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MONITORING TIMES

A Publication Of Grove Enterprises

More Convention Details

Medical Emergency!
Monitoring the Life Flight Helicopters

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A Buyer's Guide

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MONITORING TIMES

July 1990

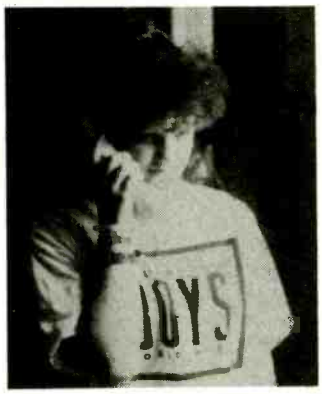
Mark Swarbrick

ON THE COVER: Photo courtesy of Motorola

She Married a Technoid by Steve Douglass 20

When *MT* author Steve Douglass and his new bride began setting up housekeeping, she was in for a big shock. She hadn't anticipated her husband's "hobby" would take up so much room! Or time. Or be so noisy! With the aid of noted cartoonist Pat McCarthy, Steve Douglass describes the couple's transition to a hopeful (?) conclusion.

And more ...



Cordless phone owner, listen up! If you have 'til now pooh-poohed the efforts of your radio hobby friends and relatives to wise you up to cordless phone monitoring, here's your last chance to be warned.

Bob Kay issues an open letter to cordless owners that you monitors can use to back up everything you've been trying to tell them but they wouldn't believe (page 32).

(P.S.: Bob also reprints the frequencies to search for those cordless phones. Those folks having a cordless phone *and* a baby monitor are *really* vulnerable, 'cause he gives you those frequencies, too!)

Monitoring Times columnist Larry Magne scoops the industry this month with a sneak preview of the new ICOM R-72. And we mean *sneak* -- the R-72 isn't going to be available in the U.S. or Canada. But don't rush to Europe until you decide the R72 is worth it. Check it out on page 86.

Bob Grove comes up with an equally long-awaited review -- the AR-3000 wide-coverage scanner (p. 88). It's looking good, but playing hard to get! Bob also critiques Lescomm's modification service for the PRO-2005 that'll turn your Realistic scanner into a real show-piece.

By popular request, "Uncle Skip" begins a two-part "Beginner's Guide to Radio Jargon" this month (p.38). You may want to make a copy to keep nearby when reading radio publications so you can translate as you read.

Are ship-board radio operators truly on the way out? James Hay takes an unbiased look at the current state of ship to shore communications... etc. etc. Check out each one of the departments below for a well-rounded view of what's happening in the world of radio!

DEPARTMENTS

MONITORING TIMES

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LETTERS

We were more than a little surprised by the support for Soviet spokesman Vladimir Posner. In our May, 1990, issue, we responded to a letter from reader Ken Martle, stating that Mr. Posner was a public relations man rather than a journalist. Frankly, we thought that we were stating the obvious. Even ABC's *Nightline"* program refers to him as a "commentator and analyst" and not journalist.

H.H. Dick Hedlund of Honolulu, Hawaii -- a Pearl Harbor survivor and World War II vet, he proudly points out -- disagrees with our assessment of Mr. Posner as public relations man as opposed to journalist. "Hell, man," says Dick, "Posner did more to heal U.S.-Soviet relations than the U.S. State Department or anyone." He signs himself "a sensible Posner fan for years."

Much stronger was the response of Anthony Keys. "I resent the slander of Vladimir Posner in *Monitoring Times*," he writes from Saunderstown, Rhode Island. "I do not want to subscribe to a right-wing publication. Do not send me any more issues."

In that same issue we also apparently slandered a Czech numbers station.

"Shame on you for taking so lightly the inquiry of Art Loftus," writes Dave Bridger of St. Louis, Missouri. Mr. Loftus was asking help in identifying a transmission in some foreign language and had included a sample.

"On the hunch that the words might be numbers I spent a few minutes with *Number Words and Number Symbols* by Karl Menninger." The book, says Dave, was originally published as *Zahlwort und Ziffer*, with English translation by the MIT Press in 1969. What Dave found was this:

"The language is probably a Slavic language, most likely Czech, with the following translation: dava = dva = 2; deviet = devet = 9; bosum = osm = 8; nedla = jedena = 1; nul = nul = 0 (cf English null); sadem = sedm = 7; ozar = ??" Ozar, reports Dave, has no correspondence with a Czech numeral and might be a corruption of "over," which would indicate a two-way transmission.

Sean Kelly of Boston writes in to say that the numbers are jeden = 1, dua = 2, tri = 3, ctyri = 4, pet = 5, sest = 6, sedm = 7, osm = 8, devet = 9 and nula, presumably, 0.

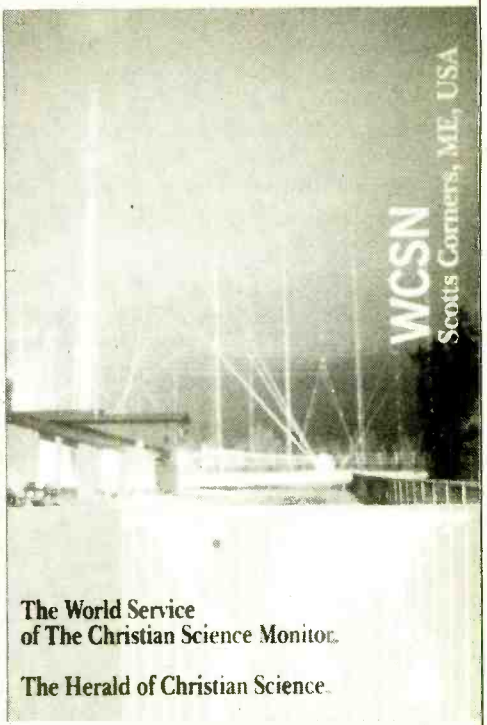
Robert Rankin says that he hears the transmissions regularly. "I hear them on 4885 kHz at 0445 UTC and again around 0530," says Robert. "The ones on 4882.5 (the exact frequency) use AM. Similar transmissions (a female announcer with 5 digit Czech numbers) at 0000 UTC on 4790 kHz uses USB with carrier inserted."

"Such transmissions have been around for a long time," concludes Robert. "The interesting point is that they are still taking place given the formation of the democratically elected Havel government."

Requiem for a Bokmakierie

Bryan Marsh of Auckland, New Zealand, sent along a eulogy for the bokmakierie. For those of you not familiar with the fauna of shortwave, the bokmakierie is the type of bird that sang the song that was used by Radio RSA to announce their transmissions. "The bird died on 30th April this year," laments Bryan. "For it was on Sunday, 1st May, 1966, that the bokmakierie first sent its clear call beyond our borders, and Radio RSA was born.

"And it is only fitting," he continues, "that for this anniversary, we should plan something new to celebrate the occasion." At the bottom of the letter, Mr. March has placed Radio RSA's bird logo at the center of a hand-drawn tombstone.



Thanks to John Carson, Preston Sewell, Thomas Cody, and the CSM itself, we've seen the Monitor's new QSL cards!

Well, as one passes, another is born -- sort of. As many of you already know, the World Service of the Christian Science Monitor is now issuing QSL cards. Such a positive response we've not heard since Radio Botswana started QSLing back a few years ago. "Radio Finland," vows QSL hound Peter Hayden, "is next." Thanks to WCSN's Ed Cockburn for the nice packet of information. Thanks also to regular contributor Preston Sewell Jr. of Franklin, New Jersey.

Major F.M. Townroe (ret.) of Minnetonka, Minnesota writes to say that he was "surprised and delighted" to read the profile of former White House communications director Don Pitts in a recent issue of *Monitoring Times*. Major Townroe remembers the "missile incident" that Pitts recounted towards the end of the article.

"I was a very junior captain, filling a major's position as the

[Continued on page 100]

COMMUNICATIONS

Curb on Hoaxes at Sea

Representative Gerry Studds of Chasset, Massachusetts, has introduced legislation that would stiffen federal penalties for making fake distress calls to the Coast Guard. According to the Boston *Globe*, the Studds bill would make the penalty five years in prison and a $20,000 fine.

Last month, a false distress call led Coast guard officials to discount a real distress call from a father and son aboard a sinking boat, the Sol e Mar. Both are missing and presumed dead.

FCC Raids Hell Raiser

Hell Raiser, a renegade CBer, felt the wrath of the U.S. Federal Communications Commission last month. According to the agency, U.S. Marshalls, with the assistance of Engineers from the FCC's New York office, raided the home of Dwayne Mayo New York, New York, confiscating his equipment.

The FCC arranged the bust after receiving petitions signed by some 30 residents who claimed that Mayo's transmissions were interfering with their televisions. Residents also reportedly heard "Hell Raiser" on their telephones.

The FCC sent Mayo several letters directing him to cease operation until he could eliminate interference, all of which, said an FCC spokesman, "went unheeded." Mayo was then fined $1,600 for unauthorized CB operation. The FCC then monitored Mayo operating his CB with excessive power (they later found five linear amplifiers, each capable of boosting the CB's normal 4 watt power above 2,000 watts.) and conducted the raid.

Buddha Blast Goes Bust

No sooner had the Korea *Times* reported the launching of Buddhist Broadcasting System that there was trouble. Intruders at the station, which had been on the air for only one day,

smashed equipment and threatened employees. According to police, two men in their early twenties entered the station's building in Seoul and fled after destroying equipment worth some 120 million won (US$170,000).

Police suspect a grudge attack by religious rivals who find the station "satanic." The station, HLSG, was powered by a 5,000 watt transmitter and signed on the air on the 2,534th birthday of Buddha.

LoJack Gets Its Man

Back in February, *Monitoring Times* reported the frequency for a stolen vehicle locator call "LoJack." The system uses a radio transmitter, which placed in a car, can easily lead police to the vehicle. Well, LoJack got its first man in Elizabeth, New Jersey.

Police there report finding a 1990 Chevy Blazer that was reported stolen in Massachusetts. According to a police spokesman, two officers in a patrol car picked up the stolen vehicle's signal. "After that," he said, "it was simply a matter of following the electronic trail."

The manufacturers of LoJack recently spent some $3 million to equip some 300 state a municipal patrol cars in the Garden State with the tracking equipment.

Megadeath on AM

People used to AM radio's more sedate fare will be surprised to find heavy metal on New York City's 1480 WZRC. Called Z-Rock, the bone numbing format features 24 hour-a-day hard rock from such groups as Whitesnake and Megadeath.

Citing poor ratings and declining revenues on the formerly all-Spanish station, Infinity Broadcasting decided to try putting specialty rock on AM. "There is absolutely no station [in New York City] catering to the 16 to 24-year-old rock audience," says Mel Karmazian, president of Infinity.

Karmazian also doesn't think that it will be hard to lure the teens to the primarily non-music and poorer fidelity AM band. "If you program a station with something that people want to hear, they're going to listen to it, whether it's on AM or FM."

Satellite-delivered Z-Rock is already on the air in 20 other markets around the U.S.. Lee Abrams, developer of the format, describes it as "gonzo."

Oregon Rules "OK to Tape Police Calls."

An Oregon Appeals Court has said that citizens have the right to record police radio broadcasts without informing the police. The court reversed the Lane County conviction of Ruth Bichsel for taping a radio communication without getting the consent of at least one participant, saying that an exception in state law allowed recording of radio transmissions because they were sent unscrambled and were available for free and ready access by the general public.

The appeals court did, however, uphold her separate conviction of recording a face-to-face conversation with a policeman without notifying him that she was doing so.

Bichsel, apparently on foot, was stopped by police in August of 1987 for carrying a scanner and a tape recorder.

COMMUNICATIONS

CBN Trouble

Radio Evangelist and 1988 Republican presidential hopeful Rev. Pat Robertson was apparently the target of a booby-trapped package that arrived at his Christian Broadcasting Network's Virginia Beach, Virginia, office. A 33 year old CBN security guard was injured when the package exploded. Robertson confirmed that the package was addressed to him.

"This is evidence of extreme hatred by some deranged individual who wants to silence the Christian voice in this country," Robertson said.

Meanwhile, a television technician at CBN was facing criminal charges for allegedly interrupting the satellite transmission of another television show. According to reports, Thomas M. Haynie, a technician for the Christian Broadcasting Network, was accused of using the station's satellite equipment to break into a transmission of what the U.S. Justice Department described as "a hard-core pornography show" on Playboy's American Ecstasy channel. Haynie's video message, repeated three times, urged viewers to "Repent, the kingdom of God is at hand!"

Ham Mags Merge

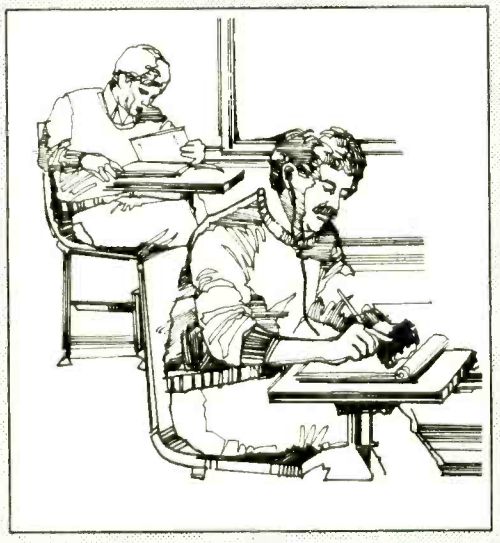
Beginning with this month's issue, two major ham radio magazines will merge. CQ Communications, Inc., the publisher of *CQ*, has announced the purchase of *Ham Radio* magazine. According to sales literature, the combined publications will now have a circulation figure of over 100,000.

Speaker Scam

The Consumer Electronics Group wants to let you know that a speaker scam may be working in your community. According to the CEG, salespeople operating from unmarked vehicles parked in lots, malls or on the streets, entice unsuspecting consumers to purchase speakers with fraudulent bills of lading.

The invoices that they show to the prospective buyer indicate that the manufacturer's retail price is anywhere from $800 to $1,000. The consumer is then urged to set the price, usually in the $250 to $800 range.

When attached to the consumer's audio system, it readily becomes apparent that the speakers are of cheap quality and cost no more than $25 to $50. As the story goes, "if the price sounds too good to be true, it probably is."



Cheating with FM

It was final exam time at Hankuk University of Foreign Studies and the students in Professor Choi Sung-ae's class were diligently scribbling down their answers. Keeping a vigilant eye on the class, Professor Choi relaxed, switching on her FM radio.

"I was tuning into a broadcast," said professor Choi, "when a man's voice suddenly came out: 'The number 2 subjective question is E-X-C-I-T-E-D.'"

Choi contacted university officials who had only to listen to the "broadcast" to learn the identity of the offenders, who were addressed by name over the radio. One of the two "receiving" students had an FM radio and an earphone; however, the other had no "evidence." Officials were unable to find the man who was transmitting the answers.

Mini-sized transmitters, capable of sending messages for short distances over the 76-108 MHz FM band are readily available in Korea and cost only about 50,000 won.

Hams OK'd to Go Mobile in Michigan

You can't operate a scanner in your car in Michigan, but thanks to an amendment signed by Governor Blanchard May 23rd, amateur radio operators have been exempted from that restriction. Praising amateur radio operators for their public service efforts in aiding police, fire and disaster communications, the Governor signed the bill which exempts amateurs of technician class and higher from the motor code which makes it a misdemeanor to equip a private vehicle with a radio capable of receiving police frequencies.

The amended Michigan "scanner" law is in contrast to some other states, notably New Jersey, which do not exempt even amateur radio operators from laws banning mobile use of equipment to receive police calls. The problem has recently become more serious as many current model amateur radio transceivers are capable of receiving police frequencies in addition to the amateur services.

Scanners may be out, but, hey, don't throw away that fuzz buster; The bill also included a provision which prohibited law enforcement agencies from using the ban on police radios to restrict the use of radar detectors.

Thanks to Anonymous, Boston, Massachusetts; Dave Alpert, New York, New York; James Brooker NI8E, Grosse Pointe Farms, Michigan; M.L. Cauthon III, APO San Francisco, California; R.F. DiCorcia, Franklin Park, New Jersey; William D. Heine Jr, APO San Francisco, California; Ruth Hesch, White Plains, New York; Hugh Miller, Woodinville, Washington; J. Mutter, Charlotte, North Carolina; Ali Orka, Seoul, Korea; Rust, Aurora, Illinois; Tomlins, St. Petersburg, Florida; Gary Westfall, Beaverton, Oregon

Laura Quarantiello

LIFE FLIGHT

Monitoring the Emergency Aeromedical Service

by Laura Quarantiello

The future of on-the-scene emergency trauma care has arrived, in the form of an eagle from the sky -- the Life Flight helicopter.

Physicians often talk of the "golden hour" -- the first sixty minutes immediately following a serious accident when the victim's life is quite literally in the hands of paramedics who are usually the first to the scene. It is here that decisions must be made quickly: questions of transport and how to best move the patient to the nearest hospital. The best means is not always by ambulance, due to traffic and the inevitability of a rough ride over city streets and highways. It is this moment when seconds count that Life Flight shines.

Program Background

Established on March 17, 1980, by the University of California (UCSD) Medical Center at San Diego, Life Flight was one of the first hospital-based programs to begin a "Shared Helicopter Service" system. Developed as an auxiliary program to complement and assist emergency medical services in San Diego and nearby Imperial County, Life Flight delivers advanced prehospital medical care to critically injured or ill patients.

It was considered a new and innovative concept, but with time it has proven to be a lifesaver. Life Flight is recognized internationally as a leader in the field of aeromedical transport, with a high percentage of flights directly to the site of accidents, more than any other hospital based program in our nation.

The Helicopter

Life Flight operates three helicopters to serve San Diego County. These craft are medically configured Bolkow B.105LSs with a top speed of 150 miles per hour, optimum range of 250 miles and a service ceiling of 10,000 feet. They are capable of landing in a 60 foot by 60 foot landing zone -- an LZ -- with all the attendant risks.

It can be dangerous flying, for there are sometimes hidden risks such as power lines, tree stumps, fences and numerous other objects that can ruin any pilot's day. However, ten years have proven Life Flight a dependable service.

Two helicopters are available 24 hours a day to respond. Life Flight One is based at UCSD Medical Center, Life Flight Two serves the North County from Palomar Airport in Carlsbad. The rotorcraft can transport two patients at a time and can be reconfigured to act as a neonatal intensive care unit.

Hospital-to-hospital transport is another common job, transferring critically ill patients to other facilities. Each helicopter carries a Registered Nurse versed in advanced emergency procedures, a county certified paramedic and a pilot experienced in emergency medical flying.

The Mission

Life Flight can be requested by any medical authority or public safety agency such as police and fire departments, lifeguards, hospitals, etc. The service is utilized for serious medical emergencies where routine ambulance transport would take too long, or where the victims are located at inaccessible sites.

In less than five minutes following an activation call, Life Flight can have a helicopter in the air and on its way. Flight time to the scene is often only minutes, far and away faster than a ground ambulance. Dispatching is done from the Emergency Transport Services Communications Center at UCSD Hospital in San Diego. Commonly, the helicopter nearest the incident is the one that takes the call.

After liftoff, more detailed map coordinates are given to the crew if necessary, along with a ground contact frequency. The rotorcraft are equipped with Wulfsberg radios operating on VHF and UHF frequencies, while the dispatch center uses a Motorola Centracom I console.

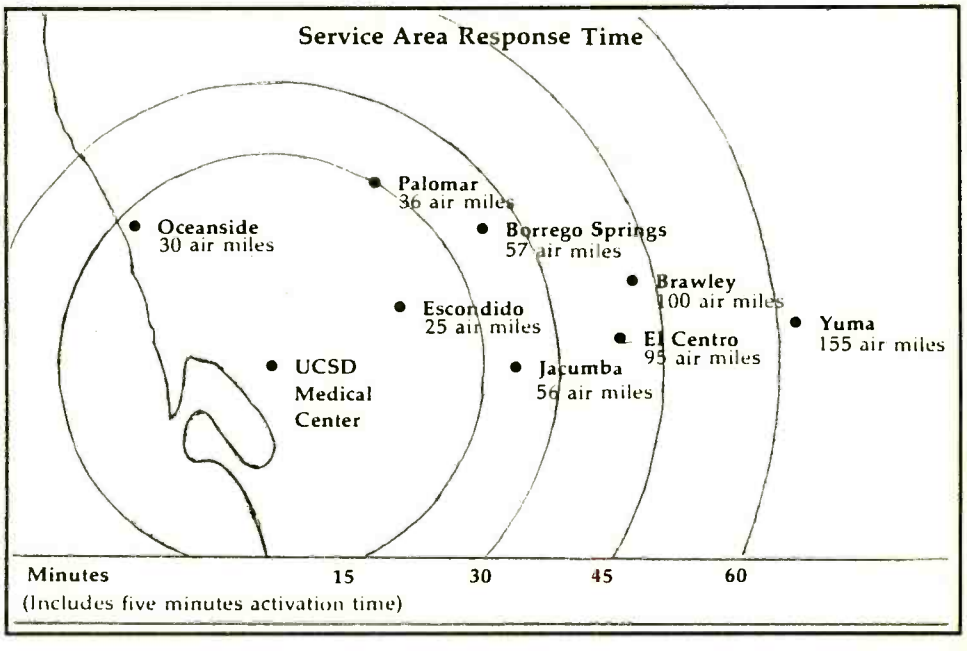
When the craft nears the scene, radio contact is established with one of the police or fire units present on the ground, who will direct Life Flight to their landing zone. The dispatch center is advised of the touchdown. After the patient has been stabilized and loaded, and the helicopter lifts off, the trauma center selected as the best choice is put in touch with the medical teams aboard Life Flight via the Communications Center.

The common critical care facilities used are Palomar Hospital in Escondido, Scripps Memorial in La Jolla, Sharp Memorial in San Diego, and UCSD Hospital in San Diego. A detailed medical report is passed to the emergency room team at the selected hospital, with further updates enroute if the patient's condition changes during the course of the flight.

Life Flight Helicopter Presets

F-1	EMS-1	155.205
F-2	EMS-2	155.325
F-3	EMS-3	155.175
F-4	SDFD CH.3	153.785
F-5	FIRE "RED"	155.085
F-6	CLEMARS	154.920
F-7	HEARTLAND TAC	154.250
F-8	INLAND FIRE	154.175
F-9	SOUTHBAY FIRE	154.415
F-10	SDPD TAC 1	155.685
F-11	UCSD SECURITY	154.515
F-12	NORTH "GRAY"	154.355
F-13	CDF LOCAL	151.190
F-14	COASTAL "GREEN"	154.385
F-15	UCSD DISPATCH	462.975

Primary Dispatching is done on 462.975 MHz from repeater locations on Mt. Laguna (KNCG 463), Mt. Palomar (KNCG 495), Pine Valley (KNCG 494), and San Diego (KNCG 492).



Life Flight's job ends at touchdown on the hospital helipad as the ER team takes over, but the seconds still count. It is the time saved enroute which gives the physician in the emergency room a precious chance to save a life.

Life Flight service is not cheap, with prices depending on air miles flown, but a price cannot be placed on a human life. Seven days a week, 24 hours a day, these aeromedical helicopters stand ready to fly. To date, the service has transported more than 16,000 patients and is one of the busiest programs in the country with an average of two hundred flights undertaken each month.

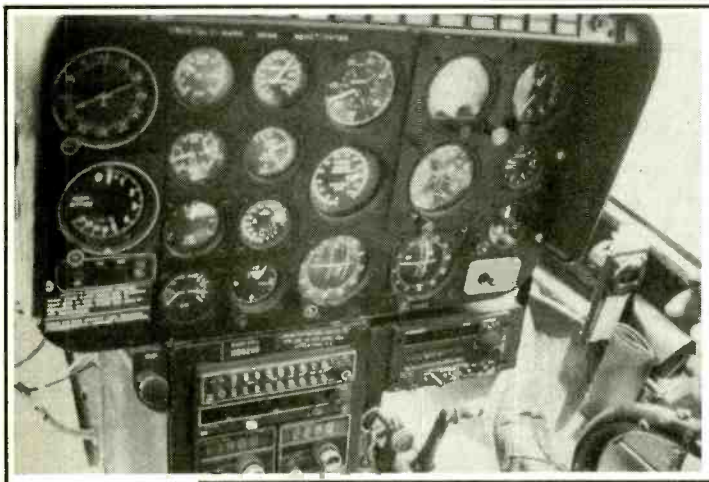
Monitoring the emergency aeromedical service is about as good as it gets for fast exciting action. In concert with police and fire frequencies, listening to Life Flight will provide you with all the information on an incident before the TV news even airs the story. There is nothing like being "on-the-scene."

The author would like to thank Betsi Howard of Life Flight for information used in the preparation of this article.

mt

Life Flight Enroute Frequencies

118.3	LINDBERGH TOWER
119.6	LINDBERGH APPROACH
119.2	MONTGOMERY TOWER
120.7	GILLESPIE TOWER
118.6	PALOMAR TOWER
126.2	NAS MIRAMAR TOWER
135.1	NAS NORTH ISLAND TOWER
127.3	SAN DIEGO APPROACH
121.5	AIR EMERGENCY
123.05	HELIPAD
123.02	CRITICAL AIR
122.85	ASTREA (SHERIFF'S HELO)
155.205	HARTSON AMBULANCE
155.280	HARTSON F-2
47.580	SHAEFFER AMBULANCE
453.725	SD SHERIFF'S F-1
453.425	SD SHERIFF'S F-9
151.190	CALIFORNIA DEPT. OF FORESTRY
168.750	US FOREST SERVICE
155.685	SD POLICE F-8
453.650	SD CITY LIFEGUARDS
154.115	CORONADO LIFEGUARDS



The Wulfsberg Goes Amateur Air Mobile

Tom Marcotte, engineer and *MT* reader, routinely leases helicopters to fly over the Gulf of Mexico. On one trip he was delighted to discover the helicopter was equipped with a Wulfsberg Flexcomm radio. He was familiar with their use by EMS units, as well as the Coast Guard and other agencies.

Describing the radio, he says, "This particular setup was capable of operation in the 138-174 MHz FM range, fully programmable, with 10 presets. This same system, with the proper presets, is capable of programmable operation in the following bands from one controller: 30-50 MHz FM, 138-174 MHz FM, 450-470 MHz FM, and 118-138 MHz AM. . .

"The Wulfsberg was programmed with our company frequency in the VFO slot, with nothing in the presets. I quickly taught myself how to program the unit and plugged in a few of the Corpus Christi 2 meter repeater frequencies. It didn't take long to get some replies and solid signal reports on the 146.88 machine about 30 miles away. It was a pleasure to use a high quality air mobile rig."

Ever consider a job with the San Diego Life Flight team, Tom?!

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Uniden Corporation of America has purchased the consumer products line of Regency Electronics Inc. for $12,000,000. To celebrate this purchase, we're having our largest scanner sale in history! Use the coupon in this ad for big savings. Hurry...offer ends September 30, 1990.

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Bearcat 210XLT-A $164.95
Bearcat 70XLT-A.....$139.95
Uniden HR2510-A $229.95
Uniden HR2600-A1 .....$239.95
Uniden PRO810E-A.....$169.95
Uniden CARD-A $164.95
Uniden RD3XL-A $149.95
Uniden RD99GT-A $114.95

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Frequency range: 29-54, 118-174, 406-512, 806-956 MHz. Excludes 823.9875-849.0125 and 868.9875-894.0125 MHz.
The *Bearcat* 760XLT has 100 programmable channels organized as five channel banks for easy use, and 12 bands of coverage including the 800 MHz. band. The *Bearcat* 760XLT mounts neatly under the dash and connects directly to fuse block or battery. The unit also has an AC adaptor, flip down stand and telescopic antenna for desk top use. 6-5/16" W x 1⅜" H x 7⅜" D. Model **BC 590XLT-A** is a similar version without the 800 MHz. band for only $199.95. Order your scanner from CEI today.

NEW! Uniden® Telephones

AM470D-A *Uniden* answering machine.....$69.95
AM464-A *Uniden* answering machine.....$49.95
AM468V-A *Uniden* answering machine.....$49.95
AM460-A *Uniden* answering machine.....$49.95
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The *RELM* RH256B is a sixteen-channel VHF land mobile transceiver designed to cover any frequency between 150 to 162 MHz. Since this radio is synthesized, no expensive crystals are needed to store up to 16 frequencies without battery backup. All radios come with CTCSS tone and scanning capabilities. A monitor and night/day switch is also standard. This transceiver even has a priority function. The RH256 makes an ideal radio for any police or fire department volunteer because of its low cost and high performance. A *60 Watt* VHF 150-162 MHz. version called the **RH606B-A** is available for $429.95. A UHF 15 watt, 16 channel version of this radio called the **RU156B-A** is also available and covers 450-482 MHz. but the cost is $454.95.

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Bearcat® 200XLT-A

List price $509.95/**CE price $239.95/SPECIAL**
12-Band, 200 Channel • 800 MHz. Handheld
Search • Limit • Hold • Priority • Lockout
Frequency range: 29-54, 118-174, 406-512, 806-956 MHz. Excludes 823.9875-849.0125 and 868.9875-894.0125 MHz.
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Priority control • Search/Scan • AC/DC
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List price $189.95/**CE price $94.95/SPECIAL**
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Priority control • Weather search • AC/DC
Bands: 29-54, 136-174, 406-512 MHz.
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Breakaway Republics:

Tuning In Lithuania, Latvia and Estonia

by Dr. Peter Hadley

You would have to have spent the last six months inside a bowling alley or otherwise cut off from society not to be aware of the first grabs at independence now being made by the Soviet Union's Baltic Republics -- three lands facing Finland and Sweden across the Baltic Sea.

Lithuania made the first move -- loud and bold -- on March 11. Estonia and Latvia followed on March 30 and May 4, respectively, each taking a more measured approach -- having by then seen how Moscow was reacting to the Lithuanian declaration.

All three nations enjoyed two decades of independence during the period 1920-1940. But then they were annexed by Stalin under a secret pact with the Nazis. Hitler, however, turned on the Soviets and invaded and occupied all three from 1941-1944, before the Soviet Union took them back.

One of the many surprises we've seen come out of glasnost was Moscow's admission that the Hitler-Stalin pact amounted to an illegal annexation of the Baltic Republics. It would be hard to argue that the admission did not, however unintentionally, encourage these three small nations to unfurl flags long kept under wraps.

Estonia is the most difficult to log of the three Baltic states. This is Harju street in Tallinn, the Estonian capitol.

There are still many scenes and acts yet to be played out in this tension-filled event and no one can begin to guess at how it's going to end. Gorbachev is still enforcing economic sanctions against Lithuania and, probably, wondering how to handle the other two, over and above declaring the independence proclamations illegal.

As this drama unfolds, it's a good time to focus some attention on the various shortwave stations and broadcasts from these three republics and discover what we can hear.

The shortwave listener who monitors only from an aspect of content, who wants to hear news direct from the center of the action is, by and large, going to be disappointed here. Getting a line on what's happening is practical (more or less) with only one of the three. Picking up signals from all of them is more a DX challenge. Radio Moscow may qualify as a "lean back and put your feet up" kind of station but that's not the case with Lithuania, Estonia and Latvia.

LITHUANIA --

Of the three Baltic broadcasters, Radio Vilnius is the only one which has a genuine foreign service. It offers broadcasts in Lithuanian and English, beamed both to Europe and North America. The service is, however, relayed mostly over the facilities of Radio Moscow, and thus from transmitters likely to be located anywhere within the Soviet Union. So you cannot assume you are hearing a transmitter in Lithuania just because you've picked up Radio Vilnius.

The European service is currently on at 2100-2200 (winter months 2200-2300) with Lithuanian for the first half hour, English the second. This service currently runs on 6100 and 9675. For North America there is a 30-minute English broadcast at 2200 (2300 in winter) and a half hour of Lithuanian at 0000 (0100 in winter) carried on 6100, 11770, 12060, 15180, 17665 and 17690. These frequencies are subject to seasonal changes, too, of course. The only frequency known to be used by a transmitter located in Lithuania is 6100 and this is the Radio Moscow site at Kanaus.

The Kanaus site is also used as follows: On 6055 from 1500-0500 (with some breaks) carrying the Radio Moscow 2 network in Russian. This also airs on 6110 from 0200-0500 and on 6165 from 1300-2000. Radio Moscow in Russian is also carried on 11965 at 0530-1430. The Radio Vilnius home service (first network) in Lithuanian and Russian is scheduled on the Kanaus transmitter from 0300-1500 on 9710.

The Radio Vilnius foreign service mysteriously vanished for a couple of days just after the Lithuanian parliament proclaimed the country's independence. Once it returned, several monitors

Radio Vilnius is generally very receptive to correct reports and responds with a variety of cards, such as this green and white folder-type QSL.

commented on a lower modulation level which made the broadcasts very difficult to copy. One other report indicates there was a second cut off later, though, again, only for a day or two. Still, the strength of Radio Vilnius' signal seems weaker than before the blockade.

The Lithuanian parliament has voted to take formal control of Lithuanian radio and TV, though this act will likely have no bearing on how well we are able to hear the station.

Also affected by the blockade: a *Monitoring Times* trip to the Lithuanian republic. Postponed from this spring and rescheduled for the fall, our factfinding journey to Radio Vilnius is once again in danger.

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FOR INVITATION WE NEED UOUR WIFES INFORMATION TOO BECAUSE OF BLOCADE WE CANNOT GUARENTEE UOU VISAS AND PETROL FOR JOURNEY AROUND LITHUANIA
EDVINAS BUTKUS

A potential fact-finding trip to Lithuania by Monitoring Times has been put on hold due to the blockade. Radio Vilnius, who issued the invitation, sent MT the above telegram outlining the situation (emphasis ours).

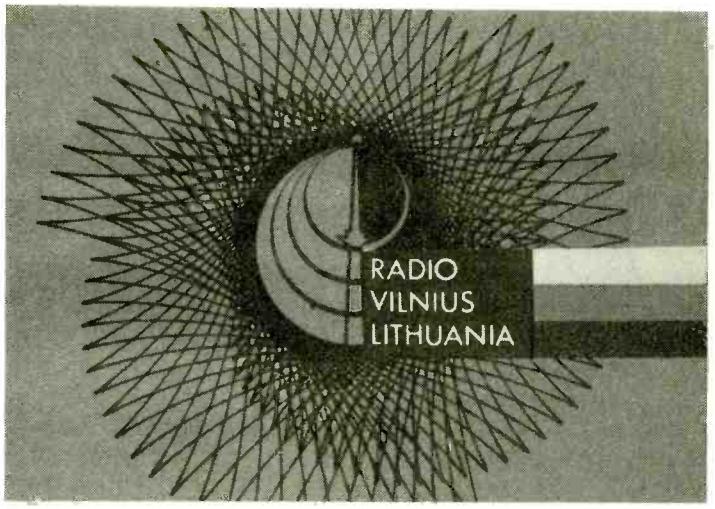
LATVIA --

The independence trail in Latvia is likely to have even more bumps and twists than Lithuania's, even if no sanctions are applied, because Latvia has a much more considerable non-Latvian population which prefers to remain a part of the Soviet Union. The Soviet military has its Baltic Command headquartered in Latvia and is believed to have about 200,000 troops in the country. "Interfront," the main group opposing independence, has organized demonstrations and work stoppages.

Radio Riga (Latvijas Radio) airs a foreign service, although it is about the absolute minimum possible to meet such a definition. For the summer months the station is shown as broadcasting in Swedish and Latvian Sundays at 0700-0730 (winters from 0800). Also in Swedish at 1930-2000 Tuesday, Thursday and Saturday and 2130-2200 Wednesday, Friday and Sunday.

These segments show from 2030-2200 during the winter months. The broadcasts are all on 5935, which makes the 1930/2030 airings difficult to impossible for anyone outside the eastern North American time zone. However, the 5935 Riga transmitter is also used for a Radio Moscow home service relay between 0200-1900 (except as noted

Very few Radio Vilnius broadcasts actually originate from Lithuania. Purists may have a hard time obtaining a QSL verifying the transmitter site.



Enclosing a souvenir such as a picture postcard may improve your chances of a response.

above). This offers us a better opportunity to log the Riga site, if not to hear programming from Riga.

Currently, the Riga facility is also used by Radio Moscow on 11920 in Russian from 1130-1430 and on 11925 for Radio Moscow in Russian between 0530-1100. Radio Moscow's service to Africa, including the world service and broadcasts in Hausa are via Riga on 15140 between 0530-1430 and on 15465 to Africa in Russian, Hausa and the world service between 0300-1400, all of which seem to offer much better logging opportunities.

ESTONIA --

This one is the toughest of the three. Radio Tallinn (officially Eesti Raadio) also has a very small foreign service which generally uses just one frequency -- 5925. It airs in Swedish and Finnish at 0600-0730 and 0930-1100 on Sundays. Also in Finnish at 1500-1530 daily except Sundays and on Sundays only at 2000-2100 in Swedish, Estonian and English.

There is some chance of the 2000 broadcast making it as far as the midwest during the dead of winter but such loggings are difficult, even on the east coast. Fortunately, there are a couple of other options: The Radio Tallinn first network airs in Estonian and Russian on 5925 between 0100 and 2000, except for periods when the foreign service is scheduled. Another transmitter at Tallinn carries Radio Moscow in Russian between 1330-2100 on 6080, although this seems to be even more infrequently heard in North America than 5925.

More recently, there have been sporadic reports of Radio Tallinn on 9560 between 1400 and 2300 UTC.

QSLs

Radio Vilnius has been very friendly to listeners over the years and normally will QSL all correct reports. The address is Lithuanian Radio and TV, Kronarskio 49, Vilnius 232674, Lithuanian SSR, USSR. Purists will have a problem, though, in that the station may not QSL a Radio Moscow broadcast via the Kanaus site and hearing Radio Vilnius via the Kanaus site can be difficult.

Radio Moscow, however, can sometimes be induced to indicate the site on its QSL so you might try reporting on one of the frequencies given here for the various Radio Moscow frequencies, even though Moscow is more reluctant to QSL home service broadcasts. Remember, though, that these frequency/site combinations are in an almost constant state of change so it's very often a case of potluck.

Latvian Radio is also pretty good about QSLs. The address is Latvian Radio, Box 266, Riga 226018, Latvian SSR, USSR. Radio Tallinn is more of a question mark but they'll usually reply, if not to a first effort, then to a follow-up.

Moscow relays via sites in Estonia and Latvia should probably be sent to Radio Moscow with a request that the site be indicated on the QSL card. Return postage isn't necessary when writing direct to the republic stations, although a friendly letter and a photo or picture postcard or some other kind of souvenir would undoubtedly be well received.

If and when the day comes when these three republics do achieve real freedom from Moscow we may look for the eventual expansion of these stations and their shortwave broadcasts. In the meantime, while we wait to see whether these dreams will be achieved, it's entirely possible that shortwave efforts might actually be reduced.

Whatever happens, now's a good time to be directing some of your listening and DXing efforts at this trio of tiny Soviet Republics as they try to regain the independence outsiders stole from them half a century ago.

mt

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Bob Grove

Ian McFarland

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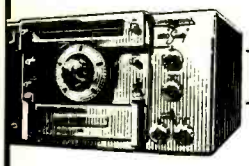

Shortwave Receiver Buyer's Guide Companion

by Vern A. Weiss

Good, inexpensive shortwave receivers are out there. We're not talking about those $89 pocket portables, either. There have been literally hundreds of different receivers produced, even since world war II, and all you need do is scan the classified advertisements of your local paper or browse the local flea markets to find them.

But how much should you pay for one of these radios? It can be difficult to gauge whether the seller is being fair in his pricing.

Shortwave receiver values are a strange matter. In my research for this article I found that it would appear that "value" of a particular piece of equipment is determined more by emotion and subjective considerations than actual usefulness or quality.

To prove my point, I conducted an informal survey of fellow shortwave listeners using this single question: What would you pay for a receiver that was just like your first shortwave receiver? In over 90 percent of the cases the respondent quoted a figure that was higher than the "going" value. This would seem to indicate heart more than mind for, if you are like me, your first receiver boasted minimal usefulness when compared to others on the market, let alone today's products.

It is beyond the scope of this article to list every receiver known to man. Receivers manufactured before World War II alone could fill a listing the size of this magazine. In view of the numbers, I feel that receivers built prior to World War II would be better handled in "antique" journals. Receivers that are contemporary lend themselves to enough exposure that sufficient information is usually available on them from dealers, dealers' used-equipment lists and word-of-mouth. This leaves the period from World War II to the Vietnam War as a sort of uncharted land, so this listing includes popular receivers built between 1940 until the very early 1970s.

Likewise, we had to establish some guidelines as to what category of shortwave receivers to include. Using the literal interpretation, a garage-door opener is a shortwave receiver. So, for the purpose of this listing I did not include scanners, fixed-frequency (i.e. crystal-controlled) receivers or transceivers.

Prior to the current crop of receivers, when you bought a shortwave receiver, you could open the box and begin using it. Today manufacturers sell you the "basic" receiver, then offer skillions of "options." So unlike today, most manufacturers did not sell you a shortwave receiver piece-by-piece. Because few options were available, I did not feel it was important to list accessories here.

How did I derive the present day value of these receivers?

I tracked "asking" prices as published in classified advertisements, "swap sheets" and hamfest tables. For this reason I have unfortunately been unable to list a current value on all receivers. Simply put, in my research not all receivers built between 1940 and the early 70s have shown up in ads and at hamfests I have attended.

For me to make up prices would provide for a more comprehensive listing but certainly not an accurate one. Hopefully the other information I have provided will be enough to make anyone using this listing an educated consumer and able to derive a better idea of pricing than if he used no such listing.

The Wild Cards

There are a few "unpredictables" in the world of used shortwave equipment. For example, a National NC 109, which sold "new" for $199.95 in 1957, brings in over $250 today. And why are there two different Hammarlund HQ-180ACs?

In compiling this listing, I uncovered some strange anomalies such as receiver value appreciation instead of depreciation. No doubt we can mix some of what we learned in economics class about the strength of the 1950s American dollar to the strength of the American dollar thirty years later into our "emotions and subjectiveness" potion. Or maybe it's just one of those crazy things.

The matter of the Hammarlund HQ-180AC is a little easier. It was simply reintroduced six years later with the same name. Hallicrafters produced a receiver in 1952 called the S-73 but later that year decided to rename it the SX-73. Same receiver, inside and out except the later version provided you with an "X" die-cast into the escutcheon, possibly due to the new invention: crystal filtering.

I cannot stress enough that this listing is merely a report of what I noted the respective models going for. It is not an attempt to set values. So before the nasty letters begin pouring in saying that "how dare you say that *my* 18 tube super-duper ZX-900 is worth only a hundred bucks when everyone knows they're worth more," read carefully. It appears that not everyone does know. My first receiver was a Hallicrafter's SX-25, a receiver of which today I own four. The last one I paid $75 for ten years ago, so seeing that the "going" price is only $35 left me with the realization that I, too, fell prey to that "emotion and subjectiveness."

Finally I should mention that no price shown here is based on an average of less than two samples. Although all samples fell surprisingly close to each other during my survey, I am left curious about one model: The Hallicrafter's SX-28. Why the eight samples fell between $65 and $250 I do not know. This is a considerable disparity and for that reason I felt it necessary not to average the extremes to a midpoint.

A Final Word

I had a marketing instructor tell my class that his opinion was that advertising which proclaims a vacuum cleaner worth normally $200 on sale for only $100 is not only poor advertising technique but also a lie. His belief was that once something can be bought for less, its value becomes less. In this case, a $100 vacuum cleaner can only be worth $100. I tended to agree with him until years later when our vacuum sweeper went out.

For a week my wife and I shopped around for the best price on a $200 sweeper and could not find any below $200. I opened up the morning paper to find a local discount house offering my desired $200 model for $150. I immediately went to the store and found they had been sold out.

That evening we were having a dinner party and I figured I'd wait until the discount house got in more models on a rain check. Upon returning home, my wife was shocked at having returned from the grocery store with a bag of flour which broke as she walked across the living room carpeting. The vacuum cleaner was now imperative. The pygmies were coming over the hill.

I returned to another store willing to give them their darned $200. But guess what? They had raised the price to $220.

The lesson in this too-long story is that (1) true, I did not save $50 on the vacuum cleaner, (2) true, I now own a $200 vacuum sweeper for $220, but, the floor got cleaned up for the party. I guess, to me, the value of that appliance was worth $70 more than the $150 sale price. Time, opportunity and circumstances and yes, "emotion and subjectiveness" more than anything else determine true value.

These factors and the guy who is willing to demonstrate a receiver and even give you his address might be worth money that cannot be tabulated in a listing such as this.

Happy shopping and good DX.

Listings are tabulated according to Make, Model, Year first introduced, New Price/ Apparent Market Value. w=wired k=kit

ALLIED RADIO SHACK (Realistic)

SX-190 (1971)	$249.95/	$125
AX-190 (1971)	249.95/	85
DX-150B(1972)	139.95/	50
DX-150 (1967)	119.95/	50
DX-150A(1969)	119.95/	50
DX-120 (1970)	69.95/	25
DX-160 (1974)	79.95/	65
DX-300 ( )	/	150

ALLIED

A-2515 (1968)	99.95/	50
A-2515A(1970	99.95/	50
A-2516 (1969)	169.95/	80

AMECO

R-5 (1966)	w 79.95/	45
R-5A (1970)	w 99.95/	30

BARLOW-WADLEY

XCR30 (1972)	235.00/	75

COLLINS

R-388 ( )	Military/	160
R-390 (1956)	Military/	200
R-390A (1961)	Military/	275
R-392 ( )	Military/	100
R-648 ( )	Military/	30
75A-1 (1949)	375/	80
75A-2 (1951)	420/	110
75A-3 (1953)	530/	150
75A-4 (1955)	695/	175
75S-1 (1958)	495/	175
75S-2 (1962)	Military/	225
75S-3 (1962)	680/	295
75S-3A (1963)	/	300
75S-3B (1964)	620/	365
75S-3C (1964)	620/	450
51S-1 (1971)	875/	700
51J-1 (1948)	600/	170
51J-2 ( )	/	200
51J-3 ( )	/	275
51J-4 ( )	/	325

COMMUNICATIONS ASSOC (CAE)

CR-70 (1971)	/	

CONAR

500 ( )	/	

DAVCO

DR-30 (1964)	389.50/	200

DEL MAR

SW-59 (1959)	49.50/	10

DRAKE (R.L. DRAKE CO)

1/A (1959)	299.00/	125
2-A (1960)	269.95/	115
2-B (1962)	279.95/	120
2-C (1967)	229.00/	135
R-4 (1965)	379.95/	200
R-4A (1967)	399.00/	150
R-4b (1968)	430.00/	185
R-4C (1973)	599.00/	300
SW-4A (1967)	289.00/	100
SPR-4 (1970)	499.95/	250
SSR-1 (1970)	350.00/	175
DSR-1 (1971)	2195.00/	1500

EDDYSTONE

EA-12 ( )	550.00/	

GALAXY

R-530 (1968)	795.00/	375

GELOSO

G-209R (1959)	299.50/	

GLOBE

Globe'Ceiver(1963)	w64.95/	10

GONSET

Super-Ceiver(1953)	119.50/	10
G-66 (1955)	169.50/	25
G-66B (1957)	209.50/	100
G-33 (1958)	89.95/	25
G-43 (1958)	159.50/	75
G-63 (1961)	239.50/	100
GR-211 (1962)	69.95/	20
GR-212 (1962)	109.95/	50

HALLICRAFTERS

CRX-106(1968)	39.95/	20
CRX-107(1968)	39.95/	20
SX-16 (1938)	123.00/	65
S-20 (1939)	60.00/	50
S-20R (1939)	60.00/	50
S-22R (1940)	74.50/	25
SX-24 (1939)	74.00/	40
SX-25 (1940)	94.50/	35
S-27 (1940)	195.00/	60
S-27B (1940)	195.00/	60
SX-28 (1941)	179.50/	65-250[1]
S-29 (1940)	59.50/	49
S-36 (1942)	307.50/	100
S-36A (1942)	307.50/	100
SX-37 (1942)	591.75/	35
S-38 (1947)	47.50/	20
S-38A (1948)	39.95/	20
S-38B (1951)	49.50/	20
S-38C (1952)	49.50/	30
S-38D (1954)	49.50/	25
S-38E (1958)	54.95/	35
S-38EM (1959)	59.95/	25
S-38EB (1959)	59.95/	25
S-40A (1946)	89.50/	50
S-40U (1946)	98.50/	40
S-40B (1950)	129.50/	40
S-42 (1947)	275.00/	125
S-42U (1947)	287.50/	100
SX-43 (1947)	169.50/	120
SX-43U (1947)	178.05/	120
S-51 (1947)	200.00/	40
S-52 (1948)	99.50/	20
S-53 (1948)	79.50/	50
S-53A (1950)	79.95/	50
S-53U (1948)	88.50/	25
S-55 ( )	/	30
SX-62 (1948)	289.50/	70
SX-62A (1954)	349.95/	165
SX-62U (1948)	295.00/	70
SX-71 (1951)	199.50/	80
SX-71U (1951)	210.00/	105
S-72L (1949)	79.95/	30
S-72 (1949)	79.95/	20
S-76 (1950)	169.50/	
S-73 (1952)	975.00/	275
SX-73 Same as S-73, Changes were nomenclature only		
S-76 (1950)	169.50/	70
S-77 (1950)	99.95/	40
S-77A (1950)	99.95/	40
S-85 (1954)	119.95/	50
S-86 (1954)	119.95/	35
S-88 (1954)	595.00/	400
S-93 (1954)	99.95/	35
S-96 (1954)	249.95/	125
SX-99 (1954)	149.95/	70
SX-100 (1955)	295.00/	120
SX-101 (1956)	395.00/	100
SX-101 (1958) Mark III	395.00/	100
SX-101A(1959)	399.50/	100
S-102 (1956)	59.95/	15
S-106 (1956)	59.95/	20
S-107 (1959)	94.95/	30
S-108 (1959)	130.00/	60
SX-110 (1959)	159.95/	50
SX-111 (1959)	279.50/	100
SX-112 (1961)	595.00/	225
SX-115 (1961)	595.00/	250
SX-117 (1962)	379.95/	125
S-118 (1961)	99.95/	30
S-119 (1961)	w49.95/	30
S-120 (1961)	69.95/	15
S-120A (1967)	59.95/	20
SX-122 (1963)	295.00/	175
SX-122A(1967)	395.00/	185
S-129 (1965)	164.95/	70
SX-130 (1965)	179.95/	75
SX-133 (1967)	249.50/	155
SX-140 (1961)	w139.95/	50
SX-146 (1965)	249.95/	125
S-200 (1967)	109.95/	50
S-240 (1967)	109.95/	50
TW-1000(1956)	149.95/	40
WR-600 (1967)	69.95/	25

HAMMARLUND

HQ-66 (1964)	159.95/	
HQ-88 (1964)	300.00/	
HQ-100 (1957)	169.00/	100
HQ-100A(1961)	189.00/	100
HQ-110 (1957)	229.00/	
HQ-110A(1962)	249.00/	
HQ-110AC(1962)	259.00/	
HQ-110A-( ) VHF	299.00/	
HQ-110AC(1962) VHF	309.00/	
HQ-120X ( )	/	150
HQ-129X (1946)	177.30/	120
Super Pro400 (1946)	344.55/	175
SP-600JX (1950)	985.00/	480
Pro 310 (1955)	495.00/	210
HQ-140X (1953)	264.50/	140
HQ-140XA(1955)	249.00/	145
HQ-145 (1959)	269.00/	125
HQ-145A (1964)	289.00/	125
HQ-145AC(1964)	299.00/	125
HQ-145C (1959)	202.00/	125
HQ-145X (1961)	269.00/	150
HQ-145XC(1961)	279.00/	150
HQ-150 (1956)	294.00/	120
HQ-160 (1958)	379.00/	100
HQ-170 (1958)	359.00/	100
HQ-170C (1958)	369.00/	100
HQ-180 (1960)	429.00/	190
HQ-180A (1963)	429.00/	220
HQ-180AC(1963)	439.00/	230
HQ-180AC(1969)	500.00/	230
HQ-180C (1960)	439.00/	200
HQ-200 (1969)	249.95/	175
HQ-215 (1967)	529.50/	300
HQ-215 (1969) Mark II	399.99/	275

HARVEY WELLS			
R-9	(1955)	149.50/	25
R-9A	(1958)	159.95/	30
HEATH (and "Heathkit")			
AR-1	(1951) ko	21.95/	15
AR-2	(1953) ko	25.50/	10
AR-3	(1955) ko	29.95/	10
GC-1	(1959) ko	109.95/	20
GC-1A	(1959) wo	193.50/	50
GR-54	(1970) ko	89.95/	35
GR-64	(1970) ko	42.50/	35
GR-78	(1970) ko	129.95/	50
GR-81	(1961) ko	24.95/	10
GR-91	(1961) ko	39.95/	25
MR-1	(1959) ko	119.95/	30
RX-1	(1958)	299.95/	85
HR-10	(1961) ko	79.95/	35
HR-10B	(1968) ko	79.95/	40
HR-20	(1962) ko	134.50/	50
SB-300	(1966) ko	265.00/	95
SB-301	(1968) ko	260.00/	125
SB-303	(1969)	319.95/	150
SB-310	(1969) ko	259.00/	160
SW-717	(1970) ko	60.00/	20
INTERNATIONAL CRYSTAL			
AOR-41	(1963)	62.50/	
AOR-42	(1963)	62.50/	
AOR-43	(1963)	62.50/	
AOR-44	(1963)	62.50/	
AOR-45	(1963)	66.50/	
AOR-46	(1963)	66.50/	
AOR-47	(1963)	66.50/	
KARADIO			
International	(1948)	79.50/	5
Airport	(1948)	79.50	5
KENWOOD			
R-300	(1978)	249.00/	130
KNIGHT (and Knight Kit)			
Ocean Hopper	(1950) ko	16.95/	20
Space Spanner	(1956) ko	19.95/	25
Span-Master	(1958) ko	25.95/	25
Star Roamer	(1964) ko	39.95/	20
Star RoamerII	(1970) ko	69.95/	30
Globe Patrol	(1970) ko	19.95/	10[2]
R-55	(1960)	67.50/	40
R-55A	(1960)	67.50/	40
R-100	(1958)	104.50/	50
R-100A	(1962)	99.95/	50
R-195	(1969)	99.95/	30
KW ELECTRONICS			
KW201	(1969)	/	125
KW202	(1972)	395.00/	125
LAFAYETTE			
HA-63	(1963)	59.95/	40
HA-63A	(1966)	59.95/	40
HA-226	(1966)	44.95/	25
HA-350	(1963)	130.00/	50
HA-500	(1966)	149.95/	50
HA-600A	(1970)	99.95/	50
HA-600T	(1968)	99.95/	50
HA-700	(1966)	89.95/	50
HA-800	(1969)	129.95/	50
HA-800	(1971)	129.95/	50[3]
HE-10	(1959) w	79.95/	30
HE-30	(1960) w	99.95/	30
HE-40	(1961)	49.95/	20
HE-80	(1962)	139.50/	25
KT-135	(1962) ko	21.95/	20
Explor-Air			
KT-200	(1959) ko	64.50/	25
(same as HE-10)			
KT-320	(1960) ko	79.95/	25
(same as HE-30)			
PF-200	(1971)	102.95/	30
PF-300	(1971)	186.80/	65
MC MURDO SILVER			
800	(1949)	39.75/	
801	(1949)	29.95/	
802	(1949)	38.95/	
MEISSNER			
T2BK	(1952) ko	10.29/	
T6BK	(1954) ko	43.41/	
MIDLAND			
11-500	(1969)	44.95/	20
11-520	(1969)	89.95/	50
11-530	(1969)	89.95/	50
"PS"	(1967)	24.95/	4
"AR"	(1967)	24.95/	10
MORROW			
FTR	(1954)	139.10/	15
5BRF	(1954)	67.95/	20
MBR-5	(1955)	224.50/	30
Falcon	(1957)	185.22/	25
MB-6	(1958)	239.50/	70
MOSLEY			
CM-1	(1961)	182.70/	
MULTI-ELMAC			
PMR-6A	(1953)	134.50/	20
PMR-7	(1956)	159.00/	20
PMR-8	(1960)	189.50/	20
NATIONAL			
HFS	(1948)	125.00/	100
HRO-5	(1946)	274.35/	170
HRO-SAT	(1946)	245.00/	145
HRO-7	(1947)	312.00/	75
HRO-50	(1949)	349.00/	225
HRO-50T[1]	(1951)	383.50/	325
HRO-60	(1952)	745.00/	110
HRO-500	(1965)	1295.00/	500
HRO-500P	(1965)	1295.00/	565
HRO-600	(1970)	/	
NC 1-10A	(1946)	67.50/	75
NC 2-40	(1946)	169.50/	85
NC 2-40S	(1946)	250.00/	100
NC 33	(1948)	65.95/	40
NC 46	(1946)	97.50/	50
NC 57	(1947)	89.50/	55
NC 60	(1958)	59.95/	40
NC 60B	(1961)	59.95/	40
NC 66	(1957)	129.95/	50
NC 77X	(1963)	69.95/	35
NC 81X	(1937)	/	30
NC 88	(1953)	129.95/	50
NC 98	(1954)	149.95/	75
NC 100	(1936)	200.00/	95
NC 105	(1961)	119.95/	
NC 105W	(1961)	139.95/	
NC 109	(1957)	199.95/	285
NC 125	(1950)	149.50/	50
NC 140	(1963)	189.95/	50
NC 155	(1961)	199.95/	60
NC 173	(1947)	179.50/	90
NC183D	(1952)	369.50/	125
NC183DR	(1952)	369.50/	165
NC 188	(1957)	159.95/	75
NC 190	(1961)	219.95/	100
NC 121	(1963)	129.95/	60
NC 24 C	(1946)	250.00/	100
NC 240CS	(1946)	250.00/	250
NC 240D	(1947)	225.00/	250
NC 270	(1960)	249.95/	100
NC 300	(1955)	399.00/	100
NC 303	(1958)	449.00/	125
NC 400	(1959)	895.00/	325
SW-54	(1951)	49.95/	20
WRR-2	( )	450.00/	225
PHILMORE			
NR-300	(1954) ko	14.70/	5
7001C	(1954) ko	14.91/	
PIERSON HOLT			
KE-93	(1955)	249.00/	
RF COMMUNICATIONS			
RF-505	( )	/	
RF-505A	(1972)	/	
RME			
RME-45	(1947)	198.70/	65
RME-50	(1951)	197.50/	75
RME-79	(1953)	287.00/	130
RME-84	(1947)	98.70/	35
RME4300	(1955)	194.00/	95
4350	(1958)	249.00/	125
4350A	(1958)	249.50/	70
6900	(1960)	349.00/	285
VHF 2-11	(1948)	130.00/	45
SIGNAL/ONE			
CR-1200	(1972)	1095.00/	650
CR-1500	(1972)	1650.00/	765
SONAR			
SR-9	(1951)	72.45/	35
MR-3	(1952)	89.95/	40
MR-4	(1952)	89.95/	40
MR-5	(1952)	89.95/	40
SQUIRES-SANDERS			
SS-1R	(1963)	895.00/	
SWAN			
600-R	(1971)	395.00/	160
TAPETONE			
345	(1959)	279.95/	
TECHNICAL MATERIEL (TMC)			
GPR-90	(1956)	395.00/	125
GPR-91	(1962)	664.00/	
GPR-92	(1964)	1552.00/	100
TEN TEC			
RX-10	(1970)	59.95/	25
315	(1972)	229.00/	

1 No average value was deemed appropriate because of an unusually large disparity of samples. Minimum asking price for SX-28 was found to be $65 while top of scale was $250.

2 Globe Patrol receiver, manufactured by Knight Electronics of Maywood, Illinois, carried the sub-brand name, "Science Fair."

3 Lafayette Model HA-800 was introduced in 1969, then reintroduced with some refinement two years later but nomenclature remained same.

Notes: "w" indicates receiver available in both kit and wired versions. Original price is that of new factory-wired version.
"k" indicates receiver available only in kit form. Original price denoted is price of that kit.

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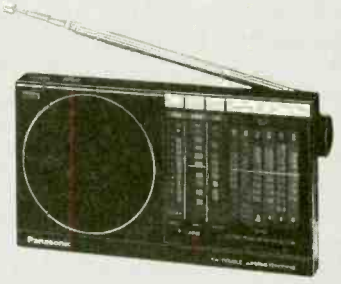

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CIRCLE 106 ON READER SERVICE CARD

Monitoring Angola wasn't difficult for me from southern Africa; Now, however, it poses a challenge.

by Colin Miller

The spotlight this month focuses on the largest of the former Portuguese colonies, the country of Angola on the west coast of Central Africa.

In the 1960s and early 1970s Angola developed into Portugal's richest possession. Industry and the economy were at their zenith, and radio broadcasting was expanding. From my listening post in Southern Africa, I logged several interesting Angolan stations in the tropical bands. But let's take a brief look at the country itself before reviewing the past and present radio scene.

