I have talked about how to examine a particular radio's vital statistics to get the most bang for your buck. Howsoever, you will never find the Tenacity Factor listed on any rig's spec sheet. A modest rig supported by a high tenacity factor will make it possible to hear just about anything flying through the ether.

Tenacity can be measured in the number of hours of static you are willing to endure to have some long-sought station rise out of the muck. It is logged in the number of times you re-report a contact to extract a QSL. Tenacity can also be described as the NUT that connects the shack chair to the radio! It is what you are willing to put into the equation through blood, sweat, and tears.

Over the years, Old Uncle Skip has discovered the mathematics behind the Tenacity Factor. Tenacity appears to bow to the law of Inverse Proportions. It seems that the more tenacity you can inject into your system, the less money you will require for hardware.

Put another way, if you are bored stiff with your hobby, you will need to inject large quantities of cash into the equation to make up for your lack of tenacity. As stated in Uncle Skip's Radio Axioms: Tenacity + $$$ = QSL

So what'samatter, Bunker? You say you are short on cash and you want to know how to get your tenacity tuned up? No problem, Sport. If you are reading Monitoring Times cover to cover, you are already shoring up your tenacity rating. Uncle Skip has always found that the best way to get your tenacity revved up is to learn something new!!! Hit the books, ask around, listen to folks on the air. Soak up some radio savvy, and you will begin to listen smart.

But don't believe everything you hear. Contrary to popular belief, you don't need a megastation to get the job done. You see, compadre, the radio spectrum is a mysterious and amazing thing. It is full of quirks, anomalies, irregularities and occasional technical bottlenecks. Take these events, sprinkle them generously with tenacity and you will be turning up signals the so-called experts only dream about.

But far be it for me to leave you hanging in the breeze. Maybe if we take a quick look at some examples of tenacity in action, you can get in the groove. So let the horns blow and the drums roll as MT presents:

Uncle Skip's Guide to Tenacious Radio Practices

Lowfers

Below the 550 kHz end of the "standard" AM Broadcast band lies a land occupied almost exclusively by tenacious types. Lowfers monitor and even operate in the 1750 meter band. You can monitor all manner of aeronautical and maritime beacons. There is also quite a bit of military activity. Between 150 and 175 kHz you can go digging for Ground Wave Emergency Network (GWEN) signals. While quite a few available receivers will tune down into this realm, you may find it necessary to construct or purchase a converter to get in on the fun. If you want to be really tenacious, you can brew up a transmitter for legal, unlicensed operation in the 160-190 kHz band. You are limited to 1 watt and a fifty foot antenna.

Experimentation abounds on the base-ment band. Since the equipment is either surplus, cheap, or homebrewed, there is not a lot of room for ego. If you want to give the lowfer world a whirl you might want to start by reviewing "DeMaw's Workbench" in the December 1988 issue of MT. You might also drop a line to The Longwave Club of America, 45 Wildflower Road, Levittown, Pennsylvania 19057.

County Hunting

Everyone who gravitates to county hunting goes through the same basic ritual. For many years they think it's kind of silly. Then, one day when they have nothing better to do, they tune across 14336 kHz USB and listen to "those crazy county hunters" shouting at each other through QRM to contact one of the 3075 counties in the good old U.S. of A. If they are hams, they will find themselves volunteering their home county to folks on the net.

Before they know it, they have their rigs locked on to the net and can't quite seem to find an excuse to twist the dial away in hopes of hearing that missing county. It takes even the most dedicated county hunter several years to get them all, but a Worked All Counties award hanging in your shack is the ultimate statement of tenacity in the ham radio world.

With prevailing conditions, you can go county hunting with low power and a basic

Radio at its tenacious best as 25,000 hams take their equipment to the field to demonstrate emergency operations

ICOM America

www.americanradiohistory.com
antenna. Many of the people playing this game are operating mobile so everyone on the net works together to help one another achieve every opportunity to make a contact. If you want to play the game, just tune in to 14336 kHz. It won't take you long to get hooked.

Field Day
Every June over 25,000 amateur radio operators take their equipment outside in an effort to demonstrate ham radio's great tradition of being able to set up for emergency operations. The majority of the over 1,700 stations utilize emergency power and antennas erected "on site." You will run across folks operating using solar power, with antennas strung through trees by bow and arrow. High power, low power, and, when Murphy's Law strikes, no power.

It's radio at its tenacious best. A friend of mine once brought the lady he was courting out to our club's field day site. He went on to explain to her that we were all involved in this contest with folks all over North America. She asked him "Who's winning?" My friend replied, "I've been doing this for ten years and I never thought to ask!"

This YL clearly requires a tenacity adjustment. Give a listen on 24-25 June this year. You'll hear radio tenacity at its best.

Homebrewing
In many ways this has become an easy hobby. You simply decide what you want to listen to and then thumb through a few catalogs until you see a rig that suits your fancy. Believe it or not, there are still quite a few folks who get a kick out of "rolling their own" radio gear. Granted, what you come up with might not look as slick and sophisticated as the latest offering from the Orient, but there is no reason on earth why it can't perform just as well on the air, that is, if you add a little tenacity to the project.

Start off with the projects you see here in the pages of MT. You will find that many of the principles of electronics you found so elusive in the past will make perfectly good sense once you have wired a few simple circuits.

If you keep at it, it won't be long before you are constructing more difficult projects out of books found in libraries or perhaps The ARRL Handbook. Hang in there, Ace! Some folks have more fun building equipment than using it.

Scanner DXing
VHF/UHF Scanning is another aspect of the hobby that can become a bit weak in the tenacity department. It's easy to get into a rut, monitoring the same handful of frequencies day in and day out. Stir in some tenacity and you can begin to listen for stations that are hundreds of miles beyond your normal scanning practices.

The addition of a low-noise preamplifier and a good directional antenna will get you started in grand style. You will quickly learn to take advantage of weather conditions that create atmospheric "ducts" that serve to channel VHF signals over long distances. Meteor showers can also create conditions in the ionosphere that make for almost unimaginable signal distances.

On the high bands, tenacity often translates into being in the right place at the right time, but the reward will be a log book full of real DX. Keep an eye on Bob Kay's "Scanning Report" here in MT for the latest information on this tenacious radio habit.

Radio Restoration
Things move along pretty fast in the radio world. In less than some lifetimes, we have gone from spark gaps to integrated circuits. Along the way some truly beautiful equipment has come and gone. But like most things in life that have some antiquity, there are folks who appreciate and collect old radios.

The process of moving from blowing the dust off some old box you found at a garage sale to a finished (and refinished) radio is long and difficult. Scouring for components and materials requires a very tenacious person. But a fully restored 1930 Philco Cathedral radio will impress even you nonradio friends.

TENACITY RULES!!!
While we have taken an all too brief look at some of the more tenacious aspects of the monitoring hobby, I hope it will serve to fire up the imagination and get folks to expand their radio horizons. None of these examples of radio tenacity require a particularly well stocked checkbook. Remember, the tenacity factor can override the cash factor most any day of the week. You can detect radio signals with a telephone speaker and an old razor blade IF YOU HAVE ENOUGH TENACITY!!!

Radio restoration can be long and difficult, requiring a great deal of tenacity. But folks will be impressed!
Your Scanner --  
*Don't leave home without it!*

The sound cuts through the cold night air, metal against metal. Two hinges scream out in pain as the wind repeatedly slams the wooden screen door against its frame.

Here in Angel Fork, Alaska, the snow still fights a losing battle to smother the blue and pink crocuses that push their way through to spring. Giving support to those struggling little flowers is the warm, yellow light that streams out into the darkness from the windows of the Clark family cottage. Let's look inside and have a listen as the family gathers 'round the energy-efficient, non-polluting Navaho Tradesman woodstove.

"Well, kids," says Dad, dressed in a flannel shirt and home-made leather pants, "I know you're all looking forward to summer vacation. As usual, your earthmother has made plans for us to spend two weeks at the Wild Cow Nudist Camp in Appleton, Wisconsin."

There is a pregnant pause. This year, everyone frowns at the good news. But it's not the destination that has the rest of the Clark family upset. It's just that last year, the whole vacation was ruined when Dad forgot to pack the scanner!

Sparkle, the youngest of the children, looks up at Dad sadly. A single tear spills down her cheek. "Promise you won't forget the scanner?"

"Take a lesson from the Clark family. Remember the scanner."

Traveling without at least one scanner is kind of like going to the beach in the rain: Sure, you're still at the beach but all the pretty girls are inside and you've missed half the fun. Inevitably, when the scanner is left behind, a major event occurs that makes the news at six and eleven.

The remedy, of course, is to ensure that packing your trusty hand-held receives the same sort of attention as does your toothbrush.

The first item of business is to develop a scanner travel plan. Examine a good map or road atlas of the area(s) you plan to visit. Generate a list of federal buildings, facilities, and military installations in the general vicinity. Don't leave out anything.

The "Murphy's Law" of scanning is that the one federal agency, branch, bureau or department that you do not include in your list will be the one to be most active during the trip. So the first goal is to avoid Murphy.

While drafting the scanner travel plan, consider how you'll be getting from point "A" to point "B." A trip in a personal vehicle will require plans quite different from the ones you'll make when traveling by air. If you will be traveling by air, decide whether you'll have access to a rental vehicle once you arrive at your destination.

Either way, examine the entire route and make a list of major facilities and cities enroute. Add these to the list generated for the destination area or create a separate list. Consider, too, all federal or military entities within a 50 or 100 mile radius of where you are staying. When traveling by air and arriving at your destination with no access to a vehicle, just concentrate on the immediate area with your list.

The second phase of the plan is to research data and frequencies for the agencies and installations on your list(s). The second phase is not as easy as the first because the local book store or the AAA do not have available scanner frequency directories or source guides. Still, sources for federal and military data are plentiful. These come in three categories -- magazines like Monitoring Times, scanner clubs, and frequency directories.

Each source offers material that may not necessarily be duplicated by the other sources. Most serious VHF/UHF federal and military monitors have access to at least publication from each of the three source types listed above. Yearly indices, like the one published each December in *MT* (Reprints are available for $2.00 and an SASE) provide a quick method to hone in on the frequencies you need.

The researching of data and frequencies for the list may be performed in two phases -- an initial phase before the travel has started, like packing your suitcase, and a second phase when the destination is reached. The initial phase data is available from the three source types listed in the previous paragraph.

Beyond Monitoring Times are the scanner clubs that have federal or military columns which were highlighted in the December 1988 Federal File column. The club columns provide various agency and military profiles as well as useful and interesting tidbits of data. Sorting through back issues of their newsletters, data for the scanner plan list may be found.

If you are not a member of the club, you may be able to purchase back issues for your reference. Another alternative is to contact the column editor for assistance.

Remember, when contacting the column editors to include an SASE and to allow ample time for their response. Also, keep your request reasonable -- do not just
The third source of data are scanner frequency directories. The “What’s New” column in Monitoring Times publishes reviews of the available federal and military directories. Review the reviews and find the directory best suited for your needs.

Also, do not overlook the Police Call scanner directories available at your local Radio Shack. Each edition contains a federal government section. Ask at the counter for their local print out. Most Radio Shacks have one and it is usually free.

An additional source of data is the telephone book. Some public libraries have telephone directories for larger cities -- hopefully the ones through which you will be traveling. The blue page section (in some directories) or white page section (in others) will list federal agencies and military locations in the city.

The listing of agencies will confirm if a local office exists, which, of course, greatly increases the probability of interception. Agencies which are not listed may still be candidates as the office may be located in a nearby city.

Once all the data has been obtained and reference data is at hand, it is organization time. Organization is essential to making the most out of the mounds of data you have collected. Use a steno pad or notebook to generate lists of agencies and their locations.

Organize them alphabetically and create separate pages for each agency and military branch or installation. The reason for multiple pages is to allow for the entering of frequencies from data sources and for notes from monitoring activities.

Using the data sources, create frequency lists for each agency and note any channel numbers given, or other similar data, along with the frequencies in the notebook. A numeric ascending order of frequencies is generally the easiest to work with in planning and monitoring stages.

When the creating of the frequency lists are completed, generate a scanner channel plan. The channel plan should list the scanner channel number, frequency, and user notes (agency, base or mobile, channel number, etc). Organize the programming of the scanner into banks.

The first bank should contain the main repeater or operational frequencies from most of the agencies on your list. The other banks should contain a detailed frequency profile for a given agency.

Always keep the first bank enabled and when activity is heard on a frequency for a given agency, then also enable the bank where more frequencies for that agency are located. When monitoring a radio transmission, just note the channel number and use it as a reference to zero in on what is being monitored. The channel number is easier to reference than the frequency, and also quicker.

Keep notes on all transmissions such as unit or channel numbers, type of transmission (repeater, simplex, or mobile), activity of the channel, and brief notes on the conversation.

By planning the scanner trip ahead of time, you will be better organized and prepared. The preparation and organization will also pay off with the family since you will not be spending time in your motel room or relative’s house searching through frequency directories, magazines, and maps instead of spending time with them. Preparation and organization will also provide you with a more enjoyable monitoring experience.

Murphy’s Law guarantees that the excitement will happen when you’re unprepared. So when the snack bar burns down at the beach, be ready, Freddy!

Harry Baughn
New York: City of Opportunity

Having at least in part fled from North America for the last few columns, perhaps it is time to return and this month have a look at some of the many possibilities offered from the state of New York.

For the sake of limited space, and to avoid boredom, the U.S. Coast Guard has been omitted from these listings. We will start with a look at some of the medium and high frequency stations which are all upper sideband and in kilohertz.

The frequencies below are largely towing or oil companies and as such can provide some interesting listening. In both cases the business is such that destinations change quickly as cargos are sold. Towing companies can provide interesting listening as not only is the dispatching of tugs heard, but also discussions regarding problems in handling a tow or effecting salvage.

The Coast Guard can easily be heard on 2182 and 2237 kHz as well as on other frequencies. The most prominent are the group stations at Shinnecock and Rockaway. Coast Guard stations generally use high powered transmitters and are relatively easily heard.

The stations in the following list will usually use less powerful transmitters and prove to be more of a challenge to hear. Although sometimes thought of as being in New York, Ocean Gate Radio is located in New Jersey, and therefore is not listed.

Next column will continue a look at the VHF stations which are to be found in New York. The state offers a great variety of stations and for those living in, or traveling to that area, a scanner would provide some interesting material.

As always, your comments and suggestions are welcome. Good listening until next time.

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Tugs and oil freighters always provide plenty of activity for the monitor.

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Harry Baughn
**Mobiling Ten Meter Style**

Hams love operating their radios. In fact most of them love it so much they can't stand being away from the rig. They suffer whenever they are unable to yak into a microphone, manipulate a Morse key, or in some manner send their voices or thoughts to some far off friend.

**VHF/UHF?**

Large numbers of the hams have mobile rigs in their car. Most of these rigs are VHF or UHF FM type of units and allow us to keep in touch with our local (20 to 100 mile radius) friends. To be sure, this is a lot of fun but it is not the reason most of us got into ham radio – we want to talk to the ham on the other side of the earth, or at least the other side of the country.

Few of us could see the sense of investing a kilo-buck or more for a rig to use in our car. And who would want one of those big floppy antennas bouncing around on the back of the family buggy?

The advent of Novice enhancement prompted several companies to produce compact, inexpensive SSB, CW rigs that are ideal for mobile use. And with propagation being what it is, any of us can get on ten meters with a simple CB antenna and talk to the world just like real hams! To boot, the cost is usually less than the average VHF FM only rig.

If you drive any distance to work, having a rig in the car can make a big difference in the way you look at the drive to and from the button factory. I drive one hour each way, and until I got a Uniden in the car, dreaded the daily two hours of driving.

Now that I can chat with folks all over the world I greet the drive with enthusiasm and cheerily jump into the car each morning (True, I don't want to get out of it when I get to work, but I force myself).

**Equipment**

One of the biggest things to hit ham radio in many a year was the Uniden 2510. With this little rig, anyone can have a ten meter mobile rig in the car at a price that is affordable. On the heels of the 2510 came Radio Shack with their HTX-100, another excellent ten meter mobile rig. Prices for these rigs are extremely reasonable ($220 to $270). They are one of the best bargains in ham radio today!

Don't let the idea of 25 watts into a loaded whip discourage you. I worked all continents within four days of installing the 2510 and Wilson 1000 antenna. Many QSO's are hour long solid rag chews, and DX contacts are easily made.

On phone, operation is much like it is at your home station. Remember if you use one of the popular 25 watts units, it is better to answer calls than to call CQ. Although calling CQ does work, a lot of the time you run into a problem when a station that is too weak replies. Then it is a fight to complete a QSO and a lot of the pleasure is lost. Call the strong stations and enjoy your mobiling.

**Desk for the Mobile**

The biggest problem I had was keeping accurate records. The problem can be solved fairly easily, though. Here is how I did it.

Obtain a cardboard carton (or make one from wood) that is about 12x15x2 inches. Open the 12 inch side and reinforce the sides by gluing two pieces of cardboard 15 inches long and wide enough to butt against the top and bottom of the carton.

Now punch a hole on the right side of the box (12 inch side) about half inch from the edges; You are going to tie a string to this hole to attach your black crayon to. Use a spring type paper clip or clothes pin to attach a tablet to the top of the box, and you have an operating desk.

Now when you make a contact, you can write down the call and name and other pertinent data with the crayon in large letters that will let you read it at a glance. Jot down the time and when the QSO is done. Tear off the sheet of paper and shove it into the box.

**You Gotta Be Kidding?**

My mobile desk also serves as a base for my hand key which I use for mobile CW. I used double sided tape and stuck the key down in a comfortable spot (a leg key with a strap or clip is a good alternative to the key on a box).

CW is my favorite mode and I enjoy mobile CW a great deal. As always, it's the mode to use when you want to get through, and will provide QSO's when no one will reply to you on SSB. Twenty-five watts of CW is a lot more equal than 25 watts of phone!

The question I am asked most is, "How hard is it to copy?" Well, if you can copy 15 to 20 wpm solid, it is simple enough to copy a station in your head. The major problem with copying in your head is poor operators.

If a station is sending sloppy Morse, I terminate the contact at once. But good clean CW at speeds up to 35 or 40 WPM can easily be copied in your head with just a little practice (get the practice at the home station and not in the car!) All you need do is make the same call, name, report and time comments on the log that you do for phone.

**The Ten Meter Mobile Antenna**

There are many different antenna arrangements to use for your mobile station. Best, but least desirable is a fender-mounted 1/4 wave whip. This antenna will provide the user with consistently good results although most of us do not like the idea of punching a 1 1/4 inch hole in the fender of the car.

The bumper mount is an alternative to punching a hole and works almost as well. The bumper mount is a strap or chain that fastens around the auto's bumper, and with a standard ball attached to it, permits use of a 1/4 wave whip. Unfortunately, many modern cars will not accept the strap on bumper mount.

A recent development has been a mount that allows attaching a standard ball mount to a trailer hitch; it is a sturdy mount and seems to do a superb job.

Likewise, a good loaded whip mounted in the center of the roof will do an excellent job for you. It is quite easy to modify a CB antenna to work on ten meters. If the antenna is center loaded usually you must remove a turn or two from the loading coil to get the antenna to operate on ten meters. The same is true for short base loaded antennas.

However if the antenna is four or five feet long and loaded at the base, usually all that is required is to trim an inch or two off the whip till the SWR falls to a reasonable level in the portion of ten meters you desire. Avoid the short loaded whips, they do not work well at all.

The best place to mount a loaded whip is the center of the roof of the vehicle. The best mount is the type that requires drilling a hole in the body of the car. This will provide a good ground and ensure decent results.

A second type of mount is the clip on gutter or trunk type. This mount will clip the whip to the rain gutter or trunk lip of the vehicle. Generally speaking the trunk lip is ok, but the rain gutter mount is least desirable of all. Another clip on mount for loaded antennas is the popular mirror mount; They work, but I advise against using them unless all else is impossible.

The third and perhaps most popular is the Magnetic mount antenna. Several are on the market for ten meters. The experience I have had with these antennas indicates that they do an excellent job. Especially the Wilson 1000!

**The Great Northwest Pennsylvania Canoe Expedition!**

Keep the dates of May 27th through 30th in mind. N3IK and at least one other amateur will be heading down the west branch of the Susquehanna river in western Pennsylvania. The expedition route is through beautiful wilderness and several difficult to work counties. Each night will see us camped on a different river island where the HW-9 will be put into operation.

During daylight most operation will be on ten meter ssb. Preferred frequencies of operation will be between 28430 to 28450. Some CW activity on 28040 to 28060 is also anticipated. Night time will find us on 80 and 40 meters CW only (unless someone has a battery operated all mode rig). Frequencies to watch will be 3560 and 3705 on 80, 7040 +/- 5 on 40. Time permit-
Special Event Station AE9K

The W/K ARC of Greater Milwaukee will operate AEK (A)stronomical (E)xploration, to commemorate National Astronomy Day from the dedication ceremonies of the Nichols Astronomical Observatory.

Operation will be from 1400Z May 13 to 0600Z May 14 on these suggested frequencies: CW, 30 kHz up from bottom of band. Phone 1850, 3850, 7250, 14250, 21350, 28450 MHz. Packet on 14509 MHz. SASE for special QSL to Nichols Observatory, 3885 Pioneer Rd., Richfield, Wisconsin 53706. SWL’s are also invited to participate.

U4MIR Active

The low activity of U3MIR has been replaced by an extremely active U4MIR. Alexander is active frequently on the normal 145.550 simplex FM frequency as well as 145.650 at times. Alexander does not speak English well, but he works hard at it.

To help matters give your call sign in standard ICAO phonetics (don’t use cute phonetics!), speak slowly and be patient. Send QSL’s to Boris Stepanov, UW3AX, P.O. Box 679 Moscow 107207, USSR.

28,850

I ran across a lot of very interesting work on my way home from work last week on the frequency of 28,850. Reports of solar activities, flux levels and various other propagation phenomena was being discussed by a large number of stations and reports of DX stations and frequencies they were active on.

Turned out this is the club frequency for SMIRK (Six Meter International Radio Klub). Loads of interesting info about what was happening on the six meter band was being exchanged. With the intense solar activity six is coming to life and lots of good DX can be worked. If you want to keep on top of the action, tune this frequency.

I also have a complete list of 6 meter beacon stations around the world. It is too lengthy to list here, but an SASE and one buck will get you a copy. Send all requests to my home address.

Neat Compact Antenna

As ever, I am on the lookout for decent antenna systems for those of us who cannot put up the ultimate.

Recently I saw an MFJ ad for a HF portable antenna (MFJ-1621). Knowing the quality of MFJ accessories, I shot off an order for one of these units. What I received was a sturdy plastic case with a loading coil enclosed in it, as well as a field strength meter, band and loading controls. Attached to the box was 50 feet of high quality 50 ohm coax. A five foot telescoping whip mounts on top of the case (see photo).

According to the manual, the antenna works from 40 through 10 meters. It did not take long to set it up in my back yard (on the ground) and run the coax into the shack. Tune up was a breeze and in a few minutes I was active on 40 meters. Stations all over the eastern half of the U.S. were worked with ease with signal reports of S3 to 7 received in return — not bad for only putting 50 watts into the antenna.

Results on 20 were most pleasing with stations in Europe, South America and the western U.S. responding. 15 and 10 meters provided QSO’s to wherever the band was open to.

True, reports did not match my beam or long wire antennas, but they were quite satisfactory and proved the 1621 to be worthwhile for the guy who can’t erect a full size wire.

I did not use any radials during the initial tests, but felt it would be beneficial to do so. Stretching a 50 foot hunk of bell wire on the ground and tuning it with the MFJ Artificial Ground (931) proved to be a big improvement on 40 meters. Signals would jump from S4 to S7 or 8 when the radial was switched in.

Installing the antenna in a modern apartment building proved that apartment buildings are not good locations for indoor antennas. It was extremely difficult to work stations from inside the apartment, and RFI was a problem. But as soon as the antenna was placed out side on a window ledge things improved considerably; however, local noise precluded any satisfactory tests.

The next test was to put the antenna in the attic of a friend’s home (antennas are excluded from his subdivision). The house has aluminum siding, so we did not know what to expect. What we got were great results! Contacts on 40 SSB were solid and the first that my friend had in several years since moving to this area. The antenna is now a permanent resident at his location and has allowed at least one ham to get on the air where antennas are forbidden.

The 1621 is available from MFJ Enterprises, Box 494, Miss. state, MS 39762, or call 800-647-1800 for a dealer near you.

