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Tahiti: Myth and Reality
by Edward Pyatt

One doesn't generally travel to Tahiti to listen to the radio, so it wasn't until Ed Pyatt's seventh visit that he looked up RFO Radio Tahiti. Unlike most government-owned voices, this shortwave station doesn't represent Tahiti to the world, but is an arm of Radio France International in Paris. That makes for an unusual programming mix, but perhaps you can still catch the balmy breezes on a frosty northern night.

DRUG WAR
Monitoring by William Shelby

Next to monitoring a natural or man-made disaster, overhearing drug deals and drug busts ranks as the most excitement a radio monitor can expect. But William Shelby has avoided the media's temptation to capitalize on the sensational. His coverage of the U.S. Customs Service is thorough and professional. So thorough, in fact, that his report will be presented in two parts, concluding next month. This is "must" reading for utility buffs!

China's Shortwave Voices by Charles Sorrell

Nowhere has shortwave radio proved its worth more than in China -- a huge nation with many far-flung and isolated states. Several broadcasting services are there to be heard. Although DXing China can be both rewarding and frustrating, Sorrell's overview will help you know what to expect. You can certainly anticipate hearing more than Radio Beijing!

COVER: Fire engulfs the jet-fuel tanks at Denver's Stapleton Airport. Photo by Jim Nelson.
No-Code Hamming is Here!

At last, anyone who can demonstrate technical competence can obtain a ham license — without having to learn Morse code! Noted writer and ham Fred Maia, W5YL, recounts the struggles within the U.S. ham community as it, and the FCC, searched for the proper direction for amateur radio and its assigned frequencies. The result: Now it's even easier for you to be a part of amateur radio's future!

Fire! at Stapleton Int'l Airport

Wayne Heinen counts himself fortunate to have monitored from the safety of his home the worst fire the airport outside Denver, Colorado, had ever experienced. As a tank of jet fuel burned out of control and threatened numerous other nearby tanks, the fire department desperately searched the state for more foam for containment. Through three days, as a black cloud hung over the city, Wayne heard it all.

And More...

One of the most common requests from our readers is to have some of the jargon of the hobby explained. "Uncle Skip" did that for radio hobbyists in July and August 1990, and Jean Baker begins a glossary this month for AM monitors (p. 44).

Our reviewers have put a couple of new, moderately priced receivers on the test bench: Larry Magne gives a qualified thumbs-up to Haverhill's new digital portable, while Bob Grove is more enthusiastic about Uniden's BC855XLT desktop scanner.

Leafing through the back section of MT, which project would you want to start first? -- Doug DeMaw, Rich Arland, Clem Small, and Bob Grove present so many projects and tips this month, we can't list them all! Same goes for the frequencies covered in this issue ... It may take you until the March issue to savor all that is contained in February's!

When you look at the page with your label on it, though, take a moment to check your expiration date. Subscription rates will be slightly higher beginning March 1, so why not take the time to renew right now?!
LETTERS

"I'm writing because I'm confused," says Bruce Gaskamp of Brenham, Texas. "I tuned in to one of the loggings listed on page 27 of last month's issue and didn't hear a thing. Is it possible to hear these programs or are they just past loggings from someone else's log?"

Bruce, the answer is yes and yes. The loggings section is a selection of things that have been heard by Monitoring Times readers around the world.

Now for your first question: "Is it possible to hear these programs?" Yes, it is possible, and under most circumstances, even probable. However, there are never guarantees with shortwave. Let me explain.

While there are shortwave stations with transmitters so close or so strong as to virtually guarantee regular reception, these are not in the majority. Because the more powerful stations are easily found by simply spinning around the dial, they are not often listed in the loggings column. What you see in the logging section is a variety of things, some quite exotic. Of course, reception conditions also play a part in what you'll hear, varying the stations that reach your receiver by day, month and even year.

One final comment. Remember that when someone tunes in to a really exotic station, it is the result of a number of factors all coming together at the same time: the operator's skill, sometimes equipment, a healthy dose of luck and generally, a lot of time.

 Granted the article was about an AM DXer, but re-read the profile of Patrick Martin on page 21 of the December 1990 issue. Says Patrick, "I'd still like to hear India. I've been sitting on 1134 kHZ...for years and years [italics mine]." Not every rare DX catch is the result of monk-like patience. But few happen on the first time out.

Keep listening, Bruce!

We got a real nice 1991 Ham Photo Calendar from John David of KBIT Radio Specialties. If you're into ham radio -- as a participant, monitor or hopeful, you'll love the photographs. My favorite is March which shows Trevor Rogers, VK5FG, operating from John Willis Island -- a bleak looking slice of rock jutting out of the Coral Sea. The rest span the globe from the Antarctic to Bhutan (isn't that a lighter?) and the U.S.S.R.

The 1991 edition is John's first all-color edition and it's available for $11.95 plus 2.00 postage from KBIT Radio Specialties, Box 1015YG, Amherst, New Hampshire 03031.

John Flake of Charlotte, North Carolina, figures that he "blew somebody's mind" when he completed a week-long radio survey. John, a big shortwave listener, didn't fill out the survey with the names of local stations. "Wait until they try and figure out KUSW, WRNO, ABC-Perth, WWCR, KTWR, CFRB, WHRI and such."

I'm not sure how that will be handled statistically, John. Unless someone at the research company is familiar with shortwave, they may simply dismiss it a gobbledygook and throw out the data.

Some years ago, Joe Costello, owner of WRNO Worldwide, told me that his shortwave station was starting to show up on Arbitron diaries (surveys). WRNO got included in the survey because his FM station is also called WRNO and the people taking the survey looked up the call letters in [Please turn to p. 100]
Albanian Journalists Sorry

A litany of apologies continues to pour from Soviet-bloc journalists as their countries fall to the west. Albania, one of the last hold-outs in the camp of Stalinist admirers, is apparently in the death-throes of democratic reform -- just listen to Radio Tirana.

The station, which only a few years ago programmed little more than constant paens to President Enver Hoxa, is now admitting -- and describing -- the acts of violence occurring in cities like Shkoder and Elbasan. Last month, broadcasters on the station even gave their own personal opinions on the events.

Not too long ago, the very admission that something was wrong in the worker's paradise might have earned a journalist a trip to jail or a bullet in the back of the head.

One recent broadcast from Tirana closed with what has become a routine apology, having been heard from stations in Rumania, Czechoslovakia, and most pathetically, East Germany. Said the Albanian broadcaster: "I would like to take advantage of this occasion to thank all listeners for the support they gave us, the journalists of Radio Tirana. We can make them one firm promise -- that there will be far more information in our broadcasts than there has been in the past."

Hallelujah.

Tune In Top Cities

Government-sponsored shortwave stations tend to "accentuate the positive" about their country. That's somewhat understandable since it's the job of most shortwave stations to project a favorable image of their country abroad.

Now comes a more reliable rendering of "livable" cities from the private non-profit Population Crisis Committee in Washington, D.C. PCC ranks metropolitan cities around the world on the basis of food expenditures, living space, access to utilities, communications, education, infant mortality, murder rate, air quality, noise pollution, and traffic congestion.

The top five most livable cities are Melbourne, Montreal, Seattle-Tacoma, Atlanta, and Essen-Dortmund-Duisburg in Germany.

It may sound like a tropical paradise ... but a nice place to live? Not necessarily.

The five least livable cities as ranked by PCC are Lagos, Nigeria; Kinshasa, Zaire; Kanpur, India; Dhaka, Bangladesh; and Recife, Brazil.

So the next time you are able to cut through the static enough to hear a glowing report on beautiful and healthful Lagos from the Voice of Nigeria, don't you believe it!

The Burper

Police communications in Pennsylvania's Mon Valley (near Pittsburgh) have been plagued by annoying sounds ranging from belching, loud clicking, kazoo serenades and what police discreetly call "body sounds."

The sounds have blared over the Twin River Council of Governments police radio frequencies for the last year, sometimes interrupting important transmissions.

"At first it was kind of funny," said Lincoln Police Chief Ted Hazard. "Then as it progressed it became a bit of a nuisance."

McKeesport police say that they are close to solving the problem, however. Chief Daniel Kochman says that he thinks the culprit is another police officer because of the times that the Burper is on the air and the strength of the signal. "I'm convinced that the transmission is coming from a police car," he says.

Others disagree. According to Gertrude Anderson, a public affairs specialist with the FCC in Philadelphia, "sometimes [used] police cars are sold with the radio still in, which is not a great idea."

Still, dispatchers in the area are keeping track of the dates and times of the intrusions and hope to match them with officers' work schedules.

"We'll find The Burper by process of elimination," promises Chief Kochman.

Notices to Fishermen

Shortwave listeners from the Gulf of Maine to Cape Hatteras and possibly beyond, will be able to tune up-to-date information on fishing conditions on shortwave. According to local reports, NOAA's National Marine Fisheries Service station, KMY, will provide time-critical fishery notices, notices of regulatory actions, and future hearings and meetings of interest to the fishing industry.

Broadcasts will occur twice a week -- Tuesdays at 8:30 am on 6521.9 kHz (repeated at 8:35 am on 8294.2 kHz) and again on Thursdays at 2:30 pm on 6521.9 (repeated at 2:35 pm on 8294.2 kHz).

Announcements of other broadcasts will be made on weekdays on 2182 kHz at 8:00 am. Fishermen will then be instructed to turn to a working frequency where the broadcast can be heard. All transmissions will be in single sideband.

CPBS Celebrates 50th

China's national radio network, the Central People's Broadcasting Station...
(CPBS) celebrates its 50th anniversary this month and, according to the government-sponsored media, is gaining in popularity. "One out of every two Chinese tunes to the news service of the Central People's Broadcasting Station at 6:30 am [2230 UTC] or 8:00 pm [1200 UTC]."

CPBS began its life half a century ago, broadcasting a daily one hour program from a cave in Yan'an. Today it provides six channels of news, music and information for 107 hours a day (plus 37 hours of programs beamed to Taiwan).

Despite its growth, CPBS reportedly has found itself in a battle for listeners, many of whom have been drawn away from the radio by television soap operas.

Sources from the radio station promise to combat its one-eyed competitor by modernizing the station, updating the news, and making the programs "closer to life."

Listeners in North America can tune in CPBS broadcasts on their shortwave radios. According to Passport to World Band Radio, reception is best in the early morning hours (after 0700 UTC) and, during the winter, in mid afternoon (starting from 1800 to 2000 UTC) on a number of frequencies. These include 7504, 7516, 7525, 7620, 7770, 8007, 9020, 9080, 9390, 9455, 9775, 10010, 11000 11040, 11100, 7770, 8007, 9020, 9080, 9390, 9455, 12000, 12900, and 13590 kHz.

NICADs: Exploding the Memory Myth

For decades, manufacturers and end users of NiCd batteries have apparently labored under a misconception: that a NiCd cell "remembers" the amount of charge when it is recharged and gives up only that amount even when called on to deliver its full capacity.

According to Bruce Essig of Gates Energy Products in Gainesville, Florida, recent tests show that the phenomenon is virtually non-existent.

Gates, which manufactures 80 percent of the batteries used by satellite missions, tested cells from two manufacturers. Both were cycled, first at zero discharge, then at 25% discharge, and finally at complete discharge. After nearly 500 cycles, no significant difference was noted in rechargeability among the samples.

In fact, those that were continuously overcharged, actually showed slightly greater capacity than those charged by normal standards.

A typical NiCd battery is useful for at least 500 full charge/discharge cycles over a period of several years. Appliances which remain plugged into their chargers unused for periods of 50 days or more experience a 0.15 volt depression when finally used, giving the impression of a partial discharge. Actually, after they are fully discharged to 1 volt per cell, they bounce back to their rated capacity upon recharge.

Apparently, the misconception regarding these batteries was based on a one isolated observation of a single battery in a lunar NASA mission.

Daily DAB'll Do It!

Digital audio broadcasting is a reality. A Japanese radio station has begun daily programming, delivered by satellite, that sounds as good as a compact disk. Annoying multipath fading, common to FM broadcasts, is nonexistent with DAB and listeners with digital audio tape recorders can make recordings that are virtually identical to the master tapes.

Starting in April, the service will expand to 24 hour a day operation and begin to scramble their transmissions. A decoder/receiver is necessary to receive the broadcasts and a monthly $4.60 subscription fee will keep the music coming to your home without interruption. The Satellite Digital Audio Broadcasting Company of Tokyo hopes to have 700,000 paying customers within their first two years.

MT Postal (and Subscription) Rates Rise

Grove Enterprises, publisher of Monitoring Times, regrets it must raise the annual subscription rate for the first time since June of 1988. Increases in the postal rate make it necessary to raise the annual subscription rate to $19.50 for one year, $37 for two years, and $54 for three. Foreign subscriptions will also increase to $28, $54 and $78 for one, two and three years.

Subscriptions may be extended at the old rates until the end of February, so you'd better send in your renewal now!


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Although I've visited the island of Tahiti on at least six occasions, I must confess that I have never taken the time to look for Radio Tahiti. Although such an admission may seem heretical to the serious radio hobbyist, the station just wasn't on my mind.

Instead, my trips to Tahiti have been consumed with a passion for relaxing in the beautiful lagoon surrounding the island, for automobile trips through the scenic hills overlooking the city of Papeete, and for camping excursions to the picture book beauty of the neighboring island of Moorea.

I have acquired many Tahitian friends during my visits, developing deep affections for the Taputaurai family of Mahina (a community near Papeete). They have tutored me in the French language, provided me with a knowledge of and an appreciation for Tahitian culture, and have taken me on numerous family excursions. The meals taken at their table have been sumptuous.

So overwhelming is this place that despite my xxxx years as a shortwave listener, it wasn't until my most recent visit that I sought out the station — officially known as Radio Television Francaise D'outre Mer (RFO). It is the government funded radio and television voice of French Polynesia.

The Real Tahiti

Tahiti is an island that has been associated with great natural beauty and with countless legends of romance and adventure. Often it is difficult to determine where myth ends and reality begins. It is without a doubt an island of great natural beauty. It is surrounded by a spectacular reef and the clear blue waters of the Pacific. However, there are no really spectacular white sand beaches on Tahiti.

The population includes Polynesians, French, Chinese, and others and various mixtures of all. It is an island of a newly renovated two-story traditional open market and of modern air conditioned shopping centers.

This is also an expensive island. A pair of mostly polyester men's trousers sells for U.S. $75. A hamburger at the fast food place can cost U.S. $5. Those who come to the island for fun and adventure typically bring plenty of money. Papeete harbor is always full of yachts and schooners from Sweden, France, Switzerland, Finland, Canada, the USA, New Zealand, Australia, and the like. Expensive clothing boutiques abound.

Many also have a vision of Tahiti as a hedonist's paradise. In truth, Tahitians are a religious people who take church going very seriously. The churches are full on Sunday mornings with many of them holding two services — one in the French language and one in the Tahitian language. The Tahitian language services usually last a good deal longer than the French ones.

Recent years have witnessed a resurgence of Polynesian culture and an emphasis on things Polynesian. The July 14 celebrations have lost most of their French Bastille Day emphasis and become more of a celebration of Polynesian art, dance, and sports. The recently constructed $20 million town hall in Papeete has an architectural facade that replicates the facade of the palace of Tahiti's last king. A memorial project that will trace the history of the royal family in Tahiti has been authorized.

The RFO Studio

The Radio Tahiti management had been informed prior to my arrival of my desire to visit their studio. French is the language of government in Tahiti. My French is not so robust, hence I felt duty bound to take an interpreter with me on my visit to the studio. My Tahitian friend, Didier Taputaurai, served ably as interpreter and guide. A telephone call to Mr. M. Soulimovsky, the technical director of Radio Tahiti, confirmed our visit and we were on our way.

Traffic in the city of Papeete is, to say the least, a serious problem. The crush of cars is incredible for such a small island. Most of the commercial activity is in Papeete so people drive into the city in the morning and then drive home for lunch and then drive home again in the evening. This creates three periods of traffic chaos daily. You literally take your life onto your feet when you venture to cross a street in Papeete. People drive French style — with a reckless abandon and a love for speed.

Didier and I safely negotiate the mid-morning traffic and find a parking space near the station. The Radio Tahiti studio is located in a small, unpretentious building on a back street. We enter and are greeted by a male
The receptionist who announces our arrival to Mr. Soulomovsky. It is immediately obvious that the building is too small for the activities that take place there. Three narrow hallways seem to converge at the area near the reception desk. People turn sideways in order to squeeze past one another!

Mr. Soulomovsky arrives and greets us warmly with a few pleasantries in French. I respond in French. After exchanging greetings, it becomes clear that his command of English is as weak as my command of French. He then introduces me to Mr. Leon Siquin, the principal technical specialist, who speaks fluent English and is to be the host for my visit.

Thanks to Mr. Siquin I received a wealth of information about the technical side of operations, and met several other people who provided information about programming. He also made arrangements for me to visit the shortwave and mediumwave transmitter site in Mahina.

Radio Tahiti Programming

North American listeners probably have erroneous ideas about the nature of Radio Tahiti programming. In North America we usually hear only the evening programs of Radio Tahiti. A conversation with Bernard Ferbos, the assistant director of programs, revealed that only the night programs have a real Tahitian flavor. Each week night from 7 p.m. local time until sign off there is a program called "Te Maru a'o Nui" hosted by the Mario brothers. During the program, Tahitians call in with musical requests, birthday and anniversary greetings and other messages for persons on Tahiti and the outer islands. The callers usually converse in Tahitian and request a selection of Tahitian music. On weekends the programs "Te Vevo" with Augustine Drollet and "Te Eo Kanahau no Te Henua Enata" with J.M. Barsinas are heard with the same format.

With just a few exceptions, all of the other programming on Radio Tahiti is presented in French. During the day the programs have a strong Francophile twist with musical selections from French artists, mostly ballads and easy listening fare. A few French rock and roll tunes are also played. French rock really has a flat, twangy, almost pitiful sound. Also during the day there are news bulletins in French and Tahitian, contest programs, and a weekly women's program in Tahitian. In sum, the daytime RFO programs are pretty dull. But fortunately these are the programs that we in North America usually do not hear.

The Tahitians, for the most part, do not care much for the daytime RFO programs and do not listen to RFO much during the day. They usually listen just to hear the news bulletins. This is not to imply that RFO has no daytime listeners, as there is a large expatriate, military, and resident contingent of French people living in the islands. They no doubt find the day programs of RFO more appealing than the native Tahitians do.

In recent years there has been a plethora of Tahitian oriented FM stations that have taken to the air. On one day I counted 20 of these FM stations on the air. They are all privately funded and specialize their programming. Some play rock music, a couple play easy-listening music, one classical, and the remainder play Polynesian music. For entertainment the Tahitians tune in to these stations. The staff at RFO readily admits that they do not attempt to broadcast programs which reflect a good deal of Polynesian culture. The station functions more as a voice of French culture in the South Pacific than as a local organ.

No World Voice for Radio Tahiti

The broadcasts of RFO are intended solely for home consumption. The station is officially purported to have no role to play in informing the surrounding Pacific island nations or the world about Tahitian life, culture or political and economic interests. Paris and not Papeete calls the tune. Radio France International in Paris is the sole external voice of France and the French territories. Local radio stations in the territories, such as Radio Tahiti, are not permitted to represent their local opinions or culture to external audiences. This is unfortunate indeed.

The staff members at Radio Tahiti agree that it would be a good thing for Americans, Europeans, Asians, etc. to learn more about Tahiti and its culture and its political and economic concerns. However, they are firm in asserting that Radio Tahiti can play no part in
Informing the world of such interests.

Fortunately, Radio Tahiti's QSL policy does not reflect its provincial broadcasting interests. Mr. Siquin acknowledges that he is well aware that Radio Tahiti has many listeners abroad. The station receives reception reports from throughout the world. He also confessed that reception reports from outside of French Polynesia do not really provide any information that is of statistical value to the station. However, they do send QSL cards to overseas listeners who send in reception reports. They send the cards as a matter of courtesy and as encouragement to radio hobbyists. A new batch of QSL cards with a new logo has been printed and is ready for distribution.

Transmitter Size

Accompanied by Mr. Siquin I visited the Radio Tahiti transmitter site at Mahina. The transmitters and a building which houses the technical offices of RFO are located on a four acre site that overlooks the ocean. It is close to Point Venus, the site where the first Europeans to visit Tahiti dropped anchor. Just offshore is a small motu (island).

We are greeted at the transmitter site by Jacky Barillec, the assistant technical director, and Andre Blondy, the manager of the television department. Both are dressed very casually in short pants and Telediffusion de France tee shirts. Unlike the Papeete office building, this one is spacious and sparsely manned. It has a relaxed and casual air with many maps of relay sites around the islands and maps of other RFO operations in the French overseas territories.

Barillec and Blondy inform me that the shortwave transmitters currently in use are four kilowatts on 6135 and 9750 kHz and 20 kilowatts on 11825 and 15170 kHz. Most North American listeners hear the 11825 and 15170 kHz transmitters which are beamed in a northwesterly direction to the Tuamotu islands in French Polynesia's northern island group. The 6135 kHz transmitter is beamed to the Marquesas island group in the north and 9750 kHz is beamed to the Gambier island group in the south.

Future Plans

RFO has plans to construct a total of 25 earth relay stations in French Polynesia to make it possible for all French Polynesians to receive both AM and FM broadcasts from Papeete. Thirteen of these stations have already been completed.

Two new transmitters are due to be placed in service in 1990. They will be 80 kW and 50 kW in power and will give Radio Tahiti a more powerful voice in the Pacific than the Voice of America. It should also make it a bit easier for SWLs in North America to hear Radio Tahiti on the shortwave band.

A new studio building is also planned. Money for the new building has already been allocated by Paris and land for the building has already been secured. The new building will relieve the crowded conditions in the current Papeete studio building. Much of the space in the new building will be allocated to television which is still in its infancy in French Polynesia. Presently there are three TV channels in operation and one of these is an educational channel.

A Station with a Big Heart

My visit to Radio Tahiti had consumed the better part of the day and the staff had been particularly kind and cooperative. This station is operated by professionals who really know their job. They also have a sympathetic admiration and respect for the radio hobbyist. I was impressed by their dedication, professionalism and sensitivity.

Two days later I said goodbye to the Taputuarais. They showered me with the traditional shell leis that Tahitians use to wish departing friends and relatives a fond farewell. I boarded a jetliner bound for Rarotonga in the Cook Islands and vacation.

As the big 767 jetliner pulled away from Tahiti and floated out over the island of Moorea, I looked down at these two island pearls in the shiny blue Pacific. I thought of the DXers and SWLs in distant lands who tune to Radio Tahiti on some frigid, snow-filled night and hear the soft lilting Polynesian music. I'm sure they conjure images in their minds of beautiful islands in a shiny blue ocean very much like the shining image that floated below me.

Left, Radio Tahiti's transmitter site at Mahina; Below, at the transmitter site, I am met by Jacky Barillec, technical director, Andre Blondy, TV department manager, and Leon Siquin, principal technical specialist.
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**DRUG WAR Monitoring**

by William Shelby

Smuggling narcotics into the United States is not a new phenomenon, nor is the war on drugs an overnight reaction to this problem. Although this war is carried out in the skies, on land and at sea, it is the pivotal role of radio communications which ties it all together.

The drug cartels are well aware of the importance of radio, and undoubtedly have their own comprehensive monitoring network. Through this and other methods of obtaining information, few would argue that the cartels today now probably know as much about Customs operations as Customs itself.

Hobbyists often swap federal frequency information among themselves, but fear that open publication of such data might cause an agency to change frequencies or alter call signs, or that the publishers might be visited by the authorities, or that more restrictive monitoring laws may be imposed as a result of such disclosures.

These fears are unfounded; federal drug interdiction efforts are not compromised by hobby monitoring. Voice and data encryption (scrambling) thwarts any attempts to learn information which is truly critical.

**Interdiction: The Early Years**

During the 1960s drugs freely entered this country. Granted, it was not in massive amounts, but by aircraft, ship, vehicle, horse and backpack it did trickle in. The U.S. Customs Service was primarily a port of entry inspection service. Narcotics were cleverly concealed aboard unsuspecting legitimate air and steamship carriers. Drugs were easily smuggled by bypassing the mandatory ports of entry.

By the early 1970s Customs and the Border Patrol had a handful of light aircraft and boats thinly spread out over the entire USA. The rapidly expanding drug cartels knew this, so organized efforts the likes of the Narc Steamship Company, Weed Airlines, Border Caravans Inc., Drug Van Lines and the Coke Air Express Service went into full gear. The US/Mexico border area literally became a highway for air and over land smugglers. On the east coast, the Bahamas, with its widely scattered chain of islands, was being established as a major transhipping area.

While we could track some airborne smugglers via FAA airport radar facilities, many of the sites were either too far apart or were of the mid to high altitude coverage variety, allowing aircraft to fly under the radar.

In 1971 Customs obtained four Army Mohawks -- twin turboprop observation aircraft modified to carry a steerable forward-looking infrared unit (FLIR) pod mounted under the nose. This see-in-the-dark capability aboard an aircraft that could attain 280 mph with a 1,000 mile range gave Customs its first dedicated airborne intercept and tracking aircraft.

Since marijuana was the drug most often carried and required a considerable bulk to be profitable, large aircraft like old commercial DC-3s, 6s and 7s, and even military C-119 Boxcars were flying the skies. The new Customs Mohawks were ideal for tackling these birds. And for detecting ships off shore, Customs obtained four Navy Grumman S-2 Trackers equipped with surface search radar.

As the Customs “air force” grew, it was with a wide assortment of hand-me-downs from other agencies, or confiscated aircraft. Most fell short on speed, range and the ability to carry airborne tracking equipment.

By the end of the '70s, the market had shifted to cocaine, much smaller aircraft could carry enormously profitable cargoes of this new drug. Customs finally received the government funding it needed to permit them to begin standardizing on four main types of aircraft.

For its high-speed interceptors, Customs bought twin-turboprop Piper Cheyenne 3s, twin turbojet Cessna Citation 550s and several Navy, four-engine, turboprop, P-3A Orions. The Cheyennes and the Citations were modified to carry the Air Force's F-16 radar and FLIR. Both aircraft could cruise at near 400 mph for at least five hours. For long range, offshore duty, the P-3A Orion was modified to carry a FLIR pod plus the Air Force F-15 radar. For its helicopter, Customs chose the Sikorsky UH-60A Black Hawk.

It would be the early 1980s before a chain of tethered aerial radar platforms called aerostats from southern California to Florida would allow a radar scan of up to 200 miles in any direction from their 15,000 foot perches.

In the meantime, Customs obtained two Blue Eagle/Sentinels, four-engine AWACS aircraft with 14-hour endurance, 4,500 mile range, 450 mph max speed, and a relief crew. By now a third Sentinel is flying, a fourth is on order and the Hawkeyes have been retired.

Site of a drug drop on the Texas/Mexican border, ironically, within visual sight of border radar. The ribbon-bedecked pole is raised to indicate wind direction and mark the spot for the drop.

Harry Baughn

February 1991

MONITORING TIMES
AIR ROUTES - This map shows the favorite routes of airborne smugglers. One crosses Cuba via a civil aviation air corridor, otherwise smugglers skirt around the island. The route over Haitian territory often terminates with air drops in the Bahamas or flights to the southeastern US. Smugglers also make long flights into Mexico for eventual shipments into the USA from Colombia and Peru.

Customs P-3 Sentinels conduct a fair percentage of their radar patrols north of the Yucatan Channel area, and along a long arc from the Yucatan coast to the Lesser Antilles. On the Pacific side, they patrol off the Baja coast.

Drug smugglers often employ stolen aircraft, or those purchased through dummy companies, then modify them with extra fuel tanks. Multi engine types are preferred for long over-water flights and their load-carrying capacity. Most Colombian air and ship departures are made from the Peninsula de la Guajira area, but other jump-off points are used as well.

Cartels reportedly pay pilots between $25,000 to $250,000 per flight, making the risk worthwhile. Some stolen aircraft are deliberately abandoned after landing and off-loading their cargo. The cartels can afford to pay top dollar to their smugglers, lose crews, aircraft and many shipments, and still make outrageous profits.

The P-3 Sentinels now have a unique role all their own: to provide long-range air/surface radar surveillance in areas not covered by ground or Aerostat radars. All AWACS aircraft are dispatched from the Surveillance Operations Center (SOC) at the Corpus Christi, Texas, Naval Air Station.

Air Operations

Throughout the fifty states and Puerto Rico, Customs operates air operations bases (primary) and units (secondary); they may also stage operations out of Guantanamo, Bahamas and other Caribbean locations. The most interesting to monitor are those in the southern tier of states, located at military air bases. On HF they employ colorful tactical call signs like Desert Base, Empire, Fried Chicken, Home Plate, Jackpot, Longhorn, Mushroom and Ping Pong.

Each main base is assigned at least one Cheyenne, Citation and Black Hawk, in addition to several other aircraft used for training and local customs support. Most numerous are the Cessna 210 Centurion, Cessna 404 Titan and the Beech Super King Air 200. A disproportionate number of aircraft are concentrated in Florida, the Bahamas and Caribbean.

On HF, Customs aircraft identify as "OMAHA" plus the last two numbers of its civil registration. For example, in a recent aviation magazine article there was a photograph of a Customs Citation with the registration of N753CC – Omaha 53.

On VHF/UHF Customs aircraft identify as "Lima" plus the numerical suffix. Air bases also use the Lima prefix along with a three or four digit suffix which always end in a double zero. For example, the Customs aviation office at San Angelo, Texas, IDs on HF as Black Sheep; its company call sign is Lima 1400. All San Angelo air agents are assigned 1400 series identifiers.

Customs aircraft using a "Tango" prefix
Vessels leaving Colombian ports are primarily ocean-going cabin cruisers, fishing boats and coastal freighters. The larger vessels are often utilized as mother ships, transporting drugs to rendezvous points, then transferring cargo to small fast boats or landing cargo along a coast for the last leg into the USA.

The four main choke points which are patrolled for surveillance are the Yucatan Channel between the Yucatan Peninsula of Mexico and Cuba, the Windward Passage between Cuba and Haiti, the Mono Passage between the Dominican Republic and Puerto Rico, and the Anegada Passage east of the British Virgin Islands. Pacific-side smugglers off-load at various points along the Central American and Mexican coast for trans-shipping into the USA.

Not shown are the routes which first take drugs to European, African and Far East ports, then, via unsuspecting steamship carriers, are subsequently carried to major US and Canadian ports. Smuggling by sea offers the greatest profit margin because of the cargo capacity.

Frequencies and Security

For a decade following the early 1970s, Customs employed a number of HF frequencies which by now are well known to everyone—the Xray, Yankee and Zulu groups:

- XA-2808.5
- XB-4991
- XC-5058.5
- XD-7778.5
-XE-9238.5
-XF-11073.5
-XG-15953.5
-XH-17601
-XI-19131

- YA-3428
- YB-5571
-YC-8912
-YD-11288
-YE-13312
-YF-17972
-YG-21057
-YH-25122
-YI-29187

- ZA-4500
-ZB-7527
-ZC-9802
-ZD-12222
-ZE-15867
-ZF-17972
-ZG-21057
-ZH-25122
-ZI-29187

- XD-7778.5
-YD-11288
- ZD-12222
-ZE-15867
-ZF-17972
-ZG-21057
-ZH-25122
-ZI-29187

But times are a-changin'. During the 1980s Customs began implementing a more secure means of communications. COTHEN (Customs Over the Horizon Enforcement Network) consists of several aspects, including automatic selective frequency scanning (called "auto call" or "auto selscan"). COTHEN radio technicians may be heard identifying as "COTHEN" plus a numeric designator.

Instead of guarding one or two frequencies, all assigned selscan frequencies are continuously scanned. When an operator wishes to contact another stations, he keys in and transmits the appropriate ident code, a five-second data burst sounding like a machine gun. If no contact is established, the call is repeated on progressively higher frequencies.

Diplomacy

Our government has agreements with several Caribbean nations concerning drug interdiction in their territories. Since Cuba and the Dominican Republic forbid such overflights, smugglers often fly within their Air Defense Intercept Zone (ADIZ).

12 February 1991

MONITORING TIMES
assigned frequencies until a short acknowledgment burst is received, confirming good signal exchange and locking the stations on that frequency. To maintain good communications, Customs uses several HF remote relay sites.

At other times Customs employs "channelizing" which manually locks their radios on one frequency to eliminate link-up time lag experienced on auto selscan, and because not all interfacing military agencies have the selective scanning system.

Secure voice ("Secure Key", "Kilo", "Sierra Kilo" or "Q") is provided by the Collins digital voice scrambling system. Extremely effective among Customs units, it cannot interface with the military KY-75 Parkhill secure system.

With the implementation of the COTHEN system, many frequencies changed, including the deletion of some of the Xray, Yankee and Zulu channels. At this writing, ten frequencies make up the selscan block: 7527, 8912, 11494, 13907, 15867, 18594, 20890, 23214 and 25350 kHz USB. Other frequencies are in the "Tango", "Victor" and "Whiskey" series.

Auto selscan is also used on FAA frequencies like 4065, 5860, 6870, 7475, 8125, 13630, 16348 and 20852 kHz as well as FAA/flight test assignments like 5571, 11288 and 13312 kHz. Six Customs areas served by remote radio sites are designated "Charlie Sierra" plus a number.

Some selscan transmissions are used electronically assess propagation conditions, the Link Quality Analysis (LQA) procedure. In a call-up mode the selscan system bypasses active frequencies; in the LQA mode, however, the transmission progresses even though it causes interference.

Intercept Procedures

Customs has two main command, control, communication and intelligence (C3I) facilities. One is a combined Customs/USCG facility at Miami, Florida, with the call sign "Slingshot". Its west coast equivalent, "Hammer", is at Riverside, California and, on VHF/UHF they are called "Lima 950". "Blue Fire" is the radar tracking operations center at Houston, Texas. A third C3I installation, the National Aviation Center, is presently under construction at Oklahoma City, Oklahoma.

When private and commercial aircraft file a flight plan they are given a transponder ("squawk") code. Customs has access to these and can quickly wade through thousands of airborne targets to make a determination if they are legitimate or not since most smugglers fly without a flight plan or a

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genuine squawk code, and do so at relatively low altitudes.

Once such a target is detected, a Customs aircraft is dispatched and guided to intercept on VHF or UHF frequencies like 165.7375 MHz, (381.8 MHz, C31 East's "Blue One"), and 282.425 (Blue One for C31 West). Because of tactical sensitivity, UHF frequencies are periodically changed.

VHF and UHF frequencies are IDed by "Victor" or "Uniform", respectively, followed by a number (1 through 4). Each C31 center utilizes four VHF and four UHF frequencies which may be remote controlled across the country.

Three new, fully integrated detection and monitoring Joint Task Force centers, staffed by agents from the Navy, Coast Guard, Department of Defense, Customs, DEA, FBI and NSA, are now operational at Key West, Florida; Alameda, California; and El Paso, Texas.

A relocatable (transportable) Over-the-Horizon Backscatter Radar system is being developed by the Navy. This new ROTH is designed to provide land-based surveillance of aircraft and ships far out at sea. Initial tests conducted recently at separate transmit and receive sites at Whitehorse and Chesapeake, Virginia, proved reliable over a 60 degree arc for up to 1800 miles, an area that would require 12 AWACS aircraft to patrol—virtually the entire Caribbean!

The ROTH electronics were subsequently moved to an operational site on Amchitka Island in the Aleutians, but since the Virginia antennas are still in place, the Navy intends to install a production model at that site for Caribbean anti-drug surveillance.

Intercept and Shadowing

Once a suspect aircraft has been detected, the nearest Customs air facility dispatches an interceptor; the aircraft maneuvers into its target's blind spot, lights switched off at night.

Initially, the aircraft type and registration number are identified. During daytime, this can be accomplished with binoculars; at night, FLIR is employed and its images, along with superimposed data, are video taped. Information is processed by a ground station, revealing flight plan, transponder code and registration.

Aircraft and owner information are run through the (Treasury Enforcement Communications System (TECS) and the National Crime Information Center (NCIC) to ascertain if the aircraft or its owner has any previous suspicion of drug trafficking.

As the drug market shifted from marijuana to high-profit cocaine, Customs upped its technology to keep step with traffickers. Here a Customs Blackhawk helicopter practices interdiction exercises.

If the plane air-drops its load, the interceptor will radio in the position and circle the drop zone until ground or sea authorities move in. When the aircraft lands, local authorities are alerted to converge on the site or a Customs aircraft may land right behind the suspect to make the arrest.

Customs aircraft rarely employ secure voice on VHF, and not at all on the UHF AM mode. When they do, it is the voice masking system called the 'Motorola Blaster'. Ground agents refer to it as "Secure" or "88." Its roaring sound is deafening and quite effective within a local area, but suffers with distance, making the voice intelligible. Plans are to modernize the system similar to that used on HF.

For radio positioning, Customs has divided the southern states into east, central and west divisions, referred to as "Echo", "Charlie" and "Whiskey" followed by numerals. These locations are probably VORTAC sites.

Coast Guard Involvement

The USCG is America's maritime police force. HC-130s fly long-range patrols and, when required, provide airborne HF radio relay of UHF communications between Customs and USCG units and C31 Miami. High speed HU-25C Night Stalkers, modified HU-25A Falcon search and rescue aircraft, are equipped with radar and FLIR. Their 525 mph speed and five hour endurance allows them to range far and wide over the Caribbean.

The Coast Guard's four E-2C Hawkeyes are not really adequate; at least one of their saucer-dome radar instrumentation is being moved to an HC-130. Helicopters are deployed directly from shore bases or cutters and the short-range HH-65A Dolphin can be deployed from Navy assault ships.

The most unusual Coast Guard aircraft are two Lockheed RG-8A motorized gliders; with exhaust muffling and a special propeller, they cannot be heard beyond a few thousand feet. Fitted with FLIR, other surveillance equipment and a two man crew, whatever they are doing is accomplished very silently.

Many Coast Guard aircraft on the Gulf Coast employ Navy-style alphanumerics (triglyph) tactical call signs like Yankee Victor when working air-to-ground stations like Slingshot; when they contact the C31 East net, they may be "Joker 33" or "Swordfish" followed by its last three tail numbers.

The USCG sometimes employs color prefixes to identify frequency ranges: Brown (HF), Black (VHF) and Yellow (UHF). When operating in conjunction with Customs units or when under the control of C31 East, UHF references are normally the Customs 'Blue' or 'Uniform' designators. There is some indication that Coast Guard units working C31 east are COTHEN equipped.

Next month, MT concludes this in-depth account of U.S. drug interdiction efforts with an eye-opening look at military and other federal agency involvement and the most complete list of drug war frequencies and call signs ever published.
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DXing CHINA’S Shortwave Voices

by Charles Sorrell

China has fascinated the west since we first learned of its existence hundreds of years ago. It wasn’t long before “foreign devils” made their first visits, discovering a civilization in many ways more advanced than their own. The lure of China was — and remains — strong, and extends even to such things as shortwave DXing.

Like all things having to do with China, DXing the country can be both rewarding and frustrating. There are many things to hear.

Very large and populous nations such as the People’s Republic of China call for very large and complicated broadcasting systems. Beyond Radio Beijing and its foreign service, there are four other centrally operated networks using shortwave, plus two more run by the People’s Liberation Army, plus a couple of fairly new stations which aren’t really part of the above, plus a couple of others. We won’t even get into the mediumwave (AM radio) scene which includes well over 500 stations in all parts of the country.

Not all of the frequencies listed for the various shortwave services from China are active at any one time. Some, including both international and provincial stations, are used on a seasonal basis. Others become empty for no apparent reason, only to return months or years later. Hohhot on 6974 kHz, for example, was heard on a regular basis up until a year or so ago and now seems inactive on this spot.

Some of the frequencies are used by more than one transmitter site. Further, a particular station on a particular frequency may, at various times, carry its own local or regional programming or one of the Chinese People’s Broadcasting Station (CPBS) networks or Radio Beijing, while other sites stay with a single service.

Aside from Radio Beijing on the international broadcast bands your best logging opportunities are with the various CPBS networks, as well as the Voice of the Strait. Look for them especially on the oddball frequencies they seem to favor.

A few of the provincial/local stations are also loggable. Best times to tune are during the 1000-1500 period, depending upon where you live in North America. Fortunately, though many of the stations operate with split schedules, they almost all are active during the equivalent of our morning hours, at least as far as the provincials on the lower bands are concerned.

Radio Beijing

Radio Beijing broadcasts in some 40 languages over transmitters running powers of up to 500 kW. Well over 100 frequencies are used at various times, broadcasting to target areas in nearly every part of the world.

As might be expected, Asia gets considerable attention, but so do audiences in Africa, Europe and the Americas. English for North American listeners runs to eight hours per day, with programs provided in both our mornings and evenings. Programs generally end two or three minutes prior to the end of the hour.

Currently, English for North America is aired at 0000-0100 on 9665, 9770 and 11715; 0300-0400 on 9690, 9770 and 11715; 0400-0500 on 11695; 0500-0600 on 11840; 1100-1200 on 9665; 1200-1300 on 9665 and 1400-1600 on 7405. Radio Beijing’s foreign service is transmitted from several different sites within the People’s Republic, as well as several foreign relay sites. Many of the Radio Beijing frequencies just carry Chinese to various parts of Asia.

The shades of China’s policies have changed many times over the years, from the violence of the Red Guards through the liberalization of the “Let a thousand flowers bloom” period. But no matter what is happening within China, Radio Beijing always seems to remain an excellent verifier of reception reports, failing only when it came to indicating transmitter sites.

The gradual opening up of China and its increased connections with the west has changed that. Radio Beijing will now confirm at least some of its local relay sites — Xian, Jinhua and Shijiazhuang are examples, and will confirm its foreign relay sites in Spain, French Guiana, Canada and Switzerland, if asked.

Central People’s Broadcasting Station

This is China’s domestic broadcasting organization, which runs several networks out of its Beijing headquarters.

Network One (abbreviated CPBS-1) is aimed at the general public and includes a mixture of programs, including a good deal of domestic propaganda. It signs on with a vocal version of “The East is Red” and closes with the Communist “International.”

CPBS-1 is on the air between 2000-1700, except for a near three hour break on Tuesdays beginning at 0900. Listen for the Chinese ID “Zhongyang Renmin Guangbo Diantai.” CPBS-1 can be heard in North America on many different frequencies, from the lowly 3220 to the topside 17605. Out of band frequencies (see listing) provide the best chance not only to hear the thing but to be sure of what you have.

Network Two (CPBS-2) is more of a news and information network. At one time, at least, it even broadcast dictation speed news. It is on the air from 2100-1600 with a Friday break from 0530-0900. It is heard on about as many frequencies as CPBS-1, many of which are heard fairly regularly. Try 6750, 6840, 10010, 11330, etc.

CPBS also runs a pair of services beamed at listeners in Taiwan which are designated Taiwan-1 and Taiwan-2. Taiwan-1 broadcasts in Putonghua (standard Chinese) between 00530-0609 and 0953-0004. (We’ve never seen an explanation for all these odd on and off times). 5125, 9380 and 11100 are all fairly reliable frequencies to try for Taiwan-1.