With an area of 481,380 square miles, Angola is a little smaller than Peru, or just more than three times the size of California. Until the 16th century, Bantu tribes penetrated most of the region. The population is now nine million and the main ethnic groups are the Ovimbundu, Kimbundu and Bacongo.

The Portuguese came in 1583, allied with the Bacongo kingdom in the north, and developed the slave trade. Large scale colonization did not take place until the 20th century, when 400,000 Portuguese immigrated. A guerrilla war began in 1961, and lasted until 1974, when the new government in Portugal offered independence. This came on November 11, 1975, when a Marxist government came into power under Agostinho Neto, and the People's Republic of Angola was born.

The economy is in a state of collapse following the post-independence flight of skilled workers and the war. Coffee, sisal and corn are important crops and natural resources include diamonds, gold and oil.

Amateur Origins

The history of broadcasting in Angola goes back to 1931, when a radio ham, Alvaro Nunes de Carvalho, started sending out programs under the call sign CR6AA. Originally he lived in Benguela on the coast but later moved to nearby Lobito, where he used a transmitter of only a few watts. He is known to have continued operating until 1957, but since then he has been lost to sight.

The first steps to commercial broadcasting were laid in 1936 when a group of radio enthusiasts in the capital city of Luanda formed an association. They decided to buy a proper transmitter which could later form the basis for a complete network. When they met together in September that year, they elected Commander Manuel de Albuquerque e Castro as their chairman. They planned to take as their model either CT1AA in Lisbon, or even that of their colleagues in Mozambique.

In February 1937 they purchased a 100 watt transmitter and obtained the call letters CR6RC. It made its first test transmissions in February 1938 under the name of Radio Clube de Angola. This remained in use until 1940, but within the first 12 months the young club had purchased a second more powerful transmitter of 250 watts.

At the end of the war in 1945, they purchased a one kilowatt transmitter and about ten years later started broadcasting on shortwave, thereby greatly increasing their coverage.

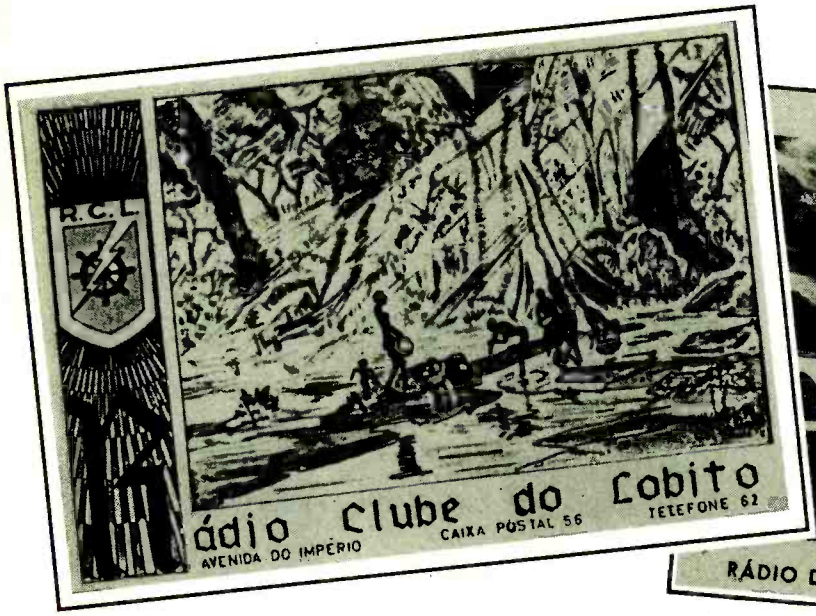
Not to be outdone by such progress in the capital, radio enthusiasts in the south formed together under the title of Radio Clube de Sul de Angola, a name which was changed later to Radio Clube de Lobito. For their part, they chose a 100 watt RCA transmitter and began transmitting in May 1938.

Perhaps because they are so close together, Lobito and Benguela have always been fierce rivals and so it was only to be expected that once the former had its own station, the latter would follow suit. All the more so, because the father of Angolan radio lived in their midst. And so towards the end of 1938 Benguela obtained the call CR6RB for its own station, Radio Clube de Benguela.

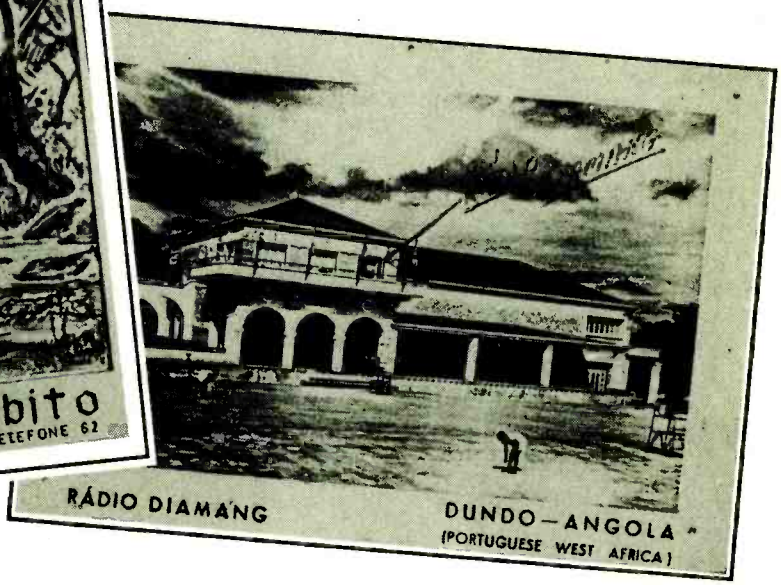
So far all the radio clubs were located along the coast, but it was not long before people further inland followed their example. Huila was the first province. Sa da Bandeira (now called Huila), its capital, stands on a high plateau at the edge of the desert. The success of the planned station was due to the enthusiasm of the province's governor, Captain Ferreira de Carvalho. The first broadcasts from CR6RJ began in May 1939, and before long the station had established contacts with Lobito and arranged joint broadcasts.

Four years later, the spirit of initiative had spread to the town of Nova Lisboa (now Huambo), further inland along the Benguela railroad. The new group purchased a second-hand 75-watt transmitter from a local ham who was then manager of a plantation.

The club was more ambitious than their colleagues and within five years purchased a one kilowatt transmitter and contracted professional announcers from Lisbon. They were Fernando C. Ribeiro and Joana Campos, the former the author of the slogan used for many years, "a Portuguese voice in Africa."



Radio Clube do Lobito instantly sparked a rivalry with neighboring city, Benguela, who followed with their own station.



Radio Diamang was a private station founded for the benefit of diamond miners in Dundo -- All these private stations were incorporated under the banner of Radio Nacional de Angola.

Other radio clubs along the coast and inland set up their own stations in the years that followed, but it was only in 1951 that the government opened an official station in Luanda designed to cover the whole country and back up the shortwave service of Emissora Nacional in Lisbon. A broadcasting department was set up as part of the Directorate of Postal and Telephone Services. At first, broadcasts were carried out experimentally over the Radio Marconi transmitter, used for point to point communication. Regular broadcasts started in late 1953 under the call CR6RZ, Emissora Oficial de Angola.

In 1954 the Roman Catholic Church began broadcasting from Luanda over Radio Ecclesia. In 1965 the first 100 kW shortwave transmitter was inaugurated in Luanda, and a year later A Voz de Angola started broadcasting in association with R Comercial in Huila province. R Comercial, as its name suggests, was the only entirely commercial station in Angola.

By 1972, five separate stations operated from Luanda. In addition there were 17 private stations, including 12 radio clubs and Radio Diamang, which operated for the benefit of the diamond miners in Dundo.

Independence and Unification

After independence in 1975, all these stations were nationalized into what is now known as Radio Nacional de Angola. The main station is located at Mullembos near Luanda, and consists of a number of 100 kW and 10 kW shortwave transmitters, and three mediumwave transmitters. In addition, there are 14 regional and provincial stations operating on medium and shortwave, ranging in power from 500 watts to 10 kW.

Radio Nacional Luanda is on the air 24 hours a day and can be heard on one or more of the following frequencies (kHz):

3355	3375	4953
5325v	7215	7245
9535	9720	11955

One or two of the transmitters are unstable and drift in frequency. Here are some regional stations logged recently. They are difficult to hear, but have a go at logging them anyway.

3355	Emis Provincial de Benguela
4820	Emis Provincial de Huila
4860	Emis Provincial de Lunda Sul, Saurimo
5040	Emis Provincial de Benguela
6152	Emis Provincial de Benguela

The interval signal of Radio Nacional is an electronic vibraphone.

mt

MT authors welcome your response to their columns so they can keep giving you the information you want, and can relay the information you have. Please address your letter to the author c/o Monitoring Times, P.O. Box 98, Brasstown, NC 28902. If requesting a personal reply, you should always enclose an SASE.

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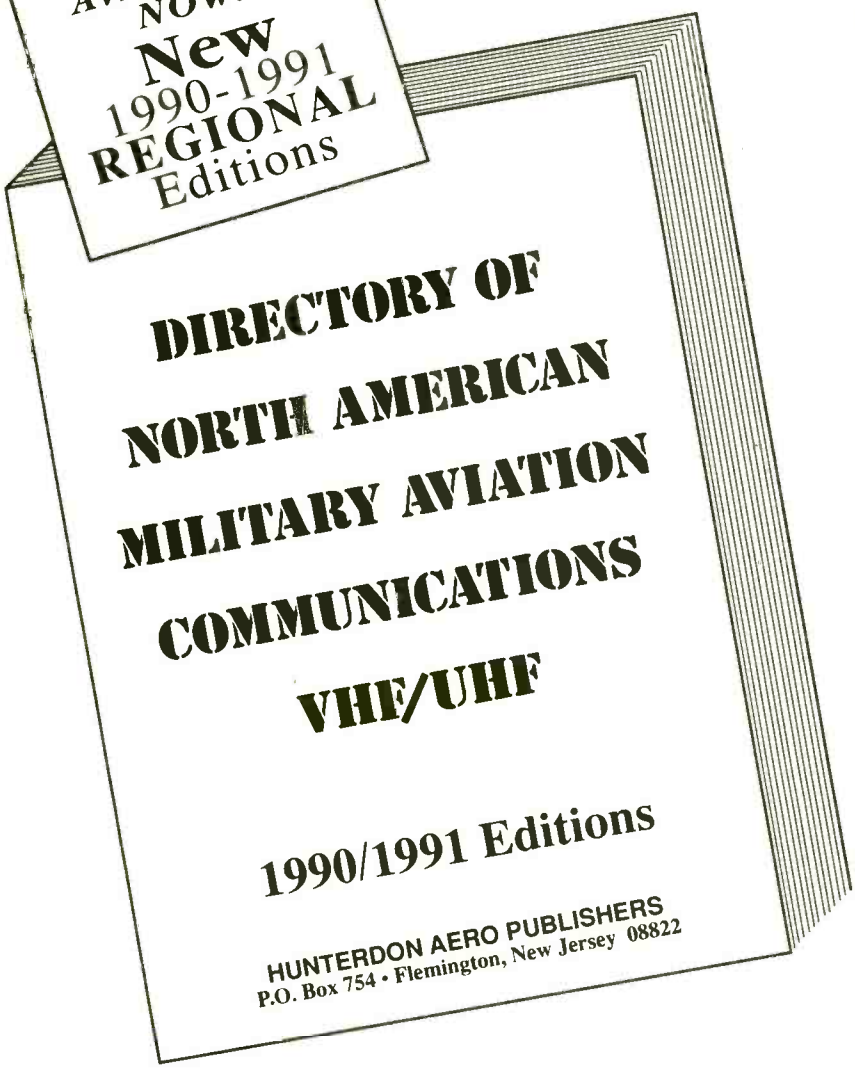

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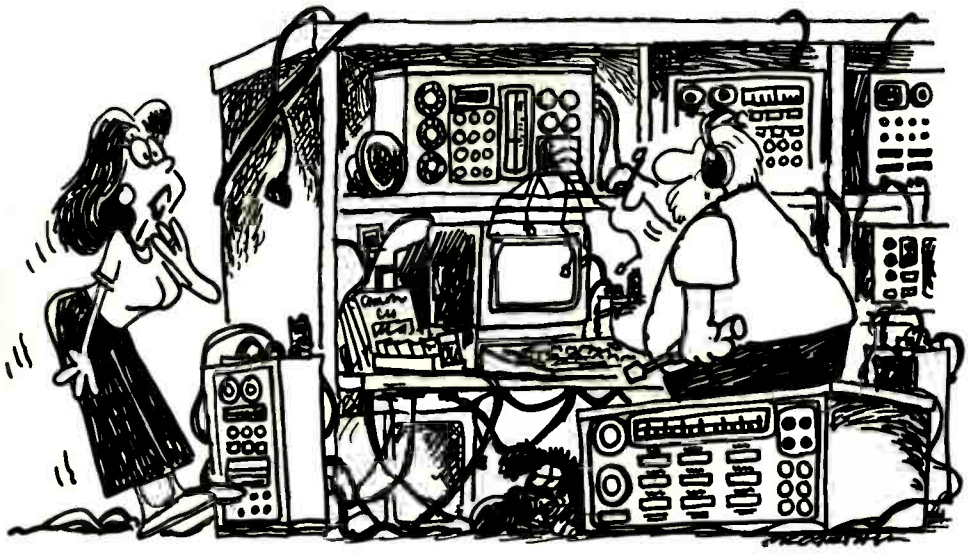
Steve Douglass is one of *Monitoring Times'* most popular authors. He is a free-lance photographer, journalist and near rabid radio enthusiast.

She Married a Technoid

by Steve Douglass



Cartoons by Pat McCarthy

Well, I finally did it, I finally tied the knot.

My family was not only ecstatic but relieved. I was the last of six children to leave the nest. "Steve," they would say, "are you ever gonna settle down?" "You know you're not getting any younger," they had to remind me.

My comeback was always, "I haven't found anyone I disliked enough to inflict that kind of punishment on." It's not easy to find that special person you intend to spend the rest of your life with. The truth was, I really wasn't looking. I wasn't a Don Juan and just couldn't woo the women.

I started to have serious doubts that I would find someone, then love bloomed in the most unexpected place -- work. I didn't plan on falling in love, it just magically occurred. They say life is what happens to you when you are busy making plans for it. Well then, life really happened to me.

Teresa was the new graphics artist for the paper I worked for. Our first encounter was when I had to subject her to the horror of the official employee photo. There you are looking and feeling totally lost on your first day of work at a busy newspaper and some big bozo wants to preserve the moment by taking a picture of you.

Little did she know that this huge guy, blinding her with strobes, would some day be her husband. For me it was love at first sight. It took her a little longer.

We were married a few weeks ago and so far married life is great. I should have done it years ago. Every day is a joy and a discovery. As wonderful as it is, I am not blind to the realities of marriage. Now I am experiencing the adjustment of going from bachelor to married man. I was used to being single, and it is difficult to change my ways and get used to hers. For example, she hogs the covers, keeps the house too hot and spills coffee in the car.

She has her complaints too. She says I leave the toilet seat up, put empty bottles back in the fridge, and my dog smells up the place. Dudley, my 70 pound English sheepdog, has worked very hard all winter to get that perfect stinky wet dog aroma. I don't see a need to give him a bath if he doesn't want one. Besides, if he ever got lost, how else could I find him in the dark?

The first test of our marriage came last week. Moving my stuff into our new home was a job, but not near as tough as tearing down all my monitoring equipment (antennas, receivers and miscellaneous electronic treasures), hauling it across town and putting it back together. I hadn't overhauled the system in three years and the whole thing was a tangled, frightening mess. It would be some job, but I was up to the challenge.

Teresa's eyes grew big when she saw box after box being stacked in the "office/art room." "Can't you put this stuff in the garage," she asked? I would just as soon put my mother in the garage than banish my precious receiving equipment.

"You wouldn't put your easel, canvas and brushes in the garage," I said. "Besides, this is part of my (our) living. I write about what I hear on these gizmos (as she calls them) which helps put food on the table," I proclaimed.

"Just as long as I have room to paint and don't have to hear them squawking and squealing," she said. "At least they don't eat."

"Only electricity and they don't smell bad either," I added as I caught a whiff of smelly Dudley. Her expression told me that was not the right choice of words. I could see that Teresa had this vision of the electric meter spinning like a fan and lights dimming in houses across town as I fired up the "gizmos."

I tried to assure her that her womanly doo-dads (hair dryers, curlers, electric tooth brushes, electric shavers, etc) suck up more electricity than the radios do. Since I am going bald, have a beard and use the manual method for brushing my teeth, I am just putting my half of the electricity bill to better use, I reasoned. She wasn't convinced.

By promising not to leave the bathroom light on all night, watch less football (she doesn't know I hate the game) and not have the bigwigs at the electric company planning their Hawaii vacations based on my utility bill, I convinced her to let me set it all up.

Going for broke, I decided to ask her to help, thinking the more she learned about my "little hobby" the more she would understand it. I was sure once she saw how much fun it was, how intriguing it is to pluck that rare signal from the air, she would become truly radio enlightened. I would convert her and one day she would say, "Thank you, oh wise husband, for you have shown me the real meaning of life." Her thinking was more down to earth. "Well, at least it keeps you off the streets," she said.

Trying to find a day when the winds are calm enough to put up an antenna is a major effort where I live. West Texas is known for its constantly moving real estate. They say most of the dirt here was blown in from New Mexico and in a few years we will all be living in Oklahoma. Sometimes you have to put rocks in your pockets to keep from blowing away.

But one weekend the howling winds decided to take a day off. After all the lost windborne hats fell to earth, I decided to give it a shot. Time had come to set up the old

antenna farm. I climbed up the ladder with Teresa holding on to it. Looking up at me perched on the wobbly ladder she said, "You know dear, now that you are totally dependent on me for your safety, let's discuss that new outfit we saw at the mall."

"Very funny; if anything was to happen to me you would have to bathe Dudley," I said. She looked down at smelly Dudley digging at a flea and remarked, "I wonder if sheep dogs can climb ladders?" Not looking down, I scrambled up the ladder.

As the antennas went up, I almost came down. I barely missed falling off the roof while diving for a crescent wrench that bounced off my head. Thrown to me by my loving wife it "accidentally" brained me and slid down the roof nearly bonking her. Actually I should be fair by saying it scared her more than it did me and I am almost sure it was accidental. I also narrowly avoided being thrown off the roof when Teresa decided to test the antenna rotator while I was tightening a few bolts.

I ducked just in time only to be strangled by the trailing coax cables. How would I explain this to the insurance agent? "Well, you see, it was like this, I broke my neck while running around on the roof while my wife threw things at me." They would cancel my policy for sure.

By now the neighbors were getting a big kick out of this Laurel and Hardy routine and were setting up lawn chairs to watch the free entertainment. Teresa tossed me a roll of duct tape which I juggled and finally caught behind my back, dropping my vise grips which slid down the roof, bounced off the gutter and fell towards Teresa's head.

"Headache," yelled the crowd as the heavy metal tool took aim for her noggin. Teresa caught it gracefully in one hand inches from her face. This drew a hearty round of applause from the audience on the lawn. Next time I would charge admission.

Later, I looked proudly at the completed antenna now nailed to the roof, looking for the world like an avant garde sculpture. "It is pretty," she said, "sort of Picasso-esque. If I could paint it in fluorescent colors I could enter it in a show." "I think it represents man's inhumanity to man," I commented in my best art critic's voice. She hugged me and said, "Not bad, we should have signed it."

The neighbors grew bored with this banter and retired inside. "Alf is on," I heard one remark. I went in to hook up the receivers and see if they all worked. Everything crackled to life and I was impressed with the improved reception. I called Teresa in to show off the monitoring post and explain to her what I could hear. I decided to tune in Strategic Air Command's Giant Talk net on 6.761 MHz. That would impress her, I thought. "As soon as Alf is over," she shouted. It was a rerun.

Feeling dejected, I went about tuning the radios and was soon lost in my favorite pastime, radio monitoring. Teresa finally came in, sat down and listened while I explained what she was hearing.

She was relieved when the malfunctioning bomber we were listening to landed safely. She said the sideband transmissions sounded like aliens from outer space and she couldn't figure out how I could understand the strange sounding voices.

She got a kick out of the neighbor's cordless phone conversation but felt like a voyeur when the talk turned intimate. I was just about to lock out the frequency when she stopped me saying, "Wait, they are just getting to the good part. This is better than my soap opera," she said with a sly grin. We tuned the knobs for a couple of hours and then it was time for dinner.

"Well, what do you think of all this great gear, dear?" I asked. I was sure after my demonstration into the fascinating world of monitoring she would soon be spending hours listening in and thanking me for introducing her to this exciting new hobby. She said, "Dear, it's all real neat, but I'll take some soft jazz, a glass of wine, and blank canvas over this any day." She picked up her easel and began to set it up. I must have looked disappointed.

"Don't look so sad, dear. I'm glad you are interested in this. If it makes you happy, it makes me happy. I just never thought I would be married to a Technoid. Now while I paint will you go fix my trash masher?" She kissed me on the cheek and left the room followed by stinky Dudley, who probably had more interest in monitoring than Teresa did.

I wasn't too disappointed. I may have lost the battle but not the war. Every once in a while I catch her turning up the scanner to see where the fire engine is going or saying something completely surprising like, "Honey, you had better come in here. I hear SAM 2600 (Air Force One) calling Andrews."

Maybe there is still hope to radio convert her after all. Maybe someday she will be a professed "Technoidette." Dare I dream?

mt

If you have a story of how radio has played a part in your life or the life of your community, send it to *Monitoring Times*. If accepted for publication, we'll send you $50.00. All stories should be true, real life events and include at least one clear illustration.

Shortwave Broadcasting

Glenn Hauser
Box 44164-MT
Tucson, AZ 85733

Planning your vacation? Be sure to take into account Boulder's solar flux forecasts: July 210, August 200, September 240, October 230, November 200. During months with higher averages, you'll be better off indoors at the dials than outdoors with all those fluxes hitting you.

ALBANIA Radio Tirana is yet another station undergoing transformation. Check it out. Editorial improvement has been slow but definite. The music is, as always, delightful. Mailbag is on UTC Fridays. Listen at 2330 on 9760, 11825; 0230 and 0330 on 9500, 11825 (Bill Peek, NC, *World of Radio*)

ANGOLA Radio Nacional has changed to: "A" program, 24 hours on 7245, and 0500-1800 UTC on 9720, 11955; 2300-0500 on 3355. "B" at 0500-1800 on 7215, 0500-1900 on 9535, 1500-1900 on 3355. International Service is also on 3355 ex-3375, and on 9535, no longer on 7245, at 1900-2300 with one hour each in French, Spanish, English, Portuguese. Regional at Menongue is back on shortwave at 0700-1300, 1700-2200 with 5 kilowatts on 4780 and new 9560 (Richard Ginbey, Namibia, R Nederland *Media Network*) 9560 = 2 x 4780!

ARGENTINA With only one working transmitter, and frequency management oblivious to interference, RAE makes itself a tough catch. English to us is UTC Tuesday-Saturday at 0200-0300 on 11710, but that's occupied by Moscow-via-Cuba. The only other chance is Monday-Friday 1900-2000 on 15345, intended for Europe. The frequency may be clear but the signal here is awfully weak.

Gabriel Ivan Barrerra, who does their DX program, fills us in on weekly features: Monday, *Sports*. Tuesday, *Argentine Dances*. Wednesday, *DXers Special*, *Sciences in Argentina*. Thursday, *Argentine Museums*, *Hispanoamerica and Its Music*. Friday, *Get to Know Argentina*, *Sports in Argentina* (*W.O.R.*)

AUSTRALIA QSL hogs take note: letter from Radio Australia says due to budget/staff constraints, only one QSL per listener per season will be issued (Tom Laskowski, IN, *Fine Tuning*) RA has extended 13700 to 0830, thus ensuring good reception until 9580 signs on at 0830 (Bill Peek, NC, *W.O.R.*)

Due to protests that it blocks reception of WWV and WWVH, VNG on 10 and 15 MHz stands by during minutes 9, 10, 11 and 46-51 of each hour (Arthur Cushen, NZ, *RNMN*)

BANGLADESH Radio Bangladesh, English at 1815-1900 was clear on 11862.5, but not clear on 15255 (Kath Denley, UKOGBANI, WDXC *Contact*)

BRAZIL Radio Clube ITM (name not clear) is a new station on 4895 from Campo Grande, MGS, heard between 0115 and sign-off at 0200 (Christer Brunstrom and Lars-Erik Svensson, Sweden, *SW Bulletin*) Sounds like ETB, heard at 0130-0230 but not at 0900 (Yuki Ohmia, Japan BCL Federation, Parana, Radio Japan *DX Corner*) *WRTVH 90* has this as ZYF909, 5 kW on 4895, a Future Plan of Radio Clube Campograndense.

Radiobras relays of Deutsche Welle: 2300-0050 in Spanish on 6145; 0100-0300 in German on 9545 (BBC Monitoring) At latter time also on 6075 (Wolfgang Buschel, Germany)

BULGARIA Radio Sofia's summer schedule to Europe and North America: 0630-0700 on 17825, 15160, 11720; 1830-1900 and 2030-2100 on 15330, 11765, 11660; 2130-2230 and 2300-2400 on 15330 and 11660; 0300-0400 on 15290 and 11720 (Bill Peek, NC, *W.O.R.*)

CHINA Radio Beijing must be trying to distract us from a certain anniversary. The English Dept. has started publishing a slick bi-monthly full-color folio, *the Messenger*, free on request. Includes info about China, the station staff and listeners, program previews, recipes, complete English schedule and abridged non-English schedule, both showing relay sties. Station is also running an Asian Games Quiz, deadline Sept. 15 -- write for entry form and listen to *Letterbox* on Sundays and Tuesdays for answers. Prizes not specified, so presumably not including trips to China (via Bruce MacGibbon)

Direct broadcasts to North America have been cut to only three as Radio Beijing relies more on relays: 1200 on 17855, 1300 and 1400 on 11855.

COSTA RICA Radio Earth's info quoted last month was wrong; RFPI says the *Music From Everywhere* show is actually on Sundays at 2200-2230 on 21566, 13660; so repeats UTC Monday on 7377 USB would be around 0445, 1115. Weekend broadcasts now last from 1800 to 2430, with two 6-1/2 hour repeats starting at 0045 when possible. RFPI hopes to add a frequency in the 15-MHz band if a clear spot can be found. If 13 sounds weaker than 21, the higher frequency has more than twice as much antenna gain. Nominal weekend repeat times for World of Radio have shifted to: UTC Sunday 0215, 0845; Monday 0515, 1145.

Three 100 kW transmitters are already in Costa Rica, but the relay project of Radio Exterior de Espanya has been set back due to the change in government in C.R. A new site must be found and other matters renegotiated. Only the southern half of the U.S.A. is to be within coverage range (Homero Valencio, RNE-RE Director, RN *Radio-Enlace*)

CUBA (non) La Voz del CID keep shifting around 40 meters, such as 7340.1 around 0100 (George Zeller, OH, Association of Clandestine Enthusiasts)

CZECHOSLOVAKIA The revived Radio Prague International: 0000-0015 on 7345, 11680, 11990; 0100-0130, 0300-0330 and 0400-0415 on 5930, 7345, 11680 (Eric D. Patterson, MA, *W.O.R.*) *DX Special* now airs every UTC Thursday during half-hour transmissions, *Mailbag* on all four the same day (Bill Peek, NC, *W.O.R.*) Different sites are used; some must be satellite-fed; 7345 trails 5930 and the others (gh) At 2100, 6055 lags behind 7345 (Wolfgang Buschel, Germany)

DENMARK/NORWAY From Sep 8, Radio Norway will double English, adding Saturday to Sunday. It would be smart if Radio Denmark broadcasts immediately following these, could also be in English (Jorgen T. Madsen, Radio Denmark, DSWCI *SW News*)

ECUADOR HCJB is getting better results with 15155 and new 17875 at 0030-0700. Brent Allred will be leaving HCJB in January to take up a pastorate in Auckland, New Zealand. Taking over as *DX Partyline* producer will be Richard McVicar (formerly an active DXer in Ontario), who will be arriving in Quito in August. Some *DXPL* topics this summer: *July 1*, WJG, Radio Stamps. *July 8*, Algeria, IC-R9000 review (perhaps from Magne in *MT* as previous reviews have been). *July 15*, National Museum of Communications, in Dallas; Arthur Cushen; SPEEDX. *July 22*, North Korea; ANARC, SPARC, EDXC. *July 29*, Village Radio, vintage hobby station in Tauranga, NZ. *August 5*, half-wave, center-fed dipoles; Radio Stamps. *August 12*, Italy; ODXA; Grundig Yacht Boy 230. *August 19*, Portishead Radio; Cushen; SPEEDX. *August 26*, Saipan; ANARC, SPARC, EDXC. *DXPL* airs UTC Sundays around 0052, 0252, 0522. *Saludos Amigos* is heard 24 hours later, with an ANARCON 1986 rerun on *July 22*;

PROGRAM notes
HCJB · THE VOICE OF THE ANDES · QUITO · ECUADOR

ANARCON 1987 on *August 19*. (HCJB)

ESTONIA Relays of various domestic and external Estonian Radio services have been heard on 9560 between 1400 and 2030 (BBC Monitoring)

ETHIOPIA The Organization for African Unity plans to put on a station in Addis Ababa to be heard worldwide; it already has a recording studio there. Hope to be on in three years using official languages English, French, Arabic, Portuguese (*RNMN*)

(non) Ethiopia has become one of the hottest spots for clandestines, with BBC Monitoring reporting new developments almost every week. Voice of the Broad Masses of Ethiopia, and Voice of Tigray Revolution started joint broadcasts as Voice of the Ethiopian People for Peace, Democracy and Freedom (Amharic: *Ye Ethiopia Hizboch ye Selam, ye Democracy na ye Netsanet Dimtsi*), at 0400-0500, 1500-1600 and 1900-2000. However, Voice of Tigray Revolution retains its own name at 0500-0545, 1600-1645. The former was monitored on 7885 kHz (38 meters) though announcing 49, 44, 43, 41, 40 and 31 meterbands. Then on 9400 kHz, radio of the Ethiopian People's Revolutionary Party was heard at 1730-1800, also announcing daily broadcasts at 0330-0400, and this address: P O Box 710358, Dallas, Texas 75371, USA!

GERMANY what's left of **EAST** Radio Berlin International reorganized its schedule so that English to North and Central America airs: 2145 on 9730, 13760; 2345 on 6080, 9730, 11890, 13610, 13760, 15240; 0145 on the same minus 9730; 0300 on 6080, 9730; 0345 on 11890, 13760; 0745 on 11785; 0900 on 11785, 11890. RBI says it is now a semi-public body financially supported, but not run, by the government (via John Carson, OK)

GUAM KSDA has added another English broadcast, Monday-Friday 0400-0500 on 15225, starting with the musical *Good Day Asia* until 0415. On July 7-14, AWR-Asia will cover the 55th Adventist General Conference, from the Hoosier Dome in Indianapolis, pre-empting five hours of English per day. During this week, Adrian Peterson will revive his *Radio Monitors International* show, two, three or four new programs featuring Adventist broadcasting activities. Exact schedule not set, but should also be on other AWR stations (via Charlie Hoffman, and *R.I.B.*)

KTWR's *Pacific DX Magazine*, believed to be its only semi-secular program, now airs: Saturday 0900 on 11805; 1515 on 11650, Sunday 0838 on 15200 (via BBC Monitoring)

INDONESIA RRI Manokwari noted for the first time on 60 meters, 4978v around 1500 to closing at 1600; probably ex-6188v which was missing (Peter Bunn, Australia, *OzDX*) RRI Jambi at 1138-1215 on 9853.8, a second harmonic (Nobuyoshi Aoi, Japan, DSWCI *SW News*) RRI Gorontalo, 4977.2, on the move again, ex-4898 at 1230-1600 (Craig Tyson, W.A., *Fine Tuning*)

IRAN VOIRI has English at 1130-1225 on 7115, 9670, 11790, 11825; 1930-2030 on 6035, 9022 (via Kevin Klein, RCI *SWL Digest*)

(non) Three clandestines in a row heard on the same date: Voice of Iranian Kurdistan until 1759 on 4065; tentative Voice of the Workers until 1830 on 4224.17; and Voice of the Communist Party of Iran until 1911 on 4469.81 (Bernhard Gruendl, Germany, *Play-DX*)

IRAQ Radio Baghdad now has English at 2000-2200 on 13660 (John F. Wilson, DE) And also at 0130-0330 on 11830, 11810 (Bill Peek, NC, RCI *SWL Digest*)

KOREA SOUTH Bill Matthews, a longtime Ohio monitor for Radio Korea, has been rewarded with an alternate-week phoned-in DX news report on *Shortwave Feedback*, Sundays at 1040 on 11715 via Canada; 1254 on 9750, 1439 on 9570, 2439 on 15575 (*W.O.R.*)

A strike in April disrupted KBS and Radio Korea programming; union workers opposed the new KBS president. Finally, 2400 riot police stormed the KBS building (BBCM)

KURDISTAN (non) Voice of the People of Kurdistan heard in Kurdish and Arabic at 1630-1700 on 15047 (Bjorn Fransson, Sweden, *SW Bulletin*) See also IRAN

LAOS (non) The single Soviet relay of Vientiane, in French at 1100-1130, is now monitored on Serpukhov 11960 and Tula 17595 (Wolfgang Buschel, Germany)

LITHUANIA Radio Vilnius' summer frequencies for English at 2200-2230 are 11790, 13645, 15180, 15455, 15485; too bad they dropped 17665, which was best. They include reports from Latvia and Estonia (Larry Shewchuk, Winnipeg, *W.O.R.*) 15180 best here now, nothing on 13645 (gh, AZ) Also on unannounced 11805 (Bruce MacGibbon, OR, *DX Spread*)

MEXICO Radio Mil, 6010, operates at greatly reduced power, if at all, most of the year to avoid interfering with nearby politician's televisions and telephones. When they are away for Christmas and Easter holidays, Radio Mil dares to go full power, and this is when most DXers can hear them (Carl Huffaker, Mexico, *SPEEDX*)

MOLDAVIA Another instance of time changes being politically significant: After observing DST of UTC + 4 during April, Moldavia decided to go back to UTC + 3, matching Romania rather than Moscow (BBCM)

MONGOLIA Radio Ulan Bator also moved its external services one hour ahead due to DST in April, but then moved the transmissions, if not the clocks, back to their original winter time. Note the new frequencies for English half-hours: 0910 on 12015, 11850; 1200 (except Tuesday, Friday) on 12025, 11850; 1445 on 13780, 9795; 1940 on 12050, 11850 (Tetsuya Kondo, Radio Japan)

MYANMAR (non?) On the former frequency of the communist Voice of the People of Burma, 5110, a station called Voice of the People of Wa State has been heard at 1130-1330, in Wa until 1240, then Burmese and other dialects. Also on the air at 0015-0125; Burmese ID is *Wa Ne Pyithu Athan* and appears to support the Wa State United Army (BBCM)

NAMIBIA With independence, NBC gets to phase out Afrikaans broadcasts in favor of English (BBCM) And English has become the official language. Listen for the news program weekdays at 0430-0600 on 3270, and until 0530 on 3290; then switching to 7165, 7190 (Richard Ginbey, Windhoek, *RNMN*)

NETHERLANDS Radio Netherlands started the season on new 11740 for the 0030 broadcast, then returned to 15315, but Moscow was there too, so RN moved again to 15560, where Radio Australia was also scheduled but not heard.

RN will have a digital link to Bonaire by September; RN is targeting the 18-35 year-old audience. C-SPAN Audio 1 now carries RN on weekends only (Jonathan Marks, *Sweden Calling DXers*)

NETHERLANDS ANTILLES Strange priorities: TWR will QSL a report showing frequency as much as 50 kHz off, but not if there's a minute less than 15 of program details -- so reporting the 10-minute *Bonaire Wavelengths* is not enough, no matter how thorough and obvious that you heard it.

NEW ZEALAND Although it received a reception report from Germany, Print Disabled Radio, 2XA, is not yet on shortwave 3935, as the one-kilowatt transmitter is still in the US (Arthur Cushen, NZ, *RNMN*)

Radio New Zealand International, established on 17680 since

Shortwave Broadcasting

February, was hit by QRMoscow a couple of months later, various services to Latin America most of the day, blocking RNZI even in its Pacific targets. This should not have come as a surprise, since the Peace & Progress printed schedule shows 17680 for May 7 to July 31 for Spanish at 0000-0030 and Creole at 0200-0230. RNZI was extremely reluctant to shift to one of its publicized alternates, and protested to Moscow. Eventually, RNZI tried 17675 but only at 2200-2400. The RNZI *Mailbox* and DX show airs the first and third UTC Mondays at 0430, repeated following Fridays at 1905 (info from John Carson, *RNMN*, gh)

NICARAGUA Before relinquishing power, the Sandinistas gutted the state-run network La Voz de Nicaragua; and suddenly developed an affinity for private radio, as they started setting up their own radio and TV outlets (AP via Larry Nebron) LV de Nicaragua is renamed Radio Nicaragua, on 6002 (BBCM)

(non?) Radio Miskut, "a new voice against atheist communism," hostile to the [former] Nicaraguan government, claiming to broadcast from somewhere in Nicaragua; mostly in Miskito but some items in English and Spanish: daily 1200-1400, Monday-Saturday 1800-2300, Sunday 2000-2300, all on 5560; extended on occasions (BBCM)

NORWAY *Norway Today*, Sundays in English to North America: 0800, 1200 and 2300 on 15165; 1600 and 1700 on 17765 (Norwegian Embassy via David Rutman, FL) See also DENMARK

PALESTINE (non) Al-Quds Radio announced in Arabic, but not in English and Hebrew, shortwave frequencies of 5990 and 6030; not heard on the latter, but instead on 15050 USB at 0600-1107 (BBCM)

PERU (See last month) Nabeshima sent another copy of his tape to Julian Anderson, Argentina, who replies: no doubt that the station on 4195v is Radio Imberiar -- meaningless in Spanish but it could be an acronym; 4705 station is Radio Alto Valle, Rioja, not Alto Mayo, or Auto Mio, on the air at 1100-2300 (*Pampas DXing*)

A Peruvian on 13255.4 from 0246 to 0356 sounded like Radio San Antonio, Radio del Peru, Bambamarca; unlikely a 3rd harmonic as it unseemed parallel Frecuencia Lider on 4418-variable (John Fischer, *DX Ontario & Fine Tuning*)

ROMANIA RRI's new summer schedule: 0200-0300 and 0400-0430 on 15380, 11940, 11830, 9570, 9510, 5990. Other English, not to North America, but best frequencies asterisked: 0530 on 21665, 17790, 17745, 17720, 15380, 15340*; 0645 on 21665, 17805*, 17720, 15365, 11940, 11810; 1200 on 17720, 15380; 1300 on 21665, 17850, 15365, 11940; 1500 on 17745*, 17720, 15355, 15250, 11940, 11775; 1730 on 17860, 17805, 15365* (varying to 15366.5), 15340; 1930 on 11810, 9750, 9690*, 5955; 2100 on 11940, 11810, 9750, 9690*

The "jammer" reported on 9570 at 0200 is apparently Bucharest's own transmitter. When this acts up, hours or days can elapse before the problem is corrected. On days when 9570 is affected at 0200, the same is true of 9690 at 1930 and 2100, 17805 at 0645, and 9570 at 0400 (Bill Peek, NC, *World of Radio*)

SOUTH AFRICA As promised last month, Radio RSA said a sad farewell to its overseas listeners, playing itself off with *Auld Lang Syne*. Letters to overseas monitors said reports from them are no longer needed. The power of academic publication: BBC Monitoring heard Foreign Minister Pik Botha on Radio RSA referring to an article in Vol. 33, No. 2 of *Journal of Broadcasting and Electronic Media* that the station did not have substantial audiences in Europe and North America. That piece may well have prompted the drastic cutback to serve Africa alone. Never on 21 or 25 MHz any more, and silent between 2055 and 0358 UTC, Radio RSA now finds itself with lots of spare transmitter time; they told *Radio-Enlace* that inquiries from overseas stations needing relays are now invited.

Radio RSA's English, only to Africa, and much harder for us to hear: 1100-1255 on 17835, 11900, 11805, 9555; 1400-1555 on 17835, 11925, 9555; 1800-1855 on 17765, 15270, 7230 (Tom Sundstrom, via Larry Nebron)

SPAIN Madrid has moved its DX program a day earlier, UTC Sundays 0023, 0123, 0523 on 9630, 11880 (Bill Peek, NC, *W.O.R.*) Due to developments in Europe, German and Russian have been added at 1700-1800 on 15280, 11790, 9875 (*Radio-Enlace)* See also COSTA RICA

SURINAM Radio Apintie definitely active again on 5005.7, Dutch at 0925 (*FT*)

SWEDEN Restructuring of language priorities in September could lead to *Sweden Calling DXers* being broadcast only in English, rather than one script serving six languages, and thus raising its cost for English alone; this worries me a great deal (George Wood, DX Editor, *RNMN*)

TANZANIA Radio Tanzania apparently testing a new transmitter by reactivating long-silent frequencies, 6105 or 5985 heard between 0730 and 1000 and 1100-1915, asking for reports to Box 9191, Dar es Salaam (BBCM)

U S A Now that the CSM stations have their own do-it-yourself QSL cards, the WCSN certificate picture in our May column is no longer issued -- except for those lucky enough to pick up unscheduled test frequencies, during maintenance downtime. Send such reports only directly to stations as instructed on the test ID (Ed Cockburn, WCSN)

Allan Weiner, who operated pirate KPRC, "Pirate Radio North" in 1982-1984 via the facilities of his licensed station WOZW, Monticello, Maine; and remote pickup base station KPF-941 in Yonkers, NY as a local broadcaster; and Radio Newyork International, offshore pirate, has filed for a construction permit with the FCC to build a (legal) shortwave station in Monticello. Since he was not fully prosecuted for these infractions, the FCC isn't sure whether to grant his application, and it has been designated for hearing -- the Broadcast Bureau must prove the violations; Weiner must prove he now has the requisite character qualifications (FCC via Benn Kobb)

(non) Mother Angelica, founder of the Catholic cable Eternal Word TV Network, plans to start shortwave broadcasting shortly in Europe. Unfortunately, there are no further details, as neither Dennis Wholey nor callers during her appearance on *Late Night America*, PBS-TV, asked any pertinent questions about this. With Vatican Radio already there, it's unclear why church HQ would OK this (*W.O.R.*)

U S S R Radio Kiev's one-hour English at 2300 is on 11790, 15180, 15455, 15485, and best on 15525; also announced but unheard on 13645 (see LITHUANIA); at 0200-0230 now in Ukrainian. To Europe in English at 2000-2100 only on 9865 (RCI *SWL Digest*)

UZBEKISTAN Radio Tashkent, at 1200-1230 and 1330-1400 on 17745, 15470, 11785, 9640, 7325 (John Coxon, England, *SCDX*)

VATICAN Vatican Radio is often off-frequency, such as 11778.2 for English at 0050-0110 (Ernie Behr, Ont., RCI *SWL Digest*)

VIETNAM Voice of Vietnam heard on new 5030 at 0815-1600 with domestic service // 4895, 6448, 10060, including English lessons at 1530-1545; 5030 not heard in mornings (Craig Tyson, W.A., *Fine Tuning*) Guess what: 5030 is half of 10060.

Read much more about shortwave broadcasting and other media in REVIEW OF INTERNATIONAL BROADCASTING and/or DX LISTENING DIGEST. Samples are $2 each, 10-issue subscriptions $21, or both for $40, in North America; US funds on a US bank, from Glenn Hauser, Box 1684-MT, Enid, OK 73702.

Monitor Glenn Hauser's DX news reports concluding each SWL DIGEST on Radio Canada International; Saturday 2337 UTC on 9755, 5960; Sunday 1837 on 17820, 15260, 13670, 2137 on 17875, 15325; 2307 on 11730, 9755; Tuesday 1233 on 17820, 11855, 9635 and C-SPAN Audio 1.

See COSTA RICA and last month for WORLD OF RADIO on Radio for Peace International; also on WRNO, New Orleans: UTC Thursday 0030 on 7355, 1530 on 15420, 2300 on 13720; UTC Friday 0030 on 7355; UTC Saturday 0300 on 6185, 2330 on 13720; Sunday 2030 on 15420.

Broadcast Loggings

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

0005 UTC on 11735
Uruguay: Radio Oriental. Spanish. Futebol commentary with breaks for announcement bulletins and IDs. (John Tuchscherer, Neenah, WI)

0010 UTC on 15115
North Korea: Radio Pongyang. National news and discussion on medical care in N. Korea. Folk tune titled "Village We Live In" and political commentary. (John Carson, Norman, OK) Heard on 15160 kHz from 0020-0045 UTC. (Richard Lentini, Albany, NH)

0200 UTC on 7265
German Federal Republic: Sudwestfunk. German. National newscast and rock music. (Ken Grey, Manchester, NH)

0202 UTC on 11745
Brazil: Radio Nacional-Bras. National economic report and technology update. Program preview, and Brazilian pop vocals and instrumentals. Ecology feature on the forest industry in the states of Para and Maranhao. (Sam Wright, Biloxi, MS) *Nice details.-ed.*

0215 UTC on 6549.6
Lebanon: Voice of Lebanon. English/Arabic. Regional news and station ID. Arabic service commencing at 0229 UTC, with periodic repetitions of musical "Eine Kleine Nachtmusik." (Ken Grey, Manchester, NH) French service heard from 0315-0345 UTC. (Jack Romalewski, Montpelier, VT)

0240 UTC on 5990
Romania: Radio Bucharest. Interesting discussion on the democracy in Romania. Monitored on parallel 11940 kHz from 0248-0256 UTC sign-off and 9570 kHz at 0245 UTC. (John Carson, Norman, OK)

0245 UTC on 3285
Brazil: Radio Sentinela da Amazonia. Portuguese. Fair signal with Brazilian pops and ballads. Local time check, commercial jingles, and ID, to abrupt sign-off following vocal tune. (Richard Lentini, Albany, NY) (Jack Romalewski, Montpelier, VT)

0250 UTC on 9445
Turkey: Voice of Turkey. Piano melody interval signal to 0255 UTC. ID/frequency schedule. International news headlines and topics in detail. Review of today's Turkish press and "Last Week" feature of past events. Dry discussion on "Development of Turkish Democracy." (Sam Wright, Biloxi, MS)

0320 UTC on 4940
Venezuela: Radio Continental. Spanish. Chat and program announcements. Station ID at 0330 UTC and Latin musical variety. (John Tuchscherer, Neenah, WI) Heard on 4940 from 2350-0005 UTC with ads and IDs. (William Kruger, Miami, FL)

0329 UTC on 7110
Ethiopia: Voice of Ethiopia. Amharic. Electronic xylophone interval signal. Partial ID heard as "yeh ye Ethiopia." Gong time signal and local announcements to indigenous African music. (Rod Pearson, St. Augustine, FL) (Jack Romalewski, Montpelier, VT)

0330 UTC on 3354
Angola: Radio Nacional. Portuguese. Lady announcer with "Nacional" ID, and intros for native African vocals, Portuguese ballads, and U.S. pop tunes. (Frank Hillton, Charleston, SC) Pop music, talk, and ID on 3375 kHz at 2230 UTC. (Richard Lentini, Albany, NY)

0354 UTC on 4840
Venezuela: Radio Valera. Spanish. Closing comments for station sign-off to include call letters "YVOI," Valera ID, and national anthem. (Tim Johnson, Galesburg, IL) (Charles Edwards, Scranton, PA)

0410 UTC on 4976
Uganda: Radio Uganda. Fair signal with deep fades during the national newscast. Station ID and program schedule. Slight improvement to hear native African and lite pops till final fade out at 0440 UTC. (William Kruger, Miami, FL)

0449 UTC on 17680
New Zealand: Radio New Zealand Int'l. Children's short story program to station ID at 0500 UTC. (John Carson, Norman OK) Weak/fading news audible at 0700 on 17680. (Brian Bagwell, St. Louis, MO)

0530 UTC on 5020
Niger: La Voix du Sahel. French/Arabic. Islamic recitations. (Tim Johnson, Galesburg, IL) Sign-on, African vocals audible past 0610 UTC. (Ronald Westbrook, Columbus, OH)

0600 UTC on 4795
Cameroon: Radio Douala. French/English. ID as "ici Douala" into Afro pop songs. Fairsignal quality. Additional from 2130-2310 UTC sign-off. Radio Yaounde logged in French/English from 2345-0000 sign-off on 4850 kHz *-ed.*

0620 UTC on 4760
Liberia: Radio ELWA. Discussion on the importance of cooperating with the police. (Ken Grey, Manchester, NH) Religious programming on 4760 kHz from 2210-2230 sign-off. (John Miller, Thomasville, GA)

0715 UTC on 9660
Australia: A.B.C.-VLQ9 Brisbane. Environmental feature on saving the nation's Queensland. (Tim Johnson, Galesburg, IL) Still audible up to 1210 UTC in Texas. (David Thompson, Houston, TX)

0805 UTC on 15425
Australia: A.B.C.-VLW15 Waneroo. Play by play sports commentary for a cricket game. (Tim Johnson, Galesburg, IL)

0910 UTC on 12015
Mongolia: Radio Ulan Bator. External services programming including quoted frequency schedule, and Asian music program. (Tim Johnson, Galesburg, IL) (Brian Bagwell, St. Louis, MO)

0945 UTC on 4825
Peru: La Voz de la Selva. Spanish. Peruvian drum/flute music to IDs and local time checks. Fair signal quality. (Brian Bagwell, St. Louis, MO) Peruvian Radio Tropical on 4935 kHz from 1000-1025 UTC. (John Miller, Thomasville, GA)

0945 UTC on 3290
Ecuador: Radio Centro. Spanish. Ecuadorian music to "Radio Centro" ID at 0959 UTC. Music breaks with news items on Quito. Clear signal monitored to 1020 UTC. (Frank Mierzwinski, Mt. Penn, PA)

1100 UTC on 3315
Papua New Guinea-Admiralty Islands. Radio Manus. Pidgin. Native drum interval signal and national newscript. Station ID to easy-listening music intros. (Frank Hillton, Charleston, SC) PNG Radio Enga (New Guinea) with country and western on 2410 kHz from 1115-1130 UTC. (William Kruger, Miami, FL)

1110 UTC on 3345
Indonesia: Moluccas. Radio Republik Indonesia-Ternate. Indonesian. Fair signal quality for Arabic music to "Ternate" ID, and Holy Koran. Indo station R.R.I.-Dili (Timor) audible on 3306 kHz from 1100-1105, and R.R.I.-Ujung Pandang (Celebes) heard on 4719 kHz from 1130-1140 UTC. (Donald Westbrook, Columbus, OH)

1150 UTC on 4607
Indonesia: Irian Jaya. Radio Republik Indonesia-Serui. Indonesian. Regional Indo music and ID/announcement break at the hour. Voice of Indonesia (Java) also heard on 11785 kHz from 1215-1220 UTC with slight fades. (Donald Westbrook, Columbus, OH)

1155 UTC on 4875
China: Voice of Jingling. Chinese. Opening broadcast with Chinese music, two IDs and announcer duo chat. (Tim Johnson, Galesburg, IL) Xinjiang PBS audible on 4970 kHz at 1205 UTC. (David Thompson, Houston, TX)

1255 UTC on 6570
Myanmar: Defense Forces Broadcasting Unit. Bamar. Very weak signal as male announcer reads a script. (Tim Johnson, Galesburg, IL) Voice of Myanmar audible 1145-1155 UTC with ID and orchestral music interval signal on 4725 kHz. (Donald Westbrook, Columbus, OH)

1300 UTC on 11850
Philippines: FEBC. Children's religious Bible study program. (Tim Johnson, Galesburg, IL) (Kelly Jennings, Ottawa, IL)

1413 UTC on 11865
Japan: Radio Japan. National weather forecast to "Japan Scene" program. "Hello From Tokyo" show featuring letters from listeners. 11835 kHz audible at 2318 UTC. (John Carson, Norman, OK) Frequency 11815 kHz heard 1440-1500 UTC. (Richard Langer, Pittsburgh, PA)

1603 UTC on 21675
Kuwait: Radio Kuwait. Arabic. Islamic recitations and Arabic music. Guest interviews to station ID. Audible at 2300 UTC on parallel frequencies 15495 and 15505 kHz. (John Tuchscherer, Neenah, WI)

1856 UTC on 15525
Switzerland: Swiss Radio Int'l. German. Sign-on to newscast, with excessive co-channel interference. Portuguese at 2210 UTC on 12035 kHz, and English at 0220 UTC on 12035 kHz. (John Carson, Norman, OK) German service monitored 2325-2335 UTC on 9810 kHz. (Frank Mierzwinski, Mt. Penn, PA)

1955 UTC on 15767
Iceland: Icelandic Nat'l Broadcasting Service. Icelandic. Continuous reading to ID as "Utvarp Reyjavik," and musical interval signal to abrupt sign-off. (Stephen Price, Conemaugh, PA) Monitored 2320 to 2334 UTC sign-off. Parallel frequencies on 11418/13855 kHz. (Charles Edwards, Scranton, PA)

2145 UTC on 4870
Benin: ORTB. French. Weak signal for African hilife music to the hour's ID. (Frank Hillton, Charleston, SC) Monitored several consecutive days to sign-off at 2300 UTC. (Brian Bagwell, St. Louis, MO)

2159 UTC on 11920
USSR-Armenian SSR: Radio Yerevan. Spanish/Armenian. Haunting interval signal and bilingual broadcast. Several "Radio Yerevan" IDs, and folk music selections. Fair to good signal quality. (Stephen Ponder, Shreveport, LA) (Walter Sneider, Tyler, TX)

2259 UTC on 9725
Costa Rica: Adventist World Radio. Spanish. Two station IDs at 2300 and 2330 UTC spaced between religious programming and station address. Strong clear signal. (Stephen Ponder, Shreveport, LA)

2320 UTC on 4900
Guinea Rep.: RDTV-Guineene. French. African highlife music to 2330 UTC. Clear ID, including DJ's long conversation. Musical interval signal, closing ID and Guinean national anthem. (Thomas McCandless, Raleigh, NC)

2335 UTC on 4815
Burkina Faso. RDTV-Burkina. French. Documentary feature on colonialism, coproduced with ORT du Benin. (Ken Grey, Manchester, NH)

2335 UTC on 4915
Brazil: Radio Anhanguera. Portuguese. Great signal for report details of IDs, with station promotionals. Ad jingles, Brazilian sambas and pops to 0000 UTC newscast. (Charles Edwards, Scranton, PA) (Sam Wright, Biloxi, MS)

Thanks to all our new and regular contributors this month! Don't let those summer doldrums keep your logs away. Many surprises have been known to pop up on the bands in the summertime.-ed.

Utility World

Larry Van Horn
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Dropping in on General Pacheco

How many times have you sat in front of your receiver listening to a ute station's endless beeps, blurps and voice transmissions and wondered what the station looks like? How is the station laid out? Who are the operators? What kind of equipment do they have?

I know I have and I've always said, "When I get rich and famous or win the Florida lottery, I'm going to take a vacation to another country. And when I get there, not only will I see the usual tourist traps, but I am going to visit so and so station." Oh well, it's only a dream, I am not rich and famous but just maybe, someday.

Well, *Monitoring Times* reader Brian Webb got a chance to visit Argentina recently and combined his trip with a visit to that country's most widely heard utility station, General Pacheco Radio in Don Bosco.

I'll let Brian pick up on the story from here:

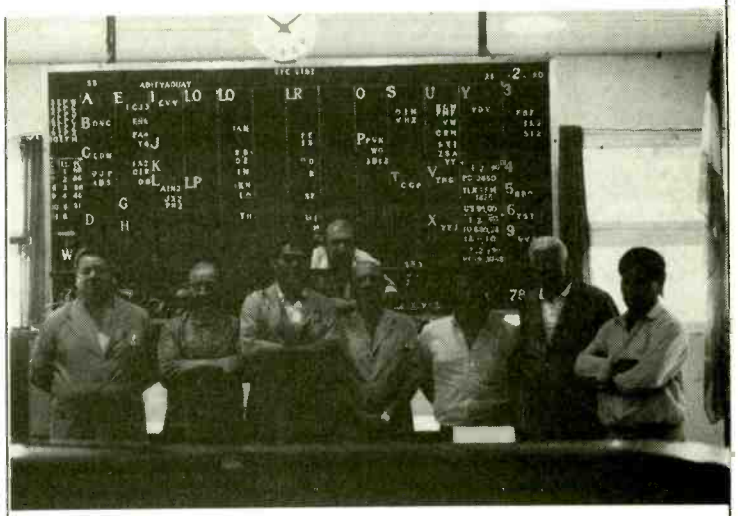
"One of the objectives of my vacation to Argentina was to visit various Argentine HF radio stations which I have heard in the US. Oscar Forsetti (my guide and interpreter) and I drove about 35 kilometers south of central Buenos Aires to the General Pacheco radio facility in Don Bosco.

"Forsetti and I were met at the gate by Mr. Oscar Canay. For the next 1-1/2 hours we were shown around the facility by Mr. Canay and Mr. Urbano Flores. We conversed in Spanish and English. The following is some of what they told me about General Pacheco Radio.

"General Pacheco Radio is operated by Encotel, a government-owned telephone company. The station uses two facilities: a receiving and a transmitting site. The receiving site, located at Don Bosco, is where the radio operators are located. From here the operators remotely operate the transmitters at the transmitter site via a microwave link. Argentina's domestic telephone system is interfaced with General Pacheco Radio at the Don Bosco receiving facility.

"The station's transmitter site is situated several kilometers from the receiving site in order to reduce interference. Voice and telegraph traffic is received via microwave radio from Don Bosco, demultiplexed, and routed to the appropriate transmitter.

Brian Webb (left) and Oscar Canay (an SSB voice operator) pose together after the tour of General Pacheco Radio in Argentina.



Maritime CW operators in front of the status board in the CW communications room. Urbano Flores (far right) and Oscar Canay (extreme left) are both SSB voice operators; the others are maritime CW operators.

"Pacheco Radio performs a variety of functions as a utility station. These include:

- Maritime CW and SSB communications.
- HF radiotelephone communications with the Argentine Antarctic bases (More on this later).
- HF radiotelephone with the country's interior.
- HF voice communications with units of the Argentine Border Patrol.
- An undetermined function which occurs within a secure area on the complex.

"The station building is divided into several rooms and during the visit I got a chance to visit each of these areas. The first stop was the voice communications room. It is a large room with a telephone operator and switchboard in the rear and rows of operating positions. Each operating position is used for a specific frequency (i.e., 8 MHz maritime radiotelephone) and contains an old Phillips receiver. Several operating positions are used for maritime HF SSB service and one operating position is dedicated to voice service with Antarctica.

"In the CW [Morse code] communications room I noticed a large status board at the front and several operating positions and radio operators. Each position was again used for a specific frequency and contained a Kenwood R-2000 receiver. All of the operating positions appeared to be used for maritime CW communications. The frequencies being worked ranged from 500 kHz through the 25 MHz HF maritime bands.

"Next stop on the tour was in the Border Patrol voice communications room. This was a small room with two racks of receivers. The left rack contained old Mackay receivers and the right one contained somewhat newer Racal receivers.

"Between the two racks was a shelf with a clip-fed pistol. Two interesting incidents come to mind regarding this pistol. The combination of the pistol and radios made for an interesting scene.

I asked one of the border patrol men for permission to take a photograph. Permission was denied. The same man joked that when they can't raise their men via radio, they will fire the pistol into the air to get their attention.

"Equipment in the Border Patrol room is used to provide HF voice comms with border patrol units operating outside of the capital (Buenos Aires) area. This room and the adjoining rooms were under the control of a small group of border patrol troops.

"I also visited the teletype room, a medium sized room with teletype equipment along one wall. The equipment appeared to consist only of teletype receiving gear (I don't recall seeing any teletype printers). The engineer-in-charge said that the equipment was used to receive TANJUNG news service copy.

"Me and my interpreter were also shown the telephone/microwave room, records/billing room, engineer's office and electronics maintenance shop. At the end of the tour we were shown the antenna farm. It sits on a large parcel of land covering an area approximately 330 by 330 meters. There were numerous lattice towers and various types of wire antennas. (I don't recall seeing any Yagi or log periodic arrays.) One of the antennas was a folded dipole for use in the lower HF region (either 4 or 6 MHz).

"General Pacheco Radio's call signs consist of letters and numbers (i.e., LPD46). The letters designate the mode (LPL for voice and LPD for CW) and the numbers designate the frequency and thus a specific operating position." *(Just a note here for future visitors who might listen to marine VHF activity while in Buenos Aires: their VHF call sign is LPQ.-ed.)*

According to Brian, obtaining a QSL card from General Pacheco is now very difficult due to the station's limited budget. The engineer-in-charge picked up a handful of reception reports and said he was unable to reply.