See ya next month - 73 de N3JK
Australia
Radio Australia, 9580 kHz. Full data color QSL card of Koala bears, without verification signer. Received in 68 days for an English reception report and one IRC. Station address: P.O. Box 4293, G.P.O., Melbourne 3001, Australia. (Tom Maslanka, Cleveland, OH)

Canada
CFGM, 640 kHz-AM. Full data personal letter, without verification signer. Received in 30 days for an English reception report. Station address: 10254 Yonge St., Richmond Hill, Toronto, Ontario, Canada L4C 3T7. (Harold Froedge, Midland, MI)

CFSB, 1010 kHz-AM. Full data personal letter, without verification signer. Received in 30 days for an English reception report and one IRC. Station address: 2 St. clair Ave. North, Toronto, Ontario, Canada M4V7L6. (Harold Froedge, Midland, MI)

China
Radio Beijing, 11715 kHz. Full data card of Chairman Mao Hall, without verification signer. Also received a program schedule and 'Paper Cut' of Panda and Dragon. Received in 30 days for an English reception report. Station address: English Department, 2 Fuxingmenwai Avenue, Beijing, The People's Republic of China. (Tom Maslanka, Cleveland, OH)

Colombia
Radio Guatapuri, 4815 kHz. Full data prepared card, with Spanish personal letter. Verification signer, Gustavo Cuello Diaz, Jefe de Programacion. Received in 150 days for a Spanish reception report and mint stamps. Station address: Apartado A.51, Valledupar, Cesar, Colombia. (Rod Pearson, St. Augustine, FL)

Galapagos Islands
La Voz de Galapagos, 4810 kHz. Full data Galapagos Island scene card. Verification signer, Padre Victor Maldonado. Received in 40 days for a Spanish reception report and mint stamps, and a self-addressed envelope (used in reply). Station address: Mision Franciscana, Puerto Baquerizo Moreno, Isla San Cristobal, Galapagos, Ecuador. (Frank Hillton, Charleston, SC)

Guatemala
Radio Chortis, 3380 kHz. Full data form letter and personal reply in Spanish. Verification signer, Juan Maria Boxus, Director Ejecutivo. Received in 95 days for two Spanish reception reports, mint stamps, and one IRC. Station address: Centro Social Jocotan, Chiqimulna, Guatemala. (Frank Hillton, Charleston, SC)

Radio Texulutan, 4385 kHz. Full data station card and personal reply in Spanish. Verification signer, Arnoldo Wilhelm, Director Ejecutivo. Received in 30 days for a Spanish reception report and mint stamps. (Rod Pearson, St. Augustine, FL)

Indonesia
Irnaes-Jaya Radio Republik Indonesia-Biak. Full data friendly personal letter in English. Verification signer, Mochtar Yuhaputra, BA. Received in 32 days after second Indonesian reception report. Station address: P.O. Box 505, Biak, 98101, Indonesia. (Richard L. Coday, Oldale, CA)

Japan
Coastal Station Nagasaki Radio, 12675.5 kHz. Full data station letter and station postcard. Verification signer, Setsuo Yamanishi, Radio Officer. Received in 30 days for an English utility reception report. Station address: 14-1 Hinode-cho Isahaya-

city, Nagasaki 854, Japan. (Milan Seifert, APO San Francisco, CA)

Japan Meteorological Agency, 17029 kHz. Full data station letter and souvenir postcard. Verification signer, Tsuneo Ueda, Head of Int'l Comm. Received in 60 days for an English utility reception report. Station address: J-3-4 Ote-machi, Chiyoda-ku, Tokyo, Japan. (Milan Seifert, APO San Francisco, CA)

Malta
Voice of the Mediterranean, 9765 kHz. Full data scenery card, without verification signer. Received in 65 days for an English reception report and three IRCs. Station address: P.O. Box 143, Valletta, Malta. (Frank Hillton, Charleston, SC)

Netherlands
Radio Netherlands, 5990 kHz. Full data QSL card of Van Gogh's "The Sower," without verification signer. Also received a station banner and sticker. Received in 22 days for an English reception report. Station address: P.O. Box 222, 1200 JG Hilversum, The Netherlands. (Tom Maslanka, Cleveland, OH)

Niger
La Voix du Sahel, 5020 kHz. Full data station letter with a hand written program schedule. Verification signer, Yocouba Alwall. Received in 67 days after the third French reception report. Station address: Boite Postal 361, Niamey, Niger, Africa. (Richard L. Coday, Oldale, CA)

Papua New Guinea
New Guinea Territory-Radio Western, 3305 kHz. Full data "NBC" network/map card. Verification signer, Timothy Dickson. Received in 75 days for an English reception report, mint stamps, and a self-addressed envelope (used in reply). Station address: P.O. Box 23, Daru, Papua New Guinea. (Frank Hillton, Charleston, SC)

Sweden
Radio Sweden International, 11705 kHz. Full data "50th Anniversary" QSL card. Received in 15 days for an English reception report and one IRC. Station address: S-105 10 Stockholm, Sweden. (Tom Maslanka, Cleveland, OH)

Taiwan
Central News Agency Incorporated, 14665 kHz. Full data station letter, and souvenir postcard. Verification signer, Dong Sum Wong, Director, Central News Agency, Inc. Received in 30 days for an English utility reception report. Station address: 209 Sungikong Road, Taipei, Taiwan, Republic of China. (Milan Seifert, APO San Francisco, CA)

Togo
Radio Togolahie-Lama Kara, 3222 kHz. Full data station card, without verification signer. Received in 340 days for two French reception reports, mint stamps, one IRC, and a self-addressed envelope (not used in reply). Station address: Boite Postal 21, Kara, Togo, Afrique. (John Bougeros, Thibodaux, LA)

United Arab Emirates
Voice of the UAE-Abu Dhabi, 9595 kHz. Full data color brochure with letter. Verification signer, Ahmed A. Shouty-Director. Received in 34 days for an English reception report and two IRCs. Station address: P.O. Box 63, Abu Dhabi. United Arab Emirates. (Leslie Edwards, Doylestown, PA)

United States
Radio New York International, 6240/1620 kHz. Full data personal letter, without verification signer. Received in 75 days for the third reception report, and a self-addressed stamped envelope. Station address: RNI, Monticello, MI 48750. (Harold Froedge, Midland, MI)

Space shuttle Discovery STS-26, 7185 MHz-SSB. Full data QSL card of satellite under repair. This card was for a retransmission, courtesy of the Goddard Amateur Radio Club. Verification signer, Frank Bauer, President, Goddard Amateur Radio Club. Received in 104 days for an English reception report, and a self-addressed stamped envelope. Station address: c/o Goddard Space Flight Center, Greenbelt, Maryland. (Tom Maslanka, Cleveland, OH)

WAMJ, 1580 kHz-AM. No data personal letter on station letterhead. Verification signer, Richard Van Mele. Received in seven days for an English reception report and a self-addressed stamped envelope. Station address: P.O. Box 6580, 1129 N. Hickory Drive, South Bend, Indiana 46615. (Harold Froedge, Midland, MI)

WLW, 700 kHz-AM. Full data station logo card. Received in eight days for an English reception report and a self-addressed stamped envelope. Station address: Suite 700, 3 E. 4th St., Cincinnati, Ohio 45202. (Harold Froedge, Midland, MI)

Mr. Leslie Edwards received a full-color brochure in 34 days from Voice of the UAE

Gayle Van Horn
P.O. Box 1098
Gretna, LA 70053-1098

MONITORING TIMES

Date........January 5, 1989

Sir,

We acknowledge receiving your reception report on ........today about our broadcast dated ........wave ..........frequency ..........KHz

Our engineering department has verified your report's details and found them correct. Many thanks for your interest in our English service and we are pleased to send you this Q.S.L. card for your reference and record.

Sincerely yours,

Director,

Voice of UAE from Abu Dhabi

Season's greetings from Greenbelt, Maryland.

Mrs. Leslie Edwards received a full-color brochure in 34 days from Voice of the UAE

May 1989

www.americanradiohistory.com
In the past several issues of Monitoring Times, I talked about several exotic RTTY modes. The response was overwhelming! One reader said, “Your article about piccolo came with perfect timing. I have been hearing these strange signals but didn’t know what they were.”

I’m glad that we were helpful, Fred Smith (Chicago, Illinois). Sometimes RTTY is a mode that uses beeping sounds that can be foreign to some rooky listeners. In order to benefit from this hobby, it takes a keen ear and lots of patience.

"Just the FAX, Ma’am!"

I’ve been so busy talking about RTTY, I forgot about FAX! This is one mode that has gained popularity in the last several years. Just about every manufacturer of RTTY gear offers FAX modes in their equipment. In fact, one could say that 1988 was the year of the FAX.

FAX is also gaining popularity in the business world. Every time I hear a commercial about a FAX unit on the local AM broadcast station, I stop and think, "I wonder if I can connect it to a shortwave receiver and copy the FAX on 8.08 MHz?" The FAX format is used on the "land lines," and so I’m told, it is different. However, someday I just might drag my Sony 2010 to work and connect it to the Ricoh FAX unit that’s sitting on my secretary’s desk!

The FAX picture shown below was sent in by Bob Perkins of Artesia, New Mexico. As you can see from the photo, Bob has a very sophisticated listening post. In order to obtain pictures of good quality, you need to put out some "bucks." I have to admit, even with my setup, I’m lacking a good printer.

The M-7000 from Universal shortwave is the best choice for a demodulator. The Kantronics KAM or the AEA PK232 will give good results if an IBM PC clone is used with the software that’s offered by either manufacturer. All of the units mentioned above require a printer that will handle graphics. The printer, for the most part, will determine the quality of the picture. You should only use the printer that is recommended by the manufacturer.

FAX uses a system that is similar to RTTY. It transmits tones but it doesn’t have the "toodil loodli" sound. It sounds more like a broken record playing a tune from Twisted Sister! The shifting tone will have a distinct cadence.

On the shortwave bands, FM FAX can use four different drum speeds. They are 60, 90, 120, and 240 RPM. The drum speed is the actual speed that a drum, in commercial FAX units, is spinning. A piece of paper is attached to the drum.

There is a pen that moves in little steps (which correspond to the cadence) and scans down the paper. The picture is created by the pen because an electronic circuit, which connects to the shortwave receiver, causes ink to flow on the paper. The ink spot corresponds to the space tone (black) and no ink spot corresponds to a mark (white). The simple two tone (black and white) system is used to print weather maps and text.

A more complicated system using shades of grey is used to print photographs. But I won’t get into that because it goes beyond the scope of this column. The only unit that can receive FAX photos and is reasonably priced for the SWL market is the Universal M-7000. The M-7000 can also receive AM FAX pictures which are found on the orbiting weather satellites such as the ones used by NOAA.

Tune your VHF receiver to 137.5 MHz and set the M-7000 for FAX AM, 120 speed, positive, 576 ITC, AGC on, left to right and grey (picture) mode. Connect the M-7000 to the speaker output (you’ll need an external speaker to monitor the audio) and set the R71 to FM narrow. Then wait for the satellite to make an orbital pass (you’ll hear a clicking or wooshing sound). Press the R3n button on the M-7000 and you should get what looks like a cloud cover photo directly from the satellite.

The orbital pass will take about ten minutes which will be enough time to get most of the picture. This will be a good project for you (the reader) to send in and I’ll make sure that it gets printed in a future issue! ZCZC

NOA Weather Satellites
137.5 and 137.62 VHF
NOTE: Black and white pictures are sent during the day and Infrared at night.

Shortwave FAX
122.50 CFH HALIFAX NOVA SCOTIA
2718.00 CCS SANTIAGO CHILE
3537.00 NAM NORFOLK VIRGINIA
4271.00 CFH HALIFAX NOVA SCOTIA
5100.00 AXM22 CANBERRA AUSTRALIA
5890.00 RVB TASHKENT USSR
6436.40 GZ2 NORTHWOOD UNITED KINGDOM
7931.50 BUENOS AIRES (photo)
8080.00 NAM NORFOLK VIRGINIA
8185.00 FP198 PARIS FRANCE
9220.00 RTB NOVOSIBIRSK USSR
13550.00 ZKLF AUCKLAND NEW ZEALAND
14692.00 JMJ4 TOKYO JAPAN
NOTE: For a complete list, see the Shortwave Directory by Bob Grove.

Here is a list of RTTY/FAX manufacturers and dealers:

AEA
2006 196th SW
Lynwood, WA 98036
Phone: 206-775-7373

Grove Enterprises
140 Dog Branch Road
Brasstown, NC 28902
800-438-8155

Healthkit Company
P.O. Box 8588
Benton Harbor, MI 49022
Phone: 800-253-0570

Kantronics
1220 E. 23 St.
Lawrence, KS 66046
Phone: 913-842-9745

MFJ Enterprises, Inc.
P.O. Box 494
Mississippi State, MS 38762
Phone: 601-323-5869

Universal Shortwave
1290 Aida Drive
Reynoldsburg, OH 43068
Phone: 614-431-3839

My attempt at copying NAM Norfolk, VA, on 8.08 MH using a Star NX-10 printer and the M7000.

Bob Perkins’ FAX pic from USCG on 17.151.2 MHz, using the ICOM 761A and DES M-800 converter, and Epson LQ-800.
Sorting Through 158 Channels

The other night I traveled through the Clarke Belt to see if there were any significant changes. I came upon quite a few, starting with Spacenet 2-11. SelectTV recently moved here from S1-9 and is still on the air after countless rumors to the contrary. Instead, the three Telstar channels which were cable pay-per-view and VCI encrypted have unceremoniously disappeared.

Channel 21 -- The United States Information Agency (USIA) is using this channel for a retransmission of C-SPAN and other specialized programs such as a course in American English.

Channel 7 -- The combined efforts of CNN and Telemundo are providing a Spanish language news service aimed at Latin American countries.

Satcom F2 -- The reborn PTL crowd is here raising money to the tune of over $2,000 per minute. What if the U.S. treasury had its own channel?

Telstar 301 channels 2 and 7 (CBS) were scrambled with the audio in the clear. Word has it that sports backhauls for this network will not be scrambled. Also on this bird on channel 15 is CBS News Net International. American news stories are being fed here to Rupert Murdoch's Sky Channel.

On the SCPC front: As of January 1, Mutual Radio News has gone from analog SCPC on W4,3 to digital SCPC on F1. The move will disappoint SCPC fans as it leaves National Public Radio as the only big time radio network still using analog SCPC. Those looking for news with a less orthodox slant will enjoy the Pacifica Radio feeds daily on W4,3 as well. Also heard there since the first of the year has been KLONG-FM, Longbeach, California (U of C L B), which has the best all-jazz format an aficionado could hope for.

Programming of Note

Telecommunications and Information Revolution is the title given one of the more fascinating half-hours on television. TIR is hosted by Jacob L. Trobe, Executive Director, Telecommunications in the Public Interest. If you guessed that this was a highly academic program populated by Ph.Ds, you're right. But if you thought it was over your head, you're wrong.

The program I'm reporting on had two guests, both of whom were Ph.Ds from the Center for Telecommunications and Information Studies at the graduate school of business, Columbia University. Among topics up for discussion were: Telesco entry into cable television competition, status of DBS globally, regulatory role of government in nonbroadcast communications, and runaway profits from telecom takeovers.

You're right, this will never replace Alf. But if you have any interest in the subject of communications and want to hear the dispassionate opinions of astute media observers, then this is your show.

What About You?

Depending on your location, you can probably pick up six to ten over-the-air stations on your TV set. With cable you may get an additional 12 to 24 channels. For these purposes, the TV program guide in your Sunday paper or the little program guide at the supermarket check-out counter will do nicely. However, trying to keep up with programming on the 150 plus channels on your dish is impossible without a special satellite TV program guide.

One such guide is Satellite TV Week. This guide is tabloid size (11" x 14 1/2") with pages numbering in the upper 60s. While the guide portion of the magazine is printed on newsprint (like Monitoring Times), six of the pages are glossy stock which allows for full color photos and program-oriented feature stories. Other "departments" are sprinkled throughout the guide.

Among these departments are: "Ask the Tech Editor," in which readers' technical questions are answered; "Recurring Feeds" in which individual syndicated shows are listed with their day, time and satellite/channel given and "Video and Audio" where 86 audio programmers and 158 video channels are listed in a comprehensive and

Trying to keep up with 150 programs is impossible without a program guide. Satellite TV Week publishes a guide, plus a couple of other useful tools. Sample several guides to find what suits you.
A three-way switch helps your TV sort out signals from three sources.

Choosing a satellite program guide is an important decision for every dish owner. Without one, it is impossible to figure out what to watch. You could stumble from bird to bird for days without ever finding what you are looking for. Which guide to buy is up to the needs of the individual. My advice is to write for samples of the guides you are interested in and compare them.

Here are some other tips: As with all magazine subscriptions, expect to wait up to six weeks before your sub starts. For that reason you may want to start your sub before you have actually installed your system. Subscription periods are typically for one year for which you can expect to pay about $50.00. To speed things up, most publications have a toll-free number for credit card customers. It could save weeks on the start-up time.

**Buyer’s Guide, Too**

The publisher of *Satellite TV Week* also offers two other publications of interest to the home dish owner or person “just looking.” The first is called *A Simplified Guide to Satellite Television* (Newly Revised Edition). The price is $1.50. The pamphlet was probably intended as a handout by dealers to prospective customers and a handy marketing tool for *STV Week*. As such, I’m sure it’s effective.

The $1.50 price tag is clearly designed to make you think you’re getting something of value for free. But who wants a weenie when a Texas steak is on the table? Fortunately, the publisher also offers *Satellite TV Buyer’s Guide 1989 Edition* for $3.50 and it’s worth every nickel. *Buyer’s Guide* runs 100 pages long and is jammed with information from useful maps of satellite footprints to product reviews of integrated receiver decoders (IRDs). In addition, there are lots of items of interest including a glossary of TVRO terms, directory of TVRO dealers’ associations, technical tips, and much more.

For more information on subscriptions to *Satellite TV Week* or the buyer’s guide, write: *Satellite TV Week*, P.O. Box 308, Fortuna, CA 95540-9993. For credit card subscription purchases call 800-345-8876.

Two products from Archer: This infra-red remote control extender allows control of your satellite receiver and VCR from a remote location without extra cables.

You Can Hear The Satellites!

Communications Satellites will tell you how -- and where -- to listen!

255 illustrated pages list thousands of active frequencies and their uses! Only $11.95 plus $2 UPS or bookrate shipping from

Grove Enterprises
P.O. Box 98
Brasstown, NC 28902

or order toll-free
1-800-438-8155
The Angry Young Man, the Robot, and the FCC

When most people listen to the radio these days, they leave it merely with a sense of dissatisfaction. When Gary Gaulin listens to the radio, he leaves it angry. "It's wall-to-wall beer commercials and devil worship music," he says. So incensed, Gary decided to create an oasis of radio morality in the community of Holyoke, Massachusetts, by starting his own FM radio station. He picked up a couple of radio magazines at the local library, bought some parts at the local Radio Shack and before long, station W I DON'T KNOW was born. W I DON'T KNOW is on the air 24 hours a day and has been since March of 1988.

From the outside, the studios of W I DON'T KNOW look like any other house in Elmwood. But inside is a tiny home-made transmitter that carries the station's signal up one end of Northampton Street and down the other. You're likely to lose it as you head downtown on Dwight street or South Street, though you may pick it up again in Fairview, Aldenville or parts of South Hadley.

"External antennas pick us up good, says Gary. "But if you're in a house, you won't get us because we don't put out enough power."

For now, the station is staffed by Gary and his wife Laurie, who divides her time between housework, caring for two children and plugging in station IDs when Gary is at work. When they both get tired of their station obligations, Mr. DJ takes over.

Mr. DJ, a robotic disc-spinner that's part Jameco computer, part compact disc player and part speech synthesizer, is like nothing you've heard before.


Then it's into a recording by Tangerine Dream, selected by Mr. DJ.

"It takes all the songs that are on the CD cartridge, and it shuffles it up like a deck of cards," says Gary, who considers Mr. DJ a machine -- he won't call it "he" the way Laurie does. "Then it announces every song before it plays it."

Gary punches a few keys on the computer and Mr. DJ introduces Rock Lobster by the B-52s. The robot rocker sounds something like a Cylon warrior from the old TV show, Battlestar Galactica.

Aside from the steely-voiced Mr. DJ, W I DON'T KNOW is run like any other radio station. IDs, for example, are given every 15 minutes.

Gary begins to type again, inputting weather and news reports, phonetically spelled for ease of electronic elocution, that Mr. DJ will read each hour:

"THE EYEATOLA HO MAINEE," begins Mr. DJ. "REALLY DID IT THIS TIME. WHAT A PERFECT EXAMPLE OF RELIGIOUS FANATISMS... MOST ISLAMIC PEOPLE ARE NOT CRAZY LIKE HO MAINEE. IT'S JUST THAT HO MAINEE TALKS TO GOD EVERY DAY LIKE THE TV EVANGELISTS AND HE CHANGES THE RELIGION AS HE GOES.

"ALL IMPORTANT ANNOUNCEMENTS LIKE THIS ARE REE PEEITED HOWERLY. THANK YOU."

Gary Gaulin promises, "When we hit the big time, no beer commercials!"

The music on W I DON'T KNOW is every bit as unusual, an eclectic mix of tunes ranging from the mind-bending teen anthems of Twisted Sister to marches by John Philip Sousa. "One of our intents is to play music that is good, that's lively, but won't screw up their heads," says Gary. If he thinks a lyric might be misinterpreted, he'll go on the air with an explanation.

"The object of our station is to be the first educational music station," he says. "Where the commercials used to be, we put in positive, educational messages."

Gary takes his radio and his mission very seriously. "If you don't think that all these ads aren't raising our kids to be alcoholics, you'd better think again. When we hit the big time," he promises, "no beer commercials!" Meanwhile, the studio monitor blasts out Cindy Lauper's Money Changes Everything.

Despite his lack of a license, Gaulin insists that he isn't a pirate. "We're not fooling around. I know all about the regulations. Our power is so low that the FCC could fly their planes over my house all day long and they'd never find us we're so small."

He says that reports that the F.C.C. was trying to find W I DON'T KNOW don't worry him. He's not even trying to hide. In fact, one time he even called the F.C.C. to run a computer search for the cleanest local frequency. The nearest competition he was able to find was WBBS in Great Barrington, a little more than a kilometer away.

But again, there's little to worry about. That sort of thing, he says, is a technicality that can be sorted out with the F.C.C. in the licensing procedure. It's his landlord and his mother who are his biggest problem.

Back at the New England office of the Federal Communications Commission, enforcement officer Victor Tagliaferro was hearing rumors of a strange little station operating on 105.3 MHz. One morning, Tagliaferro decided to get in his car and head for Holyoke.

There on Interstate 91, he began to detect W I DON'T KNOW. He followed the fading signal down Northampton street, locating Gaulin's house "within 15 minutes."

At about that time, Gaulin was on his way home from lunch, perhaps to do a little tinkering on his transmitter. It was then that he spotted a man on Martin Street, aiming an electronic direction finder at his attic.

"I knew what was in his hands. It was a homing device and he had it pointed right at my antenna," Gaulin said. "I went into the house, wolfed down a tuna fish sandwich and waited for the knock at the door."

Before that knock came, however, Gary managed to make a phone call to the local paper. If the F.C.C. was going to start hauling his equipment out, by God, he wanted the whole world to know about it. The F.C.C., it turned out, had no intention of making a scene. Tagliaferro was polite but firm.

"He said that we should go off the air for the time being so as not to jeopardize the future,"
said Gary. "He said that our sound quality, by the way, was beautiful."

In an interview with the Transcript-Telegram, Victor Tagliaferro agreed, saying that "[Gaulin is] a very talented young man." Still, Tagliaferro had to be firm. "They can't operate, period. And they must shut off." Unfortunately, laments 32 year old Gaulin, "our kit was built a little too good.

The story does not end on a completely down beat note, however. According to Tagliaferro, the Gaulin's may qualify for a lower power license to fill the void on the FM band. But he will have to apply through the F.C.C.'s Washington, D.C. office. And that's got Gary and Laurie Gaulin at work once again, this time trying to raise community support in now FM-less Holyoke.

"We're going to start preparing for the big time," says Gaulin enthusiastically. "Probably the biggest message I want to get across to the kids is that you've got to keep learning. Then I want to promote some kind of moral sense in a world where morals are easily lost or twisted.

Once again, Gaulin is "on the air" and the fine line between the man and his machine once again begins to b-b-b-lurr.

Bits and Pieces

Diss Jockey Mike McDonald thought he'd have a laugh by promising "the keys" to a new Porsche sports car to a lucky listener, but the joke turned out to be on him. McDonald, of Chicago's WLS, offered the keys to the first person who could answer a question on the air. Thom Theobald did and McDonald told him, "You win the keys to the Porsche. I have absolutely no idea where the car is, but you get the keys."

Theobald, not one to laugh over such a thing, called his attorney who demanded the $30,000 car from the station.

In the end, Theobald did get the Porsche. McDonald, not surprisingly, got the axe.

WGMS-AM in Bethesda, Maryland, hopes to have their wind-damaged tower rebuilt by the end of this month. Back in December, a strong thunderstorm knocked down one of the station's four towers. WGMS was forced to convert its 5,000 watt daytime/1,000 watt nighttime directional signal to a weaker 1,000 watt daytime/250 watt nighttime signal.

None of this seemed to phase the station. As general manager Michael Ferrel said, the weaker signal did not have a significant effect on listenership because AM listeners make up a small portion of WGMS' audience.

Ever want to start your own AM or FM station? Read Fan-Com International's new check-full-of-goodies catalogue and maybe you can. There's more details in the "What's New" section of this issue but suffice it to say that there are plans and kits for low cost, low power (20 watt AM and 10 watt FM) broadcast transmitters and some really excellent books.

The catalogue is one dollar from P.O. Box 130, Paradise, California 95967-0130. Tell 'em Monitoring Times sent you.

Mailbag

Ken Flannery, obviously a Dale Carnegie graduate, writes: "While I find American BandScan's monthly 'New Station Grants' section most helpful, I find you to be a dundehead! People read this list to see if there are any new stations being planned for their community. So list them by community, not frequency!" Good idea, Ken.

David Dunn of Columbus, Ohio, writes in to say that he's purchased a DX-40 with digital readout "with which I am hoping to pick up AM stations across the Atlantic." Good luck, David! The way reception is going this year, anything is possible.

Cathy Turner of Yonkers, New York, herself a DXer of some repute, says that American BandScan is "good reading!" Regarding a recent column, she says, "I have mixed feelings about stations going talk. One of the biggest disappointments in my life was relocating to the NYC area and finding my all-time favorite station from my teen years, WABC, had gone talk!"