Radio Beijing’s headquarters in the capitol

MONITORING TIMES
Dear

We are glad to have you receive your report on our program transmitted on 4830 kHz at 1235 hours GMT dated Nov. 26, 1980.

Your further reception reports on our broadcasts are welcome.

Liaoning PBS
of China

Radio Beijing will sometimes QSL on behalf of provincial stations.

broadcasts.

Taiwan-2 uses standard Chinese, Hakka and Amoy and is scheduled between 2053-0104 and 0353-1804, except on Wednesdays when it is off between 0604-0953. This service is not aired on as many channels as Taiwan-1. Your best bets are probably 9170, 11000 and 15580.

CPBS is also in charge of the Minorities Services. Various stations and frequencies carry this at various times of the day, though each runs for only 25 minutes. Broadcasts are aired in Kazakh, Mongolian, Tibetan, Korean and Uighur. See the transmitter/frequency list for CPBS for indications of which stations carry these.

The various CPBS networks can often be QSLed by writing to Radio Beijing. We don’t know of any listeners who’ve tried going direct to CPBS but, these days, there’s no reason to think that wouldn’t bring results. The CPBS address is XiChang An Jie 3, Beijing. Incidentally, be sure to use the full country name – People’s Republic of China – in the address.

Voice of the Strait

Formerly known as People’s Liberation Army Radio -- and the Fujian Front Station -- since 1984 has been calling itself “The Voice of the Strait.” Whatever the name, this is the People’s Liberation Army broadcast effort toward Taiwan.

There are two services, designated Haixia-1 and Haixia-2. Both broadcasting in standard Chinese and Amoy and are headquartered in Fuzhou, Fujian Province, almost directly across the strait from Taipei. Haixia-1 is on the air 2053-0031 and 0953-1751. Haixia-2 airs from 0353 to 1626.

Both can be heard fairly easily by North American shortwave listeners. Look for Haixia-1 on such frequencies as 5510 and 11590. Haixia-2 is somewhat more difficult. Try 3200, 4330 and 5770.

Even during the days when Beijing was being tight with its QSL information, the Fujian Front Station was issuing QSLs. That’s a bit ironic considering the PLA’s broadcasts might be presumed to be more sensitive and something about which the Chinese might want to maintain more security.

As of a couple of years ago, the Voice of the Strait was issuing some exceptionally beautiful QSLs. Reports can be sent to the Voice of the Strait, P.O. Box 187, Fuzhou, Fujian, People’s Republic of China. Incidentally, English language reports seem to work for all of the Chinese stations and return postage is never necessary.

Provincial and local stations

There are well over two dozen of these operating on one or more shortwave frequencies each. They are named after the province in which they are based – followed by People’s Broadcasting Station, so that, for instance, the station in Lhasa is Xizang PBS (in Chinese, Xizang Renmin, Guangle Diantai). Again, most of these stations operate on split schedules, and, fortunately, most are on the air during our mornings.

The past couple of seasons have not produced as many appearances by the Chinese provincials as was the case a couple years ago. But this season has so far produced loggings of outlets as Fuzhou-5040 kHz, Harbin-3900 kHz, Harbin-4840 kHz, Jinning-4760 kHz, Lhasa-4035 kHz, Nanchang-5020 kHz, Nanjing-5010 kHz, Urumqi-4500 kHz and Zining-6260 kHz. Some of the stations, such as Wenzhou-2415 and Tianjin-4100, seem never to have been logged in North America and others are exceptionally difficult, though not impossible to hear.

In the past Radio Beijing has QSLed on behalf of many of the regional stations. However, many of them also respond to reports sent direct so the Beijing route, while probably faster, isn’t the only way to go.

Other stations

The Voice of Jinling, based in Nanjing, Jiangsu Province, directs its broadcasts to Taiwan, using 4875 kHz (where it’s most likely to be heard) and 7215. It began broadcasting in late 1986 and is operated by staff members of Jiangsu PBS. Check for it sometime prior to your local sunrise. This station is a reliable verifier. Reports go to the Voice of Jinling, P.O. Box 268, Nanjing, Jiangsu.
China's time station -BPM- sends an attractive QSL card, too.

Also broadcasting to Taiwan is the Voice of Pujiang, from Shanghai, which started on January 1, 1988. The broadcasts are intended to raise "patriotic sentiment, giving impetus to unity and reporting news of the motherland." It's heard during the same time frame as Jining, operating on 3280, 3990, and 4950, the latter the best heard. Reports go to P.O. Box 3064, Shanghai.

BPM is a time station operating on 5000, 5430, 9351, 10000 and 15000 at various times (10000 runs 24 hours). It's not difficult to figure out which frequencies offer the best reception possibilities here. Time signals are given every hour in both Morse code and voice (by a woman) every other hour between 1000-1800 on 5430 and every hour between 1100-2300 on 9351 kHz. This station has been heard by quite a few listeners throughout North America. Address: c/o Shaoan Astronomical Observatory, China Academy of Sciences, F.O Box 18, Lintong (near Xi'an).

Almost nothing is known about the Hunan Meteorological Station except that it reportedly operates on 1575 kHz. To the best of our knowledge, it has never been heard in North America. It is believed to be located at Baokang and operates only irregularly. The programs are believed to include weather reports along with music which would nominally qualify it as a broadcaster.

Unfortunately, for our purposes, anyway, China has discontinued some other stations which were once active on shortwave. There was another time station active (BVP) until a few years ago. The Pehpai Fisheries Station ostensibly aired programs for the Chinese fishing fleet. The New China News Agency could occasionally be tuned with dictation speed newscasts. Although China is still involved in some under-the-table clandestine broadcasting, this has been cut back in recent years as China takes a less hostile stance toward its neighbors.

But even with these stations gone, there's still a great number of targets to try. It's a 100 to 1 shot that you'll get them all, but half the fun is the chase — win or lose. Confucius probably had saying that would apply to that.

Radio Beijing

Domestic and Foreign Service Frequencies and Transmitter Sites

Beijing 3960, 4020, 4130, 4200, 4620, 5145, 5220, 5250, 5580, 6290, 6340, 6390, 6810, 6825, 6955, 7165, 7180, 7340, 7420, 7490, 7820, 8280, 8340, 8425, 8660, 9440, 9480, 9765, 9880, 9945, 9965, 11455, 11490, 11500, 11505, 11515, 11650, 11745, 11755, 11980, 12155, 12185, 12385, 12535, 12585, 13530, 15420, 15435, 15900, 16050.

Xian 6920, 7035, 7080, 7145, 7150, 7335, 7350, 7800, 7860, 9360, 9440, 9530, 9570, 9575, 9590, 9700, 9785, 9820, 9860, 9900, 9920, 9945, 11065, 11500, 11535, 11565, 11625, 11655, 11680, 11855, 12075, 12120, 12155, 15165, 15260, 15290, 15220, 17710.

Kunming 4960, 5025, 5035, 5065, 6165, 6875, 6900, 7105, 7305, 7590, 7780, 7800, 9455, 9605, 9625, 9660, 9870, 9880, 11445, 11500, 11650, 11660, 11685, 11735, 11780, 12110, 15135, 15440, 17535, 17585, 17620.

Huhhot 4883, 7120, 7295
Lhasa 4035, 5835, 7110, 9490
Jinhua 11805, 11860, 15165, 15445
Nanning 5005
Beaoing 6140, 7260, 7290, 9530, 11945, 11960, 15105, 15190
Shijianzhuang 9665, 17705
Togtoh (Radio Ulan Bator) 3915
Hefei, China 9690
Chifeng, Inner Mongolia 12490, 15130, 15220, 17715

China's Provincial and Local Stations

Listed by City

Changchun, Jilin 3310, 6070
Changsha, Hunan 4990
Chengdu, Sichuan 5990, 7225
Chifeng, Inner Mongolia 4525
Dongsheng, Nei Menggu 3290
Fuzhou, Fujian 2340, 4975, 5040
Gejiu, Yunnan 4390
Guliang, Giltzu 3260, 7275
Haier, Hunan 3909, 4750, 5080
Hangzhou, Zhejiang 2475, 4785
Harbin, Heilongjiang 4840, 4925, 5950
Hexuzhen, Gannan 4310, 5970
Hohhot, Inner Mongolia 3290, 4525, 6045, 6195, 6974, 7160, 9520, 9750, 11705, 11865
Kunming, Yunnan 2310, 2490, 3910, 4760, 5960, 6035, 7210
Lanzhou, Gansu 4865, 6005, 6155
Lhasa, Tibet 4305, 4750, 5935, 5995, 5950, 9710, 9710, 9740
Nanchang, Jiangxi 2445, 3700, 5020, 6040
Nanning, Guangxi 4915, 5010, 5050, 5920
Qinghai, Qinghai 6150
Tianjin, Tianjin 4100
Urumqi, Xlanjiang 2560(M), 3990(M), 4220, 4330, 4550, 4735, 4860, 4970, 4980, 5060, 5990, 5600, 5800, 5900, 6170, 6190, 7170, 7170, 7940
Wenzhou, Zhejiang 2415
Wuhan, Hubei 3740
Xian, Shaanxi 6176
Xichang, Sichuan 6060
Xilinhot, Xilingol 4950
Xining, Qinghai 3950, 4940, 6200, 6590, 9780

Other Chinese on Shortwave

Voice of Jiangling (Jilin zhi Sheng) at Nanjing 4975, 7215
Voice of Pujiang (Pujiang zhi Sheng) at Shanghai 3980, 5990, 4950

Other Chinese on Mediumwave

Hunan Meteorological Station (believed to be located at Baikang) irregular operation 5175 at 0915-0945, 5990 at 0630-0715

BMP Time Signal Station 5000, 5430, 9351, 10000, 15000 — not continuous
NEW

FREQUENCY COUNTER
1-1500 MHZ

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8 RED LED DIGITS
2 GATE TIMES 1PPM TCXO
ANODIZED ALUMINUM CABINET
INTERNAL NI-CAD BATTERY OPTION
FULL YEAR LIMITED WARRANTY

The 1500A FREQUENCY COUNTER is a quality built, LSI circuit design instrument that actually outperforms many counters costing much more. The 1500A can be powered by 9-12 VDC, AC adaptor or internal Ni-Cad batteries. The excellent UHF/VHF sensitivity makes it ideal to use with the telescoping antenna for easy and accurate measurements of transmit frequencies from handheld, fixed or mobile radios such as: police, ham, car telephone, marine, aircraft, etc. The 1500A can also be used with a probe to measure computer clocks, oscillators, etc.

#1500A 1-1500 MHZ FREQUENCY COUNTER ............ $99.95
#BP-15 RECHARGEABLE NI-CAD BATTERIES (INSTALLED) $20.00
#AC-15 110VAC ADAPTOR/BATTERY CHARGER ........ $ 9.00
#TA-90 TELESCOPING BNC ANTENNA ................. $12.00

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Aluminum cabinet, 110VAC adaptor included.

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GOODBYE MORSE CODE!

NO-CODE HAMMING IS HERE!

"The steps that we have taken ... hold the potential of providing an even more vital, more dynamic service."
-- FCC Chairman Alfred Sikes

by Frederick O. Maia, W5YI

It has been talked about for years -- and called blasphemous for at least as long. Now, after some of the most pitched battles ever fought on the field of amateur radio, comes the fabled no-code license.

No more will the ham hopeful have to quake with fear before the god of Morse code. No longer will the technically-oriented be confined to CB sets and names like "Big Mamma." Today, anyone who can demonstrate technical competence can obtain a ham license -- without having to learn Morse code.

Over the years, pro-code factions within the hobby argued that a knowledge of telegraphy, if of no other value, at least proved that the applicant was motivated; an indicator of the quality of the applicant.

Others, basing their arguments on more practical ground, said that Morse code was vital for emergency communications; a kind of mode-of-last-resort.

As time went on, many of these arguments began to lose their validity. Yes, there have been other campaigns to enact a no-code license. But none gathered sufficient steam until 1988. The boogeyman that got the ball rolling was business -- and the grim reaper.

Amateur Spectrum Reallocated

The most precious asset the amateur radio service has, by far, is its frequencies. Hams are allocated nearly 200 MHz in the valuable VHF/UHF range - and 4 MHz at the long range high frequency level. The same VHF and UHF frequencies that made up the hobby's experimental playground years ago are today the backbone of telephone, satellite, computer linking, and a multitude of other new business endeavors.

Ham radio holds, by way of sheer seniority, title to a stockpile of radio frequencies worth literally billions of dollars. And more and more, it was finding itself in the precarious position of demanding protection for frequency space that, at least the way it was set aside for the increasingly cramped commercial interests looked at it, were grossly under-utilized. Couple this with the fact that the number of amateur radio operators has not only not been growing but has been aging dramatically, and the stage is set for an assault by commercial interests on amateur spectrum. And that is exactly what happened.

In 1988, the FCC reallocated the bottom two megahertz of the 220-225 MHz shared ham band to narrow band business usage. Representing ham radio operators, the American Radio Relay League fought the move tooth and nail, even in Federal courts. But business had sensed weakness in the ham ranks and attacked like a pit bull -- quickly, brutally and boldly.
And for the first time that anyone could remember, hams and their organization, the ARRL, had lost a big one. The courts ruled that the FCC properly used their discretion in assigning the two megahertz to exclusive business operation.

Some hams, looking for a sliver of good in the ruling, pointed out that now, at least, the remaining three megahertz, once shared with other services, would be "amateur exclusive." Three megahertz of ham radio," they said, "is better than five megahertz shared with everybody else." Despite the brave face, though, the amateur radio community was secretly spinning from the beating it had suffered.

**Morse Code Signs off at Sea**

For years, pro-code factions had said that, yes, because ham radio was so often called upon to provide communications in time of disaster, every ham must know Morse code. Images of Titanic-like events were potent rallying points, speaking to every amateur radio operator's desire to be helpful, productive members of their community.

Yet just three months after their drubbing in front of the Federal Court, ham radio's anti-"no-code" contingent suffered a blow to this cornerstone argument when the International Maritime Organization (IMO) made a decision to end Morse code on the high seas. The IMO is the United Nations agency dedicated to the safety of ocean shipping and they represent some 97 percent of the world's ocean-going vessels.

Indeed, Maritime radio first used Morse code to enhance the safety of life at sea. Now a new, automated satellite-based Global Maritime Distress and Safety System had come into use, allowing the crew of a ship to send a distress signal by simply pushing a button. Ships will also carry a radio beacon which will give the ship's position via GMDSS if it were to sink suddenly. Morse code, which had been the foundation of maritime distress and safety messages since the turn of the century, was obsolete.

**Hams Agree to No-Code**

This all got the amateur community thinking about the future. After a lengthy review, the American Radio Relay League came to the same conclusion that many nations had already come to: it was time for the United States to update the amateur service to current communications technology by relaxing the code requirement.

The ARRL filed a Petition for Rule-making with the FCC asking for a new sixth "Communicator" class of amateur license offering limited privileges above 220 MHz without a requirement for Morse code. They felt additional ham activity was needed at that level since all spectrum above the two meter band is shared with other services.

The FCC added the ARRL petition to eleven others during late 1989 and began to rule on the process of eliminating Morse code as a requirement for entry level VHF and higher frequency operation.

On February 8, 1990, the FCC formally proposed a class of ham license, to be known a "Communicator," which would not require a test of Morse code knowledge. According to the Commission, they would be adopting a version that basically followed that proposed...
John Snyder of Morristown, New Jersey, would like to get his nine-year-old son interested in hamming. That's exactly what the ham community hopes, too, now that the code requirements are removed.

by the American Radio Relay League since the ARRL is perceived to represent amateur radio in the United States. A six month comment period was set. The FCC asked the public to be guided by three goals when submitting their views on the proposal. These objectives were:

1. a no-code class of ham license should be able to be implemented quickly;
2. without an adverse impact on the volunteer testing community, existing amateurs or the FCC and;
3. the existing computer-aided application processing equipment must be utilized without modification.

The Public Speaks!

Comments on the FCC's proposal started pouring in last summer. There were, of course, many arguing that the present license structure should not be changed. But the most surprising came from Quarter Century Wireless Association. QCWA is an 11,000 member organization of ham operators who have been licensed more than 25 years. Their formal comments to the FCC startled many who felt assured that the old-timers would be opposed to a no-code entry into ham radio.

QCWA said "We believe that the basic requirements can be met with only one major change in current procedures being necessary to implement a viable 'No-Code' entry program. That is, remove the Morse code requirement in the present Technician class license and modify its privileges to restrict operation to assigned frequencies above 30 MHz to comply with international agreements."

Even more ironic was the fact that QCWA president, Harry Dannals, W2HD, was the ex-president of one of the most vocal pro-code groups, the American Radio Relay League. ARRL wanted no-coders segregated at 220 MHz, isolated above and away from the mainstream of amateur radio.

The Envelope Please

Eventually, the six month period in which the Commission sought comments came to a close and the FCC announced its decision. The resulting explosion broke windows as far away as Seattle and Tampa.

To begin with, the FCC decided not to use the Communicator class name. Instead, the Commission adopted the QCWA proposal, simply eliminating the code requirement from the Technician Class amateur operator license.

Applicants may begin qualifying for the new no-code Technician Class 30 days after publishing in the Federal Register. Thus "no-code" should be available to the public this month.

What will the holder of the new code-free license get for his money? The answer is short and sweet. The new no-code operator obtains all current Technician class privileges above 30 MHz. This means full amateur power (a peak value of 1,500 watts) using all communications modes and emissions.

Technicians are authorized to operate computer-to-computer over the free airwaves, communicate through amateur satellites, chat through repeaters on the popular two-meter band and even establish their own over-the-air television stations. ATV, amateur television, is currently enjoying increasing acceptance using consumer camcorders linked to ham transceivers.

Yes, technician-level ham operators have very desirable privileges! In fact, the Technician Class is the most popular and fastest growing ham class of any today. There are 50% more Techs now than just five years ago. They make up more than 25% of the nation's half million hams. One can only imagine what the growth rate will soar to now that the code requirement has been abolished. Now an entry level opportunity with an array of excellent operating benefits exists to otherwise qualified persons who find the telegraphy requirement a barrier to pursuing the amateur service.

An enhanced Technician operator class is also optionally available that is informally being called "Technician Plus" for Technician plus code. Technicians who pass the 5 word-per-minute code are additionally authorized the current Novice and Technician HF privileges below 30 MHz -- including a portion of the ten meter band. No new license will be issued by the FCC when a Technician upgrades to Tech Plus; instead the HF privileges will be vested by a certificate issued by the examining team.
Current holders of Technician licenses will be 'grandfathered,' meaning that they will keep all of their current privileges (including HF privileges).

The Commission decided to retain the Novice license in order to provide an alternative entry-level opportunity to those who can pass a 5 WPM telegraphy requirement in place of the more comprehensive written exam for the Technician. The Novice examination will continue to be available under the current system.

How Do I Become a Ham?

The testing requirements for the code-free Technician are two examination elements; the current 30 question Element 2 and Element 3A, 25 questions. A total of 55 multiple choice questions are asked from a bank of 700 possible questions. No new questions are being required to be added to these question pools although some revisions of existing questions may be necessary. All of the verbatim questions, multiple choices and answers are known and widely published.

The 55 question examination may be taken all at once - or broken down into two smaller segments. You do not have to pass both test elements at the same time. You will receive a credit certificate for the portion passed.

Ham operator examination sessions are conducted at hundreds of locations around the country. There is bound to be one in your area. Call us (817-461-6443) if you are unable to locate a testing team in your neighborhood. We will tell you who to contact for testing. It has never been faster or easier to become a licensed ham operator!

Study material is available nearly everywhere since these same written test elements are required for the current Novice and for the previous Technician. The W5YI Group has license preparation material for immediate mail order shipment. VISA and MasterCard is accepted. Check the advertisement in this issue.

See you on the ham bands. 73 de W5YI, Fred.
FIRE!
At Stapleton International Airport

by Wayne Heinen

The Sunday after Thanksgiving was a typical Sunday. After DXing the broadcast band late the night before, I was lying in bed with my first cup of coffee and the Denver Post. My scanner was on, monitoring "My Fair City" Aurora Police and Fire and a few channels that I've found indispensable for keeping up on the Metro Denver area.

TV Channel 4 (KCNC) uses 450.1625 to dispatch their reporters and is the channel where I first learned of the tank farm fire. At 9:22 a.m. Mountain Time the control tower at Stapleton International Airport in Denver called in the first of multiple alarms on what was later to be a multi-day disaster. I heard this on Channel 4's frequency at 9:25 a.m.

I jumped out of bed and pulled open the shade on the five foot square window in the master bedroom. From the ridge where I live, I have a commanding view of Aurora and Stapleton Airport. A huge plume of black sooty smoke was rising quickly over the city. Quickly going to the scanner, I punched up a bank of frequencies I rarely use, Stapleton Airport (see sidebar for frequencies). Without leaving the comfort of my house I was in on one of the worst fires ever seen in Metro Denver.

The fire crews were very busy trying to keep the fire confined to two 400,000 gallon tanks that had ruptured. Sitting right next to these tanks and the fire were two 800,000 gallon tanks. These tanks were designed to rupture instead of explode when a fire occurs. Columns of water were sprayed on the larger tanks in an effort to keep them from rupturing. Foam was used in an attempt to keep the flaming jet fuel contained.

The flames were shooting hundreds of feet in the air and were discernible in the smoke column from my house 12 miles away. Their efforts were hampered by winds.

Stapleton Airport Frequencies

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<tr>
<th>Frequency</th>
<th>Description</th>
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<tr>
<td>118.300</td>
<td>Tower E/W</td>
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<tr>
<td>119.500</td>
<td>Tower N/S</td>
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<tr>
<td>121.900</td>
<td>Ground Control</td>
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<tr>
<td>129.225</td>
<td>United Maintenance</td>
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<tr>
<td>129.500</td>
<td>United A-Concourse</td>
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<tr>
<td>131.350</td>
<td>United Gates/Schedule</td>
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<tr>
<td>131.075</td>
<td>United B-Concourse</td>
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<tr>
<td>131.970</td>
<td>E-Concourse</td>
</tr>
<tr>
<td>154.070</td>
<td>Denver Fire Channel 2 (Simplex)</td>
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<tr>
<td>856.4375</td>
<td>Tower/Fire Ops</td>
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<tr>
<td>857.4375</td>
<td>Maintenance/Snow Removal</td>
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<td>858.4375</td>
<td>Building Maintenance</td>
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<td>Technical Support</td>
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<td>860.4375</td>
<td>Stapleton Police</td>
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ranging 15 to 20 mph and record-setting 74 degree heat. By following the action on Channel 4's dispatch channel, I was able to turn the TV on at the appropriate times to watch their live coverage at the scene.

Due to the enormity of the fire, foam became scarce. Dispatches were being aired throughout the day as equipment and foam was brought in from Buckley ANG. Foam was also brought in locally from Rocky Flats Weapons Plant, the City of Westminster and the City of Aurora. Later in the evening of the first day, a convoy from Ft. Carson, Peterson AFB and the City of Colorado Springs was heard to arrive with more foam.

As Sunday drew to a close, we could hear Denver Fire commanders getting ready to contact OshKosh Equipment to see how much damage would be done to their rigs if they used alcohol based foam. Alcohol based foam was recommended for use with their equipment. The shortage of foam was evident.

Traffic at the airport was not affected severely. Some delays for some flights were being reported. United Airlines was the hardest hit as their source of fuel was the tank farm that was burning.

Following their ramp control and maintenance frequencies led me to believe that the media didn't have the full story. United was bringing in every available jet fuel tanker and was attempting to re-fuel their planes on the ramps. Fuel was being brought up from other smaller aviation suppliers and even Buckley ANG. Many flights were delayed, some were diverted to Cheyenne and Colorado Springs for fuel and some were canceled.

The Denver Water Board estimated that over 24 million gallons of water were used on the fire within the first 24 hours. The Denver Fire Department estimated the temperature of the inferno at over 3500 degrees. At any one time an estimated 100 fire fighters were on the scene. Five fire fighters were severely overcome by smoke and heat and required hospitalization.

As the fire moved into day two, operations at Stapleton were pretty much stabilized. Foam was flown in from Houston, Texas, by Continental Airlines, Seattle, Washington, by United and a city in Pennsylvania by an air freight company. This "airlift" resupplied the fire fighters who had used most of the available foam in the state. The fire crews were being rotated on a twelve hour schedule and live updates on TV were down to every few hours. Millions of gallons of water were still being sprayed on the closest tanks.

Most everyone was accustomed to the ominous black plume on the east side of town. As day two moved into night two, the fire fighters were subjected to a severe winter storm. Temperatures plummeted into the teens making for very bad conditions at the fire site. Throughout the night fire fighters continued keeping the other tanks cooled. About 3 a.m. word was received that trucks carrying more foam from Kansas had passed the Limon Port of Entry on I-70, but because of the storm it would be a few hours before their arrival.

At 1 p.m. on day three, Williams, Boots and Coots, a Texas company that specializes in putting out liquid fires, was brought in by Continental Airlines to protect its $3,000,000 investment in the remaining jet fuel. Using a special mixture of foam and dry powder applied with specialized equipment they extinguished the blaze in 17 minutes. The Texans had both the knowledge and equipment that Denver fire fighters lacked. Fighting fuel fires is a very specialized job that few city fire departments are equipped to handle.

When the fire was out repairs to damaged valves and piping surrounding the tanks could be made. Until this time the steady leaks from the pipes had fueled the fire and had to be stopped to prevent the fire from breaking out again. In all, the blaze lasted 54 hours, destroyed 4 of 13 tanks and consumed 2.1 MILLION gallons of jet fuel.

ALBANIA Radio Tirana’s coverage of student unrest and street violence was more forthright and detailed than expected, though impossible to determine its objective truth. Newspaper stories from AP often rehash Radio Tirana broadcasts. English and Spanish news seem to be equivalent translations from a common source. News is updated for each broadcast; no program is merely a taped replay of a previous one. English schedule includes: 0830 on 7120, 9480; 2230 on 7215, 9480; 2330 on 9760; 0230 and 0330 on 9760, 11825; 0630 on 7205, 9500 (Bill Peak, NC, World of Radio & RCI SWL Digest)  

And more to Asia, Australia, Africa: 0430 on 9480, 11835; 0800 on 9500, 11835; 1130 on 9480, 11835; 1400 on 9500, 11985; 1530 on 9900, 11835. Station also offers audio and video cassettes about Albania to listeners, at reasonable cost (Craig Seager, Radio Australia Japanese DX Time) One evening Radio Tirana even invited listeners to call the station, 23239 or 24306, but there is no direct dialing and we couldn’t get through (Jonathan Marks, Radio Nederland Media Network)  

ARGENTINA Radio Belgrano is active on 11781 around 1800 (Gabriel Ivan Barrera, Buenos Aires, Onda Corta)  

AUSTRALIA Radio Australia now suggests North Americans try these frequencies for spillover from Pacific services: 21740 at 0030-0300; 17795 at 0200-0400; 15530 at 0400-0630; 15320 at 0400-0600; 15160 at 0400-0600; 13705 at 0630-0930; 9580 at 0830-1500. Features at 1430: Sunday, Communicator, Monday, Music and Word of Mouth; Tuesday, Lane’s Company, Wednesday, Innovations; Thursday, Monitor, Friday, Science File; Saturday, Interaction (via Scott Edwards, DX Listening Digest)  

BANGLADESH Radio Bangladesh’s current schedule in English: 1230-1300 on 15200, 17750; 1815-1900 on 9570, 12030 (via Frank Orcutt, NY) Only sporadically heard on 17750, nothing on 15200; at 1815 on 12030 and new 9577 (Marc —, Antwerp DX Club, BRT Radio World)  

BULGARIA With their QSL, Radio Sofia stated conditions for the Bronze Diploma: after the first QSL you just send 20 reception reports within 23 weeks for a total of 6 QSL cards. Once the diploma is awarded, they will send requirements for Silver and Gold Diplomas upon request. I think I’ll skip it (Terry Powers, CA)  

CAMBODIA (non) Voice of Democratic Kampuchea, clandestine from China, at 2330 on new 8450 ex-8345 (Bruce MacGibbon, OK)  

CAMEROON Radio Bertoua, 4750, from 2122 until sign-off at 2220, part of the time undermodulated (Hans Johnson, MD, RCI SWL Digest) Bertoua is recently reactivated after a long absence, English news at 2102, otherwise French on 4750 until 2232 (Dave Kernick, British DX Club) 0430-0650 and 1630-2300 on 4750; 0630-1630 on 7165 (Nicholas Vaughan-Baker, BDX)  

CHINA Now DX listeners must wonder if Radio Moscow is coming from China, or Radio Beijing from the USSR! Since Dec. 1, the two broadcasting giants have been swapping five hours a day of airtime to improve coverage, in a two-year renewable agreement. At the outset, Radio Beijing via USSR in Persian, Arabic, Turkish, French; and English to Europe at 2200-2300 on 7170; Moscow via China to Australia, Southeast Asia. Beijing is also working on several more relay swaps in Africa, and North America (BBCM and RNNM)  

On the sesquicentenary of the Beijing massacre, Li Dan, who got into trouble for an editorial on Radio Beijing, appeared again on the station for a few minutes. He’s taking a year off to study “philosophy” of Marx, Engels, Lenin, Mao, Chou, Liu, at a Party school where the food is bad, but he says he enjoys the company of other people in the same position, and hopes to return to work at the station afterwards (World of Radio)  

Yes, there is a charge for the Chinese lesson book, actually two volumes, mentioned on page 3 of January MT -- it’s US$15 postpaid, from Radio Beijing (Review of International Broadcasting)  

Regional schedules: Xiriang PBS, Urumqi, Chinese program: 2305-0210, 0430-0730, 1030-1650 on 3960, 4500, 6100, 7385, and Sundays also on 9560; Mongolian/Kirghiz service 2300-0230, 0530-0730, 1130-1645 on 4220, 4980, 5060; Uighur service 2300-0200, 0330-0730, 1030-1645 on 2560, 3990, 4735, 5800, 7195; Kazakh service 0000-0230, 0530-0700, 1200-1645 on 4330, 4970, 5440. Hunan PBS, Changsha, 2125-1450 on 4990 including English lessons daily at 0300-0500, 1100-1150. In last month’s Guizhou sked, made it 7275, not 7225 (BBCM)  

COLOMBIA La Voz de Armenia presumably the harmonic on 2080 kHz heard one night at 0335-0423 mentioning Armenia, Todelar net though WRTH-1990 lists no affiliates on 1040 (Don Moore, MI, RCI SWL)  

Military action seems to have put Radio Patria Libre off the air; not heard on 6315-variable, though its opponent, El Pueblo Responte, was still heard, it suffered from jamming; check around 0030-0120 (George Zeller, OH, A*E*)  

COSTA RICA A magnitude-7 earthquake Dec. 22 epicentered 5 to 10 km away damaged the Radio for Peace International studios, but not the new transmitter site under construction. No one was hurt. Now new studios and offices may also have to built. RFPI was back on the air within two days but on a reduced schedule. Once new site is active, morning broadcasts in Spanish and German will be added; weekday evenings English still starts at 2000 but lasts 4-1/2 instead of 3-1/2 hours before repeating, so most programs are re-timed. Radio Newswork International, heard Sunday nights on WWCR, also goes on RFPI Saturday evenings, 2230-2430 on 21565, 13630, repeated at 0500-0700 on 13630, 7375-USB (World of Radio)  

CUBA Radio Granma, Manzanillo, announced and listed on 1590, seems badly off frequency, heard around 1683 more than once, with complete ID at 0130; highly unstable, had to retune plus minus 300-400 Hz every minute or so; very strong (Don Moore, MI, W.O.R.)  

Radio Rebelde on 3365 is experimental for local coverage, testing transmitter with vertically polarized antenna, about 500 W RF output, simulcasting AM program; engineers are designing a new high-angle radiator for this. Radio Havana Cuba on 11835 at 0600-0800 uses a curtain of 12 dipoles toward San Francisco. At 1900-2230 to Europe on 15435 is a 30-year-old Brown Boveri 100 kW, there are plans to improve audio quality on 11820 at 0000-0600 which is 250 kW with a beautiful Cuban-built curtain of 16 dipoles, beamed 10 degrees up the east coast. Visitors to Cuba, especially Canadians, are welcome to call RHC collect within Cuba at 75444 for a possible interview. 11760 is the 100 kW Brown-Boveri, two dipoles in phased array to North, Central,
South America at 1100-1700; and reports wanted for the 2300-0500 broadcast. RHC frequencies are accurate to a few Hz, linked to the Cuban hydrogen standard. RHC may conduct SSB tests to celebrate its 30th anniversary in 1991 (Arnie Coro, CO2KK, RHC DXers Unlimited)

Perhaps to avoid the glut of other DX programs, RHC retired Saturday airings of DXers Unlimited to 1915; 0140, 0340, 1540, 0740 UTC Sundays. The Tuesday broadcast is usually a repeat.

(n) La Voz de la Fundacion has expanded to three hours, UTC Tuesday-Sunday at 0100 on WHRI, 9495 and 7315; La Voz de Alpha 66 expanded from 30 to 60 minutes, Monday-Friday 1100 on 11790, 9465; 2300 on 9495, 7315 (Jeff White, Miami, RCI SWL Digest)

CHILE (We alphabetize it here since in Spanish CFF is a separate letter following C) Radio Universidad de Concepcion is on 6059.6, ex-6135 daily at 1300-2300. Radio Nacional planned to inactivate 15139.4 but has been heard with religious programs around 0100-0230 daily, and from 1900 Sundays (Gabriel Ivan Barrera, Argentina, Onda Corta & Radio-Enlace)

ECUADOR Emisora Gran Colombia, back on 4911 with ID at 0200 (Hans Johnson, MD, RCI SWL Digest) Yes, it’s not inactive, on 49109 at 0030 (John Ekwall, SW Bulletin, Sweden)

Brent Allred left HCJB sooner than expected because his father has cancer, and wanted to spend as much time as his family in New Zealand as he could (John R. Adams, HCJB)

Contrary to WRTH-90, the station heard on 6580 is just the second harmonic of Radio Centro, Ambato, from 3290 (Rich McVicar, HCJB DX Partyline)

EGYPT Voice of Unity, Afghan clandestine from here, heard at 1233-1255 on third harmonic of 12230, 36690 kHz, typical for Egyptian transmitters (Frank Helmbold, Germany, DSWCI SW News)

An English/Arabic broadcast on 10002 kHz mystified some, but it was just Radio Cairo’s North American service in Arabic on 9900 putting a spur here and on 9798, UTC Sunday at 0248. Strangely enough Arabic lessons for English-speakers are on the Arabic service, not the English service (World of Radio) Lessons are Sunday, Tuesday, Thursday, probably just started over and 300-page textbook likely not free (Bill Peek, NC, W.O.R.)

ESTONIA Tried for Nadezhda on 12055; at 0430 only RMWS was heard, but clear ID at 1630, though weak. Had to rake leaves, so didn’t stick with it (Jerry Berg, MA, Fine Tuning) Heard on 12056, Radio Hope in Russian is put on by Estonian Interfront, pro-Soviet Russians from Soviet army base on frequency allocated to Soviet navy. Estonians are trying to get it stopped, claiming harmful radiation, but power is less than 1 kW (Radio Moscow via BBCM via RNRM)

ETHIOPIA Voice of Ethiopia on new 9706.4 between 0328 and 0400 (Ernie Behr, Ont., RCI SWLD) Testing with domestic service between 0330 and 2000 (Chris Greenway, Kenya, BDXC)

GABON Several months ago we were hearing VOA instead of Luxembourg on 15350 kHz, but VOA is no help, never giving site IDs. Now something nearby, perhaps not related: Due to uncertain state of Liberia relay, VOA has bought an hour from Africa Number One, 0300 on 15330 and 9655 (RNRM)

INDONESIA RRI Ambon continues on 4864 instead of 4845, heard at 1100 to sign-off at 1132 (Craig Tyson, WA, Radio Australia Japanese DX Time)

IRAQ After losing all its English broadcasts a few weeks before, Baghdad came back as Voice of the Jihad, Voice of the Holy War at 1600-1800 on 15170 (Victor Goonetilleke, Sri Lanka, RNRM This is to India and Pakistan with same announcer as on the 13660 broadcast at 2100-2300 for Europe, which has all but disappeared (Eugene ---, BRT Radio World)

ISRAEL Kol Israel now has a program about the media scene, Communicating, on the Tuesday 2000, 2330 (must mean 2230) and 2400 broadcasts. If you can find the station on one frequency, you can hear a schedule of all the others on Thursdays around 2025, 2255 and 2425.

ITALY Voice of Europe will soon change from 40 meters to 13710 kHz, 10 kW, 24 hours, new QSL card, from P O Box 26, I-33170 Pordenone (Play-DX)

IRR is being reorganized to make licensing more likely: a non-profit organization, Nexus International Broadcasting Association, to provide radio service for associate members. It may take up to two years for authorities to sort through all the applications for SW, FM and MW stations. IRRS now uses 9815 at 0600-1400 weekdays, 0800-1100 on Saturday, all in English; Sundays 0600-1500 in English, Ukrainian, Italian, French, Russian, Spanish; and tests evenings on MW 1602 kHz with same transmitter (Andy Sennitt and Jonathan Marks, RNRM)

KOREA SOUTH A personnel shakeup at Radio Korea: Han Hee Joo, English Director, who has attended North American DX gatherings, moved to the often overlooked World News Service in another building. Taking her place is the former news director (R.I.B.)

LAOS (non) Lao National Radio’s relay via Moscow of French to Europe at 1100-1130 has expanded from two frequencies to four: 11870, 11960, 15190, 15420. They say IRCs are not accepted in Laos (Gordon Darling, RNRM)

LIBERIA Nigerian forces set up a station on 7275 kHz, identifying as ELBC, and heard one day only at 0800-1000. Then Patriotic Front and ECOMOG forces were reported trying to destroy each other’s stations on mediumwave, both called “ELBC” (BBCM)

LITHUANIA Radio Vilnius, 7400 at 2300-2330, good signals with comments like “armed resistance to occupation” and other rhetoric about dis-union with USSR (Tim Johnson, IL)

NEW ZEALAND RNZI changes frequencies so often, this is sure to become a collector’s item: a limited edition first-anniversary T-shirt with logo, name in English and Maori, and frequencies (See p.38, this issue.) Latest schedule, supposedly effective until March but likely out of date already: 1800-2111 UTC Sunday-Friday on 15130; 2111-0705 daily except Sunday on 17675; 0705-1110 daily at 7900; 0000-1110 Sunday on 17675.

NICARAGUA The shortwave situation here: Frank Arana, formerly of the contra Radio Liberation now heads Radio Nicaragua (formerly Voice of Nicaragua); says it’s off shortwave since it’s difficult to get parts, but plans to be back on shortly with 50 kilowatt transmitter covering the world, likely on registered frequency 5950. There are also plans for an unrelated private commercial shortwave station, Radio Nicaragua Internacional. Already on FM 106.1 in Managua and planning 10 kW on 4920 soon is Radio Informaciones de Centroamerica, or Radio RICA. Authorized, but probably not on air now are Radio Miskit, 1 kW for the Miskitos on 5970; and Radio Zinica, Bluefields, 6120 (Jeff White, Nicaragua, RNRM)

OMAN Station is now called Radio Sultanate of Oman, heard on 1730 from 1400 until closing around 1458, then from 1500 past 1800 on 11890, both very strong in Arabic (Ernie Behr, Ont.)

PAKISTAN Radio Pakistan has expanded English broadcasts to Europe: 0800-0848 on 21520, 17565; 1700-1800 on 31570 and new 9775 ex-15605 (Eugene ---, BRT Radio World)

PAPUA NEW GUINEA Due to area unrest, Radio North
Shortwave Broadcasting

Solomons cannot use its own transmitter, but has 20 minutes a day via Radio East New Britain, 3385 at 0815, per press report; however, is intermittent, and severe distortion (Gordon Darling, PNG, RNMM)

PHILIPPINES FEB in English: 0000-0230 (Saturday & Sunday 0200) on 15450; 0900-1100 on 9800, 11845; 1300-1600 on 11850 (Y. Matsushita, Radio Japan DX Corner)

SOMALIA Received a friendly letter from Director of SBS Mogadishu, Mohamed Aden Hirsi, who enclosed my long-awaited QSL-card for a 1975 report on 9585 kHz. He said most reports never reached the station; the individual who demanded $50 for QSLs apparently also stole all the incoming mail (Ernie Behr, Ont., W.O.R.)

SRI LANKA Deutsche Welle planned to activate its relay once again at Trincomalee. Meanwhile, the Elkala site is being completed by Radio Japan, two 300 kW for NHK, four 10 kW for SLBC. The low-power units are already in use for domestic service; the high-powers tested 9720, 11840 (Victor Goonetilleke, RNMM) Radio Japan’s relay was to start Jan. 1 for 6 hours a day, including General Service in English at 1400-1500 on 9535, 1700-1800 on 15210, 0100-0200 on 11840 (Radio Japan DX Corner)

UNITED ARAB EMIRATES Abu Dhabi, 21735, heard on a Sunday at 1503-1530 in Arabic with Kuwaiti refugees giving messages, phone numbers to friends and relatives still in Kuwait (Hans Johnson, MD, World of Radio)

UKOBAN Two of the three daily BFBS broadcasts have expanded from 30 to 40 minutes: 0150 on 7125, 9595, 13745; 0920 on 15235, 17830, 21735; 1330 on 15390, 17695, 21735 (David Hermges, Austrian SW Panorama) Last one best heard here, though none come in well in Saudi Arabia, per Gerry Bishop, W.O.R. & R.I.B. BFBS apparently caved in to religious intolerance in Saudi Arabia by banning Xmas carols even on this broadcast from outside!

While Persian Gulf expenses indirectly threatened RCI, the crisis has led to a 12% increase over the next three years in funding for BBC programming, especially coverage of Asia (Sweden Calling DXers)

USA Before the hostage release, VOA “messages from home” service was at 0230 on 792, 1260, 5965, 11905, 15225, 17810, 17895; 0830 on 1260, 11735, 15160, 15195, 21570, 21615, and also on unannounced 21700; 2230 on 792, 1260, 9530, 11905, 11960, 15225, 15445 (Tony Barnett, England, RNMM) Keep this handy in case future situations warrant. Gerry Bishop, Saudi Arabia, notes that VOA-Rhodes on 1260 was bubble-jammed after VOA claimed Iraq was no longer jamming (G.B. and W.O.R.)

One UTC Monday from 0300 past 0735, instead of usual Sunday news shows on 9334-SSB via England, AFRTS was pre-empted for a raunchy, amateurish, rock show with military references, no time checks, no area codes but phones 455-3770 and 393-1151 for requests, four-letter words from Two Live Crew. The DJs seemed totally unconcerned about complaints to the FCC, which perhaps does not exist where they were. The whole thing would have been written off as a second-rate, one-night-stand pirate were it not for the frequency 9334-SSB. AFRTS normally carries the excellent Perspective from ABC News, UTC Mondays at 0806 on 9334, or if not there, on 9242, 10535, 13651 or 16041 (Bill Peck, NC, W.O.R.)