Brian has provided these tips to *MT* readers that could increase your chances for receiving a QSL from this ute. In fact, given economic conditions in Latin America, these could be some very good universal tips for Latin ute QSLing.

"Write the report in Spanish.

"Enclose a US $1 bill with a note explaining that the money was enclosed to cover postage. Place the dollar in the center of the reception report so that it isn't visible through the envelope.

"For extra assurance, send the reception report via registered mail. In Latin America unregistered mail isn't handled very carefully, but registered mail is given special treatment.

"While at General Pacheco, I was given a mailing address. I am not sure if it's the home address of Mr. Canay and Mr. Flores or if it's the actual address of the station. If a better address isn't available, ute listeners may send their reception reports to: Mr. Oscar Eduardo Canay/Mr. Urbano Flores, Lomas de Zamora 252, C.P. 1876, Bs. As., Republica Argentina."

Thanks a bunch, Brian, for a very interesting look at a widely heard HF utility station. From the description and pictures, sounds and looks like a very informative tour. The address you gave, Brian, is what I show for a station address on several lists. A check with *MT's* QSL column shows the address is what several others have used to write the station in the past.

Now for the frequencies. Here is the current list of frequencies you can try and hear General Pacheco Radio on. I do not have a list for their Border Patrol and if someone does have such a list, I would be happy to print it in these pages. Without further ado (all frequencies are in kHz):

CW Transmissions

LPD4	444.5	LPD	500.0	LPD5	524.0
LPD62	4262.0	LPD68	4268.0		
LPD86	8646.0				
LPD76	12763.5	LPD88	12988.5		
LPD46	17045.6				
LPD91	22419.0	LPD28	22513.5		
LPD34	25130.5				

Voice Transmissions

LPL6	2086.0	LPL	2182.0		
LPL33	4394.6	LPL	4419.4		
LPL30	6512.6				
LPL3	8759.2	LPL	8780.9		
LPL4	13159.7	LPL	13165.9		
LPL5	17232.9	LPL	17285.6	LPL	17294.9
LPL21	22605.3				

Those of you interested in listening for Spanish voice comms to Antarctica from Argentina might wish to check out 3023 and 5680 kHz. These frequencies are listed as international contact frequencies with Antarctica. Argentine stations involved with the Antarctica net include:

LPL/LPD	General Pacheco Radio
LOL	Buenos Aires Radio
LOE	Destacamento Naval Decepcion, Antarida Radio (Naval Radio)
LOK	Destacamento Naval, Orcadas Radio (Naval Radio)
LOD3	Destacamento Naval Petrel, Antarida Radio (Naval Radio)
LOE2	Estacion Cientifica Ellsworth, Antarida Radio
LOF	Mar del Plata Radio
LOR	Puerto Belgrano Radio
LOV	Ushuaia Radio

Again thanks to Brian Webb for sharing his visit to the land of the Tango and the Gauchos.

Weird Mail Returns

Some of you might remember back in March I wrote about white envelopes, weird mail, etc. If not, grab that issue and reread it because like the movie "Friday the 13th," "It's back."

This new piece of mail isn't as elaborate, but effective. The postmark says it came from Savannah, Georgia. Like a letter from the old selective service system, it starts out "Greetings from...," but the next line was cute. It's from "The staff at intercept station Kilo." If I didn't know better I'd swear that John Combs in Florida is up to his old mail tricks again.

Anyway, this Peach State reader says, "The news of the day is that KKN50 does speak." For those of you not familiar with this station, it is allegedly operated by the U.S. State Department. Throughout the station's broadcast day, you will find KKN50 and several of its sister stations broadcasting endless CW tape markers that start out "QRA QRA QRA KKN50 KKN50 KKN50 . . . ." Real eye opening stuff, huh.

Several years ago *MT* revealed the transmit location of KKN50 as Warrenton, Virginia (co-located with a numbers station transmission). Well, Intercept Station Kilo says, "We heard them on 4/9/90 at 1125 UTC on 16364 kHz break away from their marker tape and start a CW QSO." (That's Morse code operator language for conversation.) Seems they were having this QSO with KBF60 who was very weak and KKN50 asked KWS60 to QSP (more Morse code talk which stands for "Will you relay?).

During the exchange some additional frequencies were mentioned specifically: 23.363 MHz, 16.604 MHz and 26.640 MHz. After about ten minutes KKN50 went back to the usual marker tape. The gang at Intercept Station Kilo says, "By the way we have

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recorded it on cassette tape."

Thanks for the information whoever you are. Hmmmm, let's see if I can get my blood pressure back to normal now that I have finished up with that plain white envelope.

Questions, Questions, ?????????s

Eric Forslund of Sacramento has sent me some questions, a suggestion and some loggings. Wow, not bad in one letter.

He wants to know what the purpose is for a station to send the following in Morse code, "VVV DE (station call)." Eric, the stations that use these endless loop CW tapes are usually marine coastal stations. We call these type transmissions CW station markers and they are sent by the station to aid ships in locating not only what frequencies are active but which frequencies are propagating to the receiving ships.

These CW markers come in as many different varieties as there are marine stations. Some start out with CQ, others use VVV and still others use just DE. Run through this column's loggings section and you will see I have a few listed.

He also wants to know what the warbling solid cricket sound is that is associated with these stations. These are ARQ (that's a form of radio teletype, Eric) idle tones. It helps the receiving station set up to receive possible messages from the shore station. More or less used to sync up the two marine stations.

And with that, it's time to close this chapter of the Utility World for this month. Remember, we like to see your name in this column, so send your logs, station information, frequency lists, etc. to the address in the masthead. Until next month, best of 73 and good ute DX from Larry N5FPW. See you in Knoxville! Now it's time to check out what you have been hearing in the Utility World . . . SK

Utility Loggings

Abbreviations used in this column

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

AM	Amplitude modulation	ISB	Independent sideband
ARQ	SITOR	LSB	Lower sideband
CW	Morse code	RTTY	Radioteletype
FAX	Facsimile	UNID	Unidentified
FEC	Forward error correction	USB	Upper sideband
ID	Identification		

3039.00 USN? 2 males with abbreviated IDs (Lima and Mike) about tactical ops referring to electronic gear. Lima later IDed as Delta Foxtrot Lima. (Fernandez, MA) *Don't think so, Bill.-ed.*

3059.7 Female Spanish five-digit number station heard at 0314. Should have been on 3060. (Fernandez, MA) *Must be getting drifty on us, hi.-ed.*

4233.0 95TMW working 98HRS sending 23RC 23RC 23RC CW marker at 0010. (Dix, NY)

4262.0 FUE-French Naval Radio Brest, France, with usual V CW marker at 0436. (Dix, NY)

4370.0 Deep Sea Trawlers (no call signs given) heard around 1130 in USB. From accents operators probably from Maine or Canada. Giving weather and catch reports. (Ray McCartney, Sag Harbor, NY) *Welcome aboard, Ray. Hope to see you in these pages often.-ed.*

4416.3 EAM broadcast heard here at 0704 in USB. This is high seas channel 420. Open mike maybe? (Battles, NH) *I don't know, Bill. They pop up in the strangest places.-ed.*

4745.0 LOK-Orcadas Naval Radio, Argentina, heard with V CW marker at 0045. (Dix, NY)

5046.3 Female English three/two digit number station heard around 2300-2400 UTC. (Harold Bower, Sunbury, PA) *Thanks for the log, Harold and welcome aboard the Utility World train.-ed.*

5616.0 Mexican Air Force One working Gander ATC at 2202 in USB. Is this the president? (Battles, NH) *Hey, Bill, I guess it is.-ed.*

5643.0 Air New Zealand 34 working Auckland ATC with weather and position at 2009 in USB. (Gordon Trigg, Christchurch, New Zealand) *Welcome to the Utility World column, Gordon. I hope you check in often as we don't get many reports from your neck of the woods.-ed.*

5696.0 Slow piccolo-15 tones in 1.5 seconds, off 1.5 seconds at 1422. (Brinkley, CA)

5800.0 Phone Page working Survival at 1315 in USB on Whiskey 101. (Phillip Cegielski, Reseda, CA) *Welcome to Utility World, Phillip. Please check in often.-ed.*

5874.0 Female operator with numbers/letters in Chinese at 0835 on AM. No IDs. (Trigg, New Zealand) *Very interesting, Trigg, a female Chinese number station. I can't ever remember seeing one of those logged, at least in this column. Wonder how many more of these exist on the bands? Seems everybody in all parts of the world have number stations to hear.-ed.*

6021.0 Uproar working Weary. Completed a phone patch then authentication checks and said would return following Sunday. This seems to be an odd frequency to find this type of comms. This one bugs me a bit -- who and why this frequency? (Kerrigan, IL) *Yep, Pat, seems that SAC is popping up all over the place these days. This one is probably a TAC channel that carries no designator on it. They rotate them frequently and place them where you or I would least expect to find them.-ed.*

6716.0 9 Alpha Foxtrot working Halifax Military with operations message at 0322 in USB. (Battles, NH)

6728.0 SAM 24126 working Andrews with phone patch traffic to Shannon ATC at 0630 in USB. (Redden, OH)

6730.0 SAM 605 (VC-20A aircraft) working Andrews with DV-2+10 aboard. Made five phone patches then moved to F-93. F-93 must have been bad as they showed up on F-60 (11466). (Brinkley, CA)

6756.0 AT 0630 heard Driftwood working Showboat on Whiskey 103 in USB. (Cegielski, CA)

6761.0 Heard Indigo 12 calling Elmendorf AFB, Alaska, for HF radio check at 0305 in USB. (Cegielski, CA) *Interesting, Phillip, obviously this pilot forgot what frequency he was on or thought he had moved off Quebec to a GCCS channel.-ed.*

6840.0 Female English three/two digit number station heard at 2304. Heard bird calls, music, comment "that enough" and it stopped at 2310 with beeps then 182 count. At 2312 heard male voice in background speaking German, stopped listening at 2315. (Bill Burghardt, Denville, NJ) *Wow, Bill, curious, was the German under the three/two station and did it sound like it was actually transmitting over the station's carrier. Also the bird calls, etc., another station interfering?-ed.*

6915.0 BAP46 Xinhua Beijing, China sending RTTY RT test tape at 1002. (Bill, Okinawa)

7880.0 Female English five-digit number station heard at 0420. (Hal Bilodeau, IL)

8462.0 Ballast 19-Net Control and Ballast 01, 25, 06, 07, 09 and 11 heard during some sort of disaster drill, mentioned station A and E, conducted evaluation of exercise and had a roll call of the above units. They mentioned evacuation of injured personnel and also mentioned IMC training the following Sunday. In USB at 1942. (Kerrigan, IL)

8491.0 Hobnob Control working a net consisting of Hobnob 09, 22, 07 and 14 and requesting authentication checks with each station, also units checking in with message sent and received, possibly tied in with the log on 8462. Heard at 2041 in USB. (Kerrigan, IL)

8544.0 OMP44/6-Prague, Czechoslovakia, with a CW DE marker at 0537. (Dix, NY)

8867.0 ATC Sydney, Australia, working Airvan 350 requesting flight level 350 at 1045 in USB. (Dix, NY)

8891.0 ATC Reykjavik, Iceland, working Clipper 29 (SELCAL DMCE) at 0312 in USB. (Dix, NY)

8939.0 Kiev, USSR VOLMET station heard at 0421 with Russian weather. (Fogarty, NC)

8964.0 Israeli Air Force 002 calling unid ground station at 2020 in USB. (Battles, NH) *Looks like it was your month for foreign dignitary monitoring.-ed.*

8970.0 Bluesword 11 working Bluesword 12 about possible contact near point Charlie on their maps at 1915 in USB. (Brinkley, CA)

8973.3 Broadband (6 kHz) HF repeater -- appears to be repeating 6 kHz of spectrum from some other part of the band. Within the 6 kHz. I found S1M talking to Bluesword 12 on 8971.7. Long squelch tail and

intermittent keying on background noise suggest 5 MHz input. (Brinkley, CA)

9006.0 SAM 050 with equipment checks on RCAF channel at 1820 in USB. (Reddon, OH)

9023.0 Andersen AFB, Guam, calling Tango 03 on and off for more than 1 1/2 hours at 1718. (Brinkley, CA)

9043.0 SAM 974 working Andrews with radio check on F-358, secondary F-60 in USB at 1433. (Redden, OH)

10194.0 Trenton military to Pongo 77 and moved to 11271 due to excessive noise on this channel at 1500 in USB. (Brinkley, CA)

10259.6 Army Corps of Engineers heard in USB and conducting radio checks until after 1809. IDs include Mobile 1/2, Lagume 1/2, 2 Oscar Sierra Mobile. Some went off to UHF. (Fernandez, MA)

10344.0 Radio Moscow broadcast feeder in USB at 1609. (Brinkley, CA)

10801.0 RFLI-Fort de France, Martinique, with unclassified military telexes in French at 0125 using ARQ-E3. (Bilodeau, IL)

11055.0 PAT 02 working Andrews with phone patch traffic to SAM command at 0030 in USB. IDed frequency as F-310. (Redden, OH)

11191.0 Leopard 06, N5W, N5W tack 7 (*That reads on paper 'N5W-7'.-ed.*) and Hersey with war games Alligator Playground, NUCO etc. Sounds like USN but N5W-7 sounds like coast guard. At 1941 in USB. (Battles, NH) *No, Bill, definitely USN, N5W-7 might have been an aircraft attached to an afloat unit or something along that line.-ed.*

11205.0 Navy tactical channel G2T working W5U at 1545, T1R (Aussie accent) called E5O at 1555. (Brinkley, CA)

11214.0 Century 54 working Trenton with phone patch to (Wing Kern Ops 965th) at 1645. changed call to Dark Star Oscar and requested mission due to previous cancellation. (Brinkley, CA)

11256.5 Heard multiple station using US Navy tac call signs at 1110 in USB. (Bill, Okinawa)

11422.5 Army or marine range frequency with B51 (the battery), 9T (forward observer), and 035 (range control) saying "600 left, drop 400, you've got your target, fire for effect at 1836." (Brinkley, CA)

11466.0 Executive 1 Foxtrot working Andrews with radio check on secondary at 1730 in USB. (Redden, OH)

11484.0 SAM 050 working Andrews with phone patch traffic to weather office. (Redden, OH)

11495.0 Spanish female four-digit number station heard at 1841. (Pat Fogarty, Enka, NC

11686.0 Two unid station heard at 0311 in USB with phone patch using flyaway radios. (Brinkley, CA) *What is that, Bill?-ed.*

12658.0 UVD-Magadan Radio, USSR, heard at 0202 in CW with traffic list. (Dix, NY)

12764.2 TBA6-Ankara Radio, Turkey, with V CW marker at 0141. (Dix, NY)

12910.0 UAT-Moscow Radio, USSR, at 0010 with a CQ CW marker. (Dix, NY)

12950.0 VLB2-Israeli Moshad number station heard at 0348. (Dix, NY)

12961.5 CCS-Santiago Naval Radio, Chile, heard at 2131 with V CW marker. (Dix, NY)

13035.0 UFH-Petropavolvsk Radio, USSR, at 0031 with a V/CQ marker. (Dix, NY)

13057.0 UAI3-Nahodka Radio, USSR, with DE CW marker at 1336. (Dix, NY)

13217.0 Allowance working unid station on Mystic Star F-407, moved to X-109 (13247). (Brinkley, CA)

13440.0 Sam 70 working Andrews with phone patches in USB at 1735 on Mystic Star F-280. (Brinkley, CA)

13499.0 TAC call signs like 16 Uniform Echo and Fox Kilo 8 Uniform and lots of four-letter words mixed in. (Sounded like SAC meets CB channel 19) In LSB at 0109. (Bilodeau, IL) *Wonder who this is, anybody?-ed.*

13878.0 SAM 126 working Andrews on F-364 with phone patch traffic at 1730. Later switched to LSB. (Redden, OH)

13929.1 AXM35-Melbourne, Australia, with FAX weather features chart (warm-cold water areas) between Australia and New Zealand. 120/576 at 0550. (Bilodeau, IL)

14609.3 GAIMU-Tokyo, Japan, with test tape. Odd tape in that the sequence RY ET(KV) was repeated throughout. At 0954 in RTTY. (Bill, Okinawa)

16276.0 UBCP with messages in Russian. Appeared to be weather for Odessa, Vladivostok and other locations. Heard at 0341 using RTTY. (Bill, Okinawa)

16661.5 WINSTAR with message from WINTER STAR to IRGENS LARSEN A/S OSLO concerning shipboard available cabins. Heard at 0400 using ARQ. (Bill, Okinawa)

16872.3 ZLO-Iriangi Naval Radio, New Zealand with DE CW marker at 0529. (Dix, NY)

16910.0 HLJ-Seoul Radio, South Korea, heard with a CQ marker at 2344. (Dix, NY)

16918.0 VIS-Sydney Radio, Australia, with CQ CW marker at 2055. (Dix, NY)

16985.0 KOAT-Unknown station calling HKMR in CW at 0119. (Dix, NY)

16990.0 HLO-Seoul Radio, South Korea heard at 0121 sending a CQ CW marker. (Dix,NY)

17079.0 HLF-Seoul Radio, South Korea, sending a CQ CW marker at 2341. (Dix, NY)

17084.0 VHI-Unknown Australian marine station sending V CW marker at 2346. (Dix, NY) *Anybody know who this Aussie is. My ITU doesn't list this one, help please.-ed.*

17443.0 BZG48-Xinhua Beijing, China, with RY test tape at 1046. (Bill, Okinawa)

17583.1 AOK-US Navy COMSTA Rota, Spain, with FAX prognostic chart at 2020. 120/576 (Bilodeau, IL)

18019.0 Blue 44 (flight of 6 FB-111 and 3 KC-135 aircraft) enroute Pease from Mildenhall but had to divert due to "Quiet Time" at Pease. Pilot was heard to say "I'm not a happy camper at all" and advised that no NOTAM (Notice to Airmen) was given before liftoff at Mildenhall at 1658 in USB. (Brinkley, CA)

18175.0 SAM 130 working Andrews at 2040 in USB with phone patches. (Redden, OH) Seems this Mystic Star channel is getting a lot of use by SAM-VIP flights, especially to Central America. Recently heard Air Force Two enroute to Latin America around 1630 working Andrews. (Gary Inman, Norris, TN)

18441.0 JMJ-Tokyo, Japan, with 12-hour tropopause prognostic FAX chart for the Pacific Ocean with English headings at 0235 using 120/576. (Bilodeau, IL)

18532.0 Andrews working SAM 971 with Ambassador onboard going to Canadian NATO conference. Many phone patches to State Department operations and comm center at 2045 in USB. (Brinkley, CA)

18594.0 Cotton 201 working Cotton 207 at 1621, then back to scan. Also Omaha 52 working Razorback at 1622 and Slingshot saying his CS1 was down. All in USB. (Brinkley, CA)

18756.0 Multiple INTERPOL stations passing a series of INTERPOL warrants at 0229 using FEC/R. Also saw a report on drug abuse and drug trends in Poland being passed at 0155. (Bill, Okinawa)

19007.6 Unid AP news and sports scores heard at 1950 in FDM 85/50N. (Bilodeau, IL)

19497.0 RFFBBK heard sending a series of messages in French. Heard using TDM at 1110. Also RFFLVH with messages in French at 0857. (Bill, Okinawa)

20103.0 XVVU with long phase/idle followed by ID and termination of signal. I've heard this one many times before, but never with any traffic being passed. Also, this is the first time I have hard any sort of ID at 0800-0945 in ARQ. (Bill, Okinawa)

20313.0 SAM 126 working Lajes AFB with phone patch traffic at 2106 in USB. (Redden, CA)

20472.0 CXR-Montevideo Naval Radio, Uruguay, calling HDN Quito Naval, Ecuador. Also, RYRYRY, SGSGSG Spanish test tape Cinta de Prueba de CXR, Quick brown fox and count test tape at 1536 in RTTY 870/75N mode. (Bilodeau, IL)

20482.0 USIA-Poro La Union, Philippines, with news in English on agricultural topics at 0137 using RTTY 398/75N. (Bilodeau, IL)

20630.0 X9T63 calling N5S63 then C8A38 called N5S63 both with no answer at 1740 in USB. (Brinkley, CA)

22348.5 VHI-Unknown Australian marine station sending V CW marker at 2356. (Dix, NY)

22382.0 KOAT-Unknown station with following CW marker "HKMR de KOAT QRU?" at 1232. (Dix, NY)

22482.0 HLG-Seoul Radio, South Korea, with V CW marker and traffic list at 0012. (Dix, NY)

22485.0 VHP-COMSTA Canberra, Australia, with NAWS marker in CW at 0419. (Dix, NY)

22486.0 OMP6/7-Prague Radio, Czechoslovakia, with DE CW marker at 1304. (Dix, NY)

23329.5 KVM70-Honolulu International, Hawaii, with 48 hour surface thickness chart at 0049 using FAX 120/576. (Bilodeau, IL)

The Scanning Report

Bob Kay
c/o MT, P.O. Box 98
Brasstown, NC 28902

Cordless Invaders

A few months ago, I asked for your comments concerning cordless phone monitoring. Although the responses were varied, nearly 80% percent of your letters contained a surprising comment. It seems that many of you have repeatedly tried to warn your family and neighbors about 3rd party cordless monitoring. However, your warnings are never taken seriously. One reader put it this way: "Whenever I tell someone about cordless monitoring, they seem to think that I'm talking about a rare occurrence."

If you're nodding your head in agreement, I've got exactly what you need. It's my open letter to all cordless phone owners. Read it, copy it, and send it to your friends and family. If they still refuse to curtail their cordless conversations, I only have one additional suggestion – happy monitoring!

Treasure Hunt

Have you been searching for an illusive frequency that can't be found in published frequency directories? If so, here's your chance to win a H/A 1300 Frequency Counter from Opto Electronics!

The 1300 H/A features 1 megahertz to 1.3 gigahertz coverage in a pocket size instrument. An aluminum cabinet, rechargeable batteries, internal preamp and good sensitivity, make this counter ideally suited for picking up transmitted frequencies. Scanner buffs have been using the 1300 H/A to discover unknown frequencies from both fixed and mobile radios.

For the July/August Treasure Hunt, Opto Electronics has provided two 1300 H/A's as prizes. To win a frequency counter for your shack, simply find the answers to the following clues. All the answers can be found in the May, '90 issue of *MT*.

Dear Cordless Phone Owner:

On a map of your town, draw a one mile radius circle around your home. Did you know that anyone who lives within that circle and who owns a scanner can listen to your phone calls? If you live in an urban area, there could be hundreds of people listening to your every word. The fact is that the one mile radius is rather conservative. Cordless phone signals have been monitored at distances greater than two miles.

To the average person, the idea of cordless signals traveling a distance of two miles seems rather ridiculous. After all, the advertised operating range of a cordless phone is approximately 1500 feet. And if you're a cordless owner, you know from first hand experience that your phone won't work beyond the limits of your back yard.

So how can someone with a scanner radio, living several miles away, monitor your cordless phone? To answer that question, you need to understand that the cordless telephone is actually a two way radio. Most people are surprised to learn that the cordless phone is nothing more than an FM walkie talkie that flings your telephone conversations in all directions. If atmospheric conditions are favorable, cordless phone signals can travel for miles.

The scanner radio that we use has the unique ability to capture, receive, and amplify a variety of weak signals. Its sensitivity to low power signals, like the ones coming out of your cordless phone, is further enhanced by the addition of an outside antenna. With the proper equipment, it's easy to monitor an entire neighborhood of low power cordless phones.

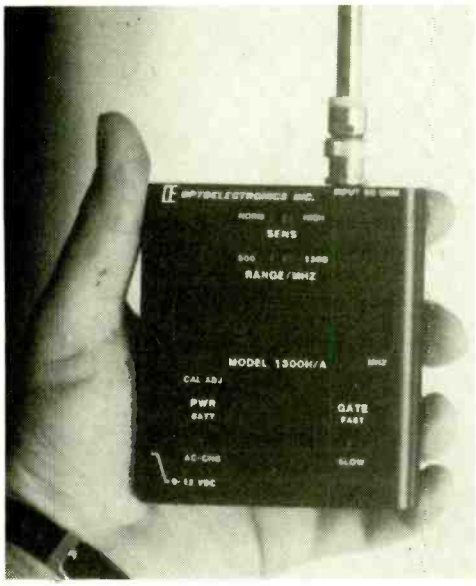
Hobbyists who monitor the cordless bands quickly learn to match voices with specific frequencies. Local cordless frequencies can be cataloged in the same manner as regular phone numbers. For example: If a cordless phone is monitored on 46.610 megahertz, that particular frequency and the name of the person using it can be logged and retained in a cordless frequency book. It then becomes as easy to "tap" into a neighbor's cordless phone as it is to "punch up" his or her frequency on a scanner radio.

By now, you're probably wondering if it's legal to monitor cordless phones. The answer is, yes. A few months ago, the Supreme Court ruled that users of cordless phones have "No justifiable expectation of privacy." Shortly thereafter, the Iowa Civil Liberties union stated that, "Consumers are purchasing cordless phones at the expense of their constitutional rights."

To protect yourself from uninvited eavesdroppers, it's not necessary to throw your cordless phone into the closet. You only need to realize that the cordless phone should be utilized as a convenience, and not as a tool. If the phone rings when you're out in the garden, it's okay to answer that call on a cordless phone. But don't discuss personal or financial matters. Simply ask the calling party to hold until you can get to a wire connected phone.

However, there's more to protecting your privacy than most people realize. If you call your neighbor on a standard wire connected phone, and they answer on a cordless phone, your right to privacy doesn't exist. Why? Because your neighbor's phone is broadcasting both sides of the conversation into the air!

For total protection against uninvited listeners, use a standard wire connected phone and don't forget to ask the second party to do the same. In today's high tech society, it's the only guaranteed way of protecting your telephone privacy.



The 1300 H/A Frequency Counter by Opto Electronics is the prize for the July/August Treasure Hunt.

1) Name the advertiser on the inside front cover.
2) "She was afraid he was going to get caught some day." On what page can that sentence be found?
3) During the *MT* Convention, the "Voice of Monitoring Times" will be broadcasting on what frequency?
4) I'm a military pilot flying through Texas. What frequency would I use to get the "Bergstrom, Metro weather?"
5) "Lower the numbers and raise your odds." Name the advertiser of this slogan.

Send your answers to the "Treasure Hunt," P.O. Box 98, Brasstown, N.C. 28902. Happy hunting!

Frequency Exchange

If you live in Arkansas, and can't seem to find the State Police Frequencies, check out the following list from Joe Woodall:

Arkansas State Police

856.9375	856.7625	856.8125
857.9375	857.7625	857.8125
858.9375	858.7625	858.8125
859.9375	859.7625	859.8125
860.9375	860.7625	860.8125

Joe claims that the above frequencies are new and cannot be found in local frequency guides. Joe would also appreciate swapping frequencies with other scanner buffs. To contact Joe, simply address your correspondence to the Frequency Exchange.

Scanner buffs who are interested in military air, will appreciate Jen Kite's list of frequencies for the **Campbell Army Airfield** in Tennessee:

118.100/255.600	Approach & Departure
138.800/368.300	Tower
121.800/275.800	Ground
141.050/302.200	ATIS
142.900/372.200	Pilot to dispatch
344.600/33.20	Campbell Metro

Is there a scanning club in **Peoria, Illinois**? Kevin Orourke, recently moved there and he wants to share his frequencies with other scanner enthusiasts. To contact Kevin, simply write to the Frequency Exchange and I'll put you in touch. In the meantime, here's a sample from Kevin's list:

42.36/42.5/155.46	Illinois State Police District 8
123.05	St. Francis Hospital Lifeflight

155.22	Ambulance dispatch
155.34	Ambulance enroute to hospital

An anonymous reader from **Spokane, Washington**, has provided the following frequencies for our scanning pleasure:

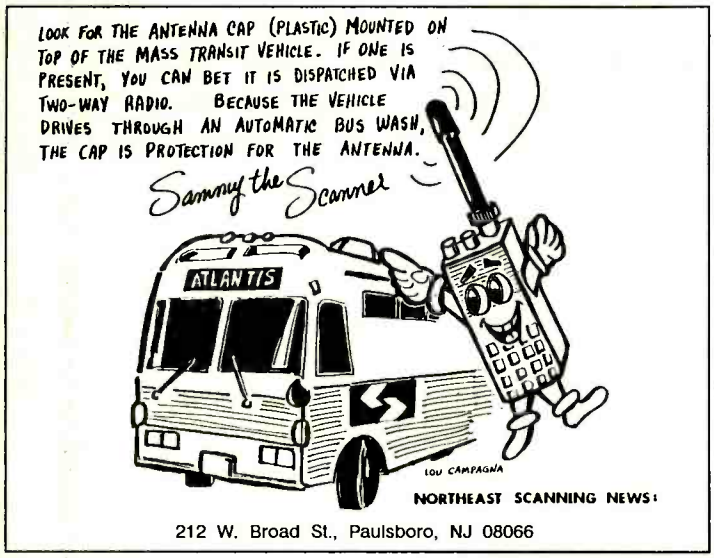
154.680	Washington State Patrol
154.770	"
154.845	"
155.520	"
155.580	"
155.970	"
158.790	"
159.075	State Police air units.
460.050/460.075	Spokane city detectives

Another reader, who prefers to be called, "M&M," has also sent in a batch of frequencies of the Spokane, Washington area:

Spokane PD	Spokane Sheriff	Border Patrol
159.03	154.740	163.625
159.09	154.755	
159.15	154.785	
159.21	155.130	
	155.625	

In **New York**, the Brooklyn Navy Yard DOD police operate on the following frequencies: 148.275 or 149.4250. In addition to naval yard frequencies, Robert Vincenti is also looking for news media and police frequencies for New York City.

Bob, you can get New York frequencies from *Northeast Scanning News*. NESN is a scanning club that provides frequencies for the following areas: New Jersey, Pennsylvania,



New York, Delaware, Maryland, Virginia, District of Columbia, Maine, Rhode Island, Vermont, New Hampshire, Connecticut and Massachusetts. For more information, contact Les Mattson, 212 West Broad Street, Paulsboro, N.J. 08066.

Fast Food

Monitoring the order window at your local fast food store may not seem too exciting. However, an anonymous reader from Cleveland Ohio, claims that he has heard order takers giving away free food to their friends. Other conversations have included comments about various managers and co-workers. If you're interested, here are the frequencies to monitor:

Macdonald's	Burger King	Hardees	Taco Bell
35.02/154.60 30.84/154.570 33.14/151.895	467.825 & 457.60	30.84/154.57	460.8875

Other frequencies to try are, 31.0/170.305, 171.105/154.60, and 170.245/154.57. Let me know what you hear.

Cordless Frequencies

Since this month's column has been dedicated to cordless phone monitoring, here is the channel listing for all phones that have been manufactured in the United States:

Channel	Base	Handset
1	46.610	49.670
2	46.630	49.845
3	46.670	49.860
4	46.710	49.770
5	46.730	49.875
6	46.770	49.830
7	46.830	49.890
8	46.870	49.930
9	46.930	49.990
10	46.970	49.970

If your neighbor has a cordless phone, it operates on one of the ten frequency pairs that are printed above. However, the best way to monitor cordless phones is to simply search between 46.60 & 47.0 megahertz. When you discover a frequency that is interesting, you can then store it into your scanner for future use!

Monitoring the Babies

Although cordless phone monitoring can be a lot of fun, don't forget to include the following baby monitor frequencies into your scanning schedule:

Channel	Frequency	Channel	Frequency
1	49.830	4	49.875
2	49.845	5	49.890
3	49.860		

Baby monitors are used in practically every neighborhood and some folks never turn them off. After a few hours of monitoring, I'm sure that you will be surprised.

Bug Hunting

There's a new electronic bug being used in Orange county, Florida. It's placed inside of a money bag, and sends out a radio signal that police can track from the air and ground. Police like the bug because it allows them to stop the bank robber in less populated areas. They merely tail along and when the opportunity presents itself, they move in to make the arrest.

Opponents of the system claim that the tracking device does not give the police the right to enter someone's property. False signals cannot be ruled out and there's a good chance that police might actually be tracking a signal from a common household device.

Okay, it sounds interesting. But what's the frequency? Anybody out there rob a bank lately? If so, grab your frequency counter and check the money bag -- just kidding, just kidding. (News clipping from Peter Martin, Tustin, California.)

Bridge Monitoring

Bob Murphy, lives in New York and has been trying to find the draw bridge frequencies for his local area. During his morning drive to work, Bob is routinely delayed by draw bridges that must open to allow boats to pass through.

The Bridge-to-Bridge frequency for the entire Eastern Seaboard is 156.65. However, a vessel can also signal the bridge operator by a series of short whistles. Bob, if you would like to learn more about Bridge-to-Bridge radiotelephone regulations, contact your local Coast Guard Station and ask for a copy of "33 CFR 26."

Scanning with Cable Gear

A lot of readers have been asking if they can use cable TV accessories in their scanning shacks. The answer is yes. But you must be careful when making your selection. Here's why. Cable splitters and preamps are often designed for a specific frequency range. You can't monitor the 800 megahertz band if your splitter is only rated to perform between 80 and 600 megahertz. The same rule applies to preamps. Make certain that the unit covers the frequency ranges of your scanner radio before you buy.

Wrap Up

As I already mentioned, every Treasure Hunt Clue can be found in the May, '90 issue of *MT*. It may take some extra digging, but only one issue is needed to solve the five questions. If you're having trouble finding all the answers, drop me a short note with an SASE, and I'll give you some additional hints. Good luck and I'll see you in Knoxville!

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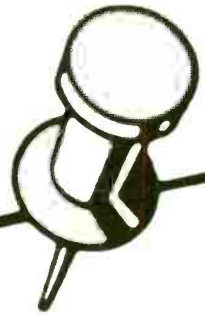

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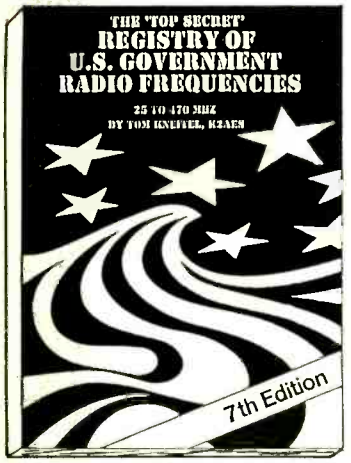


New 7th Edition

"Top Secret" Registry

It nearly is "top secret." Some argue that it should be. *"Top Secret" Registry of U.S. Government Radio Frequencies* is a book that contains some of the hottest, most controversial frequency listings to be found anywhere, some 80 federal agencies in all: FBI, Secret Service, Customs Service, DEA, ATF., CIA, NSA, U.S. Marshal, FCC, NASA, US Coast Guard, ICC, Federal Emergency Management Agency, Border Patrol, NORAD, and more.

The all-new 7th edition covers 25 to 470 MHz and has grown to a chunky 240 pages and contains more information per page than previous editions -- not only frequencies but callsigns, tactical IDs, locations, frequency usage, aircraft/ship rosters and so forth.

Text includes information on how to get the best results monitoring federal frequencies, antennas, how to discover new stations, and a fascinating look at the history of the book -- complete with copies of letters from the FBI, internal memos, the FCC, even the U.S. Senate Select Committee on Intelligence. It's a story that scanner owners are going to love.

The new 7th edition of *"Top Secret" Registry of U.S. Government Radio Frequencies* is $19.95 and will ship at the end of this month. The book is available from a number of *Monitoring Times* advertisers.

Coast Guard Radio:

A Guide to Monitoring and Using U.S. Coast Guard Communications

Talk to any veteran radio monitor and he'll tell you that Coast Guard monitoring can provide some of the most fascinating listening on the radio. In recent years, the added responsibilities of drug interdiction have increased interest in CG monitoring.

Monitoring Times contributor James T. Pogue has compiled an interesting and useful book on the USCG that includes information on the history and mission of the Coast Guard, their communications stations, call letters, shortwave and VHF frequencies, addresses, weather broadcasts, fleet lists, complete information on the service's aircraft and ships, and a glossary of terms you'll hear on the air.

Coast Guard Radio: A Guide to Monitoring and Using U.S. Coast Guard Communications is available from DX Radio Supply for $12.95 plus $1.55 book rate shipping at P.O. Box 360, Wagontown, PA 19376. The book ships late this month.

New ICOM IC-970A/H

The new ICOM IC-970A/H is an all mode, multiband transceiver. Designed for the serious operator on 144, 440 and 1200 MHz, the '970A/H provides what the manufacturer calls "the most futuristic technology for DX, digital and satellite communications."

The '970A provides a complete 25 watts of power; the '970H, 45 watts. Operation on 1200 MHz requires an optional UX-97. Also available as an optional accessory is the UX-R96 wide band receiver unit, which covers 50 to 905 MHz continuous tuning.

The new ICOM IC-970A is available this month and retails for $2,895.00; the '970H is $3,139.00. To obtain a free brochure on this unit, call the ICOM hotline at 1-800-999-9877.

Scanner Frequency Directories

The new 7th edition of the *Northwestern Ohio/ Southeastern Michigan Scanner Frequency Directory* is now available from Radio InfoSystems. According to editor Daryll Symington, the entire frequency database has been updated and hundreds of new frequencies have been added.

In fact, says Symington, "there are over 5,500 frequencies in this edition, including new additions to the 420 MHz area of the spectrum, in use in the Detroit metro area."

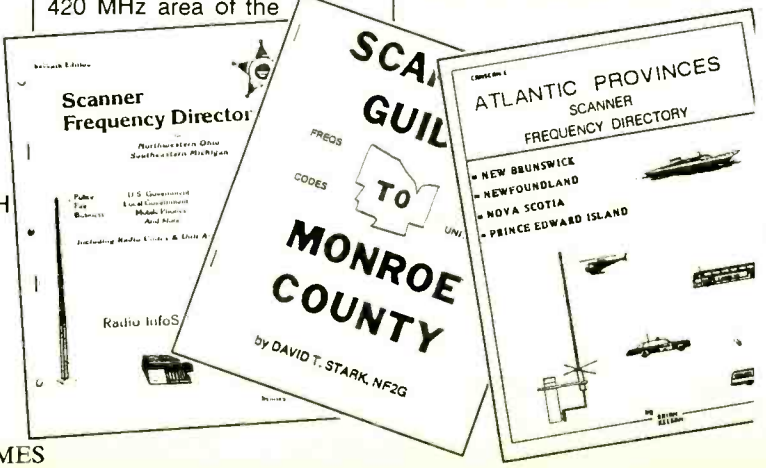
There is also an updated 800 MHz section, unit assignments and radio code lists, a "how to sue" section and a frequency cross-reference section. It's obvious that the author has put a lot of work into this one!

The Scanner Frequency Directory for Northwestern Ohio and Southeastern Michigan is available from Radio InfoSystems for $9.95 plus 1.50 book rate shipping from Box 399, Holland, Ohio 43528.

Scanner Guide to Monroe County focuses on Rochester, New York -- a veritable bees' nest of radio activity. Its metropolitan communications offer considerable listening fare for the scanning enthusiast and David Stark's frequency collection provides comprehensive guidance.

Introductory comments on listening laws practices are followed by lists of frequencies and channel designators for both civilian and federal law enforcement agencies. Ten codes and unit identifiers abound, making it easier for the listener to track dispatch responses.

But law enforcement isn't the only service covered in detail; ambulances and fire



rescue teams are also listed, as are business and industry, airport, military, emergency services, news media and maritime services.

The *Scanner Guide to Monroe County* is available for $12.95 ($13.86 includes sales tax for New York state residents) plus $.90 book rate postage from NF2G Enterprises, PO Box 40678, Rochester, NY 14604-4678.

With scannermania sweeping the North American continent, it isn't surprising that we are witnessing a renaissance in scanner information publications from Canada. Brian Keegan's new *Atlantic Provinces Scanner Frequency Directory* homes in on New Brunswick, Newfoundland, Nova Scotia and Prince Edward Island, largely ignored by previous publications.

Emphasizing police, fire, aircraft, ambulance, forestry, ham radio, government and marine, the handy guide is cross-indexed by frequency and province. Each listing provides the frequency, service, province and licensee's name. An assortment of ten codes is included.

It is quite fascinating to see the same frequencies for many common users (McDonald's, mobile telephones, Strategic Air Command, cordless telephones, maritime) listed for Canada as for the United States. It is equally interesting to note the dissimilarities, such as police and fire departments in the 406-420 MHz band -- federal government here in the States.

A handy reference for Canadian scanner monitors, *Atlantic Provinces Scanner Frequency Directory* is $14.95 plus $3 shipping from CANSCAN, PO Box 3009, Tecumseh Postal Station, Windsor, Ontario, Canada, N8N 2M3.

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

ICOM IC-2SAT Mini HT

Cute. There's no doubt about it; if you like radio equipment, you'll think the newest ICOM handie-talkie is cute. A truly shirt-pocket-sized 2" wide by a scant 4" tall and 1-1/4" deep, the IC-2SAT features a recessed, rubberized keypad and expanded frequency coverage. The rugged case accepts a BNC flex whip, sports an edgelit LCD, and comes with an AC wall charger and belt clip.

High sensitivity (0.18 microvolts @ 12 dB SINAD) assures capture of the weakest signals, while 200 milliwatts of audio (10% THD) provides adequate speaker volume for most listening environments. An external speaker or earphone may be attached.

How about that frequency coverage!

American listeners are obsessed with wide-frequency-coverage receivers; they have discovered a goldmine of radio activity out there and can't seem to get enough of it. The IC-2SAT coddles that preoccupation by offering 138-174 MHz reception and 140-150 MHz transmission (license required) without modifications.

By removing internal diode D9 and replacing D6 with ICOM's three-legged diode array DA114 (part number 1750000160), the radio receives 108-225 MHz AM and FM (simulmode!) and transmits (illegally!) from 139-162 MHz FM. The modification may void your warranty.

Count the features

The tiny internal battery pack produces 0.5 or 1.5 watts on transmit, and may be recharged directly from a 13.6 volt car battery (an AC wall adaptor is included). The external supply will also allow the IC-2SAT to transmit at 0.5, 1.5, 3.5 and 5 watts. Tuning may be in steps of 5, 10, 12.5, 20, 25, 50 and 100 kHz, and 1 or 10 MHz.

48 channels can store frequencies in memory, ten of which may include telephone numbers for automatic DTMF ("Touch Tone") dialing on autopatch repeaters. Transmit/receive offset frequencies with CTCSS (subaudible) tone encoding (requires optional UT-50 encoder/decoder) may be stored as well.

Scan and search functions move along at 10 increments per second. An LCD bargraph indicates both received signal strength as well as transmit power output. A clock timer may be programmed to turn the radio on or off on schedule. A priority function may be selected for any channel, and individual channels may be temporarily locked out for more rapid scan.

Field testing the little unit

We were eager to give the unit a rigorous operational checkout--a hike in the woods was in order! With one unit left at the office, I proceeded with my junket into the wild.

Signals were full quieting for more than 1/4 mile, even though hills and trees were in the path; obviously, their high sensitivity gives these units a competitive edge. Audio filtering is excellent, voice-tapered to provide crisp speech sounds. Squelch operation is smooth and tight.

The five-inch flex antennas are well designed, providing an excellent impedance match in the two-meter band. Swapping them out for a full-length whip made little difference in signal strength except under the most marginal conditions.

While it would seem more objective to offer some negative observations about the tiny transceiver, frankly, considering the incredibly small size of the unit and its enormous flexibility, we can't think of any!

The IC-2SAT is available from *MT*'s amateur radio equipment advertisers for approximately $380.

Letters by the Numbers

Psychologists point to the fact that we all have "Affiliation Needs." Anthropologists remind us that it was the rise of "Social/Tribal" groups that led to our development as a civilization. Sociologists continue to point to our group behavior as "that which defines us." Theologians examine our patterns of corporate spirituality . . .

Yo, Uncle Skip? What's with the social science soliloquy?

Well, it's like this . . . My task here at *Monitoring Times* has always been to help the beginner understand the ways of the radio hobby. In order to do this I often have to take a look at those things that could possibly scare the bejabbers out of someone just getting started in radio monitoring.

One of those scary things is our lingo. We radio types tend to toss around the jargon like Donald Trump buys real estate, like Ted Turner colorizes old movies, like Dan Quayle buys those little statues that, when you press on their heads, they . . . *Knock it off and get to the point!*

Our special language, consisting mostly of abbreviations and acronyms, can toss even the most dedicated novice for a loop. Also, simply translating the jumble of letters into the words they stand for still leaves the beginner scratching his or her head.

Well, then, since we wouldn't want anyone to come up lacking in their affiliation needs, Old Uncle Skip will make every effort to make folks feel at home in the Radio Hobby Tribe with . . . (drum roll please)

THE BEGINNER'S GUIDE TO RADIO JARGON

What follows here, and continues through the next issue of *MT*, is a list of abbreviations/acronyms that have been culled from the pages of recent issues of our very own *Monitoring Times*. I will utilize my particular gift of gab to help newcomers "come to terms with the terms."

AF

This means AUDIO FREQUENCY. This would include any frequency you can hear. For most of us this would include frequencies between 15 and 20,000 hertz. (Relax, we will get around to hertz later in the program). So an AF amplifier would increase the volume (gain) of music and voice. For example, those annoying suitcase size radios kids are so fond of playing in public places have a lot of AF gain. Now that you have entered the world of radio monitoring you are all expected to stop calling that knob on your radio that makes things loud a volume control. Henceforth and forevermore it shall be known unto you as the AF gain control.

AGC

Short for AUTOMATIC GAIN CONTROL. As you have probably figured out by tuning around the shortwave bands, the volume of most stations' signals does not remain constant. Signal level fluctuates for all manner of reasons. To help the listener, many receivers have an AGC circuit built into them. This circuit listens in on the incoming signal and then it makes adjustments to the receiver's amplifier stages to reduce the fading. Better receivers will have an AGC control that will allow you to make adjustments for your particular brand of listening.

AM

How many years have you owned an AM radio and enjoyed it just fine without knowing what AM meant? Well, for the record, it stands for AMPLITUDE MODULATION. All radio signals travel in waves. The waves can be varied in different ways to transmit a signal that can be received and converted into usable intelligence. Amplitude means height, so therefore in AM the height of the radio wave is what is changed to get the point across the ether. AM is a very common mode that accounts for most medium and shortwave broadcast stations.

ARRL

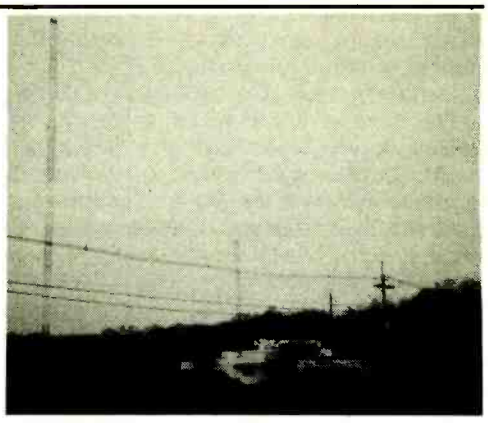
This is THE AMERICAN RADIO RELAY LEAGUE. The League is the largest single Amateur Radio Club in the country. While membership is not limited exclusively to Hams, its activities and its monthly magazine, *QST*, are dedicated to the amateur radio art. If you have any desire to give ham radio a try, you would do well to contact the League's headquarters at 225 Main Street, Newington, CT 06111, to find out about licensing classes near your home.

ASCII

Next time you hear someone toss this term out (it's pronounced "askey") ask them what it stands for. Oh, they can probably tell you what it means. It is a standard code used for data transmissions both via radio and computer utilizing 128 symbols made up of 7 bit binary numbers. But you will be able to tell them that ASCII stands for AMERICAN STANDARD CODE FOR INFORMATION INTERCHANGE.

BCB

This is a hobby term for BROADCAST BAND. It is generally applied to listening to those stations in the standard AM broadcast band of 540 to 1600 kHz or thereabouts.



BCB DXers can find an easy catch by IDing WCAU 1210 kHz AM.

BFO

A BEAT FREQUENCY OSCILLATOR is a circuit that adds an audio tone to code (CW) signals to make them easier to copy. You can also use a BFO, with careful adjusting, to translate Single Sideband into a human voice instead of some weird imitation of Donald Duck. Many modern radios no longer have tunable BFOs. Instead they have buttons for USB/LSB/CW. These buttons do the same job and these terms will be discussed as we go along.

CAP

Not something your mom makes you wear to keep from catching cold, the CIVIL AIR PATROL is a civilian organization that works in cooperation with the United States Air Force to conduct search and rescue operations. These folks run very professional training nets that can be heard in various places in the shortwave spectrum.

CB

Once a national craze, now a neat place to enjoy the radio hobby. The CITIZEN'S BAND is most commonly considered to be the 40 standard channels set up between 26965 and 27405 kHz. On these channels, anyone using legal, commercially produced equipment can work and play to their heart's content.

CW

Remember what we said about waves when we were talking about AM? Well, CONTINUOUS WAVE transmission is done by varying the wave by turning it on and off. The pattern of ons and offs can be used to send intelligence by (you guessed it) code. Most folks use the International Morse Code to perform this task. Don't forget to switch on your BFO.

DX

DX is an old code operator's abbreviation for DISTANCE. To the radio hobby it has come to mean the craft of receiving stations from far away. It can also be used to refer to the station itself. (eg. Nibi Nibi is a DX Station.) When you come right down to it though, there

is only one practical definition of a DX station. It is any station you have never heard before. How far away it is is really a relative concern. So we are all DXers, beginners as well as old hands.

FAX

FACSIMILE is a mode used to transmit pictures, drawings or formatted text from one place to another with the aid of specialized equipment. The Fax machines you see in many offices today run on the same principle. They just use phone lines instead of radio waves.

FCC

Sometimes called Fox Charlie Charlie, the Friendly Candy Company and several things that cannot be repeated over the air or the FEDERAL COMMUNICATIONS COMMISSION might charge you with improper use of the airwaves. The FCC is the bureaucracy responsible for managing and enforcing communications law in the US of A. Remember Uncle Skip's first law of radio survival -- *Don't mess with the Eagle!*

FEMA

If they ever drop the "Big One," the FEDERAL EMERGENCY MANAGEMENT AGENCY will probably be the last signal you will hear. Formerly the Defense Civil Preparedness Agency, it serves to provide a network of national communication during enemy attack or grave national disaster. FEMA network operations can be monitored on the shortwave bands.

FM

Surf's up! We are back to talking about waves again. In the case of FREQUENCY MODULATION you vary the distance between the waves to transmit your signal. In addition to the 88 to 108 MHz band we all tune up in our cars, you will find FM is a common mode above 30 MHz. Scanners are, for the most part, sophisticated, channelized FM receivers.

GHz

GIGAHERTZ sounds like some creature from another planet: *Invasion of the Gigahertz!!* Actually it means one billion Hertz. GHz is way up in the radio spectrum. Many modern scanners cover up to 1.3 GHz. Stick around and I'll tell you what a Hertz is.

GMT

GREENWICH MERIDIAN TIME, sometimes called ZULU time or its modern name Coordinated Universal Time, is the standard time given by time signal stations such as WWV. It is a twenty-four hour clock recognized and utilized by most shortwave broadcasters. Tune in 5000 or 10,000 kHz to get with the program.

HF

HIGH FREQUENCY generally refers to everything between 3 and 30 MHz. This comprises most of what we tend to think of as the shortwave bands. Guess what's coming next.

Hz

Aha! HERTZ is the standard unit of measurement for cycles per second (eg. 60 cycles per second = 60 Hz). As radio people, we tend to deal mostly in the realm of kilohertz, megahertz and even gigahertz. Named for physicist Heinrich Rudolf Hertz who confirmed J.C. Maxwell's theories of electromagnetism. So why isn't it called a Maxwell?

ID

In addition to being Uncle Skip's favorite Freudian state of mind, ID is the short version of IDENTIFICATION. The next time the police stop you and ask you for ID, why not show them your latest verification from Radio Nibi Nibi. You can both have a good laugh about it while they are booking you.

IRC

The INTERNATIONAL REPLY COUPON is a little piece of paper you can purchase at most larger post offices. It can be redeemed in many foreign lands for return postage. They are relatively expensive and problematic to use. They only work if the person on the other end is hip to the game. IRCs still serve as a medium of exchange among hobbyists even though their use in obtaining verifications is questionable.

kHz

If you have been following along, you have probably picked up on this Hertz thing. Anyway, a KILOHERTZ is equal to 1000 Hertz or one thousand cycles per second.

LED

Many modern pieces of hardware make use of LIGHT EMITTING DIODES. These are low-powered sources of light for readouts and pilot light applications. Power them up and they will happily sit there spitting photons all day long.

LF

Often called the basement band, LOW FREQUENCY is considered from 30 to 300 kHz. This band is often overlooked by beginning listeners. It is mostly known for its beacon signals and experimental transmissions by hobbyists between 160 and 190 kHz. Folks that play radio down here call themselves Lowfers. (I have no idea what their spouses call them.)

Well, as you can see, we have just scratched the surface here. We haven't even begun to figure out all those Q signals yet. Who knows what other mysteries of monitoring we will find as we shuttle our way through the alphabet of abbreviations and acronyms. It looks like all you buckaroos will just have to hang in there till next month's issue hits the old mailbox. Remember now. If you are DXing in the HF bands at 1600 GMT and you hear someone on 10493 kHz sending CW, switch on your BFO, turn up your AF gain, adjust your AGC and get ready to ID FEMA. mt

Rod Pearson

Hanging around "Hot Lanta"

At this time of year, Atlanta becomes "Hot Lanta." Anybody that lives there can testify to the fact. Temperaturewise, Atlanta is one hot place to live. Well, *Monitoring Times* reader Bob Langley agrees that "Hot Lanta" is hot -- but he isn't talking about the weather. According to Bob, monitoring federal frequencies is hot in Atlanta also.

Bob uses a PRO-2004 (400 channel modified) and a PRO-2005 (400 channels from the box), in addition to a DX-440 to check out the action in his area.

"I listen to a local base just outside of Atlanta called Dobbins Air Force Base," Bob says. "There's an interesting mix of aircraft based at Dobbins, which includes: F-15s, A-7s, OV-1s, OV-10s, AH-1s, UH-1s, C-130s and C-9s.

"The F-15 squadron is the 128th Tactical Fighter Squadron of the 116th Tactical Fighter Wing. They are part of the Georgia Air National Guard. The squadron uses the call sign 'Peach.' The F-15s train in the Snowbird Military Operating Area (MOA). This MOA is located in eastern Tennessee, over the Great Smokey Mountains."

According to Bob, if you have a good antenna the F-15 aircraft of the 128th can be heard in Atlanta when they operate in the MOA. Main frequencies in the Snowbird MOA to check out include: 271.1, 288.8, 279.2 and 396.9 MHz.

Elements of the 134th Air Refueling Group based at McGhee Tyson Airport near Knoxville (don't forget the *MT* convention there in October) is the responsible unit for refueling in the Snowbird MOA. The refueling track used in the MOA is called AR-633.

Those of you in the Atlanta area interested in monitoring this refueling activity might want to check out the following information:

	Aircraft Entry Pt	Exit Pt	(east/west)	primary/secondary
AR-633A	Atl ARTCC 254.3	Atl ARTCC	253.5/254.3	295.8/319.7
AR-633B	Atl ARTCC 253.5	Atl ARTCC	253.5/254.3	295.8/319.7

Tankers from the 134th sometimes refuel the F-15s from Atlanta while they are training. Another good frequency to check out military activity from the 134th is the squadron operation channel. You will find that activity on 303.0. Activity you will hear on 303.0 will include: aircraft checking in with their command post with fuel status, scheduling information, etc.

Readers nationwide might be interested to know that some fighter pilots refer to 303.0 as they would to the rifle -- "thirty-thirty." Another common channel using the weapons motif is 300.6. Pilots refer to it as "Thirty Aught Six."

The F-15 aircraft of the 128th use 239.9 to communicate with their command post. That call sign is "Peach Ops." The F-15s can also be heard using 239.9 as an air-to-air tactical channel when they are out and about.

The Naval Air Reserve can also be heard operating out of Dobbins. The Green Falcons of VA-205 are currently flying the A-7E Corsair Light Attack aircraft but are in the process of transitioning to the A-6 Naval Bomber. The Falcons use 285.1 and their aircraft use the call sign "Salty" and the squadron operations/maintenance department uses "Salty Ops or Base." Bob, check out 139.525 MHz. You'll probably find that the Salty bunch is using that frequency as a ground maintenance channel.

VA-205's naval sister squadron in New Orleans (VA-204), the River Rattlers (call sign -- River), will be transitioning from the A-7E to the F/A-18 Hornet sometime next year. This Corsair squadron is home-based in New Orleans, Louisiana, and use 301.3 MHz as their UHF base channel. The gang from New Orleans is using 140.895 MHz as their ground maintenance channel.

The Falcon's other Reserve Carrier Air Wing 20 running mate the Blue Dolphins of VFA-203 have already transitioned to the F/A-18 and both squadrons' (VFA-203 and VA-204) aircraft are frequent visitors to the Atlanta area. The Blue Dolphins are stationed at NAS Cecil Field, Florida, and use 363.4 as their base UHF radio frequency. Those of you in the Jacksonville area might wish to check 140.850 MHz out for ground maintenance activity from the Blue Dolphins.

Another Dobbins unit is the 151st Military Intelligence Battalion. They fly the OV-1 Mohawk aircraft and are part of the Army National Guard. Their command post frequency is 47.0 MBFM. The 151st call sign is "Guard" plus a three or five digit number. Bob says they don't seem to fly as often as the F-15s, which fly just about every week-day.

The OV-10 squadron based at Dobbins uses the call sign "Bronco." Also Dobbins is the home of another Naval Air Reserve squadron of C-9 (DC-9 military equivalent) aircraft. The aircraft of the VR-46 squadron serve the navy as personnel and cargo transports. They use the call sign JS###, which is pronounced "Juliett Sierra 908" (for example).

An interesting visitor that frequents Dobbins are the MH-53s based at Hurlburt Field, Florida. They have been at Dobbins for several months off and on. These aircraft are part of a Special Operations Squadron, in company with AC-130 gunships based at Duke Field, Florida. Anybody that might have a clue as to these units' operating frequencies, please drop me a line and I will publish the frequencies in this column for Bob and our readers' benefit.

In the interim, I will offer the following suggestions to Bob and our readers for the AC-130s at Duke: 239.4, 242.9, 248.6, 252.4, 259.7, 260.7, 261.1, 262.5, 294.9, 296.2, 321.2, 327.7, 337.0, 351.4, 375.8, 381.3, 390.9, 397.2 and 398.2.

A check on the following frequencies might reveal the MH-53 activity that Bob is seeking: 320.7, 225.4, 342.5, 335.8, 348.4, 234.8, 272.1, 325.7, 315.8, 305.7, 297.2 and 326.2.

Bob, let me know if any of these frequencies are good in your area for the activity you want to monitor. Those of you in the western part of my state, Florida, might want to check out the above listed frequencies for military aircraft activity around Duke and Hurlburt.

In the meantime here is a complete list of Atlanta frequencies as provided by Bob Langley. Before I start, however, Bob and a couple of other *Monitoring Times* readers want to get a hold of Randy Ballard in Louisiana. I have misplaced his address so if you are tuned in, Randy, would you please drop me a line and I'll pass some information on to you.

Without further ado... Hot Lanta.