New Station Grants

Over the past 30 days, the Federal Communications Commission granted 67 new stations in 32 states -- maybe one in your community. Check it out!

- **Alabama**: 86.7 and 97.3-Dadeville and 99.9-Tuskegee, **Arizona**: 93.9-El Dorado, **California**: 95.9-BastroY, 102.9-Cartago, 96.1-Morgan Hill and 100.3-Orange Grove, **Florida**: 98.7-Holmes Beach, **Georgia**: 105.9-LakeLand, k Tree: 94.5-Hayden, **Illinois**: 94.5-DeKalb and 100.5-Henry, **Indiana**: 107.7-Corydon and 101.5-Fort Branch, **Kentucky**: 106.7-Berea, 104.7-Hazard, 105.7-Manchester and 105.9-Whitney City, Louisiana: 104.7-Washington, **Maine**: 96.5-Pitfield, **Michigan**: 90.1-Bay City and 95.8-Glen Arbor, **Minnesota**: 101.7-Crosby, **Mississippi**: 94.9-Holly Springs, 97.9-Wiggins and 97.3-Yazoo City, **Missouri**: 105.9-Augusta, **Montana**: 97.8- Shelby and 96.5-Yellowstone, **New Hampshire**: 104-Convay, **New Jersey**: 96.1-Margate City, **New Mexico**: 93.5-Las Cruces, **New York**: 101.1-Fort Plain, **North Carolina**: 93.5-Wadesboro, **Ohio**: 103.5-Lancaster, 99.9-Ulhinchville and 97.5-Union City, **Pennsylvania**: 99.9-Avis, 88.5-Erie and 94.9 Port Allegany, **Rhode Island**: 102.7-Narragansett Pier, **South Carolina**: 100.7-Charleston, 100.3-Florence, 103.5-Greenwood, 100.5-Marion and 105.9-St. Stephen, **South Dakota**: 97.1-Falith, **Tennessee**: 93.7-Huntingdon, **Texas**: 92.5-Abilene, 101.3-Cameron, 93.1-Friola, 96.1-Odessa, 97.5 Olney and 101.1-Port Isabel, **Utah**: 97.5-Delta, **Virginia**: 105.1-Bridgewater, 860-Dayton, 98.3-Ellenton, 92.1-Ruckersville and 107.9-West Point, **Washington**: 1600-Dungeness, **West Virginia**: 1570-Elk Hills and 94.3-Fairmont, **Wisconsin**: 98.7-Mayville.

Also granted during the period was a booster, WBKE-FM1 on 94.7 out of Altoona, Pennsylvania, a translator, K208BP on 89.5, which relays KGTs out of WNetache, Washington, and a 60 watt synchronous transmittor 970-WAMD in Hickory Hills, Maryland.

This up-to-the-minute information comes courtesy of the fine folk at M Street Journal. For more information on M Street, write them at P.O. Box 3568, Alexandria, Virginia 22302.

Those Battling Irish!

From the Netherlands, Ary Boender continues to give us an update on the Irish situation. After the order to shut down by December 31, at least eleven stations either continued broadcasting or returned to the air, defying the government. Among them was Radio Dublin. Indeed, a Radio Dublin shortwave broadcast was monitored here in central Florida in 1989 on 6910 kHz.

Apparently the Irish authorities see Radio Dublin as the "flagship pirate," because this is the station which seems to be receiving the most pressure. According to Ary, on orders from the government, Radio Dublin’s electricity and telephone were both cut off. It quickly resumed transmissions with the aid of a generator.

However, even this venerable old pirate eventually gave up the fight. On February 9, Radio Dublin went silent. Whether it will return or not, no one can say, but for now it looks as if the pirates are losing and government winning.

While January saw several weeks of increased pirate activity, the situation in Ireland has now reversed. After Radio Dublin folded, only four stations were still broadcasting. These were Radio Star Country, Zee 103, Border Weekend Radio, and Northside Radio. By the time you read this, even they may be gone.

Other Europirate News

Gregg was one of over forty North American DXers who received QSLs from Scotland’s Weekend Music Radio for their tests around Christmas and New Year’s Day on 6312.7, 6317, and 15043. The station advises, “You haven’t heard the last from Scotland!”

Here is an update on Radio Caroline from Ary Boender. Some QSLs are now being received from Apartado 146, 17250 Playa de Aro, Spain. The station now has a new medium wave service on 89 kHz. It is called the “Overnight Alternative” and operates every day but Saturday from 2200 to 0400 UTC. On Easter, Caroline celebrated its twenty-fifth birthday. The station continues to transmit at least some days on 6215 kHz.

Clandestine Things

A letter from Vito Echevarria arrived to remind us that there is in fact one Panamanian clandestine station operating in protest of the regime of General Noriega. It is Radio Constitucional. At the present its transmissions are limited to the FM band, but there is always the chance that medium-wave or shortwave broadcasts could be planned for the future. The Noriega administration argues the station is operated by the CIA’s Foreign Broadcast Information Service. There is a good possibility this is correct.

From Michigan, Harold Frodge writes with some nice loggings of Radio Venceremos, the station of the Marxist guerrillas in El Salvador. Harold logged it between 0201 and sign off at 0336 UTC. As is often typical of Venceremos, it was shifting frequencies between 6600 and 6665 while being "chased" by two other stations. One of these appears to have been a music jammer. It is possible the other may have been a black or phony clandestine which sometimes shadows Venceremos in order to confuse listeners.

The WJDI Report

We previously related the success readers were having in hearing pirate WJDI on 1620 kHz. They obviously are also having success QSLing because Steve Rogovich, Tim Francisco, Jim Kalach, Ray Babecki, and Kevin Murray were all kind enough to send copies of the QSLs they received. Since Kevin’s was the first to arrive we are reproducing it here. You certainly cannot fault WJDI for not giving enough technical details!

In connection with WJDI, Tim Francisco and Barry Diefenderfer also received something else. They got letters from the National Radio Club stating it is not a mail drop for WJDI or any other pirate, and despite the announcement of its address it could neither verify nor forward reports. Fortunately this is no problem. We previously reported that WJDI was planning to establish a mail drop. You can now send reports or other correspondence to Box 142, Cottekill, New York 12419. They should be forwarded within a reasonable amount of time.

Meanwhile several more “Outer Limits” readers have logged WJDI. It was logged in Pennsylvania by Barry Rowan at 0408 UTC on 1620 kHz. In New Hampshire, Howard Kemp even got a phone call from the operator after sending a reception report!

The Voice of Elmer Fudd

Yes, it is hard to believe, but Norfolk, Virginia, talk-show host (WNIS 850 kHz) Pat Murphy sent along a tape of this one which he logged on 26806 kHz at 2100 with the “Uncle Stevie Show,” some pretty zany songs, and other crazy stuff.

Elmer says to report reception to Monitoring Times (he cannot pronounce Santosuosso, but who can?), PopCom, and ACE. Elmer, we are grateful for readers’ logs, as are the folks at PopCom and ACE. But please remember (and all other pirates, also), that commercial publications and radio clubs cannot function as mail drops. We would suggest you use one of the established ones, such as Box 5074, Hilo, Hawaii 96720, or set up one of your own. We can and do publish station addresses once we are made aware of them.

Other Pirates

In Connecticut, Jim Kalach bagged WKND on 6243 kHz at 0358 UTC. He reports the station was playing long versions, possibly bootleg, of songs by Neil Diamond and Neil Young. The station was lost at 0405, possibly because of technical difficulties. Jim would like to know if any of our readers have an address for WKND.
The Voice of Tomorrow is still around having been logged recently on 6241 at 2229 by Pat Murphy. Strangely enough, Barry Rowan heard them commenting, "Everyday we are sending more of our boys to Vietnam," and wonders if they are playing tapes that old.

Those who have heard VOT know it is both anti-Semitic and racist, so it is not surprising they had a broadcast on Martin Luther King, Jr. Day. Ohio's Fraser Bonnett heard that broadcast on 7410 at 2018 UTC.

Both Fraser and New York's Cathy Turner have logged Radio Angeline on 7425 kHz around 1850. Fraser notes the announcer wished everyone good luck in the coming year, 1984, while Cathy remarks on apparent attempts to copy the famous style of Radio Clandestine. Most likely this was another "historic tape," rather than the reactivation of a pirate that was known to be broadcasting several years ago.

Fraser and Cathy also report reception of WENJ on 7415 between 2100 and 2400. This station does use the Hilo mail drop noted previously. Strangely enough, while monitoring WENJ, Fraser heard someone break in over the signal announcing, "This is the FCC.

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.

A Bit of Numbers Intrigue

There is a great deal more to this story than we can report here, but perhaps just a hint may be enough to get you doing some research on your own. Some months ago we reported that an anonymous reader in Florida had sent us loggings of oral CW numbers heard on 13377 kHz. An expert - we could say professional - monitor, these bizarre transmissions had him amazed. Why would anyone use such a method?

After this was published, others, especially Maine's Dave White, went to work. Dave monitored oral CW, but he also logged regular CW as well as a good deal of five-digit English numbers transmissions in the vicinity of the frequency. There was also some plain text in both English and Swahili.

References to the "horn of Africa" area (Ethiopia and Somalia) would indicate that the stations involved were concerned with that region. There was mention of one clandestine transmitter as well as occasional usage of Italian. Italy was once the colonial power in Somalia and occupied Ethiopia during part of World War II.

Another matter of interest was the appearance of alleged State Department station KKN39 in the midst of some of this traffic as well as other stations which may have the same purpose as KKN39.

This is by no means the first time KKN39 has seemed to have had a "friendly relationship" with numbers stations. Nor is Dave the only one hearing KKN39 in that general vicinity. In New York, Leo Schmidlin logged them with a powerful signal on 13387. It was strong, in fact, that the USB transmission came in on LSB with almost equal strength.

And that could get us pondering how many transmitter locations such "State Department" stations as KKN39 and KKN44 (allegedly Monrovia, Liberia) really have. Perhaps their name is Legion.

But all this still leaves us with one nagging unanswered question - why oral CW? Our thanks to Dave White, Leo Schmidlin, John Demmitt, and our anonymous contributor for their escorting us to radio's Twilight Zone.

---

**WJDI**

**1620 KHZ**

_Written by John A. Murray_

_THIS LETTER WILL VERIFY THE RECEPTION OF "PIRATE" RADIO STATION W 3 D I 1 OPERATING ON 1620 KILOHERTZ WITH AN OUTPUT POWER OF 1000 "CLEAR" WATTS. RADIO STATION W 3 D I 1 AT THE TIME YOU RECEIVED OUR SIGNAL WAS ON THE AIR FOR EQUIPMENT TESTING PURPOSES. DURING THE MONTH OF JANUARY 1989 WE HAVE BEEN TESTING OUR NORTH / SOUTH DIRECTIONAL ANTENNA SYSTEM. THIS ANTENNA HAS VERY DIRECTIONAL PROPERTIES TO THE NORTH AND SOUTH AND HAS GIVEN US ALMOST 1000 MILES OF COVERAGE.

WE WOULD LIKE TO GIVE OUR TRANSMITTER LOCATION BUT FOR OBVIOUS REASONS WE KNOW IT WOULD CAUSE THE DENIAL OF W 3 D I 1 AND MANY MONTHS OF WORK BUT, THE GENERAL LOCATION IS 100 MILES NORTH OF NEW YORK CITY. THE TRANSMITTER WAS DESIGNED AND BUILT BY OURSELVES FOR THE STATION AND WILL OPERATE ANY FREQUENCY FROM 1400 KILOHERTZ TO 30 MEGAHERTZ. THE MAIN PURPOSE OF W 3 D I 1 IS TO ADD SOME NEW LIFE TO THE BROADCAST BAND OR HOBUSB AND TO GIVE THE GENERAL PUBLIC, A UNDERSTANDB LANTENATION TO "LOG" IN HIS BOOK. TODAY I HAVE NOTED MANY "PIRATE" CB STATIONS BUT, ONLY A FEW OF US RUN MORE THAN A FEW WATTS. ENCLOSED IS A PHO TO OF OUR "TRANSMITTER AND STUDIO OF W 3 D I 1 " IT HAS BEEN A PLEASURE ANSWERING YOUR LETTER AND I HOPE TO HEAR FROM YOU AGAIN.

*Chief Engineer*

---

**MONITORING TIMES**

**May 1989**

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**CAPRI ELECTRONICS**

P. O. Box 589M

Bayfield, CO 81122

(303) 884-9084

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**WJDI** is one pirate that welcomes reports from listeners, as one of its intentions is to give the SWL an uncommon station to log in his book. WJDI even provided a picture of the inside of the studio!
A Beacon Away Keeps Interference at Bay

I suppose that many of you have heard P-T-P transmissions that began, "This is a test transmission...etc." The purpose here is to give the receiving station an opportunity to adjust its receiver to best copy the coming transmission.

Once in a very great while a marine coastal station will conduct a test for a short period of time (a few days or a few weeks) to see if they are reaching out to the areas of open sea that they wish to cover.

There are also test transmissions by beacons in the low frequencies. Obviously, they are not for the purpose of receiver adjustment. Nor are they intended to test coverage area. The concern is interference.

On other frequency bands, interference causes irritation or resentment. Here the problem is much more severe. If a plane or a ship is using a beacon for direction finding or homing, interference from another beacon could cause the plane or ship to head in the wrong direction and this might result in an accident. Therefore, the tests are run to see if there is such interference with other existing beacons.

Interference is a concern even before the beacon goes on the air. Authorization for a new beacon on a particular frequency is a slow process. Authorities review how near the new beacon is to other beacons on that same frequency, and to beacons on adjoining frequencies.

The intent is to prohibit new beacons on the same frequency within about 300 miles or so of existing beacons. Distances to beacons on nearby frequencies are also evaluated. While this sounds a little severe, it is also beneficial to the proposed new beacon. If the new beacon could interfere with existing beacons, it is equally likely that the existing beacons could interfere with the new one.

If there is some uncertainty, the new beacon may be given temporary permission to operate on the frequency for a short period of time to see if there will be problems.

This happened in Kenosha, Wisconsin, about a year or so ago. Beacon PKW/338 went off the air for a day and then appeared on 389 for a couple of days. It returned to 338 and went completely silent about a week later. At this time, a new beacon appeared on 338. This was HE from Sheboygan, Wisconsin. It wasn't until September that PKW returned to 389. By mid-October, it completed the transition by changing to EN.

It should be pointed out that there is a difference between a two-letter and a three-letter ID for an aeronautical beacon. A three-letter beacon is an NDB, or nondirectional beacon. It is used for direction finding to the airport. Many three-letter NDBs use the same ID as the official airport identifier.

However, if the physical location of the beacon is changed more than a very small distance, it is required to change to a new ID. This prevents errors in using the beacon for location, when it isn't where an old book or map shows the (old) location.

The two-letter beacon is a marker beacon. Most will be LOM markers, Locator Outer Marker. This is a runway marker that pilots use to line up with a specific runway while still some distance from the airport. A large airport may have several LOMs, differing in ID and frequency. Middle Markers (LMM) are generally being eliminated in the U.S. and few remain in the low frequency band.

Thus, the test of PKW on 389 was apparently to check for interference before the conversion to EN was approved.

Initializing

Another kind of testing also exists. This is the test of a new beacon as it is being installed. This is more to answer the question "Will it work?" than concern for interference. This sometimes provides interesting and unusual receptions.

Larry Mindel of Waunakee, Wisconsin, has had a couple of experiences along these lines. A couple of years ago, he was listening to a new beacon, CWF/418, when it suddenly changed to CW. This was a new beacon being installed at Lake Charles, Louisiana. It was to be a two-letter LOM, but they were using the airport identifier (CWF) as the ID while testing the new beacon. Larry was listening at the moment they switched over to the official ID it still uses.

More recently, Larry heard YKF on 335. With the "Y" at the beginning and the long tone after the ID, it was apparently Canadian. Ken Stryker, the Unidentified Beacons Editor of LWCA, noted that KF was the ID of Waterloo/Wellington, Ontario.

Some years ago, Canada put a "Y" in front of many two-letter identifiers to create a similarity in Canadian beacon IDs. With this in mind, Ken talked to the airport people in Waterloo. They were testing a new beacon, but were supposed to be testing without any ID (carrier only). They have not been reported since, although testing of the carrier may still be going on.

If you live in the eastern part of the country, here is your chance to listen in on some testing in your area. Montauk Point, New York, is a light station operating a sequenced marine beacon, MP/286. This has been operating as SQ3, coming on for one minute at two minutes past the hour and every six minutes thereafter.

They have been testing continuous operation on 293 during the silent period on 286. In other words, they are on 293 for five minutes and off for one (while on 286).
During May, they are scheduled to operate full time on 293 and not be on 286 at all.

You can check what they are testing. There is apparently some concern whether Montauk Point will interfere with the Breton Reef Light beacon on 295. This Rhode Island marine beacon uses the ID of BR. Listen to both frequencies and see whether you can hear both beacons.

This seems to be an early move in converting eastern marine beacons from sequenced to continuous. The Great Lakes conversion was a year ago, and Canadian Pacific area marine beacons began changing late last summer.

**Letters to the LOWFER**

Bill Kile of Oxnard, California writes in with a simple request. "Being that most of the transmissions audible below 500 kHz use Morse Code, could you run a 'clip and save' Morse code table?" No problem, Bill. And what a good suggestion.

While letters predominate in LF station identifications, you will hear numbers from time to time, especially with private beacons. And, if you’re not familiar with Morse code, don’t let that stop you from enjoying this challenging, exciting form of DXing. Just get yourself a cassette machine and tape record everything you hear. By playing it back (as many times as necessary) and consulting our handy "clip and save" Morse code chart, you’ll be able to identify LF stations like a pro!

---

**Morse Table**

<table>
<thead>
<tr>
<th>Letters</th>
<th>T</th>
<th>U</th>
<th>V</th>
<th>W</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
<th>Numbers</th>
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</thead>
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<tr>
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<td>B</td>
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</tr>
</tbody>
</table>

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Affordable, compact, and ultra-sensitive. More and more people are discovering new applications for our counters than ever before. Now used by technicians, engineers, law enforcement officers, private investigators, two-way radio operators, scanner hobbyists, and amateur radio operators, just to name a few.

Over 15 years of service, quality, experience and dedication has proven you can count on us.

**Hand Held Series Frequency Counters and Instruments**

<table>
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<th>MODEL</th>
<th>2210</th>
<th>1300H/A</th>
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<td>TO</td>
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<td>1.3 GHz</td>
<td>2.4 GHz</td>
<td>550 MHz</td>
<td>1.6 GHz</td>
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<td>APPLICATIONS</td>
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<td>1.3 GHz</td>
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<td></td>
<td>2.2 GHz</td>
<td>$30 mv</td>
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<td>ACCURACY</td>
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<td>All counters have 8 digit red 28&quot; LED displays.</td>
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<td>Aluminum cabinet is 3.9&quot; H x 3.5&quot; W x 1&quot;</td>
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<tr>
<td>Internal Ni-Cad batteries provide 2-5 hour portable operation with continuous operation</td>
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<tr>
<td>from AC line charger/power supply supplied.</td>
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<tr>
<td>Model CCB uses a 9 volt alkaline battery. One year parts and labor guarantee. A full line of probes, antennas, and accessories is available.</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

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Fort Lauderdale, FL 33334
(800) 327-5912
(305) 771-2050

Tell the world you saw it in Monitoring Times!
from the first tee shot to the last putt. The FM signal can only be picked up on the course, the clubhouse and hospitality tents.

Development of the service comes after a three-year test run at six different events. Not unexpectedly, there is no word on what frequencies are used.

Radar: Gotcha' Now

E vading police radar is almost a national past time. Police change the bands; radar detectors quickly catch up. States make them illegal. Manufacturers make them smaller.

And on and on it goes – until now. International Measurement and Control Company (IMCC) says they can end the war once and for all.

According to New York Times business technology writer Philip E. Ross, IMCC has developed a laser speed detector that emits infrared light invisible to humans – and radar detectors.

Moreover, its pencil-thin beam is so precise that it can pick out a single car up to a third of a mile away, separating it from the herd far more easily than with radar, whose broad beam can take in several cars at a time.

In final form, the speed gun will weigh 4 pounds and measure 3 by 5 by 7 inches, making it easy enough to aim. The new laser speed gun, which was developed out of related surveying and military range-finding technology, should be in use by the end of the summer.

"I ran it once, and if it proves to be as accurate as it appears, it could be a useful tool," said Brian Traynor of the National Highway Traffic Safety Administration.

But, says author Ross, there are drawbacks. The laser's precision comes at the price of mobility. The beam must be shot from a standstill position, keeping police from roaming the roads.

Another disadvantage is the unit's high price, projected at $3,000 to $3,500 – more than triple that of most mobile radar units. Still, several law enforcement experts appear to regard the machine as a useful threat with which to chasten habitual speeders made arrogant by their dashboard detectors.

"It is my understanding," says James J. Baxter, president of Citizens for Rational Traffic Laws, Inc., "that the private enterprise system has already developed a countermeasure."

But price would be a factor in a laser-radar detector, as well. While Baxter predicts the use of jammers that "return signals showing whatever speed the driver wishes," in the end the cost might be too much for such units to become as widely used as radar detectors.

"You'd basically have to put a laser diode in the instrument and several receivers on the front and back of the car," said David Williams, president of IMCC. "I'd guess that this kind of detector would run at least $1,500."

Airballs

G olf, as a TV sport, often leaves a lot to be desired. You know, long periods of silence followed by interminable periods of boredom. If you're standing behind the ropes at a tournament, however, wondering what's going on at the other 17 holes, it can be even worse.

Fortunately for those who like to attend such events, the PGA Tour and the Sports Band Network, a Dallas-based radio service, is bringing golf play-by-play to the fairways.

According to Golf magazine, at 20 events this year, fans can rent a radio receiver headset for three dollars. The headset will be able to pick up reports of action elsewhere on the course.

Sports bands will have play-by-play reporters walking with the last four or five groups, two anchors to set the scene plus live and taped interviews. Broadcasts run Friday, Saturday and Sunday.
After years of legal wrangling, Go-Video, Inc. is about to release their dual-deck videocassette recorder system. The unit, which the manufacturer says will retail for under $1,000, should be in stores in time for Christmas sales. The unit will be produced by Samsung Electronics Company, Ltd., a South Korean firm.

The Go-Video VCR-2 lets users copy and edit the contents of one videocassette onto another, tape two programs at the same time or watch a video while taping a television show.

In order to win the approval of the motion Picture Association of America, Go-Video had to agree to include a device that would prevent the copying of any prerecorded videocassette encoded with a special signal.

Still unclear is whether consumers will be willing to part with nearly $1,000 for the unit. Says Steve Schwartz, associate editor at Twice magazine, which covers the consumer electronics industry, "It might just be cheaper to buy two VCRs."

Azden Corporation has announced the release of the DSR-DM90, their top-of-the-line full-size digital-ready headphones.

According to company literature, in order to take full advantage of the improved dynamics of digital recording, you need a headphone incorporating the latest "State-of-the-Art" materials and construction techniques.

All Azden digital units boast "slightly different characteristics" to suit individual tastes and comfortable fit.

The DR-DM90 Digital Monitor delivers the bass response of an "enclosed" type headset without the weight and produces "sizzling highs and a full warm midrange."

Speaker Unit: Dynamic type * Impedance: 32 ohms * Sensitivity: 105dB/mW * Maximum Input: 800 mV * Frequency Response: 4~26,000Hz * Cord length: 3m * Plug: 3.5 mini (Gold-plated) * Weight: (without cord): 140g.

For more information, write to Azden Corporation, 147 New Hyde Park Road, Franklin Square, New York, 11010.

Full-Size Digital-Ready Headphones

Azden corporation has announced the release of the DSR-DM90, their top-of-the-line full-size digital-ready headphones.

According to company literature, in order to take full advantage of the improved dynamics of digital recording, you need a headphone incorporating the latest "State-of-the-Art" materials and construction techniques.

All Azden digital units boast "slightly different characteristics" to suit individual tastes and comfortable fit.

The DR-DM90 Digital Monitor delivers the bass response of an "enclosed" type headset without the weight and produces "sizzling highs and a full warm midrange."

Speaker Unit: Dynamic type * Impedance: 32 ohms * Sensitivity: 105dB/mW * Maximum Input: 800 mV * Frequency Response: 4~26,000Hz * Cord length: 3m * Plug: 3.5 mini (Gold-plated) * Weight: (without cord): 140g.

For more information, write to Azden corporation, 147 New Hyde Park Road, Franklin Square, New York, 11010.

Travel Tips for Trouble Spots

Flying into Kathmandu this week? Spending a week studying sand on the Chad-Libya border? Before you do, write down this number: 202-647-5225. It's the State Department's new round-the-clock hotline for international travelers.

Ring it up and get up-to-the-minute advisories on potentially troublesome destinations. You can find out about the strictly enforced currency laws of Ghana, medical service in the Soviet Union, and even the mountain peaks of India that should be avoided because of ongoing armed clashes with Pakistan.

The advisories cover everything from civil strife to outbreaks of serious disease.

According to Insight magazine, while coverage of each country is uneven -- the advisory on India runs almost five minutes while the warning on Burma says only that "in the wake of disturbances in Burma, the State Department advises against travel to Burma at this time" -- it is still an improvement over the old system.

Prior to the advent of the computerized telephone system, written travel advisories were sent by mail. Calls to the center were handled by one of three operators who often had to set down the phone while searching for the appropriate report.