KUSW, Salt Lake City, lasted a few days less than three years. Taxes upon taxes were a problem in Utah, and the owners wanted to unload the facility at a net profit. Fortunately they found an eager buyer in Paul Crouch, head of Trinity Broadcasting Network, who revived his teenage interest in ham radio. TBN has a huge and expanding network of high- and low-power TV stations in the U.S. and abroad. Conveniently overlooking the fact that KUSW already sold as much time to preachers as it could, TBN viewers were led to believe this station should be ‘saved’ from satanic rock music by contributing to purchasing it. TBN handed over $2.1 million to Carlson Communications, and the FCC approved the transfer by mid-December. KUSW jocks said a sad farewell on Dec. 15, and the station was reborn as KTBN on Dec. 18, simulcasting TV audio on 15590 at 1600-0200 UTC, new 7510 (conveniently next to WWCR) at 0200-1600. Although already on the air with TBN programming that afternoon, Crouch pretended that evening to throw a switch turning off KUSW and turning on KTBN. Then what looked like another put-on, an explosion of something, claimed to be KUSW’s diabolical rock record library. On this the video modulation was so extreme that some TBN outlets were knocked off the air. Naturally a shortwave station over time gets reception reports from many countries, but TBN followers were led to believe that it would now have a pipeline into potential third-world converts, as well as fill in domestic areas unreached by TBN on TV. Taking over as manager in SLC was someone named Skinny — could this be anyone but former KUSW DJ Skinny Johnny Mitchell? KUSW planned to keep its Shortwave Store open, presumably to unload stock on hand and fulfill orders still coming in. (gh’s report, with thanks to John Carson for background information)

Radio Miami International, which now has an application before the FCC, would appreciate short letters of support to the FCC, especially from those who remember Radio Earth and Radio Discovery. Send them to: Mr. Alfred Sikes, FCC Chairman, 1919 M St. NW, Washington DC 20554. Refer to application for international broadcast station Radio Miami International, file number BP1B-900730NB. Thanks! (Jeff White, RMI, R.I.B.)

USSR The Australian Solid Gold Countdown is heard on Radio Moscow World Service Saturday at 0511 (best on 7310), Sunday 0111 (9895), Sunday 0711 (13705). The 0711 is a repeat of Saturday but 0111 is different; apparent clone of BBC’s Vintage Chart Show; ends with ad for Vladivosok clinic of Dr. Valery Schorin who promises to cure stuttering, allergies, nervous disorders and all addictions in a single-three-hour session (Bill Peck, NC, World of Radio)

Audio quality of RM service to western North America has noticeably improved, feeds now using a better grade of phone circuit both for speech and music (Mike Fern, CA, DX Listening Digest) See also CHINA

Two very obscure external services apparently come from the same site, same frequency and same time on different days: Adygey Radio, Maykop, Fridays at 1830-1900 on 5905 (7130 from March 3rd), in the Adygey language, also known as Circassian; the same in Kabardin on Saturdays with Kabardino-Balkar Radio, Nalchik; both one hour earlier from end of March due to DST, and both also on MW 1089, which must be nearby Krasnodar. All of these are in the area just north of Georgia, northeast of the Black Sea (BBCM)

Radio Vatandosh, Tashkent, Uzbekistan was heard until 1630 on 5945, 7325, 9540 and new 7925; and from 1730 on 5945 and new 3935, 7285 (Valery Ostroverkh, Karaganda, Kazakhstan, DX Listening Digest)

(non) Voice of Orthodoxy is not a clandestine, but a religious station in Russian, programs prepared in France and transmitted via Sines, Portugal; schedule had been Sunday 1600-1700, Saturday and Wednesday 1630-1700 on 9670; so 9690 at 0400 is new (ibid.)

ZANZIBAR A roundabout way to QSL. Radio Tanzania Zanzibar, 11734: Sunday at 1730-1745 there is a United Nations Radio program in Swahili, so a report, preferably by tape, to UN Radio, Room S-850, New York, NY 10017, should be verified. UN Radio also offers to verify its programs via a variety of other stations (Dario Monferini, Italy, Play-DX)

Hungry for more? Devour Hauser’s own ‘DX Listening Digest’ and ‘Review of International Broadcasting,’ each $21/10 issues before postal rate hike, $40 for both; sample $2 each. Reals apply North America only; US funds on US bank. Also catch weekly DX news report on Radio Canada International’s SWL Digest; and World of Radio on WWCR, Fri at 2215 UTC on 15590, UTC Mon 0130 on 7520; plus many more times on WINC, New Orleans and RPFI, Costa Rica; on Connecticut stations WQPK and WHUS, Iowa outlets WOI and WSIU.

www.americanradiohistory.com
Broadcast Loggings

Thanks to our contributors -- Have you sent in YOUR logs?

Send to Gayle Van Horn, c/o Monitoring Times.

English broadcast unless otherwise noted.

0043 UTC on 9925
BELGIUM: BRT. European Monetary Union Project discussed. (John S. Carson, Norman, OK) Monitored at 13675 kHz at 2345 UTC and 21810 kHz at 1250 UTC. (David Marshall, Sidney, OH)

0100 UTC on 11710
USSR: Radio Moscow. Station ID to national and world news. Special news on Gorbachev's economic reforms in the USSR. Excellent signal monitored to 0115 UTC. (Kelly Bailey, Midland, AR) Audible on 4795 kHz at 0200-0530 UTC. (Mike Hardesty, Camp Lejeune, NC)

0100 UTC on 11735
YUGOSLAVIA: Radio Yugoslavia. Station ID with news on Iraq and the U.S. budget deficit. Fair signal quality to 0120 UTC. (Bailey, AR) Audible on 9620 kHz at 0100 UTC. (Nicholas Adams, Newark, NJ)

0130 UTC on 5960
CANADA: Radio Canada International. French. "As It Happens" program. "Listener's Corner" at 2220 UTC in English at 11705 kHz. (Frank Jaffe, Creston, KY) (Frank Hiltion, Charleston, SC)

0132 UTC on 11645
GREECE: Voice of Greece. National news to 0142 UTC, followed by Greek music. Excellent signal monitored to 0145 UTC. (Bailey, AR) (Jack Davis, Birmingham, AL)

0140 UTC on 7355
UNITED STATES: WHNO. Louisiana State University sports coverage and "WNRB". Rock with signal audible at 1500 UTC on 15420 kHz. (Carson, OK) (Hillton, SC)

0200 UTC on 9570
ROMANIA: Radio Romania International. News, editorials, and discussion on the Romanian Revolution. "Listener's Letterbox" show at 0300 UTC, Audible on 11680 kHz at 0255 UTC/9510 kHz at 0400 UTC. (Carson, OK)

105 UTC on 9435
ISRAEL: Kol Israel. Israeli news, and "Travel Magazine" show. Fair signal quality. (Carson, OK) (Craig Young, Ft. Devens, MA)

0236 UTC on 15590
UNITED STATES: KUSB. Rock 'n' roll tunes with station promotions and ads. Audible on 15590 kHz from 1900-0300. (Carson, OK) (Young, MA)

0632 UTC on 3281

0333 UTC on 7520
UNITED STATES: Pirate Radio New York International. Monitored to 0402 UTC with "Mailbag Program" at tune-in and music from Poland, Ad for video, ID, and news bits. Excellent to decreasing signal quality. (Hardesty, Camp Lejeune, NC)

0340 UTC on 15400
UNITED ARAB EMIRATES: Radio Dubai. Up-to-date news from Baghdad and program feature on the Arab world. Audible at 1300 UTC on 21605 kHz, 1328 UTC on 21605 kHz, and 1604 UTC on 21605 kHz. (Carson, OK)

0410 UTC on 3270

0415 UTC on 9535
SUDAN: Radio Omdurman, Arabic. Fair signal for talk and Koran recitations. ID with mentions of Omdurman into news topics. (Brian Bagwell, St. Louis, MO)

0415 UTC on 11750
BULGARIA: Radio Sofia. National news and excerpts from Sofia newspapers. (Michael O'Neil, Omaha, NE)

0430 UTC on 11715
SWAZILAND: Trans World Radio. Interval signal and English sign-on, Christian music and "Our Daily Bread" program, interference from Radio Havana on 17760 kHz. (Carson, OK) Monitored on 3200 kHz at 0330 UTC with IDs, talk, and gospel hymns. (Hillton, SC)

0500 UTC on 4774
PERU: Radio Tarma. Spanish. "Radio Tarma" ID at the hour, intro talk and local Peruvian music. (Devis, AL)

0503 UTC on 7255
NIGERIA: Voice of Nigeria. African music and report on Science and Technology. Station ID and news reports on the USSR. (Bailey, AR) Radio Nigeria audible at 2235 UTC on 4770 kHz with commentary. (Tim Johnson, Gainesburg, IL)

0510 UTC on 13770
GERMANY: Deutsche Welle. Discussions on Soviet/Albanian relations and "European Journal." Monitored on 9545 KHz at 0340 UTC. (Jeffee, KY) (Sam Wright, Biloxi, MS)

0510 UTC on 4000
CAMEROON: Cameroon Radio TV-Bafoussam. English/French. National news in English on parallel 4795 kHz to sports roundup news. African and French pop tunes to French music titles and chat. (Brian Bagwell, St. Louis, MO)

0702 UTC on 5995

0710 UTC on 6085
GERMANY: Bayerischer Rundfunk. German. Lots of polka and yodel music. German march tunes included to ID. (Johnson, IL)

0739 UTC on 11755
FINLAND: Radio Finland. Press review of current affairs, Into French service at 0745 UTC. "Northern Report" heard at 1258 UTC on 15400 kHz. Programming also monitored at 1300-1505 UTC on 21550 kHz. (Carson, OK)

0826 UTC on 6000
BRAZIL: Radio Gaúcha. Portuguese. Clear station ID to nonstop music of pop and German polkas. (Johnson, IL)

0820 UTC on 4885
COLOMBIA: La Voz del Rio Arauca. Spanish. Colombian music instruments to brief local ads and station ID. (Sam Wright, Biloxi, MS) (Jeffee, KY)

0835 UTC on 9660
AUSTRALIA: ABC-Brisbane. Hilarious comedy show to pop music program, and "ABC" ID. (Marshall, Sidney, OH)

1200 UTC on 3315
PAPUA NEW GUINEA: Admiralty Islands) Radio Manua. ID in progress at tune-in with mentions of city Lorengau, DJ host music show of U.S. pop and island music to final fade-out at 1220 UTC-

1310 UTC on 11937.9
CAMBODIA: Voice of People. Democratic Cambodia. Very good signal strength for Asian instruments. Only slight fades for closing ID at 1315 UTC. (Earl Bailey, Oakland, CA)

1428 UTC on 13625
NORTHERN MARIANAS ISLANDS: KHI-Isaipen. Closing commentary on the American election system, and international news at 1430 UTC. (Hillton, SC)

1440 UTC on 21490
AUSTRIA: Radio Austria International. Discussions on marketing and the Eastern European Block. (Carson, OK)

1524 UTC on 6070
Canada: CFRX/CFRB. Call in talk show and discussion on radio broadcasting. Monitoring active past 1600 UTC. (Carson, OK) (Young, MA)

1530 UTC on 9560
ETHIOPIA: Voice of Ethiopia. Station ID and time check at the half hour. Signal gongs to national and world news topics. Audible at my location for only ten minutes. (Brian Bagwell, St. Louis, MO)

1615 UTC on 21530
PORTUGAL: Radio Portugal. Music from a Portuguese music festival, and station ID, all suffering from fading and interference. (David Browning, Portland, OR)

1615 UTC on 17555
PAKISTAN: Radio Pakistan. Slow-speed news, ID, and frequency schedule. Comments on the Sudanese president visiting Islamabad. (Stephen Price, Conemaugh, PA) Monitored on 11570/15605 kHz at 1730 UTC. (Johnson, IL)

1630 UTC on 15130
MALI: Radio Beljing relay. Classical music of Johann Strauss into American folk music. "Listener's Notebook" show with excellent signal and only minor fading. (Browning, OR)

2045 UTC on 11620
INDIA: All India Radio. Program sign-on with station ID and frequency schedule. International news suffering weak signal quality and interference. (Browning, OR)

2058 UTC on 4935
KENYA: Voice of Kenya. Fair signal but certainly audible for reporting, closing American pop to time pipes signal at the hour. Brief international news topics to ID and sign-off anthem at 2108 UTC. (Davis, AL)

2100 UTC on 4904
CHAD: Radiodiffusion National T'Chadienne. French, ID at the hour followed by announcements and native African music. News headlines at 2130 UTC. (Stephen Price, Conemaugh, PA)

2110 UTC on 21610
JAPAN: Radio Japan. International news and "Magazine Hour" show. Moderate fading with background interference making listening more work than joy. (Browning, OR)

2144 UTC on 13660
IRAQ: Radio Baghdad. Easy-listening music to broadcast messages from the American hostages in Iraq. Fair signal monitored to 2200 UTC. (Bailey, AR) (Young, MA) (Stephen Price, Conemaugh, PA)

2210 UTC on 9535
ANGOLA: Radio Nacional, Portuguese. Pop music from Phil Collins and "La Bambe" tune. Male announcer with ID and vibrato phrase Interval signal at 2230 UTC. (Johnson, IL)

2210 UTC on 4765
CONGO: Radiodiffusion-TV Congolaise, French. Announcer's comments and ID. Plenty of African hi-life music with great signal. (Johnson, IL)

2302 UTC on 11790
LITHUANIA: Radio Vitnus. News on the Teacher's Union reestablished and privatization discussed. (Carson, OK) (Young, MA)

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The Fascination of the 89th

"Air Force One, this is Andy, your primary is 212 upper and your secondary is now 414 lower."

"This is Air Force One, roger, out."

I can think of nothing that captures the imagination or attention of MT Utility World readers faster than hearing communications from Air Force One, Air Force Two or any of the SAM (Special Air Missions) that fly out of Andrews Air Force Base, Maryland.

These aircraft belong to the 89th Military Air Wing (MAW). The 89th is responsible for flying the President, Vice President, cabinet members, congressional leaders, military brass and other VIPs to faraway places and around the United States.

Organized on December 1, 1947, HMX-1 was established as an experimental unit tasked with testing and evaluating military helicopters when rotary flight was still in its infancy.

When President Dwight D. Eisenhower flew in an HMX-1 UH-34 from Newport, Rhode Island to the Naval Air Station, Quonset Point, Rhode Island, in September 1957, it marked the beginning of the squadron's mission of presidential transport and support.

Now each month we feature logs in the logging section that reflect the latest frequencies the 89th aircraft have been heard on. But one question continues to be asked over and over and over by our readers: "Is there a complete list of these frequencies and their designators?" In fact, I recently received a FAX from Martin Hunter in England, asking just that question and for help in figuring out the designators.

I think it is time to put this in perspective so that all our readers understand why a comprehensive list with designators has not and will not be published for these frequencies.

The network associated with 89th MAW communications is called the Mystic Star network. Several years ago, I remember receiving in the mail a very interesting xerox of a United States Air Force instruction regarding Mystic Star and the associated frequencies.

That instruction laid out the handling of Mystic Star frequencies and their designators as well as transmitter sites. The guidelines were quite simple. The frequencies themselves were not classified, but when you added the frequency/designator or designator/transmitting site or frequency/transmitting site, you stepped into the realm of classified Air Force material. The classification of the material was and probably still is "confidential."

The New Air Force One

"This is really something, so much roomier (than the old Air Force One)," said President Bush on the maiden voyage of the new Air Force One last fall.

The President, an old combat flying veteran, even remarked, "I wouldn't understand how to start this thing," while touring the cockpit of the new aircraft.

The new Air Force One, dubbed by some a "flying Taj Mahal" stands six stories high and is equipped with a secure worldwide communications system and anti-nuclear defense shield. It has two galleys able to serve 100 meals at a sitting.

The aircraft is painted in the same blue and white color scheme of its predecessor 707 aircraft.

When the President is seated at his desk in his rectangular "office in the sky," he has his seat belt on. The belt buckle is engraved with the presidential seal.

The new state of the art communications system hasn't been all it's cracked up to be. During one recent flight, wire service reporters attempting to make in-flight calls to dictate stories were broken off three separate times during their connections.

The new plane, built by Boeing, can hold a crew of 23 and 70 passengers, about double the capacity of the old 707s. Its wing span and deck space are 195 feet and 4,000 square feet respectively, compared with 145 feet and 1,260 feet for the old ones. It also has a complete medical unit, a built-in stairs and baggage loader.

The new presidential planes -- there are two of them -- will nest at their new hangar at Andrews AFB at a cost of $47 million. The other 747 is due for delivery at Andrews in June of this year.

RTTY Reporting Parameters

David Bogart in El Campo, Texas, dropped a note to let us know how much he enjoyed the October Persian Gulf issue. Thanks for the nice words, David. We both appreciate your vote of confidence.

He also asked if I could require that all RTTY loggings from you readers out there include: Mode (Baudot or other), shift, baud rate, polarity and hi to lo tones.

David, you have hit a sensitive topic among those of us that publish hobby logs -- that of RTTY logs.

About the only useful information that remains constant for each station, other than frequency, is the shift and baud rate. Polarity (normal or reverse) is a function of the receive position on your receiver and can vary from receiver to receiver. It is not a good idea at this point to include polarity information. Hi and Lo tones pretty much fall into the same category as above. Therefore in the future my policy is to include the following information for RTTY logs to this column:
Frequency (in kHz)  
Station name  
Call sign (if any)  
Location  
Shift (Hz) and  
Baud rate.

I might also point out that even shift and baud rate does vary from time to time by a station on a frequency. In fact, I have seen stations even change shift and baud rate mid–broadcast.

The best suggestion I can give you, David, is to read the instruction manual for your demodulator, get real familiar with the operation and start tuning in everything. Practice makes perfect in tuning in digital signals in the utility bands.

This Letter "Warrants" Attention

We recently received a letter from Bill Hale in San Marcos, California. Bill is a new subscriber to MT and the feature editor for a mediumwave club, the NRC (National Radio Club).

"As a feature editor for the NRC DX News," says Bill, "I am keenly aware of the need for accuracy in content, character and accuracy of anything that appears in print."

Addressing his comments to publisher Bob Grove, Mr. Hale goes on to say that in a previous issue I addressed the chief of Navy-Marine Corps MARS, CWO4 T. Fisk, as "warrant" two times (actually I did it three times). Bill says, "The proper address for CWO4 Fisk should have been either 'mister' or 'chief.'"

Bill, I share your interest in accuracy. According to the Navy protocol guide, however, warrant officers are addressed as either "warrant" or "sir." "Mister" went out of style years ago and many naval officers become clearly irritated when some of the old-timers use the term. A warrant officer in the Navy is not addressed as "chief," either. That term is used for the E7-E9 pay grades. Want to make that old crusty Boatswain Mate Chief's day? Call some warrant officer "Chief." You'll put him in the ozone.

Cosmos Satellites

Jim Hale up Arkansas way wants to know "How difficult is it to hear Cosmos Recon satellites on 19.989, 19.995 or 39.978?"

Jim, probably more difficult here in North America than in Europe. The only time the Soviets turn on the aforementioned beacon channels you referred to is during the recovery phase of the recon mission, when the film canister is being returned to earth. They only turn these beacons on as an aid to recovery forces located in the payload.

Unless you have propagation to Europe during the recovery phase, I doubt you will hear much, if anything. Of course, with the high sunspot cycle we have right now, anything is possible so it might bear watching.

One frequency that is worth watching is 19.542 kHz for transmissions from Soviet nuclear powered ELINT (Electronic Intelligence) satellites. At the later stages of these satellites, the nuclear core splits away from the rest of the payload and is boosted to a higher and supposedly safer orbit to let the radioactivity decay naturally before it reenters the earth's atmosphere. The beacon you hear on 19.542 MHz is from the boosted section. By tracking this beacon you can tell if a successful separation has occurred and the nuclear waste put into a higher orbit.

Most people do not realize the amount of nuclear waste in 600 km orbits above our heads, but there is a lot up there. Eventually, this stuff will return to earth.

Geoff Checks in Again

Geoff Halligey has checked in again from England with some interesting information. Geoff says the new edition (11th) of ITU's "List Of Callsigns of Fixed Stations" is now published. Slightly cheaper than the 10th edition -- now 98.00 Swiss francs.

Greatly reduced in size (only 231 pages compared with 888 pages of the 10th edition), this has been achieved by omitting all frequencies except one, which have the same call sign. The one included has an asterisk to indicate that there are other frequencies with the same call sign. Thus: NAM, NAR, NAU, for example, have only one entry: all the "N" call signs occupy just two columns instead of some 50 pages as in the 10th edition.

Whereas stations that have a call sign including a number for each frequency are listed in full, thus LTY in Argentina runs through from LTY 200 to LTY 928, with a different frequency for each number, nearly five columns of them.

If you purchased the 10th edition and are expecting something bigger and more complete for the 11th, you might just be disappointed. I should say so, Geoff, looks like another good source of information has bit the dust, buyers beware. We might all want to write to the ITU and let them know our dissatisfaction with the new changes.

Geoff also passes along that a favorite target for the listeners, Bermuda, has left the airwaves. VRT has closed all of its CW, Telex, and USB voice channels and can only be heard on VHF Channel 16 now. Many thanks to Geoff for the always informative report.

New Development in Shortwave Comms

Wilfred Gregson II, a new reporter to this column, recently got invited by an area Motorola representative to check out the new Motorola shortwave box. Called the "Rapid Deployment Radio," it comes in a rather small suitcase.

The top comes off and holds the antenna and tuner. The bottom is the radio itself. The controls consist of an on-off volume knob, a key pad (0-9 # * keys), three other buttons and a line of alphanumeric display and nothing else unless you count the mic, key and earphone jacks, plus power and antenna/antenna tuner connections.

Besides giving phase distortion-free Single Sideband comms 2-30 MHz (we talked to the factory in Illinois) it sounded better than some FM circuits I've used.

It is what this box does that is fantastic. Using the key pad you load as many as 20 different frequencies into it and every half hour or so it calls every other box in your net on each of the programmed frequencies. When contact is established, the box will make a signal/noise measurement and store the results, all in a second or so. When you want to actually talk to someone, the box knows the best frequency to use.

That's real neat, Wilfred, and we appreciate the look inside "The Box."

Well, that's it for this month. It's now time to check out what you have been hearing in the world of utility listening. Without further ado...
### Utility Loggings

**Abbreviations used in this column**

<table>
<thead>
<tr>
<th>AM</th>
<th>ARQ</th>
<th>CW</th>
<th>FAX</th>
<th>FEG</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amplitude modulation</td>
<td>SITOR</td>
<td>Morse code</td>
<td>Facsimile</td>
<td>Forward error correction</td>
<td>Identification</td>
</tr>
<tr>
<td>ISB</td>
<td>LSB</td>
<td>RTTY</td>
<td>UNID</td>
<td>US</td>
<td>NDB</td>
</tr>
<tr>
<td>Independent sideband</td>
<td>Lower sideband</td>
<td>Radioteleprint</td>
<td>Unidentified</td>
<td>Upper sideband</td>
<td>Nondirectional beacon</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>City</th>
<th>Frequency</th>
<th>Mode</th>
<th>Reporting Station</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>216.0</td>
<td>CHX-Chol, Mexico, NDB in NCW at 1045. (Homuth, AR)</td>
<td>3240.0</td>
<td>CW</td>
<td>2XX</td>
<td>-</td>
</tr>
<tr>
<td>274.0</td>
<td>CH-Chrsitchurch, New Zealand, NDB in NCW at 0925. (Trigg, NZ)</td>
<td>3260.0</td>
<td>CW</td>
<td>New Zealand</td>
<td>-</td>
</tr>
<tr>
<td>294.0</td>
<td>SW-Guatemala City, Guatemala, NDB in NCW at 0929. (Trigg, NZ)</td>
<td>3340.0</td>
<td>CW</td>
<td>Guatemala City, Guatemala</td>
<td>-</td>
</tr>
<tr>
<td>320.0</td>
<td>McCormich, Brigham City, Utah, NDB in NCW at 1030. (Homuth, AZ)</td>
<td>350.0</td>
<td>CW</td>
<td>Brigham City</td>
<td>-</td>
</tr>
<tr>
<td>350.0</td>
<td>L-Antelope Breaker, New Zealand, NDB in NCW at 1035. (Homuth, AZ)</td>
<td>350.0</td>
<td>CW</td>
<td>New Zealand</td>
<td>-</td>
</tr>
<tr>
<td>329.0</td>
<td>TAD-Trinidad, NDB in NCW at 1034. (Homuth, AZ)</td>
<td>3340.0</td>
<td>CW</td>
<td>Trinidad</td>
<td>-</td>
</tr>
<tr>
<td>3380.0</td>
<td>DNC-Dundee, New Zealand, NDB in NCW at 0944. (Trigg, NZ)</td>
<td>350.0</td>
<td>CW</td>
<td>Dundee</td>
<td>-</td>
</tr>
<tr>
<td>350.0</td>
<td>LE-Raleigh Durham, North Carolina, NDB in NCW at 0157. (Harderst, NC)</td>
<td>3560.0</td>
<td>CW</td>
<td>Raleigh Durham</td>
<td>-</td>
</tr>
<tr>
<td>3580.0</td>
<td>NCA-MCAS New River, North Carolina, NDB in NCW at 0208. (Harderst, NC)</td>
<td>360.0</td>
<td>CW</td>
<td>New River</td>
<td>-</td>
</tr>
<tr>
<td>3580.0</td>
<td>PB-West Palm Beach, Florida, NDB in NCW at 0209. (Homuth, NC)</td>
<td>3600.0</td>
<td>CW</td>
<td>West Palm Beach</td>
<td>-</td>
</tr>
<tr>
<td>360.0</td>
<td>ZIN-Kingston, Jamaica, NDB in NCW at 0215. (Harderst, NC)</td>
<td>3600.0</td>
<td>CW</td>
<td>Kingston</td>
<td>-</td>
</tr>
<tr>
<td>3670.0</td>
<td>MKC-Tampa, New Zealand, NDB in NCW at 0220. (Harderst, NC)</td>
<td>3670.0</td>
<td>CW</td>
<td>Tampa</td>
<td>-</td>
</tr>
<tr>
<td>3680.0</td>
<td>HA/HOB-French Polynesia, dash after 2 CW IDs in CW not received</td>
<td>3690.0</td>
<td>CW</td>
<td>French Polynesia</td>
<td>-</td>
</tr>
<tr>
<td>3790.0</td>
<td>NP-New Plymouth, New Zealand, NDB in NCW at 0951. (Trigg, NZ)</td>
<td>3790.0</td>
<td>CW</td>
<td>New Plymouth</td>
<td>-</td>
</tr>
<tr>
<td>3790.0</td>
<td>UN-United NDB heard at 0226 in NCW. (Harderst, NC)</td>
<td>3800.0</td>
<td>CW</td>
<td>United NDB</td>
<td>-</td>
</tr>
<tr>
<td>3740.0</td>
<td>BU-Burnham, New Zealand, NDB in NCW at 0954. (Trigg, NZ)</td>
<td>3750.0</td>
<td>CW</td>
<td>Burnham</td>
<td>-</td>
</tr>
<tr>
<td>3820.0</td>
<td>WU-Wanganui, New Zealand, NDB in NCW at 0958. (Trigg, NZ)</td>
<td>3820.0</td>
<td>CW</td>
<td>Wanganui</td>
<td>-</td>
</tr>
<tr>
<td>3850.0</td>
<td>EM-Augusta, Georgia, NDB in NCW at 0234. (Harderst, NC)</td>
<td>3960.0</td>
<td>CW</td>
<td>Augusta</td>
<td>-</td>
</tr>
<tr>
<td>4120.0</td>
<td>CTZ-Clinton, North Carolina, NDB in NCW at 0250. (Harderst, NC)</td>
<td>4170.0</td>
<td>CW</td>
<td>Clinton</td>
<td>-</td>
</tr>
<tr>
<td>4240.0</td>
<td>RVJ-Federville, Georgia, NDB in NCW at 0253, weak but steady. (Harderst, NC)</td>
<td>4320.0</td>
<td>CW</td>
<td>Federville</td>
<td>-</td>
</tr>
<tr>
<td>1610.0</td>
<td>WXX-790-Phoenix Sky Harbor International Airport, Arizona, with special announcement about new Barry Goldwater Terminal Four. Runs 25 watts into leaky coax. I have logged this one over 150 miles away under good conditions. (Homuth, AZ)</td>
<td>1615.0</td>
<td>CW</td>
<td>Phoenix Sky Harbor</td>
<td>-</td>
</tr>
<tr>
<td>1640.2</td>
<td>OR-Omaha, New Zealand, NDB in CW at 0919. (Trigg, NZ)</td>
<td>1704.0</td>
<td>CW</td>
<td>Omaha</td>
<td>-</td>
</tr>
<tr>
<td>2899.0</td>
<td>Gender ATC working Clipper 467 in UDB at 0305 for a company message. (Russ Hill, Oak Park, MI)</td>
<td>3100.8</td>
<td>CW</td>
<td>Clipper 467</td>
<td>-</td>
</tr>
<tr>
<td>3100.8</td>
<td>Tracan/VA-27/VC-97 and Jacksonville area locations discussed, request for a gaggle (that's a bunch-Larry) at 0700 for beach was confirmed promising six aircraft from same group as today. Baker boy was one station, officer at other station called by name, whole discussion in clear in US at 2300. (Burghardt, NJ)</td>
<td>3187.0</td>
<td>CW</td>
<td>Jacksonville</td>
<td>-</td>
</tr>
<tr>
<td>3187.0</td>
<td>Liberty Star (NASA SRV Recovery Vessel) working DOD Cape in US at 0903. (Alexander, PA)</td>
<td>3365.0</td>
<td>CW</td>
<td>NASA SRV Recovery Vessel</td>
<td>-</td>
</tr>
</tbody>
</table>
Someone calling "Hello QO, calling all buuggers, this is K6KLA," ended with "Well, crap, it would help if I were on the right band. (Harwood, CA) Skip, you win the unusual log of the month award, in fact this one is yours."

7535.0 Norwegian SESE radio checking various HF radio phones the USNS Pecwacul (T-AO-108) and quick radio check for USS Scout. (Tyler, MI)

7590.0 English female three/two digit number station at 2109. (Glasgow, Scotland)

7650.0 CW five-digit number station heard at 2120. (Glasgow, Scotland)

7714.0 TKJ-Doula, Cameroon, with A503 Unid shore station.

7721.4 English male four-digit number station heard at 2123 (Buick, IL).

7900.0 ROO3-Novosibirsk, USSR, with cabled meteor at 0130. RTTY 476/50. (Bidleau, IL)

8765.4 Unid shore station providing phone patches for ships (operator had British accent and was not WCO). PO32 requested line to Sydney, not available. ASHP had trouble hearing shore station. (Preston Sewell, NJ) Probably Portishead Radio In UK, Preston-Larry.

9023.0 Hit Song/Geranium/Side Car/Mischief/Steersman/Red Dog unknown, with secure voice. (Tyler, MI)

9050.0 English female five-digit number station at 2030. (Glasgow, Scotland)

9121.0 C20, E89 and E92 running data and using voice coordination in USB at 1823. (Tyler, MI)

9150.0 English female five-digit number station at 2131. (Glasgow, Scotland)

9230.0 Spanish female five-digit number station at 0524. (Fernandez, MA)

9310.0 Russian male five-digit number station at 2124. (Glasgow, Scotland)

9325.0 German female five-digit number station at 2040. (Glasgow, Scotland)

9500.0 Sledge, Sledge 01, Breastbone, Nebula, Lawyer, Parent, Drawing Card, Hassan, Pine Tree and Langtree running traffic on procedural messages and correct operating procedures in USB at 1930. (Johnson, IL) Sounds like a military training net. Tim. Not sure who however, I don’t have anything in the database or references.-Larry

10069.0 Berne Radio-Berne, Switzerland LDC working TWA aircraft with position/light data report in USB at 0242. (Fernandez, MA)

10075.0 German female two-digit number station at 0243. (Glasgow, Scotland)

10640.0 CW five-digit number station heard at 1949. (Glasgow, Scotland)

10676.0 USAF-SAC? A male with 10 count then "Communications, out" with standard SAC beep tone at end of transmission. (Fernandez, MA)

10780.0 King 2 working Cape Radio in USB at 0957, Areal 1 working Cape Radio In USB at 1050. USS Vreeland working Cape Radio in USB at 0745. (Alexandria, VA)

11035.0 English female five-digit number station at 2223. (Glasgow, Scotland)

11056.0 SAM 2600/Air Force One on ground in Chichu, enroute Battle Creek, Michigan, then Andrews in LSB at 2140. (Tyler, MI)

11059.0 Air Force Two working Andrews AF in USB at 2042. (Tyler, MI)

11108.0 German female five-digit number station at 1841. (Glasgow, Scotland)

11214.0 Idol 31 working idol 32. Some of an AWACS platforms - possibly E-3, E-2C or J-Stars aircraft. Radio operators sounded like USN types in USB at 0536. (Tyler, MI)

11222.0 Illegal fisherman type comms. Man was on boat, wife/girlfriend was on land. Canadian accents at 0245 In LSB. (Tyler, MI)

11310.0 Fisherman on west coast (References to San Diego) having a lot of bad luck in LSB at 0025. Strange frequency and mode for fisherman, isn’t it? (McCarty, NY) Yes, Ray, these guys are showing all over the spectrum.-Larry

11318.0 Russian VOLMET-Kuibyshev (female) on with Russian weather, followed by other stations in various locations in USSR in every five minutes. (Fernandez, MA)

11400.0 Russian male five-digit number station at 2101. (Glasgow, Scotland)

11415.0 English male five-digit number station at 2009. (Glasgow, Scotland)

13300.0 Exxon 99 (KC-10) working New York AFC with position report and altitudes enroute to Robbins AFB, Georgia. (HiL, MI)

13311.3 Fishing boat outboarders in LSB discussing fishing ops off NE US coast. The aero bands are getting pretty abused lately with these types of commns. (Fernandez, MA) You bet they are, Bill-Larry

13333.0 A siren sound, then net call-up. Call signs included ZWJ, ZOBY, 480G, BCUE, and GQAW. Some traffic, but signals distorted. Listed for about ten minutes in USB at 0052. WHO2IT? (HiL, MI) Sounds like it might be the Speedbird LDC in London-Larry.

13737.0 5YD7-Nairobi, Kenya with aviation notams and weather (References to weather) at 0130. Positive QRM from Ail station. RTTY 203/50. (Bidleau, IL)

14407.2 Jammed messages from unid station at 0308 using SITOR-A. ID and descriptions of wanted persons. (Norm Anderson, Santa Ana, CA) Welcome aboard, Mike, please report often.-Larry

14818.0 NNNOCVG-USS Eisenhower working stateide stations with phone patch traffic at 2330 in USB. (Bill Barnes, VT)

16202.0 STK-Khartoum, Sudan, with RTY test tape at 0321. RTTY 782/50. (Bidleau, IL)

16335.0 English female four-digit number station at 1611. (Glasgow, Scotland)

16603.0 Two mates with British accents in comms about that sounds like oceanographic electronic equipment repairs. Some gear was sent back from the states with high price tags on them and discussion on getting something with proper background in electronics to repair and set up the gear in the future. Lots of mention of "waves" (waveforms?) by number. Sounded like a ship and shore station. No IDs were given except first names when they cleared in USB at 2234. (Fernandez, MA)

18180.0 KPA14-Israel) Moshad station.

18233.0 Strange frequency and mode for fisherman, isn’t it? Our prices include airmail postage to everywhere in the world. Payment can be by $ or DM cheque or cash. Dealer inquires welcome - discount rates and pro forma invoices on request. Please mail your order to: Klingenfuss Publications Hagenloer Str. 14 D-7400 Tuebingen Germany

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9th edition • 520 pages • $ 43 or DEM 60

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MONITORING TIMES February 1991 33
Scanning in the Hole

As we descend the concrete stairs, the sunlight and the familiar noises of the city are somehow absorbed, eliminated. In the few minutes that it takes to reach the tunnels, we are alone, underground.

The New York City Transit Police refer to this place as, "down in the hole" and as you probably guessed, we are standing in the New York Subway.

If you're worried about our safety, relax. There hasn't been a wild west style shoot out down here for at least two weeks. If you see someone running, get out of the way. Bandits routinely rob people on the surface, and then run through the subway to escape the regular police. Fires in the subway are another common occurrence. If you see something ablaze, don't panic—it happens all the time.

Need to call a cop? Good luck. Finding a public phone in working order is nearly impossible. Vandals cut the pay phone lines on a regular basis. If you could use the phones, the Transit Police probably wouldn't come to your rescue. Why? Because the radio system down here doesn't work!

The Transit Police radio communication system predates the 1940's. When a Transit Police officer uses his 2 watt portable radio, the radio signals are supposed to be picked up by antennas above the tracks.

The antenna is a thick length of cable that carries the radio signals to a junction box. The box sends the radio signal over a wire to the Transit Police Dispatcher. Fifty years ago, the system probably worked reasonably well. In today's world, the antenna above the subway tracks can't pick up signals from more than 20 feet away. This causes numerous "dead spots," where cops can't send or receive radio messages.

To make matters worse, the cops in the subways can't communicate directly. Their small, 2 watt radios simply don't have sufficient power.

Needless to say, the scanning action can be sizzling hot—if you can hear it. Keep in mind that subway communications are delivered to the dispatcher via wired lines. If you're on the surface, it may not be possible to hear the transmissions from the transit police on foot patrol. That's why I brought you guys down into the subway. Hopefully, we can hear both sides of the action and have some fun. If you're not afraid to hang around, here are the 7 basic transit police frequencies:

<table>
<thead>
<tr>
<th>Base Mobile</th>
<th>Area of Use</th>
<th>Frequency</th>
<th>Base Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>160.280</td>
<td>Command Frequency</td>
<td>160.305</td>
<td>160.310</td>
</tr>
<tr>
<td>F-1 160.305</td>
<td>Brooklyn</td>
<td>160.500</td>
<td>160.190</td>
</tr>
<tr>
<td>F-2 160.500</td>
<td>Bronx</td>
<td>160.955</td>
<td>160.145</td>
</tr>
<tr>
<td>F-3 160.955</td>
<td>Queens</td>
<td>160.305</td>
<td>160.340</td>
</tr>
<tr>
<td>F-4 160.305</td>
<td>Manhattan</td>
<td>160.305</td>
<td>160.305</td>
</tr>
<tr>
<td>F-5 160.305</td>
<td>Common</td>
<td>150.205</td>
<td>150.695</td>
</tr>
<tr>
<td>F-6 160.695</td>
<td>RMPs</td>
<td>160.845</td>
<td>160.860</td>
</tr>
</tbody>
</table>

As you scan the above frequencies, here are some of the more common codes that may be monitored:

- Adam - Sergeant
- A/O - Arresting Officer
- Baker - Lieutenant
- Charlie - Captain
- Central - Dispatcher for RMPs
- CPO - City police officer
- DD - Detective division
- TP - Train patrol
- TPO - Transit police officer
- Radio - Dispatcher for underground/portal units

The sewers of New York are guarded by the Teenage Mutant Ninja Turtles; But who will protect you if you venture into the subways?!

Although subway scanning can certainly be exciting, there are many additional agencies in New York that can be monitored. Here's a small sampling of the frequencies that I have for the New York area.

Railroads
160.395 Coney Island Yard
160.485 S.I.R.T Maintenance of way/yards
160.845 Yard operations
161.190/158.880 Division A
161.505/158.775 Division B-1
161.565/158.850 Division B-2
470.3775 Maintenance-active during fires & emergencies
470.4375 Staten Island Rapid Transit Command Center
470.4875 Maintenance of way

Transit Authority Bus Operations
30.820 Flatbush Bus Depot
30.800 East New York Bus Depot
30.800 Jamaica Bus Depot
31.02 149th St Bus Depot
31.06 132nd St Bus Depot
31.12 126th St Bus Depot
31.14 Kingsbridge Bus Depot
44.56 Base Radio Bronx surface authority
44.58 Base Radio Repair and supervision
44.60 Supervisors Staten Island
158.775 54th St Bus Depot
161.175 Fresh Pond Depot
161.250/160.230 Staten Island digital
161.355 Digital data
161.520/160.530 Staten Island voice
470.4125 Queens Village Bus Depot-Voice
470.4625 Queens Village Bus Depot-Digital

Future Transit Authority Frequency Plan

<table>
<thead>
<tr>
<th>Base Transmt</th>
<th>Base &amp; Remote Receivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>161.190</td>
<td>158.805</td>
</tr>
<tr>
<td>161.505</td>
<td>158.775</td>
</tr>
<tr>
<td>161.565</td>
<td>158.805</td>
</tr>
</tbody>
</table>

Transit Authority Portables
151.340/160.905 Police/Manhattan
151.190/160.500 Police/Bronx
151.145/160.695 Police/Queens
151.310/160.305 Police/Brooklyn
158.860/161.190 Train/Division A
158.775/161.505 Train/Division B-1
158.805/161.565 Train/Division B-2
160.845- Train Yard
161.190/158.880 Train
With These New Features
- Highway Maintenance (Toll Roads, Snow Plows, etc.)
- Illustrated Listeners Guide
- Personal Log Section
- FCC Licenses through October, 1990.

More People Buy POLICE CALL Than All Other Frequency Guides (VHF/UHF) Combined.

158.880/161.190 Command
161.505/158.805 Command
158.805/161.505 Command
158.575/158.775 Command
161.505/158.575 Command
158.775/158.575 Command

Triboro Bridge and Tunnel Authority: 453.550 Operations

Cemeteries:
463.350 Catholic (KZM-567)
151.745 Cypress Hills (KNCA-582)
151.775 Evergreen (WXU-410)
154.570 Flushing (KO-9964)
30.920 Lutheran (KFZ-233)
151.745 Mount Olive
154.600 Mount Zion (KA-67891)
151.805 Oceanview (KNAM-330)

Well gang, that's it. If our visit to the subways of New York made you nervous, I apologize. However, you should consider yourself lucky. I had originally planned to visit the underground sewers, and look for the Teenage Mutant Ninja Turtles. Cowabunga, dudes!