DOBBINS AFB-MARIETTA, GEORGIA

Tower	397.2, 120.75
Pilot-to-Dispatcher	372.2
(Pretty much nationwide-ed.)	
Approach (east)	381.65, 119.3
Approach (west)	254.25, 121.0
Ground	275.8, 121.8

GCA (Ground Control Approach)

RAPCON (Radar Approach Control) 302.0, 309.2, 312.4, 346.8, 134.2, 138.1, 126.05

National Guard

47.0	National Guard Operations (OV-1)
40.550	National Guard
242.4	National Guard Air-to-air

239.9	116th TFW (Peach) Operations (F-15)
148.55	116th TFW Mobile Tower (NFM, used during major exercises)
326.1	Turn Director (used by 116 TFW during major exercises)
165.1375	116 TFW Maintenance

Frequencies used in training:

333.55	Air-to-Air Tac Training Ch 11 Aux, 13 Main (Full House"
311.3	Air-to-Air Tac Training
287.4	(Possible) associated channel
379.4	Tactical Auxiliary, Snowbird MOA
225.8	Usage unknown
333.3	"Quad 3" possibly used in conjunction with AWACS
381.3	700th TAS Ops (C-130); AFRES (Air Force Reserve)
38.7	Ops and Air-to-Air 145 Med Detachment (UH-1)
165.1125	Transient Ramp *(Air Force-ed.)*
271.6	Dobbins ATIS (Automated Terminal Information Service)
148.55	Mobile Operations
342.5	Dobbins Metro (Weather)
149.150	Motor Pool/Transportation
243.0, 121.5	Dobbins Emergency *(Nationwide-ed.)*
163.5	(primary) Security Police
149.475	(secondary) Security Police
173.5875	Dobbins fire/crash
173.150	Dobbins Command net
164.960, 172.3, 173.15	Disaster

Other Dobbins frequencies:

32.6, 46.85, 49.65, 30.51, 49.95, 138.025 (SATCOM), 138.36, 142.2, 148.1 (NG), 138.1, 142.155, 140.525, 148.55, 149.15, 150.66, 165.0125, 165.1125, 229.3, 239.0, 261.2, 266.3, 280.15, 320.0, 384.8, 396.1, 413.025, 413.15, 413.2, 413.3

Lockheed Flight:
382.6, 275.2, 314.6, 334.7, 345.4, 462.45

VHF: Ops
123.55, 30.84, 31.2, 151.955, 153.32, 154.6, 158.31, 173.205, 172.295

Lockheed Security: Fire (A); Medical (M) 462.275 and HF: 6671, 6730

Naval Air Station (NAS) Atlanta:

UHF 382.6, 275.2, 314.6, 334.7, 345.4
VHF 30.84, 31.2, 151.955, 153.32, 154.6, 158.31, 173.205, 173.395

340.2	Navy Ops
285.1	VA-205 Ops (A-7)
233.7	VR-46 Ops (C-9)

151 Military Intelligence Battalion National Guard (OV-1)

47.0	Operations
40.55	Unknown usage
242.4	Air-to-air

VMO-4 Marines (OV-10)

275.8	Ch 1 Dobbins Ground
397.2	Ch 2 Dobbins Tower
343.6	Ch 4 Atlanta ARTCC
381.65	Ch 5 Atlanta ARTCC
257.8	Ch 6 CIV
253.5	Ch 7 ???
320.1	Ch 8 Robins Tower
340.2	Ch 9 Navy Ops, Dobbins
356.45	Ch 10 Flight Coordination
276.4	Ch 11 Columbus ARTCC
277.5	Ch 12 Skywatch
303.1	Ch 13 Nest 1
300.9	Ch 14 Nest 2
260.1	Ch 15 NAS Ground
342.5	Ch 16 Dobbins Metro
255.4	Ch 17 FAA/FSS
271.6	Ch 18 Dobbins ATIS
301.2	Ch 19 Tac 1
264.2	Ch 20 Tac 2 Snowbird/VMO-4 Ops

I would like to thank Bob Langley for his special look at Dobbins AFB, Georgia, and Bob, I hope you don't mind the additions. I have some special insight that I thought would be appropriate to share with your list and felt it added to a more complete picture of the information you provided. Hope to see more from you in these pages in the very near future.

Listens to Supersonics

"I have been chasing supersonic Concordes back and forth across the Atlantic for some time," writes Bob Hubbard of Laurel, Maryland. "If you think there would be any interest in this game, I would be happy to provide *MT* readers with frequencies and other details."

Well, Bob, while those supersonic aircraft don't normally come under the fed file, I have a fellow editor who is jumping all over his computer to hear the story. Pass it on and I'll see to it that he receives the info for our *MT* readers to enjoy.

Found the Customs Service

Jack NeSmith has found a couple of interesting US Customs frequencies and one of them is downright bizarre. According to Jack, monitors might want to check out 353.9 known as Copter A-1 frequency.

Sunshine State Mystery

Florida neighbor William Moore in South Daytona wants to know what or who is on 165.0875. He has been receiving traffic on this channel but is only hearing half the conversation. This includes "CBS-1 to Control" and "Control to Echo-1." They tell them to open and close the gate.

William says his reference books list the frequency as a Secret Service channel. He would like to know if this is right and if I know the other half of the frequency?

According to my list for the state, 165.0875 MHz is used by the Cape Canaveral Air Force security teams. It is a secondary frequency and I show that the frequency used primary used simplex. You are probably hearing the base stations on the net. I hope that this helps, William.

Well, folks, that just about does it for this month. I'd like to thank all our contributors and hope to hear from you this next month. Be sure to send in your frequency list and maybe someone else might just help you fill in the holes. Until next month, it's cubo time.

Toward the Unmanned Ship

Recently I received a letter from M.L. Cauthon III who enclosed a clipping from *The Australian*. The article, headlined "Over and Out for Ships' Radio Officers," foretells the disappearance of the "Sparky" from the modern ship.

Although this topic was discussed in the March 1989 High Seas column, perhaps it is time to discuss the whole question of automation in more detail. While the article in *The Australian* mentions work which the Japanese are doing to perfect the necessary technology for unmanned ships, it does not discuss the problems of implementing that technology.

Cutting Costs

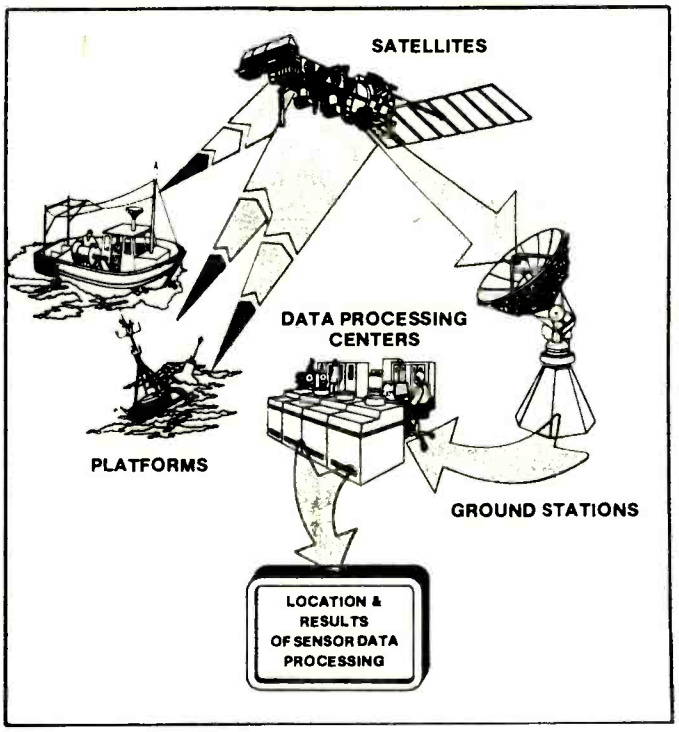
As the cost of operating ships has risen, the shipping companies have tried to find ways of increasing the efficiency of their vessels. Increased automation is seen as one way of achieving this. As more and more shipboard tasks can be accomplished with automation equipment, fewer crew members are required. The lowered costs and presumed greater efficiency from a smaller crew becomes attractive when one considers that $50,000 or more per year can be saved for each crew position eliminated.

This figure represents the fact that, particularly on tankers which spend long periods at sea, two crews are used so that one operates the ship while the other is on leave. Shipping operators would also prefer to reduce the number of positions requiring special training and the radio officer fits into this category.

The question arises: can crew size be reduced without affecting safety? If this can be done, which positions can safely be eliminated?

Successful Systems

Currently, automation is being used extensively in the engine room for collecting information about fuel consumption and monitoring the operating condition of the engines. The advent of MARISAT and its successor INMARSAT have led some companies to install systems on their ships which will collect information about the operation of the ship and have it automatically sent to the office via satellite.



This type of data transfer allows the company to see how efficiently the vessel is operating and arrange maintenance accordingly. It also allows the company to determine how the ship operates under prevailing conditions. For those aboard it may be seen as "big brother" looking over their shoulders.

Satellite navigation systems permit greater accuracy in vessel navigation. Once GPS is fully operational, worldwide coverage will make navigational automation seem more likely. The frequency of fixes will be a limiting factor, especially near the coast. The development of computer interfaces for Loran, Satnav compass and other shipboard equipment has made computer control attractive. Indeed, there are currently on the market automatic steering systems which will use information from Loran, Satnav compass and other equipment to steer the entire course to a predetermined location.

Another attraction of computer control is its ability to determine the course which takes best advantage of currents for the lowest fuel consumption. Considering the amount of fuel consumed during an hour on a ship, the saving can be considerable.

Unresolved Problems

One problem that is not met by computer control is an effective system for handling problems of seamanship -- meeting other vessels and handling the vessel in a storm, etc.

Additionally, as we all know, electronic equipment fails and there must be a way to handle the failures. Satellites can fail, antennae may be damaged and electronics can fail -- especially if the power source dies. Duplication of equipment will alleviate this problem to a certain extent; however, problems can still develop.

If vessels are to be automated fully, they will have to have failsafe operating and navigating systems. This will include collision avoidance systems, systems to handle mechanical problems and systems to handle hull punctures and cargo problems which may develop. These advances are a long way off, and it is not always possible to get a crew quickly to an unmanned ship to move a shifted cargo or make mechanical repairs.

As far as the radio officer on the ship of 1990 is concerned, he isn't gone yet. It is true that for larger ships satellite systems are becoming popular. But even though increasing amounts of information are being handled by satellite, personal communications still take place via ordinary radio.

Also, there is still a debate in the International Maritime Organization (IMO) about requirements for radio officers under the Global Maritime Distress and Safety System (GMDSS). Third World countries advocate the compulsory carriage of an electronics officer on ships of 300 tons and over. This officer would be able to make any repairs to any electronic equipment on board.

The non-Third World countries argue that electronics officers would be too expensive to hire because of the competition with the electronics companies in the employment market. It is also argued that duplication of equipment will allow a ship to get to a port safely where equipment repairs can be made.

For larger ships with automated systems which send information via satellite to the shipping company office, there may be some advantage in eliminating the radio officer and letting the navigation officers handle the communications using equipment which requires nothing more than switching to operate it.

On smaller ships which may not have automated equipment, or which do not send data to the office, other factors may have to be considered. The question becomes more one of communication and keeping the equipment going. Shipping companies will have to decide whether they need a radio officer who can maintain the shipboard communications equipment or whether the navigating officers can handle the communications using backup equipment in case of a failure. Currently the IMO has not decided what will be required for ships of less than 300 tons.

For ships over 300 tons it appears that GMDSS will permit INMARSAT equipped ships to carry their satellite communications equipment in lieu of the more traditional MF/HF/CW equipment.

There is a cost factor which must also be considered in sending information from ship to shore and vice versa. For reliable transfer of computer data, INMARSAT is the best method; however, for voice and telex calls, consider the following:

For a five minute voice call:

INMARSAT	$60.00
HF radio	25.00

For an 80 word telex message:

INMARSAT	$24.00
HF radio	4.90

These figures are assuming a ship operating on international voyages. If we further assume that during a week of operation a vessel might make telephone calls amounting to 20 minutes then the satellite charges would be $240.00 versus $100.00 for HF radio. If during the same week telex messages amounting to 1200 words are sent, then the satellite charges will be $360.00 and the HF charges would be $73.50.

This means weekly charges for our hypothetical ship of $600.00 if it uses satellite equipment or $173.50 for conventional HF radio. Over a year, assuming that the vessel will be operating for 50 of the 52 weeks, these charges amount to $30,000.00 for satellite communications versus $8675.00 for HF radio.

Regardless of who operates it, a ship operating on the high seas will need an HF radio to obtain weather and navigational information. The ship will also need MF and VHF radios as well for the same reason, as well as to arrange for pilotage and for ship traffic control.

Since this equipment will be carried anyway, the shipowner must decide if he wishes to spend another $30,000 for satellite equipment as well as the additional communications charges, or hire a radio officer and invest $10,000 in CW equipment.

The figures used above are simple very rough guesses at potential communications use, and open to correction. Also the GMDSS requirements have not yet been implemented and these will have a lot to do with what shipowners decide.

While CW is declining, it is not yet dead, and unlike *The Australian*, I would not rush just yet to predict the end of the honorable profession of radio officer.

mt

Ike Kerschner, N3IK

The Big News . . .

. . . Continues to be the Sun!

Conditions on the ham bands has been decent to terrible. This is due to the rather small number of sun spots during the last five months.

Do not expect any great DX through the summer months. Paths to Africa, South/ Central America and the Pacific will be good to excellent. Paths over the pole; such as North America to Europe and Asia will be poor with few ten meter openings occurring. Stick to 17 and 20 meters for best results on these circuits.

No Code

The long-awaited "no code" license still seems to be far away at this writing. The main problem that will have to be resolved is the apparent demise of the Novice and Technician license should the Communicator go into effect.

Most amateurs feel doing away with the Novice/Tech license would not do much to help ham radio (I agree). At the same time the current idea of using the Tech exam sans Morse for the Communicator class does not enthuse many of us.

The basic idea behind the no code ticket is to make it easy to get on the air, consequently producing more amateurs. If the FCC implements their present scheme the Communicator license seems doomed to failure.

It is unrealistic to ask an individual to take a rather difficult exam such as the Tech and then give them extremely limited privileges (222 MHz up). At present the Tech licensee may operate all Novice CW bands, ten meter SSB, and everything from six meters on up, on all modes. International law permits all countries to allow amateur activity in all bands above 30 MHz and not require a Morse exam.

The point I am trying to make here is that there is no reason at all why the Communicator should not be allowed to operate on the bands below 222 MHz -- especially if they are required to take the same written exam as the present Tech class. If you tune around six meters you will be surprised at how little activity there is on this band (in fact commercial gear for six meters is extremely difficult to find). Two meters does have a large number of users in parts of the country, but I see no reason why Communicators cannot use some portion of this band.

I see the answer to be as follows. The Communicator exam could be broken into two parts; the first would be simply the Novice written exam and privileges on 222 MHz and above. The second part would consist of the written Tech exam with privileges on all VHF bands presently allowed to the Tech.

At present the FCC is opposed to creating more classes of licenses on the basis that it would produce an overwhelming work load! In addition they do not want to create a new call sign block.

The answer is this: First of all, the extra work load will be upon the VE teams giving the exams. There is no need at all to create a new call sign block. What would be the point of it? If you pass your Extra exam and wish to retain the call issued you as a Novice, it is perfectly OK to do so. There has never been a big problem where someone with a lower class ticket uses privileges not granted to them by their license.

All the hollering, and foot stomping is a waste of time! Let's get on with it and have a decent No Code License before amateur radio is gutted!

DX NEWS

Spratly -

The Spratly DXpedition ended May 12, 1990. IS0XV/IS1RR handed out over 40,000 QSO's, making a lot of hams very happy.

To ensure success in receiving your QSL from Spratly, follow these guidelines as set down by Ed Kritsky, NT2X.

1. Send cards to Bra Ven Kong, Box 308 Moscow, 103009. Bra Ven Kong may be substituted with the operators name (Romeo Stepanenko).
2. Do not send SASE/SAE; they are a waste (non-standard Soviet size) and attract attention. If you want, enclose your address label.
3. Absolutely no call signs on the outside of the envelope! Neither theirs, nor yours!
5. Do not attach nice looking stamps, use a postal meter, and use only international airmail envelopes that protect the contents from prying eyes.
6. Conceal your IRC or greenstamp between the card and a piece of paper.
7. After sealing the envelope, apply scotch tape to the seams of the flap; it makes it less likely that someone would want to open it.
8. Be patient; it may take longer than you think. Cards are yet to be printed and sent to Moscow.

USSR/Harvard University exchange. The Harvard Wireless club operated from the Soviet Union as guests of Club Station UZ1AWT. Harvard club members used the call sign US1A from May 24 to June 2. If you worked US1A QSL cards are via W1AF.

Ike says opportunities for good DX are about as reliable as the fish biting this summer.

Kerguelen Island, FT4XG has been active on 10 SSB during weekends; listen on 28574 around 1500Z, he is working 5 up. FT5XH and FT5XA operate on 14165 kHz several mornings each week at 1100Z or later (long path). QSL FT4XG via FD1ASS or F1ASS to 1990 call book address.

PY4VB in Lusaka, Angola, waiting for a license. Watch 14025 kHz at 2200Z daily. QSL via PY4OD.

S79CW, Seychelles, has been very active around 0100Z on 20 CW as is S79FT. QSL for S79CW goes via WA5Y and S79FT cards should go to DL7FT.

New Landline Amateur BBS

There is a new landline BBS dedicated to ham radio located on Long Island, New York. Its called the NOFRILLS PLUS BBS and can be reached at (516) 661-3643, 24 hours a day. Baud rates are 300/1200/2400 baud, 8-N-1. There are files available for all types of computers and a conference area for TI-99 users.

Packet with the WP-2

Radio Shack sells a small portable word processor (WP-2) at an extremely reasonable price. This little unit weighs only a few pounds and is designed for portable operation.

The WP-2, while basically designed as a word processor, has a telecom program built into it, as well as an RS-232 and printer port. In addition, there is provision for internal and external memory additions. The screen is 80 column by 8 lines.

The unit can easily be used for portable/mobile packet as well as a fixed station terminal. All you need is a radio, TNC and the WP-2 to get going on packet! Sure is cheaper than tying up the big 'puter for the ham shack.

Sporadic E Season

The Sporadic E season is upon us. From now until the end of summer there will be many opportunities to work stations out to about 1500 miles on ten, six and two meters via Sporadic E propagation. Openings are not at all predictable, and the best way of finding them is to program frequencies into your scanner that are not in use in your area.

You can also watch TV for dual images and obvious interference. Your FM receiver, too, will tell you when DX is rolling in via E_s. I like to monitor 52 and 55 simplex on my scanner during the summer months, as there is a large number of VHF DXers active on these frequencies and their activity will alert me to openings.

High power is not required to work E_s, and a simple vertical or small yagi will be as effective as more sophisticated gear most of the time.

Weberware 1.0 . . .

. . . is now available. Weberware 1.0 is Imaging Software to process Webersat-Oscar - 18 photos. This unique package made its debut at the Dayton Hamvention. Many a radio satellite enthusiast was thrilled as an actual picture captured from WO-18 was processed on an IBM PC as they watched.

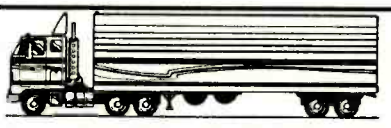
Chris Williams, WA3PSD of Weber State University, said that although the early pictures from the satellite were perhaps not all that interesting, now that the ground controllers at WSU have a better understanding of the MICROSAT's attitude motion, they have modified the on-board software so that more pictures of the earth are now being snapped. In addition, the software now maintains better control of the CCD camera iris settings and settling time. Through more operational experience, many more exciting pictures of the earth are expected soon.

Weberware 1.0 is designed to work on IBM PCs and Clones which support EGA or VGA graphics. WO-18 is constantly sending picture data and the imaging data can be easily collected with a PSK modem. For further information about Weberware, contact the AMSAT-NA exchange at (301) 589-6062.

That's All, Folks

Keep the mail coming gang, your comments suggestions are appreciated. 73, Ike Kerschner, N3IK

MOVING?



Let us know four to six weeks before you move and we will make sure your *MT* arrives on schedule. Just remove the mailing label and affix below. Then complete your new addrress (or any other corrections) in the space provided.

My new address: _____

_____

_____

Monitoring Times
P.O. Box 98
Brasstown
NC 28902

AFFIX OLD LABEL HERE

the qsl report

Gayle Van Horn

John Flake of Charlotte, NC, shares his QSLs from RAI (Italy) and REE (Spain, below)

BELGIUM

BRT, 21820/9925 kHz. Full data color scenery card, without verification signer. Received in 46 days for an English report. Station address: P.O. Box 26, B-1000 Brussels, Belgium. (Tim Johnson, Galesburg, IL) (John Carson, Norman, OK) (Nicholas Peter Adams, Newark, NJ)

EGYPT

Radio Cairo, 9475 kHz. Full data mosque scenery card, signed by Rita. Received in 41 days for an English report. Station address: c/o English Service to North America, P.O. Box 566, Cairo, Arab Republic of Egypt. (Nicholas Peter Adams, Newark, NJ)

HAWAII

WWVH, 15.000 kHz. Full data QSL card, without verification signer. Received in 14 days for an English report. Station address: P.O. Box 417, Kekaha, Kauai, Hawaii 95752. (Preston Sewell Jr., Franklin, NJ) (Frank Hillton, Charleston, SC)

INDIA

Calcutta Aeradio Air Traffic Control, 10.066 kHz USB. Full data prepared form card with station stamp. Verification signer, S. Chandra, Deputy Director of Communications. Received in 50 days for an English utility report and one U.S. dollar. Station address: c/o National Airports Authority, 463 B New Quarters, Calcutta Airport, Calcutta, India. (Rick Albright, Merced, CA)

ITALY

RAI, 9.575 kHz. No data scenery card, without verification signer. Received in 151 days for an English report and mint stamps. Station address: Viale Mazzini 14, 00195 Roma, Italy. (Terry Ryan, Bellerose, NY) (John Carson, Norman, OK) (Darren White, New Augusta, MS)

PHILIPPINES

Cathay Pacific Flight 101. 8.942 kHz USB. 474-300 Aircraft over Zamboanga, P.I. SELCAL: KLCJ. Full data prepared form card with company stamp. Verification signer, K.J. Maizey, Senior Maintenance Services Engineer (Avionics). Also included an aircraft fact sheet and photo of the aircraft. Received in 30 days for an English utility report, one US dollar and a souvenir postcard. Station address: c/o Cathay Pacific Airways Ltd., Hong Kong Int'l Airport, Box 98411 Tsim Sha Tsui, Kowloon, Hong Kong. (Rick Albright, Merced, CA)

Far East Broadcasting Company, Inc., 11.850 kHz. Full data color QSL card. Verification signer, Mrs. Alida Landma-QSL Sec. Received in 62 days for an English report and two US dollars. Station address: Box 1, Valenzuela, Metro Manila, Philippines. (Joseph Wright, Jamaica Plain, MA)

SHIP TRAFFIC

Royal Service-GWIQ, 16.463.1 kHz USB. (platform maintenance). Full data prepared QSL card, without verification signer. Received in 18 days for one follow-up report and one IRC. (Total time 414 days) Ship address: c/o Zapata Gulf Marine Corp., 35 Old Queen St., London SW1H 9JA, England. (Patrick O'Connor, Hinsdale, NH)

Sea-Land Tacoma-KGTY, 16.463.1 kHz USB. (container ship) Full data prepared QSL card, without verification signer. Received in 14 days for an English utility report and U.S. mint stamps. Ship address: c/o Sea-Land Services Inc., P.O. Box 800, Iselin, NJ 08830 (Patrick O'Connor, Hinsdale, NH)

Koln Atlantic-DAKE, 156.65 MHz. (container ship) Full data prepared QSL card. Received in 35 days for an English utility report and return postage. Ship address: Hapag-Lloyd Aktiengesellschaft, Ballindamm 25, Postfach 102626, D-2000 Hamburg 1, Federal Republic of Germany. (161 W. German ships QSLed) (Hank Holbrook, Dunkirk, MD)

Ever Giant-3FR12, 156.65 MHz. (container ship) Full data prepared QSL card and photo of ship. Received in 90 days for an English utility report and return postage. Ship address: Evergreen Marine Corp., 1 Evertrust Plaza, Jersey City, NJ 07302. Panama ship #98, ship verie 4,444 (Hank Holbrook, Dunkirk, MD)

Columbus New Zealand-DGNZ, 500 kHz. (container ship) Full data prepared QSL card. Received in 63 days for an English utility report and return postage. Ship address: Ost-West Strasse 59, Postfach 111540, D-2000 Hamburg, Federal Republic of Germany. (Hank Holbrook, Dunkirk, MD)

Queen Ace-3EJK6, 156.65 MHz. (pure car carrier) Full data prepared QSL card. Received in 151 days for an English utility report and return postage. Ship address: Nissan Prince Kaiun Co., Ltd., 95 Edo-Machi chu-ku, Kobe 651, Japan (Hank Holbrook, Dunkirk, MD)

USS Truett, FF-1095, NNNOCMB, 14.441.4/ 14.4700 kHz USB/USS Ponce, LPD-15, NNNOCRK, 14.441.4 kHz USB. Full data prepared QSL cards to both ships. Received in 24/18 days for two English utility reports. Ship addresses: USS Truett, FPO New York, NY 09588-1455. USS Ponce, FPO New York, NY 09582-1717. *--ed*

SOUTH AFRICA

Radio RSA, 11.935/25.790/21.535 kHz. Full data scenery QSL cards,, without verification signer. Received in 32/46 days for two English reports and one IRC. Station address: P.O. Box 4559, Johannesburg 2000, South Africa. (John Carson, Norman, OK) (Edouard Provencher, Biddeford, ME)

SPAIN

Radio Exterior De Espana, 11880 kHz. Full data card of the Arco Cuchillero, with illegible signer. Received in 49 days for an English report. Station address: Apartado 156.202, 28080 Madrid, Spain. (Nicholas Peter Adams, Newark, NJ) (Darren White, New Augusta, MS)

UNITED STATES

Hamilton County Comm. Center, (KQI-316) 33.900 MHz. QSL letter from William Smith-Operations Director. Report for VHF lo skip reception of fire dispatch channel in Cincinnati. Received in 7 days for a report and a self-addressed stamped envelope (returned unused). Station address: 2377 Civic Center Dr., Cincinnati, OH (Matthew Vurek, Mountain View, CA)

KARN-920 AM. Full data prepared QSL card, signed by Chief Engineer. Received in 7 days for an English AM report, return postage and a souvenir postcard. Station address: 4021 West Eighth St., Little Rock, AR 72214 (Larry Van Horn, Gretna, LA)

WCAU-1210 AM. Full data QSL letter. Verification signer, John Howard, Technician. Received in 90 days for an English AM report. Station address: City Avenue and Monument Road, Philadelphia, PA 19131. (Russ Hill, Oak Park, MI)

WKHM-970 AM. No data personal note on letterhead. Verification signer Robert Dorizi, V.P. Received in 6 days for a self-addressed envelope and an English AM report. Station address: 1700 Glenshire Dr., Jackson, MI 49201. (Harold Frodge, Midland, MI)

WOM-AT&T Sta., 4425-kHz. Full data card and brochure. Verification signer, G.G. Flatt-Comm. Tech. Received in 30 days for an English report and a self-addressed envelope. (returned) Station address: 1350 N.W. 40th Avenue, Ft. Lauderdale, FL 33313 (Russ Hill, Oak Park, MI) (Darren White, New Augusta, MS)

USSR

Radio Kiev, 9.610 kHz. Two full data scenery QSL cards, without verification signer. Received in 63 days for two English reports and one IRC. Station address: 26 Kreshchatik Avenue, Kiev, Ukrainian SSR, USSR. (John Carson, Norman, OK) (Nicholas Peter Adams, Newark, NJ) (Tim Johnson, Galesburg, IL)

VIETNAM

Voice of Vietnam, 15010 kHz. Full data QSL card and schedule, without verification signer. Received in 159 days for an English report and one IRC. Station address: Overseas Service, 58 Wuan Su St., Hanoi, Socialist Republic of Vietnam. (Bob Hurley, Baltimore, MD)

When Codes Fail

John Walker (right of center) on board the nuclear submarine Simon Bolivar. To his right is Bill Wilkinson, another radioman on board.

At least once a month I receive a letter from a reader who complains that he can't find any copyable text on the shortwave bands. He believes that "everything out there is encrypted." That's probably true when it comes to military communications but we should be glad, because if we can copy sensitive traffic, so can the enemy.

Last month I wrote about a man named John Walker. About a week after the June issue of *MT* hit the stands, I saw a special repeat viewing of "Frontline" (a news program) on public TV. It was called the "Man Who Broke the Code."

Actually it should have been called "the man who sold the code." John Walker didn't need any special computer or math skills. He just met with Russians about once a month and sold them the Key List (a piece of paper which contained the scrambling code for crypto gear).

While Walker was aboard the *USS Bolivar* in the early 70s, he used a small instrument which was like the rotary dial on a telephone. The device was a sophisticated continuity tester which can fit in the palm of your hand. It was used to test the wiring of the spinning rotors that were an integral part of the encryption box during that period. The Russians probably gave Walker the device during one of his visits to Vienna or Mexico. It was found in his house after he was arrested in 1985.

The rotors are small bakelite plastic devices with pins and sockets. They spin at different speeds and each one is wired differently. The purpose of the disks were to create billions of mathematical combinations in order to scramble the RTTY data. The rotary tester which was built by the Russians was used to check the wiring so that they could duplicate the rotors.

Whenever the crypto box needed repairs, Walker would take the unit into the "Crypto Vault" (a secured room where only a few were allowed access). There was a rule that two persons must be present in the vault (for security reasons) but Walker managed to use the device while they weren't watching.

Walker also talked his friend Jerry Whitworth into stealing manuals and other secret information. Walker told Whitworth that the information was for Israel and it was okay to give it to an ally. He also talked his son into joining the Navy and he attempted to steal secrets but was arrested along with his uncle (John Walker's brother) in 1985.

No one knows how much damage was done by Walker but some believe (including his former wife) that he was responsible for the deaths of thousands of U.S. soldiers in Vietnam.

It was believed that the Russians were able, using computer technology, to eventually break the code of the KL-47 encryption unit. Walker was even baffled (a few months before he was arrested) when the Russians told him they didn't need the keylist any more. The FBI was even more bewildered after they learned this from Walker because the U.S. military just installed a new communications center with the latest crypto technology.

Experts believe that the U.S. will have a difficult time keeping its communications secure. "The Russians are better when it comes to mathematics," says one math professor. I just hope there will never be another John Walker. NNN

mt

Astro-Text Decoders

In the February 1990 issue of *Monitoring Times,* the World Standard Teletext (WST) decoders built into the Zenith Systems three television sets were discussed. These units continue to be very much available through Zenith dealers and represent an excellent buy for serious TVRO enthusiasts who are also looking for a new TV.

But what if you've got all the sets you need and don't feel like shelling out the $500-$900 for the privilege of receiving teletext?

New WST Decoder

Astro-Guard Industries, Inc. of San Marcos, California, has just introduced its new stand-alone WST decoder. Called the Astro-Text 90, the unit is available in two models: The 90 AT for cable subscribers and the 90 AV for home satellite TV owners. The units are virtually identical except the TVRO version uses the customer's own VCR as a tuner whereas the cable version has the tuner built into the decoder.

What You Get

The Astro-Text 90 includes the decoder, an IR remote control, a 12 VAC power supply, patch cable and operating instructions. The units use a standard VHF channel 3/4 RF modulator; measures 1.5 inches high by 9 inches deep by 7 inches wide, weighs 3.75 pounds and comes with a 90 day warranty on parts and labor.

Electra

The Astro-Text decoder is designed to read the Electra Teletext Service (TBS Superstation G1,18). Billed as "the nation's electronic newspaper," Electra is a service of Great American Broadcasting Company of Cincinnati, Ohio. To quote from their brochure on the subject:

"Electra is based in the WKRC-TV and Radio complex in Cincinnati, Ohio. The local service is the longest-running teletext operation in the United States. Electra launched its Cincinnati service in July 1982 and went national in December 1984.

"A team of editors continuously updates the information on the teletext service from 6:30 a.m. to 1 a.m. seven days a week."

The result is a very-well-done, neatly-edited, and easy-to-use service that turns your TVRO system and TV into an in-home 24-hour-per-day wire service.

How it Works

The digital information which the Astro-Text 90 decodes is transmitted via the same carrier on which the video and audio of TBS Superstation are located. Using what's called the Vertical Blanking Interval (VBI), these signals are tucked neatly away and do not interfere with TBS's programming. In fact, you can't tell it's there by looking at the screen. If you adjust the vertical hold on your TV set while watching TBS so that the thick dark bar at the bottom of the screen (the VBI) is moved to the middle of the screen, you'll notice many little white dots jumping around within the dark band. That's the Electra Data!

The following Over-The-Air TV stations carry the Electra Teletext service on their Vertical Blanking Interval:

WKRC - Cincinnati, OH
WTVN - Columbus, OH
KOVR - Sacramento, CA
KOIN - Portland, OR
WTSP - Tampa, FL
WBSX - Ann Arbor, MI

Luckily you don't have to know any of this in order to watch teletext. That's what the AT-90 is for. It senses the data and processes it through its on-board computer and stores it in its RAM until you command the unit to display it.

Tuning In

When the AT-90 is activated, your TV screen will replace TBS programming with page one of Electra. Actually labeled Page 100, the first page is the menu. Here, under the Electra logo you'll find three or four news headlines with page references. Below the top stories you'll find the quick index which gives you the page numbers for the news index, sports, business or full index.

Using the AT-90 infra-red remote control you may "flip" through the many detailed pages of Wall Street indexes, sports scoreboards and standing as well as national weather summaries and many other features.

Electra also has special features which are pretty clever. If you want to enlarge the print for easier reading there's a button on the keypad to do so. There are trivia quiz questions which have hidden answers that appear on the screen when the "reveal" button is pressed. At the top of each page is a digital clock which counts out the seconds. This is an excellent way to catch up on the latest news or sports while the channel you were watching is running commercials.

As if this all seemed too good, you should know that the service is free. The decoder is simply a computer which allows you to access the service; you don't need a subscription to anything.

Who Can Receive Electra

Anyone with a satellite receiver and good reception for G1,18 (if you can't get G1 due to trees or other obstructions, you won't get Electra either) can receive the service. In addition, anyone on a cable system which offers TBS Superstation can receive the service. Finally, anyone within good reception distance of the over-the-air TV stations listed in the accompanying chart can also receive the service.

The Bottom Line

Suggested retail price for the Astro-Text 90 teletext decoder is $249.00. For more information write: Astro-Guard Industries, Inc., 340-A Rancheros Road, San Marcos, CA 92069, or call 619-471-9930.

Future of WST

Back in 1984 when I installed my first TVRO system, the only WST decoders which were available were from a company called American Teletext. These stand-alone decoders can still be found occasionally and usually command a good resale price despite their age. That will probably change with the introduction of the AT-90.

At that time there was an additional WST service called Agri-Vision which was carried on the WGN VBI and was produced by the University of Wisconsin Agricultural Extension Service. The service concentrated on farming issues of interest to the Wisconsin area.

While the service folded a few years after it began, it demonstrated the ability to serve a special interest in a rural area. I believe it might have been born too soon. As with all other special interest services it helps to have a market in place to serve. In those days there were considerably fewer than a million dishowners nationwide and it's fair to say that cable penetration was less as well.

With more AT-90s getting into the market and further availability via the Zenith built-in WST decoders it's possible that new teletext programmers will see the value of this yet-to-be exploited media.

In the past few months a new WST programmer has been running sporadic tests on the WGN VBI. While information on this possible new service is sketchy, it might be interesting to tune that channel in occasionally and see if there's something there.

TRANSPONDER NOTES

More entrepreneurs are trying to crowd onto the DBS stage as they succumb to the overpowering smell of easy money. First there was K Prime Partners which is a consortium of cable multi-system operators (MSOs) and GE American Communications, Inc. which still hopes to launch its superstation and Pay-Per-View Ku service aboard GE's Satcom K1 this fall.

Next came the omnipresent Rupert Murdoch, lumbering hand in hand with Hughes Communications, NBC and MSOs too slow witted to join K Prime. Sky is hoping to launch in 1993.

Now comes TVN Entertainment Corp. (earlier known as Touchtone Video Network) with plans to lease 17 transponders on the little used Telstar 303. AT&T which owns T303 was only too happy to help TVN establish itself as a serious DBS player. (Ma Bell has always lusted after the cable rackets and this might be a good place to start.) According to reports in various trade journals, TVN will use Leitch Video International Encryption technology and have the decoders produced by Uniden.

Details are not yet settled but it appears that TVN subscribers would pay $19.95 per month, including the lease of the decoder, for seven "basic" services and then shell out four bucks a pop for each movie. Certainly not much of a bargain even by inflated cable standards. More sinister than simple money grubbing is the idea that the encryption system may include anti-taping data. Here's a satellite TV scheme we may all toast as it sinks into the same bankruptcy grave as USCI, Inc., whose legacy remains today as a model of poor planning.

MAILBAG

✓ "I would like to know if it is possible to pick up satellites that broadcast British TV programs to the various locations in England... Can they be picked up in North America and what equipment is needed?" C. Taylor, Brandon, Manitoba, Canada.

Picking up European satellite TV signals in North America, especially as far west as your location, will not be an easy task. There are many obstacles. Geosynchronous satellites beam their signal energy in an area known as a "footprint" (so called because a map of the area on the earth upon which the signal falls resembles a footprint). These signals at C or Ku band frequencies don't bend or bounce the way shortwave or even over-the-air TV signals do. The energy level from these satellites, perched 23,000 miles above the equator, by the time it reaches the planet is small indeed. In most cases the satellites over Europe appear so low on the horizon that they can't be "seen" in North America. The further west one goes from Europe, the worse it gets.

In order to receive these signals one would need progressively bigger dishes as one moves west to a point where even 60 foot diameter dishes wouldn't help.

In addition, the satellites use circularly polarized signals while we use left or right hand polarity. The signals are also sent via the PAL standard of 625 lines per screen as opposed to the 525 scan lines in our NTSC standard.

I have heard from TVRO enthusiasts who pick up European satellites in the midwest of the U.S., so it is possible. The best chance of viewing the satellites would be to do the following: Live on the Atlantic coast, have at least a 16 foot dish, use a circularly polarized feed horn and view it all on a PAL format TV. All of these items are readily available. In the midwest one would have to upgrade the dish to at least 20 feet. A 32 footer would be nice. You might also consider a second mortgage to finance the project.

✓ "I wrote to you some time ago concerning a satellite dish from J.C. Whitney. I gave up that idea on your advice. I did buy one from Radio Shack... It works great and who cares if it has a descrambler or not. I'll never be able to watch it all anyway... " Elmer May, Baltimore, MD

Thanks for writing again, Elmer, and thanks, too, for the following tips: CSS on W5-22 in the morning, Bay Area Sports Channel W5-15, Ha Comedy on G3-23, Family Net moved to F4-5, and Nebraska Public TV on S2-2 and 4.

✓ "I live in a very new development of townhouses, and am plagued by the monitor's nightmare law... NO ANTENNAS. I have seen, though, many catalogs that offer Ku band only dishes and receivers. If possible, could you please answer these questions regarding Ku satellite systems: picture quality; number of unscrambled channels; audio programs; availability of cheap Ku only systems; brand names etc..." Sean Petty, Downington, PA

Whew! I'm afraid the news isn't encouraging. As of this writing the Ku situation is rather bleak when compared to programming and services on C band. I believe you would find a dedicated Ku system rather disappointing. Outside of NBC you will be lucky to see a half dozen unscrambled channels and virtually no FM audio subcarriers.

Your best bet would be to wait until this fall and see what K Prime will be offering. Almost certainly they will have systems packages and programming packages which will offer an alternative to cable. In the meantime you may consider what you could receive with a small C band system. If you lived in the center of the U.S. such as lower Indiana, Illinois, Arkansas, etc., you could get away with watching C band on as small as a six foot dish to which you could later add Ku. Unfortunately, at your location, C band reception with a small dish could be marginal.

It's so much easier to add Ku to an existing C band system. To do this one has only to replace the C band feed horn with a good (National ADL) C/Ku feed; add a decent (Drake) Ku LNB; and an extra 75-ohm cable to carry the Ku signal. You won't be too unhappy with the lack of programming because you'll just throw the switch, get on C band and enjoy 100 plus video channels and 80 plus audio channels, to say nothing of SCPC and Teletext. Simply put: the time for Ku has not yet arrived.

mi

The Fountain of Youth

Kid Company host Josh Binswanger with Randall Taylor, Laura Stanton and Rebecca Roth in the WBZ studios.

AM radio stations are looking for younger audiences to insure their future. Much younger audiences! Stations all over the country are premiering a wide variety of programs and complete networks for children. They are chasing what no programmer has caught before: the 12 and under market. Children's programming is bringing new life and excitement to "the other band" that was almost forgotten.

"On the air. Everywhere. Our company, your company, Kid Company."

Every Sunday, from 6 to 7 p.m., 50,000 watt clear channel WBZ in Boston airs a lively magazine show for 8 to 14 year olds: "Kid Company." Heard all over New England on 1030 kHz, the show is an innovative hour of call-ins, music, news and features produced for kids by kids.

Gone are the days of radio shows that played down to children. Kid Company has the sophistication and slick production of prestigious shows like "All Things Considered" or "60 Minutes." The only difference is its youthful orientation which proves to be attractive to kids and their parents.

Kid Company was created by Jody Snider, a former account executive who specialized in selling radio and television advertising. Jody set aside her career and became the mother of two daughters. Noticing a complete void in radio for the under 12 set, Snider combined her work experience with her home environment and created a pilot show she called "Kid Company."

Jody researched the audience in Bean Town and was surprised by the positive response. Her study found that "the older kids get, the more they listen and moms and dads would listen too." Advertisers would be attracted to this unique audience of parents and their kids making the show financially possible.

Using all her contacts in the Boston media market, Jody searched for exceptional people to join her project and found quite a few. Academy award nominee Steve Snyder became Creative Producer and joined forces with children's songwriter and storyteller Bill Harley to bring unique music and style to the show. Broadcast journalist Shari Stein and Amy Cohn, a children's book specialist, added to the effort.

After many days of preparation the show was taped, edited and readied for preparation. Snider peddled the production to several stations until she was greeted by an enthusiastic welcome at WBZ. "When I went to WBZ they loved the show and gave us a 6 p.m. time slot. They were set up for talk and call-ins and it was perfect."

Kid Company first aired on February 25, 1990, and is produced weekly by Snider for WBZ in their studios in Boston. Jody hopes to eventually be heard on other Westinghouse stations along with WBZ or launch Kid Company into national syndication.

Listening to Kid Company lets you experience all the imagination and creativity its young cast can provide. Exciting live call-in contests and games combined with informative features really capture your attention. Each week the Kid Company news team, comprised of local students, covers a variety of local events plus on-the-street interviews with a youthful point of view. A Harvard junior, 19 year old Rachel Burg, anchors the news with the assistance of dozens of high school and grade school reporters from all over New England.

Add some favorites from the Top 40 charts or a live singer, and a terrific host, Josh Binswanger. Then sit back and enjoy an hour of entertainment for the young and young-at-heart unlike any other. Snider confirms the show's appeal: "I'm having the best time. It's fun and it gives the kids a sense of empowerment and worth." What a great show.

New England isn't the only place where AM radio is becoming kid's radio. Philadelphia is the home of Kidwaves, a satellite delivered radio network for children 2 to 11 years old. An ambitious package of specialized programs in half and full hour segments, Kidwaves broadcasts 13 hours a day from 7 a.m. to 8 p.m. Eastern time.

A librarian, Linda Katz, and her teaching friend Marcia Moon pooled their professional expertise with Ragan Henry, a radio entrepreneur and attorney, to create The Children's Literacy Initiative. Designed to improve and develop the reading skills of young children, their organization recognized radio as an excellent tool to stimulate reading and writing skills and imaginations.

"We see what happens to kids who don't see their parents. They lack language skills. Children don't learn from listening to other three year olds." Linda Katz hopes Kidwaves will introduce reading and writing to low-income families and improve their literacy via AM radio. "Because our programs are so high quality, they'll be shared by adults. We hope parents will listen too."

Kidwaves is now test marketing its shows on KIDZ-AM in Kansas City, their first affiliate. You'll hear "Sing Along with Wanda" with puppet pal Wanda the Witch teaching easy to learn adult and children's song lyrics, "Story Stew" with guest story tellers and classic children's theatre recordings, and "In Concert" with music and interviews with a variety of performers and many others. Each hour becomes a new adventure.

At night, Kidwaves will focus on teenagers and advice for parents. This all day AM radio network will make entertainment and education accessible to all children.

Another approach to teaching the under 12 market hails from Orlando, Florida. Dr. Katherine Henslee is launching The Kid's Choice Broadcasting Network, a 24-hour-a-day all-music service via satellite. Based on an enormous collection of children's tunes, the network is supported by a number of celebrities and public figures.

Judy Collins, Pete Seeger, Marvin Hamlisch, Harry Belafonte, Marlo Thomas, Fred Rogers,

Tish Henslee is VP/Prog Dir of WPRD-AM 1440, the first Imagination Station of the Kids Choice Radio Network in Orlando, Florida, and the winner of a Peabody award.

Maurice Sendak and Senator Paul Simon all serve on the Kid's Choice advisory board. Peter Yarrow, of Peter, Paul and Mary, is Creative Vice president and a main investor in the network. Affiliates are known as "The Imagination Stations" bringing new creativity and ideas to everyone tuning in.

Kid's Choice disk jockeys play tunes all day with call-in contests and interactive interviews as added spice. Each part of the day caters to a specific age group. Mornings are hosted by Sam 'N' Eggs Sam and his New Day Gang with news prepared by *My Weekly Reader* magazine serving children going off to school. Later, Sunshine Suzy entertains pre-schoolers who might be listening, and Jo-Jo welcomes everyone back from school to a Curbside Carnival.

"The premise of this network is 'This is a place for kids,'" says vice president of affiliate sales Bob Bruton. "It's not for adults." Bob hopes to have 100 stations on board by the end of the year. Dr. Henslee agrees.

"Children have different interests than adults. We want to deliver the music, which is wonderful, and educate them by slipping in information between songs." Henslee started America's first all-children's radio station, KPAL, in Little Rock, Arkansas, and has moved her efforts to WPRD, the network's flagship station, in Orlando. Listen for Kid's Choice, coming soon to a station near you.

Hole in the Sock Productions is producing a weekly hour long show for WADN in Concord, Massachusetts, and other children's shows have sprouted in Philadelphia; Burlington, Vermont and even Alaska. Kids are really bringing new life and energy to AM radio. Stay tuned.

Bits 'N' Pieces

The Big Apple is watching AM change too. For the first time in years and years, New York City has a full-time rocker on AM. With programming from the Dallas based Z-Rock syndication service of Satellite Music Network, WZRC is pounding away on 1480 kHz with heavy metal music and wild and crazy DJs. "It's gonzo radio," says Z-Rock creator Lee Abrams. "The presentation is totally nuts, filled with lunatic personalities, and the music is everything from demos to live concerts."

Speaking of loud, the FCC has cited WEGX, WIOQ, WMGK, WSNI and WXTU for overmodulating. The stations were said to be up to 20 percent louder than legal limits and could be fined up to $3,000 for the offense.

"Hot molten lava and ash spewed out of the top of Avon Mountain, causing pandemonium as people tried to deal with the first volcanic eruption in more than 60 million years . . . ." In Hartford, Connecticut, WCCC-FM disk jockey Sebastian was telling listeners that bubbly orange lava was dripping down towards Route 44 as an April Fool's joke. Over 200 petrified callers tied up Avon Police phones for hours and people were wondering how close they could get to take pictures.

Some people didn't see the humor. Town Manager Phillip K. Schenck conferred with the town's attorney about filing a complaint with the FCC. People should have known better. Last April first, Sebastian told everyone that the bank was issuing special blue one dollar bills with George Bush's picture on it. Banks were inundated with people asking for the new currency. John Cassidy of Groton, Connecticut, let us join in the fun.

New Station Grants

More entertainment is coming your way on these latest entries: Seward, Alaska 88.1; Chowchilla, CA 93.3; Indio, CA 102.3; Selbyville, DE 97.9; Marco, FL 92.7; Point Vedra Beach, FL 106.5; Dock Junction, GA 105.9; Mableton, GA 102.5; Warrenton, GA 93.1; Gooding, ID 101.3; New Iberia, LA 93.7; Thomaston, ME 106.9; La Crescent, MN 91.1; Charleston, MO 106.1; Wildwood Crest, NJ 93.1; Henderson, NY 100.7; Lake Luzerne, NY 94.7; Holdenville, OK 106.5; Lawton, OK 95.3; and Conway SC 93.9.

For Sale

A 24-hour clear channel kilowatter on 540 kHz can be yours for $200,000 cash. Located in Central Utah, the station might have low wattage, but its signal goes and goes. Contact M. Halloran at P.O. Box 636, Delta, Utah 84624.

If you always wanted a station in a top ten market, this could be it. A kilowatt day and night nondirectional operation with a good dial position will go for the best offer over $1.5 million. The current owner may be able to provide financing, and transfer of "good historical call letters." Write to PGI, P.O. Box 618148, Orlando, FL 32861-8148 today.

International Bandscan

German, Austrian, Swiss, Dutch and French state broadcasting organizations are sharing the facilities of a new satellite named Kopernikus bringing direct digital radio to all of Europe. With antennae no bigger than a generous salad bowl, and a special tuner for the purpose, listeners now hear full CD quality sound on a variety of channels. Stations are identified by music type and do not get translated to analog until they reach the home receiver making the quality superb. Telefunken, Grundig and Philips are marketing stereos capable of decoding signals from Kopernikus, selling for about $1000 American.

Radio Tirana in Albania is now broadcasting to Europe in English on 1395 kHz daily at 1830 UTC. Czechoslovakia has a new private station broadcasting from Bratislava 24 hours a day on 101.8 MHz. West Germany's Deutschlandfunk has begun broadcasts in English from 1815 to 1900 UTC on 1269 kHz.

Coming this summer to London listeners is Spectrum Radio which will feature a variety of ethnic formats. They are currently recruiting staff members for sign-on this month, and if you're interested, write to: Spectrum Radio, Endeavour House, Brent Cross, London, NW2 1JT. Spectrum Radio will use the old Radio Caroline frequency of 558 kHz.

Credits: Our sincere thanks to Malcolm Kaufman of Cambridge, Massachusetts, for providing enormous help with this month's lead story. Thanks also to *Broadcasting Magazine, Radio World*, The British DX Club, The *New York Times* and Stacey Sullivan. Until next month, happy trails.

outer limits

Dr. John Santosuosso

P.O. Box 1116
Highland City, FL 33846

Eavesdropping on Europe: Terry Krueger reports reception of unlicensed Voice of Urop from Italy most evenings from 0100 to around 0300. The frequency varies between 7537.5 to 7538.3 kHz.

Some months ago we published a tribute to one of the great radio legends of any time or place, John the Man Frawley of Ireland Radio Luimni. John founded the Limerick-based station over ten years ago and was its most famous broadcaster. To hear Radio Luimni was to hear unlicensed radio at its most delightful best.

Recently we were extremely pleased to hear from Foncy Renihad of Ireland who saw our tribute. Foncy writes that he was with John the Man when he started the station. Sadly, he reports tragedy as well. John was the ninth person connected with the station to die.

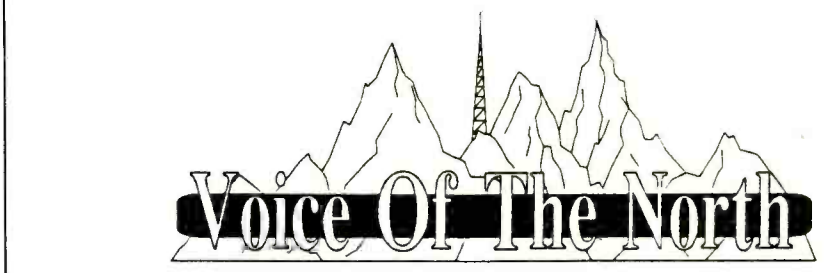
It was also John's hope and dream that Radio Luimni might get the private-station license reserved for Limerick by the government when legislation was passed forcing the pirates off the air. Foncy says the license went to another station, and that he and many others really did not get a chance at it. Radio Luimni appears gone forever, but she will always live in the hearts of those who heard her.

Champion pirate chaser Nick Grace from Massachusetts send us two recent Eurologs. He came across Radio Stella on 6320 at 0611 UTC. This one is Scottish but actually transmits from Ireland.

Nick found Rainbow Radio on 6240 at 0606 with a multilingual tape. According to Terry Krueger, Rainbow Radio was recently raided and closed by the West German authorities. The station had claimed a move to France, but most likely this was simply an unsuccessful attempt to confuse those who were looking for it. Nick's may have been one of the last logs of this one we will ever see.

The Numbers Game: From Pennsylvania David Scholl sent us information on a station he has been hearing on 7415 kHz from anywhere between 0445 to 0530 UTC. Based on what information you have supplied, Dave, I can definitely say you have come across a five-digit group numbers broadcast in a Slavic language. One cannot say for certain, but the language appears to be Russian, although I would not rule out Bulgarian, which does turn up from time to time. Czech can definitely be eliminated as a possibility.

Dave reports transmissions are normally 15 minutes but have been known to go for 18. Once he also heard at the start five or six musical notes. On another occasion sounds like furniture bumping around were also observed. Does anybody have further information on this one?



Dear J SANTOSUOSSO

Thank you very much for your reception report. It has been found to be correct and is hereby verified. Our transmitter power was 200 watts.
Date: 12-24-89 Time: 1905-2015 UTC Frequency: 15046 KHz.

We hope you will continue to receive and enjoy our programs.

Best Regards,

V.O.N.

QSL from Voice of the North

Nick Grace also came across a numbers oddity. On 6840 at 0230 he heard a Spanish four-digit station broadcasting over a phonetic alphabet station which was transmitting strings of letters and numbers. Since there was no heterodyne, he believes both were coming from the same transmitter.

So Sorry: From time to time we get requests for information from readers on where they can get equipment and assistance on how to set up their own broadcasting station. Folks, I think I can speak for *Monitoring Times* when I say we simply cannot get involved in that sort of thing. The sole purpose of "The Outer Limits" column is to inform our readers about what they can HEAR on their receivers and to make them aware of related news and information.

Personally I do feel the FCC should explore some way to make it possible for people of average financial means to broadcast legally in some form other than amateur radio. There is nothing wrong with businesses, churches or others holding broadcasting licenses, but it is not fair to make broadcasting a near monopoly of the affluent, which it currently is. Despite this unhappy situation, we just cannot tell you to go ahead and fire up your transmitter.

While on this subject, it might also be good to note again that the reasons which prevent us from assisting station operators also stop us from being QSL maildrops. Stations seeking a drop will find there are currently a number of very reliable ones around. Neither commercial nor club publications can function in that capacity.

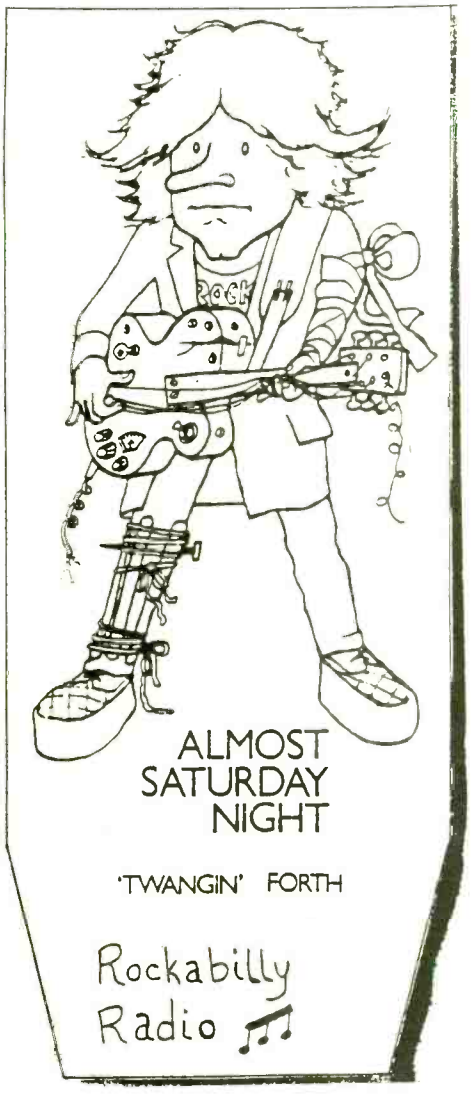
The Mailbag: Fraser Bonnett writes from Ohio that the Slanesville, WV maildrop has moved. The new address is P.O. Box 109, Blue Ridge Summit, PA 17214.

As usual, Fraser has a number of nice logs to report. He heard "the first test broadcast" of Midnight Radio on 7415 kHz at 0330. He also encountered a number of stations exchanging QSOs on 7415 at 2356. The stations involved included East Coast Pirate Radio, WXZR, Rockabilly Radio, Radio USA, Voice of Monotony, Samurai Radio, WKZP (KZAP), and KBFA. Fraser had received a QSL from Rockabilly Radio which was mailed from Canada.

Alan Masyga found Radio USA on 7416, and this writer was pleased to receive a QSL from Voice of the North for a logging on 15046. Alan also comments that MTV has a program known as "Pirate TV."

In the positively bizarre department Nick Grace logged a station calling itself Kentucky Fried Rodents on 7486 at 0020. He got a QSL with a Pago Pago, American Samoa, postmark. That mysterious station, which a few years ago was heard airing of all things, Gregorian chants, is back, as Nick found that one also. He also came across Radio Clandestine being relayed by Hope Radio International on 7391 at 0113.

Nick has had some other unusual catches recently on 7415 including the Revolutionary Voice of Plainville. Radio Free Kampuchea,



Fraser Bonnett received a QSL and this station promo from Rockabilly Radio

Radio Politzania, and Fourth of July Radio. That reminds us to mention that the major holidays are always a good time to look for pirate broadcasts.

Up in Michigan Bill Lauterbach came across something interesting. It was a 1930 UTC joint broadcast of three stations, Samurai Radio, Radio USA and Voice of Monotony. They could be heard on 6856, 7417 and 15053. This same special was also monitored by John Braden of Massachusetts. Bill also heard a pirate roundtable on 7416 which included KBFA, Broadcasters of Free America.

Jim Kalach of Connecticut checks in with a log of WXZR on 7402 at 0315. Cathy Turner of New York is back with a log of Radio Mauser on 7493 at 2315 and Radio Ganymede on 7415 at 0030. She reports Radio Ganymede even plays Ecuadorian folk songs and "Rocky and Bullwinkle."

As They Say on the Mickey Mouse Club, it's "Anything Can Happen Day!" In Maryland Steve Franklin was tuned to the World Service of Radio Moscow on 9685 at 2133. As they switched from English to French he quite clearly heard someone say in English, "This is KAOS, Los Angeles." It was the same ID he has heard retransmitted on Radio Clandestine.

The Sandinistas may be out, but the Contras are still on. Look for Radio Quince de Septiembre on 6214 around 0000 UTC.

Now you hear it, Now you don't

I keep a record of the different beacons I hear during a full year season (October 1 of one year to September 30 of the next year). Sometimes I will hear a beacon and discover that I have not listed it for the previous season or two. I may then hear it repeatedly over the next several months.

Why is it that you can hear a beacon one year and not the next? Or why will you not hear a beacon for a long time and then suddenly it is there almost every time you tune that frequency? Or it suddenly disappears.

Beacons are subject to problems like every other device. Each month there are several beacons that are not functioning, out of service. Some are repaired quickly, others may go long periods without repair. (I have been told by a local pilot that one Illinois beacon has been lying on its side for a long, long time.)

Sometimes, as was the case for ELM/375, there is official notice. Many times the only validation is that the beacon no longer appears on various official listings. This takes a great deal of time and effort to recognize. It may be easy to spot something new, but it's hard to notice what you don't see. If a beacon has been silent for an extended period of time, close perusal may show that it no longer appears on official listings.

How do these out of service and decommissioning situations affect what you hear? If the beacon has been out of service and becomes operational again, you may suddenly start hearing a beacon again after an extended period of not hearing it. Or you may only hear a beacon when some interfering beacon goes out of service.

This is more noticeable when the interfering beacon is local. Thus, when ID/385 (Chicago) went off the air, I made extra effort to catch beacons on and around that frequency.

Interference from more distant beacons may be less apparent but just as real. Failure to hear a beacon for a while doesn't necessarily mean that you aren't doing things right.

Loggings Time --

The loggings for this month are from Karen Rench in Hayward, CA. Karen is a radio amateur who started listening to LF beacons last summer. Now she has the *Aero/Marine Beacon Guide* and is identifying what she hears. These loggings were taken from the almost 60 that Karen sent. These represent a good cross section for those of you in the western part of the United States or Canada. There are eight states, two Canadian provinces and Mexico included.

249	JC	San Jose CA
271	SC	Stockton CA
278	XSD	Tonopah, NY
286	PI	Pigeon Point CA
292	R	Point Reyes CA
296	B	Point Bonita LS CA
305	SF	San Francisco LHB CA
320	A	Point Arena CA
325	BO	Bodega Head CA
322	S	Point Sur CA
333	STI	Mt. Home ID
334	F3	Pine Point NWT
335	YXO	Carmi BC
344	FCH	Fresno CA
344	XX	Abbotsford BC
347	LFA	Klamath Falls OR
356	FR	Medford OR
359	BO	Boise ID
362	EZB	Oakland CA w/wx
367	RD	Redding CA
368	ZP	Sandspit BC
375	HPL	Montrose County CO
385	MR	Monterey CA
386	SYF	St. Francis KS
388	MS	McInnes Is. LS BC
400	QQ	Comox CFB BC
413	OEG	Yuma AZ
413	TAM	Tampico MEX
414	LYI	Libby MT
521	INE	Missoula MT

You may recognize one or two that have appeared in previous logging lists. In a previous list, FCH/344 was listed as having weather broadcasts and EZB/362 did not show the weather transmissions. This doesn't mean that the weather broadcasts are sporadic or intermittent; sometimes the CW identifier can be heard and the voice is not clear enough to be heard. Other times the voice is very clear.

The marine band extends from 285 to 325 kHz. Aviation beacons also appear in this range, but it is heavily loaded with marine beacons as you can see in the listing. Few marine beacons in North America are outside this range, but you will see what appears to be a Canadian marine beacon on 388. This is operated by the Canadian Coast Guard for aircraft. A similar situation is the various aeronautical beacons for U.S. Navy airfields.