To have your new product or book considered for review in Monitoring Times, send it to Editor, 140 Dog Branch Road, Brasstown, NC 28902.
Sunday
May 7, 14, 21, 28
0030 BBC: Composer of the Month. Profiles and music of famous composers.
0101 BBC: Play of the Week. Hour-long drama selections.
0113 Radio Australia: Boomerang. Answers to listener enquiries about Radio Australia.
0130 Radio Australia: At Your Request. Dick Paterson plays listener requests.
0130 Radio Austria international: Report from Austria. A magazine program, covering all aspects of Austrian life and events in the news.
0202 Radio Cairo: Egyptian Music. Traditional Egyptian music selections.
0212 Radio RSA: P.O. Box 4559. Reception reports and questions on Africa from listeners.
0215 BBC: Reading. A serialized story or novel, as adapted for radio.
0230 BBC: The Ken Bruce Show. A mix of popular music and entertainment news.
0240 Radio RSA: Saturday RSA Weekly magazine program with music and travel.
0245 Radio Cairo: Listeners' Mail. Comments from Cairo listeners.
0315 BBC: From Our Own Correspondent. In-depth news stories from correspondents worldwide.
0330 BBC: Screenplay. A quiz show on the movies, as hosted by Iain Johnstone.
0330 Radio Australia: Unsung Heroes and Heroines. A look at extraordinary but little-known Australians.
0430 BBC: Sing Gospel Development in contemporary religious music.
0430 Radio Australia: Arts Roundabout. Arts in Australia, past and present.
0445 BBC: Worldbrief. A 15-minute roundup of the week's news headlines and other events.
0509 BBC: Twenty-Four Hours. Analysis of the main news of the day.

0530 Radio Australia: At Your Request. See S 0130.
0530 Radio Austria international: Report from Austria. See S 0130.
0540 BBC: Words of Faith. People share how their scripture gives meaning to their lives.
0630 BBC: Jazz for the Asking. A jazz music request show.
0630 Radio Australia: Education Now. Primary school students discuss their education.
0709 BBC: Twenty-Four Hours. See S 0509.
0713 Radio Australia: You Asked for It. Listener questions about Australia.
0730 BBC: From Our Own Correspondent. See S 0315.
0730 Radio Australia: Communicator. See S 0230.
0730 Radio Austria international: Report from Austria. See S 0130.
0745 BBC: Book Choice. Short reviews of current or future best-sellers.
0750 BBC: Waveguide. How to hear the BBC better.
1115 BBC: From Our Own Correspondent. See S 0315.
1130 BBC: Composer of the Month. See S 0030.
1130 Radio Austria: International Top Hits. John Anderson with the week's big sounds.
1130 Radio Austria international: Austrian Shortwave Panorama. Developments in communications and DX news.
1201 BBC: Play of the Week. See S 0101.
1230 Radio Australia: Communicator. See S 0230.
1300 BBC: Twenty-Four Hours. See S 0509.
1330 BBC: Sports Roundup. The day's sports news.
1330 Radio Australia: Sports Results. Reports from Australian and international sporting events.
1330 Radio Austria international: 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.
1430 Radio Australia: Innovations. Australian

**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 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.

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Monday

May 1, 8, 15, 22, 29

0030 BBC: In Praise of God. A half-hour program of worship.
0101 BBC: Opera of the Week. An introduction to opera, with excerpts from several operas.
0113 Radio Australia: Window on Australia. A look at people and places all over the nation.
0130 Radio Australia: This Australia. Documentaries about the land “down under”.
0130 Radio Austria International: Report from Austria. See S 0130.
0145 BBC: Chopin Collection. A look at the classical pianist and composer Chopin.
0215 BBC: Andy Kershaw’s World of Music. Exotic and innovative music from the world over.
0230 BBC: Science in Action. The latest in scientific developments.
0315 BBC: Food and Drink. A look at nutritional consumption and changing eating habits.
0330 Radio Australia: Sports Results. See S 1330.
0345 Radio Austria: Music of Radio Austria. See S 0313.
0430 BBC: Reading. A serialized story or novel, as adapted for radio.
0445 BBC: Nature Now. Information about flora, fauna, and natural resources.
0509 BBC: Twenty-Four Hours. See S 0509.
0530 Radio Australia: Southern Cross Sketches. Barry Seeber examines and documents changes in Australia since European settlement.
0530 Radio Austria International: Report from Austria. See S 0130.
0540 BBC: Words of Faith. See S 0540.
0545 BBC: Recording of the Week. A personal choice from the latest classical music releases.
0630 BBC: Feature. See S 1401.
0709 BBC: Twenty-Four Hours. See S 0509.
0713 Radio Australia: Window on Australia. See M 0113.
0730 BBC: Feature. See S 1615.
0730 Radio Australia: Along the Mighty Murray. People, places, and events encountered along Australia’s greatest river.
0730 Radio Austria International: Report from Austria. See S 0130.
0800 Radio Australia: Southern Cross Sketches. Barry Seeber examines and documents changes in Australia since European settlement.
0800 Radio Austria International: Report from Austria. See S 0130.
0830 Radio Australia: Opera of the Week. An introduction to opera, with excerpts from several operas.
0830 Radio Austria International: Report from Austria. See S 0130.
0830 Radio Canada: International Report.
0830 Radio Canada Int’l: News [S-M]
0830 Radio Canada Int’l: World at Six [T-A]
0830 Radio Moscow: News.
0830 Voice of America: News.
0830 WCBS: News [T-F]
0830 KVOH: UPI Headline News.
0830 Radio Canada Int’l: As It Happens[T-A]
0830 Radio Canada Int’l: News [S]
0830 Radio Moscow (World Service): News in Brief [M]
0830 Radio Netherlands: News [T-S]
0830 Voice of America (Special English): News.
0830 WCBS: News [T-F]
0830 KVOH: UPI Headline News [T-A]

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.

MONITORING TIMES
March 1989
Tuesday

May 2, 9, 16, 23, 30

0006 WCSN: News Focus. See M 1606.
0030 BBC: Megamix. A compendium of music, sport, fashion, health, travel, news and views for young people.
0033 Spanish Foreign Radio: Music Feature. A look at original Spanish music performed by local groups.
0034 WCSN: Young Ideas. A program for teenage listeners, featuring news, features, music, and ideas.
0047 WCSN: Music. See M 1647.
0054 Spanish Foreign Radio: Music Shorts. A variety of different instrumental music.
0101 BBC: Outlook. See M 1405.
0106 WCSN: Kaleidoscope. See M 2306.
0113 Radio Australia: Window on Australia. See M 0113.
0113 Radio Prague: Newsview. Commentary on 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 Radio Australia: Education Now. See S 0630.
0130 Radio Austria International: Report from Austria. See S 0310.
0133 Radio Prague: Meet the People. Questions from listeners are posed to guests in the studio.
0136 WCSN: Letterbox. See M 2336.
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.
0206 WCSN: News Focus. See M 1606.
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.
0232 Radio Australia: Taim Bilong Masta. Australia's involvement with Papua New Guinea over the last 100 years.
0234 WCSN: Young Ideas. See T 0034.
0247 WCSN: Music. See M 1647.
0300 WCSN: Kaleidoscope. See M 2306.
0345 Radio Finland: Armmail. An audience response feature, with listeners' comments and questions.
0406 WCSN: News Focus. See M 1606.
0430 BBC: The Learning World. See M 2315.
0430 Radio Australia: Business Horizons. Business and trade in Australia and neighboring regions.
0434 WCSN: Young Ideas. See T 0034.
0447 WCSN: Music. See M 1647.
0455 BBC: Book Choice. See S 0745.

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0130 Radio Moscow (World Service); News in Brief.
0130 WCSN: News [T-F].
0149 Radio Veritas Asia: World News [M-F].
0152 Radio Veritas Asia: World News [A].
0200 BBC: World News.
0200 Deutsche Welle: World News.
0200 KVOH: UPI Radio News [T-A].
0200 KYOI: News [M-F].
0200 Radio Canada Int'l: As It Happens [T-A].
0200 Radio Moscow: News.
0200 Voice of America: News.
0200 Voice of Free China: News and Commentary.
0200 WCSN: News [T-F].
0215 BBC (South Asia): Newsreel.
0215 Radio Cairo: News.
0230 KVOH: UPI Headline News [T-A].
0230 Radio Moscow (World Service): News in Brief [S-M].
0230 Radio Portugal: News [T-A].
0230 WCSN: News [T-A].
0300 BBC: World News.
0300 Deutsche Welle: World News.
0300 KVOH: UPI Radio News [T-A].
0300 KYOI: News [M-F].
0300 Radio Australia: World and Australian News.
0300 Radio Beijing: News.
0300 Radio Japan: News [M-A].
0313 Radio Prague: Newsview. See T 0113.
0315 BBC: The World Today. See M 1645.
0322 Radio Prague: Folk Music Section. See T 0122.
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 Radio Australia: Sports Results. See S 1330.
0333 Radio Prague: Meet the People. See T 0133.
0336 WCSN: Letterbox. See M 2336.
0339 Radio Prague: The World Federation of Trade Unions Calling. See T 0139.
0345 Radio Finland: Armmail. An audience response feature, with listeners' comments and questions.
0406 WCSN: News Focus. See M 1606.
0430 BBC: The Learning World. See M 2315.
0430 Radio Australia: Business Horizons. Business and trade in Australia and neighboring regions.
0434 WCSN: Young Ideas. See T 0034.
0447 WCSN: Music. See M 1647.
0455 BBC: Book Choice. See S 0745.
0506 WCSN: Kaleidoscope. See M 2306.
0509 BBC: Twenty-Four Hours. See S 0509.
0513 Radio Austria: Music of Radio Austria. See S 0313.
0527 Radio Finland: Press Review. See T 0342.
0530 Radio Austria International: Report from Austria. See S 0130.
0536 WCSN: Letterbox. See M 2336.
0540 BBC: Words of Faith. See S 0540.
0606 WCSN: News Focus. See M 1606.
0630 BBC: Ackers Away. A trip into the "uncharted waters of music and merriment".
0634 WCSN: Young Ideas. See T 0034.
0647 WCSN: Music. See M 1647.
0706 WCSN: Kaleidoscope. See M 2306.
0709 BBC: Twenty-Four Hours. See S 0509.
0713 Radio Australia: Window on Australia. See M 0113.
0730 BBC: Europe's World. See T 0145.
0730 Radio Australia: Monitor. See S 2330.
0730 Radio Austria International: Report from Austria. See S 0130.
0736 WCSN: Letterbox. See M 2336.
0745 BBC: Network UK. See T 0215.
0745 Radio Finland: Airmail. See T 0345.
1106 KYOI: Kaleidoscope. See M 2306.
1113 Radio Australia: Window on Australia. See M 0113.
1115 BBC: Waveguide. See S 0759.
1130 BBC: Megamix. See T 0030.
1130 Radio Australia: Soundabout. See M 1130.
1130 Radio Austria International: Report from Austria. See S 0130.
1136 KYOI: Letterbox. See M 2336.
1206 KYOI: News Focus. In-depth news analyses focusing on major stories in the news.
1215 Radio Finland: Airmail. See T 0345.
1230 Radio Australia: Unsung Heroes and Heroines. See S 0330.
1234 KYOI: Young Ideas. A program for teenage listeners, featuring news, features, music, and ideas.
1245 BBC: Sports Roundup. See S 1330.
1247 KYOI: Music. Featured music from around the world.
1306 KYOI: Kaleidoscope. See M 2306.
1309 BBC: Twenty-Four Hours. See S 0509.
1312 Radio Finland: Press Review. See T 0342.
1315 Radio Finland: Airmail. See T 0345.
1330 BBC: Network UK. See T 0215.
1330 Radio Austria: Sports Results. See S 1330.
1330 Radio Austria International: Report from Austria. See S 0130.
1336 KYOI: Letterbox. See M 2336.
1345 BBC: Sing Gospel. See S 0430.
1405 BBC: Outlook. See M 1405.
1415 Radio Finland: Airmail. See T 0345.
1430 Radio Austria International: Report from Austria. See S 0130.
1445 BBC: Chopin Collection. See M 0145.
1513 Radio Australia: Window on Australia. See M 0113.
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.
1517 Radio Finland: Press Review. See T 0342.
1520 Radio Finland: Airmail. See T 0345.

The "Yours and Mine" team at Radio RSA. The program is a request show, presenting everything from pop music to traditional African tunes. It can be heard daily at 1400 UTC.

0400 KYOI: News [M-F]
0400 Radio Australia: International Report
0400 Radio Berlin International: News
0400 Radio Havana Cuba: Int'l News
0400 Radio Moscow: News
0400 Radio RSA: News
0400 Swiss Radio International: News
0400 Voice of America: News
0400 WCSN: News [M-F]
0425 Radio televisione Italiana: News
0430 Radio Havana Cuba: News Update
0430 Radio Moscow (World Service): News in Brief [S-M]
0430 Radio Netherlands: News [M-A]
0430 WCSN: News [M-F]
0445 Radio Berlin International: News
0500 BBC: World News
0500 Deutsche Welle: World News
0500 KYOI: News [M-F]
0500 Radio Australia: World and Australian News
0500 Radio Berlin International: News
0500 Radio Japan: News [S-F]
0500 Radio Moscow: News
0500 Radio New Zealand International: News
0500 Voice of America: News
0500 WCSN: News [M-F]
0515 Radio Finland: Northern Report [T-A]
0530 Radio Moscow (World Service): News in Brief
0530 WCSN: News [T-F]
0600 BBC: Newsdesk
0600 Deutsche Welle: World News
0600 KYOI: News [M-F]
0600 Radio Australia: International Report
0600 Radio Korea: News
0600 Radio Moscow: News
0600 Voice of America: News
0600 WCSN: News [M-F]
0615 Radio Berlin International: News
0615 Radio Canada Intl: News [M-F]
0630 Radio Moscow (World Service): News in Brief [S]
0630 Swiss Radio International: News
0630 WCSN: News [T-F]
0645 Radio Canada Intl: News [M-F]
0700 BBC: World News
0700 BRT, Brussels: News [M-F]
0700 KYOI: News [M-F]
0700 Radio Australia: World and Australian News
0700 Radio Japan: News [S-F]
0700 Radio Moscow (World Service): News in Brief [S-M]
0700 Voice of Free China: News and Commentary
0700 WCSN: News [M-F]
0730 Radio Finland: Northern Report [T-A]
0730 Radio Moscow (World Service): News in Brief [S-M]
0730 Radio Netherlands: News [M-A]

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Wednesday

May 3, 10, 17, 24, 31

0000 WCSN: News Focus. See M 1606.
0030 BBC: Omnibus. See T 1615.
0034 WCSN: Conversations. See M 1634.
0047 WCSN: Music. See M 1647.
0101 BBC: Outlook. See M 1405.
0106 WCSN: Kaleidoscope. See M 2306.
0113 Radio Australia: Window on Australia. See M 0113.
0130 BBC: Help Yourself. A look at innovations in helping the disabled.
0130 Radio Australia: Try to Remember. See T 1530.
0136 WCSN: Country Style. Uh oh - it's back! British country music! Hide the children!
0200 HCJB: Saludos Amigos. Ken McHarg presents letters from listeners worldwide.
0206 WCSN: News Focus. See M 1606.
0215 BBC: Health Matters. See M 1115.
0230 Radio Australia: Anything Goes. See S 0303.
0234 WCSN: Conversations. See M 1634.
0247 WCSN: Music. See M 1647.
0306 WCSN: Kaleidoscope. See M 2306.
0315 BBC: The World Today. See M 1645.
0330 BBC: Discovery. An in-depth look at scientific matters.
0330 Radio Australia: Sports Results. See S 1330.
0336 WCSN: Letterbox. See M 2336.
0345 Radio Finland: Sports Fare. A feature on sports and off-hours activities.
0406 WCSN: News Focus. See M 1606.
0434 WCSN: Conversations. See M 1634.
0445 BBC: Country Style. See W 0145.
0447 WCSN: Music. See M 1647.
0506 WCSN: Kaleidoscope. See M 2306.

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0730 WCSN: News [T-F]
0745 Radio Berlin International: News
0800 BBC: World News
0800 KYOI: News [M-F]
0800 Radio Australia: International Report
0800 Radio Berlin International: News
0800 Radio Korea: News
0800 Radio Moscow (World Service): News
0830 Radio Moscow (World Service): News in Brief
0830 Radio Netherlands: News [M-A]
0830 Swiss Radio International: News
0800 BBC: World News
0800 BRT, Brussels: News [M-F]
0900 Deutsche Welle: World News
0900 KYOI: News [M-F]
0900 Radio Australia: World and Australian News

0900 Radio Finland: Northern Report [T-A]
0900 Radio Japan: News [S-F]
0900 Radio Moscow (World Service): News
0930 Radio Canada Int'l: News [M-F]
0930 Radio Finland: Northern Report [T-A]
0930 Radio Moscow (World Service): News in Brief [S-M]
1000 BBC: News Summary
1000 Kol Israel: News
1000 KYOI: News [M-F]
1000 Radio Australia: International Report
1000 Radio Berlin International: News
1000 Radio Moscow (World Service): News
1000 Radio New Zealand Int'l News [M-F]
1000 Swiss Radio International: News
1000 Voice of America: News
1030 KYOI: News [T-F]
1030 Radio Moscow (World Service): News in Brief [S]
1030 Radio Netherlands: News [M-A]
1030 Voice of America (Special English): News [G]
1100 BBC: World News
1100 Deutsche Welle: World News
1100 KYOI: News [M-F]
1100 Radio Australia: World and Australian News
1100 Radio Berlin International: News
1100 Radio Japan: News [S-F]
1100 Radio Korea: News
1100 Radio Moscow (World Service): News
(except 3rd: Two Cheers for April, a satirical look back at the month just past).
1130 Radio Moscow (World Service): News
1130 Radio Russia: News
1130 Swiss Radio International: News
1130 Voice of America: News
1130 KYOI: News [T-F]
1130 Radio Moscow (World Service): News
1130 Radio Netherlands: News [M-A]
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Blanch
Destley Blanch of Radio Australia's English Service

1130 Voice of America (Special English): News [M-F]
1152 Radio RSA: News in Brief
1200 BBC: News Summary [S]
1200 BBC: News [M-A]
1200 KYO: News [M-F]
1200 Radio Australia: International Report
1200 Radio Canada Int'l: News [M-A]
1200 Radio Finland: Northern Report [T-F]
1200 Radio Moscow (World Service): News
1200 Swiss Radio International: News
1200 Voice of America: News
1215 Radio Berlin International: News
1230 BRT, Brussels: News [M-S]
1230 KYO: News [T-F]
1230 Radio Berlin international: News
1230 Radio Moscow (World Service): News in Brief
1300 BBC: World News
1300 KYO: News [M-F]
1300 Radio Australia: World and Australian News
1300 Radio Berlin International: News
1300 Radio Canada Int'l: World Report [M-F]
1300 Radio Finland: Northern Report [T-F]
1300 Radio Moscow (World Service): News
1300 Radio RSA: News
1300 Voice of America; News
1330 KYO: News [T-F]
1330 Radio Moscow (World Service): News in Brief [S-M]
1330 Swiss Radio International: News
1330 Voice of America (Special English): News
1345 Radio Berlin International: News
1352 Radio RSA: News in Brief
1400 BBC: News Summary [A-S]
1400 BBC: World News [M-F]
1400 KYO: News [M-F]
1400 Radio Australia: International Report
0536 WCSN: Letterbox, See M 2336.
0540 BBC: Words of Faith, See S 0540.
0545 BBC: The World Today, See M 1645.
0606 WCSN: News Focus, See M 1606.
0630 BBC: They Made Our World, See W 1215.
0634 WCSN: Young Ideas, See T 0034.
0640 BBC: The Farming World, See W 1225.
0647 WCSN: Music, See M 1647.
0706 WCSN: Kaleidoscope, See M 2306.
0709 BBC: Twenty-Four Hours, See S 0509.
0730 BBC: Write On... Paddy Feeny with correspondence and listeners' questions.
0730 Radio Austria International: Report from Austria, See S 0130.
0736 WCSN: Letterbox, See M 2336.
0745 BBC: Network UK, See T 0215.
0745 Radio Finland: Starting Finnish, See H 0345.
1106 KYO: Kaleidoscope, See M 2306.
1115 BBC: New Ideas, See T 0445.
1120 KYO: Book Choice, See S 0745.
1130 BBC: Drama, Details not announced at press time.
1130 Radio Austria International: Report from Austria, See S 0130.
1136 KYO: Letterbox, See M 2336.
1206 KYO: News Focus, See T 1206.
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Friday

May 5, 12, 19, 26


Barry Clarke from Radio Australia's English Service


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0536 WCSN: Letterbox. See M 2336.
0540 BBC: Words of Faith. See S 0540.
0545 BBC: The World Today. See M 1645.
0606 WCSN: News Focus. See M 1606.
0630 BBC: Meridian. See W 0630.
0634 WCSN: Conversations. See M 1634.
0647 WCSN: Music. See M 1647.
0706 WCSN: Kaleidoscope. See M 2306.
0709 BBC: Twenty-Four Hours. See S 0509.
0730 BBC: Feature. Programming on various subjects.
0730 Radio Austria International: Report from Austria. See S 0130.
0736 WCSN: Letterbox. See M 2336.
0750 Radio Finland: Science Notebook. See F 0345.
1045 KYOI: Letterbox. See M 2336.
1050 KYOI: Letterbox. See M 2336.
1125 WCSN: Music. See M 1247.
1210 KYOI: News Focus. See T 1206.
1215 KYOI: Feature. See F 0730.
1215 Radio Finland: Science Notebook. See F 0345.
1234 KYOI: Conversations. See W 1234.
1245 BBC: Sports Roundup. See S 1330.
1247 KYOI: Music. See T 1247.
1306 KYOI: Kaleidoscope. See M 2306.
1309 BBC: Twenty-Four Hours. See S 0509.
1312 Radio Finland: Press Review. See T 0342.
1315 Radio Finland: Science Notebook. See F 0345.
1330 BBC: John Peel. See T 0330.

Saturday
May 6, 13, 20, 27
0000 BBC: Personal View. Opinion on topical issues in British life.
0045 BBC: Recording of the Week. See M 0455.
0101 BBC: Outlook. See M 1405.
0113 Radio Prague: Newsvision. See T 0113.
0130 Radio Austria International: Report from Austria. See S 0130.
0145 BBC: Book Choice. See S 0745.
0215 BBC: Network UK. See T 0215.
0230 BBC: People and Politics. Background to the British political scene.
0242 Radio Portugal: Mailbag Program. Greetings to listeners worldwide and responses to listener letters.
0313 Radio Prague: Newsvision. See T 0113.
0315 BBC: The World Today. See M 1645.
0320 Radio Prague: The Week’s Events in Czechoslovakia. See A 0120.
0325 Radio Prague: The Arts in Czechoslovakia. See A 0125.
0330 BBC: The Vintage Chart Show. Past top ten hits with Jimmy Savile.
0430 BBC: Here’s Humph! All that jazz with Humphrey Lyttleton.
0445 BBC: Personal View. See A 0030.

News staff at the BBC (from left): John Eidenow, Tudor Lomas, Nick Worrall, Kathryn Davies, Geoffrey Stern, and David Lay. Eidenow, Lomas, Davies, and Lay present “Twentu-Four Hours,” while Worrall and Stern present “Newshour.”

1830 Voice of America (Special English):
News
1930 WCSN: News [M-F].
1947 Radio Jamahiriya, Libya: News
1952 Radio RSA: News in Brief
1900 BBC: News Summary
1900 Deutsche Welle: World News
1900 Kol Israel: News
1900 KYOI: News [M-F]
1900 Radio Australia: World and Australian News
1900 Radio Canada Int’l: News [M-F]
1900 Radio Havana Cuba: International News
1900 Radio Japan: News
1900 Radio Moscow (World Service): News
1900 Radio New Zealand Int’l: News
1900 Radio RSA: News
1900 Voice of America: News
1900 WCSN: News [M-F]
1915 Radio Berlin International: News
1930 Radio Canada Int’l: News [M-F]
1930 Radio Finland: Northern Report [M-F]
1930 Radio Havana Cuba: News Update
1930 Radio Moscow (World Service): News
1930 Voice of America: News
1935 Radiotelevisione Italiana: News
1945 Radio Berlin International: News
2000 BBC: World News
2000 KYOI: News [S-F]
2000 Radio Australia: International Report
2000 Radio Berlin International: News
2000 Radio Jordan: News
2000 Radio Moscow (World Service): News
2000 Radio New Zealand Int’l: News
2000 Radio RSA: News
2000 Voice of America: News
2000 WCSN: News [M-F]
2025 Radiotelevisione Italiana: News
2030 KYOI: News [M-H]
2030 Radio Korea: News
2030 Radio Moscow (World Service): News
2052 Radio RSA: News in Brief [S]
2030 Radio Netherlands: News [M-A]
2030 WCSN: News [M-F]
2052 Radio RSA: News in Brief
2100 BBC: News Summary
2100 BRT, Brussels: News
2100 Deutsche Welle: World News
2100 KYOI: UPI Radio News
2100 KYOI: News [S-F]
2100 Radio Australia: World and Australian News
2100 Radio Berlin International: News
2100 Radio Japan: News
2100 Radio Moscow (World Service): News
2100 Swiss Radio International: News
2100 Voice of America: News
2100 WCSN: News [M-F]
The staff at Radio RSA's "Africa Today," the station's flagship magazine program.
**LEGEND**

- The first four digits of an entry are the broadcast start time in UTC. The second four digits represent the end time.