Treasure Hunt
This is your last month to win a frequency counter from Opto Electronics. As most of you know, Opto is the leader in high tech, highly sensitive frequency counters. For the January/February Hunt, I have one 1300 H/A and one, top of the line UTC 3000.
The 1300 H/A is probably the most popular counter on today's market. It features 1 megahertz to 1.3 gigahertz coverage, rechargeable batteries, high sensitivity, and it has a factory installed internal amplifier.
The UTC 3000 is an advanced, hand held frequency counter that can measure between 10 Hertz and 2.4 gigahertz. The instrument is superbly crafted, and it features a "bargraph," and a "hold button."
The bargraph is a 16 segment display that reacts to signal strength. As the signal becomes stronger, the bargraph displays additional segments. Generally, if three segments are showing, there is a signal present that can be measured. With a little practice, the bargraph can be used to guide the user to the strongest point of the transmitted signal. And as we all know, that particular location will provide us with our best chance to catch a frequency.
Pressing the hold button will cause the UTC 3000 to "freeze" the display. In the past, you only had a few seconds to memorize the captured frequency. With the UTC 3000, you can hold the displayed frequency for as long as the batteries hold a charge.
To win the UTC 3000 or the 1300 H/A, use the November 1990 issue of MT to answer the following questions.
1. What is the toll free order line for Opto Electronics?
2. Name the scanner radio that features Hyperscan.
3. Provide the page number that features a picture of a clown.
4. In what column can the word, "Heightophobia," be found?
5. Provide one NIS frequency for NAS, Dallas, Texas.

When you send your entry, don't forget to observe our new rules. FAX entries are not allowed. Multiple entries are okay, but you must send them separately. Post card entries are encouraged and they also save you postage.
The UTC 3000 will be awarded to the first name that is randomly selected as a prize winner. The 1300 H/A will be awarded to the second name that is selected. Happy hunting!

Frequency Exchange
Monitoring Times editor Larry Miller just received the gas bill for last month's frequency exchange. You probably
remember that we visited California and then went to Florida. This month, I will attempt to limit our visits to a more specific area.

Since we started the column in New York City, let's go back to the Big Apple, and check out a few 800 megahertz frequencies:

Transit Authority Dream Frequencies (Licensed but not implemented)
854.8625 854.9125 855.1625 855.3625 855.6125 855.8625 856.1625 856.4125
856.7375 857.7375 858.7375 859.7375

From New York City, we travel only a few miles to the city of Danbury, Connecticut. Dave Smith lives in the area, and here are a few of his favorite frequencies:

42.640 CT Highway Patrol speed traps
37.90 Danbury Highway Maintenance (Snow storms)
42.035 Danbury Hospital Security
473.3125 Danbury SWAT frequency
460.550 SWAT paging
484.875 Fire Mkt.
154.875 Motor Vehicle Dept., Main repeater
153.775 Office of Emergency Management, Tests on Wednesday/8AM
45.98 Statewide Police Holdline

As most of you know, South Carolina is just a little south of Danbury, Connecticut. Since it won't take much gas to get there, let's stop in and check out a frequency contribution that was sent in anonymously:

39.98 South Carolina HP
42.08
42.10
42.12
42.14
42.20
42.24
42.34

48.18 Savannah Electric
119.05 Marine Corps Air Station Beaufort tower
154.025 Georgia State Prisons
180.100 Savannah System rail road
161.10
161.205
185.2375 Bureau of Customs - Savannah

The State of Texas is just Southwest of South Carolina. Heck, you can stand in South Carolina and pretty near hit Texas with a stone. Since it is just over the next hill, let's stop at the home of David B. Cundiff, and check out his frequency list for Lubbock, Texas:

39.58 Texas Fire Marshal
131.50 Carlinke Helicopter
151.355 Texas State Parks
151.415 Texas Parks & Wildlife
158.2780 Texas Parks & Wildlife
452.875 Avalanche Journal
457.975 Avalanche Journal
463.125 AeroCare Helicopter
463.725 AeroCare Helicopter

No doubt you've heard Australia referred to as the "land down under." Actually, Australia isn't that far from Texas. I don't know the exact mileage but how far "under" Texas could it be? Bob Bell lives in Australia, and he has extended an invitation for everyone to pay him a visit. If your passport is handy, jump aboard. Our next stop is Sydney, Australia.

72.380 Sydney Morning Herald
72.98 National Parks and Wildlife
155.430 National Parks and Wildlife
163.30 Sidney Morning Herald
168.540 Train track inspectors, statewide
452.925 Sidney University security
467.70 National Crime Auth.
467.275 Fisheries Inspectors
468.60 State Emergency

I hope that you enjoyed this month's Frequency Exchange. And don't worry about the gas bill. I'll tell Larry Miller that we were in Sidney, New York.

The Scanning Test

Are you ready to put your scanning ability to the test? In January's column, I introduced our Scanning Certificate Program. If you missed that issue, don't panic. Here's what you need to know.

There are three levels of expertise. Scanning Novice, Scanning Specialist and Scanning Communications Expert (SCE). To become a certified SCE, you must have successfully passed all three exams.

At this time, I'm offering the Novice test. It consists of 30 multiple choice questions. You simply darken the correct answer and return the answer sheet. If you pass the exam, you'll receive a scanning certificate that is framed for display.

To take the test, send $10.00 dollars to: Scanning Test, P.O. Box 695, Honey Brook, PA 19344. The ten dollar fee includes the price of your Novice test, and the mailing of your certificate. There are no hidden costs, and this isn't a gimmick.

I designed all three exams, and I'm personally grading each test. This isn't a program that simply takes your money and then sends you a worthless certificate. You'll earn each award by passing a test.

If you don't pass, you don't advance. If you think that you have the "right stuff," prove it—take the Novice test.

Scanning the Big Mac

Personally, I can't get excited over monitoring MacDonald's, but there are dedicated listeners out there. Here's the latest frequency pair that was sent in from an anonymous reader: 33.15/151.895.

AM or FM

My mail bag indicates that many of you cannot decide if a particular frequency should be programmed in the AM or FM mode. Here's a brief explanation that should help.

Military radio communications between 30-80 megahertz are wideband FM. Between 108-144 megahertz, the mode is AM, but there is an exception. Military bases operate narrowband FM between 138-144 megahertz. Narrowband FM is also used between 144-150.8, 162-174 and 406-420 MHz. The AM mode is used between 225-400 MHz. However, there is another exception. Satellite communications between 240-270 MHz may be FM or SSB.

Thank You

A "tip o' the typewriter" to the New York Police Officers who supplied information for "Scanning in the Hole." Your help was greatly appreciated.

Next Month

Has the news media slandered the hobby of scanning? Next month I'll tell you about my television interview and the reason for its cancellation.
Now You Can Scan Up to 400 Channels in Less Than 16 Seconds!

You'll be "on the scene" of local action in a flash with the Realistic PRO-2006. More than 196,000 exciting frequencies are at your command, including the new 800-MHz police and emergency bands. At up to 26 channels per second, you'll scan much faster than most scanners not equipped with HyperScan.

You get ten 40-channel memory banks, a 10-channel monitor bank, search mode and selectable priority function. Frequency coverage is 25-520, 760-823, 851-868 and 896-1300 MHz. Precise ZeroMatic® tuning locks on-frequency for best reception. A backlit LCD display, memory backup and full array of jacks are included.

Take the next big step in communications excitement—check out the Realistic PRO-2006, available at Radio Shack.
Radio New Zealand Int'l T-shirt

Radio New Zealand International is marking their first anniversary by offering a "limited edition" t-shirt for sale. The shirt features the station's name in English and Maori ("Te Reo Irirangi O Aotearoa O te Moana-Nui-A-Kiwa"), its distinctive Pacific logo (which looks like a bad dream – it's quite exotic), as well as the frequencies.

We haven't seen the shirt but we are told that it is printed front and back in black and yellow on white. They come in sizes small through XXOS and are priced at US$20.00. Checks or cash are accepted and orders to the U.S. are dispatched airmail.

The address for the RNZI t-shirt is RNZI Enterprises, P.O. Box 2092, Wellington, New Zealand. Tell them that you read about it in Monitoring Times.

Free Ham Video from ICOM

ICOM America, Inc., says that it has completed production of a special 28 minute video about ham radio. According to ICOM officials, Zman Productions, together with local hams, explored "an innovative concept for the video."

Neither ICOM nor Zman will reveal the content of the video other than to say that "More Than Radios" is a story about real people with a simple statement about amateur radio woven into the plot. The story took six months to film.

Copies of the video tape are free of charge. All you have to do is send a letter of request on your club's stationary. The address is: Zman Productions, 8051 N.E. 143rd St., Bothell, Washington 98011. A limited number of tapes are available.

MagicNotch

The MagicNotch audio filter is an automatic notch filter designed to instantly remove heterodyne interference from SSB (Single Side Band) reception. According to the manufacturer, it effectively reduces interference created by negligent ham operators tuning on or near the frequency you want to hear, Morse code signals, and other carriers. The MagicNotch filter also claims to be effective in reducing computer-generated interference.

When interference is detected by the control circuitry, the internal switched capacitor active filter is automatically tuned to that frequency, reducing interference by up to 40 dB. In many instances, the operator may not even know that interference has occurred!

The filter is powered by 10-14 volts DC, which is usually obtained from the accessory connector found on some radios.

Interested in hearing how it works? J-Com has a recording you can listen to. Dial 408-336-3503. For more information, contact J-Com at 408-336-3503 or write P.O. Box 194, Ben Lomand, CA 95005-0194.

Wireless Burglar Alarm

Midland was at one time the leading supplier of CB radios. It now bills itself as offering "a very broad range of specialty products" – specifically things like the Midland State-Of-The-Art Wireless Car Burglar Alarm.

This portable unit, called the 72-375, is powered via the vehicle's cigarette lighter or by direct hook up to the battery. The 72-375 detects intrusion by monitoring both motion and vibration -- motion being attempts to tow or push the vehicle and vibration being any type of shock such as an attempt to break a window.

The unit can be turned on and off with a small remote control device that operates from up to 30 feet away.

For more information on the 72-375 wireless car burglar alarm, contact Midland at 1690 North Topping, Kansas City, Missouri 816-241-8500.

Scanning Ontario

For Ontario scanning enthusiasts, the Ontario Frequency Directory is one incredible directory!

Featuring public safety, aircraft and marine, utilities, paging and trunked communications systems, racing and railroads, ham radio and government, Brian Keegan has detailed over 11,000 separate entries.

Sorted first by frequency (27-956 MHz), a cross-reference by city makes this volume particularly suited for scanner monitoring. Data fields include frequency, location, etc.
The new 1991 Pirate Radio Directory, which includes new and updated information, is available now at $19.95 plus $1.90 shipping or 2.80 UPS from the publisher, Radio Guide, P.O. Box 98, Wagontown, PA 19376.

Guide to Utility Stations
Joerg Klingenschuss's annual utility guide is an excellent companion to the Grove Shortwave Directory and the Gilfer Confidential Frequency List because of the guide's European emphasis and the fact that inactive frequencies are purged every 15 months. The guide is arranged by frequency and includes call signs, modes, and locations of stations. Additional chapters include alphabetized call sign lists, ITU location symbols, NATO routing system, and extensive RTTY information. An excellent compact reference, the guide includes addresses of some 1000 utilities stations around the globe, and even fold-out aeronautical charts.

New Editions in Print:

1991 Pirate Radio Directory
Noted pirate chaser George Zeller has put together another edition of his excellent pirate radio directory. This year, Zeller features profiles of some 150 stations that have been active during the past twelve months. Each profile contains addresses, frequencies, formats, and more.

In addition to the profiles, Zeller presents an overview of the constantly shifting cast of characters and offers tips on how to tune in these elusive phantoms of the airwaves.

Catching pirates on the shortwave bands is never easy, but tuning them in is certainly easier with the help of Pirate Radio Directory.

National Highway Patrol
While not intended to be the consummate guide to monitoring, this new handbook fits easily in the glove compartment and provides information for monitoring's best friends. This new handbook is all about tracking down the best frequency "hits" for various locations nationwide, including uses for the police. Handy for the interstate traveler.

The second edition of National Highway Patrol Frequency Handbook is available for $9.95 from Scanners, PO. Box 428, Newton Highlands, MA 02161.

National Highway Patrol Frequency Handbook
The new 1991 Pirate Radio Directory ships later this month and is $8.95 plus 1.20 book rate shipping or 2.80 UPS from

To have your new product or book considered for review in Monitoring Times, send it to Editor, 140 Dog Branch Road, Brasstown, NC 28902.

Books for Every Radio Interest

MONITORING TIMES
February 1991
39

www.americanradiohistory.com
Not So Heavy Metal -
A Guide to Soldering

As I look back over February columns gone by, I find that I do tend to "wool gather" a bit in preparation for my work on such a cold winter month. This month I spent some time in consideration of the teaching role "The Beginner's Corner" performs. This led me to remember my first electronics teacher back in my freshman year at John F. Kennedy High School, Colonel Blinky Austell. (No, spark gaps were NOT still in use.)

Blinky was fresh out of the Air Force and he thought teaching kids would be a neat way to make a post-retirement living. We were somewhat less disciplined than the airmen he was used to leading. Still in all, he did his best.

Is this linear thinking exercise going someplace, Uncle Skip?

Hey, have I ever let you down?

Somewhere in the midst of frying the odd resistor, Blinky Austell was the first guy to show me the correct way to make a "Western Union" splice. Colonel Austell also taught me how to handle a soldering iron and, if I may say so myself, I have been a better person for it. Some people chase themselves to mountain tops to learn various skills from ancient masters. Old Blinky taught me the "Zen" of the perfect solder joint. Does that make me a Soldering Samurai? What more could a person ask for?

Every good student must become a teacher. So I pass on Colonel Austell's wisdom in a little ditty I like to call:

**UNCLE SKIP'S GUIDE TO SOLDERING**

Okay, I can anticipate the first question. Why should I learn to solder? Easy, Bunkey. It's one of those skills that you will always find a use for. Even if you never have any desire to build or repair your own equipment, soldering is almost a necessity when it comes to putting up a good antenna. What if your car stereo speaker connection broke loose? A little dab of solder can usually put things right.

**Soldering Irons**

Sometimes I wish things were as simple as they were back when Blinky was teaching me soldering. In the good old days, you could handle just about every kind of need with one standard garden-variety 25-watt soldering pencil. In general, and especially for the beginner, this type of soldering iron will still be the way to go for most soldering projects. You will want to get an iron that has replaceable tips as these give way periodically under normal use.

However, if you find yourself graduating to projects that involve hooking up integrated circuits, your second investment will be in a 15-watt iron that has a "grounded tip." These type of irons can be easily spotted by checking out the power cord to see if it has a third prong on the plug just like most major appliances.

Also, if your soldering tastes tend to get heavy, such as bringing together two large antenna wires, you will need to look into 100 or 200 watt soldering guns.

The last time I dug to the bottom of my tool box I discovered that I have acquired five different types of soldering irons over the years to meet various needs. Over time, it is likely you will graduate from your 25 watt iron. You will find that most electronics parts outlets and better hardware stores will be able to equip you with your every soldering need.

**Caring for your Iron**

As you make use of your soldering iron, you will want to keep the tip cleaned and "tinned." Cleaning simply involves wiping excess solder and waste flux off on a damp sponge. Tinning is simply the process of touching the solder to the iron's tip and applying a light coat of fresh solder immediately prior to making a connection. Both of these steps allow your iron to work efficiently and they prolong tip life.

Also, keep in mind that the tip of your soldering iron will run well in excess of the temperature that will set paper, wood and human flesh on fire. Therefore, you will want to keep your heated soldering iron in a safe stand or holder whenever you are not using it.

You will only pick up a soldering iron by the wrong end once, the learning experience and the scars will last a lifetime.

**Solder**

Back when Blinky was teaching, all you had to do was pop down to the nearby Allied Electronics Store (that was what we had before Radio Shack) and pick up a roll of 60/40 rosin core solder. Things have changed a bit.

Good old 60/40 solder was an alloy made of 63 percent tin and 37 percent lead. This particular mixture of metals would melt just under 400 degrees F and it would melt and spread uniformly and rapidly.

But we now live in a world that has become increasingly concerned about our day to day exposure to lead in our environment. So now we make use of solder that is made up of 96 percent tin and 4 percent silver. You have to use more heat, 430 degrees F, and it is a tad more expensive, but it seems to get the job done just as well as its ancestor. I guess I just don't think calling it 96/4 will ever catch on.

All solder used for electronics must utilize a rosin-based flux as opposed to the acid-based flux commonly used by plumbers. Acid-based flux would corrode electronic components. Fortunately, we do not need to give this a great deal of thought because the rolls of solder you will pick up at your local electronics outlet will have the rosin flux right inside of it, hence the name Rosin Core Solder.

Flux removes the oxides that are present in your connection that cannot be removed by cleaning and floats them away from the joint. This will appear as a yellowish-brownish ooze on the surface of your soldered connection. This yuk is easily wiped away with a little alcohol.

Okay, we have the soldering iron, we have the solder. Let's get started.

**A Very Simple Soldering Connection -- Two Wires**

Heat up your soldering iron. Make sure that the tip is clean and properly tinned.

Take two pieces of plain old wire. The kind you might use to hook up stereo speakers. Strip the insulation off of one end of each wire back about an inch. Prepare the two ends by making sure they are as clean as you can possibly get them. If the portions of the wires you are connecting are contaminated by
just about any substance, the joint will be subject to corrosion and failure. The solder’s flux will remove the oxides that form during the heating but it cannot perform miracles.

Next take the two stripped ends and twist them together tightly. Make sure they are twisting together and that it is not simply one wire traveling around the surface of the other. This takes some care but it will provide you with one of the essentials of successful soldering. You always want to create the most sound and stable mechanical connection between the two parts that you want to join. Solder is not really a glue, rather it creates an alloy between the two pieces you are joining and itself. An unstable joint will often be a source of failure as the joint weakens over time. So in the case of our two wires, after you have twisted them together by hand, you will want to give them a bit of a twist and maybe even a squeeze with a pair of pliers.

Now that we have our mechanical connection, take up your soldering iron in one hand and your solder in the other.

Aha. How do you hold the items being soldered? Easy, Compadre. Stabilize the wires on a table top, perhaps resting them under a few tools or books. Or clamp the wires in a small vise. The idea is to get the soon-to-be-soldered connection free from movement and reasonably far away from anything that might be damaged by the heating process. Since every connection you will ever make will be unique, you will have to get creative in your methods. But this is half of the fun.

Now where were we? Oh yes. With solder and iron in hands, first test the iron to see if the tip is hot enough to get the job done. This is checked by touching the solder to the tip and watching it melt. Just a touch, more than this will make for messy work.

Next touch the hot iron to the wires and hold it there. Make sure that the iron is heating both wires. This should be fairly easy if you have made a sound mechanical foundation.

After a moment (you will get a feel for how long with practice), while the iron is still heating the connection, touch the solder to the connection’s surface. Do not touch the solder to the iron. If the joint is heated sufficiently, the solder will flow over the two wires evenly. When the surface of the joint is covered fully, remove the solder you are holding in your hand and then remove the soldering iron. If you do it the other way around, you may find the roll of solder stuck to your connection.

Place your soldering iron in its safety stand. Be sure you allow the soldered connection to cool without moving it.

Now take a moment to inspect your work. If all went well, the surface of the connection should appear shiny with perhaps a touch of that yellow-brown look on its surface.

If the joint appears dull, this is usually an indicator of what is known as a cold solder joint. This will occur if the parts being connected were not heated evenly or if the mechanical connection moved even slightly during soldering. Cold solder joints may work initially but will result in circuit failure in the not too distant future because the proper alloying process did not occur and the joint becomes subject to corrosion.

If the connection has a crusty or rough appearance, this usually indicates that you tried to flow the solder before the joint was sufficiently heated and/or removed the heat too early.

There you have it; you have just mastered the same basic skills that Blinky Austell taught me so many years ago. Cut back the excess wire, wrap that puppy with electrical tape and you are in business. To the little electrons flowing along the wire, everything is copasetic.

Onward and Upward --
Mounting a Component on a Circuit Board

Once you have mastered the skills required to join two wires, you can apply them to any situation. Let’s say you want to put a resistor on a circuit board. The only real change in the program is that you will want to tin the leads of the resistor prior to mounting. This is simply done by heating each lead and applying a thin layer of solder just as you do when you tin the leads of the resistor prior to mounting.

If the circuit board’s metal surfaces have not been pre-tinned, you will also want to tin the pads that the component will be mounted through. Be careful that you do not close the mounting holes in the process of tinning the pads. This tinning process improves heat transfer. Then all the old rules apply. Sound mechanical connection (usually done by spreading the leads after mounting), heat both component and board foil evenly, flow solder, remove heat and allow to cool.

When soldering on circuit boards you will want to generate enough heat to solder effectively but not so much as to cause damage to the board or surrounding components.

If you are soldering a component such as a transistor, diode or integrated circuit, you will need to draw heat away from the component to prevent damage to its inners. This is accomplished with a “heat sink.” You can use pliers, tweezers, paper clips or commercially produced heat sink tools. The object remains the same. The heat sink allows the heat to go somewhere other than to the inside of the component, saving the day.

Zen Soldering
Seeking perfection in your soldering process will stand you in good stead wherever the radio monitoring hobby may lead you. Practice, practice, practice. That is all Blinky ever asked of us.
If you have a good map, you'll find the town of Cloudcroft in the west central part of New Mexico. The scenery here is breathtaking, the air is clean and the people are friendly — most of them, anyhow. Some of the people you'll find around town aren't locals and some of them aren't tourists. Instead of loud Hawaiian shirts and bermuda short, they were the khaki's of military service or the ominous dark suits of certain government employees.

The reason for their presence in this tranquil little village is strictly top secret. Huddled amidst the tall pines and glistening in the bright mountain sunshine is a white geodesic dome. The narrow dirt road leading to the facility is easy to miss, the small sign understated: "USAF CLOUDCROFT OBSERVATORY — STELLAR CALIBRATION SITE.

Go beyond that little sign and you will soon be confronted with others, larger and more threatening. The next one is attached to a heavy fence festooned with razor wire. "WARNING: NO TRESPASSING. ANY UNAUTHORIZED PHOTOGRAPHY IS NOT ALLOWED."

If you have a feeling that you're being watched, look around. You probably are. There are TV cameras, motion sensors, and a call box with a keyboard, all attached to the fence. For an observatory, the security here is rather intense.

What the huge white dome contains is actually a super-secret piece of high tech hardware managed by the Air Force for the CIA and NSA (National Security Agency). Officially known as the "Electro Optical Observation Site" on government budget records, the job of the USAF Cloudcroft Observatory is to take highly detailed photographs of anything in orbit that the Air Force, CIA or NSA wants to see close up.

Originally commissioned in 1962 as a way to keep an eye on Soviet spy satellites, the equipment consisted of two five inch spotting scopes. These low powered "eyes" scan the sky, looking for potential targets. The scanning scopes were slaved to a larger forty eight inch telescope used for tracking and taking detailed photos of orbiting debris, satellites or spacecraft.

Even thirty years ago, the detail was said to be extraordinary. Cloudcroft can photograph an object the size of a basketball 22,000 miles out in space. Resolution is thought to be about one inch, so not only can they see the basketball in space, but they can also tell you who manufactured it.

Former staff say that USAF Cloudcroft maintains a sort of top-secret photo gallery for the amusement of its employees. There among other shots taken by the staff, are pictures of space walking Soviet cosmonauts that display such clarity that the insignias on their suits are clearly readable.

Today, the site is said to be even more impressive, updated with the latest optical and radio technology for photographing, tracking, and measuring the mass of any object in orbit. Sensitive ELINT (electrical intelligence) receivers record the telemetry data coming from spacecraft, pattern, store and break down any encrypted data, and pass it on for analysis to Air Force, NSA and CIA technicians. The telescope is so powerful that it has been used to count the broken tiles on the Space Shuttle while still in orbit.

Built by TRW and maintained as part of the Ground-Based Electro Optical Deep Space Surveillance System, or GEODSS, the operations headquarters are located at nearby Holloman Air Force Base at Alamogordo. It is connected to other sites at Taegu, South Korea, and Maui, Hawaii. The Air Force maintains GEODSS' function to spot new objects in space and relay their position to Space Surveillance Center at NORAD headquarters.

This is where the monitoring fun comes in. Communications to and from GEODSS facilities, NORAD aircraft and NORAD HQ can be easily monitored by anyone living near or visiting one of the sites.

If you are ever in the area and have a scanner capable of monitoring the UHF military bands, pull into the small camping area just a quarter of a mile from the site and listen in. Be careful not to make your presence known, for there are frequent security patrol who would take great delight in confiscating your gear. I saw an innocent looking 4x4 filled with tough-looking USAF security personnel that screeched to a stop when they saw me by the side of the road, looking at the site with binoculars and holding a scanner. I beat it out of there fast and lost them in the tourist traffic heading to a country craft bazaar in Cloudcroft.

Even with the risks, the monitoring is first-class. On any given day you can hear coordinating between NORAD aircraft on alert, the GEODSS sites photographing and tracking the space objects, and F-15s running anti-sat (A-SAT) exercises on the passing birds. Holoman AFB is the base for the United States Air Force's A-SAT operations and has specially equipped F-15 Eagles that can destroy low-orbiting targets with two-stage missiles.

Some of the communications is encrypted but most are made in the clear. Data links from flying laser platforms, F-15s and AWACS aircraft, can be heard engaged in very realistic exercises, sometimes lasting for hours on end.

These are the frequencies in use near the site.

165.475 Cloudcroft site security (USAF)
165.115 Cloudcroft site security (USAF)
260.0 (AM) NORAD Primary A CC (air coordination)
364.2 (AM) NORAD operations (links to ground sites and Holloman AFB)
286.00 (NBFM) AFSATCOM link to ringmaster (NORAD Headquarters)
264.9 AM Computer Data Link (AWACS/F-15 A-SAT Aircraft)
397.9 FM Alamagordo ALC (High Altitude)
324.3 AM Holloman AFB approach (F-15 base)
255.9 AM Holloman AFB Departures

* Airborne Intercept Command Communications

Other active NORAD frequencies in use in the Cloudcroft area are 228.800 MHZ, 234.7, 238.5, 251.0, 251.1 (AWACS link to Tinker Air Force Base, Oklahoma), 256.6, 263.2, 270.4, 275.00, 278.600, 287.800, 292.700, 298.500, 302.400, 306.4000, 325.500, 338.400, 344.000, 356.000, 364.200, 375.100, 386.200 and 392.800 MHZ.

The amount of activity on these channels varies as does the communications mode. Sometimes the transmissions are AM, NBFM, WFM, data transmissions or encrypted. HF (shortwave) transmissions with other sites can be heard on 9.023 kHz.

Some housekeeping traffic can also be heard on the SAC frequencies of 311.00 MHZ (SAC primary) and 322.00 MHZ (SAC secondary).

Month of the Anonymous

A new reader up Missouri way just sent in a very nice list he accumulated at a recent airshow. The airshow was at Richards-Gebaur AFB, Missouri; the contributor wishes to remain anonymous.

36.00 A-10 aircraft/air to air
38.65 In army "Jeeps"
42.15 In army "Jeeps"
46.90 Army reserve operations
118.90 K.C. app/dep control
119.2 R-G AFB ground/circ delivery
123.3 R-G AFB
123.475 Army Golden Knights
124.2 R-G AFB Richover
127.2 R-G AFB ATIS
141.0 A-10/air to air
141.65 USAF Thunderbirds
143.60 Navy Blue Angels
145.25 ??
145.15 Civil air patrol
146.15 "Yellow 3, Yellow 1"
146.45 R-G AFB ground
146.50 Air show command post/narrator
146.55 "Yellow 3, Red"
149.30 Air show command post
149.75 TD-SEP/DVF
150.196 Police, some DES/DVF
150.225 "Golfer 1, Golfer"
150.445 ??
163.4375 Army Corp of Engineers ?? (probably-Rod)
163.5625 ??
104.175 ??

February 1991

MONITORING TIMES
Mil Sat Intercept Report

Mike Ross up Columbia, Tennessee, way has been monitoring some military satellite activity and a few other military frequencies. His list of intercepts was recently forwarded to me, so for those of you who are capable of hearing the milsats in the 240-270 MHz range, these logs are for you.

<table>
<thead>
<tr>
<th>Freq</th>
<th>Mode</th>
<th>Time</th>
<th>Intercept</th>
</tr>
</thead>
<tbody>
<tr>
<td>30.350</td>
<td>NBFM 0654</td>
<td>Echo 3 Sierra with SAC type broadcast!</td>
<td></td>
</tr>
<tr>
<td>261.475</td>
<td>NBFM 0204</td>
<td>2 stations discussing problem with aircraft (SAT)</td>
<td></td>
</tr>
<tr>
<td>261.475</td>
<td>NBFM 0228</td>
<td>Furtwanger/Zeman with message for relay to military dispatch and watch</td>
<td></td>
</tr>
<tr>
<td>261.475</td>
<td>NBFRM 0412</td>
<td>Furtwanger/Tea Pillow Kilo 1 crash site found - cannot confirm survivors</td>
<td></td>
</tr>
<tr>
<td>261.675</td>
<td>NBFM 1445</td>
<td>Dragon and ELC/Military personnel in Egypt with phone patches. (SAT) (I think, Mike is the 10th Airborne)</td>
<td></td>
</tr>
<tr>
<td>261.675</td>
<td>NBFM 0827</td>
<td>Dragon/ELC/KZAA-Military personnel in Egypt with phone patches. (SAT) (I think, Mike is the 10th Airborne)</td>
<td></td>
</tr>
<tr>
<td>261.900</td>
<td>NBFM 1013</td>
<td>2 stations setting up phone patches via ACR 35 similar to ham patches but military. (SAT)</td>
<td></td>
</tr>
<tr>
<td>261.900</td>
<td>NBFM 1316</td>
<td>Barto/Sanford/Avon Park Various operational subjects, locations of stations (SAT)</td>
<td></td>
</tr>
<tr>
<td>135.575</td>
<td>NBFM 0410</td>
<td>Operational chit-chat, mentioned Alaska twice. (ATS satellite frequency-Rod)</td>
<td></td>
</tr>
<tr>
<td>261.600</td>
<td>NBFM 1008</td>
<td>Unknown/LTH calling with unknown message (SAT)</td>
<td></td>
</tr>
<tr>
<td>261.600</td>
<td>NBFM 1615</td>
<td>NCX/LTH &quot;in the plane&quot; one way traffic no response (SAT)</td>
<td></td>
</tr>
<tr>
<td>261.450</td>
<td>NBFRM 0157</td>
<td>Acute/Link-Barely readable (SAT)</td>
<td></td>
</tr>
<tr>
<td>261.600</td>
<td>NBFM 0248</td>
<td>Unknown station female voice (SAT) very interesting</td>
<td></td>
</tr>
</tbody>
</table>

While we will continue to welcome government/military satellite intercepts, be sure to check out next month's Monitoring Times as MT leads the way into the 90's with the industry's first satellite DX column.

Mailbag

"What is a preset frequency?" That question comes from reader Terrance Boot. Terrace, here's your answer. Most military aircraft radios have a total channel storage capacity of around 20 frequencies. That means that the pilot or ground maintenance personnel can program these into the radio's memory, much as you store the frequencies of your favorite FM radio station on the car radio's buttons. In the case of the military, each frequency is assigned a number called a "preset" or "channel." These are not scanned by the pilot but are instead dialed up by manually turning a selector knob on the radio.

Instructions are simpler – "Go to button 15." Instead of trying to dial in 325.150 and having to watch the radio to make sure that frequency gets dialed up correctly, the pilot only has to worry about getting to the correct preset or "button" number.

One of the best ways to get preset information is to listen to the local air show and, if tours are being conducted, jump into the cockpit and check out the frequency card usually next to the radio. At this point it might be wise to check with the tour guide to make sure it is okay to copy down the frequency information. From my many air show experiences, if the cards are sensitive, you will not see them displayed. When you finish copying the list you have a complete set of presets for that squadron and probably 90 percent of the presets for that base.

Once you have a preset list for your area it probably will not change very often. The frequency cards only change when a frequency changes, a special mission is being conducted, or the aircraft is operating outside its normal operating local area.

This list of presets comes from a fellow out in California who also wishes to remain anonymous. It's for Mc Clellan Air Force Base.

<table>
<thead>
<tr>
<th>Preset</th>
<th>Frequency</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>265.4</td>
<td>Mc Clellan ground</td>
</tr>
<tr>
<td>2</td>
<td>369.2</td>
<td>Mc Clellan tower</td>
</tr>
<tr>
<td>3</td>
<td>269.9</td>
<td>Mc Clellan ATIS</td>
</tr>
<tr>
<td>4</td>
<td>256.7</td>
<td>Sacramento Metro</td>
</tr>
<tr>
<td>5</td>
<td>255.9</td>
<td>Travis tower</td>
</tr>
<tr>
<td>6</td>
<td>384.9</td>
<td>Travis ATIS</td>
</tr>
<tr>
<td>7</td>
<td>348.4</td>
<td>Mather tower</td>
</tr>
<tr>
<td>8</td>
<td>270.1</td>
<td>Mather ATIS</td>
</tr>
<tr>
<td>9</td>
<td>275.9</td>
<td>Elelon ground</td>
</tr>
<tr>
<td>10</td>
<td>255.6</td>
<td>Travis tower</td>
</tr>
<tr>
<td>11</td>
<td>289.1</td>
<td>Castle tower</td>
</tr>
<tr>
<td>12</td>
<td>372.2</td>
<td>Pilot to dispatcher</td>
</tr>
<tr>
<td>13</td>
<td>344.6</td>
<td>PGAV/Metro</td>
</tr>
<tr>
<td>14</td>
<td>308.6</td>
<td>Yokota ground</td>
</tr>
<tr>
<td>15</td>
<td>315.8</td>
<td>Yokota tower</td>
</tr>
<tr>
<td>16</td>
<td>281.0</td>
<td>Yokota ATIS</td>
</tr>
<tr>
<td>17</td>
<td>349.4</td>
<td>MAC command post</td>
</tr>
<tr>
<td>18</td>
<td>377.8</td>
<td>Mc Clellan consolidated command post (FORDIS)</td>
</tr>
<tr>
<td>19</td>
<td>276.0</td>
<td>41 RRRW command post (Lark control)</td>
</tr>
<tr>
<td>20</td>
<td>255.4</td>
<td>Flight service station</td>
</tr>
</tbody>
</table>

Orders

9 | 351.2 | Mather AFRES (Baker control) |
| 10 | 311.0 | Mather command post (SAC primary) |
| 11 | 321.0 | Mather command post (SAC secondary) |
| 12 | 266.0 | Mather pilot to dispatcher |

If you've got a copy of the May 1990 MT handy, you may want to look up this column and check out table 1. Randy Rodgers of Austin, Texas, sent us a listing of presets he personally saw in an RF-4 aircraft at Bergstrom Air Force Base.

Well, that does it for this month. Many thanks to all for the input and now it's time for some output; it's Cubo time.
Listening to aero communications can be an exciting experience — provided that you have at least a fundamental grasp of what the controllers and pilots are saying. Yes, there is a good deal of jargon in aero monitoring and we want to help you get the most out of your radio.

We'll examine some of the most commonly used aviation communications expressions and phraseology on the VHF bands in alphabetical order and continue it in the next issue. Then, we'll tackle the HF (shortwave frequencies) counterparts in subsequent issues.

Remember, no matter how much experience you have in regard to monitoring, there's always new words or phrases coming up which can do with some translation. In the following list, we'll give some examples as space permits.

ABEAM: You may hear a pilot tell a controller, "We're abeam Chicago" or some other city. An aircraft is "abeam" a fix, point, or object when that fix, point, or object is approximately 90 degrees to the right or left of the aircraft track. Abeam indicates a general position rather than a precise point.

ACKNOWLEDGE: "Please acknowledge my last transmission." In this instance the controller is asking a pilot to say that he's received the controller's message.

AFFIRMATIVE: Meaning yes as in "That's affirmative."

ALTIMETER SETTING: "What's the altimeter setting for Indianapolis International Airport?" The barometric pressure reading used to adjust a pressure altimeter for variations in existing atmospheric pressure or to the standard altimeter setting — 29.92 (mlb setting).

ARC: The track over the ground of an aircraft flying at a constant distance from a navigational aid by reference to distance measuring equipment or DME.

ARINC: (Aeronautical Radio, Inc.) A company owned by the airlines for which it provides air/ground communications as well as other services. You can hear ARINC's radio operators setting up phone patches between pilots and their company stations, and handling other requests on frequencies between 128.825 and 132.000. They can also be heard on the HF (shortwave frequencies) aero bands.

AUTOMATIC DIRECTION FINDER/ADF: An aircraft radio navigation system which senses and indicates the direction to a low/medium frequency nondirectional radio beacon ground transmitter. This instrument can be used to help orient lost and/or confused pilots by Flight Service Station Specialists giving what's called a "DF Steer."

BEARING: "What's our bearing for Philadelphia?" The horizontal direction to or from any point, usually measured clockwise from true north, magnetic north, or some other reference point through 360 degrees.

CHOP: Ranging from "none" to "light ripples occasionally" to "continuous heavy chop," this expression indicates the bumpyness of the ride.

CLEAR-AIR TURBULENCE: Turbulence encountered in air where no clouds are present. This term is commonly applied to high-level turbulence associated with wind shear. CAT is often encountered in the vicinity of the jet stream.

CLEARED AS FILED: "Delta 45 is cleared as filed to Denver Stapleton Airport." Means the aircraft is cleared to proceed in accordance with the route of flight filed in the flight plan. This clearance does not include altitude, SID or SID Transition.

CLEARED FOR APPROACH/TAKE-OFF: Air Traffic Control (ATC) authorization for an aircraft to execute any standard or special instrument approach procedure for that airport. Normally, an aircraft will be cleared for a specific instrument approach procedure.

CLEARED FOR TAKEOFF: ATC authorization for an aircraft to depart. It is predicated on known traffic and known physical airport conditions.

CLIMB-OUT: "We experienced some light chop on the climb-out." The climb-out is that portion of flight operation between takeoff and the initial cruising altitude.

CODES/TRANSPONDER CODES: The number assigned to a particular multiple pulse reply signal transmitted by a transponder.

COMMON TRAFFIC ADVISORY FREQUENCY (CTAF): A frequency designed for the purpose of carrying out airport advisory practices while operating to or from an uncontrolled airport. The CTAF may be a UNICOM, Multicom, FSS, or tower frequency and is identified in appropriate aeronautical publications.

COMPANY TRAFFIC: If you hear a controller say "You have company traffic at your 12 o'clock position," it means that he's advising a pilot that he and another aircraft in the same vicinity also work for the same company. Also used in other situations — i.e. "Your company reported chop at that altitude." When used by a controller, this means that someone from the same company as the pilot to whom the controller is speaking gave a ride report in which chop figured at a certain altitude.

COMPASS LOCATOR: A low power, low or medium frequency (L/MF) radio beacon installed at the site of the outer or middle marker of an instrument landing system (ILS). It can be used for navigation at distances of approximately 15 miles or as authorized in the approach procedure.

CONFLICT ALERT: A function of certain Air Traffic Control systems designed to alert radar controllers to existing or pending situations recognized by the program parameters that require his immediate attention/action. Controllers have given this function several nicknames. Some of the more printable of these include the "Squeal-a-deal," "Snitch Gear" and "Sally Snitch."

CONTROLLED AIRSPACE: Airspace designated as a control zone, airport radar service area, terminal control area, transition area, control area, continental control area, and positive control area within which some or all aircraft may be subject to air traffic control.
CONTROL SECTOR: An airspace area of defined horizontal and vertical dimensions for which a controller or group of controllers has air traffic control responsibility, normally within an ARTCC or an approach control facility. Sectors are established based on predominant traffic flows, altitude strata, and controller work load.

COORDINATES: Many times you may hear a controller ask a pilot for the coordinates of his destination. This simply means the intersection of lines of reference usually expressed in degrees/minutes/seconds of latitude and longitude, used to determine position or location.

CRUISING ALTITUDE/LEVEL: "Our cruising altitude will be at flight level 31 thousand." This is an altitude or flight level maintained during route level flight.

DEAL: Controller's slang for an aero mishap either on the ground or airborne. Don't ever ask a controller if he watches "Let's Make a Deal."

DEPARTURE TIME: The time an aircraft becomes airborne.

DEPARTURE CONTROL: A function of an approach control facility providing air traffic control for departing IFR and, under certain conditions, VFR aircraft.

DEVIATIONS: A departure from a current clearance, such as an off course maneuver to avoid weather or turbulence.

We'll have more "plane talk" in the April issue. In the meantime, if you hear something that you'd like to have defined before then, just drop me a line at the Brasstown address.

More VOLMETs (Aviation weather on the HF bands)

As promised, here's more VOLMET frequencies. Do you mean to tell me you've logged all of those we ran in December's column?

Keep in mind that 95 percent of these stations use USB — upper sideband — so your HF receiver must have a BFO (beat frequency oscillator) in order to tune these in properly.

Remember, "H" stands for hour and + means how many minutes past the hour the weather forecast is broadcast.

SOUTH AMERICAN REGION: 2881, 5601, 10087, 13279
LIMA: H+10, H+40
BRASILIA: H+15, H+45
BUENOS AIRES: H+25, H+55

MIDDLE EAST REGION: 2956, 5589, 8945

BAGHDAD RADIO: H+00, H+30; Baghdad International, Basrah/Maglal
TEHRAN RADIO: H+05, H+35; Tehran, Abadan
BERUIT RADIO: H+15, H+45; Beirut Intl, Damascus Intl
CAIRO RADIO: H+20, H+50; Cairo, Damascus Intl
BAHRAIN RADIO: H+10, H+40; Bahrain, Dhaihan, Kuwait
BASRAH RADIO: H+30 (ONLY); Basrah/Maglal
ISTANBUL RADIO: H+25, H+55; Istanbul, Yesilkoy

There is talk of a proposed Caribbean VOLMET net, which would be heard on 2950, 5580 and 11315. These would include Port of Spain, H+05, H+35; Merida, H+10, H+40; and Miami, H+25, H+55. However, as of this writing, they have not as yet gone on-line.

You Too Can be a Controller
-- at least on your PC

I've found some aviation computer programs that you may be interested in. "Dulles Tower" is a very sophisticated Air Traffic Control simulation that involves controlling arriving and departing aircraft at Washington D.C.'s Dulles Airport. This program has five levels of interaction and rivals "Tracon" and "Rapcon" — two very popular ATC simulations costing around $50 each — in its authenticity.

Then, there's "Jetset," which puts you in the captain's seat of a 747 and contains about 20 different subprograms for flights between various cities. This is a very close imitation of an airline's 747 flight simulator and it ain't easy to fly those birds, believe me, folks. I had sweat running down my back when I took out the runway lighting and ILS on the major runway in Philadelphia on my first try at the simulation. The program throws a new glitch at you each time you try it, too.

A third program, "Air Traffic," is a very simple ATC program. It can't really compare with "Dulles," but it's a fun way to learn elementary ATC procedures.

All three of these programs are available on shareware. What this means is that if you try them and like them, you send in some bucks (not to me but to the creator of the program). If you don't like them, you are free to go on your way, living life free, easy and without obligation.

Want a copy? You need a PC with at least one disk drive or a disk drive and a hard drive. Send me, a blank 5-1/4 disk in care of the Brasstown address and I'll be happy to send you a free copy of "Dulles Tower," "Jetset," or "Air Traffic."