It now appears that the beacon at Yuma Arizona has reverted to its previous ID of OEG.

As you can see, beacons extend beyond 500 kHz. From 513 to 530 kHz there are a couple of dozen beacons spread around the U.S. and Canada. Sometimes these can be heard a little greater distance than those on the lower frequencies. It is worth doing a bit of eavesdropping on these frequencies.

Antennas --

One of the most frequent questions I receive is "What kind of antenna should I use for longwave beacons?" or "How can I build an antenna for longwave?" As the original "all-thumbs" technical type (I can create a short using one hand in the receiver), I use the built-in loop in the Sony 2010 and a Radio West loop with the Kenwood.

Over the years I've seen good loggings by people using all kinds of different commercial and home-brew loops and even long wires. However, I would like to gather more information about the commercial loops that are available and the home-made loops in use. Drop me a line if you know about some of these or know of plans that might be available for the people who like to make their own. Maybe we can create a little antenna reference tract for the longwave DXer.

I'm looking forward to seeing you at the convention in October.

program guide

MT Program Team

Kannon Shanmugam, Program Manager
4412 Turnberry Circle
Lawrence, KS 66047

John Carson
Norman, Oklahoma

Jim Frimmel
Willow Park, Texas

Sunday

July 1st,8th,15th,22nd,29th

0010 Voice of America (Americas, Caribbean): American Viewpoints. Experts discuss provocative magazine and newspaper articles.
0010 Voice of America (East Asia): Newsline. News, correspondent reports, interviews, and opinion.
0030 BBC: The Ken Bruce Show. A mix of popular music and entertainment news.
0030 Voice of America (Caribbean): Weekend Magazine. Music, conversations with correspondents, and talks about the arts.
0040 Voice of America (Americas, East Asia): Words and Their Stories (Special English). A feature program in s-l-o-w English.
0045 Voice of America (Americas): American Stories (Special English). More features in s-l-o-w English.
0045 Voice of America (East Asia): VOA Morning Sports, science, business, music, and features about America.
0101 BBC: Play of the Week. Hour-long drama selections.
0109 Deutsche Welle: Commentary. Opinion on current issues.
0110 Voice of America (Americas, Caribbean): Communications World. A look at modern telecommunications.
0110 Voice of America (South Asia): Newsline. See S 0010.
0113 Deutsche Welle: Sports Report. The latest news from the world of sports.
0117 Deutsche Welle: Mailbag or Phone-in. Listener letters or comments.
0130 Voice of America (Americas, Caribbean): Press Conference, U.S.A. Correspondents ask questions of newsmakers.
0130 Voice of America (South Asia): VOA Morning. See S 0045.
0134 Deutsche Welle: German by Radio. An advanced German language course for English speakers.
0209 BBC: British Press Review. Survey of editorial opinion in the British press.
0209 Deutsche Welle: Commentary. See S 0109.
0210 Voice of America (South Asia): Newsline. See S 0010.
0213 Deutsche Welle: Sports Report. See S 0113.
0215 BBC: Feature. Programming on various subjects.
0216 Deutsche Welle: Asia in the German Press. A look at what German papers and weeklies have to say about Asia.
0223 Deutsche Welle: Mailbag Asia. Answers to listeners' queries, musical requests, and the club corner.
0230 BBC: Feature. More programming on various subjects.
0230 Voice of America (South Asia): VOA Morning. See S 0045.
0309 Deutsche Welle: Commentary. See S 0109.
0310 Voice of America: VOA Morning. See S 0045.
0313 Deutsche Welle: Sports Report. See S 0113.
0315 BBC: From Our Own Correspondent. In-depth news stories from correspondents worldwide.
0317 Deutsche Welle: Mailbag or Phone-in. See S 0117.
0330 BBC: Novel Ideas. John Timpson presents a quiz show based on literature.
0334 Deutsche Welle: German by Radio. See S 0134.
0409 Deutsche Welle: Commentary. See S 0109.
0410 Voice of America: VOA Morning. See S 0045.
0413 Deutsche Welle: Sports Report. See S 0113.
0419 Deutsche Welle: International Talking Point. A round-table discussion on major trends and events.
0430 BBC: The Tom Robinson Collection. The well-known musician takes a tour through his personal record collection.
0434 Deutsche Welle: People and Places. A program for Africa with interviews, stories, and music.
0445 BBC: Personal View. A personal opinion on topical issues in British life.
0509 BBC: Twenty-Four Hours. Analysis of the main news of the day.
0509 Deutsche Welle: Commentary. See S 0109.
0510 Voice of America: VOA Morning. See S 0045.
0513 Deutsche Welle: Sports Report. See S 0113.
0517 Deutsche Welle: Mailbag or Phone-in. See S 0117.
0530 BBC: Financial Review. A look back at the financial week.
0534 Deutsche Welle: German by Radio. See S 0134.
0540 BBC: Words of Faith. People share how their scripture gives meaning to their lives.
0545 BBC: Letter from America. Alistair Cooke's distinctly British view of America.
0609 Deutsche Welle: Commentary. See S 0109.

The VOA newsroom control center as portrayed on a QSL card sent us by Richard Lane, who heard their Monrovia relay. Known as the "Bubble," the control center receives reports from correspondents all over the world.

legend

* The first four digits of an entry are the program start time in UTC.
* The time is followed by the station name, program name, and a brief summary of the program's content.
* Some listings may be followed by "See X 0000." The letter stands for a day of the week:

S=Sunday M=Monday
T=Tuesday W=Wednesday
H=Thursday F=Friday
A=Saturday

The four digits stand for a time in UTC. Listeners should check back to that date and time to find out more about that particular program.

* All broadcasts are listed in chronological order, starting on Sunday at 0000 UTC and ending on Saturday at 2359 UTC.
* All days are in UTC. Remember that if you are listening in North American prime time, it is actually the next morning UTC. For example, if you are listening to a program at 8:01 pm [EDT] on your Thursday night, that's equal to 0001 UTC and therefore Friday morning UTC.

We suggest that you tune in to a program a few minutes before the schedule start time, as some stations have tentative schedules which may slightly vary. Consult the frequency section begining on page 65 for the frequencies in use by that station at that time.

newsline is your guide to news broadcasts on the air. All broadcasts are daily unless otherwise noted by brackets enclosing the day codes.

We invite listeners and stations to send program information to the program manager at the address above.

program guide

0610 Voice of America: VOA Morning. See S 0045.
0613 Deutsche Welle: Sports Report. See S 0113.
0619 Deutsche Welle: International Talking Point. See S 0419.
0630 BBC: Jazz for the Asking. A jazz music request show.
0634 Deutsche Welle: People and Places. See S 0434.
0709 BBC: Twenty-Four Hours. See S 0509.
0730 BBC: From Our Own Correspondent. See S 0315.
0745 BBC: Book Choice. Short reviews of current or future best-sellers.
0750 BBC: Waveguide. How to hear the BBC better.
1109 Deutsche Welle: Arts on the Air. Reports and interviews on major cultural events and developments.
1110 Voice of America (Caribbean): Critic's Choice. News from the world of the arts.
1110 Voice of America (East Asia): New Horizons. The world of science, medicine, and technology.
1115 BBC: From Our Own Correspondent. See S 0315.
1130 BBC: The Ken Bruce Show. See S 0030.
1130 Voice of America (Caribbean): Studio One. Dramatized and narrative documentaries.
1130 Voice of America (East Asia): Issues in the News. Members of the Washington press corps discuss current topics.
1134 Deutsche Welle: German by Radio. See S 0134.
1201 BBC: Play of the Week. See S 0101.
1210 Voice of America: Encounter. A discussion program presenting opinions on world issues.
1230 Voice of America: Studio One. See S 1130.
1310 Voice of America: Critic's Choice. News from the world of the arts.
1340 Voice of America: Words and Their Stories (Special English). See S 0040.
1345 BBC: Sports Roundup. The day's sports news.
1345 Voice of America: People in America (Special English). A feature program in s-l-o-w English.
1401 BBC: Feature. Programming on various subjects, starting with a "Phone-in" on the 1st.
1410 Voice of America: The Concert Hall. Classical music and interviews with America's great artists and conductors.
1455 Voice of America: Editorial. American opinion.
1509 Deutsche Welle: Religion and Society. A roundup of news and developments concerning the world's major religions.
1510 Voice of America: New Horizons. See S 1110.
1513 Deutsche Welle: Africa in the German Press. A look at what German papers and weeklies have to say about Africa.
1515 BBC: Concert Hall. Classical music performances from the world's great halls.
1530 Voice of America: Studio One. See S 1130.
1534 Deutsche Welle: Pop from Germany. A look at the German pop music scene.
1609 Deutsche Welle: Arts on the Air. See S 1109.
1610 Voice of America (Africa): Nightline Africa. News and reports on world and African issues.
1610 Voice of America: Encounter. See S 1210.

A Deutsche Welle announcer makes a point during a broadcast.

1615 BBC: Feature. See S 0230.
1634 Deutsche Welle: German by Radio. See S 0134.
1640 Voice of America: Words and Their Stories (Special English). See S 0040.
1645 BBC: Letter from America. See S 0545.
1645 Voice of America: People in America (Special English). See S 1345.
2305 BBC: Words of Faith. See S 0540.
2310 BBC: Book Choice. See S 0745.
2310 Voice of America: Newsline. See S 0010.
2315 BBC: Letter from America. See S 0545.
2330 BBC: Feature. See S 1401.
2330 Voice of America: VOA Morning. See S 0045.

Monday

July 2nd,9th,16th,23rd,30th

0010 Voice of America (Americas, Caribbean): Encounter. See S 1210.
0010 Voice of America (East Asia): Newsline. See S 0010.
0030 BBC: In Praise of God. A half-hour program of worship.
0030 Voice of America (Americas, Caribbean): Spotlight. Reports and interviews on people, places, and events of interest to listeners in the Caribbean and Latin America.
0040 Voice of America (East Asia): Words and Their Stories (Special English). See S 0040.
0045 Voice of America (East Asia): VOA Morning. See S 0045.
0101 BBC: Feature. Programming on various subjects.
0109 Deutsche Welle: Commentary. See S 0109.
0110 Voice of America (Americas, Caribbean): New Horizons. See S 1110.
0110 Voice of America (South Asia): Newsline. See S 0010.
0116 Deutsche Welle: Living in Germany. A weekly look at the social scene in Germany.
0130 Voice of America (Americas, Caribbean): Issues in the News. See S 1130.
0130 Voice of America (South Asia): VOA Morning. See S 0045.
0134 Deutsche Welle: Larry's Random Selection. Larry Wayne takes a look at Germany from the lighter side.
0145 BBC: Musical Feature. Music programming of a topical nature, including "Capriccio" on the 2nd and 9th.
0209 BBC: British Press Review. See S 0209.
0209 Deutsche Welle: European Journal. A review of major events in Europe, with interviews and analyses.
0210 Voice of America (South Asia): Newsline. See S 0010.
0215 BBC: Andy Kershaw's World of Music. Exotic and innovative music from the world over.
0230 BBC: Science in Action. The latest in scientific developments.
0230 Voice of America (South Asia): VOA Morning. See S 0045.
0234 Deutsche Welle: Science and Technology. New scientific and technological developments.
0309 Deutsche Welle: Commentary. See S 0109.
0310 Voice of America: Daybreak Africa. Correspondent reports, news features, and

newsline

0000 BBC: Newsdesk
0000 Christian Science Monitor: News
0000 Kol Israel: News
0000 KVOH: UPI News [T-A]
0000 Radio Australia: International Report
0000 Radio Beijing: News
0000 Radio Canada Int'l: News [S-M]
0000 Radio Havana Cuba: International News [M-A]
0000 Radio Moscow: News
0000 Radio New Zealand Int'l: News
0000 Radio Yugoslavia: News
0000 Spanish National Radio: News
0000 Voice of America: News
0000 WWCR: USA Radio News [T-A]
0005 Radio Pyongyang: News
0010 Radio Beijing: News About China
0030 Christian Science Monitor: News [T-F]
0030 HCJB: Latin American News
0030 Radio Budapest: News
0030 Radio Havana Cuba: Newsbreak [M-A]
0030 Radio Moscow (World Service): News in Brief
0030 Radio Netherlands: News [T-S]
0030 Voice of America (Americas,E.Asia):News (Special English) [T-S]
0030 Voice of America (E.Asia): News (Special English) [M]
0051 Spanish National Radio: News Summary [S]
0055 KUSW: News [T-S]
0055 WRNO: ABC News [W-H, A]
0100 BBC: News Summary
0100 Belize Radio One: Network News
0100 Christian Science Monitor: News
0100 Deutsche Welle: World News
0100 Kol Israel: News
0100 KVOH: UPI News [T-A]
0100 Radio Australia: World and Australian News
0100 Radio Berlin Int'l: News
0100 Radio Canada Int'l: News [S-M]
0100 Radio Havana Cuba: International News [M-A]
0100 Radio Japan: News
0100 Radio Moscow: News
0100 Radio New Zealand Int'l: News
0100 Radio Prague: News
0100 Radiotelevisione Italiana: News
0100 RAE, Buenos Aires: News
0100 Spanish National Radio: News
0100 Voice of America: News
0100 Voice of Indonesia: News
0100 WWCR: USA Radio News [T-S]
0115 Radio Havana Cuba: Cuban Nat'l News [M-A]
0125 HCJB: World News
0130 Christian Science Monitor: News [T-F]
0130 Radio Havana Cuba: News [M-A]
0130 Radio Moscow (World Service): News in Brief
0145 Radio Berlin Int'l: News
0151 Spanish National Radio: News Summary [S]
0155 KUSW: News [T-S]
0155 Voice of Indonesia: News in Brief
0200 BBC: World News
0200 Christian Science Monitor: News
0200 Deutsche Welle: World News
0200 Radio Australia: International Report
0200 Radio Bras, Brasilia: News
0200 Radio Canada Int'l: News [T-A]
0200 Radio Havana Cuba: International News [M-A]
0200 Radio Kiev: News
0200 Radio Moscow: News
0200 Radio New Zealand Int'l: News [A-S]
0200 Radio Romania Int'l: News
0200 Radio RSA: News
0200 Swiss Radio Int'l: News
0200 Voice of America: News
0200 Voice of Free China: News and Commentary
0200 WWCR: USA Radio News [T-A]
0215 Radio Cairo: News
0230 Christian Science Monitor (E.Africa): News [M]

background reports.
0315 BBC: Good Books. A recommendation of a book to read.
0316 Deutsche Welle: Living in Germany. See M 0116.
0334 Deutsche Welle: Larry's Random Selection. See M 0134.
0409 Deutsche Welle: European Journal. See M 0209.
0410 Voice of America: Newsline. See S 0010.
0430 BBC: Off the Shelf. A reading selected from the best of world literature.
0430 Voice of America: VOA Morning. See S 0045.
0434 Deutsche Welle: Africa Report. Reports and background to the news from correspondents.
0445 BBC: Tech Talk. A series of reports on engineering and technology.
0509 BBC: Twenty-Four Hours. See S 0509.
0509 Deutsche Welle: Commentary. See S 0109.
0510 Voice of America: Newsline. See S 0010.
0516 Deutsche Welle: Living in Germany. See M 0116.
0530 BBC: Waveguide. See S 0750.
0530 Voice of America: VOA Morning. See S 0045.
0534 Deutsche Welle: Larry's Random Selection. See M 0134.
0540 BBC: Words of Faith. See S 0540.
0545 BBC: Recording of the Week. A personal choice from the latest classical music releases.
0609 Deutsche Welle: European Journal. See M 0209.
0610 Voice of America (Africa): Daybreak Africa. See M 0310.
0610 Voice of America: Newsline. See S 0010.
0630 BBC: Feature. See S 1401.
0630 Voice of America: VOA Morning. See S 0045.
0634 Deutsche Welle: Africa Report. See M 0434.
0709 BBC: Twenty-Four Hours. See S 0509.
0730 BBC: Feature. See S 0230.
1109 Deutsche Welle: Newsline Cologne. A current affairs program with worldwide reports and a German press review.
1110 Voice of America (Caribbean): Focus. A look at the major figures and issues that shape contemporary life.
1110 Voice of America: Science Report (Special English). A feature program in s-l-o-w English.
1115 BBC: Health Matters. New developments in the world of medical science and fitness.
1115 Voice of America: This is America (Special English). More features in s-l-o-w English.
1130 BBC: Composer of the Month. A month-long series on a particular classical music composer.
1130 Voice of America (Caribbean): VOA Morning. See S 0045.
1130 Voice of America: Music, U.S.A. (Standards). Classics of American popular music.
1134 Deutsche Welle: Hallo Africa. Musical requests and greetings to friends.
1144 Deutsche Welle: Weekend Sport. A review of the major sporting events of the weekend.
1210 Voice of America: Newsline. See S 0010.
1215 BBC: Brain of Britain 1990. Robert Robinson presents "Jeopardy!" with a twist in a general-knowledge quiz.
1230 Voice of America: Magazine Show. Features about culture, science, sports, medicine, and the arts in America.
1245 BBC: Sports Roundup. See S 1330.
1309 BBC: Twenty-Four Hours. See S 0509.
1310 Voice of America: Focus. See M 1110.
1330 BBC: Andy Kershaw's World of Music. See M 0215.
1340 Voice of America: Science Report (Special English). See M 1110.
1345 BBC: Personal View. See S 0445.

An unusual QSL is the Singapore relay station of the BBC, caught by Richard Lane while in military service abroad.

1345 Voice of America: This is America (Special English). See M 1115.
1405 BBC: Outlook. Conversation, controversy, and color from Britain and the rest of the world.
1410 Voice of America: Asia Report. News, correspondent reports, interviews, and opinion.
1430 BBC: Anything Goes. Sounds from the BBC archives as requested by listeners.
1430 BBC: Off the Shelf. See M 0430.
1445 BBC: Feature. See S 0215.
1455 Voice of America: Editorial. See S 1455.
1509 Deutsche Welle: Newsline Cologne. See M 1109.
1510 Voice of America: Newsline. See S 0010.
1515 BBC: Musical Feature. See M 0101.
1529 Deutsche Welle: Weekend Sport. See M 1144.
1530 Voice of America: Magazine Show. See M 1230.
1538 Deutsche Welle: Monday Special. An interview or report on an event or development with special relevance for Africa.
1609 Deutsche Welle: Newsline Cologne. See M 1109.
1610 Voice of America (Africa): Nightline Africa (until 1700). See S 1610.
1610 Voice of America: Focus. See M 1110.
1615 BBC: Good Books. See M 0315.
1630 BBC: Health Matters. See M 1115.
1634 Deutsche Welle: Asia-Pacific Report. Correspondents' reports, interviews, and background news from the Asia-Pacific region.
1640 Voice of America: Science Report (Special English). See M 1110.
1645 BBC: The World Today. News analysis on a selected location or event in the news.
1645 Voice of America: This is America (Special English). See M 1115.
2305 BBC: Commentary. Background to the news from a wide range of specialists.

0230 Christian Science Monitor: News [T-F]
0230 HCJB: Latin American News
0230 Radio Berlin Int'l: News
0230 Radio Havana Cuba: Newsbreak [M-A]
0230 Radio Moscow (World Service): News in Brief
0230 Radio Pakistan: News (Special English)
0230 Radio Portugal: News [T-A]
0230 Radio Tirana, Albania: News
0250 Radio Yerevan: News
0255 KUSW: News [T-S]
0300 BBC: World News
0300 Belize Radio One: News
0300 Christian Science Monitor: News
0300 Deutsche Welle: World News
0300 Radio Australia: World and Australian News
0300 Radio Beijing: News
0300 Radio Berlin Int'l: News
0300 Radio for Peace Int'l: News [T,A]
0300 Radio Havana Cuba: International News [M-A]
0300 Radio Japan: News
0300 Radio Moscow: News
0300 Radio New Zealand Int'l: News [A-S]
0300 Radio Prague: News
0300 RAE, Buenos Aires: News
0300 Voice of America: News
0300 Voice of Free China: News and Commentary
0300 Voice of Turkey: News
0300 WRNO: ABC News [F]
0300 WWCR: USA Radio News [T-S]
0309 BBC: News About Britain
0310 Radio Beijing: News About China
0315 Radio Cairo: News
0315 Radio France Int'l: News
0315 Radio Havana Cuba: Cuban Nat'l News [M-A]
0325 HCJB: World News
0330 Christian Science Monitor (E.Africa): News [M]
0330 Christian Science Monitor: News [T-F]
0330 Radio Havana Cuba: News [M-A]
0330 Radio Moscow (World Service): News in Brief
0330 Radio Netherlands: News [T-S]
0330 Radio Tirana, Albania: News
0330 UAE Radio, Dubai: News
0345 Radio Berlin Int'l: News
0350 Radiotelevisione Italiana: News
0355 KUSW: News [T-S]
0400 BBC: Newsdesk
0400 Christian Science Monitor: News
0400 Deutsche Welle: World News
0400 Kol Israel: News
0400 Radio Australia: International Report
0400 Radio Beijing: News
0400 Radio Canada Int'l: News
0400 Radio Havana Cuba: International News [M-A]
0400 Radio Moscow: News
0400 Radio New Zealand Int'l: News
0400 Radio Romania Int'l: News
0400 Radio Tanzania: News
0400 Swiss Radio Int'l: News
0400 Voice of America: News
0400 WWCR: USA Radio News [M-A]
0405 Radio Pyongyang: News
0410 Radio Beijing: News About China
0425 Radiotelevisione Italiana: News
0430 Christian Science Monitor (E.Africa): News [M]
0430 Christian Science Monitor: News [T-F]
0430 Radio Canada Int'l: News [M-F]
0430 Radio Havana Cuba: Newsbreak [M-A]
0430 Radio Moscow (World Service): News in Brief
0430 Radio Tirana, Albania: News
0455 KUSW: News [S, T-F]
0455 Radio Tanzania: News
0500 BBC: World News
0500 Christian Science Monitor: News
0500 Deutsche Welle: World News
0500 HCJB: Latin American News
0500 Radio Australia: World and Australian News
0500 Radio Beijing: News
0500 Radio Berlin Int'l: News

program guide

2310 BBC: Financial News. News of commodity prices and significant moves in currency and stock markets.
2310 Voice of America: Newsline. See S 0010.
2315 BBC: On the Move. How we get around, from cycling to canoeing.
2330 BBC: Multitrack 1. Tim Smith presents what's hot on the British pop music charts.
2330 Voice of America: VOA Morning. See S 0045.

Tuesday

July 3rd,10th,17th,24th,31st

0010 Voice of America (Americas): Newsline. See S 0010.
0010 Voice of America (Caribbean): Caribbean Report. The latest news, sports, financial news, and weather reports for the Caribbean.
0010 Voice of America (East Asia): Newsline. See S 0010.
0030 BBC: Megamix. A compendium of music, sport, fashion, health, travel, news and views for young people.
0030 Voice of America (Caribbean): Music, U.S.A. (Standards). See M 1130.
0040 Voice of America (Americas, East Asia): Science Report (Special English). See M 1110.
0045 Voice of America (Americas): This is America (Special English). See M 1115.
0045 Voice of America (East Asia): VOA Morning. See S 0045.
0101 BBC: Outlook. See M 1405.
0109 Deutsche Welle: European Journal. See M 0209.
0110 Voice of America (Americas, Caribbean): Report to the Americas. News, correspondent reports, interviews, and opinion.
0110 Voice of America (South Asia): Newsline. See S 0010.
0125 BBC: Financial News. See M 2310.
0130 BBC: Short Story. Brief tales written by BBC listeners.
0130 Voice of America (South Asia): VOA Morning. See S 0045.
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.
0155 Voice of America (Americas, Caribbean): Editorial.

Larry Wayne hosts "Random Selection," Deutsche Welle's potpourri program, on Saturday transmissions.

0209 BBC: British Press Review. See S 0209.
0209 Deutsche Welle: European Journal. See M 0209.
0210 Voice of America (Americas, Caribbean): Focus.
0210 Voice of America (South Asia): Newsline. See S 0010.
0215 BBC: Network UK. A look at the issues and events that affect the lives of people throughout the UK.
0230 BBC: Sports International. Feature program on a topic or person making sports headlines.
0230 Voice of America (South Asia): VOA Morning. See S 0045.
0234 Deutsche Welle: Man and Environment. A program on all topics relating to the environment in industrial and developing countries.
0309 Deutsche Welle: European Journal. See M 0209.
0310 Voice of America: Daybreak Africa. See M 0310.
0315 BBC: The World Today. See M 1645.
0330 BBC: John Peel. Tracks from newly released albums and singles from the contemporary music scene.
0334 Deutsche Welle: Transatlantic Diary. See T 0134.
0409 Deutsche Welle: European Journal. See M 0209.
0410 Voice of America: Newsline. See S 0010.
0430 BBC: Off the Shelf. See M 0430.
0430 Voice of America: VOA Morning. See S 0045.
0434 Deutsche Welle: Africa Report. See M 0434.
0445 BBC: New Ideas. A radio shop window for new products and inventions.
0455 BBC: Book Choice. See S 0745.
0509 BBC: Twenty-Four Hours. See S 0509.
0509 Deutsche Welle: European Journal. See M 0209.
0510 Voice of America: Newsline. See S 0010.
0530 BBC: Financial News. See M 2310.
0530 Voice of America: VOA Morning. See S 0045.
0534 Deutsche Welle: Transatlantic Diary. See T 0134.
0540 BBC: Words of Faith. See S 0540.
0545 BBC: The World Today. See M 1645.
0609 Deutsche Welle: European Journal. See M 0209.
0610 Voice of America (Africa): Daybreak Africa. See M 0310.
0610 Voice of America: Newsline. See S 0010.
0630 BBC: Musical Feature. Music programming of a topical nature, including "The World of Rap" on the 3rd.
0630 Voice of America: VOA Morning. See S 0045.
0634 Deutsche Welle: Africa Report. See M 0434.
0709 BBC: Twenty-Four Hours. See S 0509.
0730 BBC: Europe's World. See T 0145.
0745 BBC: Network UK. See T 0215.
1109 Deutsche Welle: Newsline Cologne. See M 1109.
1110 Voice of America (Caribbean): Focus. See M 1110.
1110 Voice of America (Special English): Agriculture Report. A feature program in s-l-o-w English.
1115 BBC: Waveguide. See S 0750.
1115 Voice of America (Special English): Science in the News. More features in s-l-o-w English.
1125 BBC: Book Choice. See S 0745.
1130 BBC: Megamix. See T 0030.
1130 Voice of America (Caribbean): VOA Morning. See S 0045.
1130 Voice of America: Now Music, U.S.A. Rock and soul music from old favorites to the latest hits, and profiles of the stars.
1134 Deutsche Welle: Hallo Africa. See M 1134.
1210 Voice of America: Newsline. See S 0010.
1215 BBC: Multitrack 1: Top 20. See M 2330.
1230 Voice of America: Magazine Show. See M 1230.
1245 BBC: Sports Roundup. See S 1330.

newsline cont'd from p.57

0500 Radio Havana Cuba: International News [M-A]
0500 Radio Japan: News
0500 Radio Korea: News
0500 Radio Moscow: News
0500 Radio New Zealand Int'l: News
0500 Spanish National Radio: News
0500 Voice of America: News
0500 WWCR: USA Radio News [T-A]
0510 Radio Beijing: News About China
0515 Radio Berlin Int'l: News
0515 Radio Canada Int'l: News [M-F]
0515 Radio Havana Cuba: Cuban Nat'l News [M-A]
0530 Christian Science Monitor (E.Africa): News [M]
0530 Christian Science Monitor: News [T-F]
0530 Radio Havana Cuba: News [M-A]
0530 Radio Jordan: News
0530 Radio Moscow (World Service): News in Brief
0530 Radio Romania Int'l: News
0530 UAE Radio, Dubai: News
0551 Spanish National Radio: News Summary [S]
0555 HCJB: World News
0555 KUSW: News [S, T-F]
0600 BBC: Newsdesk
0600 Christian Science Monitor: News
0600 Deutsche Welle: World News
0600 Radio Australia: International Report
0600 Radio Havana Cuba: International News [M-A]
0600 Radio Moscow: News
0600 Radio New Zealand Int'l: News
0600 Voice of America: News
0605 Radio Pyongyang: News
0630 Christian Science Monitor: News [M-F]
0630 Radio Finland: Northern Report [T-A]
0630 Radio Havana Cuba: Newsbreak [M-A]
0630 Radio Moscow (World Service): News in Brief
0630 Radio Polonia: News
0630 Radio Tirana, Albania: News
0630 Swiss Radio Int'l: News
0645 Radio Romania Int'l: News
0655 KUSW: News [S]
0700 BBC: World News
0700 BRT, Brussels: News [M-F]
0700 Christian Science Monitor: News
0700 Radio Australia: World and Australian News
0700 Radio Havana Cuba: International News [M-A]
0700 Radio Japan: News
0700 Radio Korea: News
0700 Radio Moscow (World Service): News
0700 Radio New Zealand Int'l: News [A-S]
0700 Radio Tirana, Albania: News
0700 Voice of Free China: News and Commentary
0715 Radio Havana Cuba: Cuban Nat'l News [M-A]
0730 Christian Science Monitor: News [M-F]
0730 HCJB: Latin American News
0730 Radio Havana Cuba: News [M-A]
0730 Radio Moscow (World Service): News in Brief
0730 Radio Netherlands: News [M-A]
0745 Radio Berlin Int'l: News
0755 KUSW: News [S]
0800 BBC: World News
0800 Christian Science Monitor: News
0800 Radio Australia: International Report
0800 Radio Finland: Northern Report [T-S]
0800 Radio Jordan: News Summary
0800 Radio Moscow (World Service): News
0800 Voice of Indonesia: News
0805 Radio Pyongyang: News
0825 HCJB: World News
0830 Christian Science Monitor: News [M-F]
0830 Radio Beijing: News
0830 Radio Finland: Northern Report [T-S]
0830 Radio Moscow (World Service): News in Brief
0830 Radio Netherlands: News [M-A]
0830 Swiss Radio Int'l: News
0840 Radio Beijing: News About China
0855 KUSW: News [S]

1309 BBC: Twenty-Four Hours. See S 0509.
1310 Voice of America: Focus. See M 1110.
1330 BBC: Network UK. See T 0215.
1340 Voice of America (Special English): Agriculture Report. See T 1110.
1345 BBC: The Tom Robinson Collection. See S 0430.
1345 Voice of America (Special English): Science in the News. See T 1115.
1405 BBC: Outlook. See M 1405.
1410 Voice of America: Asia Report. See M 1410.
1430 BBC: Off the Shelf. See M 0430.
1445 BBC: Musical Feature. See M 0145.
1455 Voice of America: Editorial. See S 1455.
1509 Deutsche Welle: Newsline Cologne. See M 1109.
1510 Voice of America: Newsline. See S 0010.
1515 BBC: A Jolly Good Show. Dave Lee Travis presents listener record requests and dedications, and the UK's top ten albums.
1530 Voice of America: Magazine Show. See M 1230.
1534 Deutsche Welle: Insight. An in-depth feature giving the background to political events and international developments.
1609 Deutsche Welle: Newsline Cologne. See M 1109.
1610 Voice of America (Africa): Nightline Africa (until 1700). See S 1610.
1610 Voice of America: Focus. See M 1110.
1615 BBC: Omnibus. A half-hour program on practically any topic.
1634 Deutsche Welle: Asia-Pacific Report. See M 1634.
1640 Voice of America (Special English): Agriculture Report. See T 1110.
1645 BBC: The World Today. See M 1645.
1645 Voice of America (Special English): Science in the News. See T 1115.
2305 BBC: Commentary. See M 2305.
2310 BBC: Financial News. See M 2310.
2310 Voice of America: Newsline. See S 0010.
2315 BBC: Concert Hall. See S 1515.
2330 Voice of America: VOA Morning. See S 0045.

Wednesday

July 4th,11th,18th,25th

0010 Voice of America (Americas): Newsline. See S 0010.
0010 Voice of America (Caribbean): Caribbean Report. See T 0010.
0010 Voice of America (East Asia): Newsline. See S 0010.
0030 BBC: Omnibus. See T 1615.
0030 Voice of America (Caribbean): Now Music, U.S.A. See T 1130.
0040 Voice of America (Americas, East Asia): Agriculture Report (Special English). See T 1110.
0045 Voice of America (Americas): Science in the News (Special English). See T 1115.
0045 Voice of America (East Asia): VOA Morning. See S 0045.
0101 BBC: Outlook. See M 1405.
0109 Deutsche Welle: European Journal. See M 0209.
0110 Voice of America (Americas, Caribbean): Report to the Americas. See T 0110.
0110 Voice of America (South Asia): Newsline. See S 0010.
0125 BBC: Financial News. See M 2310.
0130 BBC: Feature. Programming on various subjects.
0130 Voice of America (South Asia): VOA Morning. See S 0045.
0134 Deutsche Welle: Transatlantic Diary. See T 0134.

the program file

July 1990

MONITOR ON THE MOVE: It's a cliche in the shortwave world: the BBC has the best news anywhere. But it may not be a valid cliche anymore.

Despite a period of financial austerity, The Christian Science Monitor World Service might just have passed the BBC; the Monitor has scrapped together a more-than-respectable team of correspondents worldwide, and the Monitor lacks the strong pro-Europe bias of the BBC. (Listen to the BBC sports sometime, and notice how they hype European golfers, even though U.S. golfers are generally superior!)

The Monitor is worth a listen, with news on every hour and a news update on most half hours. Also of note are programs like "News Focus" and "One Norway Street," which follow the news at about six minutes past the hour.

NO MORE "PLEASURE": Gordon Clyde's 45-minute program of classical music requests, "The Pleasure's Yours," is no longer. It has been replaced by another classical music program, "Music for a While with Richard Baker." Baker, a well-known broadcaster in the UK, presented "Baker's Half Dozen" about four years ago on BBC, and is certainly no stranger to the air. His urbane and sophisticated presentation style is a joy to hear.

"Music for a While..." can be heard on Thursdays at 1515 UTC.

SPORTS FIESTA: Arguably the world's most popular sporting event, soccer's World Cup comes to an end this month. The BBC World Service carries live commentary of the second half of the semifinals at 1906 UTC on the 3rd and 4th, with the final in its entirety on the 8th at 1745 UTC. In the U.S., check cable's TNT for pictures.

If you're in the U.S. but can't join the likes of Enberg, Evert, Connors, and Collins on NBC-TV, check out the BBC's live coverage of the Wimbledon finals: the women on the 7th and the men on the 8th at 1309 UTC.

-- Kannon Shanmugam
Program Manager

0855 Voice of Indonesia: News in Brief
0900 BBC: World News
0900 BRT, Brussels: News [M-F]
0900 Christian Science Monitor: News
0900 Deutsche Welle: World News
0900 Radio Australia: World and Australian News
0900 Radio Berlin Int'l: News
0900 Radio Japan: News
0900 Radio Moscow (World Service): News
0900 Radio New Zealand Int'l: News
0930 Christian Science Monitor: News [M-F]
0930 Deutsche Welle: African News [M]
0930 Radio Beijing: News
0930 Radio Moscow (World Service): News in Brief
0940 Radio Beijing: News About China
0945 Radio Berlin Int'l: News
0955 KUSW: News [S]
1000 BBC: News Summary
1000 Christian Science Monitor: News
1000 HCJB: Latin American News
1000 Kol Israel: News
1000 Radio Australia: International Report
1000 Radio Jordan: News Summary
1000 Radio Korea: News
1000 Radio Moscow (World Service): News
1000 Radio New Zealand Int'l: News
1000 Radio Tanzania: News
1000 Swiss Radio Int'l: News
1000 Voice of America: News
1030 Radio Moscow (World Service): News in Brief
1030 Radio Netherlands: News [M-A]
1030 UAE Radio, Dubai: News
1055 HCJB: World News
1055 KUSW: News [S]
1100 BBC: World News
1100 Christian Science Monitor: News [M-F]
1100 Deutsche Welle: World News
1100 Radio Australia: World and Australian News
1100 Radio Beijing: News
1100 Radio Berlin Int'l: News
1100 Radio Finland: Northern Report [T-F]
1100 Radio Japan: News
1100 Radio Jordan: News Summary
1100 Radio Moscow (World Service): News
1100 Radio New Zealand Int'l: News
1100 Radio RSA: News
1100 Swiss Radio Int'l: News
1100 Trans World Radio, Bonaire: News [M-F]
1100 Voice of America: News
1105 Radio Pakistan: News (Special English)
1105 Radio Pyongyang: News
1109 BBC: News About Britain
1110 Belize Radio One: News Summary [T-F]
1110 Radio Beijing: News About China
1120 Belize Radio One: News Summary [A]
1125 Belize Radio One: News Summary [M]
1130 Christian Science Monitor: News
1130 Deutsche Welle: African News [M]
1130 Radio Berlin Int'l: News
1130 Radio Moscow (World Service): News in Brief
1130 Radio Netherlands: News [M-A]
1152 Radio RSA: News in Brief
1155 KUSW: News [S]
1200 BBC: News Summary [S]; Newsreel [M-A]
1200 Christian Science Monitor: News [M-F]
1200 Radio Australia: International Report
1200 Radio Beijing: News
1200 Radio Canada Int'l: World Report [M-F]
1200 Radio Finland: Northern Report [T-F]
1200 Radio Jordan: News Summary
1200 Radio Moscow (World Service): News
1200 Radio New Zealand Int'l: News
1200 Radio Polonia: News
1200 Radio Romania Int'l: News
1200 Radio RSA: News
1200 Radio Tashkent: News
1200 Radio Yugoslavia: News
1200 Swiss Radio Int'l: News

program guide

0145 BBC: Country Style. David Allan presents British country music.
0155 Voice of America (Americas, Caribbean): Editorial. See S 1455.
0209 BBC: British Press Review. See S 0209.
0209 Deutsche Welle: European Journal. See M 0209.
0210 Voice of America (Americas, Caribbean): Focus. See M 1110.
0210 Voice of America (South Asia): Newsline. See S 0010.
0215 BBC: Health Matters. See M 1115.
0230 BBC: Musical Feature. See T 0630.
0230 Voice of America (South Asia): VOA Morning. See S 0045.
0234 Deutsche Welle: Insight. See T 1534.
0309 Deutsche Welle: European Journal. See M 0209.
0310 Voice of America: Daybreak Africa. See M 0310.
0315 BBC: The World Today. See M 1645.
0330 BBC: Discovery. An in-depth look at scientific research.
0334 Deutsche Welle: Transatlantic Diary. See T 0134.
0409 Deutsche Welle: European Journal. See M 0209.
0410 Voice of America: Newsline. See S 0010.
0430 BBC: Off the Shelf. See M 0430.
0430 Voice of America: VOA Morning. See S 0045.
0434 Deutsche Welle: Africa Report. See M 0434.
0445 BBC: Country Style. See W 0145.
0509 BBC: Twenty-Four Hours. See S 0509.
0509 Deutsche Welle: European Journal. See M 0209.
0510 Voice of America: Newsline. See S 0010.
0530 BBC: Financial News. See M 2310.
0530 Voice of America: VOA Morning. See S 0045.
0534 Deutsche Welle: Transatlantic Diary. See T 0134.
0540 BBC: Words of Faith. See S 0540.
0545 BBC: The World Today. See M 1645.
0609 Deutsche Welle: European Journal. See M 0209.
0610 Voice of America (Africa): Daybreak Africa. See M 0310.
0610 Voice of America: Newsline. See S 0010.
0630 BBC: Meridian. The world of the arts, including music, drama, and books.
0630 Voice of America: VOA Morning. See S 0045.
0634 Deutsche Welle: Africa Report. See M 0434.
0709 BBC: Twenty-Four Hours. See S 0509.
0730 BBC: Development '90. Aid and development issues.
1109 Deutsche Welle: Newsline Cologne. See M 1109.
1110 Voice of America (Caribbean): Focus. See M 1110.
1110 Voice of America: Science Report (Special English). See M 1110.
1115 BBC: Country Style. See W 0145.
1115 Voice of America: Space and Man (Special English). A feature program in s-l-o-w English.
1130 BBC: Meridian. See W 0630.
1130 Voice of America (Caribbean): VOA Morning. See S 0045.
1130 Voice of America: Now Music, U.S.A. See T 1130.
1134 Deutsche Welle: Hallo Africa. See M 1134.
1210 Voice of America: Newsline. See S 0010.
1215 BBC: The Poetry of Thomas Hardy. Excerpts from the work of the 19th-century Englishman.
1225 BBC: The Farming World. Issues in agriculture.
1230 Voice of America: Magazine Show. See M 1230.

Veteran newsman Max Ruston covers West Africa as VOA's Abidjan bureau chief.

1245 BBC: Sports Roundup. See S 1330.
1309 BBC: Twenty-Four Hours. See S 0509.
1310 Volce of America: Focus. See M 1110.
1330 BBC: Development '90. See W 0730.
1340 Voice of America: Science Report (Special English). See M 1110.
1345 Voice of America: Space and Man (Special English). See W 1115.
1405 BBC: Outlook. See M 1405.
1410 Voice of America: Asia Report. See M 1410.
1430 BBC: Off the Shelf. See M 0430.
1445 BBC: Business Matters. See W 0430.
1455 Voice of America: Editorial. See S 1455.
1509 Deutsche Welle: Newsline Cologne. See M 1109.
1510 Voice of America: Newsline. See S 0010.
1515 BBC: On the Move. See M 2315.
1530 BBC: Comedy. A series of thirty-minute humor broadcasts.
1530 Voice of America: Magazine Show. See M 1230.
1534 Deutsche Welle: Living in Germany. See M 0116.
1609 Deutsche Welle: Newsline Cologne. See M 1109.
1610 Voice of America (Africa): Nightline Africa (until 1700). See S 1610.
1610 Voice of America: Focus. See M 1110.
1615 BBC: Musical Feature. See T 0630.
1634 Deutsche Welle: Asia-Pacific Report. See M 1634.
1640 Voice of America: Science Report (Special English). See M 1110.
1645 BBC: The World Today. See M 1645.
1645 Voice of America: Space and Man (Special English). See W 1115.
2305 BBC: Commentary. See M 2305.
2310 BBC: Financial News. See M 2310.
2310 Voice of America: Newsline. See S 0010.
2315 BBC: Good Books. See M 0315.
2330 BBC: Multitrack 2. Graham Bannerman presents new pop music records, interviews, news, and competitions.
2330 Voice of America: VOA Morning. See S 0045.

Thursday

July 5th,12th,19th,26th

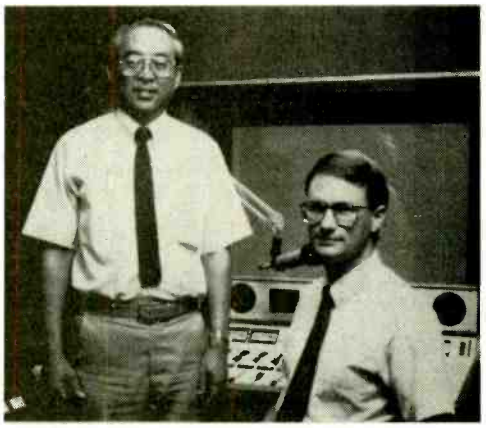
0010 Voice of America (Americas): Newsline. See S 0010.
0010 Voice of America (Caribbean): Caribbean Report. See T 0010.
0010 Voice of America (East Asia): Newsline. See S 0010.
0030 BBC: Comedy. See W 1530.
0030 Voice of America (Caribbean): Now Music, U.S.A. See T 1130.
0040 Voice of America (Americas, East Asia): Science Report (Special English). See M 1110.
0045 Voice of America (Americas): Space and Man (Special English). See W 1115.

newsline cont'd from p.59

1200 Volce of America: News
1210 Radlo Beijlng: News About China
1215 Radio Berlin Int'l: News
1230 BRT, Brussels: News [M-S]
1230 Christian Science Monitor: News
1230 Radio France Int'l: News
1230 Radio Moscow (World Service): News in Brief
1230 Radio Polonia: News
1230 Trans World Radio, Bonaire: News [M-A]
1230 Voice of Turkey: News
1245 Radio Berlin Int'l: News
1300 BBC: News and Twenty-Four Hours on Sunday [S]; World News [M-A]
1300 Belize Radio One: News
1300 Christian Science Monitor: News
1300 Christian Science Monitor: News [M-F]
1300 Radio Australia: World and Australian News
1300 Radio Beijing: News
1300 Radio Berlin Int'l: News
1300 Radio Canada Int'l: News
1300 Radio Finland: Northern Report [T-A]
1300 Radio Korea: News
1300 Radio Moscow (World Service): News
1300 Radio Peace and Progress: News
1300 Radio Romania Int'l: News
1300 Radio RSA: News
1300 Radio Tanzania: News [A-S]
1300 Radio Tirana, Albania: News
1300 Trans World Radio, Bonaire: News [S]
1300 Voice of America: News
1300 WWCR: USA Radio News [M-F]
1305 Radio Pyongyang: News
1310 Radio Beijing: News About China
1330 Christian Science Monitor: News [M-F]
1330 Radio Moscow (World Service): News in Brief
1330 Radio Tashkent: News
1330 Swiss Radio Int'l: News
1330 UAE Radio, Dubai: News
1330 Voice of America: News (Special English)
1345 Radio Berlin Int'l: News
1352 Radio RSA: News in Brief
1400 BBC: News Summary [A-S]; Five-Minute News [M-F]
1400 Christian Science Monitor: News
1400 Radio Australia: International Report
1400 Radio Beijing: News
1400 Radio France Int'l: News
1400 Radio Japan: News
1400 Radio Jordan: News Summary
1400 Radio Moscow (World Service): News
1400 Radio RSA: News
1400 Voice of America: News
1400 WWCR: USA Radio News [M-F]
1405 Radio Finland: Northern Report [T-A]
1405 Radio Pyongyang: News
1410 Radio Beijing: News About China
1430 Christian Science Monitor: News [M-F]
1430 Radio Moscow (World Service): News in Brief
1430 Radio Netherlands: News [M-A]
1430 Radio Polonia: News
1430 Radio Prague: News
1445 Radio Berlin Int'l: News
1445 Radio Canada Int'l (Central/Eastern Europe): News
1500 BBC: Newsreel
1500 Belize Radio One: News [M-A]
1500 Christian Science Monitor: News
1500 Deutsche Welle: World News
1500 Radio Australia: World and Australian News
1500 Radio Beijing: News
1500 Radio Japan: News
1500 Radio Korea: News
1500 Radio Moscow (World Service): News
1500 Radio Romania Int'l: News
1500 Voice of America: News
1500 WHRI: News [M-A]

program guide

0045 Voice of America (East Asia): VOA Morning. See S 0045.
0101 BBC: Outlook. See M 1405.
0109 Deutsche Welle: European Journal. See M 0209.
0110 Voice of America (Americas, Caribbean): Report to the Americas. See T 0110.
0110 Voice of America (South Asia): Newsline. See S 0010.
0125 BBC: Financial News. See M 2310.
0130 BBC: Waveguide. See S 0750.
0130 Voice of America (South Asia): VOA Morning. See S 0045.
0134 Deutsche Welle: Transatlantic Diary. See T 0134.
0140 BBC: Book Choice. See S 0745.
0145 BBC: Society Today. A weekly look at the changes in Britain.
0155 Voice of America (Americas, Caribbean): Editorial. See S 1455.
0209 BBC: British Press Review. See S 0209.
0209 Deutsche Welle: European Journal. See M 0209.
0210 Voice of America (Americas, Caribbean): Focus. See M 1110.
0210 Voice of America (South Asia): Newsline. See S 0010.
0215 BBC: Network UK. See T 0215.
0230 BBC: Assignment. Examinations of current topical issues.
0230 Voice of America (South Asia): VOA Morning. See S 0045.
0234 Deutsche Welle: Living in Germany. See M 0116.
0309 Deutsche Welle: European Journal. See M 0209.
0310 Voice of America: Daybreak Africa. See M 0310.
0315 BBC: The World Today. See M 1645.
0330 BBC: Brain of Britain 1990. See M 1215.
0334 Deutsche Welle: Transatlantic Diary. See T 0134.
0409 Deutsche Welle: European Journal. See M 0209.
0410 Voice of America: Newsline. See S 0010.
0430 BBC: Off the Shelf. See M 0430.
0430 Voice of America: VOA Morning. See S 0045.
0434 Deutsche Welle: Africa Report. See M 0434.
0445 BBC: Andy Kershaw's World of Music. See M 0215.
0509 BBC: Twenty-Four Hours. See S 0509.
0509 Deutsche Welle: European Journal. See M 0209.
0510 Voice of America: Newsline. See S 0010.
0530 BBC: Financial News. See M 2310.
0530 Voice of America: VOA Morning. See S 0045.
0534 Deutsche Welle: Transatlantic Diary. See T 0134.
0540 BBC: Words of Faith. See S 0540.
0545 BBC: The World Today. See M 1645.
0609 Deutsche Welle: European Journal. See M 0209.
0610 Voice of America (Africa): Daybreak Africa. See M 0310.
0610 Voice of America: Newsline. See S 0010.
0630 BBC: The Poetry of Thomas Hardy. See W 1215.
0630 Voice of America: VOA Morning. See S 0045.
0634 Deutsche Welle: Africa Report. See M 0434.
0640 BBC: The Farming World. See W 1225.
0709 BBC: Twenty-Four Hours. See S 0509.
0730 BBC: Mediawatch. Keith Hindell looks at developments in the media worldwide.
0745 BBC: Network UK. See T 0215.
1109 Deutsche Welle: Newsline Cologne. See M 1109.
1110 Voice of America (Caribbean): Focus. See M 1110.
1110 Voice of America: Science Report (Special English). See M 1110.
1115 BBC: New Ideas. See T 0445.
1115 Voice of America: The Making of a Nation (Special English). See H 0045.
1125 BBC: Book Choice. See S 0745.
1130 BBC: Serial. Excerpts from a book or play.
1130 Voice of America (Caribbean): VOA Morning. See S 0045.
1130 Voice of America: Now Music, U.S.A. See T 1130.
1210 Voice of America: Newsline. See S 0010.
1215 BBC: Multitrack 2. See W 1830.
1230 Voice of America: Magazine Show. See M 1230.
1245 BBC: Sports Roundup. See S 1330.
1309 BBC: Twenty-Four Hours. See S 0509.
1310 Voice of America: Focus. See M 1110.
1330 BBC: Network UK. See T 0215.
1340 Voice of America: Science Report (Special English). See M 1110.
1345 BBC: Folk in Britain or Jazz Scene UK. A look at folk or jazz music on the British Isles.
1345 Voice of America: The Making of a Nation (Special English). See H 0045.
1405 BBC: Outlook. See M 1405.
1410 Voice of America: Asia Report. See M 1410.
1430 BBC: Off the Shelf. See M 0430.
1445 BBC: Mediawatch. See H 0730.
1455 Voice of America: Editorial. See S 1455.
1509 Deutsche Welle: Newsline Cologne. See M 1109.
1510 Voice of America: Newsline. See S 0010.
1515 BBC: Music for a While with Richard Baker. Classical music with the well-known broadcaster.
1530 Voice of America: Magazine Show. See M 1230.
1534 Deutsche Welle: Spotlight on Sport. Background stories and coverage of important sporting events.
1609 Deutsche Welle: Newsline Cologne. See M 1109.
1610 Voice of America (Africa): Nightline Africa (until 1700). See S 1610.
1610 Voice of America: Focus. See M 1110.



Richard Liu and Greg Scott are program directors at KSDA, a station on the American territory of Guam.

1615 BBC: Assignment. See H 0230.
1634 Deutsche Welle: Asia-Pacific Report. See M 1634.
1640 Voice of America: Science Report (Special English). See M 1110.
1645 BBC: The World Today. See M 1645.
1645 Voice of America: The Making of a Nation (Special English). See H 0045.
2305 BBC: Commentary. See M 2305.
2310 BBC: Financial News. See M 2310.
2310 Voice of America: Newsline. See S 0010.
2315 BBC: Music Review. Classical music events and developments from around the world.
2330 Voice of America: VOA Morning. See S 0045.

1500 WWCR: USA Radio News
1505 Radio Pyongyang: News
1510 Radio Beijing: News About China
1530 BRT, Brussels: News [M-S]
1530 Christian Science Monitor: News [M-F]
1530 Deutsche Welle: African News [M-F]
1530 Radio Moscow (World Service): News in Brief
1530 Radio Peace and Progress: News
1530 Radio Prague: News
1530 Radio Tirana, Albania: News
1530 Swiss Radio Int'l: News
1545 Radio Berlin Int'l: News
1600 BBC: World News
1600 Christian Science Monitor: News
1600 Deutsche Welle: World News
1600 Radio Australia: International Report
1600 Radio Beijing: News
1600 Radio France Int'l: News
1600 Radio Jordan: News Summary
1600 Radio Moscow (World Service): News
1600 Radio Polonia: News
1600 Radio Portugal: News [M-F]
1600 Radio Tanzania: News
1600 Voice of America: News
1600 WWCR: USA Radio News [M-F]
1609 BBC: News About Britain
1610 Radio Beijing: News About China
1615 Radio Canada Int'l: News
1630 Christian Science Monitor: News [M-F]
1630 Radio Moscow (World Service): News in Brief
1630 Radio Netherlands: News [M-A]
1630 Radio Polonia: News
1630 RAE, Buenos Aires: News
1630 UAE Radio, Dubai: News
1630 Voice of America (except Africa): News (Special English)
1655 KUSW: News [M-F]
1700 BBC: World News [S-F]; News Summary [A]
1700 Belize Radio One: News [M-F]
1700 Christian Science Monitor: News
1700 Kol Israel: News
1700 Radio Australia: World and Australian News
1700 Radio Beijing: News
1700 Radio Japan: News
1700 Radio Jordan: Newsdesk [S-T]
1700 Radio Korea: News
1700 Radio Moscow (World Service): News
1700 Voice of America: News
1705 Radio Pyongyang: News
1710 Radio Beijing: News About China
1715 Radio Berlin Int'l: News
1730 BRT, Brussels: News
1730 Christian Science Monitor: News [M-F]
1730 Radio Moscow (World Service): News in Brief
1730 Radio Prague: News
1730 Radio Romania Int'l: News
1730 Swiss Radio Int'l: News
1755 KUSW: News [M-A]
1800 BBC: Newsdesk
1800 Belize Radio One: Headline News [M-A]
1800 Christian Science Monitor: News
1800 Radio Australia: International Report
1800 Radio Bras, Brasilia: News
1800 Radio Canada Int'l: News
1800 Radio Kiev: News
1800 Radio Moscow (World Service): News
1800 Radio RSA: News
1800 Radio Tanzania: News
1800 Voice of America: News
1800 WWCR: USA Radio News [A]
1803 Radio Jamahiriya, Libya: News Headlines
1830 Belize Radio One: Network News
1830 Christian Science Monitor: News [M-F]
1830 Radio Berlin Int'l: News
1830 Radio Budapest: News
1830 Radio Canada Int'l: News [M-F]
1830 Radio Finland: Northern Report [M-F]
1830 Radio Kuwait: News

program guide

Friday

July 6th,13th,20th,27th

0010 Voice of America (Americas): Newsline. See S 0010.
0010 Voice of America (Caribbean): Caribbean Report. See T 0010.
0010 Voice of America (East Asia): Newsline. See S 0010.
0030 BBC: Musical Feature. Musical programming of a topical nature; "Modern Masterpiece" tentatively scheduled.
0030 Voice of America (Caribbean): Now Music, U.S.A. See T 1130.
0040 Voice of America (Americas, East Asia): Science Report (Special English). See M 1110.
0045 Voice of America (Americas): The Making of a Nation (Special English). See H 0045.
0045 Voice of America (East Asia): VOA Morning. See S 0045.
0101 BBC: Outlook. See M 1405.
0109 Deutsche Welle: European Journal. See M 0209.
0110 Voice of America (Americas, Caribbean): Report to the Americas. See T 0110.
0110 Voice of America (South Asia): VOA Morning. See S 0045.
0125 BBC: Financial News. See M 2310.
0130 BBC: Folk in Britain or Jazz Scene UK. See H 1345.
0134 Deutsche Welle: Transatlantic Diary. See T 0134.
0145 BBC: Global Concerns. Issues of an environmental nature.
0155 Voice of America (Americas, Caribbean): Editorial. See S 1455.
0209 BBC: British Press Review. See S 0209.
0209 Deutsche Welle: European Journal. See M 0209.
0210 Voice of America (Americas, Caribbean): Focus. See M 1110.
0210 Voice of America (South Asia): VOA Morning. See S 0045.
0215 BBC: Seven Seas. A weekly program about ships and the sea.
0230 BBC: Serial. See H 1130.
0234 Deutsche Welle: Spotlight on Sport. See W 1534.
0309 Deutsche Welle: European Journal. See M 0209.
0310 Voice of America: Daybreak Africa. See M 0310.
0315 BBC: The World Today. See M 1645.
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.
0409 Deutsche Welle: European Journal. See M 0209.
0410 Voice of America: Newsline. See S 0010.
0430 BBC: Off the Shelf. See M 0430.
0430 Voice of America: VOA Morning. See S 0045.
0434 Deutsche Welle: Africa Report. See M 0434.
0445 BBC: Folk in Britain or Jazz Scene UK. See H 1345.
0509 BBC: Twenty-Four Hours. See S 0509.
0509 Deutsche Welle: European Journal. See M 0209.
0510 Voice of America: Newsline. See S 0010.
0530 BBC: Financial News. See T 0125.
0530 Voice of America: VOA Morning. See S 0045.
0540 BBC: Words of Faith. See S 0540.
0545 BBC: The World Today. See M 1645.
0609 Deutsche Welle: European Journal. See M 0209.
0610 Voice of America (Africa): Daybreak Africa. See M 0310.
0610 Voice of America: Newsline. See S 0010.
0630 BBC: Meridian. See W 0630.
0630 Voice of America: VOA Morning. See S 0045.
0634 Deutsche Welle: Africa Report. See M 0434.
0709 BBC: Twenty-Four Hours. See S 0509.
0730 BBC: Feature. Programming on various subjects.
1109 Deutsche Welle: Newsline Cologne. See M 1109.
1110 Voice of America (Caribbean): Focus. See M 1110.
1110 Voice of America: Science Report (Special English). See M 1110.
1115 BBC: Global Concerns. See F 0145.
1115 Voice of America: American Mosaic (Special English). A feature program in s-l-o-w English.
1130 BBC: Meridian. See W 0630.
1130 Voice of America (Caribbean): VOA Morning. See S 0045.
1130 Voice of America: Country Music, U.S.A. Current popular country music tunes with a sprinkling of old favorites.
1210 Voice of America: Newsline. See S 0010.
1215 BBC: Feature. See F 0730.
1230 Voice of America: Magazine Show. See M 1230.
1245 BBC: Sports Roundup. See S 1330.

Pamela Creighton is one of the BBC's most popular news readers.