- In the space between the end time and the station name is the broadcast schedule.

S = Sunday
M = Monday
T = Tuesday
W = Wednesday
H = Thursday
F = Friday
A = Saturday

If there is no entry, the broadcasts are heard daily. If, for example, there is an entry of "M," the broadcast would be heard only on Mondays. An entry of "M,W,F" would mean Mondays, Wednesdays and Fridays only. "M-F" would mean Mondays through Fridays. "TEN" indicates a tentative schedule and "TES" a test transmission.

- [ML] after a frequency indicates a multi-lingual transmission containing English-language programs.

- The last entry on a line is the frequency. Codes here include "SSB" which indicates a Single Sideband transmission, and "V" for a frequency that varies.

- [ML] after a frequency indicates a multi-lingual transmission containing English-language programs.

- v after a frequency indicates that it varies

- Notations of USB and LSB (upper and lower sideband transmissions) usually refer only to the individual frequency after which they appear.

- Listings followed by an asterisk (*) are for English lessons and do not contain regularly scheduled programming.

We suggest that you begin with the lower frequencies that a station is broadcasting on and work your way up the dial. Remember that there is no guarantee that a station will be audible on any given day. Reception conditions can change rapidly, though, and if it is not audible one night, it may well be on another.

**HOW TO USE THE PROPAGATION CHARTS**

Propagation charts can be an invaluable aid to the DXer in determining which frequencies are likely to be open at a given time. To use the propagation charts, choose those for your location (they are divided into east coast, midwest and west coast of North America). Then look for the one most closely describing the geographic location of the station you want to hear.

Once you’ve located the correct charts, look along the horizontal axis of the graph for the time that you are listening. The top line of the graph shows the Maximum Useable Frequency (MUF) and the lower line the Lowest Useable Frequency (LUF) as indicated on the vertical axis of the graph.

While there are exceptions to every rule (especially those regarding shortwave listening), you should find the charts helpful in determining the best times to listen for particular regions of the world. Good luck!
1000 - 1200  RAJ, Rome, Italy  9575 11600
1000 - 1300  Kol Israel, Jerusalem  11605 15615 15640
1000 - 1300  W.A. Radio Budapest, Hungary  6110 9520 9585 9835  11910 15160
1000 - 1300  Radio Canada Int'l, Montreal  9535 11695
1000 - 1300  Radio Japan, Tokyo  17880
1000 - 1300  Radio Netherlands, Hilversum  6020 6165 15315
1000 - 1300  Laotian National Radio  713v
1000 - 1300  S,M WINB, Red Lion, Pennsylvania  15145
1000 - 1500  Deutsche Welle, West Germany  6040 6065 6145 9565  9735 11665
1000 - 1500  Radio Baghdad, Iraq  6165 7250
1000 - 1555  S Radio Austria Int'l, Vienna  9875 13730
1000 - 2000  CBC Northern Quebec Service  6195 9625
1000 - 2000  CBN, St. John's, Newfoundland  6160
1000 - 2000  CBU, Vancouver, British Columbia  6160
1000 - 2000  CFCF, Montreal, Quebec  6005
1000 - 2000  CFCN, Calgary, Alberta  6030
1000 - 2000  CHNS, Halifax, Nova Scotia  6130
1000 - 2000  CKWX, Vancouver, British Columbia  6080
1000 - 2000  CFRB, Toronto, Ontario  6070
1000 - 2000  (US) Far East Network, Tokyo  3910
1000 - 2000  FEBC, Manila, Philippines  15445
1000 - 2000  HCJB, Quito, Ecuador  9720 11755 15155 15250
1000 - 2000  T-A KVOH, Rancho Simi, California  13695
1000 - 2000  KYOI, Saipan  15405
1000 - 2000  Radio Australia, Melbourne  15160 15180 15240 15320  15395 17715 17795  17750 21740
1000 - 2000  Radio Havana Cuba  11820 9655
1000 - 2000  Radio Japan, Tokyo  5960 17810 17835 17845  6090
1000 - 2000  Radio Luxembourg  9605 9685 9720 9820
1000 - 2000  Radio Moscow  17720
1000 - 2000  Radio Moscow, N. American Service  8000 6045 7215 7310  9685 11735 11750 12050  17700 17720 21530
1000 - 2000  Radio New Zealand, Wellington  15150 17705
1000 - 2000  Radio for Peace, Costa Rica  13685v
1000 - 2000  Radio Prague, Czechoslovakia  5930 6065 7345 9540  9625 11990
1000 - 2000  Radio Thailand, Bangkok  9555 11905
1800 - 2000  Voice of America, Washington  5895 6130 9455 9740  9775 9815 11580 11740  15205 17735 18157 USB
1000 - 2000  Voice of Indonesia, Jakarta  9680 11790
1000 - 2000  Voice of Free China, Taiwan  5985 6190 11740 15345
1000 - 2000  WCN, Boston, Massachusetts  9850
1000 - 2000  WHRL, Noblesville, Indiana  7520 9495
1000 - 2000  WRNO New Orleans, Louisiana  7355
1000 - 2000  WSB, Corpus Christi, Texas  10185
1000 - 2000  WYFR, Oakland, California  5950 9505 9680  11910 15160
1000 - 2000  S,M Radio Canada Int'l, Montreal  5960 9353 11845 11940
1000 - 2000  Radio Veritas Asia, Philippines  15330 15365
1000 - 2000  WINB, Red Lion, Pennsylvania  15145
1400 - 2000  Radio Berlin Int'l, East Germany  11765 11890

0200 UTC  [10:00 PM EDT/7:00 PM PDT]
0200 - 0215  Vatican Radio, Vatican City  6145 7125 9650
0200 - 0230  BBC, London, England  5975 6005 6175 7325  9410 9515 9590 9915
0200 - 0230  Burana Broadcasting Service, Rangoon  7185
0200 - 0230  Radio Berlin Int'l, East Germany  11785 11890
0200 - 0230  Radio Kiev, Ukrainian SSR  9860 13645 15240 15455
0200 - 0230  Swiss Radio Int'l, Berne  6095 6135 9725 9885
0200 - 0230  Deutsche Welle, West Germany  6035 7285 9690 11945
0200 - 0230  Radio Baghdad, Iraq  6185 7250
0200 - 0250  Radio Brasilia, Brazil  11745v
0200 - 0255  Radio Bucharest, Romania  5900 6155 9510 9570
0200 - 0300  CBC Northern Quebec Service  6195 9625
0200 - 0300  CBN, St. John's, Newfoundland  6160
0200 - 0300  CBU, Vancouver, British Columbia  6160
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<tr>
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<th>Time Range</th>
<th>Station Name</th>
<th>Country/Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>0500-0600</td>
<td>0530-0555</td>
<td>WHRL, Noblesville, Indiana</td>
<td>7520 9495</td>
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<td>0500-0600</td>
<td>0530-0555</td>
<td>WMKL, Bethel, Pennsylvania</td>
<td>9455</td>
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<td>0500-0600</td>
<td>0530-0600</td>
<td>WRNO, New Orleans, Louisiana</td>
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<td>0500-0600</td>
<td>0530-0600</td>
<td>WSHB, Cypress, S. Carolina</td>
<td>9455</td>
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<td>0500-0600</td>
<td>0527-0600</td>
<td>WYFR Satellite Net, California</td>
<td>5950 11580 13695</td>
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<td>0510-0600</td>
<td>0545-0600</td>
<td>Radio Botswana, Gaborone</td>
<td>3356 4820 7255</td>
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<tr>
<td>0515-0600</td>
<td>0527-0600</td>
<td>Radio Berlin Int'l, East Germany</td>
<td>15240 17775</td>
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<tr>
<td>0530-0605</td>
<td>0545-0645</td>
<td>FEB/MAE, Seychelles</td>
<td>17820</td>
</tr>
<tr>
<td>0530-0655</td>
<td>0545-0655</td>
<td>BBC, London, England*</td>
<td>3990 6050 6140 7210 9750</td>
</tr>
<tr>
<td>0530-0555</td>
<td>0545-0655</td>
<td>Radio Austria Int'l, Vienna</td>
<td>9615</td>
</tr>
<tr>
<td>0530-0555</td>
<td>0545-0655</td>
<td>Radio Bucharest, Romania</td>
<td>9640 11840 11940 15340</td>
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<td>0530-0600</td>
<td>0545-0600</td>
<td>Radio Tirana, Albania</td>
<td>7300</td>
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<tr>
<td>0530-0600</td>
<td>0545-0600</td>
<td>Trans World Radio, Swaziland</td>
<td>5025 7210</td>
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<td>0530-0600</td>
<td>0545-0600</td>
<td>UAE Radio, United Arab Emirates</td>
<td>15435 17775 21700</td>
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<tr>
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<td>0545-0600</td>
<td>Radio Berlin Int'l, East Germany</td>
<td>15240 17800 21540 21645</td>
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<td>0545-0600</td>
<td>Ghana Broadcasting Corp. Accra</td>
<td>4915</td>
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<tr>
<td>0550-0600</td>
<td>0545-0600</td>
<td>Voice of Malaysia, Kuala Lumpur</td>
<td>6175 9750 15295</td>
</tr>
</tbody>
</table>

For 0600 UTC to 11:00 PM EDT/PDT:

- **East Coast To Australia**:
  - **MHz**: 50.00
  - **MUF LUF**

- **East Coast To Pacific**:  
  - **MHz**: 50.00
  - **MUF LUF**

- **East Coast To Central America/Caribbean**:  
  - **MHz**: 50.00
  - **MUF LUF**

Websites:
- American Radio History: http://www.americanradiohistory.com

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**Informational Note:**
- **Radio Programs**:
  - **50**: 7285
  - **Voice of Asia, Taiwan**: 7285
  - **Voice of Free China, Taiwan**: 5985
  - **Voice of Malaya, Kuala Lumpur**: 6175 9750 15295
  - **Voice of Nicaragua, Managua**: 6100
  - **Voice of the Mediterranean**: 9765
  - **Voice of Nigeria, Lagos**: 15185
  - **WSCN, Boston, Massachusetts**: 9840
  - **WHRL, Noblesville, Indiana**: 6100 9495
  - **WYFR Satellite Net, California**: 5950 6065 7355 9680
  - **Radio Canada Int'l, Montreal**: 6055 6140 7155 9740
  - **Radio Canada Int'l, Vancouver**: 9760 11840 15325
  - **Radio Canada Int'l, Toronto**: 15190 17730
  - **Radio Columbia, Caracas**: 7105
  - **Radio Columbia, Caracas**: 7125
  - **Radio Columbia, Caracas**: 11330 15550 15790 17605
  - **Radio Columbia, Caracas**: 11495 15160 15240 15315
  - **Radio Columbia, Caracas**: 15395 15425 17715 17750
  - **Radio Columbia, Caracas**: 17795

**Note:**
- **MHz**: 50.00
- **MUF LUF**

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East Coast To South America

MHz.
50.00

East Coast To West Coast

MHz.
50.00

East Coast To Alaska

MHz.
50.00

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1000-1100 Radio Tanzania, Dar es Salaam 7165
1000-1100 Swiss Radio int'l, Berne 9560 9685 13685 17830 21695
1000-1100 Voice of Ethiopia, Addis Ababa 9560
1000-1100 Voice of Vietnam, Hanoi 12010 15010
1000-1105 A Trans World Radio, Monte Carlo 7105
1000-1100 ABC, Alice Springs, Australia 2310 [ML]
1000-1100 ABC, Katherine, Australia 2485
1000-1100 ABC, Perth, Australia 9610
1000-1100 ABC, Tennant Creek, Australia 2325 [ML]
1000-1100 All India Radio, New Delhi 11860 11915 15130 15335 17387 17785
1000-1100 BBC, London, England 9410 9740 11750 11845 12095 15070 15175 15335 15435 17705 17790 17830 18080 21710 21470 25750
1000-1100 CBN, St. John's, Newfoundland 6160
1000-1100 CFCF, Montreal, Quebec 6005
1000-1100 CFNC, Calgary, Alberta 6030
1000-1100 CHNS, Halifax, Nova Scotia 6130
1000-1100 CKWX, Vancouver, British Colombia 6090
1000-1100 CFBF, Toronto, Ontario 6070
1000-1100 (US) Far East Network, Tokyo 3910
1000-1100 KSDA, Guam 9465
1000-1100 KTWR, Agana, Guam 11805
1000-1100 KYOL, Saipan 11900
1000-1100 Radio Afghanistan, Kabul 15435 17720 5955 7205 9580 9600 9655 9770 15415
1000-1100 Radio Australia, Melbourne 11900 15140 15420 15475 15585
1000-1100 Radio Moscow, USSR 9705 9780 9875 11705
1000-1100 Radio New Zealand, Wellington 9850 11780
1000-1100 S Radio Prague, Czechoslovakia 6055 7345 9505 [ML]
1000-1100 S BBC Radio One, Singapore 5010 5052 11940
1000-1100 S Superpower KUSW, Utah 6135
1000-1100 Voice of America, Washington 6030 5985 6165 9590 11720 15425
1000-1100 Voice of Kenya, Nairobi 7270
1000-1100 Voice of Nigeria, Lagos 7255 15120
1000-1100 WHRI, Noblesville, Indiana 7335
1000-1100 WSHB, Cyprus Creek, S. Carolina 9495
1000-1100 WPYR, Oakland, California 5950
1000-1105-1010 Radio Pakistan, Islamabad 15606 17660
1000-1045 A Radio Budapest, Hungary 7220 9585 9635 11910
1000-1055 Radio Austria int'l, Vienna 15160 15220
1000-1100 BBC, London, England* 7180 9660 9725
1000-1100 HCJB, Quito, Ecuador 6130 11925
1000-1100 Radio Netherlands, Hilversum 6020 9675
1000-1100 A.S Radio Tanzania, Dar es Salaam 7165
1000-1100 SLBC, Colombo, Sri Lanka 11835 15120 17850 [ML]
1000-1100 UAE Radio, United Arab Emirates 15435 17865 21605
1000-1100 Voice of America, Washington* 11965
1000-1100 M-A Voice of Greece, Athens 11645 15630
1000-1100 S Radio Budapest, Hungary 7220 9585 9635 11910
1000-1100 Radio Prague, Czechoslovakia 6255 7345 9505
1000-1100 S Trans World Radio, Monte Carlo 7105

1100 UTC [7:00 AM EDT/4:00 AM PDT]

1100-1105 Radio Pakistan, Islamabad 6090 7290
1100-1105 A Port Moresby, Papua New Guinea 3295 4890 5960 5985 6020 6040 6080 6140 9520
1100-1110 S Port Moresby, Papua New Guinea 3295 4890 5960 5985 6020 6040 6080 6140 9520
1100-1115 Radio New Zealand, Wellington 9850 11780
1100-1120 Radio Pakistan, Islamabad 15606 17760
1100-1125 Radio Netherlands, Hilversum 8020 9675 7120
1100-1130 HCJB, Quito, Ecuador 6130 11925
1100-1130 Kol Israel, Jerusalem 11585 15650 17575 21760
1100-1130 KTWR, Guam* 9820 11685
1100-1130 S Radio Austria int'l, Vienna 13730 15450
1100-1130 Radio Finland, Helsinki 11945 15400
1100-1130 Radio Mozambique, Maputo 9525 11818 11835
1100-1130 SLBC, Colombo, Sri Lanka 11835 15120 17850 [ML]
1100-1130 S Swiss Radio int'l, Berne 11935 13635 15570 17830
1100-1130 Voice of Vietnam, Hanoi 12010 15010
1100-1150 Deutsche Welle, West Germany 15410 17765 17800 21600
1100-1150 Radio Pyongyang, North Korea 9600 9977 11735
1100-1150 Radio Beijing, China 9665
1100-1200 ABC, Alice Springs, Australia 2310 [ML]

Midwest To East Africa

Midwest To South Africa

Midwest To Central Asia

www.americanradiohistory.com
1130-1200 Radio Berlin, USSR 9625 1145 -1200 Radio Bangladesh, Dhaka 15255 17740
1145-1200 Radio Prague, Czechoslovakia 6055 7345 9505

1200 UTC [8:00 AM EDT/5:00 AM PDT]

1200-1205 M-A Port Moresby, Papua New Guinea 3295 4890 5960 6020
1200-1215 BBC, London, England* 3915 6065 7275
1200-1215 Radio Berlin Int'l, East Germany 15440 17860 21645 21540
1200-1215 Vatican Radio, Vatican City 15190 17865
1200-1215 Voice of Kampuchea, Phnom-Penh [ML] 9693 11938
1200-1220 Radio Bucharest, Romania 17720 21665
1200-1225 M-F Radio Finland, Helsinki 11945 15400
1200-1225 Radio Poronia, Warsaw, Poland 6095 7295
1200-1225 Radio Netherlands, Hilversum 5895 9715 17575 21490
1200-1230 Radio Somalia, Mogadishu 6095
1200-1230 Radio Tashkent, Uzbek, USSR 9540 9600 11785 15460
1200-1230 Radio Thailand, Bangkok 9655 11905
1200-1230 Radio Yugoslavia, Belgrade 11735 15325 15380
1200-1230 S Radio Zambia, Lusaka 11880 [RRR]
1200-1230 Swiss Radio Iry'I, Berne 6165 9355 12000
1200-1235 M-A Radio Ulan Bator, Mongolia 9615 12015
1200-1255 Radio Beijing, China 9665 11600
1200-1300 ABC, Alice Springs, Australia 2310 [ML]
1200-1300 ABC, Katherine, Australia 2485
1200-1300 ABC, Tennant Creek, Australia 2225 [ML]
1200-1300 S Adventist World Radio, Africa 17890
1200-1300 AFAN, Antarctica 6012
1200-1300 BBC, London, England 6105 9510 9515 9740
11750 17775 12095 15070
11705 17790 18080 21470
21710 25750

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**frequency section**

- 1200-1300 CFCF, Montreal, Quebec 6005
- 1200-1300 CFON, Calgary, Alberta 6030
- 1200-1300 CHNS, Halifax, Nova Scotia 6130
- 1200-1300 CKWX, Vancouver, British Columbia 6080
- 1200-1300 CFRA, Toronto, Ontario 6070
- 1200-1300 (US) Far East Network, Tokyo 3910
- 1200-1300 HCJB, Quito, Ecuador 11740 15115 17890
- 1200-1300 KYOI, Saipan 11900
- 1200-1300 Radio Australia, Melbourne 9580 9770 11800
- 1200-1300 Radio Moscow, USSR 9600 15475 15490 15540 15595 15580 17455 17700 17810 21800
- 1200-1300 A.S. Radio Tanzania, Dar es Salaam 7165
- 1200-1300 SBC Radio One, Singapore 5010 5052 11940
- 1200-1300 Superpower KUSW, Utah 6130
- 1200-1300 Trans World Radio, Bonaire 11815 15345
- 1200-1300 Trans World Radio, Sri Lanka 11920
- 1200-1300 Voice of America, Washington, D.C. 6110 9760 15160 15425
- 1200-1300 Voice of Kenya, Nairobi 7270
- 1200-1300 Voice of Nigeria, Lagos 7255 15120
- 1200-1300 WCSN, Boston, Massachusetts 9495
- 1200-1300 WHRI, Noblesville, Indiana 7520
- 1200-1300 WSB, Cypress Creek, S. Carolina 13760
- 1200-1300 WYFR, Oakland, California 5950 7355 9680
- 1215-1425 Radio Korea, Seoul, South Korea 7275 11740
- 1215-1425 Radio Berlin Intl, East Germany 15240
- 1215-1300 Radio Cairo, Egypt 17595
- 1230-1235 All India Radio, New Delhi 3905 4800 4920 7280 9565 9615 11735 15120
- 1230-1255 M-A BRT, Brussels, Belgium 17555 21815
- 1230-1300 BBC, London, England* 6125 7255 6105 9635 9565 11780 12040 15270 15390 15435 17695
- 1230-1300 Radio Bangladesh, Dhaka 15195 17710
- 1230-1300 Radio Sweden, Stockholm 9565 17815 21570 9565 7115 9695 9725 11895 15355
- 1245-1300 Radio Berlin Intl, East Germany 15440 17880 21465 21540 9805 11670 15365 15155 17720 21645
- 1245-1300 Radio France Intl, Paris 17720 21645
- 1235-1245 Voice of Greece, Athens 11645 15630 17565

**1300 UTC [9:00 AM EDT/6:00 AM PDT]**

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<td>Port Moresby, Papua New Guinea 3295 4980 5960 5980</td>
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<td>6020 6040 6080 6140</td>
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<td>1300-1310</td>
<td>Radio France Int'l, Paris 11670 15155 15365 17720 21645</td>
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<td>Radio Bucharest, Romania 9690 11940 15405 17720 9595 6195 7180 9515 9740 11750 17775 12095</td>
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<td>BBC, London, England 5990 6195 7180 9515 9740 11750 17775 12095</td>
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<td>1300-1330</td>
<td>Voice of Nigeria, Lagos 15070 15310 15420 17790</td>
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<td>1300-1330</td>
<td>Voice of Egypt, Cairo 17595</td>
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<tr>
<td>1300-1330</td>
<td>Radio Ghana, Accra 4915 7295</td>
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<td>1300-1330</td>
<td>Radio Moscow, USSR 11840</td>
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<td>11900 15225 15420 15475</td>
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<td>Trans World Radio, Bonaire 11815 15345</td>
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<td>Radio Pyongyang, North Korea 9325 9345 9555 9600 11335 11735</td>
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<td>Radio Belling, China 11690 11660 11755 15280</td>
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<td>1300-1400</td>
<td>ABC, Alice Springs, Australia 2310 [ML]</td>
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<td>CBU, Vancouver, British Columbia 6160</td>
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<tr>
<td>1300-1400</td>
<td>ELWA, Monrovia, Liberia 11830</td>
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<td>1300-1400</td>
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<td>1300-1400</td>
<td>FEBC, Manila, Philippines 11850</td>
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<tr>
<td>1300-1400</td>
<td>HCJB, Guayaquil, Ecuador 11740 15115 17890</td>
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<tr>
<td>1300-1400</td>
<td>KNLS, Anchorage, Alaska 7355</td>
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<tr>
<td>1300-1400</td>
<td>KYOI, Saipan 11900</td>
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<tr>
<td>1300-1400</td>
<td>Radio Australia, Melbourne 5995 6060 6080 7205 9580</td>
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**Midwest To Far East**

**Midwest To Australia**

**Midwest To Pacific**

May 1989

Monitoring Times

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<table>
<thead>
<tr>
<th>Frequency</th>
<th>Call Sign</th>
<th>Country</th>
<th>City</th>
<th>Time</th>
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<td>1330-1400</td>
<td>M-F</td>
<td>Radio Canada</td>
<td>Montreal</td>
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<td>15:00</td>
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<td>1330-1400</td>
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<td>Radio Jordan</td>
<td>Amman</td>
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<tr>
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<td>Seoul</td>
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<td>Radio RSA</td>
<td>South Africa</td>
<td>10:00</td>
<td>15:00</td>
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<tr>
<td>1330-1400</td>
<td>A.S.</td>
<td>Radio Tanzania</td>
<td>Dar es Salaam</td>
<td>10:00</td>
<td>15:00</td>
</tr>
<tr>
<td>1330-1400</td>
<td>S</td>
<td>Superpower KUSW</td>
<td>Utah</td>
<td>10:00</td>
<td>15:00</td>
</tr>
<tr>
<td>1330-1400</td>
<td></td>
<td>Voice of America</td>
<td>Washington</td>
<td>10:00</td>
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</tr>
<tr>
<td>1330-1400</td>
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<td>Voice of Malaysia</td>
<td>10:00</td>
<td>15:00</td>
<td></td>
</tr>
<tr>
<td>1330-1400</td>
<td></td>
<td>Voice of Nigeria</td>
<td>Lagos</td>
<td>10:00</td>
<td>15:00</td>
</tr>
<tr>
<td>1330-1400</td>
<td></td>
<td>Voice of Nepal</td>
<td>Kathmandu</td>
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<td>15:00</td>
</tr>
<tr>
<td>1330-1400</td>
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<td>Voice of Russia</td>
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<td>10:00</td>
<td>15:00</td>
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<tr>
<td>1330-1400</td>
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<td>Ankara</td>
<td>10:00</td>
<td>15:00</td>
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<tr>
<td>1330-1400</td>
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<td>Voice of Vietnam</td>
<td>Hanoi</td>
<td>10:00</td>
<td>15:00</td>
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<tr>
<td>1330-1400</td>
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<td>Voice of West Africa</td>
<td>10:00</td>
<td>15:00</td>
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<tr>
<td>1330-1400</td>
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<td>Voice of World Radio</td>
<td>Bonn</td>
<td>10:00</td>
<td>15:00</td>
</tr>
</tbody>
</table>