That's it for now. Next time we'll have more definitions, still more VOLMETs, a visit to American Trans Air (finally) and other goodies.

Until then, 73 and out.

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Ham Handicapped Waivers

The FCC has now instructed volunteer examiners to expand the provisions granted to handicapped licensees attempting the entry level 5 WPM telegraphy examination. These accommodations included pausing the telegraphy test after sentences, phrases, words or even individual letters ...or requiring the applicant to demonstrate proficiency in sending text instead of transcribing.

Late last summer the FCC proposed regulations totally eliminating the 13 and 20 words per minute (WPM) telegraphy examination to amateur operator licensees who were incapable of passing those examinations due to severe handicaps. The proposal has now been unanimously approved into law.

While the initial waivers were based on a specified list of disabilities, the FCC declined to provide a list of handicaps to determine who would be exempt from the higher speed telegraphy requirements. Instead, the judgment of a physician will be relied on to establish that a person is so severely handicapped that he/she cannot pass a telegraphy examination.

The rules adopted require a physician's certification and a release permitting disclosure to the FCC of medical information pertaining to the handicap. The Commission said that the term "physician" would be limited to practitioners with full medical privileges, that is, doctors of osteopathy (D.O.) or doctors of medicine (M.D.)

Senior level licensees are eligible to be accredited as volunteer examiners (VE's) in the Amateur Service. The question came up as to whether handicapped amateurs who had not passed the higher speed telegraphy examinations should be eligible to be VE's. The Commission said that any VE who is not competent to perform the VE functions should not administer examinations.

Ham Radio from Space!

Are you aware that the first satellite system authorized by the FCC was an amateur station? Since then, more than 30 unmanned amateur satellites have been launched. Amateur operators aboard the Space Shuttles and Space Stations routinely communicate with other amateurs around the world. The most recent ham astronaut was Ron Parise, WA4SIR, aboard the shuttle Columbia.

Parise carried a special robot packet repeater into space. Hundreds of amateur "packeteers" using personal computers and ham transceivers made the round trip! They will get a special QSL confirmation from NASA. The Shuttle Amateur Radio Experiment (SAREX) also included Parise making scheduled contacts from space with children in classrooms over amateur radio frequencies.

Incidentally, the Soviets have also put another amateur radio operator in space. Musa Manarov, U2MR, headed for the space station Mir on the same day that Ron Parise headed for the stars in Columbia. Not one to be left behind for long, it is anticipated that the U.S. Space Station "Freedom" will house a permanent ham station when it is constructed during the coming decade!

Ironically, hams stand to lose some spectrum to commercial satellites utilizing the very technology developed by amateurs. Pictured here is the Oscar 11.

One aspiring ham is Wayne Heinen, an officer in the National Radio Club and contributor to the "Bandscan" column. Wayne sent us a snapshot of his monitoring station, which includes a Drake TR-7 he inherited from his late father, W2SIC. He hastens to add, "I'm currently using the Drake as an RX only and am taking a Ham class through the Aurora (CO) Repeater Association. So that I'm not accused of any 'bootlegging'(!), when the rig gets fired up it will be on the proper band with the proper FCC license."
Ham Radio Growth

The FCC has released amateur radio census figures for the 1990 fiscal year (October 1st to September 30). Here are some of the high points from the study: The statistics show that there are 495,470 licensed radio amateurs in the United States. California has the most ham operators, 71,895. Florida is next with 30,755; then Texas 29,261 and New York 28,202.

The FCC issued 55,833 amateur licenses during the last fiscal year, an increase of 12% over 1989. (29,699 were to amateurs upgrading to a higher class, 26,134 to new licensees.) Seventy-five percent of all FCC amateur licensing is at the beginning Novice and Technician class level.

The Technician class is the most popular - and about to get even more so now that the Morse code requirement has been dropped. (See the feature story in this issue.) A mere 15% growth rate could put us at one million hams within five years!

Fred Maia is ham radio's National Volunteer Examiner Coordinator and is publisher of the WSJI Report.

MONITORING TIMES

February 1991
AIRCRAFT TRAFFIC

Carnival 101, N8616E (Boeing 727-200), 11396 kHz. Full data prepared card verified by P. N. Peters, chief pilot. Received in 43 days for an English utility report, a prepared QSL card, and U.S. mint postage. Aircraft address: c/o Carnival Airlines Inc., 1815 Griffin Rd., Suite 205, Dania, Fla. 33004 (Patrick O’Connor, Hinsdale, NH)

BULGARIA

Radio Sofia, 15330 kHz. Full data scenery QSL card, without verification signer. Received in 56 days for an English report. Station address: c/o English Section, 4 Dragan Tsankov Blvd., Sofia, Bulgaria. (Sam Wright, Biloxi, MS)

COSTA RICA

Adventist World Radio/Radio Lira International, 9725 kHz. Full data QSL of Costa Rican Coat of Arms, verified by David L. Gregory, general manager. Received in 49 days for an English report and two U.S. mint postage. Station address: AWR-Latin America, Radiodifusora Adventista, Apartado 1177, 4050 Alajuela, Costa Rica, Central America. (Nicholas P. Adams, Newark, NJ)

CZECHOSLOVAKIA

Radio Prague International, 7345/11680 kHz. Full data scenery card verified, by Karel Staney. Received in 38 days for an English report and one IRC. Station address: 12099 Praha 2, Vinohradska 12, Czechoslovakia. (John Carson, Norman, OK)

EGYPT

Radio Cairo, 9475 kHz. Full data scenery card of Cairo’s skyline along the Nile, verified by Rita. Received in 189 days for an English report and one IRC. Station address: English Service to North America, P.O. Box 1116, (or P.O. Box 556) Cairo, Arab Republic of Egypt. (Tim J. Johnson, Galesburg, IL)

NORTHERN MARIANA ISLANDS

Saipan-KHBI, 15275 kHz. Full data antenna card, verified by Tiekher. Received in 27 days for an English report sent to Boston address: Station address: World Service/Herald, P.O. Box 860, Boston, Mass. 02123. (Nicholas P. Adams, Newark, NJ)

SHIP TRAFFIC

Godfrey-WYT-9130 (tugboat) 8294 kHz. Full data prepared card verified by L.A. Trague. Received in 13 days for an English utility report, a prepared QSL card, and U.S. mint postage. Ship address: c/o Jackson Marine Corp., P.O. Box 4240, Houston, Texas 77210 (Patrick O’Connor, Hinsdale, NH)

Radiocentro-Costa Rica, 11126 kHz. Full data prepared card verified by Julio Elizao. Received in 13 days for an English utility report, a prepared QSL card, and U.S. mint postage. Ship address: Royal Caribbean Cruise Line, 903 South America Way, Miami, Fl. 33132 (Patrick O’Connor, Hinsdale, NH)

Pacific Wave-HO-17325 (tug supply) 164631 kHz. Full data prepared card, and ship info sheet verified by Captain Ashley. Received in 560 days for an English utility report, a prepared QSL card, and one IRC. Ship address: Pacific Wave Offshore, 7th Floor, Wire House, 9 Connaught, Road Central, G.P.O. Box 1, Hong Kong. (Patrick O’Connor, Hinsdale, NH)

USCG Barque Eagle, NRCB, 6472 US (6473.9 RTTY). Full ship/coast guard logo postcard, verified by KMI Kolleen Schmit. Received in 45 days for an RTTY utility report. Ship address: c/o Commanding Officer, USCG Barque Eagle (WX-327), FPO New York, NY 09568-3906, or c/o USCG Academy, New London, CT. 06320-4195 (Sam Ricks, Philadelphia, PA)

USNS Tanner, NTNR, 156.65 MHz. Full data prepared card verified. Received in 135 days for an English utility report, a prepared QSL card, and U.S. mint postage. Ship address: c/o Oceanographic Unit Two, FPO, New York, NY 09051-7102 (Hank Holbrook, Dunkirk, MD)

M/V Nanticoke-VCG, 156.65 MHz. (bulk carrier) Full data prepared card verified, and Canadian passport. Received in 47 days for the English utility report and 45 cent mint postage. Ship address: c/o C.S.L. Group Inc., 759 Victoria Square, P.O. Box 100, Montreal, Quebec, H2Y 2K3, Canada. (Hank Holbrook, Dunkirk, MD)

Yamashiro Maru JRTT, 156.65 MHz. Full data prepared card verified. Received in 75 days for an English utility report, a prepared QSL and return postage. Ship address: Yamashita-Shinnihou Steamer Co. Ltd., Palace Side 1-1, 1-chome, Hittoubashiri, Chiwoda-ku, Tokyo 100, Japan. (Hank Holbrook, Dunkirk, MD)

SOUTH KOREA

Radio Korea, 9750 kHz. Full data card of Grandfather in Traditional dress and hat, without verification signer. Received in 42 days for an English report and two IRCs. Station address: 46, Yo-uu-do-dong, Yongdung'o-gu, Seoul 150, Korea. (John S. Carson, Norman, OK)

SPAIN

Radio Exterior De Espana, 9630 kHz. Full data QSL card, with illegible signature. Received in 38 days for an English report. Station address: Apartado 156-202, 28080 Madrid, Spain. (Nicholas P. Adams, Newark, NJ)

SWITZERLAND

Swiss Radio International, 9650 kHz. Full data Swiss scenery card, without verification signer. Received in 25 days for an English report. Station address: Swiss Broadcasting Corp., CH-3000, Berne 15, Switzerland (Frank Hillton, Charleston, SC)

SYRIA

Radio Damascus, 12085 kHz. Full data map/logo card, sent via registered mail, with illegible signer. Received in 20 months for an English report. Station address: Syrian Broadcasting and Television Organization, Ommayad Square, Damascus. (Tim J. Johnson, Galesburg, IL)

TURKEY

The Voice of Turkey, 9445 kHz. Full data scenery QSL card, without verification signer. Received in 17 days for an English report. Station address: Turkish Radio-TV Corp., PK 333-06-443, Yenisehir, Ankara, Turkey (Nicholas P. Adams, Newark, NJ)

UNITED STATES

United States Coast Guard Group, NMF-2, 156.8 MHz. Full data prepared card verified. Received in 12 days for an English utility report, a prepared QSL card, and U.S. mint postage. Station address: c/o U.S. Coast Guard Group, Woods Hole, Mass. 02543-1099, (Hank Holbrook, Dunkirk, MD) Kudos to Hank. This station was his most distant VH-F Coast Guard station QSLed -- at 360 air miles.-ed. WHK-Cleveland, Ohio 1402 AM. Partial data personal letter, verified by Tammy L. Briggs, program assistant. Received in 110 days for an English AM report and a self-addressed stamped envelope. Station address: Station Office Tower, 1127 Euclid Avenue, Cleveland, Ohio 44115 (Russ Hill, Oak Park, MI)

WKNR-Broadview Heights, Ohio 1220 AM. Partial data personal letter, verified by David M. Marcus, technical operations manager. Received in 50 days for an English report and a self-addressed stamped envelope. Station address: 9446 Broadview Road, Broadview Heights, Ohio 44146. (Russ Hill, Oak Park, IL)

VENEZUELA

VVTO, Caracas, Standard Time Frequency Station, 5000 kHz. Full data “Observatory Drawing” card verified by Jesus A. Escalona, and letter from Fernando Aranda Grim. Received in 53 days for a Spanish report and one IRC. Station address: Observatorio Naval Cagual, APT. 6745, Marina 69-KHN, Caracas, Venezuela. (Patrick O’Connor, Hinsdale, NH)

YUGOSLAVIA

Radio Yugoslavia, 15105 kHz. Full data QSL card, without verification signer. Received in 50 days for an English report and one IRC. Station address: P.O. Box 250, Hiderdarska 2, 11000 Beograd, Yugoslavia. (Nicholas P. Adams, Newark, NJ)
The U.S. Information Agency

The mystery has been solved. Last month I reported an RTTY transmission in Arabic on 10.235 USB and 10.236 USB using 75/75R. Both frequencies appeared to be used for a frequency diversity system. A few days later I copied the same signal and recognized it as the USIA (United States Information Agency).

The USIA has been around for a long time. As a matter of fact, they run the VOA (Voice of America). Some of the transmitters are located in Greenville, N.C. They usually transmit news but in the mornings they communicate with overseas VOA relay sites on other frequencies.

By the way, if you tune your ICOM R71 just right, you can switch from upper to lower sideband (switching between

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<tr>
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This circuit can be duplicated using solid-state devices

10.2321 USB and 10.2351 LSB and copy both RTTY frequencies provided you switch your M7000 from REV to NORM.

Table One provides a list of frequencies that were used by the USIA and VOA in the past.

The Great RTTY Contest

I like to save old QSTs that have articles on RTTY. I came across one at the last hamfest in my area. It has an article about "RTTY Reception for Beginners" and the magazine is dated March 1965. The article talks about and shows how to build a one-tube RTTY decoder.

You remember what tubes are, don't you? Those glass things that light up and you get burnt when you try to unplug them. You can also get electrocuted if you touch the wrong thing.

The article goes on about how you can tune to one of the signals (preferably the mark pulse) in order to copy RTTY. The decoder was actually a diode which rectified and an amplifier which amplified the audio mark tone.

The receiver was zero beat to the space tone which resulted in no signal while it was present; thus nothing was amplified by the tube. The mark, however, produced a tone that was rectified by the diode and amplified by the tube. The tube provided the loop current that was needed to drive the TTY machine. The decoder was actually an OOK or "On Off Keyed" decoder which was used in the early years of RTTY.

After reading the article, I thought, "Gee, these days you can build that circuit using solid-state devices like Op amps. Most parts would be available from Radio Shack."

I would like to propose the following:

1. If you like to tinker with electronics, try to redesign the circuit shown above using solid devices or ICs. It should interface to a computer instead of a TTY machine. I built one and it does work even at 170 Hz shift (but not as good as the M7000).

2. It must be kept simple so that beginners can build one. It should interface to an IBM or clone, or a Commodore 64 computer. You should use public domain software so that it can be shared with others.

If you submit the schematic and a brief explanation how it works to the RTTY column, c/o Monitoring Times, it will be judged by the simplicity and functionality (how well it works). The winner will receive a prize valued at $20.

I figured this would be a great way to spend the few winter months ahead and your entry may benefit a beginner to the exciting world of RTTY. Entries must be in by May 1. The winner will be announced in the July issue.

NNN
Weather Satellite Handbook

Monitoring weather satellites is a hobby in its own orbit. These old birds are the original workhorses of satellite era, first seeing service in early 1960 with the TIROS series. During the ensuing 30 years, the electronics revolution has allowed not only more sophisticated weather data gathering systems but enabled individuals to participate in their reception.

Just as the past 10 years has seen the collapse of TVRO earth station prices from tens of thousands of dollars per installation to one-tenth the cost, so too have we seen the price of weather facsimile (WEFAX) equipment fall to within reasonable levels.

Where the birds are

In TVRO, all our domestic C and Ku band satellites are located in geosynchronous orbit and require only one installation to receive both. Weather satellite reception isn’t quite that simple. To start with, there are two types of weather satellites: the geosynchronous or stationary satellites and the near-orbit or polar orbiting satellites. Each requires the use of a different antenna.

While geosynchronous birds can be found with ease, polar orbiters will require more skill in tracking. Luckily, available software allows one to toggle from a polar orbit VHF antenna to the fixed 1.6 GHz dish with the touch of a keyboard. And using widely available orbiting data known as Keplerian element sets, even the polar orbiters are easier to track.

Receiving pictures

Virtually all the physical parameters and limitations which concern setting up a TVRO system apply as well to setting up WEFAX satellite receiving systems. For example, you’ll need a clear shot at the satellite you wish to receive. Things that get in between your dish and the satellite -- tall buildings, trees, and so forth -- will prevent you from “seeing” these birds.

A dish with a minimum four foot diameter is required for the same reason. It is necessary to get the best possible carrier to noise ratio (C/N) for best results. The feedhorn/down-converter must be set to the correct focal length for best illumination of the reflector.

As for receivers, there are many options. The temptation is to make your existing monitoring gear serve double duty as S band WEFAX satellite receivers. The MX5000, R7000, or PRO 2004, '5 and '6, among many others, cover the frequency range, but, while they are all excellent radios in the service for which they were designed, they won’t necessarily be excellent WEFAX receivers or even decent WEFAX receivers.

Still, an experimenter can have some fun trying to make various shortwave receivers, scanners and the like work in this specialized installation.

First, you should know that while GOES WEFAX is downlinked on 1691 MHz, the signal is usually downconverted at the feed to 137.50 MHz. It would seem that any radio tuning 137.50 MHz would work for picking up WEFAX, but there are considerations. Chief among these is proper bandwidth. This is why commercially made satellite receivers designed to do the job properly are recommended.

Enter Weather Satellite Handbook

It doesn’t take much investigating to realize that monitoring WEFAX requires some serious research. Luckily for all of us, the last word on the subject of weather satellites has been penned by Dr. Ralph E. Taggart, WBDOT, in the fourth edition of his book The Weather Satellite Handbook.

Dr. Taggart, whose PhD is in paleobotany, has been updating the handbook since 1976. This latest edition covers every facet of the hobby, from a description of the satellites to operating the complete station. In between is a gold mine of information gleaned from years of involvement. You’ll find complete plans for building an omnidirectional VHF antenna for 1.6 GHz; details on all manner of receivers, video formats, satellite tracking, and building and operating a scan converter to interface between your receiver and computer for video display of WEFAX and polar orbit images.

But wait, there’s more

The Weather Satellite Handbook explains satellite tracking, including a simple computer tracking program to calculate “pass windows.” The handbook is full of excellent photos and clear line drawings to support the informative text. Here you’ll find information on WEFAX computer bulletin boards and a satellite amateur user group publication.

The final 17 pages of the book are full advertisements. While ordinarily one would regard advertisements in a book as a bit much (unless the book is free), in this case they are actually an asset. These feature pictures, descriptions and diagrams of various hardware, software and related products pertinent to weather satellite reception. It provides, in essence, a nifty market place for the WEFAX hobbyist.

The Weather Satellite Handbook is the place from which anyone interested in this adjunct of the monitoring hobby should start. It is the companion to any who have a need to understand every facet of WEFAX technology. If you were not interested in weather satellite reception before, this book will make you wonder why you waited so long. The Weather Satellite Handbook is published by the American Radio Relay League and is available from your favorite ham radio bookstore.

Other valuable sources

An excellent source of information and equipment for weather satellite reception is GTI Electronics. (See their ad in this issue.) George T. Isleib, the GTI of the business, is a breathing encyclopedia on the subject. He’s always happy to answer your specific questions on every aspect of weather and related satellites. Write or call GTI:

GTI Electronics, 1541 Fritz Valley Road, Lehighton, Pa. 18235. Phone 717-386-4032 or FAX 717-386-5063.

Here are other sources of products on WEFAX reception:

Atlantic Surplus Sales, 3730 Nautilus Avenue, Brooklyn, N.Y. 11224; 717-372-0349

Quorum Communications, Inc., 1020 S. Main Street Suite A, Grapevine, Texas 76051; 817-488-04861, FAX 817-481-8983

Wilmanco, 5350 Kazuko Ct., Moor Park, Calif. 93021; 805-523-2390, FAX 805-523-0065

Marta Systems, 15500 W. Telegraph Rd. A4, Santa Paula, Calif. 93060; 805-933-1270, FAX 805-933-1792; Satellite Services: 805-525-GOES
MAILBAG

Monitoring the Armed Forces network

Peter Hanzal of Largo, Fla. enclosed a catalog from a mailorder microwave antenna company with a question about the feasibility of using the system for 1537-1542 MHz AFRTS reception.

It's a good question, Peter. I wrote for the same catalog with similar questions in mind. To get an idea of the type units to which I am referring look in the classified ads of the mass-market electronics magazines.

Unfortunately, these "dishes" are designed for use in the 1900-2700 MHz range which would exclude its use for INMARSAT use. In addition, the 20 inch dish, while useful for purposes for which it was designed, will not be adequate for satellite reception. Point-to-point distribution services, the so-called wireless cable service (2150-2160 MHz) or TV relay service (1990-2110 MHz) can be readily received on these systems.

To expect reception from space is asking too much. The real question is "Where can I find equipment for AFRTS on INMARSAT?" The answer is that the equipment is not commercially available. It should be possible to homebrew your own system. Information can be found in the above-mentioned Weather Satellite Handbook, the Satellite Experimenters Handbook and the ARRL Handbook, both available from your favorite ham radio bookstore. The ARRL Antenna Handbook also has quite a bit of good material on the subject of amateur satellites.

Satellite delivered radio nets

Joseph Johnson of Savannah, Georgia, wants to know about Business Radio Network (BRN) and Financial Business Network (FBN). He would also like a list of satellite delivered radio networks.

Joseph, I looked through the latest edition of Westat Communications Satellite Channel Chart and could not find either of the two radio networks you asked about. However, I've monitored the Business Radio Network on W4J3 SCPC/FM where it resides full time.

As far as lists go, any satellite TV guide will have a list of all FM audio subcarriers on satellite but none of them have a list of SCPC services. The big reason for this is that there are no standard receivers to which frequency lists would correspond. Secondly, these services do hop about with regularity and lists would quickly go out of date.

What's NAVSTAR?

Rob Cave of Princeton, Texas, would like some information on NAVSTAR.

NAVSTAR is the name given a series of global positioning satellites. These satellites carry extremely accurate atomic clocks. The combination of many of these satellites, each transmitting their own precise location (latitude, longitude and altitude) and the exact time to any point on the ground can give the receiving station a "fix" on its exact global position. These signals are transmitted at 1575.42 MHz.

An excellent description of the NAVSTAR program is found in Communications Satellites, by Monitoring Times' Ute World editor, Larry Van Horn. The book is published by Grove Enterprises.

TRANSPONDER NOTES

After nearly ten years of service, Westar 4 is fading quickly. So quickly, in fact, all PBS services have been forced to move to Spacenet 1, not exactly a new bird itself. Nonetheless, all the residents at W4 have sought shelter. That includes NPR and the rest of the SCPC services. Big question is where will BBC "Six O'clock News" show up?

WEATHER SATELLITE HEADQUARTERS

Would you like to View The Earth from an orbiting Wx satellite, Track Hurricanes, Storm Fronts, Cloud Cover, and wonder where to obtain this sophisticated equipment without searching the entire country? LOOK NO FURTHER! GTI Electronics has been working with satellite imagery for over 15 years and can save you Time, Money, Aggravation, etc. and it's a ONE STOP SHOP.

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Dept. MT
1541 Fritz Valley Rd.
Lehighton, Pa. 18235

Tel. 717-386-4032
Fax 717-386-5063
VISA — MASTERCARD

International Cablecasting Technologies, Inc. (ICT) has disappeared from F4, 19 after being absorbed by Jones Intercable to form SuperRadio. ICT still exists, however, to launch its Digital Express with its special digital tuners made by Scientific-Atlanta in full production by March.

The recession is said to be slowing industry growth. Projects which looked like they were certain have been put on hold. Among these are digital audio services, large scale HDTV experiments and new program services.

A second Ku DBS service debuts this month. Utilizing the brand new SBS 6 (99 degrees W) SkyPix occupies all odd transponders from 1-19. SkyPix joins PrimeStar GE K1 (85 W) and TVN on T303 in a bid for the uncertain DBS market. It's a rough time to be starting any new business venture and it will be interesting to see which, if any, are still around at the end of the year.

Those who have TVRO systems are familiar with Green Sheet (S1,21) which airs Thursday evenings 9-12 p.m. ET. Those who aren't should know that they are a source for used TVRO gear at reasonable prices. Equipment changes constantly but a call should bring information on what's available currently. Phone 201-707-1800 during business hours.

This is the same transponder on which Satellite Market USA has a live billboard advertising TVRO gear and programming. Their office hours are 8:30-4:30 p.m. ET. Phone 201-996-4000.

Another TVRO direct sales channel is USA Direct (T302,17). They also offer a wide variety of TVRO and related electronic gear. Call them at 800-822-1179.

And finally, the oldest still running home shopping channel directed at home dishes, beside the Sky Store, is Shop At Home (F4,15). Call them at 800-366-4010.

MONITORING TIMES

February 1991

51
WSBS’ Secret of Success

WSBS loves broadcasting in the Berkshire Mountains of Massachusetts and people love to listen. Drop by any home near Great Barrington in the morning. You’ll smell coffee brewing, see a beautiful sunrise, and probably hear WSBS on the radio.

Public service is the secret of WSBS, but it requires an occasional call to duty. Program Manager Bob Collins remembers a recent episode: “I got home, and I had just put the kids to bed. I started talking to my wife and I get a call from an announcer at the station. He tells me that the police just called and said they needed our mobile unit in a hurry. I said ‘Why?’ and he replies ‘They didn’t say. Just be there.’

“Well, I check the scanner and it’s going nuts. I discovered that it was a mock disaster drill. I started thinking ‘There’s a lot of communities that wouldn’t include the local radio station. They consider us part of their public safety network.’ I felt a lot better about it then.”

There is no limit to what WSBS will do for its audience, or how their listeners will support the station. “We did a radiothon for The Jimmy Fund (a charity for children). We asked people to drop by, have a free hot dog, and drop a couple bucks in. We were shooting for $1200. We raised over $21,000. It was unbelievable.”

Last year, WSBS morning host Nick Diller camped out on the roof of Aldos Market for 36 hours to raise money for the homeless. When the local fire department finally lifted him down, $11,350 had been collected. These events help everyone. Charities love the contributions, and WSBS continues to create a positive image with their audience.

Small local radio stations can be very successful, but it takes endless dedication and commitment to your listeners, and good management of your resources. Learning these skills has become a necessity during difficult economic conditions in the 1990s, and Collins has become an expert. “You can’t be a part of the community only while you’re at the radio station. If you’re really involved in the organizations and the meetings and taking the lead in community fund raising, then you can’t help but know what your listeners want and need because you are the community. You become a mirror of who they are.”

Looking for new advertising dollars, Collins said, “In the last year, as the economy started to sour, the banks went completely out of the picture. The auto dealers are suffering. Most of Berkshire County has been in a recession for at least a year. General Electric closed their big plants in nearby Pittsfield, and they were our largest employer.”

Collins had to aim his sales staff in new directions. “The area is now more tourism and service oriented, so now we advertise a lot of small shops.” WSBS has cut expenses but, says Collins proudly, “we haven’t cut people.”

One technique in securing advertisers and their success is to promote them en masse. Public service announcements are regularly aired on WSBS asking listeners to save time on trips to nearby cities by shopping locally. “Why be stuck in traffic on Route 7 when you don’t have to?” one announcer asks. The mutual support keeps the local economy healthy.

New technology has played its part, too. “We’ve increased our productivity a bit by going to a computer. The newsman used to spend 10 or 15 minutes going through wire service news feeds and then threw out 90 percent of the paper. Paper now costs thirty dollars a box. Every penny counts when you’re running a small business.”

WSBS doesn’t just sit back and soak in its success. Bob Collins keeps one eye toward the future as well. Collins cites the example of McDonald’s. “McDonald’s sells Happy Meals,” he points out. “And they don’t make a cent on it but they get people at a very young age to come to McDonald’s. You can do the same thing with a local radio station. We do a lot of high school football games, for example, and whenever the snow falls everyone listens to their AM radio. That’s good programming, but it’s also an investment in 10, 15 or 20 years from now.”

News is a very important part of their broadcast day. At noon, the WSBS Midday Extra hits the air with newsmen Tom J. at the controls. It is a very ambitious compilation of world, national and local news and sports, with extensive coverage of meetings and work sessions in the towns and villages throughout the county. Each area reports its news, presented by a local reporter or resident. The broadcast is extremely comprehensive and thorough. It’s no wonder that WSBS was Massachusetts Small Station of the Year in 1989. Many high school sports events and Boston Red Sox baseball games make regular appearances on the station, too.

Radio stations who rely solely on satellite delivered programming should stay away from Bob. “Those people are unfit to hold a radio license. I wouldn’t deal with them at all, and I believe that the communities won’t deal with them at all in the long run. It’s a juke box, not a local radio station. That person is saying that he can’t make money doing local radio. That’s just bad management.”

Musically, the station is pleasantly eclectic. “The music obviously has to have some mass appeal to it because we are the community radio station. On the other hand, there’s a lot of really good music out there that can be classified as commercial that never makes the charts. The best example we have on the air right now is the new George Benson CD with the Count Basie Orchestra. It’s just a great CD, and none are playing it except jazz stations. Another one is the new Paul Simon CD which a lot of adult-contemporary programmers are shying away from because it has ethnicity in it. We include that.”

“People always ask me what the format is and they’re really asking what is the classification of the music you play. You have to get out of this formatics habit.” Bob Collins’ ideas must be working since his station is “in the black” when others all around him are falling.

Look for WSBS on 860 kHz, from 5:30 a.m. to midnight, using three different transmitters. During the day, a state-of-the-art Harris SX-2.5A, producing 2700 watts, sends its signal up to 100 miles away. An old Gates BC 250 GY is used to decrease power to 250 watts during critical hours.

Toronto’s CJBC, a 50,000 watt French language variety station, also operates on 860 kHz and their signal must be protected at night. Therefore, WSBS is required to lower their power during evenings and early mornings to a mighty 3.9 watts that works surprisingly well. An Orban Optimod-AM equalizing limiter keeps their sound full and bright.

WSBS is part of a four-station group: the Berkshire Broadcasting Company that also
Be an American BandScan Reporter.

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

George A. Freeman makes this aggressive proposal: "If you would like to own a 50 kilowatt FM station serving the two top markets in Michigan's beautiful upper peninsula, show me in writing that you can provide $200,000 in cash and I'll show you how to get the job done." Write to 102 East Main Street, Madison, Wisconsin 47250 to take advantage of George's offer.

Cuisine music fans take notice. Why not buy a Class A FM station, with a construction permit to increase power to 50,000 watts? It's located between Jackson and Nashville, Tennessee, right near the Loretta Lynn Dude Ranch. The current owner has to sell quickly due to health reasons. Price is $200,000, and terms are available to experienced broadcasters with good credit and bank references. Write to: B. Coleman Jan., WIST Radio, P.O. Box 460, Lobelville, TN 37097.

International Bandscan

In Egypt, mediumwave services have been expanded and reorganized. The Voice of the Arabs is now broadcasting 24 hours a day on 621 kHz, and can also be found on 1008 and 1107 kHz as alternate frequencies during evening hours. Egypt's General Program uses 819 kHz continually, and The Middle East Program calls 774 kHz from its home on 0400-0630 and 1100-2400 UTC. Also look for Nile Valley Radio on 1107 kHz, which shares its frequency with the Palestine Radio Service.

Radio Tirana, Albania, is now offering half-hour broadcasts in English at 1830 and 2230 UTC on 1395 kHz. From Iraq, The Voice of Peace from Baghdad is sharing 1134 kHz with the Voice of Arab Awakening, using former Radio Kuwait transmitters. In Lebanon, a new pro-Lebanese Forces station, The Radio Voice of the Orient, is testing on 910 kHz.

One of the strongest signals in East Africa is RFI Mayotte on 1458 kHz now that its power has been increased from 4 to 100 kilowatts. Excellent reception has been reported in Nairobi at night, and even during the day along the Atlantic Coast.

Radio Antilles, in Monserrat, left the air after Hurricane Hugo destroyed their facilities last year. A new 20 kilowatt transmitter has put the station back on the air on 930 kHz, and they have resumed relaying programs from the BBC and Deutsche Welle. Many Europeans are familiar with the BBC's powerful World Service outlet on 648 kHz, broadcasting in English French and German. BBC 640 has recently adopted a new name: BBC for Europe.


Bits 'n' Pieces

Sometimes your dreams can really come true. Ask Chris McCarron, the new owner of WSTT-AM in Thomasville, Georgia. She sent in a postcard and walked away with a 5,000 watt radio station as the winner of MTV's Radio Station Giveaway. "It's not a contest, it's a conquest. You could rule the world with watts and power of your hands," declared the popular music video service. Chris was offered $100,000 as a substitute prize, but she wanted to go on the air. Along with the station, McCarron won the services of punk rocker Billy Idol for a day as her first celebrity guest DJ. This could be really wild listening, especially if WSTT retains its current country and western format.

Looking for a job in broadcasting? All you have to do is call 900-234-INFO (4636) extension 88. A new service, called Jobphone, provides a daily nationwide listing of employment opportunities in TV, radio, advertising, and cable TV. It's two dollars a minute to listen, so don't forget your pencil.

If you need an excellent guide to every FM radio station and translator in North America, check out the latest edition of the FM Atlas by Bruce Elving. A new edition just out contains 92 pages of maps to pinpoint station locations, and another 100 pages of listings by frequency and location. It's a must for any FM listener. Just send $10.95 plus 90 cents postage for USPS book rate or $2.23 for UPS to: DX Radio Supply, P.O. Box 360, Wagontown, Pa. 19576.

New Station Grants

Just when you thought that they couldn't squeeze another station onto the dials, more appear. Here's the latest additions, courtesy of the M Street Journal: Eufaula, AL 97.9; Big Bear City, CA 93.3; Essex, CA 98.9; Ledyard, CT 106.5; Panama City, FL 89.9; Rockford, IL 95.7; Fort Wayne, IN 92.3; LaGrange, IN 105.5; Ligonier, IN 102.7; Herington, KS 96.3; Poplar Bluff, MO 103.5; Lisbon, NH 96.7; Bay Shore, NY 103.1; Erie, PA 94.7; Slippery Rock, PA 88.1; Socastee, SC 99.5; Memphis, TN 89.3; Corpus Christi, TX 94.7; Hartford, VT 104.3; Bedford, VA 106.9; Barrackville, WV 93.1; and Spencer, WV 104.7.

For Sale

If you are looking for your first radio station with very reasonable terms, this might be the one. KAVI AM and FM in Rocky Ford, Colorado, is being offered for $165,000. A power upgrade is currently available for the FM operation. Financing is available through the absentee owner who is very anxious to sell, and no down payment is necessary. Contact Kim Love at 307-672-7421 or 307-674-7878 evenings.
The Baghdad Benny Blues

Transmissions from the Middle East seem to undergo almost daily changes. The situation is that unstable. Things that are on the air one day are sometimes off the air on the next day. Such is the case of Baghdad Benny. He could be off the air. Or he could still be open for business.

These propaganda transmissions aimed at American and allied forces in Saudi Arabia are among those that monitors most want to hear. They have even attracted the attention of the general media. Unfortunately, they are among the most elusive. The choice of frequency and schedule are not the best for those of us in North America. Also, listeners must prepare to do battle with an extremely nasty and effective bubble jammer. You might hear a bunch of other miscellaneous interference as well. But don’t give up. If you are persistent, and your ears can handle the challenge of those who want to cancel out Benny, he just might make it to your location one day.

Recently Benny made it here on 11869 kHz from about 2240 UTC to sign-off at 2255. His sidekick, Baghdad Betty, was also with him. If you have heard any of Iraq’s regular English programs, you will recognize both announcers. These special propaganda transmissions identify with the words, “You are listening to the Voice of Peace from Baghdad.”

Meanwhile, although Benny goes on, it appears Iraq is at least losing the radio war. There seem to be far fewer Iraqi transmissions around recently in either English or Arabic. I am still monitoring their English broadcast on 11830 kHz in the clear during the evening hours. Try after 0200 UTC and you should not have much difficulty.

Egypt has been noted with a strong signal in Arabic on 12050 at various times throughout the day. Iraq used to try to interfere with this. Are the sanctions forcing them to cut back? Syria, another Iraqi opponent, comes in nicely on 12085.

Meanwhile back at the VOA

We have reported previously on those Voice of America “mystery transmissions” which have popped up on both 8000 and 8030 kHz between 0300 and 0400 UTC. A VOA identification is given at the beginning and end, but the remainder of the broadcast is nonstop, normally instrumental, music. Now this is also showing up 7970 and 8060 kHz as well.

Florida’s Terry Krueger suspects a couple of these frequencies may actually be spurs. In any case one cannot help but wonder what the VOA’s intention is. Why do they want to keep these frequencies open? Could there be some connection with Middle Eastern events?

More on Caroline

Last month we reported that the legendary Radio Caroline had returned to the air, having moved to 819 kHz and now anchored off the coast of Belgium. Hopefully our European readers have all heard her again by now.

Well, now we have some good news for the rest of us. Caroline is also back on shortwave. Our Dutch contributor, Ary Boender, says it has been heard testing on 6203 kHz around 0000 and 0900 UTC. IDs are given either as “The Voice of Love” or Radio Caroline.

Now here is more news. We have heard a rumor that Caroline just might be planning a relay via WWCR. As we said, at this time it is just a rumor, but with WWCR now relaying both RNI and RFNY, this certainly would appear to be a possibility.

We do get a fair amount of mail from readers who chase the Europirates and need more information. Ary Boender has three lists available, which could be of considerable help. They are regularly updated. He can provide a list of Europirates by frequency, which also indicates time most likely to be heard and probable country of origin. A second list gives addresses, and the third is a list of all offshore, usually ship-based, Europirates that have ever been active, along with the dates of their activity. Each list is $3, which covers his postage and other actual expenses. The address is Ary Boender, Lobeliastraat 33B, 3202 HR Spijkenisse, The Netherlands.

We have also heard from Martin Lester in England who gives us some additional insight on how things look on the other side of the Atlantic. He has had considerable success logging a number of pirates on shortwave. Among his recent catches are the 18th anniversary program of England’s Radio Gemini on 6220, Ireland’s Jolly Roger Radio on 6305, and Wonderful Free Radio London on 6315. Martin also monitored Radio Stella from Scotland on 6320. This one is sometimes heard in North America, and is worth trying to log.

Coming across the channel from the European mainland were the French Radio Waves International on 7441, Italy’s Voice of Europe on 7520 (North Americans can sometimes find this on 7538), and the Dutch Radio Brigitte on 7490. UTC Sunday mornings are the best time to seek out the Europirates regardless of which side of the Atlantic is your home. Martin also logged eight FM pirates, mostly in the Birmingham area, which has long been an English hotbed of unlicensed radio activity.

The Domestic Scene

Monitoring Times readers continue to have much success logging a variety of stations. We start out by applauding Tom Roche of Georgia for coming across one that is not heard too often. Tom found the Voice of the Purple Pumpkin on 15049.5 at 2242. Earlier at 2215 he had Radio USA on just about the same frequency, 15049.7. At 2230 in the same spot Radio Samurai, The Voice of Oriental America, signed on.

Up in Michigan Harold Frodge bagged the Voice of Oz in upper sideband (USB) on 7410 at 0239. One Voice Radio showed up at 0940 on 7413.

Harold also found a Colombian clandestine switching frequencies between 6275 and 6295 at 0112. Most likely this is not Radio Patria Libre, which has been around for awhile, but a relatively new station. According to clandestine expert George Zeller, it sometimes identifies as “Del Pueblo Responde” (the people respond) and is intended to jam Patria Libre. On one occasion I heard it doing battle with a music jammer.

From Virginia Pat Murphy writes to report his latest in what is now a long list of pirate catches. Pat had the Canadian pirate CFBN at 0214 on 7415. On the same frequency he heard an ID for WHO (also logged by this writer) at 0119, while Radio Free Frank, Samurai Radio, and the Voice of Oz were in a QSO around 0200.

Another Virginian, Wil Gregson, reports he bagged his first pirate. It was The Free Radio Project, on 7415 with 25 watts at 0035. What made Wil’s catch so unusual was that this was a pirate that operates in Morse code.

Maryland’s Ron Bruckman got KUSA Radio Wisconsin on 7415 with a rather hefty 500 watts at 0600 UTC. KUSA uses both USB and LSB (lower sideband) and may be able to turn out as many as 1,500 watts. It announced a test to Europe with that power on 26000 kHz.

Minnesota’s Alan Masyska continues to do quite well for himself. He had the Voice of Bob on 7410 at 0650. Radio USA is a regular at Alan’s location. It turned up again at 2200 on 15050 kHz. An unusual log was KUB4 on 14313 USB at 2045 with New Wave music. Alan also added QSLs from WORK and Action Radio to his collection.
Bill Battles of New Hampshire received this QSL for a British Forces Broadcasting Service transmission to troops in the Middle East.

Here and There

Some very special listening should be in store for readers tuning in to Radio New York International on 7520, says Karl Zuk. On February 3, from 0200 to 0600 UTC, RNI will be hosting a special call-in show. The topic is pirate radio, and the invitation is out to all pirate broadcasters to call in to their comments (800-73-69-RNI, we assume?) Should be interesting to see who checks in!

Thanks to information received from Andy Robbins, we know one station we will not hear is an FM pirate which had been broadcasting from Kalamazoo, Michigan, restaurant on 103.7 MHz. The operator, who was busted by the FCC, is not likely to get off with just a fine. He put his station on the air with $23,000 worth of equipment allegedly stolen from WEVS in Saugatuck, Michigan. Andy reports that KMUD (7435 kHz) in San Rafael, California, has also been closed.

ACE has several pirate and clandestine awards for which you might want to qualify. Certificates suitable for framing are awarded. For further information, I would suggest you send a stamped, addressed envelope to ACE Awards, R.I., Box 15A, Poughkeepsie, N.Y. 12603.

There has been much speculation in DX circles that El Salvador's clandestine Radio Venceremos had disappeared. Some had suspected that it might have actually been located in Nicaragua and had to cease broadcasting after the Sandinistas lost last spring's election and control of the government. However, reliable outside journalists have been on the past made trips to Venceremos broadcasting sites and claimed these were indeed in rebel-controlled areas of El Salvador.

Recently both the BBC Monitoring Service and the CIA's Foreign Broadcast Information Service have both made references to Venceremos, including statements by the station it is being jammed. Apparently Venceremos is still with us, but there is always the possibility it is not currently using shortwave but only mediumwave and possibly FM.

Elsewhere FBIS notes a number of unlicensed stations are being shut down in both Bolivia and Argentina. Piracy is not a European or North American monopoly. Normally in Latin America these are commercial stations who simply take to the air without a license. Some may be in small towns or relatively remote areas, and more than one has been known to broadcast for years without any problems.

Several folks, including George Viera of New York, wrote to tell us they had monitored Radio Free New York, which is relayed by WWCR UTC Sundays beginning at 0400. Give them a listen. WWCR seems to be specializing as the "nation's relay."

Catch one of the more unusual programs on shortwave these days on another WWCR relay. This is the "Original George Klein Elvis Show," which can be found on 15690 at 1500 UTC Saturdays and on 7520 after Radio New York International signs off at 0600 UTC Mondays. "The Elvis Show" originates from WHBQ Memphis, Tennessee (560 kHz), which claims to be the first station in the world to play an Elvis Presley record.

Pardon Us if we Brag

But we are feeling a little smug after having bagged our first Ethiopian clandestine. These are never easy, but the Voice of the Broad Oromo Masses did make it here with an interval signal and sign-on announcement before fading out. Look for it on 7890 around 0355.