1309 BBC: Twenty-Four Hours. See S 0509.
1310 Voice of America: Focus. See M 1110.
1330 BBC: Short Story. See T 0130.
1340 Voice of America: Science Report (Special English). See M 1110.
1345 BBC: Here's Humph! All that jazz with Humphrey Lyttelton.
1345 Voice of America: American Mosaic (Special English). See F 1115.
1405 BBC: Outlook. See M 1405.
1410 Voice of America: Asia Report. See M 1410.
1430 BBC: Off the Shelf. See M 0430.
1445 BBC: Tech Talk. See M 0445.
1455 Voice of America: Editorial. See S 1455.
1509 Deutsche Welle: Newsline Cologne. See M 1109.
1510 Voice of America: Newsline. See S 0010.
1515 BBC: Music Review. See H 2315.
1530 Voice of America: Magazine Show. See M 1230.
1534 Deutsche Welle: Economic Notebook. A look at the economic scene in Germany and around the world.
1609 Deutsche Welle: Newsline Cologne. See M 1109.
1610 Voice of America (Africa): Nightline Africa (until 1700). See S 1610.

newsline cont'd from p.61

1830 Radio Moscow (World Service): News in Brief
1830 Radio Netherlands: News [M-A]
1830 Radio Polonia: News
1830 Radio Tirana, Albania: News
1830 Radio Yugoslavia: News
1830 Swiss Radio Int'l: News
1830 Voice of America: News (Special English)
1847 Radio Jamahiriya, Libya: News
1852 Radio RSA: News in Brief
1855 KUSW: News [M-F]
1900 BBC: News Summary
1900 Christian Science Monitor: News
1900 Deutsche Welle: World News
1900 HCJB: Latin American News
1900 Kol Israel: News
1900 Radio Australia: World and Australian News
1900 Radio Beijing: News
1900 Radio Canada Int'l: News [M-F]
1900 Radio Havana Cuba: International News [M-A]
1900 Radio Japan: News
1900 Radio Jordan: News Summary
1900 Radio Moscow (World Service): News
1900 Radio New Zealand Int'l: News
1900 Radio Portugal: News [M-F]
1900 Radio RSA: News
1900 Radio Tanzania: News
1900 Spanish National Radio: News
1900 Voice of America: News
1900 WWCR: USA Radio News [M-F]
1910 Radio Beijing: News About China
1915 Radio Berlin Int'l: News
1930 Christian Science Monitor: News [M-F]
1930 Deutsche Welle: African News [M-F]
1930 Radio Havana Cuba: Cuban Nat'l News [M-T]; Newsbreak [W-A]
1930 Radio Korea: News
1930 Radio Moscow (World Service): News in Brief
1930 Radio Romania Int'l: News
1935 Radiotelevisione Italiana: News
1945 Radio Berlin Int'l: News
1955 HCJB: World News
1955 KUSW: News [M-A]
2000 BBC: World News
2000 Christian Science Monitor: News
2000 KVOH: UPI News [S]
2000 Radio Australia: International Report
2000 Radio Beijing: News
2000 Radio Havana Cuba: International News [M-A]
2000 Radio Jordan: News Summary
2000 Radio Moscow (World Service): News
2000 Radio New Zealand Int'l: News
2000 Radio Peace and Progress: News
2000 Radio Polonia: News
2000 Voice of America: News
2000 Voice of Indonesia: News
2000 Voice of Turkey: News
2005 Radio Pyongyang: News
2010 Radio Beijing: News About China
2025 Radio Havana Cuba: Cuban Nat'l News [M-A]
2025 Radiotelevisione Italiana: News
2030 Christian Science Monitor: News [M-F]
2030 Radio Budapest: News
2030 Radio Havana Cuba: News [M-A]
2030 Radio Moscow (World Service): News in Brief
2030 Radio Netherlands: News [M-A]
2055 KUSW: News [M-A]
2055 Voice of Indonesia: News in Brief
2100 BBC: News Summary
2100 Belize Radio One: News [M-F]
2100 BRT, Brussels: News
2100 Christian Science Monitor: News
2100 Deutsche Welle: World News
2100 KVOH: UPI News
2100 Radio Australia: World and Australian News
2100 Radio Beijing: News
2100 Radio Berlin Int'l: News

SUGGESTIONS?
SOMETHING MISSING?
Let us know your corrections, additions, and suggestions of what you'd like to see to Program Manager Kannon Shanmugam at 4412 Turnberry Circle, Lawrence, Kansas 66047.

program guide

1610 Voice of America: Focus. See M 1110.
1615 BBC: Science in Action. See M 0230.
1634 Deutsche Welle: Asia-Pacific Report. See M 1634.
1640 Voice of America: Science Report (Special English). See M 1110.
1645 BBC: The World Today. See M 1645.
1645 Voice of America: American Mosaic (Special English). See F 1115.
2305 BBC: Commentary. See M 2305.
2310 BBC: Financial News. See M 2310.
2310 Voice of America: VOA Morning. See S 0045.
2315 BBC: Worldbrief. A roundup of the week's news headlines and human-interest happenings.
2330 BBC: Multitrack 3. Sarah Ward surveys the British contemporary music scene.

Saturday

July 7th,14th,21st,28th

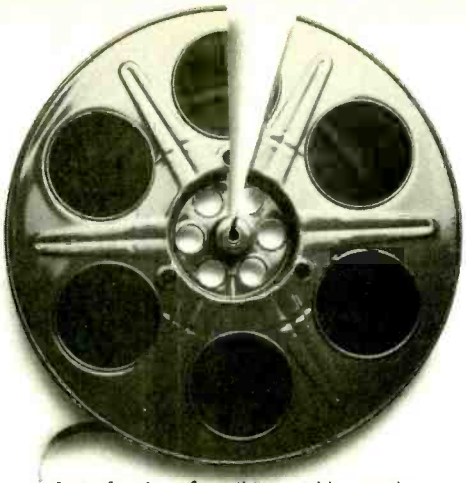
0010 Voice of America (Americas, Caribbean): Newsline. See S 0010.
0010 Voice of America (East Asia): VOA Morning. See S 0045.
0030 BBC: From the Weeklies. A review of the weekly British press.
0030 Voice of America (Caribbean): Country Music, U.S.A. See F 1130.
0040 Voice of America (Americas, East Asia): Science Report (Special English). See M 1110.
0045 BBC: Recording of the Week. See M 0545.
0045 Voice of America (Americas): American Mosaic (Special English). See F 1115.
0045 Voice of America (East Asia): VOA Morning. See S 0045.
0101 BBC: Outlook. See M 1405.
0109 Deutsche Welle: European Journal. See M 0209.
0110 Voice of America (Americas, Caribbean): Report to the Americas. See T 0110.
0110 Voice of America (South Asia): VOA Morning. See S 0045.
0125 BBC: Financial News. See M 2310.
0130 BBC: Juste Plain Madness. Pop music, punctuated by bits of radio comedy.
0134 Deutsche Welle: Transatlantic Diary. See T 0134.
0145 BBC: Book Choice. See S 0745.
0150 BBC: New Ideas. See T 0445.
0155 Voice of America (Americas, Caribbean): Editorial. See S 1455.
0209 BBC: British Press Review. See S 0209.
0209 Deutsche Welle: Commentary. See S 0109.
0210 Voice of America (Americas, Caribbean): Focus. See M 1110.
0210 Voice of America (South Asia): VOA Morning. See S 0045.
0215 BBC: Network UK. See T 0215.
0223 Deutsche Welle: Panorama. A review of the major news events of the week.
0230 BBC: People and Politics. Background to the British political scene.
0234 Deutsche Welle: Economic Notebook. See F 1534.
0309 Deutsche Welle: European Journal. See M 0209.
0310 Voice of America: VOA Morning. See S 0045.
0315 BBC: The World Today. See M 1645.
0330 BBC: The Vintage Chart Show. Paul Burnett presents top ten hits from the music charts of yesteryear.
0334 Deutsche Welle: Transatlantic Diary. See T 0134.
0409 Deutsche Welle: Commentary. See S 0109.
0410 Voice of America: VOA Morning. See S 0045.
0423 Deutsche Welle: Panorama. See A 0223.
0430 BBC: Here's Humph! See F 1345.
0434 Deutsche Welle: Man and Environment. See T 0234.
0445 BBC: Worldbrief. See F 2315.
0509 BBC: Twenty-Four Hours. See S 0509.
0509 Deutsche Welle: European Journal. See M 0209.
0510 Voice of America: VOA Morning. See S 0045.
0530 BBC: Financial News. See M 2310.
0534 Deutsche Welle: Transatlantic Diary. See T 0134.
0540 BBC: Words of Faith. See S 0540.
0545 BBC: The World Today. See M 1645.
0609 Deutsche Welle: Commentary. See S 0109.
0610 Voice of America: VOA Morning. See S 0045.
0623 Deutsche Welle: Panorama. See A 0223.
0630 BBC: Meridian. See W 0630.
0634 Deutsche Welle: Man and Environment. See T 0234.
0709 BBC: Twenty-Four Hours. See S 0509.
0730 BBC: From the Weeklies. See F 2315.
0745 BBC: Network UK. See T 0215.
1109 Deutsche Welle: Africa this Week. A review of trends and events on the African continent.
1110 Voice of America (Caribbean): American Viewpoints. See S 0010.
1110 Voice of America: Focus. See M 1110.
1115 BBC: Juste Plain Madness. See A 0130.
1130 BBC: Meridian. See W 0630.
1130 Voice of America (Caribbean): Music, U.S.A. (Jazz). Willis Conover looks at jazz of yesterday and today, in the U.S.A. and abroad.
1130 Voice of America: Press Conference, U.S.A. See S 0130.
1134 Deutsche Welle: Mailbag Africa. Listeners' questions, music requests, and the club corner.
1210 Voice of America: Communications World. See S 0110.
1215 BBC: Multitrack 3. See F 2330.
1230 Voice of America: Weekend Magazine. See S 0030.
1245 BBC: Sports Roundup. See S 1330.
1309 BBC: Twenty-Four Hours. See S 0509.
1310 Voice of America: American Viewpoints. See S 0010.
1330 BBC: Network UK. See T 0215.
1340 Voice of America: Words and Their Stories (Special English). See S 0040.
1345 BBC: Sportsworld. A weekly sports magazine (with breaks for news, through 1700 UTC).
1345 Voice of America: American Stories (Special English). See S 0045.
1410 Voice of America: Music, U.S.A. (Jazz). See A 1130.
1455 Voice of America: Editorial. See S 1455.
1509 Deutsche Welle: Africa Highlight. A weekly feature on an important topic concerning Africa.
1510 Voice of America: Focus. See M 1110.
1513 Deutsche Welle: Development Forum. Reports and interviews on projects and progress in Africa and Asia.
1530 Voice of America: Press Conference, U.S.A. See S 0130.
1534 Deutsche Welle: Science and Technology. See M 0234.
1609 Deutsche Welle: International Talking Point. See S 0419.
1610 Voice of America (Africa): Nightline Africa. See S 1610.
1610 Voice of America: American Viewpoints. See S 0010.
1623 Deutsche Welle: Development Forum. See A 1513.
1634 Deutsche Welle: Religion and Society. See S 1509.
1640 Voice of America: Words and Their Stories (Special English). See S 0040.
1645 Voice of America: American Stories (Special English). See S 0045.
2305 BBC: Words of Faith. See S 0540.
2310 BBC: Book Choice. See S 0745.
2310 Voice of America: Newsline. See S 0010.
2315 BBC: A Jolly Good Show. See T 1515.
2330 Voice of America: VOA Morning. See S 0045.

2100 Radio Canada Int'l: World at Six [M-F]; News [A-S]
2100 Radio Finland: Northern Report [M-F]
2100 Radio Japan: News
2100 Radio Jordan: News Summary
2100 Radio Moscow (World Service): News
2100 Radio New Zealand Int'l: News
2100 Radio Romania Int'l: News
2100 Radio Yugoslavia: News
2100 RAE, Buenos Aires: News
2100 Spanish National Radio: News
2100 Swiss Radio Int'l: News
2100 Voice of America: News
2110 Radio Beijing: News About China
2130 Christian Science Monitor: News [M-F]
2130 Kol Israel: News
2130 KVOH: UPI Headlines [M-H]
2130 Radio Canada Int'l (Africa): News
2130 Radio Moscow (World Service): News in Brief
2130 Swiss Radio Int'l: News
2145 Radio Berlin Int'l: News
2155 KUSW: News [M-F]
2200 BBC: Newshour
2200 Christian Science Monitor: News
2200 KVOH: UPI News
2200 Radio Australia: International Report
2200 Radio Beijing: News
2200 Radio Canada Int'l (Asia): News
2200 Radio Canada Int'l (USA): World at Six [M-F]; News [A-S]
2200 Radio Havana Cuba: International News [M-A]
2200 Radio Moscow: News
2200 Radiotelevisione Italiana: News
2200 Voice of America: News
2200 Voice of Free China: News and Commentary
2200 Voice of Turkey: News
2210 Radio Beijing: News About China
2230 Christian Science Monitor: News [M-F]
2230 KVOH: UPI Headlines [M-H]
2230 Radio Havana Cuba: Cuban Nat'l News [M-A]
2230 Radio Korea: News
2230 Radio Moscow (World Service): News in Brief
2230 Radio Polonia: News
2230 Radio Tirana, Albania: News
2230 Voice of America: News (Special English)
2233 Radio Jamahiriya, Libya: News Headlines
2255 KUSW: News [M-A]
2300 BBC: World News [A-S]; Five-Minute News [M-F]
2300 Belize Radio One: News [M-F]
2300 Christian Science Monitor: News
2300 Kol Israel: News
2300 KVOH: UPI News
2300 Radio Australia: World and Australian News
2300 Radio Canada Int'l (Canbbean): News
2300 Radio Finland: Northern Report [T-A]
2300 Radio for Peace Int'l: News [F]
2300 Radio Japan: News
2300 Radio Moscow: News
2300 Voice of America: News
2305 Radio Polonia: News
2305 Radio Pyongyang: News
2330 BRT, Brussels: News
2330 Christian Science Monitor: News [M-F]
2330 KVOH: UPI Headlines [A]
2330 Radio Budapest: News
2330 Radio Canada Int'l (USA): News [A-S]
2330 Radio for Peace Int'l: News [M]
2330 Radio Jamahiriya, Libya: News
2330 Radio Kiev: News
2330 Radio Moscow (World Service): News in Brief
2330 Radio Tirana, Albania: News
2335 Voice of Greece: News [S]
2345 Radio Berlin Int'l: News
2355 KUSW: News [M-A]
2355 WRNO: ABC News [F]

INDEPENDENT SECTOR

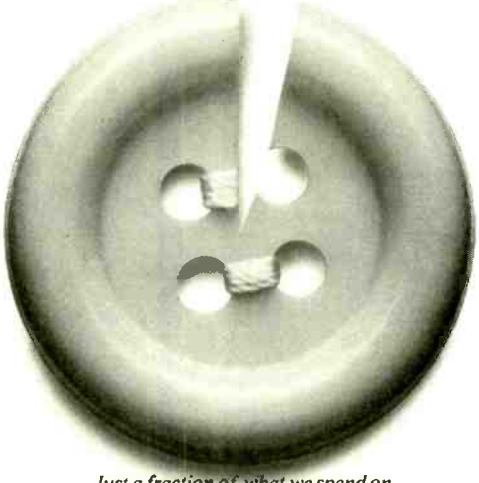
Ad Council

Just a fraction of the time we spend on the phone can help answer society's problems.



Just a fraction of our time watching movies could help bring many happy endings.

Just a fraction of what we spend on sports can help keep society in shape.



Just a fraction of what we spend on clothes could help mend society's problems.

Just a fraction of what we spend on entertainment could be music to someone's ears.

Just a fraction of what we spend dining out could help pick up the tab for a good cause.

It takes so little to help so much.

Just a small part of our extra time and money can have such a big impact on society's problems.

Millions of people have helped establish five percent of their incomes and five hours of volunteer time per week as America's standard of giving.

Get involved with the causes you care about and give five.

Give Five.

What you get back is immeasurable.

frequency section

MT Monitoring Team

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Richard A. Keen
Colorado

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Pennsylvania

0000 UTC [8:00 PM EDT/5:00 PM PDT]

0000-0015		Radio Prague Int'l, Czechoslovakia	7345 11680 11990
0000-0025		Radio Finland, Helsinki	11755 15185
0000-0030	M	Radio Norway International, Oslo	15165
0000-0030		Kol Israel, Jerusalem	15640 9435 11605
0000-0030		Radio Berlin International, GDR	6080 9730 11890 13610 13760 15240
0000-0030		Radio Korea, Seoul	15575
0000-0030		Radio Canada International, Montreal	5960 9755
0000-0045		Radio Yugoslavia, Belgrade	7215 11735 15105
0000-0050		Radio Pyongyang, North Korea	15115 15160
0000-0100		SLBC Domestic Service, Sri Lanka	4940
0000-0100		Radio New Zealand, Wellington	17680
0000-0100		BBC World Service, London, England	5975 6005 6175 6195 7325 9590 9915 11750 12095 15260
0000-0100		Adventist World Radio, Costa Rica	9725 11870
0000-0100		Radio Moscow N.American Service	11850 11710 11780 11980 12040 13605 15425 15580 15595
0000-0100		Radio Moscow World Service	15280 15550 17600 17730 17890 21585 21690 21790
0000-0100		All India Radio, New Delhi	9535 9910 11715 11745 15110
0000-0100		CBC Northern Quebec Service, Can	6195 (ML)
0000-0100		CBN, St. John's, Nfld, Canada	6160
0000-0100		CBU, Vancouver, British Columbia	6160
0000-0100		CFCF, Montreal, Quebec, Canada	6005
0000-0100		CFCN, Calgary, Alberta, Canada	6030
0000-0100		CHNS, Halifax, Nova Scotia, Canada	6130
0000-0100		Christian Science World Svc, Boston	9410 9850 13760 15435
0000-0100		CKWX, Vancouver, British Columbia	6080
0000-0100		CFRB, Toronto, Ontario, Canada	6070
0000-0100		FEBC Radio Int'l, Philippines	15480
0000-0100		KUSW, Salt Lake City, Utah	15580
0000-0100		Radio Australia, Melbourne	15160 15240 15320 17630 17750 17795 21740
0000-0100		Radio Beijing, Beijing, China	17705 15100 17855
0000-0100		Radio Havana Cuba	11820
0000-0100		Radio Luxembourg, Junglinster	6090
0000-0100		Radio Tonga, Kingdom of Tonga	5030v
0000-0100		Spanish National Radio, Madrid	9630 11880
0000-0100		Voice of America-Americas Service	5995 9775 9815 11580 15205
0000-0100		Voice of America-Caribbean Service	6130 9455 11695
0000-0100		Voice of America-East Asia Service	7120 9770 11760 15185 15290 17735 17820
0000-0100		Radio for Peace Int'l, Costa Rica	7375 21566
0000-0100		WHRI, Noblesville, Indiana	7315 9495
0000-0100		WINB, Red Lion, Pennsylvania	15145
0000-0100		WRNO Worldwide, Louisiana	7355
0000-0100		WWCR, Nashville, Tennessee	7520
0000-0100		WYFR, Okeechobee, Florida	5985 13695 15170
0030-0035		Radio Prague, Czechoslovakia	6055 13715
0030-0100	A,S	Radio Canada Int'l, Montreal	5960 9755
0030-0100		Radio Budapest, Hungary	6110 9520 9585 9835 11910 15160

the frequency file

July 1990

Welcome to another month of *MT* frequency information. The dust having settled from the last mass frequency changeover for a few months, I've found myself pondering the meaning of existence - the existence of this column, that is. I've been trying to ascertain exactly how I can help you make the fullest use of this section. It came as a jolt to me when I finally realized that the answer was "I can't"!

You are the only source I have for making this section of the magazine truly user-friendly. Your comments will be the dough for my concoction, and *MT* will be my oven (things usually get hot in the summer, don't they?). The recipe has yet to be finalized, but rest assured that we at *MT* plan to make the frequency section even BETTER than you already say it is.

Some changes will be for the purposes of simplification. For example, this month we've streamlined the BBC listings, giving them one listing per hour, instead of the sometimes four. We used to list them four times because some of their frequencies come on or close down at quarter hour intervals. In our new format, we've chosen simplicity over exactness, for the BBC as well as for others.

Another example, Radio Australia's frequency of 21740kHz, heard quite well in North America, thank you, doesn't come on line until 0030 UTC, but it is included in the 0000-0100 UTC Radio Australia listing. This will give us a little more space by eliminating a lot of what appeared to be multiple listings. They weren't multiple listings; there were small differences evident in each block. Let me know if you'd prefer to return to this type of listing - but tell me why.

Why? A good, simple question, for just about any topic. Why, for example, do stations use so many frequencies at the same time? Most of you already know the answers to that, and for those who don't, you can write and ask me (Enclose an SASE for the reply, please). However, I will tell you about one station that has doubled its' frequency usage in certain time slots: Radio Berlin International.

At their 2345 UTC transmission to North America, they are now using six frequencies instead of the usual three. Why? There are several theories, but the most evident is that they want to attract as many listeners as possible in order to build a loyal listener base prior to reunification. Even though it has been stated that both Deutsche Welle and RBI will remain intact even after the rejoining of the two Germanys, one cannot help but assume that there is a bit of apprehensiveness in the halls of RBI.

So, maybe they can build up listenership, playing on our curiosity. It may work. Speaking of curiosity, I find it strange that Radio RSA canned all of its overseas transmissions. Some may find it refreshing, but others were shocked that a major international broadcaster would call it quits just when events were heating up - events which the station has focused upon for years.

One hopes that there will always be a world to hear about on the shortwaves. While some, like Radio RSA, are lost to the same bureaucratic mentality that supports most, others, like Radio For Peace International, come in to take their places amongst the crowded bands. (Minnie Visser, secretary at Radio RSA's now defunct Monitoring Panel Headquarters, says that overseas transmissions will most probably resume at some point in the future).

As for whether or not we will still be able to listen to the same old Radio Berlin International at this time next year, remember the old saying; promises made are promises forgotten. Remember Yalta?

-- Greg Jordan, Frequency Manager

frequency section

0030-0100	Radio Netherlands Int'l, Hilversum	6020 6165 15560
0035-0100	HCJB, Quito, Ecuador	15155 17875
0050-0100	Vatican Radio, Vatican City	6150 9605 11780

0100 UTC [9:00 PM EDT/6:00 PM PDT]

0100-0105	Vatican Radio, Vatican City	6150 9605 11780
0100-0115	All India Radio, New Delhi	9535 9910 11715 11745 15110
0100-0125	RAI, Rome, Italy	9575 11800
0100-0125	Radio Netherlands Int'l, Hilversum	6020 6165 15560
0100-0130	Radio Japan Americas Svc, Tokyo	17755
0100-0130	Radio Prague Int'l, Czechoslovakia	5930 7345 11680
0100-0130	CBC Northern Quebec Service, Can	9625 (ML)
0100-0130	Lao National Radio, Vientiane	7116v
0100-0130	Radio Sweden, Stockholm	15405
0100-0130	Kol Israel, Jerusalem	9435 15640 11605
0100-0130 MTWR	Radio Budapest, Hungary	6110 9520 9835 11910 15160
0100-0150	Deutsche Welle, Koln, West Germany	6040 6145 9565 15105 11865
0100-0200	Radio Moscow North American Svc	11710 11780 11850 12040 13605 15290 15315 15425
0100-0200	Radio Moscow World Service	15280 15480 15550 17730 17890 21525 21585 21690 21790
0100-0200	BBC World Service, London, England	5975 6005 6175 7325 9590 9915 11750 12095 15260 21715
0100-0200 S,M	Radio Canada Int'l, Montreal	13720 11940 11845 9755 9535
0100-0200	Radio New Zealand, Wellington	17680
0100-0200	SLBC Domestic Service, Sri Lanka	4940
0100-0200	CBN, St. John's, Nfld, Canada	6160
0100-0200	CBU, Vancouver, British Columbia	6160
0100-0200	CFCF, Montreal, Quebec, Canada	6005
0100-0200	CFCN, Calgary, Alberta, Canada	6030
0100-0200	CHNS, Halifax, Nova Scotia, Canada	6130
0100-0200	Christian Science World Svc, Boston	15435 9850 13760 9410
0100-0200	CKWX, Vancouver, British Columbia	6080
0100-0200	CFRB, Toronto, Ontario, Canada	6070
0100-0200	FEBC Radio Int'l, Philippines	15480
0100-0200	HCJB, Quito, Ecuador	17875 15155
0100-0200	KUSW, Salt Lake City, Utah	15580
0100-0200	Radio Australia, Melbourne	15240 15320 17600 17715 17750 17795 21740 21775
0100-0200	Radio Havana Cuba	11820
0100-0200	Radio Japan General Svc, Tokyo	17835 17810 17845 5960
0100-0200	Radio Luxembourg, Junglinster	6090
0100-0200	Radio for Peace Int'l, Costa Rica	7375 21566
0100-0200	Radio Tonga, Kingdom of Tonga	5030v
0100-0200	Spanish National Radio, Madrid	9630 11880
0100-0200	Voice of America-Americas Service	5995 9775 9815 11580 15205
0100-0200	Voice of America-Caribbean Service	6130 9455
0100-0200	Voice of America-East Asia Service	7115 7205 9740 11705 15205 21525
0100-0200	Voice of Indonesia, Jakarta	11755 11788
0100-0200	WHRI, Noblesville, Indiana	7315 9495
0100-0200	WINB, Red Lion, Pennsylvania	15145
0100-0200	WRNO Worldwide, Louisiana	7355
0100-0200	WWCR, Nashville, Tennessee	7520
0100-0200	WYFR, Okeechobee, Florida	5985 9550 11720 17612
0130-0200 M-A	Voice of Greece, Athens	11645 9395 9420
0130-0200	Radio Baghdad, Iraq	11830
0130-0200	Radio Austria International, Vienna	9870 9875 13730
0145-0200	Radio Berlin International, GDR	6080 11890 13610 13760 15240
0155-0200	Vatican Radio, Vatican City	15105 9645 11750

0200 UTC [10:00 PM EDT/7:00 PM PDT]

0200-0215	Vatican Radio, Vatican City	15105 9645 11750
0200-0220	Radio Veritas-Asia, Philippines	15220 15360
0200-0230	SLBC Domestic Service, Sri Lanka	4940
0200-0230 M-F	FEBC Radio Int'l, Philippines	15480
0200-0230 T-A	Voice of America	5995 9775 9815 11580 15205
0200-0230	Swiss Radio International, Berne	6095 6135 9725 9885 12035 17730
0200-0230	Radio Berlin International, GDR	6080 11890 13610 13760 15240
0200-0230	Radio Kiev, The Ukraine	11790 13645 15180 15455
0200-0250	Deutsche Welle, Koln, W. Germany	11835 7285 9615 9690 15235 11945 17770
0200-0250	Radio Bras, Brasilia, Brasil	11745
0200-0300	BBC World Service, London, England	5975 6005 6110 6175 7135 7325 9410 9590 9915 11750 12095 15260 15390 21715

LEGEND

* The first four digits of an entry are the broadcast start time in UTC. The second four digits represent the end time.
* In the space between the end time and the station name is the broadcast schedule.

S=Sunday M=Monday T=Tuesday W=Wednesday
H=Thursday F=Friday A=Saturday

If there is no entry, the broadcasts are heard daily. If, for example, there is an entry of "M," the broadcast would be heard only on Mondays. An entry of "M,W,F" would mean Mondays, Wednesdays and Fridays only. "M-F" would mean Mondays through Fridays. "TEN" indicates a tentative schedule and "TES" a test transmission.

The last entry on a line is the frequency. Several codes may be found after a frequency as follows:

* SSB indicates Single Sideband transmission.
* v after a frequency indicates that it varies
* Notations of USB and LSB (upper and lower sideband transmissions) usually refer only to the individual frequency after which they appear.
* [ML] after a frequency indicates a multi-lingual transmission containing English-language programs. All other frequencies may be assumed to be English language programs directed to various parts of the world.
* Listings followed by an asterisk (*) are for English lessons and do not contain regularly scheduled programming.

We suggest that you begin with the lower frequencies that a station is broadcasting on and work your way up the dial. Remember that there is no guarantee that a station will be audible on any given day. Reception conditions can change rapidly, though, and if it is not audible one night, it may well be on another.

HOW TO USE THE PROPAGATION CHARTS

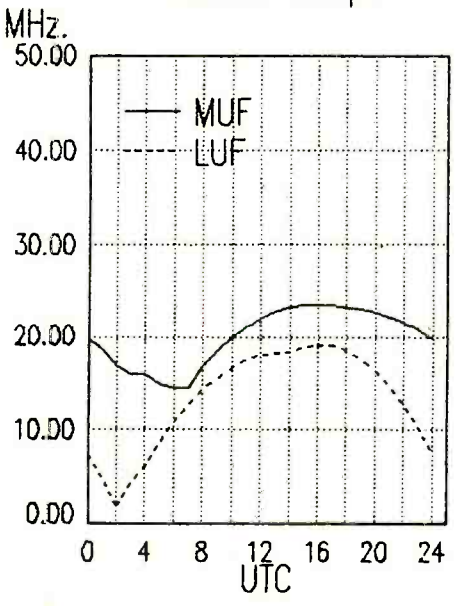
Propagation charts can be an invaluable aid to the DXer in determining which frequencies are likely to be open at a given time. To use the propagation charts, choose those for your location (they are divided into east coast, midwest and west coast of North America). Then look for the one most closely describing the geographic location of the station you want to hear.

Once you've located the correct charts, look along the horizontal axis of the graph for the time that you are listening. The top line of the graph shows the Maximum Useable Frequency [MUF] and the lower line the Lowest Useable Frequency [LUF] as indicated on the vertical axis of the graph.

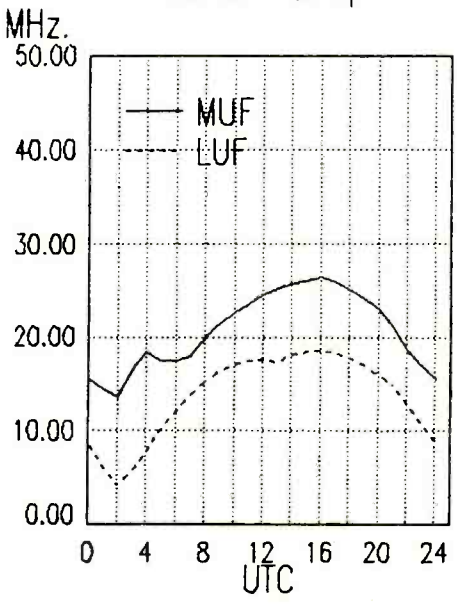
While there are exceptions to every rule (especially those regarding shortwave listening), you should find the charts helpful in determining the best times to listen for particular regions of the world. Good luck!

0200-0300	Adventist World Radio-Asia, Guam	13720
0200-0300	Radio Moscow North American Svc	11710 11780 11850 11980 12040 15290 15315 15425
0200-0300	Radio Moscow World Service	15280 15550 17730 17890 21625 21690 21790
0200-0300	CBC Northern Quebec Service, Can	9625 (ML)
0200-0300	CBN, St. John's, Newfoundland, Can	6160
0200-0300	CBU, Vancouver, British Columbia	6160
0200-0300	CFCF, Montreal, Quebec, Canada	6005
0200-0300	CFCN, Calgary, Alberta, Canada	6030
0200-0300	CHNS, Halifax, Nova Scotia, Canada	6130
0200-0300	Christian Science World Svc, Boston	9455 9850 13760
0200-0300	CKWX, Vancouver, British Columbia	6080
0200-0300	CFRB, Toronto, Ontario, Canada	6070
0200-0300	HCJB, Quito, Ecuador	15155 17875
0200-0300 T-S	KUSW, Salt Lake City, Utah	15580
0200-0300	Radio Australia, Melbourne	15240 15560 17750 17795 21740 21775 15320
0200-0300	Radio Baghdad, Iraq	11830
0200-0300 T-A	Radio For Peace Int'l, Costa Rica	21566
0200-0300 T-A	Radio Canada International, Montreal	9535 9755 11845 11940 13720
0200-0300	Radio Romania Int'l, Bucharest	5990 6155 9510 9570 11830 11940
0200-0300	Radio Cairo, Egypt	9475 9675
0200-0300	Radio Havana Cuba	9710 11820
0200-0300	Radio Luxembourg, Junglinster	6090
0200-0300	Radio Tonga, Kingdom of Tonga	5030v
0200-0300	Voice of America-South Asia Service	7115 7205 9740 11705 15160 15250 21525
0200-0300	Radio Cultura, Guatemala	3300
0200-0300	Radio New Zealand, Wellington	17680
0200-0300	Voice of Free China, Taiwan	5950 7445 9680
0200-0300	WHRI, Noblesville, Indiana	7315 9495
0200-0300	WRNO Worldwide, Louisiana	7355
0200-0300	WWCR, Nashville, Tennessee	7520
0200-0300	WINB, Red Lion, Pennsylvania	15145
0200-0300	WYFR, Okeechobee, Florida	6065 9505
0211-0230 IRR	Voice of the Democratic Alliance of Burma (clandestine: Thai/Burmese border)	7137v
0215-0225	Radio Nepal, Katmandu	5005 7165 (alt. 3230)
0230-0300 T-A	Radio Portugal, Lisbon	9600 9680 9705 11840
0230-0300	Radio Sweden, Stockholm	9695 11705
0230-0300	Radio Tirana, Albania	9500 11825

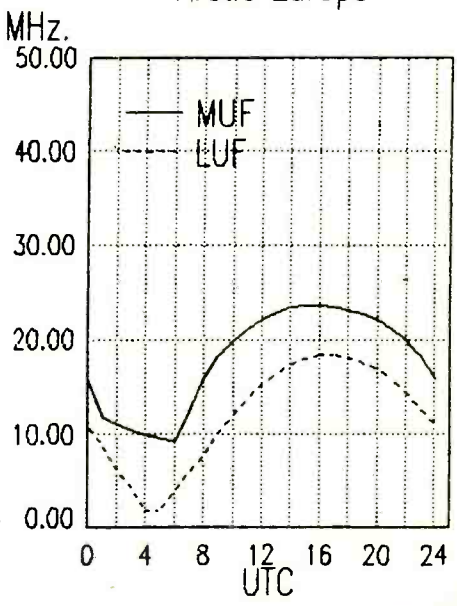
East Coast To Western Europe



East Coast To Eastern Europe



East Coast To Arctic Europe



East Coast

frequency section

0245-0300	Voice of Eelam (clandestine: Tamil rebels in Sri Lanka)	7000
0249-0257v	Radio Yerevan, Armenia	11675 11790 15180 13680 15455

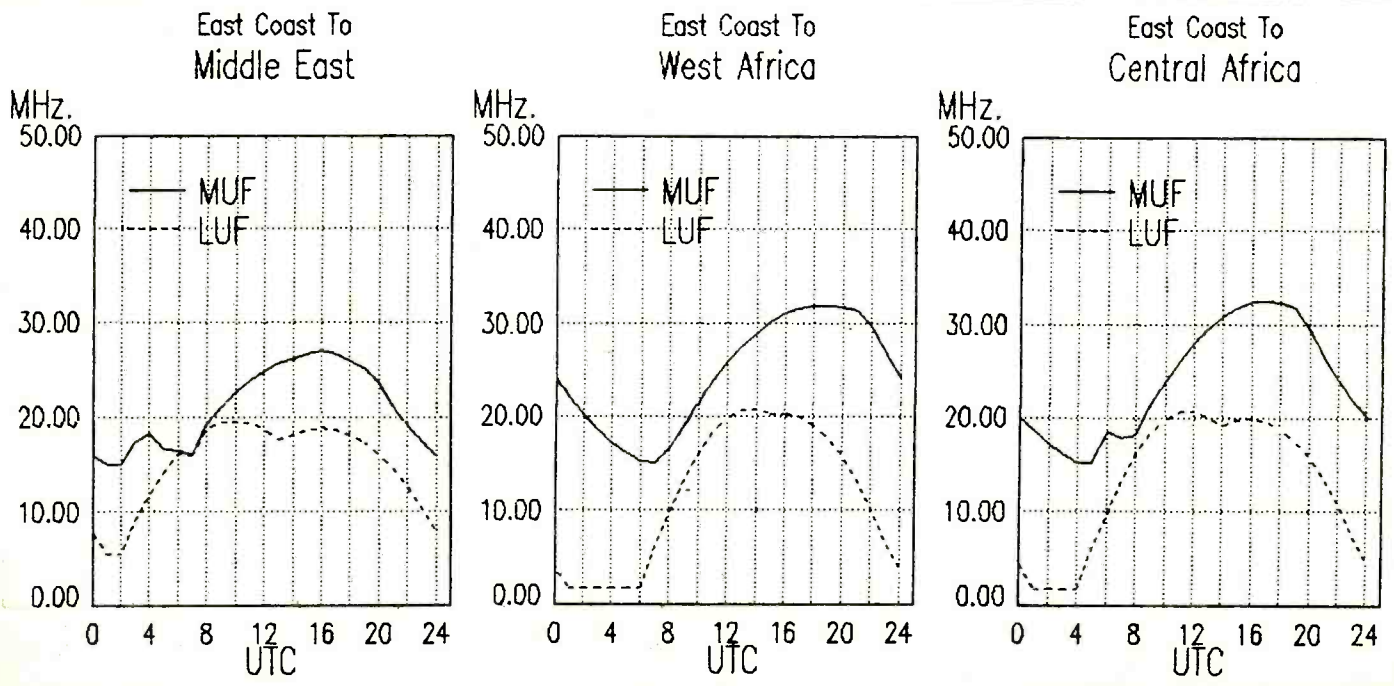
0300 UTC [11:00 PM EDT/8:00 PM PDT]

0300-0315	Azad Kashmir Radio, Pakistan	7286 4980 3665
0300-0330	Radio Cairo, Egypt	9475 9675
0300-0330	Radio Japan General Service, Tokyo	17835 17810 17765 9645
0300-0330	Radio Prague Int'l, Czechoslovakia	5930 7345 11680
0300-0330	Radio Japan Americas Svc, Tokyo	15195 17825 15325 21610
0300-0345	Radio Berlin International, GDR	11785 15125
0300-0350	Radio Baghdad, Iraq	11830
0300-0350	Deutsche Welle, Koln, West Germany	6085 6120 9545 15205 11810
0300-0355	Radio Beijing, China	9690 11655 11715 15100
0300-0400	Radio New Zealand	17680
0300-0400	BBC World Service, London, England	5975 6005 6175 6195 7135 7325 9410 9600 9915 11750 12095 15220 15260 15420 17705 21715
0300-0400	CBC, Northern Quebec Service, Can	9625 (ML)
0300-0400	Radio Moscow North American Svc	15180 15595 15425 15580 13605
0300-0400	Radio Moscow World Service	11630 11675 11710 11780 11850 11980 12040 15230 15280 15315 15320 15480 15540 15550 17560 17600 17730 17860 21585 21625 21690 21790
0300-0400	Radio Sofia, Bulgaria	15290 15310 11720 11765 11735 7255
0300-0400	Voice of Turkey, Ankara	9445 17880
0300-0400	CBN, St. John's, Newfoundland, Can	6160
0300-0400	CBU, Vancouver, British Columbia	6160
0300-0400	CFCF, Montreal, Quebec, Canada	6005
0300-0400	CFCN, Calgary, Alberta, Canada	6030
0300-0400	CHNS, Halifax, Nova Scotia, Canada	6130
0300-0400	Christian Science World Svc, Boston	9455 9850 13760
0300-0400	CKWX, Vancouver, British Columbia	6080
0300-0400	CFRB, Toronto, Ontario, Canada	6070
0300-0400	Faro del Caribe,San Jose,Costa Rica	5055
0300-0400	HCJB, Quito, Ecuador	17875 15155
0300-0400 T-S	KUSW, Salt Lake City, Utah	9815
0300-0400	Radio 5, Johannesburg, South Africa	4880
0300-0400	Radio Australia, Melbourne	15240 15320 15560 17795 21740 21775
0300-0400	Radio Cultural, Guatemala	3300
0300-0400	Radio Havana Cuba	9710 11820
0300-0400	Radio Oranje, South Africa	3215
0300-0400	Trans World Radio, Bonaire	9535 11930
0300-0400	Voice of America-Africa Service	6035 7170 7280 9525 9575 11835
0300-0400	Voice of Free China, Taiwan	5950 7445 9680 9765 11745 15345
0300-0400	WHRI, Noblesville, Indiana	7315 9495
0300-0400	WRNO Worldwide, Louisiana	6185
0300-0400	WWCR, Nashville, Tennessee	7520
0300-0400	WYFR, Okeechobee, Florida	6065 9505 15440
0310-0325	Vatican Radio, Vatican City	11725
0310-0327	Red Cross Bcasting, Switzerland	6135 9725 9885 12035
	Tuesday and Friday after last Sunday of the month.	
0315-0330	Radio for Peace Int'l, Costa Rica	7375 USB
0315-0345	Radio France International, Paris	7135 7175 7280 9550 9745 9790 9800 11705 11995 15135 15155
0330-0340	All India Radio, New Delhi	3905 4860 9610 11830 11870 11890 15305
0330-0400	Radio Netherlands Int'l, Hilversum	9590 6165
0330-0400	Radio Tirana, Albania	9500 11825
0330-0400	United Arab Emirates Radio, Dubai	11940 13675 15400 15435
0330-0400	Radio Japan General Service, Tokyo	17835 17810 17765
0340-0350 M-A	Voice of Greece, Athens	11645 9395 9420
0345-0400	Radio Berlin Int'l, GDR	11890 13760
0350-0400	RAI, Rome, Italy	11905 15330 17795 17690 17665

0400 UTC [12:00 AM EDT/9:00 PM PDT]

0400-0410 M-F	Radio Zambia, Lusaka	4910
0400-0410	RAI, Rome, Italy	11905 15330 17795
0400-0415	Radio Prague Int'l, Czechoslovakia	5930 7345 11680
0400-0415	Kol Israel, Jerusalem	9435 11605 11655 12077 15640 17575
0400-0425	Radio Cultural, Guatemala	3300
0400-0425	Radio Netherlands Int'l, Hilversum	9590 6165
0400-0430	Radio Berlin Int'l, GDR	11890 13760
0400-0430	Radio Romania Int'l, Bucharest	5990 9510 9570 11830 11940 6155

East Coast

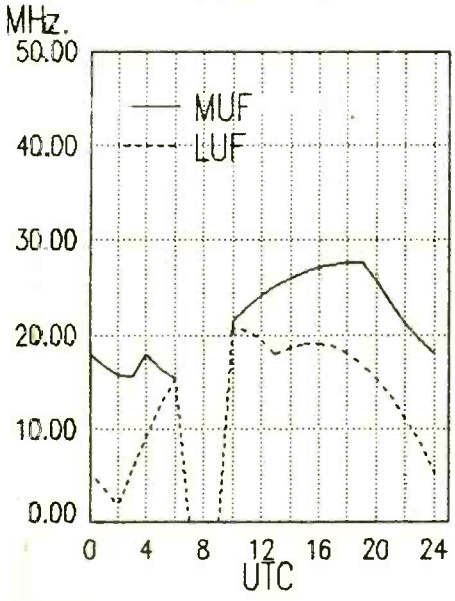


0400-0430	Swiss Radio International, Berne	6135 9725 9885 12035
0400-0430	Trans World Radio, Bonaire	11930 9535
0400-0450	Deutsche Welle, Koln, West Germany	7225 7150 9765 9565 11765 15265
0400-0450	Radio Pyongyang, North Korea	13650 15180 17765
0400-0455	Radio Beijing, China	11685 11840
0400-0500	Voice of America-Africa Service	6025 6035 7280 9525 9575 11835 11785 6025
0400-0500	Radio Moscow North American Svc	15180 15595 15425 15455 13605
0400-0500	BBC World Service, London, England	5975 6005 6195 7105 7120 9410 9580 9600 9610 9670 9915 12095 15070 17885 21715
0400-0500	Radio Moscow World Service	11630 11675 11850 11980 12040 15230 15280 15315 15320 15480 15550 17560 17600 17635 17730 17890 21585 21625 21630 21690 21790
0400-0500	Radio New Zealand	17680
		0400-0500
	CBC, Northern Quebec Service	9625 (ML)
0400-0500	Radio for Peace Int., Costa Rica	7375 USB
0400-0500	CBN, St. John's, Newfoundland, Can	6160
0400-0500	CBU, Vancouver, British Columbia	6160
0400-0500	CFCF, Montreal, Quebec, Canada	6005
0400-0500	CFCN, Calgary, Alberta, Canada	6030
0400-0500	CHNS, Halifax, Nova Scotia, Canada	6130
0400-0500	Christian Science World Svc, Boston	9455 9840 13760 17780
0400-0500	CKWX, Vancouver, British Columbia	6080
0400-0500	CFRB, Toronto, Ontario, Canada	6070
0400-0500	HCJB, Quito, Ecuador	17875 15155
0400-0500	KUSW, Salt Lake City, Utah	9815
0400-0500	Radio 5, Johannesburg, South Africa	4880
0400-0500	Radio Australia, Melbourne	15160 15240 15320 15560 17750 17795 21525 21740 21775
0400-0500	Radio Havana Cuba	9750 9710 11760 11820
0400-0500	Radio Oranje, South Africa	3215
0400-0500 M-A	WMLK Bethel, Pennsylvania	9465
0400-0500	Radio Tonga, Kingdom of Tonga	5030v
0400-0500	Voice of America-Middle East Service	3980 5995 6040 6140 7170 7200 11785 15205
0400-0500	Radio Canada International	15275
0400-0500	WHRI, Noblesville, Indiana	7315 9495
0400-0500	WRNO Worldwide, Louisiana	6185
0400-0500	WWCR, Nashville, Tennessee	7520
0400-0500	WYFR, Okeechobee, Florida	6065 9505
0425-0440	RAI, Rome, Italy	5990 7275
0430-0500	Radio for Peace Int'l, Costa Rica	7375
0430-0500	Radio Tirana, Albania	9500 11835
0455-0500	Voice of Nigeria, Lagos	7255

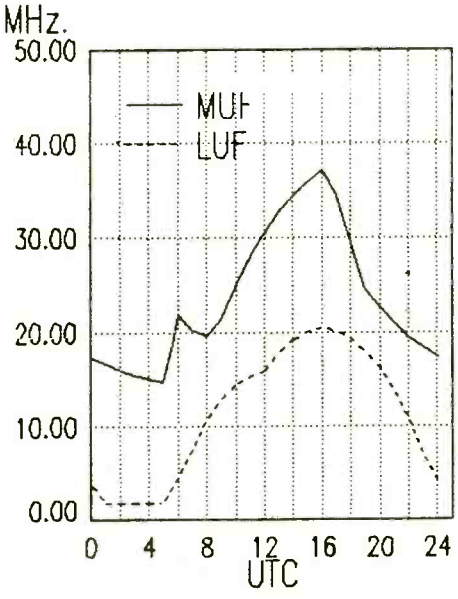
0500 UTC [1:00 AM EDT/10:00 PM PDT]

0500-0505	Radio Oranje, South Africa	3215 17630
0500-0515 M-F	Radio Canada International, Montreal	6050 6150 7295 9750 11775 17840
0500-0515	Azad Kashmir Radio, Pakistan	7268 4980 3665
0500-0520	Radio 5, Johannesburg, South Africa	4880
0500-0530	Vatican Radio African Service	17710 17730 21650
0500-0530	Voice of America-Middle East Service	5995 6060 6140 7170 7200 9670 9700 9740 11925 15205
0500-0545	Radio Berlin International, GDR	5965 6115 9645 13610 9760
0500-0550	Deutsche Welle, Koln, West Germany	5960 6120 9670 11705 11845 6180
0500-0555	Radio Beijing, China	11840
0500-0600	Radio Kuwait	15345
0500-0600	BBC World Service, London, England	5975 6195 7120 7230 9410 9640 9915 12095 15070 17740 17884 21470 21715
0500-0600	CBU, Vancouver, British Columbia	6160
0500-0600	Radio Jordan, Amman	13655
0500-0600	CFCF, Montreal, Quebec, Canada	6005
0500-0600	CFCN, Calgary, Alberta, Canada	6030
0500-0600	CHNS, Halifax, Nova Scotia, Canada	6130
0500-0600 M-A	WMLK Bethel, Pennsylvania	9465
0500-0600	Christian Science World Svc, Boston	9455 9840 13760 17780
0500-0600	Radio Moscow North American Svc	12050 13605 15180 15425 17605
0500-0600	Radio Moscow World Service	11630 11675 11980 15230 15320 21690 21790
0500-0600	Radio New Zealand, Wellington	17680
0500-0600	CKWX, Vancouver, British Columbia	6080
0500-0600	CFRB, Toronto, Ontario, Canada	6070

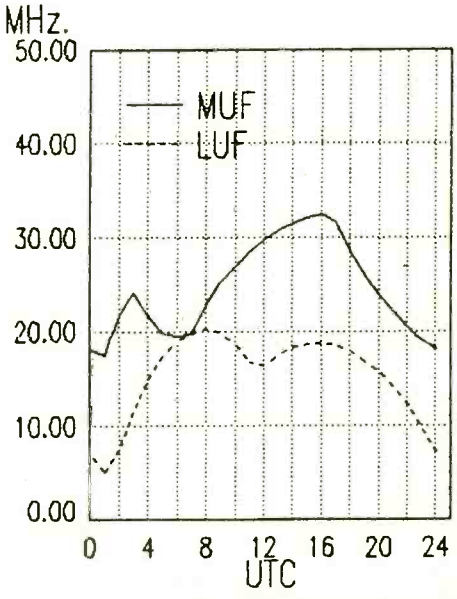
East Coast To East Africa



East Coast To South Africa



East Coast To Indian Ocean



East Coast

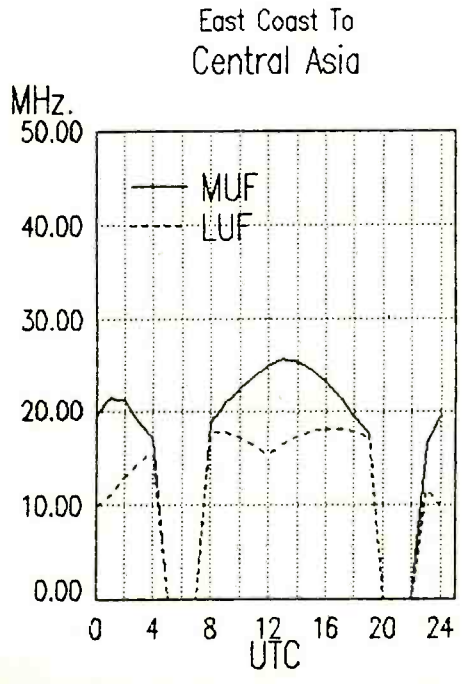
frequency section

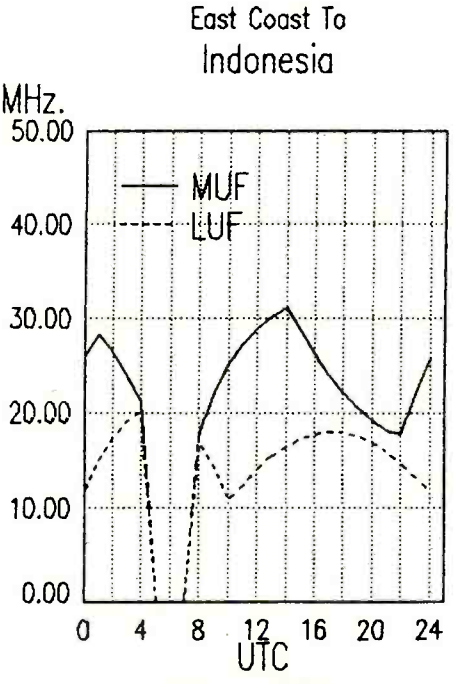
0500-0600	HCJB, Quito, Ecuador	15155	17875		
0500-0600	Radio Australia, Melbourne	15160	15240	15320	15560
		17750	17795	21525	21740
		21775			
0500-0600	Radio Havana Cuba	9710	11760	11820	9750
0500-0600	Radio Japan General Service, Tokyo	17765	17810	17825	17890
		15195			
0500-0600	Radio for Peace Int., Costa Rica	7375	USB		
0500-0600	Radio Tonga, Kingdom of Tonga	5030v			
0500-0600	Spanish National Radio, Madrid	9630			
0500-0600	Voice of America-Africa Service	3990	6035	7280	9540
		9575			
0500-0600	Voice of America-Middle East Service	3980	5995	6040	6060
		7170	7200	11785	15205
0500-0600	Voice of Hope via KFBS, Guam	15225			
0500-0600	Voice of Nigeria, Lagos	7255			
0500-0600	WHRI, Noblesville, Indiana	7315	9495		
0500-0600	WWCR, Nashville, Tennessee	7520			
0500-0600	WYFR, Okeechobee, Florida	5985	11580	17640	15566
0510-0600	Radio Oranje, South Africa	7285			
0525-0600	Radio 5, Johannesburg, South Africa	11885			
0530-0600	Radio Austria International, Vienna	6015			
0530-0600	Radio Romania Int'l, Bucharest	15380	17720	17745	
0530-0600	UAE Radio Dubai	15435	17830	21700	
0545-0600	Radio Berlin Int'l, GDR	13610	13690		
0545-0600	Radio Berlin Int'l, GDR	21540			
0555-0600	Voice of Malaysia, Kuala Lumpur	6175	9750	15295	

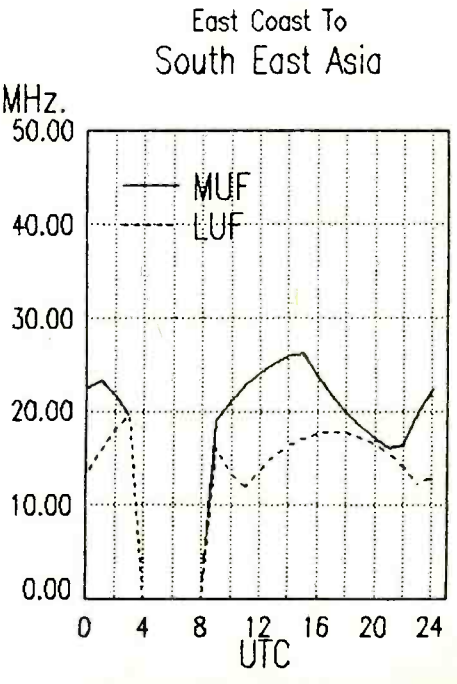
0600 UTC [2:00 AM EDT/11:00 PM PDT]

0610-0615	Sierra Leone Brdcstng.Svc.,Freetown	3316			
0600-0630	Radio Berlin Int'l, GDR	13610	13690		
0600-0630	Radio Berlin Int'l, GDR	21540			
0600-0630	Laotian National Radio	7116v			
0600-0630 S	Radio Norway International, Oslo	15165			
0600-0645v	Radio For Peace, Int., Costa Rica	7375	USB		
0600-0650	Deutsche Welle, Koln, W. Germany	11765	13790	15185	17875
0600-0650	CBU, Vancouver, British Columbia	6160			
0600-0700	Radio Pyongyang, North Korea	15180	13650		
0600-0700	Radio Australia, Melbourne	15240	13700	15465	21525
		21775			
0600-0700	BBC World Service, London, England	5975	6180	6195	7120
		7150	9410	9580	9600
		9640	12095	15070	15245
		15280	15400	15420	17640
		17710	17790	17885	21470
		21715			
0600-0700	CFCF, Montreal, Quebec, Canada	6005			
0600-0700	SIBC Solomon Islands	9545	5020		
0600-0700	Radio New Zealand, Wellington	17680			
0600-0700	Radio 5, South Africa	11885			
0600-0700	WYFR, Okeechobee, Florida	5985	6065	7355	11580
		15566	17640		
0600-0700	ABC Domestic Network, Australia	15425			
0600-0700 M-A	WMLK Bethel, Pennsylvania	9465			
0600-0700	CFCN, Calgary, Alberta, Canada	6030			
0600-0700	CHNS, Halifax, Nova Scotia, Canada	6130			
0600-0700	Christian Science World Svc, Boston	9455	9840	11980	17780
		17855			
0600-0700	CKWX, Vancouver, British Columbia	6080			
0600-0700	CFRB, Toronto, Ontario, Canada	6070			
0600-0700	Radio Moscow North American Svc.	12050	13605	15180	15425
		15595	17605		
0600-0700	Radio Moscow World Service	11980	15375	15520	15585
		21625	21690	21725	21790
Note: Transmission on 15375kHz begins now and continues through 1859 UTC.					
0600-0700	Voice of the Mediterranean, Malta	9765			
0600-0700	HCJB, Quito, Ecuador	15155	17875		
0600-0700	KUSW, Salt Lake City, Utah	6175			
0600-0700	Radio Jordan, Amman	13655			
0600-0700	ABC Brisbane, Australia	9660			
0600-0700	Radio Tonga, Kingdom of Tonga	5030v			
0600-0700	Voice of America-Africa Service	3990	6035	6080	6125
		7280	9530	9540	9575
		11915			
0600-0700	Voice of America-Middle East Serv	3980	5965	5995	6060
		6095	6140	7170	7200
		7325	9715	11785	11805
		11925	15195	15205	
0600-0700	Radio Havana Cuba	11835			
0600-0700	WHRI, South Bend, Indiana	9495	9370		
0600-0700	Voice of Hope, Lebanon	6280			
0600-0700 TP	Voice of Hope via KFBS, Guam	15225			
0600-0700	Voice of Malaysia, Kuala Lumpur	6175	9750	15295	
0600-0700	Radio Korea, Seoul	7275			
0630-0700	Radio Sofia, Bulgaria	11720	15160	17820	
0630-0700	Radio Finland, Helsinki	11755	9560	6120	
0630-0700	Vatican Radio African Service	17710	17730	21650	
0630-0700	BRT. Brussells, Belgium	13675	11695		

East Coast







0630-0700		Radio Tirana, Albania	9500	7205		
0630-0700		Radio Polonia, Warsaw, Poland	6135	7270	15120	9675
0630-0700		Swiss Radio International, Berne	15430	17570	21770	
0645-0700	A	Radio for Peace Int., Costa Rica	7375	USB		
0645-0700		GBC Radio, Accra, Ghana	6130			
0645-0700		HCJB, Quito, Ecuador	9610	11835	(alt 6050)	
0645-0700		Radio Romania Int'l, Bucharest	9670	11840	11940	15250
			15335	17720	17805	21550

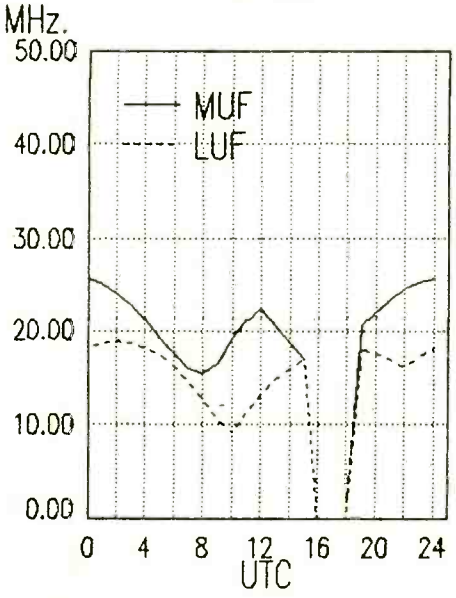
0700 UTC [3:00 AM EDT/12:00 AM PDT]

0700-0710		Sierra Leone Brdcstng.Svc.,Freetown	3316			
0700-0715		Radio Bucharest, Romania	9670	11840	11940	15250
			15335	17720	17805	21550
0700-0725		BRT Brussels, Belgium	21815	11695	6035	
0700-0730		Radio Tirana, Albania	11835	9500		
0700-0750		Radio Pyongyang, North Korea	15340	11335		
0700-0800	A	Radio for Peace Int'l, Costa Rica	7375	USB		
0700-0800		Voice of Hope, Lebanon	6280			
0700-0800		CBU, Vancouver, British Columbia	6160			
0700-0800		TWR Monte Carlo	9480			
0700-0800		Radio Havana Cuba	11835			
0700-0800		WYFR, Okeechobee, Florida	15566	7355	6065	13760
0700-0800		ZBC-1, Zimbabwe	7283			
0700-0800		Radio New Zealand	17680			
0700-0800		Radio Australia, Melbourne	9655	13700	15160	15240
0700-0800		BBC World Service, London	5975	7150	9410	9600
			9640	9760	11940	12095
			15070	15280	15360	15400
			21715			
0700-0800		Solomon Islands Broadcasting Co.	5020	9545		
0700-0800		Voice of Free China, Taiwan	5950			
0700-0800		United Nations Radio via Italian Radio Relay Service, Milan, Italy	9860			
0700-0800		WHRI Noblesville, Indiana	9370	9495	9620	
0700-0800		ABC Brisbane, Australia	9660			
0700-0800		CFCF, Montreal, Quebec, Canada	6005			
0700-0800		CFCN, Calgary, Alberta, Canada	6030			
0700-0800		CHNS, Halifax, Nova Scotia, Canada	6130			
0700-0800		Christian Science World Svc, Boston	9455	9840	11980	17780
			17855			
0700-0800		Radio Moscow World Service	11950	15375	15585	17570
			17690	21690	21790	
0700-0800		CKWX, Vancouver, British Columbia	6080			
0700-0800		CFRB, Toronto, Ontario, Canada	6070			
0700-0800		GBC Radio, Accra, Ghana	6130			
0700-0800		HCJB, Quito, Ecuador	9610	11835	15270	
0700-0800		KNLS, Anchor Point, Alaska	9785			
0700-0800		Radio Japan, Tokyo	21500	17765	17810	17890
			21690			
0700-0800		Radio Jordan, Amman	13655			
0700-0800		Radio Tonga, Kingdom of Tonga	5030v			
0700-0800	TP	Voice of Hope via KFBS, Guam	15225			
0700-0800		Voice of Malaysia, Kuala Lumpur	6175	9750	15295	
0710-0800		HCJB, Quito,Ecuador(S. Pacific Sv.)	6130	9745	11925	
0715-0730		BBC English by Radio, London	11860	15105		
0715-0730		Vatican Radio, Vatican City	15190	17730		
0715-0800	S	FEBA, Mahe, Seychelles	15275	17820		
0730-0733		Radio Prague, Czechoslovakia	9505	7345	6055	
0730-0800		ABC, Alice Springs, Australia	2310	(ML)		
0730-0800		ABC, Katherine, Australia	2485			
0730-0800		ABC, Tennant Creek, Australia	2325	(ML)		
0730-0800		Radio Austria Int'l, Vienna	21490	15410	13730	6155
0730-0800		HCJB Quito, Ecuador	9745	11925		
0730-0800		Radio Netherlands, Hilversum	9630	9715		
0730-0800		Swiss Radio Int'l European Service	3985	6165	9535	
0737-0741v		Radio Pacific Ocean, Vladivostok	9670	9780	9810	12040
			12070	15425	17605	17645
			17695			