**Midwest To Central America/Caribbean**

- **MHz.**
- **UTC**

**Midwest To South America**

- **MHz.**
- **UTC**

**Midwest To Arctic Europe**

- **MHz.**
- **UTC**

**Monitoring Times**

May 1989

www.americanradiohistory.com
### Monitoring Times

#### 1500 UTC (11:00 AM EDT/8:00 AM PDT)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Monitor</th>
<th>Country/Location</th>
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<tr>
<td>1400-1500</td>
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<td>1400-1500</td>
<td>F</td>
<td>WHRI, Noblesville, Indiana</td>
</tr>
<tr>
<td>1400-1500</td>
<td></td>
<td>WSHB, Cyprus, S. Carolina</td>
</tr>
<tr>
<td>1400-1500</td>
<td></td>
<td>WYFR, Oakland, California</td>
</tr>
<tr>
<td>1400-1500</td>
<td></td>
<td>WYFR Satellite Net, California</td>
</tr>
<tr>
<td>1415-1420</td>
<td></td>
<td>Radio Nepal, Kathmandu</td>
</tr>
<tr>
<td>1430-1500</td>
<td>F</td>
<td>ABC, Alice Springs, Australia</td>
</tr>
<tr>
<td>1430-1500</td>
<td>F</td>
<td>ABC, Tennant Creek, Australia</td>
</tr>
<tr>
<td>1430-1500</td>
<td></td>
<td>Burma Broadcasting Service</td>
</tr>
<tr>
<td>1430-1500</td>
<td></td>
<td>King of Hope, Southern Lebanon</td>
</tr>
<tr>
<td>1430-1500</td>
<td></td>
<td>KTWR, Agana, Guam</td>
</tr>
<tr>
<td>1430-1500</td>
<td></td>
<td>Radio Australia, Melbourne</td>
</tr>
<tr>
<td>1430-1500</td>
<td></td>
<td>Radio Netherland, Hilversum</td>
</tr>
<tr>
<td>1445-1500</td>
<td></td>
<td>Radio Berlin Int'l, East Germany</td>
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<tr>
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<td>M-A</td>
<td>Radio Ulan Bator, Mongolia</td>
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<tr>
<td>1455-1500</td>
<td></td>
<td>Radio Prague, Czechoslovakia</td>
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<tr>
<td>1500-1600</td>
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<td>AWR, Alajuela, Costa Rica</td>
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<td>1500-1600</td>
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<td>Burana Broadcasting Service</td>
</tr>
<tr>
<td>1500-1600</td>
<td></td>
<td>CBC Northern Quebec Service</td>
</tr>
<tr>
<td>1500-1600</td>
<td></td>
<td>CBN, St. John's, Newfoundland</td>
</tr>
<tr>
<td>1500-1600</td>
<td></td>
<td>CBU, Vancouver, British Columbia</td>
</tr>
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<td></td>
<td>CFCC, Montreal, Quebec</td>
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<tr>
<td>1500-1600</td>
<td></td>
<td>CFCA, Calgary, Alberta</td>
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<td>1500-1600</td>
<td></td>
<td>CHNS, Halifax, Nova Scotia</td>
</tr>
<tr>
<td>1500-1600</td>
<td></td>
<td>CKWX, Vancouver, British Columbia</td>
</tr>
<tr>
<td>1500-1600</td>
<td></td>
<td>CFRB, Toronto, Ontario</td>
</tr>
<tr>
<td>1500-1600</td>
<td>S</td>
<td>ELWA, Monrovia, Liberia</td>
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<tr>
<td>1500-1600</td>
<td></td>
<td>FEBC, Manila, Philippines</td>
</tr>
<tr>
<td>1500-1600</td>
<td></td>
<td>HGCB, Quito, Ecuador</td>
</tr>
<tr>
<td>1500-1600</td>
<td></td>
<td>Kings of Hope, Southern Lebanon</td>
</tr>
<tr>
<td>1500-1600</td>
<td></td>
<td>KNLS, Anchor Point, Alaska</td>
</tr>
<tr>
<td>1500-1600</td>
<td></td>
<td>KTWR, Agana, Guam</td>
</tr>
<tr>
<td>1500-1600</td>
<td></td>
<td>KYOI, Saipan</td>
</tr>
<tr>
<td>1500-1600</td>
<td></td>
<td>Radio Australia, Melbourne</td>
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<tr>
<td>1500-1600</td>
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<td>Radio Germany, Berlin</td>
</tr>
<tr>
<td>1500-1600</td>
<td>S</td>
<td>Radio Canada Int'l, Montreal</td>
</tr>
<tr>
<td>1500-1600</td>
<td></td>
<td>Radio Japan, Tokyo</td>
</tr>
<tr>
<td>1500-1600</td>
<td></td>
<td>Radio Jordan, Amman</td>
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<td>1500-1600</td>
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<td>Radio Korea (South), Seoul</td>
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<tr>
<td>1500-1600</td>
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<td>Radio RSA, South Africa</td>
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<tr>
<td>1500-1600</td>
<td></td>
<td>SBC Radio One, Singapore</td>
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<tr>
<td>1500-1600</td>
<td>S</td>
<td>SLBC, Sri Lanka</td>
</tr>
<tr>
<td>1500-1600</td>
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<td>Superpower KUSW, Utah</td>
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<td>1500-1600</td>
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<td>Voice of America, Washington</td>
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<tr>
<td>1500-1600</td>
<td></td>
<td>Voice of Ethiopia, Addis Ababa</td>
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<tr>
<td>1500-1600</td>
<td></td>
<td>Voice of Indonesia, Jakarta</td>
</tr>
<tr>
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<td></td>
<td>Voice of Kenya, Nairobi</td>
</tr>
<tr>
<td>1500-1600</td>
<td></td>
<td>Voice of Malaysia, Kuala Lumpur</td>
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<tr>
<td>1500-1600</td>
<td></td>
<td>Voice of Mediterranean, Malta</td>
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<td>1500-1600</td>
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<td>Voice of Nigeria, Lagos</td>
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<tr>
<td>1500-1600</td>
<td></td>
<td>WCBS, Boston, Massachusetts</td>
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<tr>
<td>1500-1600</td>
<td>S</td>
<td>WHRI, Noblesville, Indiana</td>
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<tr>
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<td>WRNO, New Orleans, Louisiana</td>
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<td>WSHB, Cyprus, S. Carolina</td>
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<tr>
<td>1500-1600</td>
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<td>WYFR, Oakland, California</td>
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#### Frequency Chart

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Region/Location</th>
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<tbody>
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<td>50.00 MHz</td>
<td>Midwest to Alaska</td>
</tr>
<tr>
<td>50.00 MHz</td>
<td>West Coast to Eastern Europe</td>
</tr>
<tr>
<td>50.00 MHz</td>
<td>West Coast to Western Europe</td>
</tr>
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#### Monitoring Times

- **May 1989**
- **MHz. 0-20.00**
- **MHz. 20.00-30.00**
- **MHz. 30.00-40.00**
- **MHz. 40.00-50.00**
- **UTC 0-24**

www.americanradiohistory.com
<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>Station Name and Details</th>
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<tbody>
<tr>
<td>1500-1600 MHz</td>
<td>WYFR Satellite Net</td>
</tr>
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<td>1515-1530 MHz</td>
<td>M-H Radio Budapest, Hungary</td>
</tr>
<tr>
<td>1516-1530 MHz</td>
<td>BBC, London, England</td>
</tr>
<tr>
<td>1515-1530 MHz</td>
<td>FEBA, Mahe, Seychelles</td>
</tr>
<tr>
<td>1510-1525 MHz</td>
<td>Radio Berlin Int'l, East Germany</td>
</tr>
<tr>
<td>1530-1545 MHz</td>
<td>All India Radio, New Delhi</td>
</tr>
<tr>
<td>1530-1555 MHz</td>
<td>BRT, Brussels, Belgium</td>
</tr>
<tr>
<td>1530-1600 MHz</td>
<td>Radio Prague, Czechoslovakia</td>
</tr>
<tr>
<td>1530-1600 MHz</td>
<td>Radio Sweden, Stockholm</td>
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<td>1530-1600 MHz</td>
<td>Radio Tirana, Albania</td>
</tr>
<tr>
<td>1530-1600 MHz</td>
<td>Radio-Television Morocco, Rabat</td>
</tr>
<tr>
<td>1530-1600 MHz</td>
<td>Swiss Radio Int'l, Bern</td>
</tr>
<tr>
<td>1530-1600 MHz</td>
<td>Voice of Asia, Taiwan</td>
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<tr>
<td>1530-1600 MHz</td>
<td>Voice of Nigeria, Lagos</td>
</tr>
<tr>
<td>1540-1555 MHz</td>
<td>M-A Voice of Greece, Athens</td>
</tr>
<tr>
<td>1545-1600 MHz</td>
<td>Radio Canada Int'l, Montreal</td>
</tr>
<tr>
<td>1545-1600 MHz</td>
<td>Vatican Radio, Vatican City</td>
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<td>1550-1600 MHz</td>
<td>Voice of Vietnam, Hanoi</td>
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<tr>
<td>1550-1600 MHz</td>
<td>H-S KTWR, Agana, Guam</td>
</tr>
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**MONITORING TIMES**

**May 1989**

---

**West Coast To East Africa**

<table>
<thead>
<tr>
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<tbody>
<tr>
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<tr>
<td>4</td>
<td>50.00</td>
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<tr>
<td>8</td>
<td>50.00</td>
</tr>
<tr>
<td>12</td>
<td>50.00</td>
</tr>
<tr>
<td>16</td>
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</tr>
<tr>
<td>20</td>
<td>50.00</td>
</tr>
<tr>
<td>24</td>
<td>50.00</td>
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**West Coast To Central Africa**

<table>
<thead>
<tr>
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<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>4</td>
<td>50.00</td>
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<tr>
<td>8</td>
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<td>12</td>
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<tr>
<td>16</td>
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</tr>
<tr>
<td>20</td>
<td>50.00</td>
</tr>
<tr>
<td>24</td>
<td>50.00</td>
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</table>

**West Coast To South Africa**

<table>
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<tr>
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</thead>
<tbody>
<tr>
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<td>8</td>
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<tr>
<td>12</td>
<td>50.00</td>
</tr>
<tr>
<td>16</td>
<td>50.00</td>
</tr>
<tr>
<td>20</td>
<td>50.00</td>
</tr>
<tr>
<td>24</td>
<td>50.00</td>
</tr>
</tbody>
</table>

---

**Frequency Section**
The document contains a table of radio frequencies and times for various locations around the world, with specific times for West Coast To Central Asia, West Coast To Indonesia, and West Coast To South East Asia. The table includes columns for UTC, frequency, and notes on monitoring times. The data is organized in a way that makes it easy to compare different regions and their broadcasting schedules.
<table>
<thead>
<tr>
<th>Time</th>
<th>Station/Location</th>
<th>Frequency (MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800-1900</td>
<td>Swiss Radio Intl, Berne</td>
<td>3985 6165 9535</td>
</tr>
<tr>
<td>1730-1800</td>
<td>FBEA, Mahe, Seychelles</td>
<td>11810</td>
</tr>
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</table>

### 1800 UTC [2:00 PM EDT/11:00 AM PDT]

<table>
<thead>
<tr>
<th>Time</th>
<th>Station/Location</th>
<th>Frequency (MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800-1805 A</td>
<td>SBC Radio One, Singapore</td>
<td>11940</td>
</tr>
<tr>
<td>1800-1815</td>
<td>Radio Cameroon, Yaounde</td>
<td>3970 4750 4795 4850 5010</td>
</tr>
<tr>
<td>1800-1815</td>
<td>SLBC, Colombo, Sri Lanka</td>
<td>11800</td>
</tr>
<tr>
<td>1800-1825 A.S</td>
<td>FBEA, Mahe, Seychelles</td>
<td>11760</td>
</tr>
<tr>
<td>1800-1825</td>
<td>Radio Prague, Czechoslovakia</td>
<td>5930 7345 9605 11685 11190 13715 15110 21505</td>
</tr>
<tr>
<td>1800-1825</td>
<td>RAE, Buenos Aires, Argentina</td>
<td>15345</td>
</tr>
<tr>
<td>1800-1830</td>
<td>BBC, London, England</td>
<td>7325 9410 9740 12095 15070 15400 15420 17885</td>
</tr>
<tr>
<td>1800-1830 S</td>
<td>Radio Barnako, Mali</td>
<td>4835 5995</td>
</tr>
<tr>
<td>1800-1830 M.F</td>
<td>Radio Canada Intl, Montreal</td>
<td>15260 17820</td>
</tr>
<tr>
<td>1800-1830</td>
<td>Radio Mozambique, Maputo</td>
<td>3265 4855 9618</td>
</tr>
<tr>
<td>1800-1830</td>
<td>Radio Sweden, Stockholm</td>
<td>6065 11845</td>
</tr>
<tr>
<td>1800-1830</td>
<td>Voice of Africa, Egypt</td>
<td>15255</td>
</tr>
<tr>
<td>1800-1830</td>
<td>Voice of Vietnam, Hanoi</td>
<td>9840 12020</td>
</tr>
<tr>
<td>1800-1845</td>
<td>Radio Abidjan, Ivory Coast</td>
<td>11920</td>
</tr>
<tr>
<td>1800-1845</td>
<td>Trans World Radio, Swaziland</td>
<td>9525</td>
</tr>
<tr>
<td>1800-1850</td>
<td>Radio Bras, Brasilia, Brazil</td>
<td>15265</td>
</tr>
<tr>
<td>1800-1856</td>
<td>Radio RSA, South Africa</td>
<td>15365 17795 21535</td>
</tr>
<tr>
<td>1800-1900 F</td>
<td>ABC, Alice Springs, Australia</td>
<td>2310 [ML]</td>
</tr>
<tr>
<td>1800-1900 F</td>
<td>ABC, Tennant Creek, Australia</td>
<td>2325 [ML]</td>
</tr>
<tr>
<td>1800-1900</td>
<td>All India Radio, New Delhi</td>
<td>11035 15360</td>
</tr>
<tr>
<td>1800-1900</td>
<td>CBC Northern Quebec Service</td>
<td>9625 11720</td>
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<td>1800-1900</td>
<td>CBN, St. John's, Newfoundland</td>
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<tr>
<td>1800-1900</td>
<td>CBU, Vancouver, British Columbia</td>
<td>6160</td>
</tr>
<tr>
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<td>CFCF, Montreal, Quebec</td>
<td>6005</td>
</tr>
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<td>1800-1900</td>
<td>CFCN, Calgary, Alberta</td>
<td>6030</td>
</tr>
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<td>1800-1900</td>
<td>CHNS, Halifax, Nova Scotia</td>
<td>6130</td>
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<tr>
<td>1800-1900</td>
<td>CKWX, Vancouver, British Columbia</td>
<td>6080</td>
</tr>
<tr>
<td>1800-1900</td>
<td>CFRB, Toronto, Ontario</td>
<td>6070</td>
</tr>
<tr>
<td>1800-1900</td>
<td>(US) Far East Network, Tokyo</td>
<td>3910</td>
</tr>
<tr>
<td>1800-1900</td>
<td>KNLS, Anchor Point, Alaska</td>
<td>7355</td>
</tr>
<tr>
<td>1800-1900</td>
<td>KYOI, Saipan</td>
<td>9455</td>
</tr>
<tr>
<td>1800-1900</td>
<td>Radio Australia, Melbourne</td>
<td>5955 6035 6060 6080 7205 7215 9580 15260 17820</td>
</tr>
</tbody>
</table>

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### Frequency Section

**May 1989**

#### West Coast to Indian Ocean

- **MUF**
- **LUF**

#### West Coast to Arctic Europe

- **MUF**
- **LUF**

#### West Coast to Pacific

- **MUF**
- **LUF**

---

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### Frequency Table

**1900 UTC [3:00 PM EDT/12:00 PM PDT]**

<table>
<thead>
<tr>
<th>Time</th>
<th>Frequency</th>
<th>Country/Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900-1901</td>
<td>1547 MHz</td>
<td>Africa No. 1, Gabon</td>
</tr>
<tr>
<td>1900-1905</td>
<td>6190 MHz</td>
<td>Vatican Radio, Vatican City</td>
</tr>
<tr>
<td>1900-1915</td>
<td>6240 MHz</td>
<td>Radio Bangladesh, Dhaka</td>
</tr>
<tr>
<td>1900-1915</td>
<td>9684 MHz</td>
<td>Radio Tanzania, Dar es Salaam</td>
</tr>
<tr>
<td>1900-1925</td>
<td>6020 MHz</td>
<td>Radio Netherlands, Hilversum</td>
</tr>
<tr>
<td>1900-1925</td>
<td>9695 MHz</td>
<td>Voice of Islamic Republic Iran</td>
</tr>
<tr>
<td>1900-1930</td>
<td>2310 MHz</td>
<td>ABC, Alice Springs, Australia</td>
</tr>
<tr>
<td>1900-1930</td>
<td>2325 MHz</td>
<td>ABC, Tennant Creek, Australia</td>
</tr>
<tr>
<td>1900-1930</td>
<td>7160 MHz</td>
<td>Kol israel, Jerusalem</td>
</tr>
<tr>
<td>1900-1930</td>
<td>9665 MHz</td>
<td>Radio Berlin Intl, East Germany</td>
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### Monitoring Times

**West Coast To Far East**

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**West Coast To Australia**

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**West Coast To Central America/Caribbean**

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2000-2005 S-F Port Moreby, Papua New Guinea

2000-2005 Radio Zambia, Lusaka
2000-2010 A Radio Zambia, Lusaka
2000-2010 Voice of Kenya, Nairobi
2000-2015 Radio Togo, Lome
2000-2015 M-A Radio Ulan Bator, Mongolia
2000-2015 Trans World Radio, Swaziland
2000-2025 Radio Beijing, China
2000-2025 Radio Bucharest, Romania
2000-2030 Radio Australia, Melbourne
2000-2030 Radio Budapest, Hungary
2000-2030 Radio Ghana, Nairobi
2000-2030 Radio Norway International, Oslo
2000-2030 Radio Polonia, Warsaw, Poland
2000-2030 Swaziland Commercial Radio
2000-2030 Voice of Nigeria, Lagos
2000-2030 Voice of Republic of Iran
2000-2045 All India Radio, New Delhi
2000-2050 Radio Pyongyang, North Korea
2000-2050 Voice of Turkey, Ankara
2000-2056 Radio RSA, South Africa
2000-2010 M-A ABC, Alice Springs, Australia
2000-2010 ABC, Katherine, Australia
2000-2010 M-A ABC, Tennant Creek, Australia
2000-2100 CBC Northern Quebec Service
2000-2100 CBN, St. John's, Newfoundland
2000-2100 CBU, Vancouver, British Columbia
2000-2100 CFCF, Montreal, Quebec
2000-2100 CFRC, Calgary, Alberta
2000-2100 CHNS, Halifax, Nova Scotia
2000-2100 CKWX, Vancouver, British Columbia

West Coast To South America

2000-2100 CFRB, Toronto, Ontario
2000-2100 (US) Far East Network, Tokyo
2000-2100 King of Hope, Southern Lebanon
2000-2100 KYCI, Salipan
2000-2100 Radio Baghdad, Iraq
2000-2100 Radio Havana Cuba
2000-2100 Radio Jordan, Amman
2000-2100 Radio Kuwait, Kuwait
2000-2100 Radio Malabo, Equatorial Guinea
2000-2100 Radio Moscow, USSR
2000-2100 Radio New Zealand, Wellington
2000-2100 Radio for Peace, Costa Rica
2000-2100 Radio Riyadh, Saudi Arabia
2000-2100 Radio Zambia, Lusaka
2000-2100 Superpower KUSB, Utah
2000-2100 Voice of America, Washington
2000-2100 Voice of Algeria, Lagos
2000-2100 WCSN, Boston, Massachusetts
2000-2100 WHRI, Noblesville, Indiana
2000-2100 WINB, Red Lion, Pennsylvania
2000-2100 S-F WMLK, Bethel, Pennsylvania
2000-2100 WRNO, New Orleans, Louisiana
2000-2100 WSHB, Cypress Creek, S. Carolina
2000-2100 WYFR, Oakland, California
2000-2100 M-A WYFR Satellite Net, California
2000-2100 Radio Damascus, Syria
2000-2100 A-S Voice of Kenya, Nairobi
2000-2100 ELWA, Monrovia, Liberia
2002-2045 RAI, Rome, Italy
2000-2005 Radio Polonia, Warsaw, Poland
2000-2100 Radio Australia, Melbourne
2000-2100 Radio Beijing, China
2000-2100 Radio Korea, Seoul, South Korea
2000-2100 Radio Netherlands, Hilversum
2000-2100 Radio Sofia, Bulgaria
2000-2100 Radio Tirana, Albania
2000-2100 Voice of Africa, Cairo, Egypt
2000-2100 Voice of Vietnam, Hanoi

West Coast To Alaska

2000-2100 CFCF, Montreal, Quebec
2000-2100 CFRC, Calgary, Alberta
2000-2100 CKWX, Vancouver, British Columbia

DID WE MISS SOMETHING?

Let us know your corrections and additions by sending them to frequency manager Greg Jordan at 1855-I Franciscan Terrace, Winston-Salem, NC 27127.

Send your special QSLs or good photocopies to share with other monitors as we have space. We'll copy and return them to you within the month. Send to QSL, P.O. Box 98, Brasstown, NC 28902.
<table>
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<td>Vatican Radio, Vatican City</td>
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<td>A.S. Voice of Kenya, Nairobi</td>
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QSL's from Hugh Hawkins' (San Antonio) Collection: Radio Yugoslavia, Radio New Zealand, and Radio Praha

May 1989

MONITORING TIMES
### 2200 UTC [6:00 PM EDT/3:00 PM PDT]

| 2200-2205 M-F | ELWA, Monrovia, Liberia | 3993 11830 |
| 2200-2206 | Radio Damascus, Syria | 950 12085 |
| 2200-2210 M-H | Port Moresby, Papua New Guinea | 3925 4890 5960 5985 |
| 2200-2210 | Radio Sofia, Bulgaria | 9700 11720 |
| 2200-2215 S-F | ELWA, Monrovia, Liberia | 11830 |
| 2200-2230 | Radio Berlin, East Germany | 6125 9730 |
| 2200-2230 M-F | ELWA, Monrovia, Liberia | 11830 |

### 2300 UTC [7:00 PM EDT/4:00 PM PDT]

| 2300-2315 | BBC, London, England | 3955 5975 6175 6195 |
| 2300-2330 | Radio Tirana, Albania | 15300 15320 15350 15395 |
| 2300-2330 | Radio Sweden, Stockholm | 11925 538 |
| 2300-2330 | Swiss Radio Int'l, Berne | 6190 |
| 2300-2330 | All India Radio, New Delhi | 6055 7215 9535 9910 |
| 2300-2330 | Radio Sofia, Bulgaria | 9700 11720 |
| 2300-2330 | BBC, London, England | 11715 11745 |
| 2300-2330 | CBC, Nova Scotia, Canada | 3980 6155 6175 6195 |
| 2300-2345 | Voice of America, Washington | 9765 12175 12185 |
| 2300-2355 | Voice of Japan, Tokyo | 6055 6175 6195 6210 |
| 2300-2355 | CBC, Quebec, Canada | 13720 15180 |
| 2300-2355 | Voice of America, Washington | 13720 15180 |
| 2300-2355 | Voice of America, Washington | 13720 15180 |
| 2300-2355 | Voice of America, Washington | 13720 15180 |
| 2300-2355 | Voice of America, Washington | 13720 15180 |

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**Monitoring Times May 1989**

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[www.americanradiohistory.com](http://www.americanradiohistory.com)
Tunemaster Classic Radio

Readers of the February "Sharper Image" catalog can hardly help but to have noticed that the opening item -- splashed on a five-page cover and color foldout -- is a multi-band tabletop set with a distinctly unusual design. Called the Tunemaster, it's billed as a visual replica of a 1940's-era European radio, the Sonora Excellence 301 -- a model with unique styling that recalls Art Deco's more uninhibited moments.

Brightly Colored Nostalgia

In fact, it is a replica of sorts, but not quite exact. The shape of the top appears to have been altered slightly, a piece of chrome substituted for the original Bakelite moulding, and the original black color changed to a sock-it-to-me metallic red paint similar to that found on customized 1949 Mercurys that once cruised the streets of southern California.

If this doesn't quite meet with your taste, there's also a version in white. This version should keep its original appearance longer than the red, inasmuch as the plastic underneath the paint is light-colored.

There's no question but that this is a most unusual radio. In its razzleberry red incarnation, the Tunemaster is nothing if not a conversation piece. Everybody -- but everybody -- takes notice of it.

Catalog Makes Lofty Claims

This radio -- which you can have for $205.50, including shipping -- is supposed to be more than a pretty face. "We set out to create a radio with performance and features to match its exceptional design," the catalog points out.

"First, the sound must be true high fidelity. Next, it must have multiple bands to take advantage of the boom in shortwave listening... And every jack and convenience feature ever wished for on a radio." Added to these glowing promises is a special writeup highlighting the delights of world band listening.

For $200, you expect a pretty good world band radio. After all, for a bit less you can get a Magnavox D2935, Radio Shack DX-440 or Sangean ATS-803A -- all fine sets that receive a rating of "good" in the 1989 Passport to World Band Radio. So it's comforting to find that the Tunemaster has such features as a dial light, tone control, tuning knob and BFO.

Additionally, there's a fused ac power supply, even though the set as such has no UL approval. Also, in addition to shortwave coverage from roughly 2.3-21.5 MHz -- missing, incredibly, is much of the 13 meter band -- there's coverage of AM, FM and VHF from 110-137 and 144-164 MHz.

Actual Performance Disappointing

Unfortunately, that's about the end of the pluses, for the Hong-Kong-made Tunemaster is otherwise a dreadful performer that makes use of low-cost, out-of-date technology.

To begin with, there's no synthesized circuitry, which by now is commonplace among world band models in this price range. That means the Tunemaster has no programmable channel memories or keypad tuning.

There's no digital readout, either. In fact, there's not even a reasonable analog readout. The upshot is that, for example, the entire 16 meter band is covered by less than 1/4 inch on the tuning dial and the FM band on our unit was woefully misaligned. (For example, a station on 90.0 MHz would appear on the dial at 92.5 MHz.) And as if to underscore the novel nature of the Tunemaster, the manufacturer has designated the 6-6.5 MHz range as "hams!" So much for "convenience features."