Terry Krueger, however, did even better. In addition to the above, he got two more. Voice of the Ethiopian People for Peace, Democracy and Freedom was the probable one on 9335 at 0355, while Voice of the Broad Masses of Eritrea showed up on 10021.39 at 0345. (We were too busy watching the Super Bowl to listen.)

Now if you get one of these you might even want to try for a QSL. I cannot promise you will have any success, but according to the BBC Monitoring Service, you just might be able to reach these stations through the Ethiopian People's Revolutionary Democratic Front, P.O. Box 710358, Dallas, Texas 75371.

Everything from Elvis to Ethiopia. Shortwave has it all.
One Magic Moment

Thomas D. Trocchio of Medina, Ohio, had one of those rare DX days that everyone dreams of. Says Thomas, "I've been into monitoring just about everything that comes across the radio -- from RTTY to broadcast band [AM] to utes -- anything. But until yesterday morning at approximately 1300 UTC, I've had very, very limited success with monitoring much of anything besides noise and 344-CL (Cleveland) below 500 kHz.

All of that changed last month. "Today alone I've logged over 20 beacons. In over 15 years of monitoring, I've never heard such a quiet band!"

Fishing for Beacons

Many low frequency experimenters put their own low-power beacons on the air. For some time, there have been reports of strange transmissions containing mixed numbers and letters -- obviously not hobby beacons -- in the 1700 kHz area. Now comes an explanation from Clifford Buttschardt of Morro Bay, California, who says that these mysterious beacons are "fish net finders, often used by high seas fishermen to find the ends of floating nets -- nets that are sometimes many miles in length."

"During the summer of 1990 I had the opportunity to be employed as radio officer on a merchant ship traveling between the west coast of the United States and Japan," says Cliff, who used his time aboard the ship to do some DXing. "Here is a sample of the signals heard between 1600 and 2000 kHz. The sample was made 600 miles south of Attu Island in mid-Pacific about two hours after nightfall."

The most populated frequency for the fish net beacons is 1655 kHz. There are "dozens of calls" on this frequency, says Cliff. 1650 kHz is the second most popular with 1642.3 tied for third. Try also 1635 and 1638 kHz.

The rest of Cliff's list, listing frequency and call, as reprinted in The Lowdown, includes beacons positioned all through the 160 meter ham band.

1656.2 AM30 1823 JP53
1663.2 HK15 1825.6 66I
1679 OU8 1825.6 MD52
1693 MP3 1827.6 YL5I
1709 KP73 1841 N7T
1721.4 BOJC 1850.6 AB7T
1732.6 HU42 1871 MS7T
1736 P917 1872.8 A51
1739 O3T 1907 TA1
1740 BW48 1915.3 KT3T
1746 SQRU 1921.5 TA20
1753 DK26 1935 2ST
1780 SG2T 1937.5 DJ8I
1786.3 YG11 1939 DJ7T
1787.5 DA1 1941.7 TA4W
1786 K4 1945 TTM
1800.2 DS45 1945.8 5OS
1801 M8T 1946 08V1
1815.4 HLMS7 1957.8 5AT
1817.5 KD4 1959.9 QGO7
1820.3 DB9 1988 DAMW
1820.3 DS35

Goodbye, Gwen

Community protests have caused both the House and Senate Armed Services Committees to halt construction of the second stage of the Ground Wave Emergency Network (GWEN) until the National Academy of Sciences completes a report on the possible health hazards of electrical signals radiated from the system. GWEN is designed to provide communications on longwave that could survive the effects of a high-altitude electromagnetic pulse from a nuclear blast occurring 110 to 300 nautical miles above the U.S.

The GWEN network consists of 54 towers, 150 to 200 miles apart, linking Strategic Air Command headquarters (Offutt Air Force Base, Nebraska), the North American Defense Command (Cheyenne Mountain, Colorado) and airborne aircraft. The system is expected to cost some $400 million when completed.

Newly Authorized or On the Air

Ken Stryker reports that the following beacons are newly authorized, on the air, or have experienced call or frequency changes.

270 TPF Tampa (Peter Knight), FL
318 HFY Indianapolis (Greenwood Municipal), IN
331 JYV Sellersburg (Clark Co.), IN
338 UMP Indianapolis (Metropolitan), IN
368 AN San Antonio (Int'-Alamo), TX
397 BWK Bunkie (Municipal), LA
423 DXE Dexter (Municipal), MO
na COI Cocoa (Merritt Island), FL
na HLR Fort Hood (Kileen-Hood), TX
na JUG Seagoville (Jecca), TX
na UKL Burlington (Boyd), KS

368-AN used to be on 254, 397-BWK moved from 206, and 423-DXE was on 284 kHz. Those beacons marked na are newly authorized and apparently don't have their frequency assigned.

Credit, kudos and thanks go to Ed Cunningham, Cal Esa, Ken Stryker, Thomas D. Trocchio, Clifford Buttschardt and the Longwave Club of America. See you next month.
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NAME

ADDRESS

CITY  STATE  ZIP

www.americanradiohistory.com
notes from the frequency manager . . .

Greg Jordan
P. O. Box 98
Brasstown, NC 28902

This month, the second of the "new, improved" shortwave guide, we've reversed a trend toward cutting back the frequency database - a process you will see continuing in the months ahead. Although you haven't complained, our goal is to be as all-inclusive as possible.

We do appreciate all your positive comments. There are a lot of you out there who are attentive beyond measure, and constantly support this column.

Could you do more? This is a call for frequency monitors! Positions are available for official MT monitors (a responsible, paid position). We especially welcome voices from the West and Midwest, so that the listings can be accurate for your regions.

Don't feel you have the time or the ability to monitor? Then just jot a note while you're monitoring anytime you notice something different from what's printed in our list, and send it to the above address. Or how about FAXing it to the Brasstown office (704-837-2216); it's on 24 hrs.

Without actual monitoring, our only recourse is to print a station's official schedule, not knowing if anyone can hear them or not, whether it's out of date, or who knows what? ... Shortwave broadcasters are notoriously fickle with their frequencies!

Those of you who listen regularly already know that; Won't you share your knowledge so that others who may not be as experienced won't give up after their first unsuccessful try at broadcast monitoring? Sure, shortwave broadcast listening has its difficulties and requires some skill. But the object of the MT shortwave guide is to make it as painless as possible.

Meantime, we'll keep monitoring shortwave broadcasts and we'll keep listening to you. Our goal is to keep listening so you'll keep listening.

notes from the program manager . . .

Kannon Shanmugam
4412 Tumberry Circle
Lawrence, Kansas 66047

John Carson
Oklahoma

Jim Frimmel
Texas

BBC FOR FEBRUARY: Here are some of the highlights on the BBC this month. In "Funny That Way," Barry Cryer profiles top comedians, past and present. The program can be heard in the BBC's usual comedy slot - Wednesdays at 1530 UTC, repeated the same evening in North America on Thursday UTC at 0030 UTC.

"They Made Our World" continues for the next few months, as John Newell examines the lives of scientists and inventors whose work helped to shape today's world. At ten minutes' length, blink and you'll miss it; these fascinating profiles, however, are certainly educational. Airtimes are 0215 UTC on Sundays (Saturday nights in North America), with the repeat on Mondays at 1445 UTC.

MORE BBC--FOR JANUARY???: This is supposed to be the February issue of Monitoring Times, but we'll fudge it a bit in our look at the BBC's monthly programs.

"Two Cheers for January," the comedy program, can be heard on January 30th and 31st, preempting "Funny That Way" at the times noted above. "Two Cheers for February" airs on February 27th and 28th, as well, at the same times. Also, "Seeing Stars," the astronomy program, airs February 2nd at 0130 UTC (early on the evening of the 1st for North American folk), with a repeat on the 3rd at 1115 UTC.

"The Story of Western Music" certainly has a lot of ground to cover. Consequently, this eight-part series (which actually starts on January 25th) covers the history of Western music from 800 to 1600. Later years will follow in further series. The program can be heard on Fridays (Thursday nights in North America) at 0030 UTC.

Finally, this year's series of "International Recitals" kicks off this month (well, actually on January 27th), featuring live broadcasts of classical music concerts from London's BBC Concert Hall. You can hear the program on Sundays at 1515 UTC, with repeats on Tuesday at 2315 UTC. "Concert Hall," usually heard at those times, is on hiatus this month.

WRITE TO US, PLEASE!: Your comments are always appreciated. Is our new format more useful to you? We can't know unless you write. So drop us a line at the address above. It costs only a quarter...
**how to use the shortwave guide**

The *Monitoring Times* Shortwave Guide is a section of frequencies, programming, propagation forecasts and other listening tips to enhance your enjoyment in listening to shortwave broadcast stations.

The frequencies listed in the guide are for English language transmissions, updated each month. However, which frequencies may be audible from your location can only be determined by experimentation; it will vary according to time of day or night, season, or sun spots! Refer to the propagation charts on page 84 for aid in predicting conditions.

Because of such variations in reception conditions, it is advisable to tune in a station a few minutes early. In general, lower frequencies work best in the morning and evening, higher frequencies during the day.

The frequency listings are followed by a selected list of advance programming for the most popular listening hours. Each month features a variety of stations and programming in addition to the standard BBC. News broadcasts, however, are listed every month in their entirety in "Newsline."

To listen to a particular program or news broadcast, simply consult the frequency listing at the scheduled start time to find the frequencies in use by the station at that hour.

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**Frequencies:**

- 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. "TEN" indicates a tentative schedule and "TES" a test transmission.

- The last entry on a line is the frequency. Several codes may be found after a frequency as follows:
  
  v Indicates that the frequency it follows varies
  
  USB Single, upper and lower sideband transmissions;
  
  LSB each code refers only to the frequency it follows.

  (M) A multi-lingual transmission containing English-language programs.

  * English language lessons.

**Programs:**

- Some listings may be followed by "See X 0000." The letter stands for a day of the week using the same day codes listed above. The four digits stand for a time in UTC. Listeners should check back to that day and time to find out more about that particular program.

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**newslines**

"Newsline" is your guide to news broadcasts on the air. All broadcasts are world news reports unless followed by an asterisk, which means the broadcast is primarily national news. All broadcasts are daily unless otherwise noted by brackets enclosing the day codes.

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**MONITORING TIMES**

February 1991

59
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### Radio Stations

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<th>Time</th>
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### Notes

Ralph Carson, owner of non-defunct station KUSW, poses with the station's impressive antennas. The new station, religious broadcaster KTBN (see p.28 for the story), has cancelled regular news broadcasts.
## FREQUENCIES

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## SELECTED PROGRAMS

### Sundays

- **0008 Radio Canada Int'l**: innovation Canada. Bob Cadman looks at Canada's new ideas and technological developments.
- **0300 BBC**: The Ken Bruce Show. A mix of popular music and entertainment news.
- **0300 Radio Canada Int'l**: The Shortwave Listeners' Digest. Ian McFarland with news and features on shortwave radio.

### Mondays

- **0004 Radio Canada Int'l**: Royal Canadian Air Force. A humorous look at the land up north.
- **0300 BBC**: In Praise of God. A half-hour program of worship.
- **0304 Radio Canada Int'l**: Double Exposure. See S 0404.

### Tuesdays

- **0300 BBC**: Megamix. A compendium of music, sport, fashion, health, travel, news and views for young people.
- **0300 Radio Canada Int'l**: As It Happens. A detailed look at the people and events making news in Canada and abroad.

### Wednesdays

- **0300 BBC**: Omnibus. See T 1615.
- **0300 Radio Canada Int'l**: As It Happens. See T 0030.

### Thursdays

- **0300 BBC**: Funny That Way (except February 28th: Two Cheers for February). See W 1530.
- **0300 Radio Canada Int'l**: As It Happens. See T 0030.

### Fridays

- **0300 BBC**: The Story of Western Music. The history of Western music from 800 to 1600.
- **0300 Radio Canada Int'l**: As It Happens. See T 0030.

### Saturdays

- **0300 BBC**: From the Weeklies. A review of the weekly British press.
- **0300 Radio Canada Int'l**: As It Happens. See T 0030.
- **0415 BBC**: Recording of the Week. See M 0545.

### Voice of Free China

Voice of Free China staff take a field trip to their transmitter at Tien-Ma.
| FREQUENCIES | 0100-0105 | Vatican Radio, Vatican City | 9605 | 11780 | 15180 |
| | 0100-0115 | All India Radio, New Delhi | 9535 | 9970 | 11780 |
| | 0100-0125 | Radio Netherlands Intl, Hilversum | 6020 | 6165 | 11740 | 15560 |
| | 0100-0125 | RAI, Rome, Italy | 9575 | 11800 |
| | 0100-0130 | Kol Israel, Jerusalem | 7465 | 9435 | 11805 |
| | 0100-0130 | CBC Northern Quebec Service, Canada | 9625 | (ML) |
| | 0100-0130 | Radio Australia, Melbourne | 11880 | 15240 | 15530 | 17630 |
| | | | 17750 | 17795 | 18755 | 21255 |
| | 0100-0130 | Radio Canada International, Montreal | 9760 | 9765 | 11800 |
| | 0100-0130 | Radio Japan Americas Svc, Tokyo | 7755 |
| | 0100-0130 S,M | Radio Norway, Oslo | 9615 | 11925 |
| | 0100-0130 | Radio Prague Intl, Czechoslovakia | 5930 | 7345 | 11680 |
| | 0100-0130 | Radio Sweden, Stockholm | 15405 |
| | 0100-0145 | Radio Yugoslavia, Belgrade | 9620 | 11735 |
| | 0100-0150 | Deutsche Welle, Koln, West Germany | 6064 | 6065 | 6145 | 6155 |
| | | | 5955 | 11865 | 11890 | 13610 |
| | | | 13770 | 15640 |
| | | | 9590 | 9915 | 11750 | 12095 |
| | 0100-0200 | CBN, St John's, Newfoundland | 6160 |
| | 0100-0200 | CBV, Vancouver, British Columbia | 6160 |
| | 0100-0200 | CFCF, Montreal, Quebec, Canada | 6005 |
| | 0100-0200 | CFCN, Calgary, Alberta, Canada | 6030 |
| | 0100-0200 | CFRN, Toronto, Ontario, Canada | 6070 |
| | 0100-0200 | CHNS, Halifax, Nova Scotia, Canada | 6130 |
| | 0100-0200 | Christian Science World Svc, Boston | 7395 | 9650 | 13790 | 15225 |
| | | | 15610 | 17555 | (+17865 A.S) |
| | 0100-0200 | CKWX, Vancouver, British Columbia | 8080 |
| | 0100-0200 | FEBF Radio Intl, Philippines | 15490 |
| | 0100-0200 | HCBJ, Quito, Ecuador | 8205 | 15165 | 17875 |
| | | | 15580 |

**SELECTED PROGRAMS**

**Sundays**
- 0101 BBC: Play of the Week. Hour-long drama selections.
- 0109 Deutsche Welle: Commentary. Opinion on current issues.
- 0115 Radio Japan: This Week. The major events of the week, and current affairs topics in Japan.
- 0117 Deutsche Welle: Feature. "Mailbag," "Phone-in," or "To The Top" (the German pop scene), presented on a rotating basis.
- 0134 Deutsche Welle: German by Radio. An advanced German language course for English speakers.
- 0138 Radio Canada Intl (Latin America): Listeners' Corner. Listener comments, questions, and music requests.
- 0138 Radio Canada Intl (USA): Coast to Coast. Ian McFarland looks at opinions of Canadians on issues affecting them.

**Mondays**
- 0101 BBC: Feature/Drama. Program details to be announced (except February 4th: With Great Pleasure, a celebrity presents selections from poetry and prose).
- 0108 Radio Canada Intl: The arts scene in Canada.
- 0109 Deutsche Welle: Commentary. See S 0109.
- 0116 Deutsche Welle: Living in Germany. A weekly look at the social scene in Germany.
- 0134 Deutsche Welle: Larry's Random Selection. Larry Wayne takes a look at Germany from the lighter side.
- 0134 Radio Canada Intl (Latin America): Coast to Coast. See S 0138.

**Tuesdays**
- 0101 BBC: Outlook. See M 1405.
- 0109 Deutsche Welle: European Journal. See M 0209.
- 0116 Radio Japan: In Conversation. See M 0316.
- 0134 Deutsche Welle: Transatlantic Diary. Cultural, science, and economic developments between the U.S. and Germany.
- 0145 BBC: Europe's World. A magazine program reflecting life in Europe and its links with other parts of the world.
- 0150 Radio Japan: Commentary. See M 0350.

**Wednesdays**
- 0101 BBC: Outlook. See M 1405.
- 0109 Deutsche Welle: European Journal. See M 0209.
- 0130 BBC: Talk. A short talk on any subject under the sun (except February 6th: Alternative View, a foreigner encounters the night-clubs of Manchester).
- 0130 Radio Japan: City Beat. See M 0530.
- 0134 Deutsche Welle: Transatlantic Diary. See T 0134.
- 0137 Radio Japan: Diary Japan. See M 0537.
- 0145 BBC: Country Style. David Allison presents British country music.
- 0150 Radio Japan: Commentary. See M 0550.

**Thursdays**
- 0101 BBC: Outlook. See M 1405.
- 0109 Deutsche Welle: European Journal. See M 0209.
- 0134 Deutsche Welle: Through German Eyes. See S 1513.
- 0145 BBC: Here's Humph! All that jazz with Humphrey Lyttelton.
- 0150 Radio Japan: Commentary. See M 0550.
## FREQUENCIES

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## SELECTED PROGRAMS

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<td>Deutsche Welle: Commentary. See S 0109.</td>
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<td>Deutsche Welle: Sports Report. The latest news from the world of sports.</td>
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<td>BBC: They Made Our World. Scientists who shaped the future of mankind.</td>
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<td>Deutsche Welle: Musical requests and answers to listener questions.</td>
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<td>BBC: Book Choice. Short reviews of current or future best-sellers.</td>
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<td>BBC: Feature. Topical programming on various subjects.</td>
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### Mondays

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<td>BBC: Andy Kershaw's World of Music. Exotic and innovative music from the world over.</td>
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<td>BBC: Composer of the Month. A month-long series on a particular classical music composer.</td>
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<td>Deutsche Welle: Science and Technology. New scientific and technological developments.</td>
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### Tuesdays

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<td>Deutsche Welle: As It Happens. See T 0030.</td>
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<td>0234-0234</td>
<td>Deutsche Welle: Insight. See T 1534.</td>
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### Wednesdays

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<td>BBC: Health Matters. See M 1115.</td>
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<td>BBC: Feature. Topical programming on various subjects.</td>
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### Thursdays

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### Fridays

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<tr>
<td>0215-0215</td>
<td>BBC: Seven Seas. A weekly program about ships and the sea.</td>
<td>9915</td>
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<tr>
<td>0230-0230</td>
<td>BBC: Drama. See H 1130.</td>
<td>5965</td>
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<tr>
<td>0230-0230</td>
<td>Radio Canada Int'l: As It Happens. See T 0030.</td>
<td>5965</td>
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<tr>
<td>0234-0234</td>
<td>Deutsche Welle: Spotlight on Sport. See W 1534.</td>
<td>5965</td>
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</table>

### Saturdays

<table>
<thead>
<tr>
<th>Time</th>
<th>Program Name</th>
<th>Frequency</th>
</tr>
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<tbody>
<tr>
<td>0209-0209</td>
<td>BBC: British Press Review. See S 0209.</td>
<td>7125</td>
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<tr>
<td>0209-0209</td>
<td>Deutsche Welle: European Journal. See M 0209.</td>
<td>5975</td>
</tr>
<tr>
<td>0215-0215</td>
<td>BBC: People and Politics. Background to the British political scene.</td>
<td>9915</td>
</tr>
<tr>
<td>0230-0230</td>
<td>Deutsche Welle: As It Happens. See T 0030.</td>
<td>5965</td>
</tr>
<tr>
<td>0234-0234</td>
<td>Deutsche Welle: Economic Notebook. See F 1534.</td>
<td>5965</td>
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</table>

### Monitors

- **Marguerite Bayimbi**
  - **Country**: Africa
  - **Position**: Number One's technical manager
0300 UTC

FREQUENCIES

0300-0315 Azad Kashmir Radio, Pakistan 7286 4980 3865
0300-0330 Radio Australia, Melbourne 11880 15160 15240 15320
                                      15465 15590 17630 17750
                                      17795 21525 21740 21775
0300-0330 Radio Baghdad, Iraq         11755 11810 11830
0300-0330 Radio Cairo, Egypt         9475 9675
0300-0330 Radio Japan, Tokyo          15320 17825 21610
0300-0330 Radio Prague Intl, Czechoslovakia 5930 7345 11680
0300-0330 WINB Red Lion, PA          15145
0300-0355 Deutsche Welle, Köln, West Germany 6085 8120 9645 9605
0300-0355 VOA Beijing, China         9690 9770 11715
0300-0400 VOA Middle East Svcs        5965 11905 15160 17810
                                      17865
                                      7155 7325 9410 9600
                                      9915 11750 12095 15220
                                      15260 15420 17705 21715
0300-0400 CBC, Northern Quebec Service, Can 9625
0300-0400 CBN, St. John's, Newfoundland, Can 6160
0300-0400 CBU, Vancouver, British Columbia 6160
0300-0400 CCFB, Montreal, Quebec, Canada 6005
0300-0400 CFCF, Toronto, Ontario, Canada 6070
0300-0400 CFCH, Calgary, Alberta, Canada 6030
0300-0400 CHJN, Halifax, Nova Scotia, Canada 6130
0300-0400 Christian Science World Svcs, Boston 9455 9850 13720 13760
                                      15225 (+17865 & 17555 A) S
0300-0400 CKWX, Vancouver, British Columbia 6090
0300-0400 CFO, Caribou, San Luis, Costa Rica 5055 9445
0300-0400 HCJB, Quito, Ecuador        9745 15155
0300-0400 T-A KUSW, Salt Lake City, Utah 15590/11955

SELECTED PROGRAMS

Sundays
0300 Deutsche Welle: Commentary. See S 0109.
0315 BBC: Society Today. A weekly look at changes in Britain.
0317 Deutsche Welle: Feature. See S 0117.
0330 BBC: From Our Own Correspondent. In-depth news stories from correspondents worldwide.
0330 Radio Japan: DX Corner. Fika Kobayashi presents shortwave radio news, features, and reception reports.
0334 Deutsche Welle: German by Radio. See S 0334.
0350 BBC: Write On... Paddy Feeny presents listener letters.
0354 Radio Japan: Viewpoint. Japan's international role with regard to major issues at home and abroad.

Mondays
0300 Deutsche Welle: Commentary. See S 0109.
0316 Deutsche Welle: Living in Germany. See M 0116.
0334 Deutsche Welle: Larry's Random Selection. See M 0134.
0350 Radio Japan: Commentary. Opinions on current news events worldwide.

Tuesdays
0309 Deutsche Welle: European Journal. See M 0209.
0315 BBC: The World Today. See M 1645.
0316 Radio Japan: Out and Around. See M 0516.
0322 Radio Japan (North America): Radio Japan

0334 Deutsche Welle: Larry's Random Selection. See S 1010.

Heather Couper and Nigel Henbest present "Seeing Stars," a new monthly BBC program on astronomy (See A 0100).

0330 BBC: John Peel. Tracks from newly released albums and singles from the contemporary music scene.
0330 Radio Japan: City Beat. See M 0530.
0334 Deutsche Welle: Transatlantic Diary. See T 0134.
0334 Radio Japan: Radio Japan Diary. See M 0377.
0350 Radio Japan: Commentary. See M 0350.
0355 Radio Japan: Tokyo Pop-In. See M 0555.

Wednesdays
0309 Deutsche Welle: European Journal. See M 0209.
0315 BBC: The World Today. See M 1645.
0316 Radio Japan: Out and Around. See M 0516.
0322 Radio Japan: History. Asia Hotline. A look at the rapid changes in other Asian nations.
0330 BBC: Discovery. An in-depth look at scientific research.

0330 Radio Japan: City Beat. See M 0530.
0334 Deutsche Welle: Transatlantic Diary. See T 0134.
0337 Radio Japan: Radio Japan Diary. See M 0537.
0340 Radio Japan: Asia Contact. Japan's relations with the rest of Asia.
0350 Radio Japan: Commentary. See M 0350.

Thursdays
0309 Deutsche Welle: European Journal. See M 0209.
0315 BBC: The World Today. See M 1645.
0316 Radio Japan: Out and Around. See M 0516.
0330 CBC: QZ. See M 1215.
0330 Radio Japan: City Beat. See M 0530.
0334 Deutsche Welle: Transatlantic Diary. See T 0134.
0337 Radio Japan: Radio Japan Diary. See M 0537.
0340 Radio Japan: Economy Update. Newly marketed products, consumer trends, and interviews.
0350 Radio Japan: Commentary. See M 0350.
0355 Radio Japan: Tokyo Pop-In. See M 0555.

Fridays
0309 Deutsche Welle: European Journal. See M 0209.
0315 BBC: The World Today. See M 1645.
0316 Radio Japan: Music Mix. A program for young listeners, with Japanese pop music and discussion.
0330 BBC: Focus on Faith. Comment and discussion on the major issues in the worlds of faith.
0334 Deutsche Welle: Transatlantic Diary. See T 0134.
0334 Deutsche Welle: Transatlantic Diary. See T 0134.
0350 Radio Japan: Commentary. See M 0350.

Saturdays
0309 Deutsche Welle: European Journal. See M 0209.
0315 BBC: The World Today. See M 1645.
0316 Radio Japan: This Week. See S 0115.
0330 BBC: The Vintage Chart Show. Paul Burnett presents top ten hits from the music charts of yesteryear.
0334 Deutsche Welle: Through German Eyes. See S 1513.
### FREQUENCIES

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<th>Country</th>
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<td>M-F Radio Zambia, Lusaka</td>
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<td>0400-0411</td>
<td>RAI, Rome, Italy</td>
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<td>0400-0425</td>
<td>Radio Prague Int'l, Czechoslovakia</td>
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<td>0400-0425</td>
<td>Radio Cultural, Guatemala</td>
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<td>Radio Netherlands Int', Hilversum</td>
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<td>Radio Australia, Melbourne</td>
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<td>Radio Romania Intl', Bucharest</td>
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<td>Radio Tanzania</td>
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<td>Radio Thailand, Bangkok</td>
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<td>Trans World Radio, Bonaire</td>
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<td>Radio Pyongyang, North Korea</td>
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<td>Voice of America-Middle East Service</td>
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<td>Radio Australia, Melbourne</td>
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<td>0400-0500</td>
<td>Radio Tirana, Albania</td>
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<td>0400-0500</td>
<td>ISSR Radio Truth (clandestine intended for Zimbabwe)</td>
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<td>0400-0500</td>
<td>Voice of Nigeria, Lagos</td>
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### SELECTED PROGRAMS

#### Sundays

**0404 Radio Canada Int'l**: Double Exposure. A mocking look at the week's top news stories and newsmakers.

**0409 Deutsche Weisse**: Commentary. See S 0109.


**0419 Deutsche Weisse**: International Talking Point. A round-table discussion on major trends and events.

**0430 BBC**: That's The Way It Was. Conversations with vanished pop stars (except February 17th, 24th: Pop Music, a series on various musical subjects).

**0434 Deutsche Weisse**: People and Places. Interviews, stories, and music beamed to Africa.

**0434 Radio Canada Int'l**: Listeners' Corner. See S 0138.

**0445 BBC**: Personal View. A personal opinion on topical issues in British life.

#### Mondays


0409 Deutsche Weisse: European Journal. See M 0209.

0430 CBC: Off the Shelf. A reading selected from the best of world literature.

0434 Deutsche Weisse: Africa in the German Press. A look at what German papers and weeklies have to say about Africa.


0445 BBC: Talk. A short talk on any subject under the sun.

#### Tuesdays

0408 Radio Canada Int'l: As It Happens. See T 0030.

0409 Deutsche Weisse: European Journal. See M 0209.

0430 CBC: Off the Shelf. See M 0430.

0434 Deutsche Weisse: Africa Report. Reports and background to the news from correspondents.

0438 Radio Canada Int'l: Current Affairs. See S 1523.

#### Wednesdays

0408 Radio Canada Int'l: As It Happens. See T 0030.

0409 Deutsche Weisse: European Journal. See M 0209.

0430 CBC: Off the Shelf. See M 0430.


0438 Radio Canada Int'l: Current Affairs. See S 1523.

0445 BBC: Worldview. See M 0215.

#### Thursdays

0408 Radio Canada Int'l: As It Happens. See T 0030.

0409 Deutsche Weisse: European Journal. See M 0209.

0430 CBC: Off the Shelf. See M 0430.


0438 Radio Canada Int'l: Current Affairs. See S 1523.

0445 BBC: Andy Kershaw's World of Music. See M 0215.

#### Fridays

0408 Radio Canada Int'l: As It Happens. See T 0030.

0409 Deutsche Weisse: European Journal. See M 0209.

0430 CBC: Off the Shelf. See M 0430.


0445 Radio Canada Int'l: Current Affairs. See S 1523.

0445 BBC: Europe's World. See T 0145.

#### Saturdays

0408 Radio Canada Int'l: As It Happens. See T 0030.

0409 Deutsche Weisse: European Journal. See M 0209.

0430 CBC: Off the Shelf. See M 0430.


0445 Radio Canada Int'l: Current Affairs. See S 1523.

0445 BBC: Worldview. See M 0215.

---

**HCJB (Ecuador) s Musical Mailbag team: Marian Osborne, Carol Cathro, John Adams, Brian Seeley.**

---

February 1991 monitoring times
**0500 UTC**

|-------------|------------------------|-------------------------------------|---------------------------------|---------------------------------|-----------------------------------------------|----------------------------------------|---------------------------------------|----------------------------------------|-----------------------------------|
0600 UTC

[1:00 AM EST/10:00 PM PST]

**FREQUENCIES**

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<tr>
<th>Time</th>
<th>Station Name</th>
<th>Frequency</th>
<th>Mode</th>
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<tr>
<td>0600-0645</td>
<td>Radio For Peace, Int., Costa Rica</td>
<td>7375</td>
<td>USB</td>
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<td>0600-0650</td>
<td>CBU, Vancouver, British Columbia</td>
<td>6160</td>
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<td>0600-0650</td>
<td>Deutsche Welle, Koln, W. Germany</td>
<td>11765, 13790</td>
<td>15185, 17875</td>
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<tr>
<td>0600-0650</td>
<td>Radio Pyongang, North Korea</td>
<td>15180, 15230</td>
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<td>0600-0700</td>
<td>ABC Brisbane, Australia</td>
<td>9660</td>
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<tr>
<td>0600-0700</td>
<td>ABC Domestic Network, Australia</td>
<td>15425</td>
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<tr>
<td>0600-0700</td>
<td>Deutsche Welle: International Talking</td>
<td>9640, 12095, 15070, 15245</td>
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<tr>
<td>0600-0700</td>
<td>CFCF, Montreal, Quebec, Canada</td>
<td>6005</td>
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<td>0600-0700</td>
<td>CFCN, Calgary, Alberta, Canada</td>
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<td>0600-0700</td>
<td>CFRB, Toronto, Ontario, Canada</td>
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<td>0600-0700</td>
<td>CHNS, Halifax, Nova Scotia, Canada</td>
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<tr>
<td>0600-0700</td>
<td>Christian Science World Svc, Boston</td>
<td>9455, 9840, 11705, 13720</td>
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<tr>
<td>0600-0700</td>
<td>CKWX, Vancouver, British Columbia</td>
<td>6080</td>
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<tr>
<td>0600-0700</td>
<td>HCB, Quito, Ecuador</td>
<td>15155, 17875</td>
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<td>Radio Australia, Melbourne</td>
<td>11880, 13700, 13705, 15240</td>
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<td>Radio Havana Cuba</td>
<td>5965, 11760, 11820</td>
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<td>Radio Moscow North American Svc.</td>
<td>9635, 12050, 13605, 15180</td>
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<td>Radio Moscow World Service</td>
<td>15260, 17690, 21690, 21790</td>
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<tr>
<td>0600-0700</td>
<td>Radio New Zealand, Wellington</td>
<td>9855/17675</td>
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<tr>
<td>0600-0700</td>
<td>SIBC Solomon Islands</td>
<td>5020, 9545</td>
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</table>

**SELECTED PROGRAMS**

**Sundays**

- 0609 Deutsche Welle: Commentary. See S 0109.
- 0630 BBC: Jazz for the Asking. A jazz music request show.

**Mondays**

- 0609 Deutsche Welle: European Journal. See M 0209.
- 0630 BBC: Feature. See S 1401.
- 0630 Radio Canada Intl: Inside Track A sports feature magazine.
- 0634 Deutsche Welle: Africa in the German Press. See M 0434.

**Tuesdays**

- 0609 Deutsche Welle: European Journal. See M 0209.
- 0630 BBC: Rock/Pop Music. A series on various musical subjects (except February 5th: The Classic Albums, a look at the Eagles"Hotel California" and other classic Rock LPs).
- 0630 Radio Canada Intl: Coast to Coast. See S 0138.

**Wednesdays**

- 0609 Deutsche Welle: European Journal. See M 0209.
- 0630 BBC: Meridian. The world of the arts, including music, drama, and books.
- 0630 Radio Canada Intl: Open House. The effect of religion on politics, social justice, and personal relations.

**Thursdays**

- 0609 Deutsche Welle: European Journal. See M 0209.
- 0630 BBC: Travelling Tales (except February 21st, 28th: Talk). See M 2315.

**Fridays**

- 0609 Deutsche Welle: European Journal. See M 0209.
- 0630 BBC: Meridian. See W 0630.
- 0630 Radio Canada Intl: Arts Tonight. Interviews, panel discussions and reviews covering the arts.

**Saturdays**

- 0609 Deutsche Welle: Commentary. See S 0109.
- 0623 Deutsche Welle: Panorama. See A 0223.
- 0630 BBC: Meridian. See W 0630.
### 0700 UTC

**FREQUENCIES**

<table>
<thead>
<tr>
<th>Time</th>
<th>Station Name</th>
<th>City/Location</th>
<th>Frequency 1</th>
<th>Frequency 2</th>
<th>Frequency 3</th>
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<td>0700-0710</td>
<td>Sierra Leone Brodcstg.Svc.,Freetown</td>
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<td>Radio Romania Int'l, Bucharest</td>
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<td>0700-0725</td>
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<td>21815</td>
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<td>0700-0730</td>
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<td>0700-0730</td>
<td>Radio Tirana, Slovenia</td>
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### 0800 UTC

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### MONITORING TIMES

February 1991

99

www.americanradiohistory.com
### 0900 UTC

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**[4:00 AM EST/1:00 AM PST]**

- 0900-1000 CKWX, Vancouver, British Columbia
- 0900-1000 FEBC Radio Intl., Philippines
- 0900-1000 HCJB, Quito, Ecuador
- 0900-1000 HCJB, Quito, Ecuador (alt pro)
- 0900-1000 KTWG, Agana, Guam
- 0900-1000 Radio Beijing, China
- 0900-1000 Radio Bhutan, Thimpu
- 0900-1000 Radio Japan Australian Svc., Tokyo
- 0900-1000 Radio Japan General Service, Tokyo
- 0900-1000 Radio Moscow World Service
- 0900-1000 Radio New Zealand, Wellington
- 0900-1000 A: Radio for Peace Int., Costa Rica
- 0900-1000 Solomon Islands Broadcasting Co.
- 0900-1000 Voice of Hope, Lebanon
- 0900-1000 Voice of Nigeria, Lagos
- 0900-1000 WHRI, Noblesville, Indiana
- 0910-0940 M/W/H, S Radio Ulan Bator, Mongolia
- 0920-1000 ABC, Perth, Australia
- 0930-1000 British Forces Broadcasting Svc, UK
- 0930-1000 CBN, St. John’s, Newfoundland
- 0930-1000 KTWG, Agana, Guam
- 0930-1000 Radio Afghanistan, Kabul
- 0930-1000 Radio Australia, Melbourne
- 0930-0955 RRI Surabaya, Java Timur, Indonesia

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**[5:00 AM EST/2:00 AM PST]**

- 1000-1100 FEBC Radio Intl., Philippines
- 1000-1100 HCJB, Quito, Ecuador
- 1000-1100 KHBN Guam
- 1000-1100 KSDA, Guam
- 1000-1100 KTWG, Agana, Guam
- 1000-1100 Radio Baghdad, Iraq
- 1000-1100 Radio Beijing, China
- 1000-1100 Radio Korea, Seoul
- 1000-1100 Radio Moscow World Service
- 1000-1100 Solomon Islands Broadcasting Co.
- 1000-1100 Voice of America-Caribbean Service
- 1000-1100 Voice of America-Pacific Service
- 1000-1100 WHRI, South Bend, Indiana
- 1000-1100 WYFR, Okeechobee, Florida
- 1015-1030 Radio Korea, Seoul
- 1015-1100 S: Adventist World Radio Svc, Milan
- 1030-1100 Adventist World Radio, Forli, Italy
- 1030-1100 Radio Austria Intl., Vienna
- 1030-1100 Radio Australia, Melbourne
- 1030-1045 Radio Budapest, Hungary
- 1030-1100 Radio Korea, Seoul
- 1030-1100 Radio Netherlands Intl, Hilversum
- 1030-1100 Radio Tanzania
- 1030-1100 UAE Radio Dubai
- 1030-1100 M-A Vatican Radio
- 1040-1050 Voice of Greece, Athens
- 1045-1100 Radio Budapest, Hungary
- 1050-1100 Radio Finland, Helsinki

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February 1991

70

MONITORING TIMES
So far, we've found 7 dolphins in 60 miles of driftnet. That only leaves 999,940 miles to go.

Japanese, Taiwanese, and South Korean fishermen set a million miles of driftnet a year. These nets are meant to catch squid, tuna, or salmon. But they are deadly to virtually all living creatures that swim into them.

Recently, Greenpeace activists surveying only 60 miles of driftnet found seven dolphins. Unfortunately, we were too late to save any of them.

But there is still hope for tens of thousands of other dolphins, porpoises, seals, whales, and birds that are expected to get caught up in these invisible plastic "walls of death" this year.

Support Greenpeace Action. We're working directly to stop this strip mining of the oceans.

And we're working to make sure that international efforts to ban driftnets do not get tangled up and die.

Greenpeace Action
1436 U Street, NW, Washington, DC 20009

www.americanradiohistory.com
1100 UTC

FREQUENCIES

1100-1115 Azad Kashmir Radio, Pakistan 7268 4960 3605
1100-1115 Radio Finland, Helsinki 15400 21550
1100-1120 Radio Pakistan 17956 21520
1100-1125 HCJB Quito, Ecuador 9745 11925
1100-1125 Radio Netherlands Intl., Hilversum 6020 11890
1100-1130 Adventist World Radio, Forti, Italy 7230
1100-1130 Kol Israel, Jerusalem 11585 15850 17575 17590
1100-1130 Radio Australia, Melbourne 5995 6020 6035 6080
1100-1130 Radio Chile, Santiago 9580 9655 9710 9910 15485 21825
1100-1130 Radio Mozambique, Maputo 11835 11818 9525
1100-1130 Solomon Islands Broadcasting Co. 5200
1100-1130 Swiss Radio International, Berne 13635 15570 17830 21770
1100-1130 Voice of Vietnam, Hanoi 8940 15010
1100-1150 Deutsche Welle, Koln, West Germany 15410 17785 17800 21600
1100-1150 Radio Pyongyang, North Korea 9977 11735
1100-1150 ABC, Alice Springs, Australia 2310 (ML)
1100-1150 Adventist World Radio, Costa Rica 9725 11870
1100-1150 All India Radio, Northeast Suv 7195
1100-1150 ABC, Brisbane, Australia 9660
1100-1150 ABC, Katherine, Australia 2485
1100-1150 ABC, Perth, Australia 9610
1100-1150 ABC, Tennant Creek, Australia 2325 (ML)
1100-1200 CBN, St. John's, Newfoundland, Can 6160
1100-1200 CFCC, Montreal, Quebec, Canada 6000
1100-1200 CFCH, Calgary, Alberta, Canada 6030
1100-1200 CFBR, Toronto, Ontario, Canada 6070
1100-1200 CHNS, Halifax, Nova Scotia, Canada 6130
1100-1200 Deutsche Welle: German by Radio. See S 0134.
1100-1200 Christian Science World Svc, Boston 9455 9495 9530 11960
1100-1200 CKWV, Vancouver, British Columbia 6080
1100-1200 KHBN Guam 9830 ML
1100-1200 Radio Baghdad, Iraq 11860
1100-1200 Radio Japan, Tokyo 6120 11815 11840
1100-1200 Radio Jordan, Amman 13655
1100-1200 Radio Moscow World Service 11840 17690 21860 21790
1100-1200 Radio RSA, Johannesburg 9555 11805 11900 17835
1100-1200 A.S. Radio Tanzania 9685 6105 7165
1100-1200 SBC Singapore 11940
1100-1200 Trans World Radio, Bonaire 11815 15345
1100-1200 Voice of America-Caribbean Service 9560 9195
1100-1200 Voice of America-East Asia Service 9760 11720 15155 15425
1100-1200 WHRI, Noblesville, Indiana 9465 11790
1100-1200 WYFR, Okeechobee, Florida 5950 11580
1100-1200 WQVW-F Radio Bolivia 4830 5995 7255
1100-1200 Radio Nepal, Katmandu (External Svc.) 5005
1100-1200 Radio Korea, Seoul 9750
1100-1200 Radio Lasoftho 4800
1100-1200 Radio Budapest, Hungary 15190 9610 9835 15160 15220
1100-1200 HCJB, Quito, Ecuador 11740 15155 17890
1100-1200 Radio Austria International, Vienna 6155 13730 21490
1100-1200 Radio Australia, Melbourne 5955 6020 6035 6080 9580 9710 11720 19110 15465 21825
1100-1200 Radio Thailand 9195 9655 4830
1100-1200 Voice of Islamic Republic of Iran 9575 9705 11715 11790 11825
1100-1200 Radio Finland 15400 21550

SELEC TED PROGRAMS

Sundays
1109 Deutsche Welle: Arts on the Air. Reports and interviews on cultural events and developments.
1130 BBC: The Ken Bruce Show. See S 0030.

1134 Deutsche Welle: German by Radio. See S 0134.

Mondays
1109 Deutsche Welle: Newsline Cologne. A current affairs program with worldwide reports and a German press review.
1300 BBC: Composer of the Month. See M 0230.
1310 Radio Japan: City Beat. See M 0530.
1434 Deutsche Welle: Hello Africa. Musical requests and greetings to friends.
1337 Radio Japan: Japan Diary. See M 0537.
1440 Radio Japan: Crosstalker. See M 0540.
1540 Radio Japan: Commentary. See M 0350.

Tuesdays
1109 Deutsche Welle: Newsline Cologne. See M 1109.
1115 BBC: Waveguide. See M 0530.
1200 Radio Japan: Asiatwatch. See M 1200.
1240 Radio Japan: Round and About. See M 1244.
1255 BBC: Book Choice. See S 0225.
1300 BBC: Megamix. See T 0030.
1311 Radio Japan: City Beat. See M 0530.
1434 Deutsche Welle: Hello Africa. See M 1134.
1337 Radio Japan: Japan Diary. See M 0357.
1540 Radio Japan: Commentary. See M 0350.