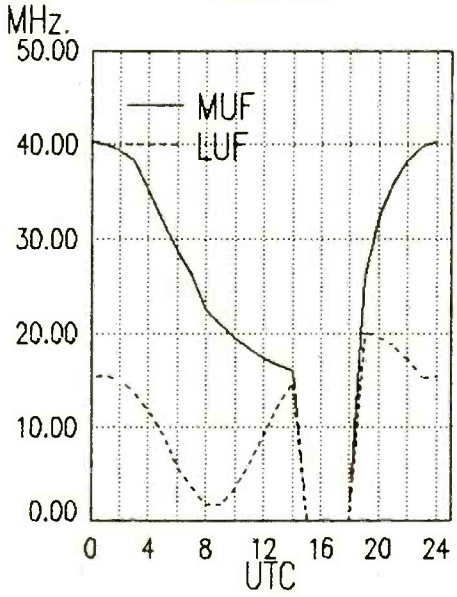
0800 UTC [4:00 AM EDT/ 1:00 AM PDT]

0800-0810		Sierra Leone Brdcstng Co., Freetown	3316			
0800-0825		BRT Brussels, Belgium	9925			
0800-0825		Radio Netherlands Int'l, Hilversum	9630	9715		
0800-0825		Voice of Malaysia, Kuala Lumpur	6175	9750	15295	
0800-0825		Radio Finland, Helsinki	17800	21550		
0800-0830	S	Radio Norway International, Oslo	15165	25730		
0800-0830		Voice of Islam, Dhaka, Bangladesh	15195	11705		
0800-0850		Radio Pyongyang, North Korea	15180	15160	11830	
0800-0900		Radio New Zealand, Wellington	17680			
0800-0900		Radio Moscow World Service	15375	15585	17570	21690
			21790			
0800-0900		Radio Australia, Melbourne	6020	9580	9655	9710
			17750	17795	21525	
0800-0900		Trans World Radio, Monte Carlo	9480			
0800-0900		ABC Brisbane, Australia	9660			

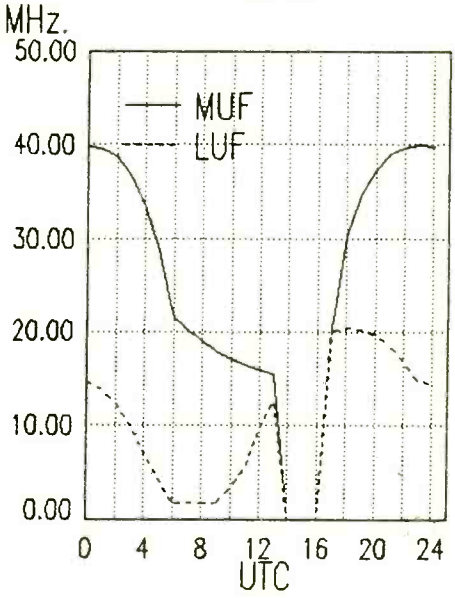
East Coast To Far East



East Coast To Australia



East Coast To Pacific



East Coast

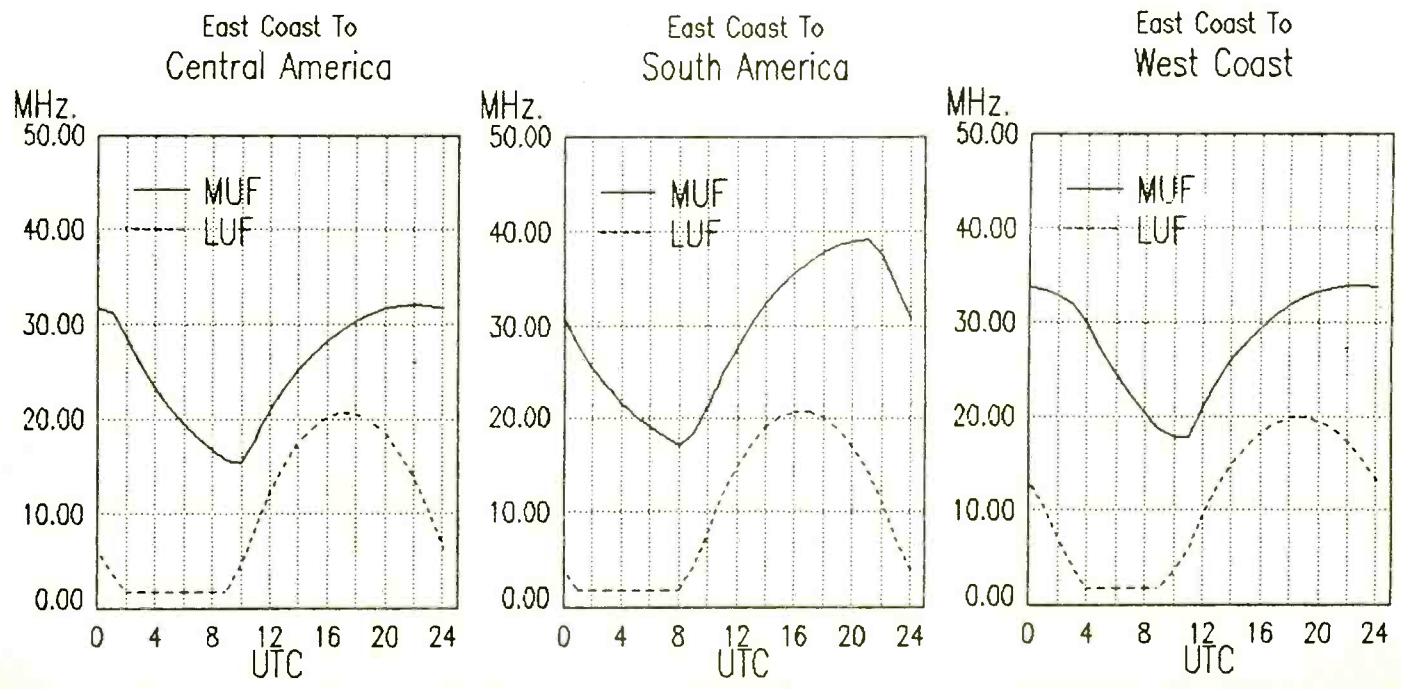
frequency section

0800-0900		BBC, London	15280	9640	12095	15070
			15360	21715	15400	9410
			21660			
0800-0900		ABC, Alice Springs, Australia	2310	(ML)		
0800-0900		ABC, Katherine, Australia	2485			
0800-0900		ABC, Perth, Australia	15425			
0800-0900		ABC, Tennant Creek, Australia	2325	(ML)		
0800-0900	A	Radio for Peace Int., Costa Rica	7375	USB		
0800-0900		Voice of Hope, Lebanon	6280			
0800-0900		CBN, St. John's, Newfoundland, Can	6160			
0800-0900		CBU, Vancouver, British Columbia	6160			
0800-0900		CFCF, Montreal, Quebec, Canada	6005			
0800-0900		CFCN, Calgary, Alberta, Canada	6030			
0800-0900		CHNS, Halifax, Nova Scotia, Canada	6130			
0800-0900		Christian Science World Svc	9455	9530	9840	11705
			13760	17855		
0800-0900		CKWX, Vancouver, British Columbia	6080			
0800-0900		CFRB, Toronto, Ontario, Canada	6070			
0800-0900		HCJB,Quito,Ecuador(alt.S.Pac.Svc.)	6130	9610	11835	
0800-0900		HCJB, Quito, Ecuador(S.Pacific Sv)	9745	11925	15270	
0800-0900		KNLS, Anchor Point, Alaska	11715			
0800-0900		Solomon Islands Broadcasting Co.	5020			
0800-0900		WHRI. South Bend, Indiana	7355			
0800-0900		KUSW, Salt Lake City, Utah	6135			
0800-0900		Radio Jordan, Amman	13655			
0800-0900		Radio Tonga, Kingdom of Tonga	5030v			
0800-0900		Voice of Indonesia, Jakarta	11755	11788		
0800-0900		Voice of Nigeria, Lagos	7255			
0800-0900	S	WRNO Worldwide, Louisiana	6185			
0810-0820		Bayerischer Rundfunk, Munich	6085			
0830-0833		Radio Prague, Czechoslovakia	9505	7345	6055	
0830-0855	M-A	Radio Netherlands Int'l, Hilversum	17575	21485	9770	
0830-0900		KTWR, Anana Guam	11810			
0830-0900		Radio Beijing, China	11755	15440	17710	
0830-0900		Radio Netherlands Int'l, Hilversum	17575	21485		
0830-0900		Radio Finland, Helsinki	21550	17800		
0830-0900		Swiss Radio International, Berne	9560	13685	17670	21695
0845-0900		KTWR, Agana, Guam	15210			
0850-0900		All India Radio, New Delhi	5960	5990	6010	6020
			6050	6065	6100	6140
			7110	7140	7150	7160
			7250	7280	7295	9610
			11850	15235	15250	17705

0900 UTC [5:00 AM EDT/2:00 AM PDT]

0900-0915		Radio Budapest, Hungary	15160	15220	11925	9835
			9585	6110		
0900-0920		ABC, Perth, Australia	15425			
0900-0925		BRT Brussels, Belgium	21810	26050		
0900-0925		Radio Netherlands Int'l, Hilversum	17575	21485		
0900-0930		KTWR Agana Guam	15210			
0900-0930		Radio Beijing, China	11755	15440	17710	
0900-0930	S	Radio Norway International, Oslo	17840			
0900-0945		Radio Berlin International, GDR	11890			
0900-0950		Deutsche Welle, Koln, West Germany	6160	9565	15410	11740
			17780	17820	21600	21650
			21680			
0900-1000		ABC, Alice Springs, Australia	2310	(ML)		
0900-1000		ABC Brisbane, Australia	9660			
0900-1000		Solomon Islands Broadcasting Co.	5020			
0900-1000		Radio Moscow World Service	15375	15585	21690	21725
			21790			
0900-1000		ABC, Katherine, Australia	2485			
0900-1000		ABC, Tennant Creek, Australia	2325	(ML)		
0900-1000	S	Adventist World Radio, Portugal	9670			
0900-1000	A	Radio for Peace Int., Costa Rica	7375	USB		
0900-1000		KTWR, Agana, Guam	11805			
0900-1000		Radio Australia, Melbourne	9580	9655	9760	11720
			15415	17715	11930	
			15160	15240		
0900-1000		Radio New Zealand, Wellington	17680			
0900-1000	S	Radio Bhutan, Thimpu	5023v			
0900-1000		Voive of Hope, Lebanon	6280			
0900-1000		BBC World Service, London, England	5975	9740	11750	12095
			15070	15190	15360	15400
			17640	17705	17790	17885
			21470	21660	21715	
0900-1000		CFCF, Montreal, Quebec, Canada	6005			
0900-1000		CFCN, Calgary, Alberta, Canada	6030			
0900-1000		CHNS, Halifax, Nova Scotia, Canada	6130			
0900-1000		Christian Science World Svc, Boston	9455	9530	9840	11705
			13760	17855		
0900-1000		CKWX, Vancouver, British Columbia	6080			
0900-1000		CFRB, Toronto, Ontario, Canada	6070			
0900-1000		FEBC Radio Int'l, Philippines	9800	11850		
0900-1000		HCJB, Quito,Ecuador(alt. S.Pac.Sv.)	6130			
0900-1000		HCJB, Quito,Ecuador(S.Pac.Serv.)	9745	11925		

East Coast



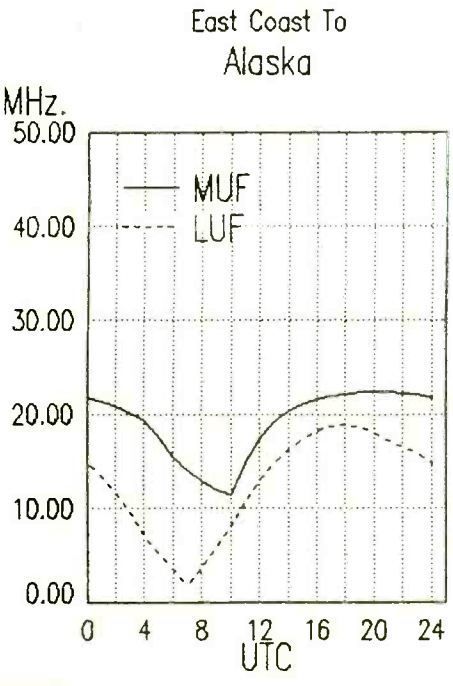
0900-1000	KUSW, Salt Lake City, Utah	6135				
0900-1000	Radio Japan Australian Svc., Tokyo	17890	15270			
0900-1000	Radio Japan General Service, Tokyo	17810				
0900-1000	Radio Jordan, Amman	13655				
0900-1000	Radio Metro, Johannesburg,S.Africa	11805				
0900-1000	Radio Tonga, Kingdom of Tonga	5030v				
0900-1000	Voice of Nigeria, Lagos	7255				
0900-1000	WHRI, Noblesville, Indiana	7355	9495			
0910-0940	MWHAS Radio Ulan Bator, Mongolia	11850	12015			
0920-1000	ABC, Perth, Australia	6140				
0930-1045	Radio Budapest, Hungary	15160	15220	11925	9835	
		9585	6110			
0930-1000	Radio Afghanistan, Kabul	17720	15250	4940	6085	
		9635				
0930-0955	RRI Surabaya, Jawa Timur, Indonesia	2377				
0930-1000	CBN, St. John's, New Foundland	6160				
0930-1000	KTWR, Agana, Guam	11805				
0930-1000	Radio Beijing, China	11755	15440	17710		
0945-0948	Radio Prague, Czechoslovakia	9505	7345	6055		
0945-1000	Radio Budapest, Hungary	7220	9585	9835	11910	
		11925	15160	15220		

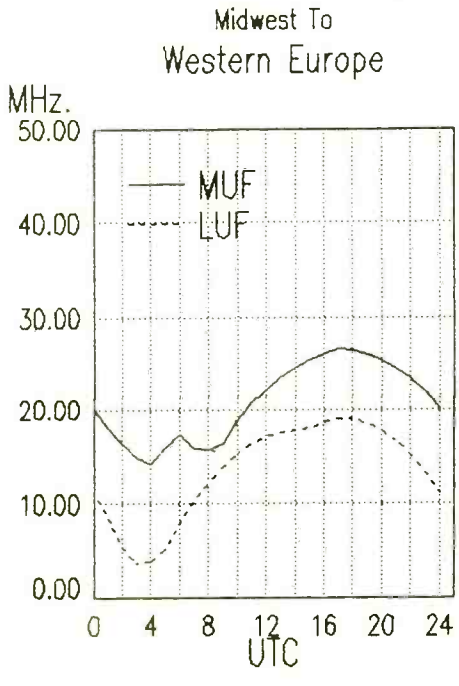
1000 UTC [6:00 AM EDT/3:00 AM PDT]

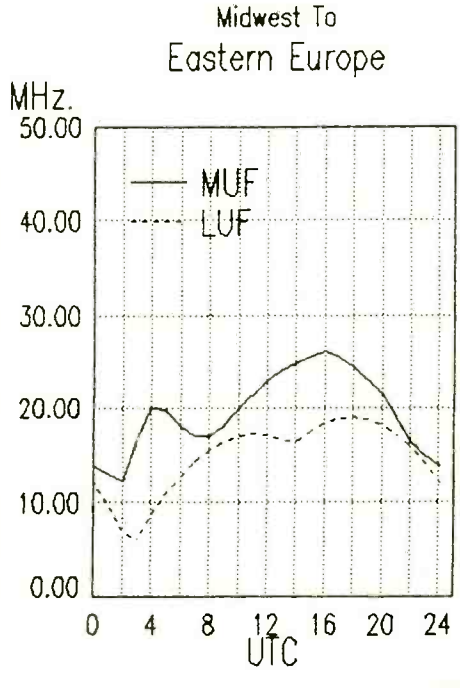
1000-1015	KTWR, Agana, Guam	11805				
1000-1030	Radio Afghanistan, Kabul	17720	15250	4940	6085	
		9635				
1000-1030 A	Radio for Peace Int., Costa Rica	7375	USB			
1000-1030	Kol Israel, Jerusalem	11585	15485	15650	17575	
		17590	21745	21780		
1000-1030	Voice of Vietnam, Hanoi	12015	15010	9840		
1000-1030	Radio Beijing, China	11755	15440	17710		
1000-1030	Swiss Radio International, Berne	9560	13685	17670	21695	
1000-1100	Radio Australia, Melbourne	9580	9655	15415		
1000-1100	Radio New Zealand, Wellington	9855	17680			
1000-1100	ABC, Alice Springs, Australia	2310	(ML)			
1000-1100	ABC, Katherine, Australia	2485				
1000-1100	Solomon Islands Broadcasting Co.	5020				
1000-1100	ABC, Perth, Australia	9610				
1000-1100	ABC, Tennant Creek, Australia	2325	(ML)			
1000-1100	Adventist World Radio-Asia, Guam	13720				
1000-1100	Radio Moscow World Service	11840	15375	21690	21790	
1000-1100	All India Radio, New Delhi	17685	17387	15050	15335	
		21735				
1000-1100	BBC World Service, London, England	9410	9740	9750	12095	
		15070	15190	15360	15420	
		17705	17790	17885		
1000-1100	CBN, St. John's, Nfld, Canada	6160				
1000-1100	CFCF, Montreal, Quebec Canada	6005				
1000-1100	CFCN, Calgary, Alberta, Canada	6030				
1000-1100	CHNS, Halifax, Nova Scotia, Canada	6130				
1000-1100	Christian Science World Svc, Boston	9455	9495	9530	15115	
1000-1100	CKWX, Vancouver, British Columbia	6080				
1000-1100	CFRB, Toronto, Ontario, Canada	6070				
1000-1100	FEBC Radio Int'l, Philippines	11850	9800			
1000-1100	ABC Brisbane, Australia	9660				
1000-1100	WYFR, Okeechobee, Florida	5950				
1000-1100	HCJB, Quito, Ecuador	9745	11925			
1000-1100	KTWR, Agana, Guam	11805				
1000-1100	KUSW, Salt Lake City, Utah	6135				
1000-1100	Radio Jordan, Amman	13655				
1000-1100	Radio Metro, Johannesburg,S.Africa	11805				
1000-1100	Voice of America-Caribbean Service	9590	11915			
1000-1100	Voice of America-Pacific Service	5985	11720	15425		
1030-1045	Radio Budapest, Hungary	15190	6110	9835	15160	
		15220				
1030-1100	Radio Austria Int'l, Vienna	15450	21490			
1030-1100	Radio Korea, Seoul	11715				
1030-1100	Adventist World Radio, Forli, Italy	7230				
1045-1049	Radio Prague, Czechoslovakia	9505	7345	6055		
1050-1100	Radio Finland, Helsinki	15400	21550			
1030-1100	Radio Netherlands Int'l, Hilversum	6020	11890			

1100 UTC [7:00 AM EDT/4:00 AM PDT]

1100-1115	Azad Kashmir Radio, Pakistan	7268	4980	3665	
1100-1115	Radio Pakistan	21575	17555		
1100-1115	Radio Finland, Helsinki	15400	21550		
1100-1125	HCJB Quito, Ecuador	11925	9745		
1100-1125	Radio Netherlands Int'l, Hilversum	6020	11890		
1100-1130	Solomon Islands Broadcasting Co.	5020			
1100-1130	Radio Mozambique, Maputo	11835	11818	9525	
1100-1130	Voice of the Democratic Alliance of Burma (clandestine: Thai/Burmese border)	7137v			
1100-1130	Adventist World Radio, Forli, Italy	7230			
1100-1130	Swiss Radio International, Berne	13635	15570	17830	21770
1100-1145	Radio Berlin International, GDR	17780	13690	9665	6115
1100-1150	Radio Pyongyang, North Korea	11735	9977	9645	







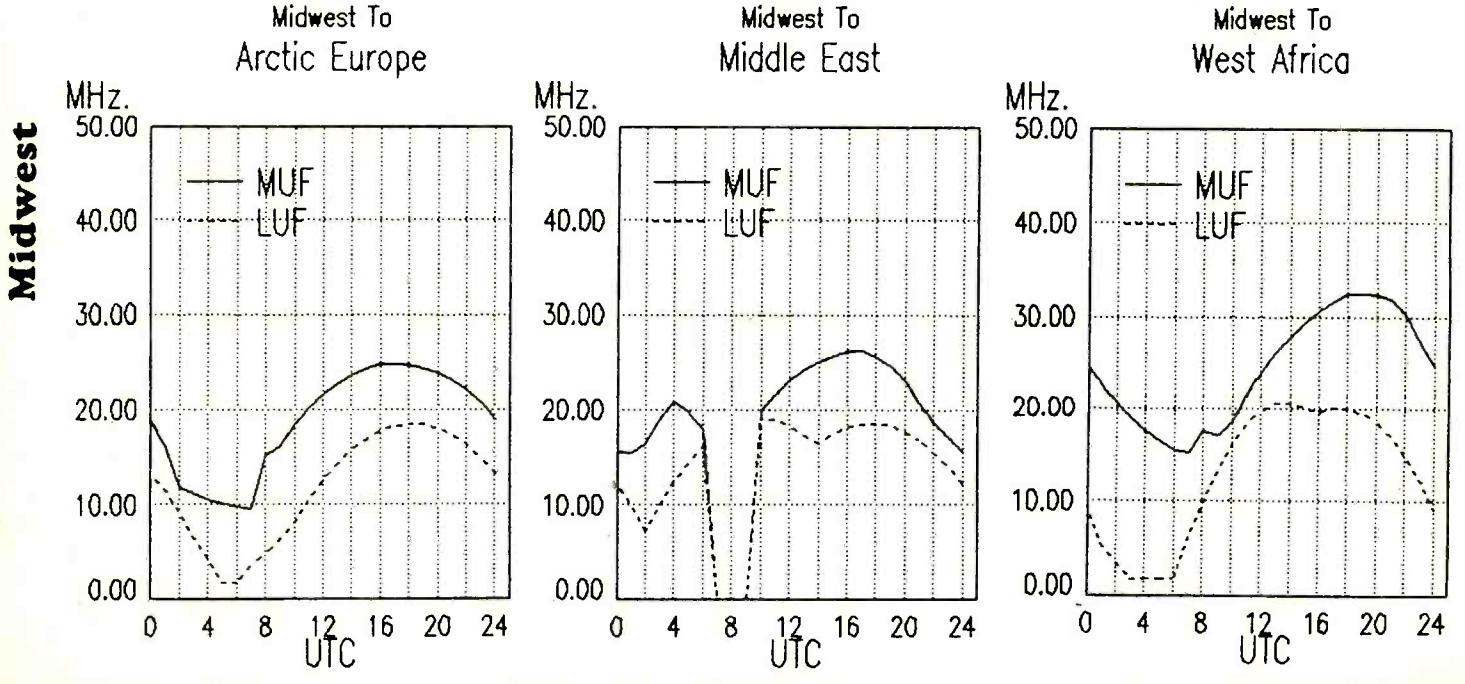
Midwest

frequency section

1100-1150	Deutsche Welle, Koln, West Germany	15410	17765	17800	21600
1100-1200	ABC, Alice Springs, Australia	2310	(ML)		
1100-1200	BBC World Service, London, England	9410	9515	9740	9750
		11775	12095	15070	15360
		15420	17640	17705	17790
		17705	17790	17885	21470
		21660			
1100-1200	WHRI, Noblesville, Indiana	9465	11790		
1100-1200	WYFR, Okeechobee, Florida	5950	11580		
1100-1200	Adventist World Radio, Costa Rica	9725	11870		
1100-1200	Radio Moscow World Service	11685	11840	15375	21655
		21785	21800		
1100-1200	Radio New Zealand, Wellington	9855			
1100-1200	CBC, Montreal	6160			
1100-1200	SBC Singapore	11940			
1100-1200	ABC, Brisbane, Australia	9660			
1100-1200	ABC, Katherine, Australia	2485			
1100-1200	ABC, Perth, Australia	9610			
1100-1200	ABC, Tennant Creek, Australia	2325	(ML)		
1100-1200	Trans World Radio, Bonaire	11815	15345		
1100-1200	CBN, St. John's, Newfoundland, Can	6160			
1100-1200	CFCF, Montreal, Quebec, Canada	6005			
1100-1200	CFCN, Calgary, Alberta, Canada	6030			
1100-1200	CHNS, Halifax, Nova Scotia, Canada	6130			
1100-1200	Christian Science World Svc, Boston	9455	9495	9530	15115
1100-1200	CKWX, Vancouver, British Columbia	6080			
1100-1200	CFRB, Toronto, Ontario, Canada	6070			
1100-1200	KUSW, Salt Lake City, Utah	9850			
1100-1200	Radio Beijing, China	17855			
1100-1200	Radio Japan, Tokyo	6120	11815	11840	
1100-1200	Radio Jordan, Amman	13655			
1100-1200	Radio RSA, Johannesburg	17835	11900	11805	9555
1100-1200	Voice of America-Caribbean Service	9590	11915		
1100-1200	Voice of America-East Asia Service	5985	6110	9760	11720
		15155	15425		
1115-1145	Radio Nepal,Katmandu(External Svc.)	5005			
1115-1130	Vatican Radio, Vatican City	17840	21485		
1130-1145	RRI Yogyakarta,Yogyakarta,Indonesia	5046			
1130-1200	Radio Berlin International, GDR	11970	15440	17880	21465
1130-1200	HCJB, Quito, Ecuador	11740			
1130-1200	Radio Thailand	11905	9655	4830	
1130-1200	Radio Austria International, Vienna	6155	13730	15430	21490
1130-1200	Radio Netherlands Int'l, Hilversum	5955	9715	17575	21480
		21520			
1130-1200	Voice of Islamic Republic of Iran	7190	7230	9695	
1135-1140	All India Radio, New Delhi	6065	7110	9610	9675
		11620	11850	15320	
1145-1152	Radio Prague, Czechoslovakia	9505	7345	6055	

1200 UTC [8:00 AM EDT/5:00 AM PDT]

1200-1215		Vatican Radio, Vatican City	17840	17865	21485	21515
1200-1225		Radio Netherlands Int'l, Hilversum	5955	9715	17575	21480
			21520			
1200-1225		Voice of Islamic Republic of Iran	7190	7215	7230	9695
1200-1225	M-F	Radio Finland, Helsinki	15400	21550		
1200-1230		Radio Romania Int'l, Bucharest	15340	17720		
1200-1230		Radio Thailand	11905	9655	4830	
1200-1230		Radio Yugoslavia, Belgrade	11735	15165	15325	
1200-1230	MWHRS	Radio Ulan Bator, Mongolia	11850	12025		
1200-1230		Radio East Africa,	9585			
1200-1230	S	Radio Norway International, Oslo	15165			
1200-1230		Radio Tashkent, Uzbekistan	5945	9540	9600	11785
			15470			
1200-1300		ABC, Alice Springs, Australia	2310	(ML)		
1200-1300		WWCR Nashville, Tennessee	15690			
1200-1300		ABC, Brisbane, Australia	9660			
1200-1300	M-F	Radio Canada Int'l, Montreal	11855	17820	9635	
1200-1300		Radio New Zealand, Wellington	9855			
1200-1300		SBC Singapore	11940			
1200-1300		ABC, Katherine, Australia	2485			
1200-1300		ABC, Perth, Australia	9610			
1200-1300		Trans World Radio, Bonaire	11815	15345		
1200-1300		ABC, Tennant Creek, Australia	2325	(ML)		
1200-1300		Adventist World Radio, Costa Rica	9725	11870		
1200-1300		BBC World Service, London, England	5965	9410	9515	9740
			11775	12095	15070	17640
			17705	17790	17885	21470
			21660	21710		
1200-1300		CBU, Vancouver, British Columbia	6160			
1200-1300		CFCF, Montreal, Quebec, Canada	6005			
1200-1300		CFCN, Calgary, Alberta, Canada	6030			
1200-1300		CHNS, Halifax, Nova Scotia, Canada	6130			
1200-1300		Christian Science World Service	9495	9465	11930	15285
1200-1300		CKWX, Vancouver, British Columbia	6080			
1200-1300		Radio Moscow World Service	11840	15375	15585	17790
			21655	21785		
1200-1300		CFRB, Toronto, Ontario	6070			
1200-1300		HCJB, Quito, Ecuador	11740	15115	17890	

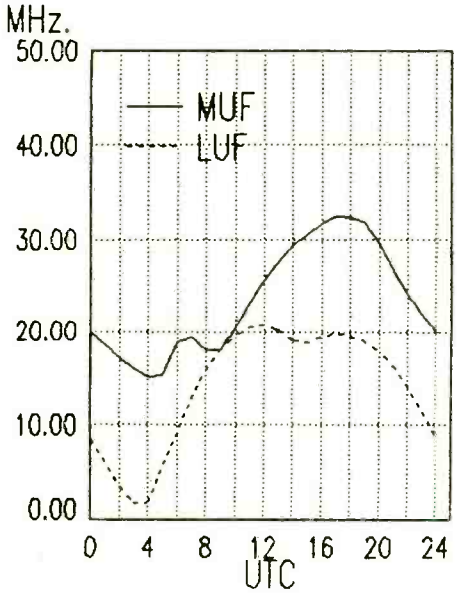


1200-1300		KUSW, Salt Lake City, Utah	9850			
1200-1300		Radio Beijing, China	9530	17855	11600	15450
			11660			
1200-1300		Radio Jordan, Amman	13655			
1200-1300		Radio Korea, Seoul	9570	9750		
1200-1300		Radio Australia, Melbourne	6020	6080	7215	9580
			9710	11720	15465	
1200-1300		Radio RSA, Johannesburg	17835	11900	11805	9555
1200-1300		Voice of America-East Asia Service	6110	9760	11715	15155
			15425	9530		
1200-1300		WHRI, Noblesville, Indiana	11790	9465		
1200-1300		WYFR, Okeechobee, Florida	5950	6015	11580	17750
1215-1225		Radio Bayrak, Northern Cyprus	6150			
1215-1300		Radio Berlin International, GDR	11705	15240		
1230-1240		Voice of Greece, Athens	17550	15630	11645	
1230-1300		Voice of Turkey, Ankara	17785			
1230-1300		Voice of Vietnam, Hanoi	15010	12010	9840	
1230-1300	M-S	BRT Brussels, Belgium	21820			
1230-1300	M-F	BRT Brussels, Belgium	21815			
1230-1300		Radio Bangladesh, Dhaka	15195	11705		
1230-1300		Radio France International, Paris	9805	11670	15155	15195
			17650	21635	21645	
1230-1300		Radio Sweden, Stockholm	15190	21570	17740	
1245-1300		Radio Prague, Czechoslovakia	9505	7345	6055	
1245-1300		Radio Berlin International, GDR	11970	15440	17880	21465

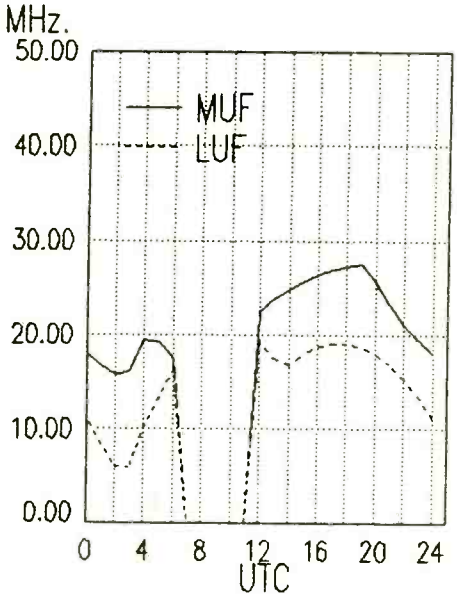
1300 UTC [9:00 AM EDT/6:00 AM PDT]

1300-1325		Radio Finland, Helsinki	15400	21550		
1300-1330		Radio Tirana, Albania	11855	9500		
1300-1330	S	Radio Norway International, Oslo	9590			
1300-1330		Radio Canada Int'l, Montreal	11955	15385		
1300-1330	S	Trans World Radio, Bonaire	15345	11815		
1300-1330		Swiss Radio Int'l European Service	3985	6165	9535	
1300-1330		Radio Berlin International, GDR	11970	15440	17880	21465
1300-1345		Radio Berlin International, GDR	6115			
1300-1350		Radio Pyongyang, North Korea	9325	9345	9645	13650
			15180			
1300-1400		BBC World Service, London, England	5965	9410	9515	9750
			11775	12095	15070	17640
			17705	17790	17885	21470
			21660	21710		
1300-1400	S	Radio Canada Int'l, Montreal	11955	17820	11720	
1300-1400		ABC, Alice Springs, Australia	2310			
1300-1400		ABC, Brisbane, Australia	9660			
1300-1400		ABC, Katherine, Australia	2485			
1300-1400		ABC, Perth, Australia	9610			
1300-1400		ABC, Tennant Creek, Australia	2325	(ML)		
1300-1400		Adventist World Radio, Costa Rica	9725	11870		
1300-1400		CBC Northern Quebec Service, Can	9625			
1300-1400		CBN, St. John's, Newfoundland	6160			
1300-1400		CBU, Vancouver, British Columbia	6160			
1300-1400		CFCF, Montreal, Quebec, Canada	6005			
1300-1400		CFCN, Calgary, Alberta, Canada	6030			
1300-1400		CHNS, Halifax, Nova Scotia, Canada	6130			
1300-1400		Christian Science World Service	9495	9465	11930	15285
1300-1400		CKWX, Vancouver, British Columbia	6080			
1300-1400		CFRB, Toronto, Ontario, Canada	6070			
1300-1400		Radio Moscow World Service	9655	9755	11840	11900
			11995	12030	12050	15305
			15320	15375	15540	15585
1300-1400		FEBC Radio Int'l, Philippines	11850			
1300-1400		HCJB, Quito, Ecuador	11740	15115	17890	
1300-1400		KUSW, Salt Lake City, Utah	9850			
1300-1400		Radio Australia, Melbourne	5995	6080	7215	9580
			21525			
1300-1400		Radio Beijing, China	9530	11600	11660	11855
1300-1400		Radio Romania Int'l, Bucharest	11940	15365	17850	21550
1300-1400		Radio Jordan, Amman	13655			
1300-1400		Radio Sta.Peace & Progress,Moscow	11870	15180	15480	15560
			17635	17730	17805	17835
			21505			
1300-1400		Voice of America-East Asia Service	6110	9760	11715	15155
			15425			
1300-1400		WHRI, Noblesville, Indiana	9465	11790		
1300-1400	S	WRNO Worldwide, Louisiana	9715			
1300-1400		WWCR, Nashville, Tennessee	15690			
1300-1400		WYFR, Okeechobee, Florida	5950	6015	11550	11580
			13695			
1330-1400		All India Radio, New Delhi	11760	9565		
1330-1400		Radio Austria International, Vienna	15430			
1330-1345	A,S	Radio Finland, Helsinki	21550	15400		
1330-1400		Laotian National Radio	7116v			
1330-1400	A	Trans World Radio, Bonaire	11815	15345		
1330-1400		Radio Tashkent, Uzbekistan	5945	9540	9600	11785
			15470			
1330-1400		Swiss Radio International, Berne	9620	11695	15570	17830
			21695	25680		
1330-1400		UAE Radio, Dubai	15320	17775	21605	

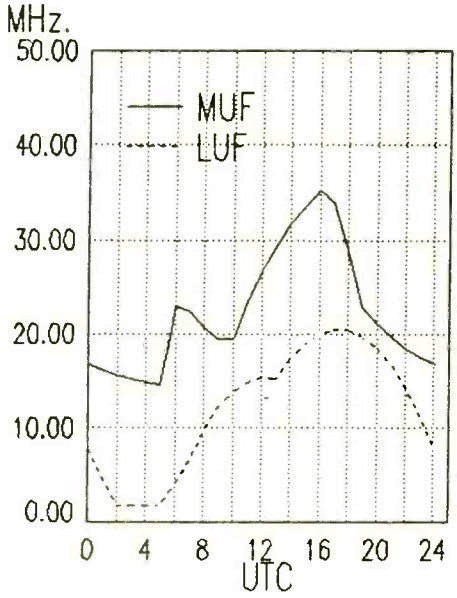
Midwest To Central Africa



Midwest To East Africa



Midwest To South Africa



Midwest

frequency section

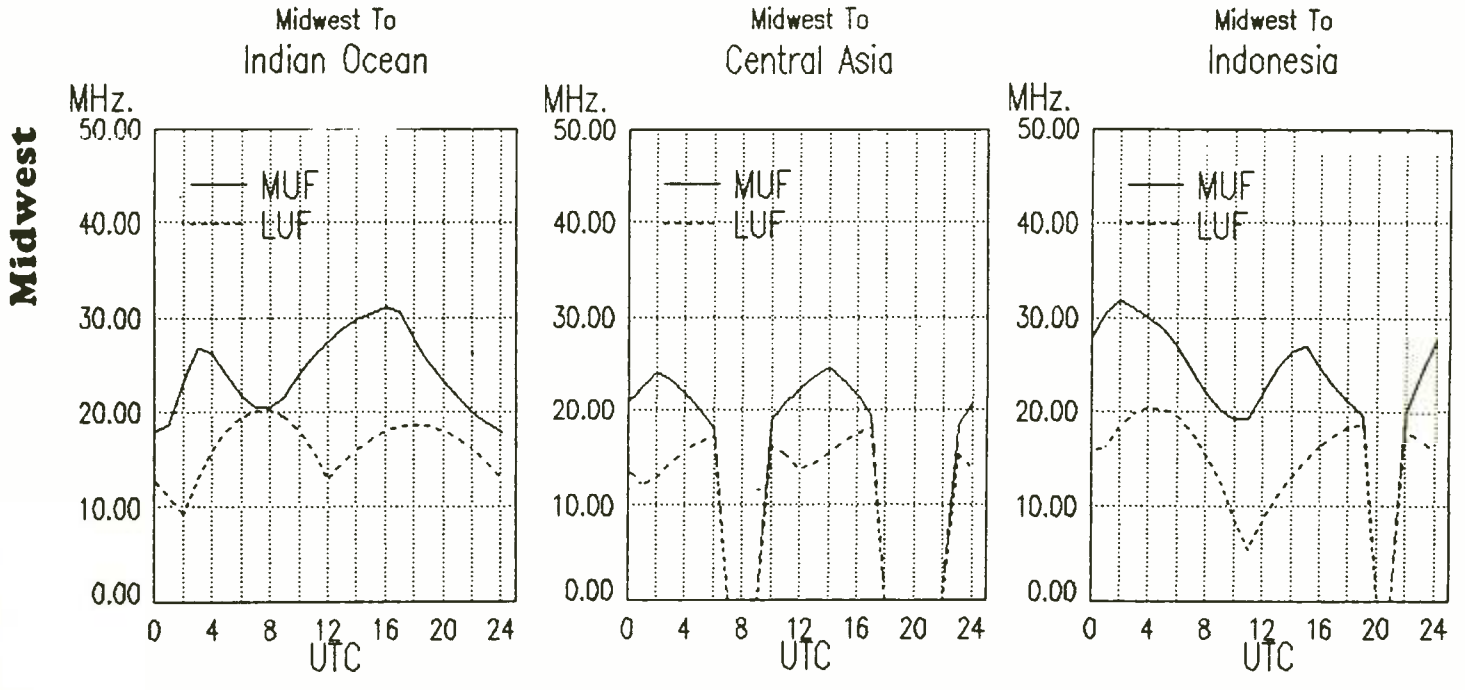
1330-1400		Voice of Vietnam, Hanoi	9840	15010	12010
1345-1350		Radio Prague, Czechoslovakia	9505	7345	6055
1345-1400		Radio Berlin International, GDR	9730		
1345-1400		Voice of Eelam (clandestine:northern Sri Lanka)	7000		

1400 UTC [10:00 AM EDT/7:00 AM PDT]

1400-1415		Azad Kashmir Radio, Pakistan	7268	4980	3665	
1400-1420		Radio Jordan, Amman	13655			
1400-1430		ABC, Alice Springs, Australia	2310	(ML)		
1400-1430		ABC, Tennant Creek, Australia	2325	(ML)		
1400-1430		Swiss Radio Int'l, Berne	6165	9535	12030	
1400-1430		Radio Juba, Sudan	9540/9550			
1400-1430		Radio France International, Paris	11925	21780		
1400-1430	S	Radio Norway International, Oslo	21710			
1400-1430		Radio Polonia, Warsaw, Poland	6095	7285		
1400-1430		Radio Berlin International, GDR	9730			
1400-1430		Radio Sweden, Stockholm	11905	17740		
1400-1430		Radio Tirana, Albania	9500	11895		
1400-1455		Radio Beijing, China	7405			
1400-1500		Radio SPLA (clandestine: Sudan)	11710	9550		
1400-1500		ABC, Brisbane, Australia	9660			
1400-1500	S	Radio Canada Int'l, Montreal	11955	17820		
1400-1500		Voice of the Mediterranean, Malta	11925			
1400-1500		Radio New Zealand, Wellington	9855			
1400-1500		Radio Beijing, China	7405	11815	11855	
1400-1500		Radio Korea, Seoul	9570	9750	15575	
1400-1500		ABC, Katherine, Australia	2485			
1400-1500		ABC, Perth, Australia	9610			
1400-1500		All India Radio, New Delhi	11760	9565		
1400-1500		BBC World Service, London, England	9410	11750	12095	15070
			17640	17705	17790	17880
1400-1500		CBC Northern Quebec Service, Can	9625			
1400-1500		CBN, St. John's, Newfoundland	6160			
1400-1500	M-A	CBU, Vancouver, British Columbia	6160			
1400-1500		CFCF, Montreal, Quebec, Canada	6005			
1400-1500		CFCN, Calgary, Alberta, Canada	6030			
1400-1500		CHNS, Halifax, Nova Scotia, Canada	6130			
1400-1500		Christian Science World Service	9530	13625	17555	21780
1400-1500		CKWX, Vancouver, British Columbia	6080			
1400-1500		CFRB, Toronto, Ontario	6070			
1400-1500		FEBC Radio Int'l, Philippines	11850			
1400-1500		HCJB, Quito, Ecuador	11740	15115	17890	
1400-1500		KUSW, Salt Lake City, Utah	15590			
1400-1500		Radio Australia, Melbourne	6060	9580	9710	9770
			12000	13745		
1400-1500		Radio Japan General Service, Tokyo	11865	11815		
1400-1500		Radio Moscow World Service	9655	9755	11840	11900
			11995	12030	12050	15320
			15375	15540	15585	17670
1400-1500		Radio RSA, Johannesburg	17835	11925	9555	
1400-1500		Voice of America-East Asia Service	6110	9760	15155	15425
1400-1500		Voice of America-South Asia Service	7125	9645	9760	15205
			15395			
1400-1500		Voice of Nigeria, Lagos	7255			
1400-1500		WHRI, Noblesville, Indiana	9465	15105		
1400-1500	S	WRNO Worldwide, Louisiana	15420			
1400-1500		WWCR, Nashville, Tennessee	15690			
1400-1500		WYFR, Okeechobee, Florida	5950	6015	11580	13695
			17750			
1405-1430		Radio Finland, Helsinki	15185	21550	11820	
1405-1500		WYFR, Taiwan	11550			
1415-1500	M-A	Radio Bhutan	5023v			
1415-1425		Radio Nepal, Katmandu	5005	7165	(alt. 3230)	
1430-1500		Radio Sofia, Bulgaria	11735	15310	15370	17825
1445-1500		Radio Berlin International, GDR	11970	17880		
1445-1500	MWHAS	Radio Ulan Bator, Mongolia	9795	13780		
1445-1500		RCI European News Svc, Montreal	11935	15315	15325	17820
		{M-A add these:	15305	17795	21545)	
1430-1500		Voice of Hope, Lebanon	6280			
1430-1500		Voice of Myanmar (Burma)	5990v			
1430-1500	F	ABC, Alice Springs, Australia	2310	(ML)		
1430-1500	F	ABC, Tennant Creek, Australia	2325	(ML)		
1430-1500		Radio Austria International, Vienna	6155	11780	13730	21490
1430-1500		Radio Netherlands Int'l, Hilversum	13770	15150	17575	17605
			17840	21505		
1445-1500		Vatican Radio, Vatican City	6248	7250	9645	11740

1500 UTC [11:00 AM EDT/8:00 AM PDT]

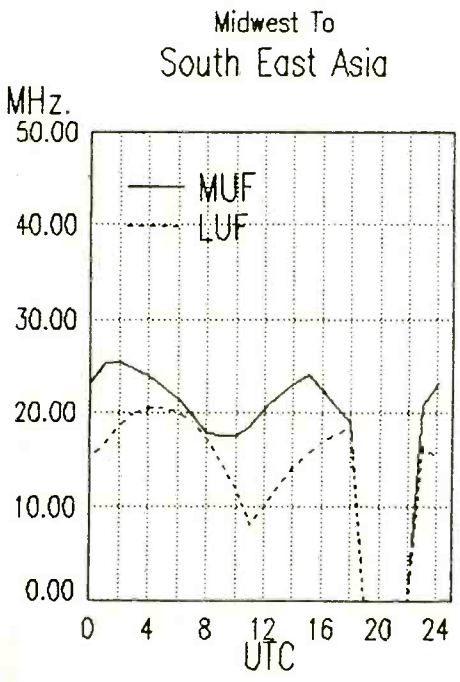
1500-1515	MWHAS	Radio Ulan Bator, Mongolia	9795	13780		
1500-1515		Vatican Radio, Vatican City	11955	15090	17870	
1500-1515		WYFR, Taiwan	11550			
1500-1525		Radio Netherlands Int'l, Hilversum	13770	15150	17575	17605
1500-1530		Radio Sofia, Bulgaria	11735	15310	15370	17825
1500-1530		Radio Sweden, Stockholm	17740	11905		

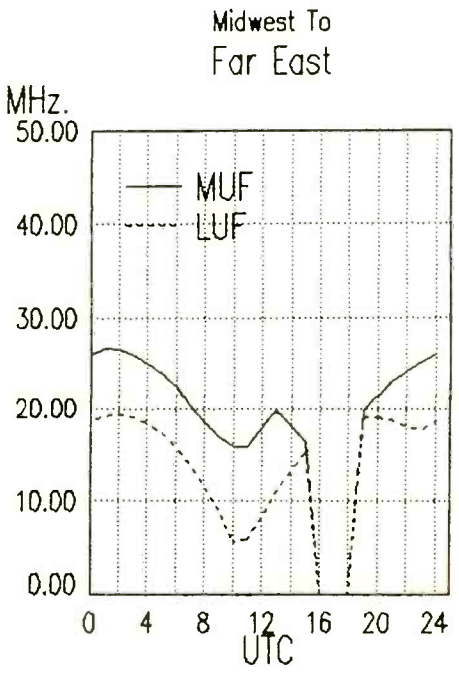


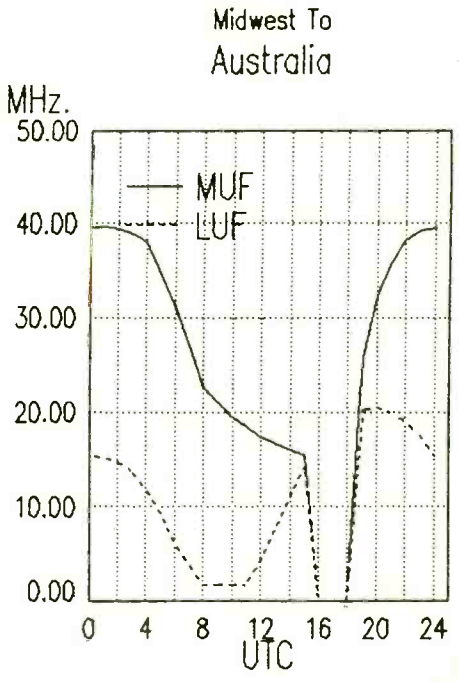
1500-1530		Radio Romania Inter'l, Bucharest	11940	15250	15335	17720
			17745			
1500-1540		FEBA, Seychelles	11865			
1500-1550		Radio Pyongyang, North Korea	11750	9977	9640	9325
1500-1550		Deutsche Welle, Koln, W. Germany	9735	11965	17765	21600
1500-1555		Radio Beijing, China	11815	15165	7405	
1500-1600		Radio Jordan, Amman	9560			
1500-1600		Radio New Zealand, Wellington	9855			
1500-1600	S	Radio Canada Int'l, Montreal	11955	17820		
1500-1600		FEBA, Seychelles	15330	9590		
1500-1600		Voice of Hope, Lebanon	6280			
1500-1600	F	ABC, Alice Springs, Australia	2310	(ML)		
1500-1600		ABC, Perth, Australia	9610			
1500-1600	F	ABC, Tennant Creek, Australia	2325	(ML)		
1500-1600		BBC World Service, London, England	9410	11750	11775	12095
			15070	15260	17640	17705
			17780	21470	21660	21710
1500-1600		Voice of Myanmar (Burma)	5990v			
1500-1600		CBC Northern Quebec Service, Can	9625	(ML)		
1500-1600		CBN, St. John's, Newfoundland	6160			
1500-1600		CBU, Vancouver, British Columbia	6160			
1500-1600		CFCF, Montreal, Quebec, Canada	6005			
1500-1600		CFCN, Calgary, Alberta, Canada	6030			
1500-1600		CHNS, Halifax, Nova Scotia, Canada	6130			
1500-1600		Christian Science World Service	9530	13625	17555	21780
1500-1600		CKWX, Vancouver, British Columbia	6080			
1500-1600		CFRB, Toronto, Ontario	6070			
1500-1600		FEBC Radio Int'l, Philippines	11850			
1500-1600		HCJB, Quito, Ecuador	15115	17890		
1500-1600	T-S	KNLS, Anchor Point, Alaska	11715	(or 9750)		
1500-1600		KTWR, Agana, Guam	11650			
1500-1600		KUSW, Salt Lake City, Utah	15590			
1500-1600		Radio Australia, Melbourne	5995	6035	6060	6080
			7210	9580	12000	
1500-1600		Radio Japan General Service, Tokyo	11865	11815	21700	
1500-1600		Radio Moscow World Service	9655	9755	11840	12050
			11900	11995	15375	15540
			15585	17670		
1500-1600		Radio RSA, Johannesburg S. Africa	17835	11925	9555	
1500-1600		Voice of America-Middle East Service	9700	15205	15260	21530
1500-1600		Voice of America-South Asia Service	6110	7125	9645	9700
			9760	15205	15260	9350
1500-1600		Voice of Nigeria, Lagos	7255			
1500-1600		WHRI, Noblesville, Indiana	15105	21840		
1500-1600	S	WRNO Worldwide, Louisiana	15420			
1500-1600		WWCR, Nashville, Tennessee	15690			
1500-1600		WYFR, Okeechobee, Florida	5950	11830	13695	11580
			17750			
1515-1530		Radio Budapest, Hungary	15160	15220	11910	9835
			9585	7220		
1530-1540	M-A	Voice of Greece, Athens	11645	15630	17535	
1530-1555	M-A	BRT Brussels, Belgium	17580	21810		
1530-1600		Radio Tirana, Albania	11835	9500		
1530-1600		Radio Omdurman, Sudan	11635	9550/9540		
1530-1600		Radio Sweden, Stockholm	17880	21500	21655	
1530-1600		Swiss Radio International, Berne	13685	15430	17830	21630
1545-1600		Radio Berlin International, GDR	7295	9730	15350	17780
1540-1555	S-F	FEBA, Seychelles	11865			
1545-1600		Radio Pakistan	21740	21480	17895	17580
			15605	13665		
1545-1600		Vatican Radio, Vatican City	15120	17730	21650	
1555-1600	M,A	FEBA, Seychilles	11865			

1600 UTC [12:00 PM EDT/9:00 AM PDT]

1600-1610	M,A	FEBA, Mahe, Seychelles	11865			
1600-1610		Vatican Radio, Vatican City	6248	7250	9645	11740
1600-1615		Azad Kashmir Radio, Pakistan	7268	4980	3665	
1600-1630		Radio Pakistan, Dacca	17580	13665	15605	21740
			17895	21480		
1600-1630	S	Radio Norway International, Oslo	17765	21705		
1600-1630		Radio Polonia, Warsaw, Poland	6135	9540		
1600-1630		Radio Portugal, Lisbon	15210			
1600-1630		Radio Berlin International, GDR	17780	15350	9730	7295
1600-1630		Voice of Vietnam, Hanoi	9840	15010	12010	
1600-1640		UAE Radio, Dubai	15320	15435	17865	21605
1600-1650		Radio Pyongyang, North Korea	9325	11760		
1600-1650		Deutsche Welle, Koln, W. Germany	6170	7225	15105	15595
			17825	21680		
1600-1700		KSDA, Guam	11980			
1600-1700		Radio Korea General Service, Seoul	5975			
1600-1700	F	ABC, Alice Springs, Australia	2310	(ML)		
1600-1700		BBC World Service, London, England	9410	11775	12095	15070
			15260	17640	17705	21660
1600-1700		Radio Australia, Melbourne	9580	12000	13745	
1600-1700		ABC, Perth, Australia	9610			
1600-1700	F	ABC, Tennant Creek, Australia	2325	(ML)		
1600-1700		CBC Northern Quebec Service, Can	9625	(ML)		
1600-1700		CBN, St. John's, Newfoundland	6160			







Midwest

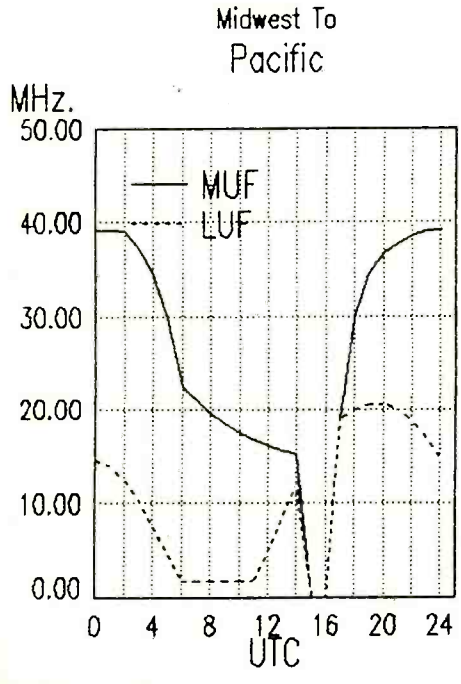
frequency section

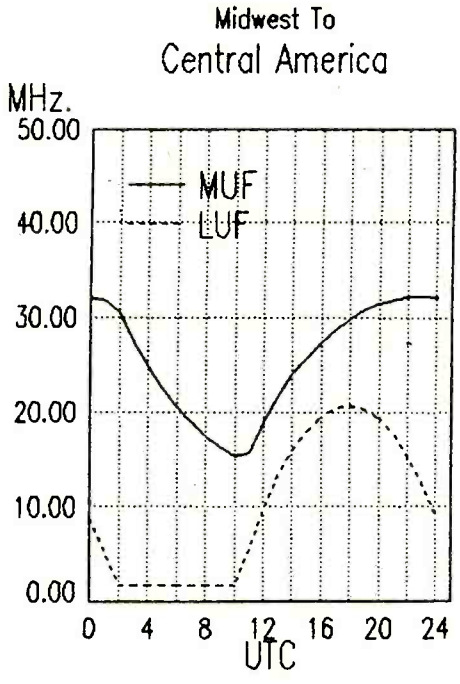
1600-1700	Radio Moscow World Service	11840	12010	12050	15185
		15375	15540	17670	17695
		21585	21825		
1600-1700	CBU, Vancouver, British Columbia	6160			
1600-1700	CFCF, Montreal, Quebec, Canada	6005			
1600-1700	CFCN, Calgary, Alberta, Canada	6030			
1600-1700	CHNS, Halifax, Nova Scotia, Canada	6130			
1600-1700	Christian Science World Service	9530	13625	13745	21640
1600-1700	CKWX, Vancouver, British Columbia	6080			
1600-1700	CFRB, Toronto, Ontario	6070			
1600-1700	KTWR, Agana, Guam	11650	11910	13720	
1600-1700	KUSW, Salt Lake City, Utah	15590			
1600-1700	Radio Beijing, China	9570	15110	15130	13740
		9710			
1600-1700	Radio France International, Paris	15360	17620	17795	17850
1600-1700	Radio Jordan, Amman	9560			
1600-1700	Radio Korea, Seoul, South Korea	5975			
1600-1700	Trans World Radio-Swaziland	15135			
1600-1700	Voice of America-Africa Service	7195	9575	11920	15410
		15445	15580	15600	17785
		17800	17870		
1600-1700	Voice of America-Middle East Service	3980	9700	15205	15260
1600-1700	Voice of America-Asia Service	7125	9645	9700	9760
		15205	15260	15395	
1600-1700	Voice of Nigeria, Lagos	7255			
1600-1700	WHRI, Noblesville, Indiana	15105	21840		
1600-1700	WINB, Red Lion, Pennsylvania	15295			
1600-1700	WRNO New Orleans, Louisiana	15420			
1600-1700	WWCR, Nashville, Tennessee	15690			
1600-1700	WYFR, Okeechobee, Florida	11830	13695	17750	15566
		11580	17612	21525	21615
1615-1630	M-A RCI European News Svc, Montreal	11935	15305	15325	17820
		21545			
1615-1620	Vatican Radio, Vatican City	9645	11740		
1630-1655	BRT Brussells, Belgium	11695	5910		
1630-1700	Radio Netherlands, Hilversum	15570	6020		
1630-1700	Radio Sta. Peace & Progress, USSR	6110	6135	11695	11745
		11775	12055	15330	17615
		17635	17655	21715	
1630-1700	Radio Austria Int'l, Vienna	11780	13730	21490	

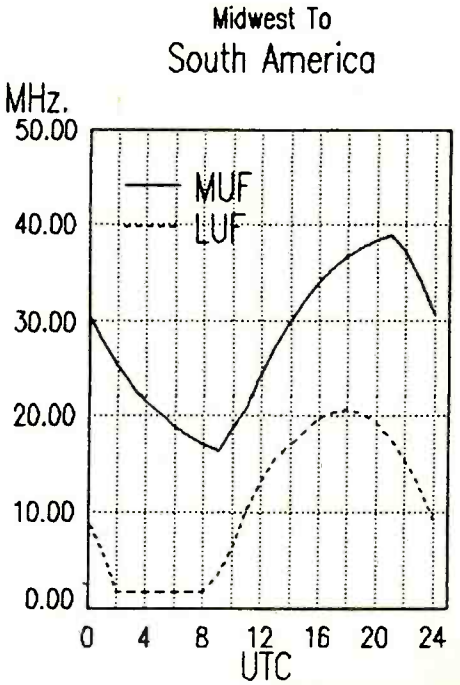
1700 UTC [1:00 PM EDT/10:00 AM PDT]

1700-1715	Kol Israel	11585	11655		
1700-1730	Radio Netherlands, Hilversum	15570	6020		
1700-1730 S	Radio Norway	25730	17765		
1700-1800	Radio Australia, Melbourne	9580	13740		
1700-1800	BBC World Service, London	9410	11775	12095	15070
		15260	15310	15400	17640
		17695	21660	21740	
1700-1800	Voice of America-Africa Service	7195	9575	11920	15410
		15445	15580	15600	17785
		17800	17870		
1700-1800	Radio Moscow World Service	11840	12050	15185	15375
		17670	17695	21585	
1700-1800 S-F	WMLK Bethel, PA	9465			
1700-1800	Radio New Zealand, Wellington	17680			
1700-1800	Voice of America-Middle East Service	3980	6040	9700	9760
		11760	15205	15260	
1700-1800	Voice of America-South Asia Service	7125	9645	9700	15395
1700-1800	WHRI, Noblesville, Indiana	13760	15105		
1700-1800	Christian Science World Service	9530	13625	15385	21640
1700-1800	Radio Moscow Africa Service	17615	21630		
1700-1800	CBC, Montreal	9625	(ML)		
1700-1800	Radio Japan, Tokyo	9695	11815	11865	
1700-1800	Radio Pyongyang, North Korea	9325	9640	9977	11760
1700-1800	KUSW Salt Lake City, Utah	15590			
1700-1800	WINB, Red Lion, Pennsylvania	15295			
1700-1800	WRNO, New Orleans, Louisiana	15420			
1700-1800	WWCR, Nashville, Tennessee	15690			
1700-1800	WYFR, Okeechobee, Florida	11830	13695	11580	
		17750	17885		
1709-1745	BBC Africa Service, London, England	6005	6190	9595	11940
		15400	17880		
1710-1727	Radio Prague Int'l, Czechoslovakia	5960	6055	7345	11990
1715-1800	Radio Pakistan	11570	9815		
1730-1740	Radio Bayrak, Northern Cyprus	6150			
1730-1755	BRT Brussels, Belgium	5910	11695	13675	
1730-1800	Radio Sofia, Bulgaria	11735	11840	15370	
1730-1800	Swiss Radio Int'l, Berne	9535			
1730-1800	Radio Berlin International, GDR	9665	13610	15145	15350
		17755			
1730-1800	Vatican Radio African Service	21650	17710	17730	
1730-1800	Radio Romania Int'l, Bucharest	11940	15340	15365	17720