Even then, the tuning knob doesn't necessarily require a safecracker's touch -- there is, after all, a rudimentary fine-tuning knob which you can grope for on the back of the set. It does, however, require that you put up with the spongy response of the tuning knob, which turns an archaic string-and-pulley arrangement that gives this control all the "feel" of a soggy marshmallow.

World band performance isn't much better than the features. Adjacent-channel selectivity is truly mediocre, as is image rejection, thanks to the set's low-cost single-conversion circuitry.

World band sensitivity with the built-in antenna is moot, as there is no built-in antenna for that band; this is, after all, a tabletop model. With an external antenna, overloading -- a garbled mishmash of wanted and unwanted stations, all audible at the same time -- is the order of the day, and there isn't so much as an attenuator to cope with the mess.

The result of all these collective shortcomings is a tiresome assault on the hapless listener's ears. World band stations are difficult to locate on the dial, hard to receive intelligibly, and unpleasant to hear when they are audible.

The Tunemaster is promoted as being able to receive ham radio transmissions, thanks to its BFO. Alas, the BFO's signal is not clean. Too, while the set is not terribly drifty, it's not really stable, either. The combination is such that reception of ham - or utility -- SSB signals is marginal.

Much is made of the Tunemaster's
"first-rate sound." "In fact," the catalog boasts, "we know of no other model for less than $400 with sound that compares to Tunemaster's." That's quite a claim, given the excellent sound you can get from Proton and KLH table radios, among many others that cost less than the Tunemaster.

In fact, the Tunemaster's speaker, with a 4-1/4" cone and large magnet, and sealed speaker enclosure are of superior quality by world band standards. On FM -- provided a powerful outboard antenna is not used -- the quality of the sound can be pleasant, indeed.

Even then, the Tunemaster's audio on FM can come across as being distorted when a sufficiently strong outboard antenna, such as might be used for shortwave listening, is used. On world band the audio quality is quite reasonable, but nothing special.

The Tunemaster could be dismissed as a joke in questionable taste were it not for the fact that untold numbers of Americans are going to buy it and wonder why anybody would wish to suffer through anything so awful as shortwave listening.

The Sharper Image knows better. It once sold the General Electric World Monitor II, a very nice set that was priced comparably to the Tunemaster. More recently, they sold a Sangean portable under the Emerson label that also was a poor performer, but at least cost considerably less.

With the introduction of the Tunemaster, The Sharper Image has unwittingly earned its name. Caveat emptor.

---

ICOM to Introduce Costly New Superset

If you have six thousand or so dollars to spare, you may be interested in ICOM's forthcoming IC-R9000 receiver. This gilt-edged entry, patterned after the ICOM IC-781 transceiver introduced last year, has just about everything imaginable to gladden a transistorized heart. For example, there's a spectrum display so you can see the signal strength and fade patterns of stations on and around the frequency to which the radio is tuned. And it tunes all the way from 100 kHz to 1999.8 MHz.

I've played with the IC-781 only once, while visiting Universal Shortwave's showroom in Ohio. But it would seem as if the '9000 will have quite a few performance characteristics and features of interest to devoted radio monitors. However, what it apparently won't have is synchronous detection -- a glaring omission in a world band receiver costing nearly as much as an automobile.

---

**Magnavox D-2935**

"Best value"... Larry Magne

Passport to World Band Radio 1989

The Magnavox D-2935 offers tremendous value in the under $200 category. Passport to World Band Radio says, "... the best intersection of performance and price of any world band radio..."

All the features you want are provided. Big LCD digital readout, dial light, gain control, S-meter, BFO for SSB/CW reception, Complete coverage of LW, MW, FM and shortwave is provided. Frequencies can be selected with a two-speed manual tuning knob, keypad entry or stored in nine memories. Large 4 inch speaker provides exceptional audio. Runs on 120/220 VAC or 6 x D cells and 3 x AA cells (optional).

Order #2214 Only $177.95 (+$5 UPS)

---

**Magnavox D-2999**

The Magnavox D-2999 is an attractive full featured portable with fidelity that will surprise you! Full digital readout (to 1 KHz), keypad entry, three-speed tuning, automatic search, BFO, bass & treble, 16 station memory, dial light, wide-narrow selectivity. Covers 150 - 26100 KHz plus FM. Requires 120/220 VAC or 6 x D and 3 x AAA cells (optional).

Order #0958 $277.95 (+$5 UPS)
Scanner equipment

AOR AR2515 Wide Coverage Scanner

Ace Communications of Indianapolis undertook a very ambitious project when they decided to upgrade the popular AR2002 scanner. Was it worth the effort? Let's take a look and see.

The AR2515 looks very much like an AR2002; in fact the first units were made by modifying existing 2002s. But unlike the 2002 the 2515 has continuous -- no gap -- frequency coverage from 5 through 1500 MHz and nearly 2000 memory channels! A total of 16 separate search ranges may be called up selectively or sequentially and scan and search speeds reach 36 increments per second.

Labor-intensive Programming

But there's a price to pay for all this capability: the 2515 is cumbersome to program. It has no defaults so you have to do its thinking for it. It won't write over previous entries, so they must be deleted before new information can be keyed in.

For example, to program a search range on a Bearcat scanner, you simply press frequency, limit, frequency, limit, and you're ready to search. On the 2515 you must press bank number, select bank, select frequency, delete, select frequency, delete, shift, mode, shift, increment, frequency, add, frequency, add ... THEN you're ready to scan!

Similarly, to enter a scan frequency on a Bearcat, you simply press frequency and enter; on the 2515 you press bank number, select frequency, shift, link, select frequency, delete, shift, mode, frequency, add!

Fortunately, there are some shortcuts for "scratchpad" memory -- temporary frequency entries for monitoring which aren't to be saved -- if the mode or step increment doesn't have to be changed.

So how long would it take you to load your favorite frequencies into the 2515's 1984 memory channels? Even if you had the procedure down pat, it would probably take you 20-30 hours -- non-stop! The scanner comes fully pre-programmed from the factory with favorite public safety frequencies already in memory to make the job easier.

Computer Control

The AR2515 has an RS232C port on the rear apron. The manual includes a chapter on interface and commands. Documentation is provided to allow external control of all keyboard commands.

Banks

Scan frequencies are entered into any of 62 32-channel memory banks; an additional 16 banks are reserved for search ranges. While ANY frequency range within the radio's capability can be programmed into ANY scan or search bank, it is recommended that frequencies be closely spaced.

The reason for this is that for a scanner's circuitry to fully lock on to each frequency during scan or search functions, there is a time delay. The wider the steps, the longer the delay. To help reduce this delay, the microprocessor automatically sorts the frequencies in descending order.

This descending order of scan frequencies takes some getting used to when manually rotating the main tuning knob. As the knob is rotated clockwise, frequencies scroll lower on the display! A counterclockwise rotation produces the frequencies to ascend upward. Since both are backwards by convention, perhaps the manufacturer will see fit to reverse the wiring for our creatures of habit.

Sensitivity

The AR2515 was set alongside an ICOM R7000 for signal strength comparison. An experimental scanner antenna was attached through Grove RG6/U cable to a Grove PRE-3 preamplifier whose dual outputs fed both radios simultaneously. Sensitivity in all VHF/ UHF frequency ranges was virtually identical.

A ten-segment LED light bar shows relative signal strength.

Selectivity

Rejection of adjacent channel interference was about the same as the R7000. Since channel spacing is rarely narrower than 25 kHz in the VHF and UHF ranges, this poses no particular problem. But the 2515 is designed to go down into the shortwave bands as well, where 10 kHz broadcast spacing is the rule and 5 kHz is
commonly found.

While audio quality is exceptionally crisp with such wide bandwidth, adjacent channel interference is prominent. Weak signals are totally muted by adjacent channel powerhouses. No external devices can correct this selectivity deficiency.

**SSB Reception**

An external BFO (optional accessory) can be plugged into the AR2515 for monitoring single sideband or CW stations. As with AM reception, however, crowded band conditions in the shortwave spectrum will result in considerable interference while trying to weed out closely-spaced stations.

**Antennas**

A single BNC connector allows attachment of a telescoping whip (included), but this is only useful on close, strong signals. Switching between two outdoor antennas -- a wideband scanner antenna for VHF/UHF and a wire at least 25 feet long for shortwave -- is definitely recommended.

**Some General Observations**

It is difficult to find fault with an initial entry of an innovative receiver with such wide frequency coverage and massive memory capacity. Certainly, home experimenters are bound to come up with even more useful modifications for this scanner. Nonetheless, there are some shortcomings worth noting.

A prominent background hum through the speaker and a high-pitched whine are probably a combination of AC hum from a marginal wall adaptor and the receiver’s loop (synthesizer) noise.

Synthesizer radiation is quite noticeable when using the indoor whip antenna. A similar problem with the early MX5000 manufactured by AOR for Regency Electronics was substantially reduced by internal shielding and bypass capacitors.

There is no window detector, so the search sequence will stop on a signal as soon as it is strong enough to break squelch rather than when it is tuned on center frequency; thus, a signal may actually be 5-10 kHz off frequency when the radio stops to monitor it.

As with the 2515’s predecessors (MX5000/5500/7000, AR2001/2002), there is no search hold. If a signal is uncovered during the search sequence, even with delay on, the squelch knob must be opened to prevent resumption of the search sequence after the 3-second delay.

The 2515 doesn't always come on the first time the power button is pressed; the display will remain blank. The switch may have to be turned on and off several times before the microprocessor will initialize, indicated by the legend “AR2515” scrolling across the display.

The tiny, dark blue panel legends printed against a black background are very difficult to read. Lighter, larger print should be selected.

The instruction manual, a combined effort of a number of individuals, needs pruning of errors and convolution. Fortunately, AR2515 owners are invited to call a toll-free number for help.

**The Bottom Line**

While each of us would have designed it differently, the AR2515 does offer a great deal to the inquisitive listener and is a significant step forward in receiving capability. Its compact size, wide frequency coverage, enormous memory, signal strength indicator, computer port, manual tunability and rapid scan/search speed make it an attractive addition to the radio room.
Understanding Crystal Oscillators

Crystal oscillators aren’t as simple as the circuit diagrams make them appear. Understanding how they operate can help to eliminate faulty operation, or no operation at all.

Various types of crystal oscillators are in common use, but I will describe only the two most common ones among experimenters – notably the Pierce and the Colpitts. We will also look at 3rd and 5th overtone oscillators, along with some VXO (variable crystal oscillator) circuits.

The Keys to Surefire Oscillation

A quality, active crystal is mandatory for proper circuit performance. This truism may seem trite, but I have known many tinkerers who experienced circuit failure because they tried to use old surplus crystals from bygone days and WW-II.

These crystals are contained in nonconductive molded cases, and the quartz crystal elements are sandwiched between two metal plates that have wires leading to the plug pins on the case.

The FT-243 style of holder is one example of the kinds of crystals I am discussing. Residue can build up within the crystal holder, owing to years of air pollution surrounding the crystal holder. Despite rubber gaskets, which some holders have under the cover plate, gasses enter the holder and coat the crystal and the metal contact plates.

Some of these sluggish or inoperative crystals can be restored by removing the quartz element (carefully!), then washing it and the metal plates with hot soapy water, followed by a thorough rinsing with clear, hot water. I have had good results also when cleaning them with denatured alcohol.

I recommend modern plated crystals in metal holders. These are found in a variety of sizes that range from the most common HC-6/U case to the smaller HC-18/U unit with wire leads. Plated crystals have their electrodes bonded to the quartz element, and the crystal floats on two small wires within the holder. These crystals are more fragile than their older brothers in FT-243 and similar holders, so try not to bump or drop them.

The next consideration for surefire oscillation is the proper feedback ratio in your oscillator. Feedback is obtained by sampling some of the oscillator RF output voltage and feeding it back to the input of the oscillator. In essence, an oscillator is an amplifier that we cause to oscillate by way of feedback energy. Normally, no more than 1/4 the output power is used for feedback. Too much feedback can cause an oscillator to "squegg," and this leads to the development of spurious frequencies along with the desired one. Excessive feedback can cause the crystal to overheat and change frequency, and it may damage the crystal. Too much feedback can lead to transistor overheating and subsequent damage.

Finally, proper oscillation depends upon the upper frequency rating (fT) of the transistor versus the oscillator operating frequency. Try to select a transistor that has an fT rating no less than five times the crystal frequency; e.g., a 50-MHz fT for a 10 MHz crystal.

An excellent bipolar transistor for crystal oscillators and VFOs is the CATV 2N5179. It has an fT of 1200 MHz! Similarly, a 2N4416 JFET offers good performance because of its UHF rating. Dual-gate MOSFETs, like the RCA 40763 and 3N211, are good choices for the same reason. If the fT is near the crystal frequency the oscillator may not operate.

Some Practical Circuits

Six common oscillators are depicted schematically in Figure 1. Circuits A, B and C are Pierce oscillators. The output is untuned
and the crystal is bridged between the input and output of the transistor. C1, C2 and C3 of Fig. 1A regulate the feedback. C4, depending upon its value, may also be selected for feedback control. C2 and C3 form a voltage divider to provide a takeoff point for the output energy.

The ratio of these capacitor values can be varied to provide a high- or low-impedance output characteristic. A 10:1 capacitance ratio (larger value at C3) yields a low impedance output, whereas the reverse (largest capacitor at C2) provides a high-impedance output.

In-between ratios may be used to obtain midrange impedances between 50 and several thousands of ohms. Generally, this is not critical to derive. In any event, C2 and C3 in series should have the same net value as that at C1.

Fig. 1B shows how to use a JFET (junction field-effect transistor) in a Pierce configuration. Gates 1 and 2 are simply tied together, as shown.

Examples of Colpitts oscillators are given in Fig. 1 at D, E and F. C1 and C2 are the feedback capacitors. Increasing the capacitance value at C1 provides greater feedback. This may be necessary if oscillation does not occur.

Some Colpitts oscillators require a C1/C2 ratio of 1:1. This depends on the quality of the crystal, the f'T of the transistor and the gain (beta) of the Q1 transistor. The FET gain is measured in transconductance (gm).

The component values provided in Fig. 1 should ensure good performance when using crystals from 1 to 20 MHz fundamental crystals.

Overtone Oscillators

We can cause a fundamental crystal to oscillate at odd harmonics. This is called "overtone" oscillation. The most common cases call for 3rd or 5th-overtone oscillation. This prevents the crystal from oscillating on its fundamental frequency.

For example, we can cause a 10-MHz crystal to oscillate at approximately 30 MHz by using the circuits of Fig. 2A and 2B. The overtone frequency is seldom exactly three or five times the fundamental frequency, but it will be reasonably close for most experimental work.

Overtone oscillators require a tuned circuit at the output (L1 and C1). This circuit is tuned to the desired overtone frequency, at which time oscillation commences. Reliable oscillator starting can be ensured by tuning C1/L1 slightly higher in frequency than the setting that causes oscillation. Output reduction is minor when this is done.

Most crystal manufacturers provide products that are designed specifically for overtone operation. The frequency marked on the holder is correct, even though it may not be precisely three or five times the fundamental frequency of the quartz element.

Variable Frequency Crystal Oscillators

This type of oscillator is known as a VXO. We can "rubber" the crystal frequency a few kHz when using the circuits of Fig. 2C and 2D. A Pierce version is shown at IC and a Colpitts VXO is presented at D. C1 and L1 are reactances (XC and XL) that are placed in series with the crystal.

The greater the inductance value for L1 the larger the frequency shift as C1 is adjusted. The lower the crystal frequency the smaller the frequency shift. For example, a 4.1-MHz crystal can be shifted only 1.5 kHz, typically. At 10 MHz we can expect shifts as great as 10 kHz, and at 15 MHz it is possible to obtain a 20 kHz shift. AT-cut crystals seem to rubber the best of the types available.

For too great an inductance at L1 will cause the oscillator to function like a conventional VFO, and large frequency swings will be possible. The disadvantage of this condition is that we lose the excellent frequency stability of the VXO. Miniature RF chokes are suitable for use at L1.

These are ball-park choke values versus frequency: 1-4 MHz; 50 uH; 4.7 MHz; 25 uH; 7-12 MHz; 15 uH and 12-21 MHz; 12 uH. I have found these values suitable in the circuits of Fig. 2C and D when using a 100-pF variable capacitor for C1.

Closing Comments

I have not discussed crystals in depth. Many additional characteristics pertain to crystals and the oscillator circuits in which they are used. Such matters as load capacitance, Q, series resistance and series-parallel-mode oscillation are important to circuit designers.

I do not want to burden you, the beginner, with details about those parameters at this time. I urge you, however, to breadboard some of the circuits in Figs. 1 and 2. The learning exercise will provide a stepping stone to future circuit development.

Figure 2

Examples of overtone and VXO circuits. The oscillators at A and B permit crystal oscillation at odd harmonics of the crystal fundamental by tuning the output circuit (L1/C1) to the desired overtone frequency. Circuits C and D enable you to pull or "rubber" the crystal lower in frequency by using a VXO type of circuit. C1 is the tuning control for shifting the frequency. See text for additional data.
Make the BC-600 (or BC-580/760) a Real Tone Scanner

by Dean McDermott

The BC-600 is a big step forward in the evolution of scanning, but it has one major drawback: you either scan all channels not locked out or you scan just the tone coded channels not locked out.

That was the past. This is now.

Now you can scan both tone and carrier squelch channels.

The way to do this is to include a CTCS tone encoder in your scanner. Tone encoders are available from "Communications Specialist" (1-800-854-0547) at a price of $29.95. Ask for model SS-32.

Here's the Hookup

1. Remove the bottom of the BC-600.
2. Install optional tone board from Bearcat if it is not already installed.
3. Solder the negative lead from the new tone encoder to point 1.
4. Solder the positive lead from the new tone encoder to point 2.
5. Solder the encoder out lead to IC 2 Pin 10.
6. Follow the instructions included with the encoder board to program the encoder board for a tone of 67 Hz.
7. Mount the board on top of IC-14 using the tape supplied.
8. Turn the scanner on and turn the CTCS on.
9. With the scanner in manual, program in a frequency along with a tone of 67 Hz.
10. Turn the squelch full clockwise.
11. On the encoder board locate the output level control (small screw driver adjustment).
12. Starting with this adjustment full counter clockwise, turn it clockwise till you hear noise from the speaker.
13. Close the scanner up; use caution not to short any wires out.

Now follow directions for using the CTCS decoder, but when you enter a frequency that does not have tone or a frequency that you don't know the tone of, enter the tone of 67 Hz. Now you can scan both tone and carrier squelch frequencies.

Note: 67 Hz is commonly used for open squelch. If 67 Hz is being used in your area for tone encoding you may select any unused tone for your open squelch channel.

Techniques of Taping

by W.N. Jenkins

Soon after one hears his or her first exciting radio call, the thought of preserving it on tape naturally occurs. It certainly did to me, and after making a very modest investment in time and materials, I can say that not only has the use of taping enhanced my monitoring activities, but it has actually changed my listening habits.

A tape recorder is not simply a necessary piece of equipment and the ability to record and preserve material. It reaches much deeper, into subjects such as statistical probabilities. It provides you with a way to search for the exotic and unexpected at times when you're sound asleep or away at work.

The Equipment

Let's start with your receiver. All modern day scanners and receivers are suitable for off-the-air taping. I suggest caution when considering older tube-type equipment, as the voltage levels present at the speaker output may damage the solid state VOX (voice operated circuit) and the input levels presented to your tape recorder may be far too high. However, if your equipment is solid state with an 8 ohm speaker jack, you're on your way.

A final requirement from your radio is that it have a squelch control. The ability of your receiver to completely shut down any audio output below a preset level is what enables the VOX circuit to detect the presence or absence of such audio output. The remaining tasks are to turn on the tape deck, reduce the level of the audio to such that it is acceptable to the tape player's input,
and return to the original pause position when the signal is no longer present. All modern day scanners, of course, have a squelch control.

Some otherwise fine receivers such as the Sony ICF-210, which does have a scan function, does not have the ability to completely drop off all of the audio signal. In some cases, the RF gain control can serve this purpose, although it has been my experience that this is not as precise as the usual squelch circuit.

Some accessory devices, such as the Jabco Voicegate, can be used to add-on the squelch feature. It also contains a VOX circuit and from what I've read about it in Monitoring Times, I'm looking forward to giving one a try.

If you own one of the more upscale pieces of recently introduced gear, this function may be built-in and so much the better! Those of us with more commonplace radios however, must make do with what is available. That means in addition to our receiver, we will need a VOX circuit and a tape recorder.

The VOX circuit shown in the figure was at one time available in kit form from Capri Electronics (P.O. Box 589, Bayfield, CO 81122, ph. 303-884-9084). However, demand was not strong enough for it to remain in their catalog and the circuit is reproduced here for those who wish to "roll their own."

Capri used to sell an assembled version (with an additional sensitivity control). However, since they left the consumer market for electronic countermeasures, it may no longer be available. There are other circuits that will do the job but I have found this one to perform so well that I've never had any reason to investigate others.

Finally, you will need a tape deck. Good fortune smiles upon us! I have found that the best and most reliable recorders are the inexpensive cassette units found at Sears and Radio Shack. High quality and expense are wasted in this application. After all, we are recording voice transmissions and high fidelity just gets in the way.

When shopping for your deck, keep in mind that it must have a remote mike jack. This is what is used to turn the tape on and off by the VOX circuit.

Construction and hook-up is a breeze for anyone handy with a soldering iron. As only audio and DC levels are present, parts placement is far from critical. The unit can be built on vector board and enclosed in a metal enclosure. Use shielded cable for the connection to your radio and the input to the mike jack on the tape deck. It is important that you match the DC polarities on your remote control jack to the boards polarity as shown in the schematic.

Ready to Roll

After making the initial hookups, insert a tape and place the recorder into the "record" position. When power is first applied to the VOX board, it goes into an "ON" condition for about four seconds, whether an audio signal is present or not. Now, turn up the volume on your radio and make tests at various levels noting the volume that yields the best recorded sound. This can vary from 25% to full volume.

Resistor R7 can be increased in value to increase the on-delay time. In the circuits shown, about two seconds of tape run-on occurs after recording the last message. I have found this very appropriate, as it prevents the tape recorder from cycling during return transmissions, much in the same manner as the scan delay functions on the radio.

That's all there is to it. With a nifty gadget like this you can listen to all those missed communications. In fact, you can listen to a whole day's worth of comms in just an hour or so.

Projects for Experimenters Workshop, while reviewed by our Technical Editor, are submitted by readers and remain experimental.

Monitoring Times invites you to submit your favorite projects for publication. For more information, contact Rich Arland, 25 Amherst, Wilkes-Barre, PA 18702
I'm sure that every reader of this column has heard or read the terms "dB" and "decibel." Of course, the first of these terms is the abbreviation of the second, but just what do they mean, and what have they to do with antennas and radio communications?

Well, in practical terms, workers in communications have found that, when signal power levels change, a decibel scale indicates the kind of difference the ear hears better than do some other scales.

To explain, let's compare the communications value of signals from two different shortwave stations. Let's say that you are tuning between one shortwave station (station A), and another shortwave station (station B). And let's also say that both stations are identical in every way except for the power they use: they are located next door to one another in the same foreign country, using the same kind of antennas, transmitting on the same band, playing the same kind of programming material, and so forth.

If station B transmits twice the power of station A, we might expect station B to sound twice as loud at our receiver as does station A, right? Although that seems to be a reasonable guess, it's wrong.

But now let's go to the decibel scale and see what it would indicate in this situation. On the decibel scale, one decibel is a just-barely noticeable change in signal loudness. And, with a decibel scale, the change in power from station A to station B (a twofold increase) can be shown to be just three decibels. Remembering that a decibel is a very small change in signal strength, we would expect three decibels to be a relatively small change in signal loudness. Thus, using the decibel scale, we can better indicate how our ears respond to a doubling of signal power.

Now you might wonder how we can tell how many decibels a particular change in power levels will give, and how we can interpret the various amounts of decibel change we encounter in communications work.

Nicely enough, communications engineers have already worked this out for us. Table 1 shows some decibel values which we are likely to find useful in our communications work, and how to interpret them.

But what do antennas think about decibels?

When reading about a new antenna in which we are interested, we may find a statement of its gain, given in decibels. Frequently this gain is determined by comparing the new antenna to our friend, the halfwave dipole antenna. The comparison is then reported as so many decibels of gain, referenced to a dipole (dBd).

Again, Table 1 can help us to understand what the dB gain value means. An antenna with a gain of 3 dB over another antenna would give an improvement in receiving weak stations, for which this slight (3 dB) boost may bring them from marginally-readable to readable.

But let's say that you were looking for a means of bringing in signals so weak you cannot quite even tell for sure that they are there with the lower gain antenna. Then, since 3 dB is not a big improvement, the antenna with 3 dB more gain than the antenna you are using would not be of much interest to you. For what you want, you may need more like a 6 to 10 dB increase in gain.

Table 2 gives a comparison of the gain of some common antenna designs, as compared to a dipole antenna.

So, what difference does one dB make, anyhow?

Obviously, one dB will rarely make a real difference in your communication potential. Remember that it is a value that's just barely noticeable by the human ear. So, unless we are really particular, we don't consider an improvement (or loss) of one dB in signal strength to be of any practical consequence.