Wednesdays
1109 Deutsche Welle: Newsline Cologne. See M 1109.
1115 BBC: Country Style. See W 0145.
1200 Radio Japan: Asiatwatch. See M 1120.
1240 Radio Japan: Round and About. See M 1124.
1300 BBC: Meridian. See W 0630.

1434 Deutsche Welle: Mailbag Africa. Listeners' questions, music requests, and the club corner.

Erling Thokle has been the program director of Radio Norway International since 1964.

32 March 1991

MONITORING TIMES

[6:00 AM EST/3:00 AM PST]
**SELECTED PROGRAMS**

**Sundays**
- 1201 BBC: Play of the Week. See S 0101.

**Mondays**
- 1215 BBC: Quiz. Test your wits in a game show of the airwaves.

**Tuesdays**
- 1215 BBC: Multitrack 1: Top 20. See M 2330.

**Wednesdays**
- 1215 BBC: New Ideas. See M 1615.
- 1235 BBC: Food Plants (except February 27th: Talk). See M 1635.

**Thursdays**
- 1215 BBC: Multitrack 2. See W 2330.

**Fridays**
- 1215 BBC: Feature. Topical programming on various subjects.

**Saturdays**
- 1215 BBC: Multitrack 3. See F 2330.

---

**Got Something to Say?**

*MT* columnists and editors would love to hear it. Got something you think we should cover? We'd like to know.

Courtesy requires, however, that whenever requesting a reply of a columnist, you enclose a self-addressed, stamped envelope for return postage.

Ben Dalfen scans the airwaves, hunting for shortwave news for his program, "DX Corner," airing Sundays on Kol Israel.
1300 UTC

[8:00 AM EST/5:00 AM PST]

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SELECTED PROGRAMS

Sundays
1345 BBC: Sports Roundup. The day’s sports news.

Mondays
1309 BBC: Twenty-Four Hours. See S 0509.
1330 BBC: Andy Kershaw's World of Music. See M 0215.
1345 BBC: Personal View. See S 0445.

Tuesdays
1309 BBC: Twenty-Four Hours. See S 0509.
1330 BBC: Network UK. See T 0215.

Wednesdays
1309 BBC: Twenty-Four Hours. See S 0509.
1330 BBC: Development '91. Aid and development issues.
1330 Radio Canada Int'l: North Country. See M 1523.

Thursdays
1309 BBC: Twenty-Four Hours. See S 0509.
1330 BBC: Network UK. See T 0215.
1330 Radio Canada Int'l: North Country. See M 1523.
1345 BBC: Folk In Britain or Jazz Now and Then. A look at folk or jazz music on the British Isles.

Fridays
1309 BBC: Twenty-Four Hours. See S 0509.
1330 BBC: Quiz. Test your wits in a game show of the airwaves.
1330 Radio Canada Int'l: North Country. See M 1523.

Saturdays
1309 BBC: Twenty-Four Hours. See S 0509.
1330 BBC: Network UK. See T 0215.
1345 BBC: Good Books. See M 0315.

Four VOA staff members from the Hindi, Arabic, Farsi, and Bengali services interview Rep. Arthur Ravenel of South Carolina.

MONITORING TIMES

74 February 1991

www.americanradiohistory.com
**FREQUENCIES**

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**SELECTED PROGRAMS**

**Sundays**
- 1401 BBC: Feature. Topical programming on various subjects.
- 1404 Radio Canada Int'l: Sunday Morning. A magazine program covering virtually everything under the sun.
- 1430 BBC: Anything Goes. Bob Holness presents a variety of odd recordings.

**Mondays**
- 1405 BBC: Outlook. Conversation, controversy, and color from Britain and the rest of the world.
- 1416 Radio Japan: Out and Around. See M 0516.
- 1422 Radio Japan: People. See M 0522.
- 1430 BBC: Off the Shelf. See M 0430.
- 1430 Radio Japan: City Beat. See M 0530.
- 1437 Radio Japan: Japan Diary. See M 0537.
- 1440 Radio Japan: Crosscurrents. See M 0540.
- 1445 BBC: They Made Our World. See S 0216.
- 1450 Radio Japan: Commentary. See M 0350.
- 1455 Radio Japan: Tokyo Pop-In. See M 0555.

**Tuesdays**
- 1405 BBC: Outlook. See M 1405.
- 1416 Radio Japan: Out and Around. See M 0516.
- 1430 BBC: Off the Shelf. See M 0430.
- 1430 Radio Japan: City Beat. See M 0530.
- 1437 Radio Japan: Japan Diary. See M 0537.
- 1455 Radio Japan: Tokyo Pop-In. See M 0555.

**Wednesdays**
- 1405 BBC: Outlook. See M 1405.
- 1416 Radio Japan: Out and Around. See M 0516.
- 1422 Radio Japan: Asia Hotline. See W 0322.
- 1430 BBC: Off the Shelf. See M 0430.
- 1430 Radio Japan: City Beat. See M 0530.
- 1437 Radio Japan: Japan Diary. See M 0537.
- 1440 Radio Japan: Asia Contact. See W 0340.
- 1450 Radio Japan: Commentary. See M 0350.

**Thursdays**
- 1405 BBC: Outlook. See M 1405.
- 1416 Radio Japan: Out and Around. See M 0516.
- 1422 Radio Japan: Science Scene. See F 0522.
- 1430 BBC: Off the Shelf. See M 0430.
- 1430 Radio Japan: City Beat. See M 0530.
- 1437 Radio Japan: Japan Diary. See M 0537.
- 1445 BBC: Recording of the Week. See M 0545.
- 1450 Radio Japan: Commentary. See M 0350.
- 1455 Radio Japan: Tokyo Pop-In. See M 0555.

**Fridays**
- 1405 BBC: Outlook. See M 1405.
- 1416 Radio Japan: Out and Around. See M 0516.
- 1422 Radio Japan: Science Scene. See F 0522.
- 1430 BBC: Off the Shelf. See M 0430.
- 1437 Radio Japan: Japan Diary. See M 0537.
- 1445 BBC: Talk. See M 0445.
- 1450 Radio Japan: Commentary. See M 0350.
- 1455 Radio Japan: Tokyo Pop-In. See M 0555.

**Saturdays**
- 1401 BBC: John Peel. See T 0330.
- 1415 Radio Japan: This Week. See S 0115.
- 1430 BBC: Sportsworld. The weekly sports magazine.
**English language shortwave guide**

**1500 UTC**

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<td>1500-1600 KHBN Guan 9830 ML</td>
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**SELECTED PROGRAMS**

**Sundays**

| 1500 Radio Canada Int'l: Sunday Morning. See S 1404. |
| 1509 Deutsche Welle: Religion and Society. News and developments concerning the world's major religions. |
| 1513 Deutsche Welle: Through German Eyes. German journalists provide a perspective on world events. |
| 1515 BBC: International Recital. The annual series of live classical music concerts from London's BBC Concert Hall. |
| 1534 Deutsche Welle: Pop from Germany. A look at the German pop music scene. |

**Mondays**

| 1509 Deutsche Welle: Newsline Cologne, See M 1109. |
| 1516 Radio Japan: In Conversation. See M 0316. |
| 1523 Radio Canada Int'l: Current Affairs. See S 0523. |
| 1534 Deutsche Welle: Monday Special. An interview or report on an event or development with special relevance for Africa. |
| 1550 Radio Japan: Commentary. See M 0350. |
| 1555 Radio Japan: Tokyo Pop-In. See M 0555. |

**Tuesdays**

| 1509 Deutsche Welle: Newsline Cologne. See M 1109. |
| 1516 Radio Japan: Out and Around. See M 0516. |
| 1522 Radio Japan: Newsline. See W 0322. |
| 1523 Radio Canada Int'l: Current Affairs. See S 0523. |
| 1530 Radio Japan: City Beat. See M 0530. |
| 1534 Deutsche Welle: Life in Germany, See M 0116. |
| 1537 Radio Japan: Japan Diary. See M 0537. |
| 1540 Radio Japan: Asia Contact. See W 0340. |
| 1550 Radio Japan: Commentary. See M 0350. |
| 1555 Radio Japan: Tokyo Pop-In. See M 0555. |

**Wednesdays**

| 1509 Deutsche Welle: Newsline Cologne. See M 1109. |
| 1515 BBC: Traveling Tales (except February 20th, 27th: Talk). See M 2315. |
| 1516 Radio Japan: Out and Around. See M 0516. |
| 1522 Radio Japan: Asia Hotline. See W 0322. |
| 1523 Radio Canada Int'l: Current Affairs. See S 0523. |
| 1530 BBC: Funny That Way. Barry Cryer profiles top comedians, past and present (except February 27th: Two Cheers for February, a satirical look at the month just past). |
| 1530 Radio Japan: City Beat. See M 0530. |
| 1534 Deutsche Welle: Life in Germany, See M 0116. |
| 1537 Radio Japan: Japan Diary. See M 0537. |
| 1540 Radio Japan: Asia Contact. See W 0340. |
| 1550 Radio Japan: Commentary. See M 0350. |
| 1555 Radio Japan: Tokyo Pop-In. See M 0555. |

**Thursdays**

| 1509 Deutsche Welle: Newsline Cologne. See M 1109. |
| 1515 BBC: Music for a While with Richard Baker. |

** Fridays**

| 1509 Deutsche Welle: Newsline Cologne, See M 1109. |
| 1515 BBC: Music Review. See H 2315. |
| 1523 Radio Canada Int'l: Current Affairs. See S 0523. |
| 1534 Deutsche Welle: Economic Notebook. A look at the economic scene in Germany and around the world. |
| 1550 Radio Japan: Commentary. See M 0350. |
| 1555 Radio Japan: Tokyo Pop-In. See M 0555. |

**Saturdays**

| 1509 Deutsche Welle: Africa Highlight. A weekly feature on an important topic concerning Africa. |
| 1513 Deutsche Welle: Development Forum. Reports and interviews on projects and progress in Africa and Asia. |
| 1515 BBC: Sportsworld. See A 1430. |
| 1515 Radio Japan: This Week. See S 0115. |
| 1523 Radio Canada Int'l: Current Affairs. See S 0523. |
| 1534 Deutsche Welle: Science and Technology. See M 0243. |
**1600 UTC [11:00 AM EST/8:00 AM PST]**

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### SELECTED PROGRAMS

**Sundays**
- 1600 Deutsche Welle: Arts on the Air. See S 1109.
- 1615 BBC: Feature. See S 0230.
- 1634 Deutsche Welle: German by Radio. See S 0134.

**Mondays**
- 1600 Deutsche Welle: Newsline Cologne. See M 1105.
- 1635 BBC: Food Plants. Staple crops which feed our world (except February 25th: Talk, a short talk on any subject under the sun). See S 0419.
- 1645 BBC: The World Today. News analysis on a selected location or event in the news.

**Tuesdays**
- 1600 Deutsche Welle: Newsline Cologne. See M 1109.

**Wednesdays**
- 1600 Deutsche Welle: Newsline Cologne. See M 1109.

**Thursdays**
- 1600 Deutsche Welle: Newsline Cologne. See M 1109.
- 1615 BBC: Assignment. See H 0230.

**Fridays**
- 1600 Deutsche Welle: Newsline Cologne. See M 1109.

**Saturdays**
- 1600 Deutsche Welle: International Talking Point. See S 0419.
- 1615 BBC: Spaceworld. See A 1430.
- 1623 Deutsche Welle: Development Forum. See A 1513.
- 1634 Deutsche Welle: Religion and Society. See S 1509.

**Monitoring Times**
February 1991 77
### Shortwave Guide

#### 1700 UTC

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<td>1800-1855</td>
<td>Trans World Radio, Swaziland</td>
</tr>
<tr>
<td>1800-1900</td>
<td>F ABC, Alice Springs, Australia</td>
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<tr>
<td>1800-1900</td>
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<tr>
<td>1800-1900</td>
<td>BBC World Service, London</td>
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<tr>
<td>1800-1900</td>
<td>CBC Montreal</td>
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<tr>
<td>1800-1900</td>
<td>CBN, St. John's, Newfoundland</td>
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<tr>
<td>1800-1900</td>
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<td>1800-1900</td>
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<td>CFRL, Toronto, Ontario</td>
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<td>CHIN, Halifax, Nova Scotia, Canada</td>
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<td>1800-1900</td>
<td>Christian Science World Service</td>
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<td>1800-1900</td>
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<td>KVOR, Rancho Simi, California</td>
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<tr>
<td>1800-1900</td>
<td>KUSW, Salt Lake City, Utah</td>
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<td>1800-1900</td>
<td>Radio New Zealand, Wellington</td>
</tr>
<tr>
<td>1800-1900</td>
<td>Radio RSA, Johannesburg, S. Africa</td>
</tr>
<tr>
<td>1800-1900</td>
<td>A S Radio for Peace In'tl, Costa Rica</td>
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#### 1900 UTC

<table>
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<tr>
<th>Frequency</th>
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<tr>
<td>1900-1900</td>
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<td>Radio Sunnun In'tl (via Brazil)</td>
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<tr>
<td>1900-1900</td>
<td>Voice of America-Africa Service</td>
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<td>1900-1900</td>
<td>Voice of America-Middle East Service</td>
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<tr>
<td>1900-1900</td>
<td>Voice of America-South Asia Service</td>
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<tr>
<td>1900-1900</td>
<td>WHRI, Noblesville, Indiana</td>
</tr>
<tr>
<td>1900-1900</td>
<td>WINE, Red Lion, Pennsylvania</td>
</tr>
<tr>
<td>1900-1900</td>
<td>S F WMLK Bethel, PA</td>
</tr>
<tr>
<td>1900-1900</td>
<td>WRNO, New Orleans, Louisiana</td>
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<tr>
<td>1900-1900</td>
<td>WWCR, Nashville, Tennessee</td>
</tr>
<tr>
<td>1900-1900</td>
<td>WYFR, Okeechobee, Florida</td>
</tr>
<tr>
<td>1900-1900</td>
<td>Radio Canada In'tl, Montreal</td>
</tr>
<tr>
<td>1900-1900</td>
<td>Radio Pakistan</td>
</tr>
<tr>
<td>1900-1900</td>
<td>Radio Bayrak, Northern Cyprus</td>
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<tr>
<td>1900-1900</td>
<td>Radio Romania In'tl, Bucharest</td>
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<tr>
<td>1900-1900</td>
<td>Radio Sofia, Bulgaria</td>
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<tr>
<td>1900-1900</td>
<td>Radio Sta. Peace &amp; Progress, USSR</td>
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<tr>
<td>1900-1900</td>
<td>Radio Tirana, Albania</td>
</tr>
<tr>
<td>1900-1900</td>
<td>Radio Truth</td>
</tr>
<tr>
<td>1900-1900</td>
<td>Swiss Radio In'tl, Berne</td>
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<tr>
<td>1900-1900</td>
<td>Vatican Radio African Service</td>
</tr>
<tr>
<td>1900-1900</td>
<td>RAI Vienna</td>
</tr>
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87 February 1991

[12:00 PM EST/9:00 AM PST]

[1:00 PM EST/10:00 AM PST]
### 2000 UTC

**[3:00 PM EST/12:00 PM PST]**

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<th>2000-2100 Radio Australia, Melbourne</th>
<th>6020 7205 7215</th>
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<td></td>
<td></td>
<td>7240 9580 11855 13745</td>
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<tr>
<td></td>
<td></td>
<td>(+6080 &amp; 5995 until 2030)</td>
</tr>
<tr>
<td>2000-2100</td>
<td>Radio Baghdad, Iraq</td>
<td>11860 13660</td>
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<tr>
<td>2000-2100</td>
<td>Radio Beijing, China</td>
<td>9440 9920 11500 11715</td>
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<tr>
<td>2000-2100</td>
<td>Radio Havan Cuba</td>
<td>11800</td>
</tr>
<tr>
<td>2000-2100</td>
<td>Radio Moscow Africa Service</td>
<td>11715 11775 11960 12035</td>
</tr>
<tr>
<td>2000-2100</td>
<td>Radio Moscow British Service</td>
<td>15520 15535 21630 21740</td>
</tr>
<tr>
<td>2000-2100</td>
<td>Radio New Zealand, Wellington</td>
<td>73630 11630 11960 15185</td>
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<tr>
<td>2000-2100</td>
<td>Radio Moscow World Service</td>
<td>7315 11630 11670 11805</td>
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<tr>
<td>2000-2100</td>
<td>Radio Radio Peace Int'l, Costa Rica</td>
<td>13630 21566</td>
</tr>
<tr>
<td>2000-2100</td>
<td>Radio Sta. Peace &amp; Progress, USSR</td>
<td>9470 9680 11830 11880</td>
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<tr>
<td>2000-2100</td>
<td>Radio Solomon Islands Broadcasting Co.</td>
<td>5020</td>
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<tr>
<td>2000-2100</td>
<td>Voice of America-Africa Service</td>
<td>7195 15410 15445 15580</td>
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<tr>
<td></td>
<td></td>
<td>15800 17785 17800 17870</td>
</tr>
<tr>
<td>2000-2100</td>
<td>Voice of Hope, Lebanon</td>
<td>6280</td>
</tr>
<tr>
<td>2000-2100</td>
<td>Voice of Indonesia, Jakarta</td>
<td>11753 11785</td>
</tr>
<tr>
<td>2000-2100</td>
<td>WHHI, Nobleville, Indiana</td>
<td>13760 17830</td>
</tr>
<tr>
<td>2000-2100</td>
<td>WINS, Red Lion, Pennsylvania</td>
<td>15740 17880</td>
</tr>
<tr>
<td>2000-2100</td>
<td>WRVO, New Orleans, Louisiana</td>
<td>15420 17895</td>
</tr>
<tr>
<td>2000-2100</td>
<td>WWCR, Nashville, Tennessee</td>
<td>15560 17915</td>
</tr>
<tr>
<td>2000-2100</td>
<td>WYFR, Okeechobee, Florida</td>
<td>11830 13695 15440 15580</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17215 17865 2125 21615</td>
</tr>
<tr>
<td>2000-2100</td>
<td>Radio Damascus City, Syria</td>
<td>12085 15095</td>
</tr>
<tr>
<td>2000-2100</td>
<td>Radio Netherlands Int'l, Hilversum</td>
<td>9860 13700 15560</td>
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<tr>
<td>2000-2100</td>
<td>Voice of Vietnam, Hanoi</td>
<td>9840 12020 15010</td>
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<tr>
<td>2000-2100</td>
<td>All India Radio, New Delhi</td>
<td>7415 9685 9910 11620</td>
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<td>11715 15265</td>
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### 2100 UTC

**[4:00 PM EST/1:00 PM PST]**

<table>
<thead>
<tr>
<th>FREQUENCIES</th>
<th>2100-2200 KHBW Guan</th>
<th>9820 ML</th>
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<tbody>
<tr>
<td>2100-2200</td>
<td>T-A KUSW, Salt Lake City, Utah</td>
<td>15590</td>
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<tr>
<td>2100-2200</td>
<td>KVOH, Rancho Sini, California</td>
<td>17775</td>
</tr>
<tr>
<td>2100-2200</td>
<td>Radio Angola Int'l Svc, Luanda</td>
<td>33590 9535</td>
</tr>
<tr>
<td>2100-2200</td>
<td>Radio Australia, Melbourne</td>
<td>11800 15465 17795</td>
</tr>
<tr>
<td>2100-2200</td>
<td>Radio Baghdad, Iraq (to Europe)</td>
<td>13960</td>
</tr>
<tr>
<td>2100-2200</td>
<td>Radio Baghdad, Iraq</td>
<td>11860</td>
</tr>
<tr>
<td>2100-2200</td>
<td>Radio Beijing, China</td>
<td>9920 11500</td>
</tr>
<tr>
<td>2100-2200</td>
<td>Radio Cairo, Egypt</td>
<td>9900</td>
</tr>
<tr>
<td>2100-2200</td>
<td>Radio Havana Cuba</td>
<td>11800 17860</td>
</tr>
<tr>
<td>2100-2200</td>
<td>Radio Kiev, Ukraine</td>
<td>9885</td>
</tr>
<tr>
<td>2100-2200</td>
<td>Radio Moscow World Service</td>
<td>7115 7150 7315 9685</td>
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<tr>
<td>2100-2200</td>
<td>Voice of America-Africa Service</td>
<td>7195 15410 15445 15580</td>
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<tr>
<td></td>
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<td>15660 17785 17800 17870</td>
</tr>
<tr>
<td>2100-2200</td>
<td>Voice of America-Middle East Service</td>
<td>6040 9700 9760 11760</td>
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<tr>
<td></td>
<td></td>
<td>15205 11710</td>
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<tr>
<td>2100-2200</td>
<td>Voice of America-Pacific Service</td>
<td>11800 15185 17375</td>
</tr>
<tr>
<td>2100-2200</td>
<td>Voice of Hope, Lebanon</td>
<td>6280</td>
</tr>
<tr>
<td>2100-2200</td>
<td>Voice of Turkey, Ankara</td>
<td>9795</td>
</tr>
<tr>
<td>2100-2200</td>
<td>WHRI, Nobleville, Indiana</td>
<td>13760 17830</td>
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<tr>
<td>2100-2200</td>
<td>WINS, Red Lion, Pennsylvania</td>
<td>15185 17880</td>
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<tr>
<td>2100-2200</td>
<td>WRNO WorldWide, Louisiana</td>
<td>15420 17895</td>
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<td>WWCR, Nashville, Tennessee</td>
<td>15560 17915</td>
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<tr>
<td>2100-2200</td>
<td>WYFR, Okeechobee, Florida</td>
<td>11830 13695 15440 15580</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17215 17865 2125 21615</td>
</tr>
<tr>
<td>2100-2200</td>
<td>Radio New Zealand, Wellington</td>
<td>17675</td>
</tr>
<tr>
<td>2100-2200</td>
<td>Radio Damascus City, Syria</td>
<td>12085 15095</td>
</tr>
<tr>
<td>2100-2200</td>
<td>HCJB, Quito, Ecuador</td>
<td>15270 17790 25560sbb</td>
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<tr>
<td>2100-2200</td>
<td>Radio Canada Int’l, Montreal</td>
<td>11730 13670 15150 17820</td>
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<tr>
<td>2100-2200</td>
<td>Radio Japan, Tokyo</td>
<td>11815 11835 15270 17765</td>
</tr>
<tr>
<td>2100-2200</td>
<td>Radio Sofia, Bulgaria</td>
<td>17810 21610</td>
</tr>
</tbody>
</table>

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**February 1991**

www.americanradiohistory.com
CQ Amateur Radio Buyer's Guide

You can buy with confidence when you have all the facts. The 1991 Equipment Buyer's Guide gives you in-depth coverage of HF/VHF/UHF rigs and accessories. All the information is here in one handy, concise directory with descriptions, technical specifications, model numbers, retail prices and photographs. How do you get a ham license? What's the latest on the code-free license? What equipment do you really need to work the satellites? Should you buy a computer for your shack? How do you add computer control to your rig? You can buy with confidence when you have all the facts. Order the 1991 Equipment Buyer's Guide today!

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Don't miss the single most valuable buying guide in the Amateur Radio field.

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www.americanradiohistory.com
### FREQUENCIES

<table>
<thead>
<tr>
<th>Time</th>
<th>Station Name</th>
<th>Frequency (MHz)</th>
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<td>Sierra Leone BrcdStng,Co. Freetown</td>
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<td>Radio Finland, Helsinki</td>
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<td>Radio Canada Int'l, Montreal</td>
<td>9755 17330</td>
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<td>2300-2340</td>
<td>Radio Sofia, Bulgaria</td>
<td>11600 11700</td>
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<td>2300-2355</td>
<td>Radio Viltis, Lithuania</td>
<td>8100 7400 9865 11790</td>
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<td>2300-2345</td>
<td>WYFR, Okeechobee, Florida</td>
<td>5985 11580 15170</td>
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<td>Radio Pyongyang, North Korea</td>
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<td>2300-0000</td>
<td>Adventist World Radio, Costa Rica</td>
<td>9725 11870</td>
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<td>CBC Montreal</td>
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<td>CBU, Vancouver, British Columbia</td>
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<td>CFRB, Toronto, Ontario</td>
<td>6070</td>
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<td>CHNS, Halifax, Nova Scotia, Canada</td>
<td>6130</td>
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### PROGRAMS

#### Sundays

- **2305 UTC:** BBC: Words of Faith. See S 0540.
- **2308 Radio Canada Int'l:** The Shortwave Listeners’ Digest. See S 0038.
- **2310 UTC:** BBC: Book Choice. See S 0225.
- **2315 UTC:** BBC: Letter from America. See S 0545.
- **2315 UTC:** Radio Japan: Hello from Tokyo. See S 0515.
- **2320 UTC:** BBC: Feature. See S 1401.
- **2345 UTC:** Radio Japan: Viewpoint. See S 0354.

#### Mondays

- **2305 UTC:** BBC: Commentary. Background to the news from a wide range of specialists.
- **2308 Radio Canada Int'l:** Current Affairs. See S 1523.
- **2310 UTC:** BBC: Financial News. News of commodity prices and significant moves in currency and stock markets.
- **2315 UTC:** BBC: Traveling Tales. Scottish storytellers strut their stuff (except February 18th, 25th: Talk, a short talk on any subject under the sun).
- **2318 UTC:** Radio Japan: Out and Around. See M 0516.
- **2322 UTC:** Radio Japan: People. See M 0522.
- **2330 UTC:** Multitrack 1: Top 20. Tim Smith presents what's hot on the British pop music charts.
- **2330 UTC:** Radio Japan: City Beat. See M 0530.
- **2337 UTC:** Radio Japan: Diary. See M 0537.
- **2350 UTC:** Radio Japan: Commentary. See M 0350.
- **2355 UTC:** Radio Japan: Tokyo Pop-in. See M 0555.

#### Wednesdays

- **2305 UTC:** BBC: Commentary. See M 205.
- **2308 Radio Canada Int'l:** Current Affairs. See S 1523.
- **2310 UTC:** BBC: Financial News. See M 0530.
- **2315 UTC:** Good Books. See M 0315.
- **2318 UTC:** Radio Japan: Out and Around. See M 0516.
- **2322 UTC:** Radio Japan: Asia Hotline. See W 0322.
- **2330 UTC:** BBC: Multitrack 2. Graham Bannerman presents new pop records, interviews, news, and competitions.
- **2330 UTC:** Radio Japan: City Beat. See M 0530.
- **2337 UTC:** Radio Japan: Diary. See M 0537.
- **2340 UTC:** Radio Japan: Asia Contact. See W 0340.
- **2350 UTC:** Radio Japan: Commentary. See M 0350.

#### Thursdays

- **2305 UTC:** BBC: Commentary. See M 205.
- **2308 Radio Canada Int'l:** Current Affairs. See S 1523.
- **2310 UTC:** BBC: Financial News. See M 0315.
- **2315 UTC:** Music Review. Classical music events and developments from around the world.
- **2316 UTC:** Radio Japan: Out and Around. See M 0516.
- **2322 UTC:** Radio Japan: Business Today. See H 0322.
- **2330 UTC:** Radio Japan: City Beat. See M 0530.
- **2337 UTC:** Radio Japan: Diary. See M 0537.
- **2340 UTC:** Radio Japan: Economy Update. See H 0340.
- **2350 UTC:** Radio Japan: Commentary. See M 0350.

#### Fridays

- **2305 UTC:** BBC: Commentary. See M 205.
- **2308 Radio Canada Int'l:** Current Affairs. See S 1523.
- **2310 UTC:** BBC: Financial News. See M 0315.
- **2315 UTC:** BBC: Worldbrief. A roundup of the week’s news headlines and human-interest happenings.
- **2316 UTC:** Radio Japan: Out and Around. See M 0516.
- **2322 UTC:** Radio Japan: Science Scene. See F 0522.
- **2330 UTC:** BBC: Multitrack 3. Sarah Ward surveys the British alternative music scene.
- **2330 UTC:** Radio Japan: Music Scene. See F 0530.
- **2337 UTC:** Radio Japan: Diary. See M 0357.
- **2340 UTC:** Radio Japan: A Glimpse of Japan. See F 0540.
- **2350 UTC:** Radio Japan: Commentary. See M 0350.

#### Saturdays

- **2305 UTC:** BBC: Words of Faith. See S 0540.
- **2308 Radio Canada Int'l:** Innovation Canada. See S 0038.
- **2310 UTC:** BBC: Book Choice. See S 0245.
- **2315 UTC:** A Jolly Good Show. See T 1515.
- **2320 UTC:** Radio Japan: This Week. See S 0115.

*A live newscast at Radio Korea.*
From Grove Enterprises
The Leader in Listening Accessories

For Scanning Enthusiasts

GROVE PRE4 SCANNER BOOSTER

Bring in those weak, distant signals with the new Grove PRE4 Scanner Booster. A powerful tool for the serious scanner listener, the PRE4’s transistorized, low-noise amplifier adds up to 20 dB of gain to those hard-to-hear signals. A front panel allows you to customize the amount of amplification.

Using two scanners? The PRE4 has two jacks for simultaneous operation of any two 25-1300 MHz radios! In fact, the Grove Scanner Booster is perfect for any scanner, general coverage VHF/UHF receiver -- even TV and FM.

The new Grove PRE4 Scanner Booster is now available from Grove Enterprises for $79.95 plus $3.50 UPS.

(Not recommended in strong signal areas.)

Improve Your Shortwave Reception

THE TUN4 MINITUNER PLUS

Grove Enterprises has taken two of their most popular products and combined them into one. The result is a listening tool so powerful that it improves reception over the entire 100 kHz to 30 MHz range! It’s the all new TUN4 from Grove Enterprises!

Tune in that weak station. Then switch on the TUN4’s low-noise, high-gain transistor amplifier. Peak the tuning control and hear an astounding improvement in signal strength.

You can also switch the TUN4 between two antennas, interconnect receivers or even remove it from the circuit altogether—all at the touch of a switch. Fine tune your listening with the Grove TUN4. Just $139.95 plus $4.00 UPS.

GROVE FTR5 SCANNER FILTER

Interference. It’s become a real problem. A simple notch filter is no longer the answer. To screen out those increased and multiple source disruptions Grove has designed the new FTR5 Scanner Filter!

A high-pass filter removes shortwave feedthrough, while band-reject filters remove FM and TV broadcast interference automatically. An adjustable 100-220 MHz notch filter allows you to reduce or eliminate single-frequency interference. High-Q microstrip line circuitry rejects deep interference.

A diode shunt array protects your scanner from nearby lightning strikes and high-powered transmitters. A rugged weatherproof enclosure allows for masthead mounting.

The FTR5 with F connectors is just $49.00 ($54 if ordered with BNC, Motorola, PL259, or N connectors) plus $2 UPS.

Business Hours: 9am–5pm EST Monday through Friday
Orders Only 1-800-438-8155 • Information 704-837-9200
Send orders to Grove Enterprises • PO Box 98, Brasstown, NC 28902

www.americanradiohistory.com
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 Usable Frequency (MUF) and the lower line the Lowest Usable 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!

Propagation conditions between the EAST COAST and ...

[Graphs showing propagation conditions for different regions]
Propagation conditions between the EAST COAST and ...

- Pacific
- South America
- Central America
- West Coast

Propagation conditions between the MIDWEST and ...

- Western Europe
- Eastern Europe
- Arctic Europe
- Middle East
- West Africa
- South Africa
- East Africa
- Indian Ocean

MONITORING TIMES
February 1991
Propagation conditions between the MIDWEST and ...

Central Asia

South East Asia

Indonesia

Far East

Pacific

South America

Central America

Propagation conditions between the WEST COAST and ...

Western Europe

Eastern Europe

Arctic Europe

Middle East
Propagation conditions between the WEST COAST and...

**West Africa**

**South Africa**

**East Africa**

**Indian Ocean**

**Central Asia**

**South East Asia**

**Indonesia**

**Far East**

**Pacific**

**South America**

**Central America**
Haverhill's Rodelvox Digital Portable

Several months ago, we broke the news about the DAK MR-101, a new Chinese-made portable with digital frequency readout selling for a mere $49.90. In a nutshell, it has loads of features for the money, but mediocre overall performance and quality control.

Yet, fifty bucks is fifty bucks, and the DAK model has sold by the boatload. Reportedly, many have also been returned because of performance and quality-control flaws.

Set Widely Advertised

What seems to be that basic set, with numerous changes and improvements added, has surfaced as the Chinese-made "Rodelvox," sold by Haverhills (800/882-3050), the catalog firm that's been selling multi-band radios for some years, now.

Probably nowhere else has Haverhills been so thoroughly roasted over the coals than in our Buyer's Guide in Passport to World Band Radio. Yet, something has to be said in favor of a firm which has consistently and profitably beaten the bushes for world band customers. This can-do attitude is a far cry from the behavior of some world band manufacturers' marketing forces, which appear to be asleep.

Rodelvox Noticeably Different from DAK Model

Now, Haverhills has finally come up with a worthwhile product for all those marketing energies. The Rodelvox, which Haverhills' computer printout refers to as the "Rodelasonic Dig. World Band," right off looks dissimilar to DAK's MR-101. The cabinet is designed a bit differently, for one, and its ergonomics are superior. The Rodelvox' antenna rotates, while that of the DAK unit doesn't, and the Rodelvox takes three, rather than the DAK's four, "AA" batteries -- and they're much easier to insert.

None of this is going to move the heavens, but the differences (and these are just the highlights) are real enough to make one wonder whether the two sets are made by the same Chinese factory.

Tuning Limitations in All Bands

The Rodelvox, like the DAK, tunes the AM band from 530-1630 kHz in 10 kHz increments. Of course, this means the 1600-1700 kHz portion of the forthcoming expanded AM band in the Americas won't be covered. Too, 10 kHz increments are fine for the Americas, but are inappropriate for most of the rest of the world, where 9 kHz increments are used.

Equally, the FM band, which is tuned in 200 kHz increments, is not appropriate to the channel separations found in most countries outside the Western Hemisphere. However, the Rodelvox, which otherwise has only pedestrian overall FM performance, does allow for stereo FM reception when headphones are used.

In all, then, the Rodelvox, like the DAK, is far from the ideal set for globetrotting.

There's no longwave coverage -- another drawback for listening abroad -- but shortwave coverage is reasonable, if not ideal. "SW1" covers from 3200-7300 kHz, while "SW2" spans 9500-21750 kHz -- all in 5 kHz, or one-channel, steps. Missed are the 7.3-7.6, 9.3-9.5 and 21.75-21.85 MHz portions of the spectrum. A peek at the Blue Pages of the 1991 Passport shows that large numbers of juicy stations, some not available on other channels, are found within these not-covered frequency ranges.

That's the same dismal shortwave coverage found on several other sets that have recently begun coming out of China and Taiwan. This goes to show that as radios become increasingly dependent on a small number of chip designs for key circuits, it becomes more essential that engineers of those chips be thoroughly informed as to the real-life requirements of the end products. The flawed coverage of this popular Asian chip/LCD design shows how one set of lousy specifications can result in the screwup of all sorts of models from any number of manufacturers.

Tuning, as with the DAK and other units using this same basic chip design, is Spartan. There's no tuning knob -- no keypad, either. Just a pair of up-down slewing buttons, and five buttons for programmable channel memories. As these memory buttons, which are spread in an arc, as in a quarter moon, work independently for each of the four "bands," there are actually 20 memories in all: five for AM, five for FM, five for "SW1" and five for "SW2."

Another plus is that the slewing buttons are multi-speed. So, while they're a mediocre substitute for a keypad and tuning knob, once you get the hang of them they are adequate. Indeed, for the first-time listener they have the advantage of being extremely simple to operate.

Nonstandard Display of Frequency and Time

The Rodelvox' clock/frequency LCD, which is lit for nighttime use, has superior contrast and reasonably large numbers. On the other hand, instead of displaying frequency in the customary XXXXX kHz frequency layout, it reads as XXX.XX MHz. For frequencies ending in "5," that's fine. But the last digit is dropped when it's a zero. So, say, 5965 kHz displays as 5.96 MHz, but 5960 kHz comes out as 5.96 MHz. You get used to it, but it's yet another indication, like the 7.3-9.5 MHz tuning gap, that whoever designed the tuning chip/LCD has had pitifully little experience in the field.

Having a clock with timing facilities on a world band radio is also a great idea. You can use the clock to ascertain World Time (UTC), and as a timer it can allow for at least some VCR-type hands-off taping.

Problem is, the Rodelvox's clock (that chip/LCD circuit again!) uses the 12-hour format -- not the 24-hour format required for World Time. And its timer is a simple on-only alarm. That's fine for being aroused in the morning, but it's of little use for taping. There's also a sleep-off control.

On the Rodelvox, as in the DAK unit, there's a lock switch for the keypad. Frankly, this looks
as though somebody designing the receiver saw "lock" on several other portable radios and decided that meant a keypad lock. What it normally means -- and should mean -- is a power lock, which prevents the radio or its dial light from coming on accidentally in transit, running down the batteries. So while the Rodelvox lock misses the point, at least it's clearly and honestly labeled as a keypad lock.

**Sensitivity Much Better than DAK Model**

As to performance, it's a mixed bag. Selectivity is fairly typical for a $100 model -- you can hear squeals and slop from adjacent channels, but it's not all that obnoxious. Audio quality, while it's a bit tinny, isn't too bad, either. The real difference in performance between the Rodelvox and the DAK units, however, is in sensitivity to weak signals. The DAK sometimes seems to be better at generating hiss than in bringing in stations. The Rodelvox, however, fares much better, notably in the lower frequencies covered by "SW1."

However, the Rodelvox shares one annoying shortcoming with the DAK: single-conversion IF circuitry. That is hardly surprising for a receiver in this set's price class, but it means that you hear some "repeats" of radio signals that actually operate almost 1 MHz away.

**Reliability Questionable**

The only way to be certain of a given model's reliability is to use numerous samples over long periods of time. As the Rodelvox has just made its debut, we haven't been able to do that. But looking at it over doesn't inspire confidence. Nor does the numerous samples over long periods.

Price? We paid $79.95 plus $6.95 shipping for ours when it was first being offered a few weeks ago, but that same model is now $99.95 plus s/h, or $106.90 total. That's only $12.95 less than Radio Shack's similar, but much better constructed, Realistic DX-370. And close to the street price for two models very much like the DX-370: the Magnavox (Philips) AE 3805 and the Sangean ATS 800, both widely sold by world band specialty firms and other stores.

**Bottom Line: What's the Point?**

So, what all this come down to is that, yes, the Rodelvox is a welcomed improvement over DAK's pioneering but flawed MR-101, and Haverhills is to be commended for seeing to it that improvements were made. But the Rodelvox lacks the appeal of rock-bottom price found in the DAK model, which costs only half as much; yet, it doesn't have the quality of construction of a variety of similar models within its price class.

The problem with this close family of portables from Sangean, Magnavox, Philips, Radio Shack, DAK, and now Haverhills, is that while they are essentially suitable only for traveling (their performance is below that needed for hour-after-hour listening at home), the fixed channel spacing of their AM and FM circuits, plus the lack of longwave coverage, make them singularly inappropriate for use at home. If these sets can't hack it as world travel portables, and they won't suffice for use at home, then what are they being produced for?

Someone has come up with a nifty way to produce decent radios for much less money than in the past. That's great. But much more thinking needs to be done about designing sets to fit real-life market requirements and listener needs.

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You can hear Larry Magne's equipment reviews the first and third Saturdays of each month over Radio Canada's "SWL Digest." For North America, "SWL Digest" is heard at 7:35 PM ET on 5960, 9755 kHz, with a repeat Tuesday at 8:30 AM ET on 9635, 11855, 17820 kHz.

PASSPORT'S "RDI White Paper" equipment reports contain its exhaustive tests. These equipment reports are available in the U.S. from Universal Shortwave and EEB; in Canada from PIP, C.P. 532, L.G.R., Leval PQ H7N 428; in Europe from Interbooks, A. Abbot Street, Perth PH2 OBE, Scotland, and Low Electronics stores; in Japan from IBS-Japan, S-31-6 Tamianawa, Kamakura 247. For a complete list, send an SASE to RDI White Papers, Box 300M, Penn's Park PA 18943 USA.

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**MONITORING TIMES**

February 1991 89
UNIDEN'S NEW BC855XLT

Released in limited quantities at the close of 1990, the new Bearcat BC855XLT from Uniden is a low-profile, entry-level, desktop scanner with 50 memory channels. Pre-programmed weather search for the five NOAA frequencies is provided as well.

The 50 memory channels are divided among five 10-channel banks which may be combined or locked out in any combination. Frequencies may be scanned or searched at 5 or 15 steps per second.

Frequency coverage for the new Bearcat includes 29-54, 118-174, 406-512 and 806-956 MHz (cellular ranges deleted, but restorable as described in the sidebar).

Individual channel lockout permits any memory channel to be temporarily deleted during the scan sequence to avoid stopping on unwanted frequencies without erasing them from memory.

The liquid crystal display shows frequencies and operational settings. Rescan delay is selectable for individual channels to allow a two-second wait for responses between transmissions.

Squelch may be manually set for desired sensitivity, or rotated to the automatic position which is factory set for optimum squelch level for most applications.

Uniden's standard search capability allows the user to enter his own upper and lower frequency limits and the scanner will automatically tune rapidly across that range looking for active signals.

Channel one priority allows any frequency in the radio's range to be entered into this channel and sampled every two seconds for activity, automatically locking onto that channel when a signal is present so that the listener won't miss an important message even though the radio may be scanning or searching.

A non-volatile memory provides long-term storage of memorized frequencies without the need of a replaceable battery. Direct channel access permits the user to press keypad digits to instantly monitor the corresponding channel number.

**CELLULAR RESTORATION**

NOTICE: Monitoring Times assumes no responsibility for damages or other liability resulting from attempting to duplicate this procedure. It is possible that this modification may void your warranty.

While it is lawful for anyone to own a receiver with cellular frequency coverage, it is not lawful to monitor cellular telephone calls.

The following steps should not be attempted by anyone unfamiliar with electronic circuit components. Tools required are a Phillips screwdriver, wire cutters, 1/4 or 1/2 watt resistor measuring 4.7k to 22k ohms, a small soldering pencil and small gauge, rosin core solder.

With the power cord disconnected and the bottom edge of the scanner facing you, turn it over on a soft surface to avoid scratching, and proceed as follows:

1. Remove the five Phillips-head cabinet screws and carefully separate the cabinet.
2. Grasping the speaker plug (not the wires), carefully pull the plug from its socket. Lay the two cabinet halves side-by-side.
3. Refer to the illustration and find the fifth jumper in a row at the top of the right-hand circuit board. Cut "A" at its midpoint and bend it down as shown.
4. Route the resistor under the lower lead of diode D201 and under the jumper lead. Solder points B and C carefully; do not use excessive heat. If the jumper comes loose from beneath the board, it will reattach when the solder cools.