But losses (and gains) in terms of decibels are additive. So consider a situation where you might have an antenna system where you are losing 1 dB due to corroded connectors at the antenna, another 1 dB loss due to low-quality feedline, and another dB due to failure to solder some connection you should have soldered. That adds up to 3 dB.

So, although any one of these 1 dB losses are not of any real significance by themselves, by correcting all of them, you can have a gain in antenna performance of 3 dB, a small but worthwhile amount in weak-signal work.

Incidentally, if you had several small losses in your antenna system with a total of 4 dB loss between them, correcting these losses would give one whole S-unit of gain (or more, see Table 1) to the system.

RADIO RIDDLES

Last Month: Last month I asked you to give two relatively common ways of reducing noise-pickup by the way in which we utilize ordinary antennas. I also asked you to give a common trick for reducing noise-pickup from the antenna lead-in, through the proper choice of cable. Did you know the answers?

Well, one well-known way to reduce received noise is to mount the antenna so that its length runs horizontally (i.e., it is

<table>
<thead>
<tr>
<th>Table One</th>
<th>A Comparative Table of Decibel Value Meaning</th>
</tr>
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<tbody>
<tr>
<td>0 dB</td>
<td>About the smallest change in sound level which can be detected by the human ear. The effect of 1 dB change in power (25%) is almost unnoticeable.</td>
</tr>
<tr>
<td>3 dB</td>
<td>A doubling of power in a signal gives a 3 dB increase in signal level. This is an easily noticed change, but not at all strong. May make a marginally readable signal readable.</td>
</tr>
<tr>
<td>6 dB</td>
<td>Multiplying the power by four gives a 6 dB increase in signal level. This is a very noticeable increase, could make an unreadable signal readable. The S-meter on communications receivers usually have each S-unit = 4 to 6 dB.</td>
</tr>
<tr>
<td>10 dB</td>
<td>Multiplying a signal's power by 10 gives a 10 dB gain. A 10 dB change is a bit more noticeable than 6 dB, but not greatly so.</td>
</tr>
<tr>
<td>20 dB</td>
<td>This level represents a gain of 100 in power. It gives a big increase in the loudness of a received signal.</td>
</tr>
<tr>
<td>30 dB</td>
<td>This level represents a gain of 1000 in power. A 30 dB change in power gives a dramatically large change in the loudness of the received signal.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Table Two</th>
<th>Approx Maximum Gain for Common Antenna Designs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenna Type</td>
<td>Approximate Signal Gain</td>
</tr>
<tr>
<td>Groundplane</td>
<td>-1.8 dBd</td>
</tr>
<tr>
<td>Dipole</td>
<td>0.0 dBd</td>
</tr>
<tr>
<td>Longwire (1 wavelength lon)</td>
<td>.4 dBd</td>
</tr>
<tr>
<td>5/8 wavelength vertical</td>
<td>1.2 dBd</td>
</tr>
<tr>
<td>Two-element quad</td>
<td>7.0 dBd</td>
</tr>
<tr>
<td>4-element Yagi-Uda</td>
<td>10.0 dBd</td>
</tr>
<tr>
<td>Parabolic Dish</td>
<td>Gain varies greatly depending on the design. Gains of 50 to 60 dBd common</td>
</tr>
</tbody>
</table>
horizontally polarized). Because much man-made noise is vertically polarized, noise pick-up is often thereby reduced.

Another trick, if you have the real estate to do it, is to mount your antenna far away from any buildings and electrical power lines. This removes the antenna from the areas where electrical noise is generated, and reduces noise pick-up dramatically at times.

And, if there is an electrically noisy environment between the antenna and the receiver, it is good to use coaxial cable as your antenna lead-in. This is because the outer conductor (braid) of the coax is a shield against the entry of extraneous signals, such as the electrical noise, through which the cable must pass between the antenna and receiver.

While we're at it, we should mention also that the use of a highly directional beam antenna reduces noise signals from all directions except the direction favored by the beam's main lobe. Thus, if you have trouble with noise received from a particular direction, a highly directional beam, pointed away from the noise source, will cut down on noise interference while allowing communications in the direction favored by the beam's main lobe.

This Month: For what famous inventor is the decibel named? Hint: the answer is not Mr. or Ms. Decibel.

Find the answer to this month's riddle, and much more, next month in your copy of Monitoring Times. Til then, Peace, DX, and 73.
Q. I recently saw a huge conical horn antenna on a microwave tower. Can they interfere with ham radio equipment? TV—even microwave ovens? Are these hazardous to your health? (Barney Fontanot, San Antonio, TX)

A. Only if they fall on you. Due to their frequency range (several thousand megahertz), their patterns are highly directional; very little scattered radiation falls outside of their boresight.

While there have been documented cases of microwave radiation injury, they have all been the direct result of being in the line of fire. Cause and effect studies are presently being conducted to determine whether VHF and UHF walkie-talkies, held to the head during transmit, may cause eye injury. The jury is still out on this one.

There is contradictory evidence being gathered pointing toward high-tension power lines and even radio transmitters as being cancer causing. Suspicion of flawed data collecting should offer some relief to hams and broadcast engineers.

So far as interference potential from those microwave towers, only TV dish owners near the microwave transmitters have complained of such problems, called "TI" (terrestrial interference). This is because land microwave services share some of the same bands utilized by satellite TV. Other home electronics appear to be immune, largely because they utilize entirely different frequency ranges and have adequate shielding.

Q. Does anyone out there repair old scanners? I have a carcass to donate and need work done on another.

A. Absolutely! Gerry Oliver of G & G Communications (9247 Glenwood Drive, Le Roy, NY 14482; phone 716-768-8151) is always looking for discard scanners to salvage, and does a fine job troubleshooting and repairing scanners as well (if he has the parts in stock!).

Q. My old Hallicrafters R-48 extension speaker is rated at 3.2 ohms; is it safe to attach it to a radio specified for an 8 ohm output? (Robert Gallardo, San Jose, GA)

A. Ordinarily, yes. The only exception might be if the radio has a marginally-rated solid-state amplifier which will be operated at high listening volume. The low speaker impedance could cause the amplifier to draw excessive power, leading to heat failure.

If it is solid state, run the radio for a few minutes at normal listening volume, feeling the power amplifier circuitry for uncomfortably-hot temperatures. Moderately warm is normal. Be careful not to touch any of the wiring connected to the AC line cord and do not perform the "touch test" on vacuum tube circuitry; both represent a serious shock hazard.

Q. Even with the ignition switch turned off, my Realistic DX360 portable radio experiences high level "hash" noise when plugged into a DC/DC converter operating from the car battery. Any cures? (Robert Hilton, Ft. Wayne, IN)

A. I'd be willing to bet that some microprocessor-controlled circuit (clock, radio, ignition, etc.) in the vehicle is still functioning and causing the interference. Try these steps:

1. Disconnect alternately the external antenna and power cord (switching to internal batteries) to determine whether the noise is coming through the antenna or power cord.

2. If antenna, mount your outside receiving antenna as far as possible from the engine compartment, using coax lead-in.

3. If power cord, install a hash filter (choke and capacitor set), available from most automotive electronics dealers including Radio Shack.

4. You may have to wrap the radio in metal screening if it is picking up radiation directly through its plastic cabinet.

5. Contact the dealer or manufacturer of your vehicle regarding service notes to reduce electrical noise interference on radio reception.

Q. What is "longwave" as printed on the dial of my portable radio? What can I hear there? (Charley Thompson, Longview, TX)

A. Years ago, various radio bands were expressed in wavelengths (meters) rather than frequency (formerly kilocycles and megacycles per second, now kilohertz and megahertz). International broadcasters still conventionally refer to "meter band" in their identifications, but two-way communicators never do; they always refer to frequency.

Without going into theory, the higher the frequency, the shorter the wavelength. Thus, low frequencies are the longwave bands and higher frequencies are the shortwave bands. The North American AM broadcast band, between the two, is called medium wave.

Some internal domestic services of foreign countries use longwave (150-400 kHz or 2000-750 meters) for programming to their citizens. Unfortunately, due to their relative low power, short-range propagation, and interference in North America from aeronautical beacons and images from powerful medium wave stations, reception of these stations is rare.

Q. Can a satellite TV dish be used for amateur transmitting and receiving above 1 GHz? (Barney Fontanot, San Antonio, TX)

A. Absolutely, with reduced gain and directivity below 3.7 GHz, and additional above.

Q. Are there any devices or computer interfaces which will allow me to copy the digital data transmissions I hear on our local police channels? (Robert Gallardo, San Jose, CA)

A. Apparently not. In spite of several teases inviting our technically-inspired readers to share with us any experiences they have had in doing this, not the first one has ever come in. It seems that the protocol is a non-standard packet system, accounting for its resistance to being copied by consumer equipment.
Get the Most from your Nicads

Why Does My Bearcat Shut Off So Soon?

A number of Bearcat 200XLT owners have questioned the charge life of their battery packs. Some users have complained of only about 3 hours before the low battery indicator comes on (this premature loss of capacity is known as “fading”), while others report five or more hours of useful performance.

The energy storage capacity of a nicad (nickel-cadmium) battery is rated in milliamperes-hours (mAh), obtained by multiplying the recommended discharge current by the time it takes the cell voltage to drop from the normal 1.2-1.3 volts to 1.0 volt (considered to be discharged).

It is a simple matter to determine normal voltage for any nicad battery: simply multiply the voltage per cell times the number of cells. Thus, a 6-cell battery would have a terminal voltage of 7.2-7.8 volts, discharging to 6.0 volts.

Capacity

A 560 mAh battery can nominally provide 56 milliamperes of current for 10 hours. It could also provide 560 milliamps for 1 hour, too, although at higher currents the efficiency drops as some energy is transformed into heat and the battery will discharge in less than one hour.

One may logically ask, if such high current discharge rates are available, why is it necessary to recharge so slowly? Trickle charges of 12-16 hours are common. The reason is that high charging currents produce excessive heat and oxygen gas which builds up pressure, causing internal damage.

Since nicads are not 100% efficient, a recharge time of about 140% of capacity is usually recommended. For example, a 450 mAh battery being charged at 45 mA would not reach capacity for about 14 hours.

How to Kill a Battery

The service lifetime of a nicad battery is many years, accommodating anywhere from several hundred to tens of thousands of charge/discharge cycles, depending upon effective maintenance. Diminished capacity can be caused by overcharging, repeated shallow discharge/recharge cycles, long term storage or inadequate charging.

Overcharging produces hydrogen and oxygen gases on the negative and positive plates. At first the excess oxygen unites with the cadmium metal to form cadmium hydroxide; eventually, after saturation, the gas pressure buildup forces electrolyte out of the battery cells, causing a reduction in electro-chemical capacity. This venting process can permanently damage a battery.

You can verify loss of electrolyte in your nicad battery by simply measuring the voltage after a recharge cycle—it will be higher than normal (above 1.3 volts per cell). In spite of the higher voltage, the capacity will not be as good, resulting in premature discharge in use.

Repeated overcharging also reduces a nicad's capacity by permitting crystals to grow on the cadmium anodes. The crystals restrict the amount of electrochemical energy which can be stored, producing an effect known technically as "voltage depression" or, more commonly, "memory". Fortunately, the crystals are usually redissolved by several deep discharge cycles, a procedure known as "exercise".

Deep discharge simply means that the battery current is drained down to the point where the terminals measure 1.0 volt per cell.

A charging technique utilized by the military, known as "pulse" charging, can virtually reverse battery memory with one shot and add an extended service life of two or three times normal. Hopefully, it will see its way into consumer products!

Long term storage encourages the formation of a "passivation" layer of insulating crystals on the nickel plates, preventing them from efficiently reacting with the electrolyte. As with memory, the deposit is usually removed by several deep discharge cycles.

Occasionally, these simple remedial procedures won't work and it is necessary to lower the cell voltage below 1.0 volt, a process known as reconditioning. It is necessary, however, to do this under careful control to prevent depolarization of one or more cells, rendering the battery virtually useless.

Nicad batteries operate most efficiently between 32 degrees Fahrenheit (above freezing) and 105 degrees Fahrenheit; this can be shown by actually measuring the battery voltage which will rise to a maximum at approximately 75 degrees Fahrenheit.

Bearcat Batteries

The BC200 pack contains six Sanyo AA-size 600 mAh nicad cells connected in series to provide a nominal 7.2 volts DC to the radio. An internal voltage regulator assures that the battery will receive a constant charging current over a wide range of supply voltages, such as the 12-14 volts experienced when connected to the AC wall charger or an auto cigarette lighter charger.

Recently, Bob Parnass performed a series of tests which he reported in a paper on the subject as reprinted in the RCMA Newsletter. We shall summarize his findings here.

The BC200XLT consumes an average of 50-100 mA of current when on, depending upon the volume setting. Loud volume draws the greatest current and, oddly enough, 800 MHz reception draws about 13 mA more than low band reception! Earphone listening conserves battery life.

Even when the radio is switched off, approximately 0.5 mA of memory "keep alive" current is drawn by the radio. The microprocessor also has a backup capacitor to prevent memory loss during short periods of battery disconnect.

Bearcats also drain themselves through internal resistance, accounting for limited shelf life, about 40 days maximum in the case of the BP200 pack. If kept in a hot car, the discharge time increases, reducing lifetime by as much as 6 days.

Don't recharge your Bearcat at the first sign of a blinking low battery indicator; it is better to turn off the scanner, then turn it back on to reset the timer and use the scanner longer. This procedure may be repeated many times before the battery capacity is completely drained. The low battery indicator comes on much too soon.

Ideally, the BP200 should be drained to 6 volts (1 volt per cell), then charged for 16 hours. This procedure may substantially increase battery time to as much as 9 hours. There are two ways to accomplish this:

1) Every month or two, remove the battery pack and tape the leads of a 12 ohm, 10 watt resistor across the terminals. This allows a 600 mA discharge current which should safely deplete the charge in less than one hour. Measure the voltage with a voltmeter and when it reaches 6 volts, remove the resistor, remount the battery pack and charge it for 16 hours.

(In lieu of the resistor, an automotive bulb may be used. Solder wire leads to the two tips under the base of a #1157 bulb and connect it to the battery. 400 mA will be drawn, draining a fully charged battery in just over one hour...cd.)

2) Allow the scanner to run until the display blanks; turn it off, then on again to reset the timer. Do this repeatedly, occasionally removing the battery pack and measuring the voltage. When it shows 6 volts, recharge it for 16 hours.

These simple tricks will prolong the life of your nicad battery, saving you from the aggravation of premature equipment shut-down.
LETTERS
continued from page 3

Jim Streitmattes, N9HAS, of South Bend, Indiana, agrees with the proponents of restricting radio listening -- to a degree. Says Jim, "I just don't believe that a person without the proper authorization has the right to listen to anything he wants. Leads to anarchy, I think. But I don't want a police state, either."

George Golebiowski of Southbridge, Massachusetts, says that while we mentioned "an inexpensive ($15) modification that would enable a radio to receive FM SCA transmissions, no such modification appeared in the article."

We were three dollars off. That modification is available direct from Dr. Elving for $18.00. His address is P.O. Box 24, Adolph, Minnesota 55701-0024. While you're at it, ask Bruce for a copy of his catalogue. Also, a new edition of the FM Atlas will reportedly be out soon -- just in time for vacation travel. I hope to have a review copy of it shortly.

Speaking of vacations, Bart Veerman, publisher of the popular Haruteq frequency directories, offers some help to the U.S. scanner listener hoping to take his radio across the border and into Canada.

"According to the Canadian Department of Communications, no rules or regulations exist for scanners when used for personal entertainment. This means that you don't need a license and all scanners, whether mobile or stationary, can be legally used in Canada."

Bart points out a neat twist in Canadian rules that U.S. legislators should take a look at. "So long as the scanner is capable of receiving at least one public frequency such as national weather (162.400, etc.), the are no restrictions imposed on the frequencies you can monitor. You can legally monitor the RCMP (the Canadian equivalent of the FBI) and cellular phones in Canada. You just can't make use of or divulge to a third party, any of the communications you hear."

Bona Fide Program Guide

"At last!" writes long-time Monitoring Times reader Arthur H. Frietzche of San Luis Obispo, California. Refering to MT's "new and improved" program guide (pp.58-66), he waxes, "From the ridiculous to the sublime. From the worthless to the program guide I had always hoped for! Do I detect ye editor's hand in this?"

What you see is what reader Jeff Miller, KB2FB (no relation) of Trenton, New Jersey, refers to as a "magazine [that] is maturing nicely." A very nice compliment, indeed. No small amount of praise goes to wunderkind Kannon Shanmugam, who compiles the column.

Says Bill Kiley, Oklahoma City, Oklahoma, "I heard a pirate station playing the children's record, "Winnie the Pooh and the Blustery Day" on 9950 kHz. They gave out your name and address for QSL cards." Yes, I know. I heard them, same frequency, playing "Brer Rabbit and the Tar Baby." There's another pirate giving out Dr. John Santosuosso's name and address for QSLs.

Rude Awakening

"After reading your March 1989 cover story about cruise ship monitoring, I thought you would be interested in the response I have just received from a cruise ship radio officer."

"I've always found most shipboard radio officers to be extremely helpful, alerting me to company nets, additional times and frequencies and so forth. I was truly taken aback by this negative reaction. From now on I will stick to merchant shipping!"

Along with his letter, Thomas Snell of Gambier, Ohio, sends along a copy of the report. In case you can't read the copy reproduced on page 3, the radio officer of the MS Celebration has typed across the bottom of the reception report, "By listening to commercial radio traffic, you are braking (sic) both the FCC and ITU regulations. I am sending my report to the FCC."

Thomas, we advise you not to let this rude, uninformed human being ruin your fun. The truth is that he is dead wrong. Says Bob Grove, "It is legal to do this kind of monitoring."

Why not write a note to the "Celebration"'s main office (Carnival Cruise Line, 3915 Biscayne Blvd, Miami, Florida 33137), informing them that you and 50 of your closest friends have changed your plans to sail on their ship. After all, would you trust your life to a ship where the radio officer is so ill-informed -- not to mention rude?

Nudist Radio!

"Enclosed is a copy of an interesting article which I came across. The photo depicts an FM radio station that apparently operates within the confines of a nudist park. Could you do an article on 91.5-WSRL?"

We were unable to write an article on the station when we found that it was not included in any listing of FMs on 91.5. After passing around the station's publicity photo, however, we sure didn't have any shortage of volunteers for the assignment.

We asked the FCC for their assistance. After they saw the photo, rumor has it that they chartered seventeen buses so that the entire staff can be in on the investigation.

Letters should be addressed to Letters to the Editor, Monitoring Times, P.O. Box 98, Brassington, NC 28902 and should include the sender's 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.
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Need: R-80 ballast tube for R274/FRR HALLCRAFTERS radio. Call Bob collect (501) 352-5907 from 4 to 9 pm.

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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. Box 213, 4009 BASEL, Switzerland.

Wanted: ICOM R7000 in excellent condition. Jeff Kadet, W3CRH, Box 20, Macomb, IL 61455 (309) 833-1809.

Little Big Horn Amateur Radio Organization now being formed. Free membership open to American Indians and other interested hams. For information contact WS4GE, Mick, 940 Temple St., San Diego, CA 92106. Ph. (619) 222-3912.

JRC NRD-525, immaculate, like new, $900. Will consider swap for NRD-515 plus $$ or DRAKE R7A, or DRAKE R4245. (216) 953-9279 evenings.


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### CONVENTION CALENDAR

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<td>New York, NY</td>
<td>Hall of Science ARC/5plkn.Greenbaum WB2KDQ</td>
<td>85-10-34 Ave, Jackson Hts, NY 11372</td>
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<td>Jun 4</td>
<td>Pittsburgh, PA</td>
<td>The Breeze Shooters/ William Kristoff Jr N3BPB</td>
<td>3617 California Ave, Pittsburgh, PA 15212</td>
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<td>Evansville, IN</td>
<td>Tri-State ARS/ Martin Hensley KAPCT</td>
<td>1906 S. Parker Dr, Evansville, IN</td>
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<td>Jun 4</td>
<td>Princeton, IL</td>
<td>Starved Rock/ Kenneth Slaak WBZFO</td>
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<td>Jun 4</td>
<td>Chelsea, MI</td>
<td>Chelsea ARC/ Rob Schantz K&amp;JKV</td>
<td>416 Wilkinson St, Chelsea, MI 48118</td>
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<td>Jun 4</td>
<td>Salina, KS</td>
<td>Central Kansas ARC/ Harvey Tewes WAOZP</td>
<td>2317 Aura, Salina, KS 67401</td>
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<td>Jun 4</td>
<td>Manassas, VA</td>
<td>Ole Virginia Hams ARC/ Joseph Turino KB4VHK</td>
<td>P.O. Box 2027, Manassas, VA 22110</td>
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<td>Jun 10</td>
<td>Winchester-Salem, NC</td>
<td>Six Meter Club/ Jim Novak WAFSH</td>
<td>Box 60 Cedar Grove Pk, Kernersville, NC 27284</td>
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<td>Jun 10</td>
<td>Pittsburgh, KS</td>
<td>Pittsburg Repeater/ Jerry Adams KASBMX</td>
<td>RR 5 Box 204, Pittsburg, KS 66762</td>
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<td>Jun 10</td>
<td>Coeur'dAlene,ID</td>
<td>Kootenai ARS/ Marjorie Hogewide W8BW</td>
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<td>Jun 11</td>
<td>Willow Spgs,IL</td>
<td>Six Meter Club/ Jim Novak WAFSH</td>
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<td>Jun 11</td>
<td>Erlanger, KY</td>
<td>Kentucky ARC/ John Thames WMAT</td>
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<td>Jun 16-17</td>
<td>Albany, GA</td>
<td>GA State Convention/ John Crosby K4XA</td>
<td>PO Box 1205, Albany, GA 31702</td>
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<td>Jun 17</td>
<td>Cortland, NY</td>
<td>Skyline ARC/ William Ackroyd WAC2UFO</td>
<td>5 Hiltion Rd, Dryden, NY 13053</td>
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<td>Jun 18</td>
<td>Santa Maria,CA</td>
<td>Satellite ARC/ John Flaherty N6PKK</td>
<td>409 Oakhill Terrace, Lompoc, CA 93436</td>
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A couple of comments from MT readers:

"Thank you for a wonderful year of Monitoring Times. In just one year of SWLing, I have grown to love the hobby. And in just one year, I can plainly see how the Times has grown and improved with each issue. Bravo!"

"I "inhale" every inch of every issue, and have never encountered a "bad" article. Enclosed is my two-year renewal. Continue your fine publication. I don't know how it could get better, but I suspect it will! - Stephen Wandel, Washington, D.C."

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Closing Comments

Scanners and Receivers:
Are our wishes being ignored?

Over the years, a variety of consumer radios have appeared on the market. Shortwave receivers became more sensitive, accurate, stable and selective. Entrepreneurs entered into the foray, introducing fresh designs with attractive functions at reasonable cost. Then something happened.

A crush of low cost, high performance radios began to appear from Japan. American manufacturers were driven from competition. Revered brands like Hallicrafters, National, and Hammarlund buckled under the economic pressure, yielding to exotic names like Yaesu Musen, Trio-Kenwood, ICOM, Sony, Panasonic and Uniden.

The audiofile market had its analogy with the disappearance of Fisher, McIntosh, Harman Kardon, Bell and so many others which were replaced by offshore brands like Sansui, Matsushita, Onkyo, Nippon and Fujitsu Ten.

In an effort to deceive suspicious Anglophiles, many resourceful Oriental merchandisers branded their products with names like Juliett, Electro Brand, Citizen, Crown and Roberts.

In an effort to dominate, Japanese manufacturers began to offer "Chinese copies" of one another's functions and features undreamed of in prior years -- snooze alarms, shortwave memory channels, automatic on/off timers, recorder activators, microprocessor control, infrared remote controllers, computer interfaces and more.

At first consumers were dazzled by these "bells and whistles," but an unsettling fact has begun to emerge: The consumer is no longer in control. The Japanese manufacturers are offering to us not what we want, but what they want us to have.

Rotary knobs have been replaced by pushbuttons; variable and selectable functions have given way to factory-determined presets; bold, readable panel legends have grown small and dim; well-shielded metal cabinets have been replaced by plastic; easy-access circuitry has disappeared as dense construction and house-numbered components now require maintenance by authorized service centers or discard and replacement; instruction manuals are often incomplete, incorrect and poorly translated.

Even worse, the Japanese seem to be indifferent to consumer input. Letters of complaint or inquiry are frequently ignored or pretentiously answered; customer service representatives are poorly informed, offering little relief to customers' queries; personnel who are really in charge are unavailable for assistance; back orders build for months without explanation or courtesy updates; dealer orders are cancelled without notification; parts are unavailable for warranty repair.

Whether this deplorable state of affairs in the consumer electronics marketplace is typical of Japanese business philosophy in general, or arrogance bred of successful market domination, there may be hope on the horizon.

Japanese manufacturers are suffocating under their own success. Inflation has driven them to other offshore suppliers -- Taiwan, Hong Kong, Korea, Malaysia -- in an effort to survive under their own competition. In many cases, these expediencies have lowered product quality, blemishing former reputations of high quality at low cost.

There is talk among some start-up American companies that the time might be ripe for Americans to fight back, unleashing a bevy of innovative products at competitive prices, satisfying the American consumer and providing service along the way.

We would encourage American industry to take a serious look at this opportunity. *MT* will be happy to support such an effort, reporting in its pages new products which are of value and interest to our readers. Let's all hope that in the near future we will be seeing more and more products bearing the label, "MADE IN THE USA!"

-- Bob Grove, WA4PYQ
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