To test the modification, plug in the power cord, switch on the scanner and press MANUAL, 845., ENTER in that order. If 845.000 appears in the display, the restoration is successful, otherwise ERROR will be displayed as before. Remember, the speaker is disconnected, so no audio will be heard.

5. Snip off and remove excess wire from the resistor leads; plug the speaker lead back in place; reassemble the cabinet. If factory service is required, the resistor may be removed and the jumper lead resoldered.

**MONITORING TIMES**
The antenna jack is the improved BNC variety; an 18" plug-in telescopic whip is provided for close-in listening convenience. An 1/8" external speaker jack is included on the rear apron, as is a 12 volt DC jack for the AC wall adaptor (provided). If mobile operation is desired, the unit may be powered directly from a cigarette lighter adaptor like the popular Grove ACC23 ($9.95 plus shipping).

Audio output level is 1.3 watts, substantial for indoor hearing environments. Size is 9"W x 6-1/2"D x 2-1/4" H and weight is 22 ounces. The housing is a smooth, metallic, grey plastic cabinet.

A Look Inside

Essentially, the BC855XLT is a desktop version of the enormously-popular BC200XLT handheld scanner. As such, it has excellent sensitivity and average selectivity and dynamic range. But it is an outstanding value considering it is the lowest priced scanner on the market with 800 MHz capability.

Our Observations

Unlike the venerable BC800XLT with which this new unit will clearly compete, the BC855XLT has only one antenna connector, but cellular frequency coverage (included from the factory on the 800) is deleted (although it may be restored).

The audio amplifier provides strong, clean audio, more than adequate for any common listening environment.

Like the BC200XLT handheld, the 855 will respond to the all-channel erase command (with the radio off, hold down MANUAL, 2 and 9 and switch on the radio) and the factory preset frequency autoload as well (same as above, but pressing SCAN, 2 and 9).

The liquid crystal display (LCD) shows frequency, channel number, bank number, scan or search mode, and lockout or delay status on selected channels. The easy-to-read, 1/4" digits are backlit by a green electroluminescent (EL) panel for night viewing.

The BC855XLT is now available from Uniden dealers; Grove Enterprises, from whom we borrowed this unit for testing, sells them for $209 plus $5 UPS shipping.

Thanks to the thousands of you who returned the reader's surveys! We appreciate your loyalty, have noted your responses, and will report to you shortly!
INNOVATE and Cut the Cost of Parts

Are you a person who buys new materials each time you tackle a new project? For example, do you buy commercially-made antenna insulators for each antenna you erect? What about project boxes for those upcoming pieces of radio-room equipment?

If we were to compile a list of materials we have purchased for, say, the past 12 months and did a cost analysis, we might find the expenditure a bit shocking. Ordinary store items can be modified for electronics use at a significant savings if we are willing to be innovative. This article treats the general subject of employing common materials for day-to-day electronics applications.

Antenna materials

Quality insulators are costly. We can save money by using hardware-store materials. For example, PVC pipe and PVC pipe nipples (joiners) serve nicely as antenna insulators, and they cost just pennies for the 1/2 and 3/4 inch sizes. They work well for receiving types of antennas, and they are suitable also for low-power transmitting antennas (less than 300 watts).

PVC material can break down and burn when it is used as insulating material at the high-impedance points in a transmitting antenna. I don't recommend it for use as dipole end insulators or loading-coil forms if high levels of RF power are used. PVC plastic is okay for high RF power if it is used at the low-impedance point in an antenna (center insulator of a half-wave dipole, etc.).

In a like manner, plastic hair-curler forms (rollers) are cheap and entirely satisfactory as antenna insulators. I have used them as spreaders for open-wire, balanced feed line. Plastic coat hangers may be cut into suitable lengths for use as insulators. One hangar provides many insulators, and you can cut it easily with a hacksaw.

Some of you may recall the way it was done a few decades ago, when we boiled wooden dowel rod in paraffin (canning wax) for 30 minutes after cutting and drilling it for use as insulators. The technique remains practical, and the wood stands up well in the weather for years. Wood may be treated in the same manner if we wish to construct a dipole center block.

This discussion brings to mind a ham radio field day event I attended where the crew forgot to bring insulators for the antennas. An innovative member of the group solved the problem by removing the polyethylene retainers from some soda-pop six-packs, separated the rings with a knife, then used them as insulators. They were strong and had excellent insulating properties.

Antenna wire has become an expensive item. I have found a workable solution to this problem by purchasing clear plastic twin speaker wire that is sold at most radio stores. The parallel wires pull apart easily to provide 200 feet of antenna wire per 100 foot roll. I prefer No. 22 speaker wire for short antennas and No. 18 speaker cable for longer, heavier antennas.

The cost per foot of antenna wire becomes two or three cents, and the plastic insulation enhances the strength of the wire.

The insulation holds up well when exposed to the elements for long periods.

It appears to be UV-resistant as well. I have used this wire for as long as four years in Michigan, and found no evidence of discoloration (suggesting contamination) or cracking. The plastic jacket helps prevent oxidation of the copper wire inside it.

I have used speaker wire (unseparated) as low-impedance balanced feed line when operating my ham gear in the West Indies. It is resistant to salt water and is lightweight, which makes it easy to carry in my luggage. You can make a dipole from speaker wire by simply pulling the two conductors apart to form the dipole, then tying a knot at the feed point and using the unseparated part of the wire as a balanced feed line. A 40-meter dipole, thus constructed, should cost less than $1.

No. 18 Copperweld electric fence wire is very inexpensive. It is worth considering for use in a variety of shortwave and ham antennas. Most farm supply stores sell it in 1/4-mile spools for as little as $12. It is an inexpensive source of wire for buried ground radials as well.

Workshop materials

Sheet aluminum is sometimes hard to find, and it can be costly. Those of us who like to make our own chassis and panels can take advantage of aluminum cookie sheets that are sold at most variety stores. They are relatively inexpensive and may be cut easily with a saber saw.

I have used galvanized steel furnace ducting to form many chassis and boxes for my projects. Some heating contractors are willing to give me scrap pieces at no charge. I like using this material because the seams of a box can be soldered together easily with a 100-watt or greater iron. Once cleaned and painted, my homemade boxes look as good as most store-bought aluminum project boxes.

Plastic and metal recipe boxes are excellent for use as small equipment enclosures, and they are inexpensive. Other types of office file cabinets (such as bond boxes) serve as inexpensive cabinets for
larger pieces of gear. Ventilator grilles and screen vent plugs are sold at most lumber supply houses. They are excellent for use as ventilator openings in cabinets that house heat-generating electronic circuits.

Don't overlook aluminum channel and angle stock as heat-sink material. Lumber suppliers carry all manner of aluminum stock that may be cut to size and used for semiconductor heat sinks. Aluminum angle stock is great also for joining the walls of homemade cabinets.

Small diameter hookup wire for little projects is hard to find in electronics catalogs. An excellent source of this type of wire is multiconductor telephone cable. Each wire in this cable has its own color code. A two-foot length of this cable has provided sufficient wire for my many projects over the past 10 years. A telephone serviceman gave me two scrap pieces of cable for my shop. Don't be bashful about asking for leftover cable that is usually thrown in the trash pile.

Homemade circuit boards can be fashioned from scrap pieces of Formica by using epoxy glue to affix thin copper to the Formica. Hobby stores stock very thin copper for this application. Alternatively, you may use the thicker flashing copper by cutting it into strips of the appropriate length and gluing it to Formica or a similar insulating material.

How about coil forms for small equipment? The days of commercially made plug-in coil forms are gone. I have used two and three circuit PL-55 type phone plugs as plug-in coil forms. The coil is wound on the plastic screw-on sleeve, then glued to provide a protective insulation for the coil wire. I use polyurethane varnish for this purpose. General Cement polystyrene Q-Dope is better, but it is expensive, comparatively speaking.

I have used discharged shotgun shells successfully as coil forms. The plastic bodies of the shells have good insulating properties and the material is rigid and moisture proof. I mount the shells on a chassis by means of a 4-40 screw and nut which is passed through the primer-cap hole. The cap is removed easily by using a punch and hammer to dislodge it. Prescription pill bottles also serve well as coil forms. Your friendly druggist will probably sell you a few of these at his cost.

Some closing thoughts

I have barely agitated the surface in this discussion. There are countless common items you can obtain for use as substitutes when cutting the cost of commercial radio parts. All it takes on your part is to have an inquisitive mind when you browse through the variety store or lumber supply house.

I look at food containers with more than casual interest when I'm at the supermarket. Many cans are ideal for use as small chassis or shield cans for sensitive circuits. I give more than a cursory examination to baking pans and other aluminum cookware items. Cake tins and bread pans are great for use as chassis — especially for prototyping new circuits.
**Lettin' the Air Flow**

Want to cool off your Uniden BC 250 (or any other scanner/receiver for that matter)? If so, read on. By removing the bottom cover of the BC250 scanner (which is made of heavy gauge sheet metal) and opening up one or two holes with a nibbling tool, you can increase the air circulating throughout the radio.

Radio Shack sells some small speaker grills (RS # 40-1291) which can be placed over the holes in the bottom cover to keep hands from accidentally finding some possibly lethal voltages. Ensure that the holes conform to the size of the grills.

If desired you can pop the top cover and repeat the process to provide excellent air flow through the radio. Just be sure that the grills fit the holes and secure them with some five minute epoxy cement so they won't pop lose. Thanks to Robert Watkins of Milwaukee, Wisconsin, for the information.

**A Different Tilt**

Some monitors like to put a tilt on their equipment. I have seen everything from blocks of wood to 35 mm plastic film cases placed under the front of a radio to elevate the unit. The film can solution gives about 2 inches of lift to the front.

I prefer the plastic caps off the LARGE toothpaste tubes which yield about a 3/4 inch tilt. These plastic caps can be painted to match the front panel. They are secured with a screw through a hole drilled in the top of the cap directly to the bottom of the receiver cabinet. Radio Shack sells a selection of stick-on feet (I use the clear round ones) which can be attached to the open end of the toothpaste cap to provide a nonskid foot for your favorite radio.

**Locked out of the Trunk?**

More and more public services are leaving the traditional Hi-band VHF and UHF frequencies in favor of the new 800 MHz trunked systems. This provides a real challenge to scanner listeners, for how, outside of spending lots of money for a new scanner which covers 800 MHz, do you receive these frequencies?

Some enterprising individuals have experimented with their scanners using them as tunable IF strips and punching in ridiculous combinations of frequencies in hopes of hitting a multiple of the fundamental frequency plus or minus the IF frequency which will yield a usable 800 MHz signal. All kidding aside, this is not the way I want to spend my valuable time at the radio.

Bob Sickels of Ft. Pierce, Florida, came up with a very low cost solution to the problem. It seems that Fair Radio Sales, 1016 E. Eureka, Box 1105, Lima, Ohio 45802, might have a cost-effective answer. They offer a GE varactor UHF TV tuner for about $6 each. Bob's interest in radio astronomy prompted him to hook up this tuner per the diagram in Figure 1. Tuning his receiver to 45 MHz and using it as a tunable IF strip, he was able to receive all the UHF TV channels and the 800 MHz portion of the spectrum, as well.

The hook-up bears a little explanation. Since the tuner is a varactor device, actual frequency shifting is done by a 100K ohm pot hooked up to a +24 to 30 VDC source. In addition, you need to supply two additional voltages of +15 V and +6 V. Input to the tuner is 300 ohms (as usual on TV sets) and can be brought down to an impedance of 75 ohms using any balun designed for cable TV service.

The antenna is hooked onto the coaxial connector of the balun and the 300 ohm twin lead output of the balun is soldered to the two lugs for antenna input to the tuner. A short piece of coax with an RCA plug on one end and an end to match whatever your scanner takes for an RF input completes the hook-up.

Now, by tuning your scanner to 45 MHz it becomes an IF amp and audio section for the UHF tuner. Anything that the tuner hears is down converted to 45 MHz and fed to the scanner where it is demodulated and amplified.

So there you have it, a $6 solution to the 800 MHz dilemma. Have fun with this one. The only limitation will probably be your antenna system. Bob uses a 7-foot dish and a GaAsFET preamp to boost his UHF signals, but if there is a lot of 800 MHz activity in your locale, a good UHF scanner antenna should provide some interesting listening. Many thanks, Bob.
Toward a More Selective IF

IF selectivity is a big problem with a lot of the portable shortwave receivers on the market. The Sony 2001, which started the portable shortwave revolution, was absolutely horrible on SSB and AM with its extremely wide ceramic IF filters. Radio West, EEB and Universal all offer mods to increase the selectivity of various portables by replacing the offending IF filter with one that exhibits better shape factor and skirt selectivity.

Unfortunately, this type of modification can be costly. About the only other solution is to add some sort of audio filtration on the output. This will clean up some signals but is similar in concept to a doctor who treats the symptoms rather than the cause of the disease.

Steve Raycraft of Watertown, New York, has had huge success by replacing the narrow filter in his Sony 2010 with a Murata CFM455J1/LF-C2A ceramic filter. These filters have a response of 2.6 kHz at 6 dB to 4.1 kHz at 50 dB, yielding a shape factor of 1.57:1, which ain’t too bad at all. As with any of the mods described in this column, ensure that you have the necessary test equipment, experience level and, most importantly, the service manual or tech literature available so the mod will go smoothly and you won’t hose up an otherwise good radio.

About the only problem is procuring the Murata filters. Most parts outlets do not stock them and those that do usually have a minimum order amount. Anyone out there know of an inexpensive source of Murata filters?

Packing for an Expedition

In the August column I put forth several ideas for making a listening DXpedition a little more tolerable. Bob Fraser of Cohasset, Massachusetts, provides further info on this topic. Bob deploys into the bush with a Sony 2003 (predecessor of my 7600) in a fanny pack. Also included in the pack is a zip-lock baggie holding a notebook, pencil (I prefer a .5mm mechanical type made by Pentel) and several frequency lists reduced photostatically to a small size.

In addition there is another zip-lock bag holding a set of folding headphones (I use the mono, nonfolding headphones found in Radio Shack) and the AN-61 reel antenna (I really like the reel antenna idea -- the British SAS have used this design for over 40 years in their portable HF sets).

Bob also chides me for not mentioning a small mini flashlight. It just slipped my mind, Bob. I have two sizes, one which stays on my belt in a pouch and the other one in my shirt pocket or in the radio gear.

Bob brings up a good question regarding heat/cold damage to portable receivers and scanners left for extended time in a vehicle. I use a trick carried over from my photographic days, using a large styrofoam cooler (usually about $3 or $4 at a local supermarket) to keep the equipment at an even temperature while stored in the car or van.

You don’t have to use any ice bags or frozen “blue-goo” in the bottom unless temperatures are extremely intense. If ice or coolant is used, be sure to seal the radio equipment in a zip-lock baggie and place a towel or piece of cardboard down over the ice to ensure that water or condensation does not ruin delicate electronic equipment.

Fatal Flaw in Dec Circuit

Finally, Lt. Arnal Cook, an advanced ham who currently resides aboard the USS Nimitz, has a warning for anyone trying the circuit on figure 4 of the December issue (p. 95). The circuit, says Arnal, is “guaranteed disaster if anyone tries to install it in any non-center tapped transformer circuit as you show.” Figure 5 shows how to hook it up in a PRO 2004/5/6 scanner. “The least it will do is blow fuses. At worst, it could wipe out a $400 scanner instantly.” We’ll let Arnal explain.

“These figures attempt to show how to provide a split (or dual) polarity power supply for an IC circuit requiring + and -12v. Paralleling two bridge rectifiers and strapping an output of each together (the traditional [-] of one to ground and the [+]) of the new one [Fig. 4] to ground) results in a direct short through two forward biased diodes of the non-center tapped transformer.

“You cannot simply parallel another simple full wave (bridge) rectifier across the same winding and miraculously double the output voltage (+ and -12v = 24v).”

That’s it for another month, gang. My sincere thanks to all who have written sending in solutions, mods and questions. This column cannot function without your input and support. 73 es gud DX.
Of Sailboat Masts and Paper Clips and Cabbages and Kings

Yes, this month we have reports on antennas which utilize, of all things, sailboat masts and, it’s true, paper clips. But I must admit, I lied about the cabbages and kings. Anyhow, now and then I feature something that one of you talented Monitoring Times readers sends in to share with me. This month we have not one, but two reader-designed antennas which we will take a look at.

A Multiband Shortwave Antenna System:

Our first antenna comes from MT reader Jacques d’Avignon, who monitors the airwaves from Cornwall, Ontario, in Canada. Here are the steps to the Avignon Antenna System shown in Figure 1.

1. It seems that Jacques started the whole project off by putting the first antenna pole up to serve as one support for a clothesline which his wife wanted. No harm in getting your spouse favorably disposed to your antenna projects right from the start.

2. Then he strapped a 30 foot sailboat mast to his chimney. A less romantic solution for most of us might be a Radio Shack telescoping pipe mast, or even one of the wooden masts mentioned several months back in this column (plans still available for a business-size SASE). To get the most of this installation, in addition to the antenna described below, Jacques mounted his VHF discone on the top of his tower.

3. Next he cut insulated wires to the following lengths: 45, 40, 35, 30, 25, 20, 17.5, 12.5 and 7.5 feet. Jacques tells us that these lengths approximate quarter wavelengths for most of the important monitoring bands from 5 to 30 MHz.

4. The insulated wires were then “bundled up together” and strung between the clothesline pole top and the sailboat mast as shown in Figure 1.

5. Ground the metal mast. If you use a wood or nonconductive mast, you could run a ground wire up the mast to provide the needed grounding. Probably number 12 or even heavier would be best here.

6. The feedline is RG-8, and its shield is grounded to the mast (or the ground wire) near where the antenna meets the mast. Scrape the wires bright where they connect and make it a soldered connection if possible.

7. Use insulators at each end of the wire span between the two poles as shown in Figure 1.

8. The end of each antenna element wire nearest the mast is scraped clean of insulation and then they are all connected together and connected to the center conductor of the RG-8 feedline. For best results, this multiple connection should be soldered. Seal the connection around the coax with coax sealer to keep weather out of the line.

9. If you live in lightning country, be sure to remember at least the minimum lightning damage protection: never operate your rig in stormy weather, and always disconnect and ground your antenna when it is not in use. I unplug my rig too, as transients on power lines from nearby strikes can enter through that route.

Jacques reports that this antenna works very well for him, and it should do so for you, too, if you are a shortwave monitoring enthusiast. The old rule of putting it as high and in-the-clear as possible should be kept in mind, but if you can get it up only 20 feet or even less, you should still have some good monitoring and enjoyable evenings with the Avignon Antenna System. Thanks, Jacques.

Kurt N. Sturba,*
Eat Your Heart Out

The next antenna came across my desk under the heading, “My most interesting antenna story.” And you will soon see why. John Azzara, N2GYN, of Deer Park, New York, says that he “decided to have some fun on 10 meters” during a time when the propagation was really excellent.

He normally operates a three-element triband Yagi-Uda, but found contacts so
easy to make that he wanted more challenge in his radio-sport. So he used his ham transceiver and a MFJ 949 antenna tuner to feed a paperclip tuned as a longwire.

John reports that he was able to tune an acceptable SWR on this antenna with his tuner, and proceeded to call "CQ." To his great surprise, a G4 station (England) responded with a 5 by 8 report. When he signed off with the incredulous Briton, he immediately received a call from a DL (German) station who had been listening to his first "paperclip" QSO.

He continued to work stations with his "longwire paperclip antenna" and to each station he sent, along with his QSL card, the exact paperclip which he had used in the contact with that station.

John says he tells this story to encourage beginners and old timers alike that they do not need a beam antenna to work DX. You may remember my reference a few months back to the old McMurdo-Silver receiver ad which proudly reported "around the world reception with an ice-pick antenna," but this paperclip is the winner of the smallest practical (?) shortwave antenna I’ve heard of.

Thanks, John, you made my day. Any of you readers out there have a "most interesting antenna story" to beat John’s?

RADIO RIDDLES

Last Month: We asked: "How could the beverage antenna earn such a reputation for really 'beaming-in' on the signal at which it is pointed, and bringing that signal up out of the interference to a nice listenable level when, in truth, the beverage antenna is a low-gain antenna."

Well, you can make a station stand out above the interference by either raising that station's strength above the interference, or by lowering the strength of the interference but not lowering the desired station's strength. The beverage is such a highly directional antenna that it is much less responsive to signals "off its beam" than to signals in its narrow beam path.

So, although it is a low-gain antenna, it tends to put the signal it is "aimed at" in the clear. Without the interference, that signal is much easier to read and therefore appears to be coming in stronger than it might on some less-directional high-gain antennas.

This month: Last month's featured antenna was named for its primary inventor, Harold Beverage. But its name sounds like it's something to drink. So, for next month, let's see if you can come up with names of actual antennas that sound like: something to eat, something to eat from, something to wear, something to sleep on, and something to keep a pet in.

Get the answers to those questions, and much more, in your next month's Monitoring Times. Till then, Peace, DX and 73.

* "Kurt N. Sturba" is the pseudonym of a well-known writer on antennas who has, for years, been encouraging radio enthusiasts to believe that you do not need an ideal antenna to have fun in radio. He has used such unusual items as a shopping cart and a lawn chair as antennas to work DX to demonstrate his point. And he's right, you know.

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M O N I T O R I N G  T I M E S  F e b r u a r y  1 9 9 1  9 7
Q. What frequency bands are used by U.S. aircraft in the Persian Gulf conflict? (Several readers)

A. One (of many) MT readers now stationed there informs us that his aircraft is capable of plain voice and cipher satellite communications (probably 240-260 MHz), plain voice and cipher VHF-FM (probably 30-66 MHz), plain text VHF-AM (118-136 MHz), and plain text and cipher HF-SSB (2-30 MHz).

Q. What is meant by the term "bands" or "radios"? Is a ten-band radio better than a six-band radio? (John Madden, Greenville, SC)

A. A band is a swath of frequencies which share something in common. For example, the medium wave AM broadcast band consists of domestic commercial stations between 530 and 1600 kHz, while the FM broadcasters occupy the 88.1-107.9 MHz "band." The 80 meter ham band is 3.5-4.0 MHz; the civilian aircraft communications band is 118-137 MHz; and so on.

In early communications receivers, the number of bands was considered important for fine tuning as well as frequency coverage. For example, a radio that tuned from 530 kHz through 30 MHz in one band was far "touchier" to fine tune than one that covered it in four bands (four consecutive ranges). A rotary bandswitch selected those ranges.

Predictably, many less reputable merchandisers define their own bands to deceive their customers. For example, some divide the domestic AM band into sports, music and news! How they ever arrived at that, I don't know, but they call such a receiver a "three-band" radio, even though it has only one tuning range.

When transistorized portable radios first came out, zealous oriental manufacturers took a similar misrepresentation to the extreme. I once saw a "16-transistor radio," ten of which were non-functional, merely soldered by their twisted leads to the circuit board! If anyone out there has one of these relics, I'd love to have it as a collector's item.

Q. Can a discrete be used for TV reception? (A. Hogund, Thomdko, ME)

A. While the frequency coverage is that of TV stations, most TV signals are horizontally polarized; using a vertical antenna like a discrete can reduce incoming signal strength by as much as 30 dB because of cross-polarization. Of course, if signals are strong enough, the loss is insignificant.

Q. How long is the shelf life of a new, uncharged NiCd battery? (Richard Sobon, Einghampton, NY 13001)

A. When a NiCd is purchased, it has already been charged, although the battery often has discharged by the time you purchase it. Typical lifetime for a NiCd is five years, by which time there is an obvious decrease in useful charge life.

Q. Why do I hear cellular telephones in the 454 MHz range on my BC300XLT? (Herb Robinson, Middletown, NY)

A. While you could conceivably be hearing intermod from close-by 800 MHz cell sites, it is more likely you are mistaking conventional 454 MHz mobile telephones from cellular telephones.

Q. Can a scanner be manufactured without a squelch? (A. Shack, Simi Valley, CA)

A. Sure, but why would you want to do it? All you would hear would be the raucous background hiss between transmissions. Perhaps you mean can a scanner be manufactured without a squelch control? The answer would be yes again, but the advantage of the control is to allow custom setting for your local signal levels and background noise.

Bearcat scanners often have an "automatic squelch" setting, fully counterclockwise on the control. This allows the user to accept the factory's preset level without having to adjust the control. It is useful in areas of reasonably strong signals.

Q. Back in the days when CW (Morse code) was king, were there contests for speed, endurance, etc.? What were some of the records? (Gary Jordan, Laveen, AZ)

A. There sure were, and some of the kings were legend. Keep in mind, however, that many of the early records were restricted by the disadvantage of hand-operated straight keys.

More than a century ago at the Paris Exposition (1855), Jimmy Leonard, then only 15 years old, copied 4-character words sent by Joseph Fisher using a straight key at 55 words per minute. A respectable performance by both the receiver and sender.

But the receiving record to contend with is that set by professional Morse operator Ted R. McElroy at the Asheville, North Carolina, Code Tournament on July 2, 1939. At five characters to the word, McElroy copied 75.2 words per minute, earning him the Official Champion Radio Operator title which hasn't been broken for over half a century!

We would like to thank Bart Jahnke,
KB9NM, of the American Radio Relay league (ARRL) for researching this information which was extracted from the publication Morse Code: The Essential Language by L. Peter Caron.

Q. Am I permitted to intercept a TV program being distributed through the 2 GHz multipoint distribution system (MDS)? (Frank Lavoie, Hollywood, FL)

A. No. Interception for personal use of any "addressed" signal—sent by subscription to specific users—is forbidden under provisions of Section 705 of the 1934 Communications Act and is considered theft of services.

Q. I recently heard on 27405 MHz (CB ch. 40) at 1:30 in the morning a one-sided AM transmission in which the operator said it would be impossible to block his signal because of the satellite it transceives from. What was this? (Bill Czeto, Simcoe, ONT)

A. It was a CBer with an illegal linear amplifier puffing up his ego. There have never been any satellite downlinks in the CB band.

Q. How can I reduce interference radiated by the family TV set into my receiver? (Ken Hydeman, Kettleby, OH)

A. The primary source of interference heard on shortwave radios comes from harmonics of the TV’s horizontal (sweep) oscillator; these multiples of its 15.75 kHz frequency may be heard clear into the shortwave range as a raucous buzz.

Scanners get interference radiated by tuner oscillators (heard as unstable carriers) and intermediate frequency (IF) circuitry (audio sound and video buzz in the 42-45 MHz range).

Keep the TV and its antenna as far away from the radio antenna as possible. Add a high-pass filter to the TV antenna leads. Shield and ground the TV set (but not its chassis if it is "hot"—connected to one side of the AC line). Ground the radio. Try another TV. And most effective of all—turn off the TV!

Q. Where can I get a manual for my old Lafayette receiver? (Robert Hilton, Ft. Wayne, IN)

A. The best source of manuals for old communications equipment is HI Manuals, PO Box 802, Council Bluffs, IA 51502. Ask for the price of a manual for a specific model and include an SASE for a response.

Q. I bought a Radio Shack discone for my PRO-2006 scanner, mounted it in the attic of my aluminum-siding house, and attached the F-connector coax cable with adaptors, yet I see no improvement over my other antenna. How come? (Steve Demers, Coventry, RI)

A. All discones are great for wideband transmitting because of their constant impedance over at least an 8:1 frequency range, but they have no gain whatsoever over a simple ground plane antenna at any frequency. The Radio Shack discone degrades rapidly below about 100 MHz because it has no low-band resonator like the Diamond D-130 or ICOM AH7000.

There could be loss in your coax, especially if it is RG-58/U or low-grade RG-59/U; use RG-8U mini or RG6/U for low cost and high performance. Impedance is not a concern for scanner reception. Some adaptors are lossy; use coax with the correct connectors to begin with unless you know the adaptors are of high quality.

The PRO2006 has less sensitivity than most other scanners; this makes it more resistant to strong-signal overload in the city, but out in the country a better antenna and/or preamp may be indicated. Be sure the attenuator switch on the rear apron is in the "0 dB" position.

If the antenna is not at least 8 or ten feet above the uppermost level of aluminum siding, reflections and absorption may be hurting reception.

Q. Is there a way to get 100 or more channels of audio on a video tape, perhaps by multiplexing, like the article in MT a few years ago which told about how the government used pre-detection recording to store radio signals on tape? (William Hassard, Leduc, Alberta, Can)

A. Sure, but I haven’t the foggiest notion how to do it! Perhaps one of our readers knows of such a scheme.

A comprehensive list of questions and answers regarding monitoring may be found in Bob Grove’s "Scanner and Shortwave Answerbook," $12.95 plus $3 shipping from Grove Enterprises, P.O. Box 98, Brasstown, NC 28902.
Broadcasting Yearbook and called Joe. He provided the explanation to a puzzled Arbitron.

A faithful contributor to MT’s pirate loggings, Pat Murphy, is also a news reporter for WNNIS 850AM in Norfolk, Virginia. Pat credits MT and PopCom for revitalizing his love for radios. He says, “As a newsman I always had a scanner nearby but nothing that could search for stations. When I found you guys, I realized that I wasn’t the only one that enjoyed these things. I’ve had fun building up the shack over the past few years. It’s been fun to explore chunks of the spectrum that I had never listen to. Thanks to you, I stay off the streets and spend a lot of time in the company of some top-notch equipment.”

He does, indeed. Pat sent us a snapshot of himself and his friends, which include a Kenwood R-5000, Universal M-7000 decoder, ICOM R-7000, PRO 2004, 5, and 6!

Once or twice a year, Pat persuades Bob Grove to do a radio show with him on WNNIS, and says, “I get calls for weeks after, asking for your address.” Thanks for the kind words, Pat, and for sharing your enthusiasm. It’s readers like you that make “a great magazine, great columnists, and timely information!”

In the December issue, William Nichols mentions seeing a circle of 30 foot masts while vacationing in Germany. William was able to provide little other detail but was hopeful that another MT reader could explain what he saw.

We got a couple of explanations. First comes from Andy R. J. Cadier of Kent, England. “From the description given it sounds very much like a low/medium frequency direction finding station,” he says. “The higher frequencies are monitored using a vertical beam antenna with telescopic elements that can be extended or reduced at will, and can of course be rotated. How the ring of 30 ft masts work on the lower frequencies I do not know.

“By the way,” concludes Mr. Cadier, “these facilities are usually found on high ground and are well way from other radio facilities and are run by the government.”

Another source — a gentleman who works for Motorola but who asked not to be identified, says that what Mr. Nichols saw is called a “Luneberg lens” and is used primarily for HF (shortwave) signal intercept purposes.

“The Luneberg lens is based upon the principle of a horn or wave-guide and is steerable for its 360 degrees with 2 degree beam-width. It can be used for transmitting as well,” says this source.

In short, both roughly agree.

“The fast food frequencies listed in last month’s Scanning Report gave me a chuckle,” says Ken Greenberg of Skokie, Illinois. “Why, oh why,” asks Ken, “would anybody, ever, listen to fast food employee conversations? I doubt if anything transmitted on the radio spectrum could be less interesting. Even repetitive beacon signals are more interesting.”

I’ve got one that’s worse: monitoring garage door openers. There is, of course, a club that’s devoted to the topic, the Worldwide Garage Door Opener Monitoring Association (WWGDOMA). WWGDOMA publishes a monthly bulletin (twice during the winter time when the garage door opener frequencies are more active) called GDMonitor. You can get a sample copy of the January issue of GDMonitor, which features a profile of the Sears “Security One” opener (both heavy duty and aluminum door models), an article on DXing garage door openers in the Third World, as well as loggings by members and more. Send your check for $59.95 to P.O. Box 1, Grand Central Station, New York, New York 10010.

“Hey! Wait a minute!” says John Harazda of Denton, Texas. “Morse code is not a dying mode (See letter from Herbert Boose, “Ask Bob,” December, pg. 98.) CW is alive and doing very well as far as I can tell. Read ‘Looking for work?’ on page 46 of the same issue. It looks like as time goes on Morse code is still the backup mode when the going gets tough, I personally regard CW as a necessary survival skill and think it should be taught as a second language in high school.”

“I fail to see how Bob Kay’s “Picking on the Russkies” segment in his Scanning column pertains at all to communications. Perhaps the editorial page in Bob’s local newspaper would be a better outlet for his personal political opinions than the pages of Monitoring Times.” So says Greg Doerschler of Worcester, Massachusetts.

“I would like to add my sympathies to all the MT staff on the passing of ‘Below 500 kHz’ columnist Joe Woodlock,” says Jeff Mutter of Charlotte, North Carolina. “I’ve enjoyed his column since it appeared in August 1988. Through his encouragement, tuning across the LF band has become part of my hobby routine.

“After the September, 1990, issue came out, I had some questions and information to share with Mr. Woodlock. Now, looking back, the fact that he wrote me back, despite his illness, underscores just how devoted he was to the hobby and MT readers.”

We agree. There is, however, a sad footnote to Joe’s passing. His column, which for the past few months has been written by Monitoring Times editor Larry Miller, will be discontinued after this issue. Not unexpectedly, we were unable to find anyone willing or able to fill Joe’s shoes. In the future, information about longwave will be included in Larry Van Horn’s Utility World.

We’d like to hear your comments, opinions, and experiences concerning the world of radio. Please understand that personal replies are not always possible. Letters should be addressed to Letters to the Editor, Monitoring Times, P.O. Box 98, Braintree, NC 28902. Please include your name and address (may be withheld at your request).
**CONVENTION CALENDAR**

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Club/Contact Person</th>
<th>City, State/Detail</th>
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<tbody>
<tr>
<td>Feb 2-3</td>
<td>Miami, FL</td>
<td>Southeastern Division Comm/ Evelyn Gauzens WAVYWR</td>
<td>2780 NW 3 St, Miami, FL 33125</td>
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<td>Feb 3</td>
<td>Lorain, OH</td>
<td>Northern OH ARS/ Darlene Ohman KABTSV</td>
<td>4122 Bush Ave, Cleveland, OH 44109</td>
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<td>Feb 9</td>
<td>Blaine, MN</td>
<td>Robbinirdale ARC/ Bob Arl KYOH</td>
<td>3042 Wisconsin Ave N, Crystal, MN 55427</td>
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<td>Feb 9</td>
<td>Golden, NY</td>
<td>Innotelty ARC/ Pat Harris NE8BBK</td>
<td>Rd 3 Box 349 D, Welllill, NY 12589</td>
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<td>Feb 10</td>
<td>Mansfield, OH</td>
<td>Brispath &amp; Fothill ARC</td>
<td>449 Parker St, Mansfield, OH 44906</td>
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<td>Feb 11</td>
<td>Elk, NC</td>
<td>Dorthe Taiberl NA9HE</td>
<td>Rt 1 Box 918L, Low Gap, NC 27024</td>
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<td>Feb 17</td>
<td>Kansas City, MO</td>
<td>Mid-America FM Assoc/ Robert Akeisson</td>
<td>12109 E 51st St, Independence, MO 64055</td>
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<tr>
<td>Feb 23-24</td>
<td>Cincinnati, OH</td>
<td>Great Lakes Division Convention</td>
<td>Contact: Stan Cohen W6BGG, 2301 Royal Oak Ct, Cincinnati, OH 45237; 513-531-1011</td>
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<td>Location: Cincinnati Gardens Exhibition Center, Langston &amp; Seymour Ave. 8:30am-5pm both days. Advance tickets $5, $8 at door.</td>
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<td>Mar 3</td>
<td>Dover, PA</td>
<td>Pen-Mar ARC, Keystone VHF Club, Hilltop Transmitting Soc, Southern PA Comm Group/ John Shaffer</td>
<td>2596 Church Rd, York, PA 17404</td>
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<td>Mar 9-10</td>
<td>Charlotte, NC</td>
<td>Roanoke Div Comm/ W. Reed Whitton AB4W</td>
<td>1208 Oxford Place, Cary NC 27511</td>
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<td>Location: Charlotte Merchandise Mart, 2500 E. Independence Blvd; $6 preregistration or $8 at the door; More info call 704-536-7373. Talk-in 145.29 MHz.</td>
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<td>Mar 10</td>
<td>Indianapolis, IN</td>
<td>Morgan Co Rpt Assoc/ Aileen Scales KSGXVA</td>
<td>1.9-25 MHz</td>
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<td>Mar 15-17</td>
<td>Orlando, FL</td>
<td>Fla State Comm/ John Lenkard W4DUN</td>
<td>3145 Market Place, Bloomington, IN 47403</td>
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<td>Mar 16</td>
<td>Scottsdale, AZ</td>
<td>ARCA Spring Hamfest/ Allen Sklar K7DZJ</td>
<td>P.O. Box 10678, Scottsdale, AZ 85271-0678, 683-491-0802</td>
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<td>Location: Scottsdale Community College, Pima and Chapparel Rd; Admission $2 per car. Talk-in 147.18/147.78 and ZIA Link.</td>
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<td>Mar 17</td>
<td>Sterling, IL</td>
<td>Sterling-Fair Rptr ARS/ Susan Pekers KASGNR</td>
<td>511 8th Ave, Sterling, IL 61081</td>
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<td>Mar 16-17</td>
<td>Ft Walton Bch, FL</td>
<td>Ft Playgound ARC/ Clair Fisher N4OWX</td>
<td>616 Burgundy Ln, Ft Walton Bch, FL 32548</td>
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<td>Mar 22-24</td>
<td>Kearney, NE</td>
<td>Midwest Div Comm/ Timothy Lowenstein W4DIV</td>
<td>409 E 25th, Box 998 Kearney, NE 68849-0988</td>
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<td>Monitoring Times is happy to run brief announcements of radio events open to our readers. Send your announcements at least 60 days before the event.</td>
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**BOB'S BARGAIN BIN**

*(One-only items unless stated; all prices* include UPS shipping nationwide)

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- **NEMS CLARK R1302B/REU300C surveillance receiver, 55-900 MHz AM/FM, manuals, excellent; $395.**
- **JIL SX200 SCANNER, 26-108180/180-514 MHz, AM/FM, manuals, excellent; $150.**
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- **Police Call Directory, 1990 edition (only some states); $5.**
- **Collection of previous editions of Confidential Frequency List, Passport, WRTH, FM Atlas, Air Scan, more; $20.**
- **MAGAZINES! FREE FOR THE COST OF SHIPPING AND HANDLING!** Donated by Richard Hackney of Nashville, Tennessee:
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  - Monitoring Times, 1987 complete; $10
  - Monitoring Times, 1988 complete; $10
  - Monitoring Times, 1989 complete; $10
  - Popular Communications, 1988 complete; $10
  - Popular Communications, 1989 complete; $10
  - SPEEDX, 1989 complete; $5
  - SPEEDX, 1988 11 issues; $5
  - Hands-On Electronics, 1988 complete; $10
  - Hands-On Electronics, 12 issues '84-'87; $5
  - Big mix of PopComs, Radio Electronics, ham magazines, etc.; $10

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INDEX OF ADVERTISERS

ACE Communications 91
Advanced Electronic Technologies 23
Antennas West 3, 29, 48
Ashton ITC 41
C.Crane Company 91
Cellular Security Group 97
Classic Radio Service 23
Communications Electronics 9
CQ Communications 81
CSRA 97
Datametrics 89
DX Computing 91
DX Radio Supply 39
Electron Processing 53
Electronic Equipment Bank 15
11-Meter Communications 55
Franklin Video 55
Galaxy Electronics 13
GRE America 21
Grove Enterprises 83, 101
GTI Electronics 51
Hollins Radio Data 35
Hunterdon Aero Publishers 45
ICOM America Cover IV
ICUSA 95
Industrial Comm Engineers 93
Interbooks 3
J & J Enterprises 13
Just Tees'n 43
Klingenfuss Publications 33
MilSpec Communications 99
Monitoring Times Cover III
NBO Distributing 93
OPTOElectronics Cover II
Palomar Engineering 47
Popular Electronics 57
Radio Shack 37
Software Systems Consulting 3, 97
Somerset Engineering 5
Spec-Com 97
Startek 19
The WSYI Group 17, 47
Tiare Publications 25
Universal SW Radio 89

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MONITORING TIMES 103
Many listening hobbyists are suspicious that scanner and shortwave retailers enjoy windfall profits on their imported merchandise. After all, Japanese goods cost far less than comparable American products, right? Wrong!

While it is true that mass merchandisers steeply discount consumer items like TV sets, VCRs, stereos, computers, cameras and the like, our listening hobby is considered insignificant in comparison. Smaller numbers of buyers mean smaller numbers of products, and low volume means higher costs.

The Gallup Poll shows 98% of American homes have television, but only about 3% of the adult population have scanners and shortwave radios. Manufacturers place that figure at only about 1-2%, typically white males of middle age and older. The BBC expects to complete their own survey within a year.

In mass merchandising, a manufacturer's typical markup is 300-500%; sounds great, doesn't it? In the jewelry industry this is known as 'keystoning'; you "keystone" every time you double your cost as a sales figure. Triple keystoning is common among jewelers.

Communications companies like Sony, Kenwood, Icom, Yaesu and JRC sell to dealers who sell to you ("two-stepping"); there is no distributor. This should save the dealer money, right? Wrong again! The pervasive presence of discount mail order firms who buy factory-direct has made margins very small. Let's take a look at some real numbers.

The Sony ICF2010 flies a fictitious retail flag of $459.95. When was the last time you saw one advertised for that? Typically, the radio sells for about $340, netting the retailer about $25. Some profit!

The same holds true for Uniden's Bearcat scanners. Uniden's imaginary $449.95 suggested retail for the BC200XLT really makes the typical $260 selling price look pretty good. But it makes the retailer's $29 profit look pretty dismal.

Near ports of entry like New York, retailers will pool their resources to make enormous volume purchases from off shore, allowing them reasonable profit in spite of substantial price slashing. These dealers may offer the greatest discounts, but don't offer customer support. That is the tradeoff.

Keep in mind, now, that the retailer has to invest in his order with no interest earned on that money while the stock sits unsold on his shelf. He must pay for shipping and insurance as well as advertising, salaries, building, utilities, taxes--get the picture?

So how about publishing? There must be tremendous profit in books--look at the piles of them in Waldenbooks stores and the lists in Publisher's Clearinghouse catalogs. The big publishers like Bantam and Signet may realize the coveted eight-times-cost profit, but many print runs still become clearance shelf candidates.

While the World Radio TV Handbook and Passport to World Band Radio may see 50,000 copies, more specialized tomes like the Shortwave Directory realize a volume only a tenth of that. Low volume printing eats up profit margins.

We at Monitoring Times are proud of the small American entrepreneur who advertises in our pages. It takes spunk, conviction and courage to risk the personal and professional security of a paying job and commit to an independent business. Only about 25% of these dreamers--and I use that term with respect and compassion--will last for three years.

But a few do make it and, with the gradually weakening yen, the climate may once again favor the Growth of American entrepreneurship. Will you be part of this trend? I hope so.

--Bob Grove, WA4PYQ
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