Midwest







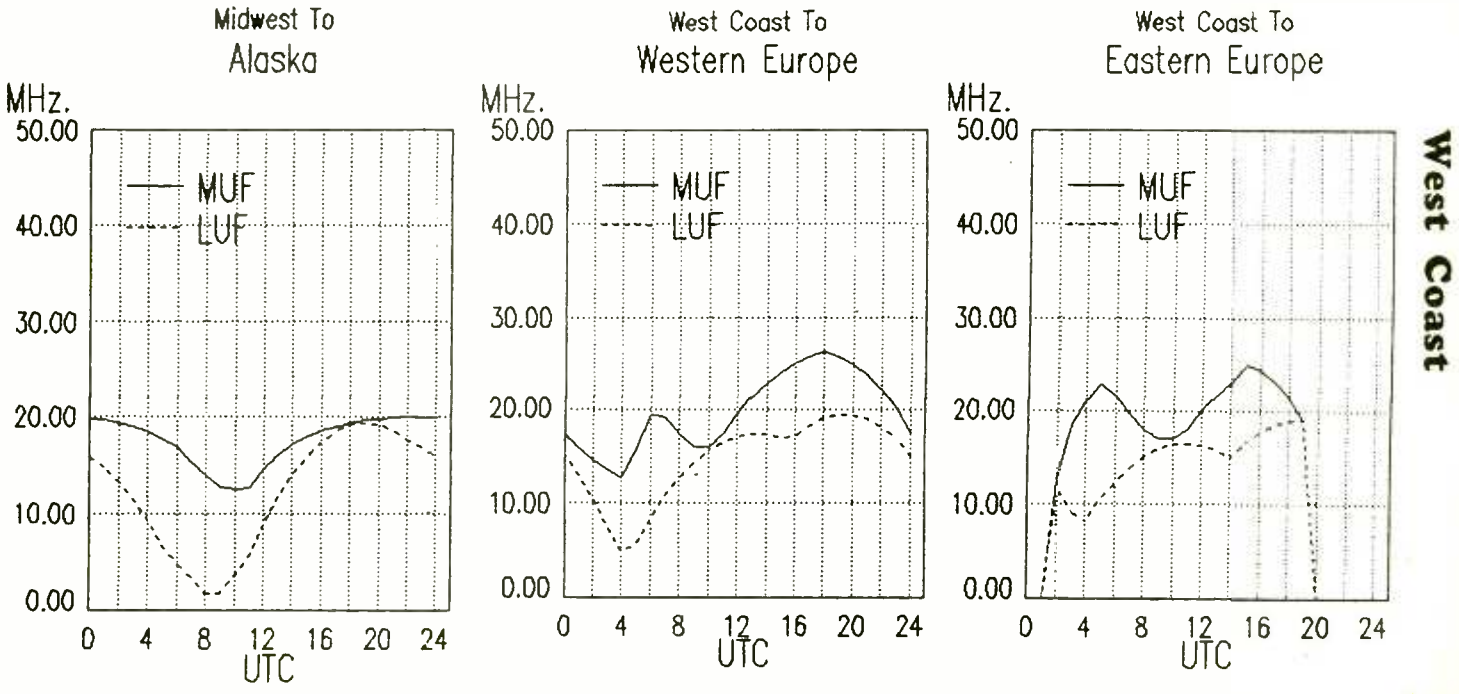
frequency section

1800 UTC [2:00 PM EDT/11:00 AM PDT]

1800-1815		Radio Berlin Int'l, GDR	9665 13610 15145 15350 17755
1800-1830	M-F	Radio Budapest, Hungary	15160 11910 9835 9585 7220 6110
1800-1830		Radio Canada Int'l, Montreal	13670 15260 17820
1800-1830		Radio Kiev, The Ukraine	6010 6090 6165 7115
1800-1830	S	Radio Norway International, Oslo	21730
1800-1830		Voice of Ethiopia, Addis Ababa	9660
1800-1830		Radio Sofia, Bulgaria	11680
1800-1830		Radio Sweden, Stockholm	6065 7265
1800-1830		Voice of Vietnam, Hanoi	15010 12010 9840
1800-1845		Trans World Radio, Swaziland	15210
1800-1845		All India Radio, New Delhi	11935 15360
1800-1850		Radio Bras, Brasilia, Brasil	15265
1800-1855		Radio Mozambique, Maputo	9618 4855 3265
1800-1900	F	ABC, Alice Springs, Australia	2310 (ML)
1800-1900	F	ABC, Tennant Creek, Australia	2325 (ML)
1800-1900		Radio Korea, Seoul	15575
1800-1900		KVOH, Rancho Simi, California	17775
1800-1900		BBC World Service, London	9410 12095 15070 17640
1800-1900		Radio Australia, Melbourne	6035 9580 13740
1800-1900		Radio Moscow World Service	11840 12050 13605 15185 15425 15540 15580 17570
1800-1900		Radio New Zealand, Wellington	17680
1800-1900		CBN, St. John's, Newfoundland	6160
1800-1900		CBU, Vancouver, British Columbia	6160
1800-1900		CFCF, Montreal, Quebec, Canada	6005
1800-1900		CFCN, Calgary, Alberta, Canada	6030
1800-1900		CHNS, Halifax, Nova Scotia, Canada	6130
1800-1900		Christian Science World Service	9455 21780 21640 17555
1800-1900		CKWX, Vancouver, British Columbia	6080
1800-1900		CFRB, Toronto, Ontario	6070
1800-1900		KUSW, Salt Lake City, Utah	15590
1800-1900		Radio Jordan, Amman	9560
1800-1900		Radio Kuwait, Safat, Kuwait	13610
1800-1900		CBC Montreal	9625
1800-1900	S-F	WMLK Bethel, Pennsylvania	9465
1800-1900		Radio RSA, Johannesburg, S. Africa	17765 15270 7230
1800-1900	A,S	Radio for Peace Int'l, Costa Rica	13660 21566
1800-1900		Voice of America-Africa Service	7195 9575 11920 15410 15445 15580 15600 17785 17800 17870 21485
1800-1900		Voice of America-Middle East Service	6040 9700 9760 11760 15205
1800-1900		WHRI, Noblesville, Indiana	13760 17830
1800-1900		WINB, Red Lion, Pennsylvania	15295
1800-1900		WRNO, New Orleans, Louisiana	15420
1800-1900		WWCR, Nashville, Tennessee	15690
1800-1900		WYFR, Okeechobee, Florida	11830 13695 11580 17750 17885 15540
1815-1900		Radio Bangladesh, Dhaka	15255 11705
1830-1845		Radio Prague Int'l, Czechoslovakia	6055 7345 11990
1830-1845		Radio Finland, Helsinki	11755 9550 6120
1830-1855		Radio Polonia, Warsaw, Poland	5995 6135 7125 7285 9525 11840
1830-1900	A,S	Radio Budapest, Hungary	6110 7220 9585 9835 11910 15160
1830-1900		Radio Sofia, Bulgaria	15330
1830-1900		Radio Yugoslavia, Belgrade	11735 7215 5980
1830-1900		Radio Riyadh, Saudi Arabia	9705 9720
1830-1900	A,S	Radio Canada Int'l, Monreal	13670 15260 17820
1830-1900	M-F	Radio Canada Int'l, Montreal	21675 17875 15325 7235 5995
1830-1900		Radio Afghanistan, Kabul	4915 6020 7215 9635 11830 15440
1830-1900		Radio Tirana, Albania	7120 9480
1830-1900		Radio Netherlands Int'l, Hilversum	6020 15560 17605 21685
1830-1900		Swiss Radio International, Berne	9885 11955
1830-1900		Swiss Radio Int'l European Service	3985 6165 9535
1840-1850	M-A	Voice of Greece, Athens	11645 12105 15630
1845-1900		All India Radio, New Delhi	15360 11935 11620 9550 7412
1850-1855	IRR	Africa No. 1, Gabon	15475

1900 UTC [3:00 PM EDT/12:00 PM PDT]

1900-1915		Sierra Leone Brdcstng.Co.,Freetown	3316
1900-1920v		Radio Omdurman, Sudan	11635
1900-1925		Radio Netherlands Int'l, Hilversum	6020 15560 17605 21685
1900-1930		Radio Afghanistan, Kabul	9635 7215 6020 15440 11830
1900-1930	M-F	Radio Canada Int'l, Montreal	13670 15260 17820
1900-1930		Radio Japan General Service, Tokyo	11865 11850 15270
1900-1930	S	Radio Norway International, Oslo	15165
1900-1930	M-F	Radio Portugal, Lisbon	11740 15250 21530
1900-1930		Voice of Vietnam, Hanoi	9840 15010 12010

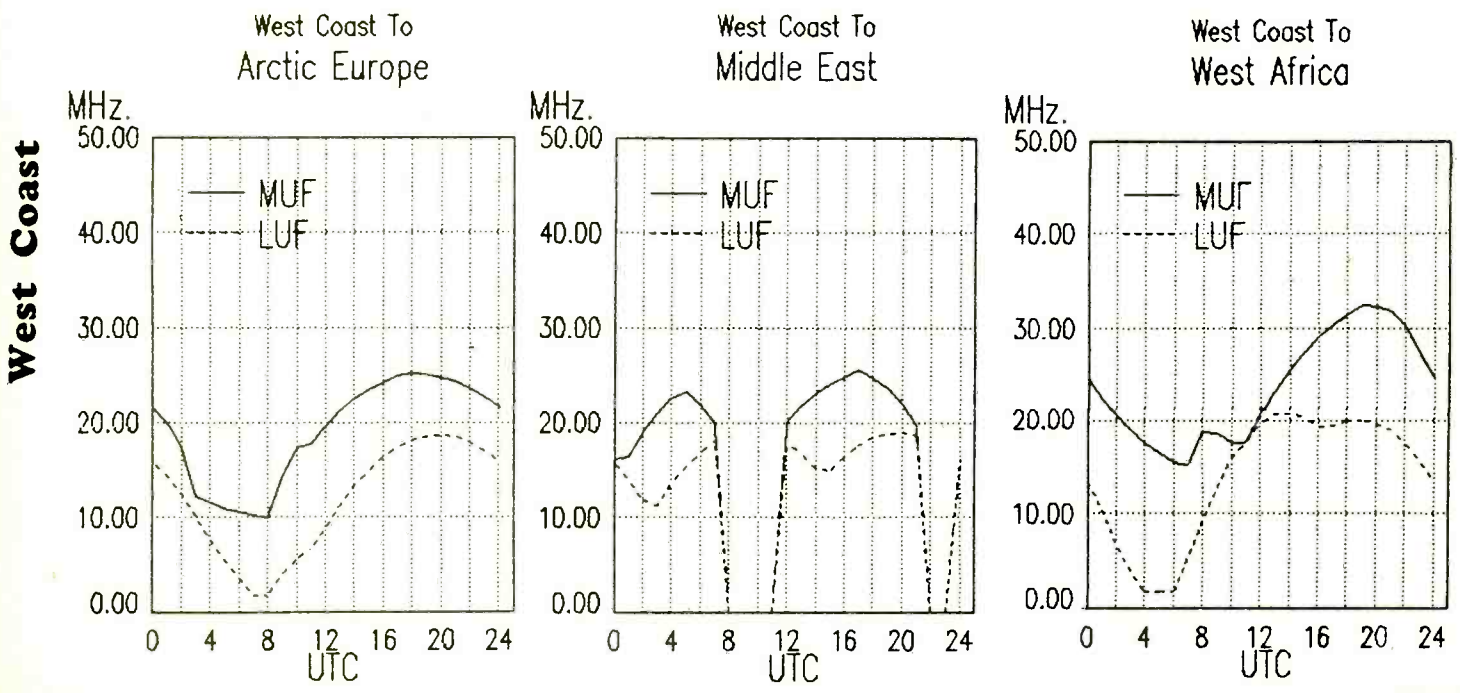


frequency section

1900-1930		Kol Israel, Jerusalem	15640	11605	17630	15485
			17590	12077		
1900-1945		All India Radio, New Delhi	7412	11620	11935	15360
			9550			
1900-1950		Deutsche Welle, Koln, W. Germany	11785	11810	13790	15390
			17810			
1900-2000		CBC, Montreal	9625			
1900-2000		Radio New Zealand, Wellington	17680			
1900-2000		Radio Moscow British Service	17695			
1900-2000		Radio Moscow World Service	11840	12050	15185	15425
			15540	15580	15585	17695
			21630			
1900-2000		Solomon Islands Broadcasting Co.	5020			
1900-2000		KVOH, Rancho Simi, California	17775			
1900-2000		BBC World Service, London, England	9410	12095	15070	15400
			17880			
1900-2000		CBN, St. John's, Newfoundland	6160			
1900-2000		CBU, Vancouver, British Columbia	6160			
1900-2000		CFCF, Montreal, Quebec, Canada	6005			
1900-2000		CFCN, Calgary, Alberta, Canada	6030			
1900-2000		CHNS, Halifax, Nova Scotia, Canada	6130			
1900-2000		Christian Science World Service	9455	17555	21640	21780
1900-2000		CKWX, Vancouver, British Columbia	6080			
1900-2000		CFRB, Toronto, Ontario	6070			
1900-2000		GBC Radio, Accra, Ghana	6130			
1900-2000		HJCB European Service, Ecuador	17790	15270	21470	
1900-2000		KUSW, Salt Lake City, Utah	15590			
1900-2000		Radio Algiers, Alger	9535	15215		
1900-2000		Radio Australia, Melbourne	6035	11930	6080	7205
			7215	9580	6020	
1900-2000		Radio Havana Cuba	11800			
1900-2000		Radio Jordan, Amman	9560			
1900-2000		Radio Kuwait, Safat, Kuwait	13610			
1900-2000	A,S	Radio for Peace Int'l, Costa Rica	13660	21566		
1900-2000		Spanish National Radio, Madrid	15280	15375	15395	
1900-2000		Voice of America-Africa Service	7195	15410	15445	15580
			15600	17785	17800	17870
			21485			
1900-2000		Voice of America-Middle East Service	6040	9700	9760	11760
			15205			
1900-2000		Voice of America-Pacific Service	9525	11870	15180	
1900-2000		WHRI, Noblesville, Indiana	13760	17830		
1900-2000		WINB, Red Lion, Pennsylvania	15295			
1900-2000	S-F	WMLK, Bethel, Pennsylvania	9465			
1900-2000		WRNO, New Orleans, Louisiana	15420			
1900-2000		WWCR, Nashville, Tennessee	15690			
1900-2000		WYFR, Okeechobee, Florida	11830	13695	15440	15566
			17612	17885	21615	
1920-1930	M-A	Voice of Greece, Athens	7430	9395	9425	
1930-2000	M	Radio Tallin, Estonia	5925			
1930-2000		Radio Austria International, Vienna	5945	6155	12010	13730
1930-2000		IBRA Radio	7110			
1930-2000		Radio Romania Int'l, Bucharest	9690	9750	11810	11940
1930-2000		Voice of the Islamic Republic Iran	9022	11895		
1935-1955		RAI, Rome, Italy	7275	9710	11800	
1940-2000	MWHR	Radio Ulan Bator, Mongolia	11850	12050		
1945-2000		All India Radio, New Delhi	15360	11935	9550	

2000 UTC [4:00 PM EDT/1:00 PM PDT]

2000-2005		Vatican Radio, Vatican City	7250	9645		
2000-2010	MWHR	Radio Ulan Bator, Mongolia	11850	12050		
2000-2010		Sierra Leone Brdcstng.Co.,Freetown	3316			
2000-2030	M-F	Radio Portugal	15250			
2000-2030	M	Radio Ljublijana, Yugoslavia	5980	7240	9620	
2000-2030		Radio Budapest, Hungary	11910	15160	9835	9585
			7220	6110		
2000-2030		Radio Prague Int'l, Czechoslovakia	5930	6055	7345	11990
2000-2030		Radio Romania Int'l, Bucharest	9690	9750	11810	11940
2000-2030		Voice of the Islamic Republic Iran	9022	11895		
2000-2050		Radio Pyongyang, North Korea	6576	9345	9977	9640
2000-2100		Radio for Peace Int'l, Costa Rica	21566	13660		
2000-2100		Voice of Hope, Lebanon	6280			
2000-2100		BBC World Service, London, England	5975	9410	12095	15070
			15260	15400	17755	17760
			17880			
2000-2100		Radio Australia, Melbourne	6035	7205	7215	9580
			9620			
2000-2100		All India Radio, New Delhi	9950	11860	15360	
2000-2100	M-A	ABC, Alice Springs, Australia	2310	(ML)		
2000-2100		ABC, Katherine, Australia	2485			
2000-2100	M-A	ABC, Tennant Creek, Australia	2325	(ML)		
2000-2100		CBN, St. John's, Newfoundland	6160			
2000-2100		CBU, Vancouver, British Columbia	6160			
2000-2100		CFCF, Montreal, Quebec, Canada	6005			
2000-2100		Radio Moscow World Service	11630	11840	12050	12060
			13605	15185	15540	15560
			15580	17670	17755	17790
2000-2100		Voice of Turkey, Ankara	9795			

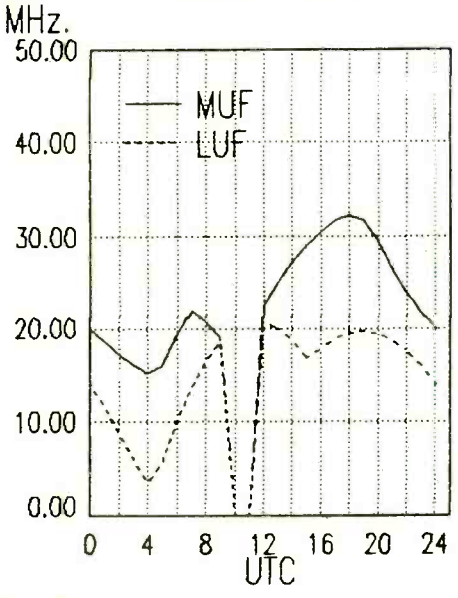


2000-2100		CFCN, Calgary, Alberta, Canada	6030			
2000-2100		CHNS, Halifax, Nova Scotia, Canada	6130			
2000-2100		Radio Baghdad, Iraq	13660			
2000-2100		Christian Science World Service	9455	13770	15610	17555
			15265			
2000-2100		CKWX, Vancouver, British Columbia	6080			
2100-2200		Radio Sta. Peace & Progress,USSR	9470	9820	11830	11880
			11980	15260		
2000-2100		CFRB, Toronto, Ontario	6070			
2000-2100		KUSW, Salt Lake City, Utah	15590			
2000-2100		Radio Beijing, China	11500	9920	15110	
2000-2100		Radio Havana Cuba	11800			
2000-2100		Radio Kuwait, Safat, Kuwait	13610			
2000-2100		Radio Jordan, Amman	9560			
2000-2100		Voice of America-Africa Service	7195	15410	15445	15580
			15600	17785	17800	17870
			21485			
2000-2100		Voice of America-Middle East Service	6040	9700	9760	11760
			15205			
2000-2100		WHRI, Noblesville, Indiana	13760	17830		
2000-2100		WINB, Red Lion, Pennsylvania	15185			
2000-2100		WRNO, New Orleans, Louisiana	15420			
2000-2100		KVOH, Rancho Simi, California	17775			
2000-2100		Solomon Islands Broadcasting Co.	5020			
2000-2100		WWCR, Nashville, Tennessee	15690			
2000-2100		WYFR, Okeechobee, Florida	11830	13695	15440	15566
			17612	17885	21525	21615
2005-2100		Radio New Zealand, Wellington	17680			
2005-2100		Radio Damascus, Syria	12085	15095		
2025-2045		RAI, Rome, Italy	7235	9575	11800	
2030-2100		Radio Sofia, Bulgaria	11660	15330	9700	
2030-2100		Radio Korea, Seoul	7550	6480	15575	
2030-2100		Radio Netherlands Int'l, Hilversum	9860	13700	15560	
2030-2100		Voice of Vietnam, Hanoi	12020	15010	9840	
2040-2048	M-A	Voice of Greece, Athens	9425	11645	9395	
2045-2100		All India Radio, New Delhi	7412	9550	9910	11620
			11715	7265		
2045-2100		Vatican Radio, Vatican City	9625	11700	11760	15120
2050-2100		Vatican Radio, Vatican City	6190	7250	9645	

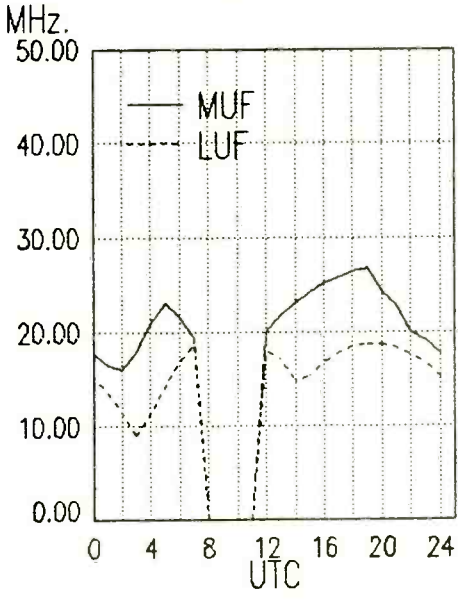
2100 UTC [5:00 PM EDT/2:00 PM PDT]

2100-2105	Radio Damascus, Syria	12085	15095		
2100-2110	Vatican Radio, Vatican City	6190	7250	9645	
2100-2115	Radio Prague Int'l, Czechoslovakia	5930	6055	7345	11990
2100-2125	Radio Netherlands Int'l, Hilversum	9860	13700	15560	
2100-2130	Vatican Radio African Service	17730	17710	21650	
2100-2130	Sierra Leone Brdcstng.Co.,Freetown	3316			
2100-2130	Radio Korea, Seoul	15575	7550	6480	
2100-2130	Radio Romania Int'l, Bucharest	9690	9750	11810	11940
2100-2130	BRT Brussels, Belgium	5910	9925		
2100-2130	Radio Japan General Service, Tokyo	17890	17810	15270	15230
		21610			
2100-2130	Radio Sweden, Stockholm	9655	11705		
2100-2130	Swiss Radio International, Berne	9885	13635	15525	12035
2100-2130	Radio Finland, Helsinki	6120	11755	15400	
2100-2145	Radio Berlin International, GDR	9730			
2100-2145	Radio Yugoslavia, Belgrade	7215	9620	11735	15105
2100-2150	Deutsche Welle, Koln, West Germany	9670	11810	9765	13780
		15435			
2100-2200	Radio Canada Int'l, Montreal	15325	17875		
2100-2200	All India Radio, New Delhi	11715	11620	9910	9550
		7412	7265		
2100-2200	CBC Montreal	9625			
2100-2200	Radio New Zealand, Wellington	17680			
2100-2200	Radio Moscow World Service	11630	11840	11980	12060
		15230	15535	15560	
2100-2200	CBN, St. John's, Newfoundland	6160			
2100-2200	CBU, Vancouver, British Columbia	6160			
2100-2200	Voice of Hope, Lebanon	6280			
2100-2200	CFCF, Montreal, Quebec, Canada	6005			
2100-2200	CFCN, Calgary, Alberta, Canada	6030			
2100-2200	CHNS, Halifax, Nova Scotia, Canada	6130			
2100-2200	Christian Science World Service	9455	13770	15610	17555
		15265			
2100-2200	Solomon Islands Broadcasting Co.	5020	9545		
2100-2200	CKWX, Vancouver, British Columbia	6080			
2100-2200	CFRB, Toronto, Ontario	6070			
2100-2200	KUSW, Salt Lake City, Utah	15590			
2100-2200	Radio Australia, Melbourne	9620	15160	17795	
2100-2200	KVOH, Rancho Simi, California	17775			
2100-2200	Radio Baghdad, Iraq	13660			
2100-2200	Radio Beijing, China	9920	11500		
2100-2200	Radio Jordan, Amman	9560			
2100-2200	Radio for Peace, Costa Rica	21566	13660		
2100-2200	Voice of America-Africa Service	7195	15410	15445	15580
		15600	17785	17800	17870
		21485			

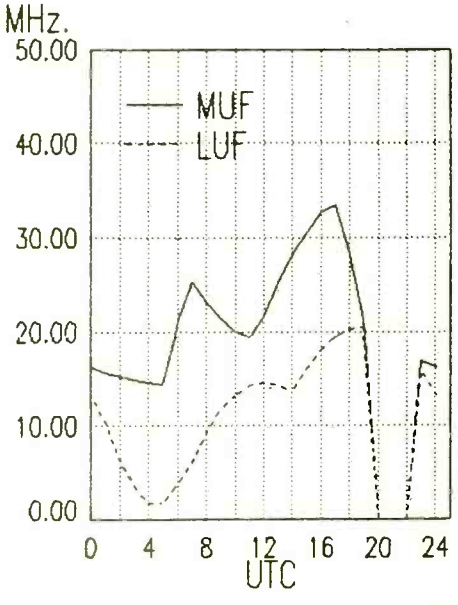
West Coast To Central Africa



West Coast To East Africa



West Coast To South Africa



West Coast

frequency section

Radio Peace and Progress sent this QSL to John Carson of Oklahoma. If you have some prize QSLs you haven't seen featured in our pages, how about sending them to QSL Editor, c/o Monitoring Times? We'll copy and return them to you as quickly as we can.

Got suggestions, additions for the Frequency Guide? Send them to Greg Jordan at the address at the beginning of this section. He'll be glad to hear from you.

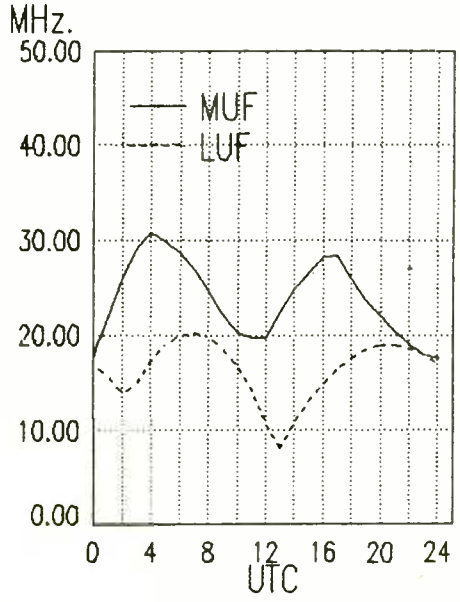
2100-2200		Voice of America-Middle East Service	6040	9700	9760	11760
			15205	11710		
2100-2200		Voice of America-Pacific Service	11870	15185	17735	
2100-2200		WHRI, Noblesville, Indiana	13760	17830		
2100-2200		WINB, Red Lion, Pennsylvania	15185			
2100-2200		BBC World Service, London, England	5975	9410	12095	15070
			15260	15400	17760	17880
2100-2200		WRNO Worldwide, Louisiana	13720			
2100-2200		WWCR, Nashville, Tennessee	15690			
2100-2200		WYFR, Okeechobee, Florida	11580	11830	13695	17885
			15566	17612	21615	21525
2110-2200		Radio Damascus, Syria	15095	12085		
2130-2200		Kol Israel, Jerusalem	15640	12077	11605	17575
			17630			
2130-2200		Radio Sofia, Bulgaria	15330	11660		
2130-2200		Radio Vilnius, Lithuania	6100	9675		
2130-2200		Radio Canada Int'l, Montreal	11880	15150	17820	
2130-2200		HCJB, Quito, Ecuador	15270	17790		
2145-2200		Radio Berlin International, GDR	5965	7295	9730	13760

2200 UTC [6:00 PM EDT/3:00 PM PDT]

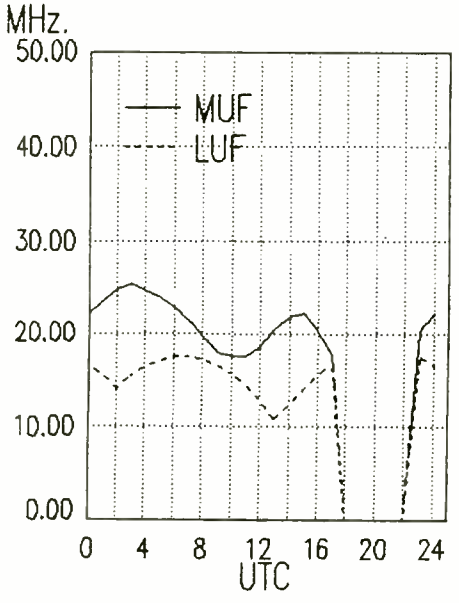
2200-2205		Radio Damascus, Syria	15095	12085		
2200-2215		Sierra Leone Brdcstng.Co.,Freetown	3316			
2200-2215	M-A	ABC, Alice Springs, Australia	2310	(ML)		
2200-2215		ABC, Tennant Creek, Australia	2325	(ML)		
2200-2215	M-F	Voice of America-Caribbean Service	9640	11880	15225	
2200-2225		RAI, Rome, Italy	5990	7235	9710	
2200-2230		Radio Beijing, China	3985			
2200-2230		Radio Berlin International, GDR	5965	7295	9730	13760
2200-2230		Radio Vilnius, Lithuania	6100	11790	13645	15180
			15455	15485		
2200-2230		ABC, Katherine, Australia	2485			
			11715	7265		
2200-2230		Radio Canada Int'l, Montreal	11705	11905	9755	5960
2200-2230		Radio Sofia, Bulgaria	15330	11660		
2200-2230	S	KGEI, San Francisco, California	15280			
2200-2230	S	Radio Norway International, Oslo	17730			
2200-2245		All India Radio, New Delhi	7412	9550	9910	11620
2200-2300		BBC World Service, London, England	5975	6005	6175	6195
			7325	9410	9590	9915
			11750	12095	15070	15260
			15400	17750		
2200-2300		CBC Northern Quebec Svc, Canada	9625			
2200-2300		CBN, St. John's, Newfoundland	6160			
2200-2300		Radio Korea, Seoul	15575			
2200-2300		Radio Moscow North American Svc	11710	11780	12040	13605
			15230	15315	15355	15425
			15580	15595		
2200-2300		Radio Moscow World Service	11745	15580	17655	21690
			21790			
2200-2300		Voice of Turkey, Ankara	9445	9665	9685	17785
			17880			

West Coast

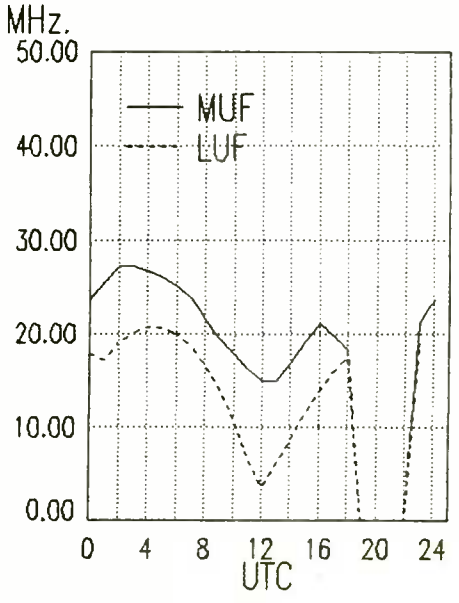
West Coast To Indian Ocean



West Coast To Central Asia



West Coast To South East Asia

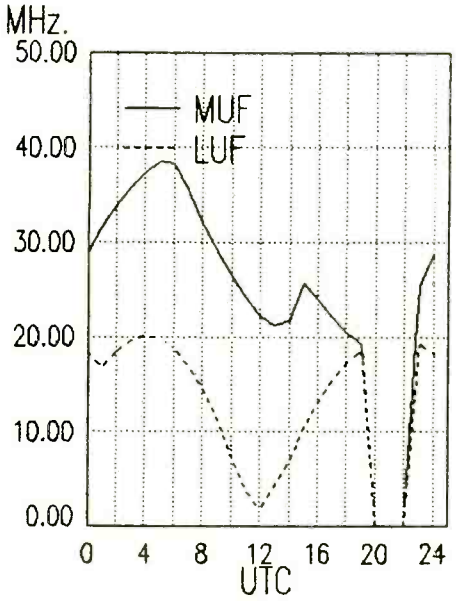


2200-2300	CBU, Vancouver, British Columbia	6160			
2200-2300	CFCF, Montreal, Quebec, Canada	6005			
2200-2300	CFCN, Calgary, Alberta, Canada	6030			
2200-2300	CHNS, Halifax, Nova Scotia, Canada	6130			
2200-2300	Christian Science World Service	9465	15275	15300	15405
		17555			
2200-2300	CKWX, Vancouver, British Columbia	6080			
2200-2300	CFRB, Toronto, Ontario	6070			
2200-2300	KUSW, Salt Lake City, Utah	15580			
2200-2300	Voice of Hope, Lebanon	6280			
2200-2300	Radio Australia, Melbourne	15160	15240	15320	
		17795			
2200-2300	Radio Havana Cuba	7140			
2200-2300	Radio for Peace Int'l, Costa Rica	21566	13660		
2200-2300	Radio Tonga, Kingdom of Tonga	5030v			
2200-2300	Voice of America-East Asia Service	7120	9770	11760	15185
		15290	15305	17735	17820
2200-2300	Voice of America-Eur/Pac. Service	9852	11805	15345	15370
		17610			
2200-2300	Voice of Free China, Taiwan	17750	17845		
2200-2300	United Arab Emirates R., Abu Dhabi	9600	11985	13605	
2200-2300	WHRI, Noblesville, Indiana	13760	17830		
2200-2300	WINB, Red Lion, Pennsylvania	15185			
2200-2300	WRNO Worldwide, Louisiana	13720			
2200-2300	WWCR, Nashville, Tennessee	15690			
2200-2300	WYFR, Okeechobee, Florida	11580	11830	13695	17612
		17885	21525		
2205-2220	Vatican Radio, Vatican City	9615	11830	15105	
2230-2300	Radio Polonia, Warsaw, Poland	5995	6135	7125	7270
2230-2300	Radio Tirana, Albania	7215	9480		
2230-2300	Swiss Radio Int'l, European Service	6190			
2245-2300	All India Radio, New Delhi	15110	11745	11715	9910
		9535			

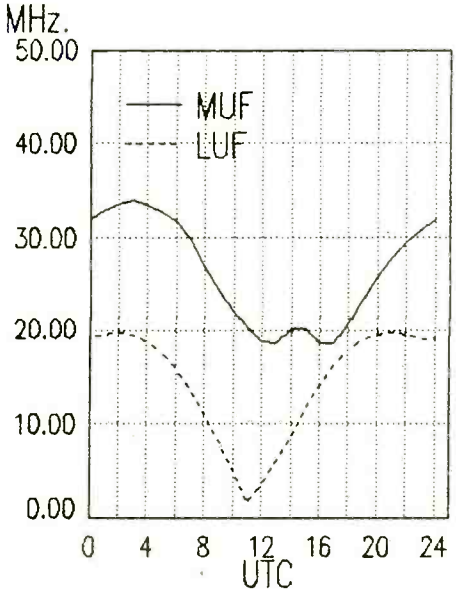
2300 UTC [7:00 PM EDT/4:00 PM PDT]

2300-2310	Sierra Leone Brdcstng.Co.,Freetown	3316			
2300-2315	FEBC, Manila, Philippines	6030			
2300-2325	Radio Finland, Helsinki	11755	15185		
2300-2330	Kol Israel, Jerusalem	11605	9435	15640	
2300-2330 S	Radio Norway Int'l	15165			
2300-2330	Radio for Peace, Costa Rica	21566	13660		
2300-2330	Radio Canada Int'l, Montreal	9755	11730		
2300-2345	WYFR, Okeechobee, Florida	11580	5985	15440	15170

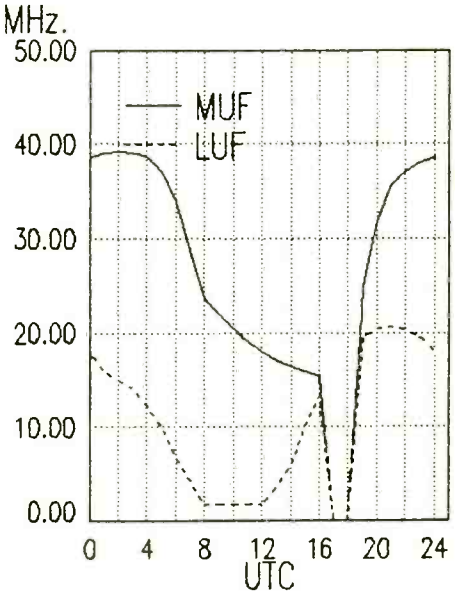
West Coast To Indonesia



West Coast To Far East



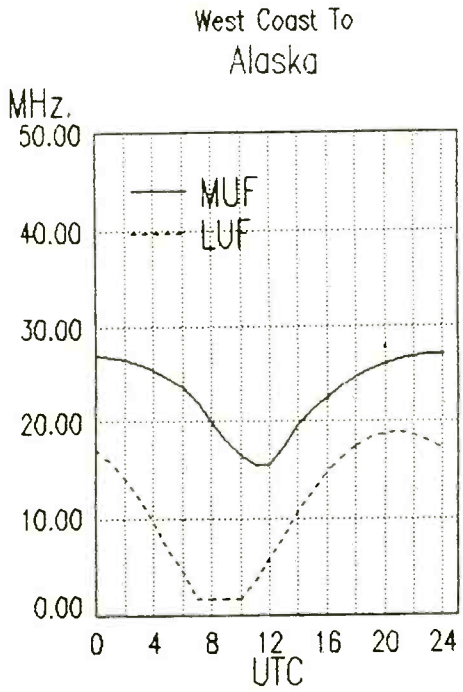
West Coast To Australia



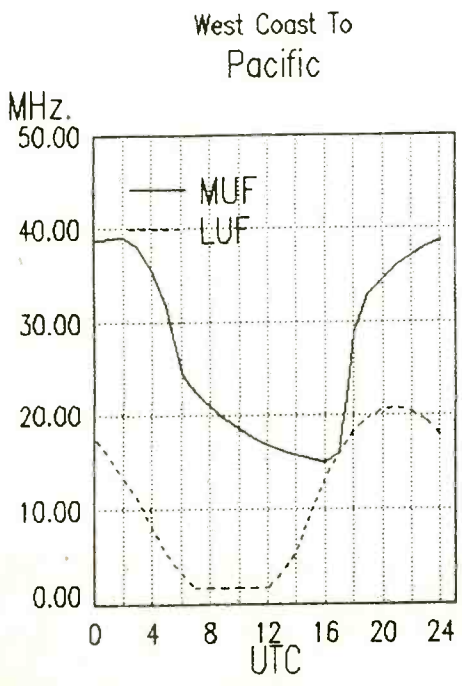
West Coast

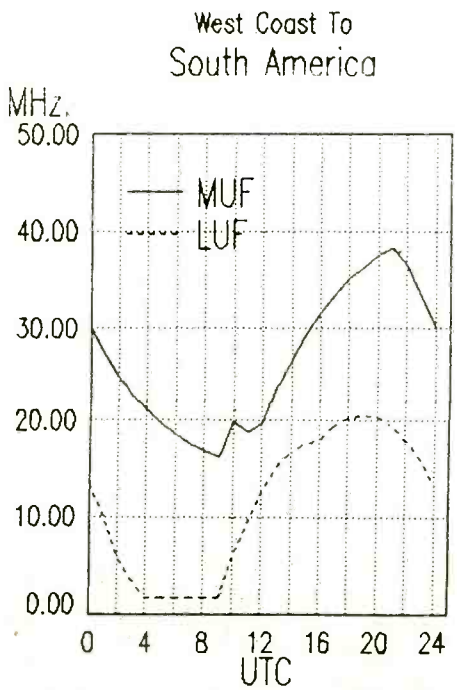
frequency section

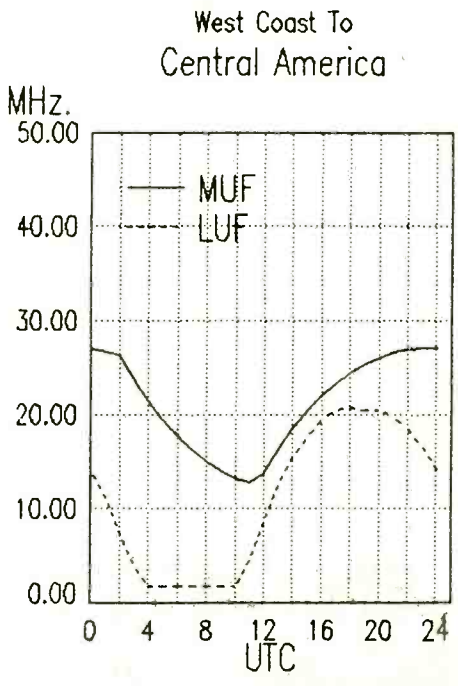
2300-0000		Adventist World Radio, Costa Rica	9725	11870		
2300-0000		Radio Moscow North American Svc.	11710	11780	11850	12050
			13605	15315	15355	15580
			17735			
2300-0000		Radio Moscow World Service	15550	15580	21690	21790
2300-0000		Radio Sofia, Bulgaria	11660	15330		
2300-0000	A,S	KTWR, Guam	15125			
2300-0000		CBN, St. John's, Newfoundland	6160			
2300-0000		CBU, Vancouver, British Columbia	6160			
2300-0000		CFCF, Montreal, Quebec, Canada	6005			
2300-0000		CFCN, Calgary, Alberta, Canada	6030			
2300-0000		CHNS, Halifax, Nova Scotia, Canada	6130	15405		
2300-0000		BBC World Service, London, England	5975	6175	6195	7325
			9410	9590	9915	11750
			15260			
2300-0000		Christian Science World Service	9465	15275	15300	17555
			15405			
2300-0000		Radio New Zealand, Wellington	17680			
2300-0000		CKWX, Vancouver, British Columbia	6080			
2300-0000		CBC Montreal	9625			
2300-0000		CFRB, Toronto, Ontario	6070			
2300-0000		KUSW, Salt Lake City, Utah	15580			
2300-0000		Radio Australia, Melbourne	15160	15240	15320	
			17795			
2300-0000		Radio Japan General Service, Tokyo	11835	15195	17810	21610
			17765			
2300-0000		Radio Luxembourg	6090			
2300-0000		Radio Pyongyang, North Korea	11735	13650		
2300-0000		Radio Tonga, Kingdom of Tonga	5030v			
2300-0000		Voice of America-East Asia Service	7120	9770	11760	15185
			15290	15305	17735	17820
2300-0000		United Arab Emirates R.,Abu Dhabi	9600	11985	13605	
2300-0000		WHRI, Noblesville, Indiana	13760	17830		
2300-0000		WINB, Red Lion, Pennsylvania	15145			
2300-0000		WRNO, New Orleans, Louisiana	13720			
2300-0000		WWCR, Nashville, Tennessee	15690			
2305-2355		Radio Polonia, Warsaw, Poland	5995	6135	7125	7145
			7270			
2330-0000		Radio Canada International	5960	9755		
2330-0000		Voice of Vietnam, Hanoi	15010	12010	9840	
2330-0000		Radio for Peace Int., Costa Rica	7375	(+13660	21566	M-F)
2330-0000		BRT Brussels, Belgium	9925	13675		
2330-0000	M-A	Radio Budapest, Hungary	6110	9520	9585	9835
			11910	15160		
2330-0000		Radio Kiev, The Ukraine	11790	13645	15180	15455
			15485			
2330-0000		Radio Korea, Seoul	15575			
2330-0000		Radio Tirana, Albania	6120	9760	11825	
2335-2345	M-A	Voice of Greece, Athens	9395	11645		
2345-0000		Radio Berlin International, GDR	6080	9730	11890	13610
			13760	15240		



West Coast







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An effective noise blanker has adjustable controls for optimum reduction of a wide variety of impulse noises, from power line hash to the Russian woodpecker. Filter selectivity may be further enhanced by the use of the independent notch filter and passband tuning controls.

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

(Psst, Buddy, Wanna see ICOM's new IC-R72?)

The introduction of a communications receiver by a major manufacturer is always big news. When ICOM unveiled the IC-R9000, it turned out to be the best receiver we had ever tested -- but at a ghastly price.

So it was with keen interest that we viewed the many ads these past months for ICOM's new IC-R72 desktop receiver. It's designed to be a lower-cost alternative -- by about $200, give or take -- to ICOM's venerable IC-R71A.

Yanks and Canucks Need Not Apply

Right off, there's a rub, and it's a whopper: The 'R72 is not going to be available in the United States or Canada. Not now, maybe not ever. Ditto the new IC-R1 and IC-R100 receivers you've seen advertised hither and yon.

Why? Ask the friendly folks at ICOM America, and they'll tell you with a straight face that it all has to do with production considerations.

However, the 'R72, along with the 'R1 and 'R100, are all available just about anywhere on our planet *except* the United States and Canada. But if you buy one abroad and it ever needs service, you'd better not look to ICOM America. Says ICOM: They won't touch it, or the 'R1, or the 'R100. Not now, maybe not ever. Period.

Undeterred, *Passport to World Band Radio's* team of guerrillas swooped down on Tokyo just as production units were landing on Japanese dealer's shelves. What we found was a mixed bag.

An Attractive Package

The 'R72 is a cleanly designed, attractive rig, in many ways resembling ICOM's IC-725 ham transceiver. The compact 'R72 measures just 9.5" wide by 3.7" high by 9" deep, so it occupies relatively little real estate on a desktop. The bright orange-on-black display is highly legible, too, as is the analog signal-strength meter. The tuning knob, replete with (non-rotating) speed dimple, spins with silky smoothness.

More juicy stuff. The 'R72 offers a number of features to warm the heart of any serious shortwave buff: multi-voltage AC operation; 99 tunable memory channels, plus two separate programmable scan-edge memories; a 10 dB preamplifier to help flush out faint signals; a keypad for direct frequency and memory selection; two types of antenna connectors on the back panel; a two-position noise blanker; a variety of scanning options; capability for computer control; and provision for operation off a built-in lead storage battery.

This last feature, which gives around one hour of operation per charge, is inadequate for field portable requirements, such as on a DX-pedition. However, it's useful for when the electricity fails, such as during an electrical storm or earthquake.

When we ran the 'R72 through our laboratory paces, the measurements also confirmed that the receiver is a worthy piece of gear. Except for sensitivity in the AM band, nearly all measurements are at least "good." Some -- image rejection, IF rejection, and shortwave sensitivity with the preselector on -- are simply superb.

Overall, Worthy Ergonomics

In the past, we've often faulted ICOM for its inattention to ergonomics -- the art of orienting controls to people, rather than the other way around. Here, the 'R72 represents a major improvement. It's much handier -- and simpler -- to use than the 'R71.

Not Included Are ...

But all is not well at El Rancho ICOM.

Presumably to keep costs down, a number of goodies that shortwave hot-rodders prize are nowhere to be found: no tunable notch filter, no passband tuning, no IF shift, no RF gain control. If you want these goodies, make a beeline for the original, now discontinued, version of the 'R71. (The current version, as you may recall from our earlier report, is somewhat stripped down).

Too, the 'R72's tiny, tinny speaker is a joke. The 'R72 definitely requires headphones or a good external speaker. With either of these, audio becomes quite pleasant.

Filters for the Deaf

Worse news for world band listeners are the bandwidth filters. Our laboratory measurements show AM-wide to be nearly 8 kHz at -6 dB, and no less than 19.2 kHz at -60 dB -- and there's considerable filter flyback, to boot. That's too wide.

The AM-narrow filter gets rid of the problem. But that filter is truly narrow -- 2.4 kHz -- and sounds muffled unless the receiver is detuned 1 kHz or so, which helps a bit. So we found ourselves listening to most world band broadcasts not in the usual AM mode, but in the SSB mode, which also makes use of that narrow filter. That's okay for DXing, but for ordinary world band listening it's an impractical alternative.

Tuning world band signals in the SSB mode does have benefits, but it's fussy and time consuming.

Because of its disappointing bandwidth performance, the ICOM IC- R72 all but begs for the sort of filter replacement offered by various shortwave specialty firms. Of course, this would raise the price of the receiver, and thus tend to defeat its positioning as a lower-cost alternative to the 'R71A.

Buzz Off

There are various slight internally generated noises that are audible on the 'R72. In narrow AM and LSB, there's minor hum, whereas in USB there is a bit of buzz on occasion with faint, DX-caliber signals.

Lab tests of our unit unearthed the source that USB buzz: the frequency synthesizer, arguably the heart of any serious modern receiver. It's one of the least-clean synthesizers we've encountered in recent times, and stands out all the more because of ICOM's heretofore longstanding practice of turning out models with superior synthesizers.

Another non-critical disappointment is that on our unit, at any rate, the USB mode was adjusted so high that virtually no low audio frequencies made it through to the speaker. Added to the "buzz," this made ham and utility listening -- and listening to the upper sideband of world band broadcasts -- something less than an aural tour de force.

The Bottom Line

Withal, the 'R72 is a nice little set that's in serious need of a narrower -- say, 5 or 5.5 kHz -- "wide" bandwidth. That, and an outboard speaker, would make it suitable for serious listening to world band broadcasts. Even with that improvement, though, its unclean synthesizer keeps it from being a serious DX rig.

The basic problem with the 'R72 is that too many corners have been cut, apparently to keep costs well and truly down. In all fairness to ICOM, the root of this problem is largely beyond their control. The fall of the dollar against the yen some years back has forced the Japanese -- and, more recently, the Taiwanese -- to raise prices, cut profit margins, and search for economies. As a result, product life-cycles have been lengthened, "new" models introduced that are but cosmetic redesigns of earlier models -- and what truly new models that have been introduced have tended to have "cost accounting" stamped over them.

Nearly every Japanese world band manufacturer, including Sony, has been caught in this economic vise. But with American manufacturers asleep at the wheel and Europeans only recently beginning to stir, what the Japanese have to offer in the way of serious shortwave receivers is pretty much what we have to accept. When they make them available to us in the first place.

The 'R72? It's nice, but nothing special. Leave your guerrillas at home.

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You can hear Larry Magne's equipment reviews the first Saturday of each month, plus PASSPORT editors Don Jensen and Tony Jones the third Saturday, over Radio Canada's "SWL Digest." For North America, "SWL Digest" is heard at 7:35 PM ET on 5960 and 9755 kHz, with a repeat Tuesday at 8:30 AM ET on 9635, 11855 and 17820 kHz.

PASSPORT'S "RDI White Paper" equipment reports contain everything found during its exhaustive tests of communications receivers, antennas and advanced portables. These reports are now available in the U.S. from Universal Shortwave and EEB; in Canada from PIF, C.P. 232, L.d.R., Laval PQ H7N 4Z9; in Europe from Interbooks, 8 Abbot Street, Perth PH2 0EB, Scotland, and Lowe Electronics stores; and in Japan from IBS-Japan, 5-31-6 Tamanawa, Kamakura 247. For a complete list of reports, send a self-addressed stamped envelope to RDI White Papers, Box 300M, Penn's Park PA.

Bob Grove, WA4PYQ

AOR AR3000 Wide Coverage, All Mode Scanner

For years, listeners have asked for one compact receiver which covers virtually the entire listening range, with adequate memory capacity and all mode detection at a reasonable cost. It may be finally here.

The new AR3000 scanner from AOR is loaded with features and functions. Offering continuous, no-gap coverage from 100 kHz through 2036 MHz -- the widest frequency range of any receiver on the consumer market -- the AR3000 also offers push-button selection of AM, narrowband FM, wideband FM, USB and LSB (and CW).

Tuning and search steps are custom-selected for any size from 50 Hz through 100 kHz, allowing natural sound on SSB and matching tuning increments for any band plan. A slight pull on the tuning knob multiplies the tuning speed by ten for larger stepping.

Up to 400 memory channels are accessible in four 100-channel banks. Memory stores frequency, mode, channel number and attenuator setting. The first channel of each bank may serve as one of four priority channels. Each of the four banks permits a separate search range to be stored, the ranges for which may be chosen for any span throughout the scanner's spectrum.

During the search function, which clips along at 40 steps per second, up to 48 frequencies may be locked out to prevent repeated stopping on a busy or unwanted signal. An automatic two-second delay is built in for both scan and search functions.

A dual-function, 22-button keypad commands an array of functions including mode, search, step increments, scan, priority, up-down search or scan direction, keyboard lock, beep-tone select, channel lockout, display backlight, memory bank selection, attenuator, clock and timer set.

The AR3000 is powered by 12 volts DC; an AC wall adaptor and a mobile power cord are included, but no mobile mounting bracket. A telescoping whip is provided to attach to the single, rear-panel, BNC antenna connector.

While the frequency display is smaller than might be expected, the LCD is crisp, contrasty, and strongly backlighted, allowing easy viewing in all lighting conditions. A nine-segment LCD bargraph gives relative signal strength indications.

A 24-hour clock-timer -- with seconds display -- automatically switches on your tape recorder via a rear-panel, eight-pin DIN connector (mating plug not supplied, but available from Radio Shack as part number 274-026 for $1.79). Squelch also activates the recorder for scan/search recording.

For computer control, a rear-apron RS232 port accesses frequency, mode, steps, memory, squelch, signal strength, RF attenuation and memory bank selection. No additional hardware is required and MS-DOS software is due soon.

Let's check it out

Sure, the specs look good, but how does it work under real listening conditions? Impressively! GaAsFETs in the receiver front end provide high sensitivity and low noise, as good as -- if not better than -- any scanner we have ever tried. SSB frequency stability is solid with only minor AGC pumping.

An array of 15 RF bandpass filters assures wide dynamic range and low intermodulation products under strong signals which would produce severe signal degradation in competitive scanners.

On the down side, audio quality is compromised by the small, bottom-mounted speaker; it can be loud, but it will be distorted. An external speaker considerably improves that compromise. Some residual audio is still heard in a quiet room even with the volume control fully counter-clockwise.

IF selectivity is quite respectable, with 2.4 kHz (2:1 shape factor) filters switched in for SSB reception and somewhat wider filters for AM and narrow FM.

A friendly keypad

While the busy keypad may appear intimidating with its myriad pushbuttons and legends, the commands are easy to learn and logical once the manual -- well written and illustrated -- is read thoroughly.

A detent knob permits the user to tune in a frequency just as he would on a general-coverage receiver. Tuning steps are easily selected at the press of a button. Automatic tuning (search) can be up or down, controlled by the respective keys.

A clever shift key allows the user to toggle back and forth between two frequencies for repeater input/output or two-frequency simplex monitoring. An attenuator key affords instant reduction of overpowering signals.

The bottom line

Because the AR3000 was withdrawn from European distribution some months ago, we were skeptical; frankly, this is a superbly-designed radio, loaded with features and long on performance. For the listener who wants everything in one box for under $1000, start here.

AOR AR3000, $995 from ACE Communications, 10707 E. 106th St., Indianapolis, IN 46256; discounted by some *MT* advertisers, including $899 plus $5 shipping from Grove Enterprises, PO Box 98, Brasstown, NC 28902 (order line: 1-800-438-8155). Introductory quantities are limited, so check on availability.

Improvements for the PRO2005

Now discontinued, the Realistic 2005 scanner continues to enjoy an unsurpassed reputation for flexibility and performance. Les Jernigan of Lescomm offers several improvements which extend those features even further. Some of these improvements apply to the former PRO2004 as well and, presumably, will apply to the PRO2006 -- when it is finally available.

For example, a nine-segment LED S-meter ($79.95 installed; $69.95 kit form) permits comparative signal strength readings in all modes. Continuous, no-gap 760-1300 MHz restoration and 30-channel-per-second scan/search rate increase -- with a squelch improvement thrown in -- is $29.95 ($21.95 in kit form).

Adding a beep volume control is $19.95

($9.95 for do-it-yourselfers), and the addition of a 455 kHz IF output jack allowing the scanner to be attached to a general coverage receiver for SSB reception is another $14.95 ($9.95 in kit form).

Spraying the inside of the plastic cabinet with shielding (not available as a kit) is $9.95 plus shipping if done separately. If you'd like Les to do the whole job in one whack, $139.95 will take care of it (all kits bought at once costs $99.95).

Do the mods work?

The interference shielding spray does provide some improved immunity to external noise. This could be important in a mobile environment or in a high signal area. If you have nearby appliances -- including other radios -- which radiate interference, the shielding may be a marginal plus -- not as good as a metal cabinet would have been, but better than the old plastic.

The LEDs are arranged in a vertical column alongside the display. Approximately logarithmic in response, weak signals cause one or two segments to light, illuminating the entire column with strong locals. A bright/dim switch is provided.

Hysteresis is a "loose" squelch, intended to prevent weak signals from breaking in and out of the audio. Many listeners prefer a "tight" squelch, whereby the slightest adjustment of the knob will open or close the squelch. This is Les's mod.

The original annunciator "beep" to confirm key entries drives some of us crazy! Les provides a comfortable volume adjustment -- even completely off -- to suit the user.

If you have an SSB-capable shortwave receiver, you may wish to have this option installed. Connected to the antenna jack of your receiver, the PRO2005 now becomes a VHF/UHF SSB receiver.

Single sideband (SSB) and amplitude-compandered sideband (ACSB) may be heard on ham bands, military aircraft signals, government satellites and other places in the upper reaches of listeners' spectrum.

We always want an increase in scan and search rate. Les offers that, too, increasing the rate to approximately 25-30 steps per second at no sacrifice in performance.

The 806-960 MHz spectrum is loaded with activity near large cities. Tandy disables the cellular telephone range at the factory; Les reenables it. Remember, it is considered unlawful to monitor cellular -- or any other kind of mobile telephone -- signals.

The Key Research Autoload

Key Research has developed a nifty gadget which allows automatic entry of search-discovered frequencies into the scanner's memory, unattended. You can come back later, query the memory, and find out what frequencies were active while you were gone!

Les installs this device for $60 plus shipping, allowing your choice of 10 scratchpad memories or up to 255 regular memories to be filled during the automatic, unattended search period. All installations are warranted for a year; there are no refunds.

Les accepts check or money orders made out to Lester Jernigan; sorry, no CODs or charge cards. For more information on these and other mods, send an SASE to Lescomm, PO Box 5212, 1116 Stone Street, Jacksonville, AR 72076.

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catalogs

Chronicling a Medium

Television, in its short life, has managed to infiltrate virtually every aspect of life on this planet. There are probably thousands of pounds of dry, dusty, academic texts that document the history of this strange medium but amazingly, it is a small magazine often found at the supermarket checkout line. That magazine, of course, is *TV Guide*.

TV Guide Specialists is a company that, as the name implies, specializes in *TV Guide*. In fact, owner Jeff Kadet has put out a catalogue listing every *TV Guide* ever produced (the national magazine began on April 3, 1953). What's more, he's got them all in stock, in conditions ranging from fine to mint, at prices that start at $3.00 and go as high as $225 (for the April 17-23, 1953 issue).

There, frozen in time, is Lassie. Dragnet. All in the Family. Battlestar Galactica. Even if you're not the least bit interested in buying one of Mr. Kadet's back issues, you might want to get his catalogue. Well illlustrated and at only $4.95 postpaid, the *TV Guide* Specialist catalogue it is an enjoyable romp down memory lane. Send your check or money order to Box 20, Macomb, Illinois 61455.

Getting Around for 300 Bucks

LORAN is an acronym for *Long Range Navigation* that is based on a group of radio transmitters that broadcast synchronized, pulsed signals. The LORAN receiver is actually two devices in one, a sophisticated radio that picks up the radio signals and a navigation computer that analyzes them to plots the unit's position.

A company called The

Sportsman's Guide is now offering for sale what it claims is the "first" handheld LORAN navigator, the SportNav. According to the catalogue, it will "tell you in plain English...how to get there and alert you when you arrive, within 20 feet."

The 28 ounce unit is just $339. Use your Mastercard, Visa or American Express and call 1-800-888-3006.

Let's be Realistic

Radio Shack's most recent catalogue includes two decent values. First, their Nine-Band (6 shortwave, "international" longwave, FM and AM) portable radio, the Realistic DX-360, has been discounted from $89.95 to $69.95. Also getting slashed is the Realistic 40 Channel Mobile CB Radio. It went from $99.95 to $49.95.

Speaking of Radio Shack, Grove Enterprises is now touting the new Realistic PRO *2006* scanner in their new catalogue. The just-released '2006 lists at $419 but Grove is offering it at $389. The main difference between the new '2005 and the *newer* '2006? Scanning speed. For more information, call 1-704-837-9200.

New From Panasonic

Panasonic puts the world in your hands with a new, palm-sized camcorder packed with full-size features and nicknamed the 'Palmcorder.'" So reads Panasonic's latest press release on the 1.7 pound (without battery) PV-40.

To put things in perspective, the Palmcorder is about the size of a 35 mm SLR camera and eliminates forever the crowds of bozos that circle about family events with TV cameras the size of copy machines perched atop their shoulders.

According to the press release, the PV-40 features "fuzzy logic" technology and flying eraser head (which eliminates "rainbow noise"), and full auto white balance. "We think," says Panasonic Marketing Manager Tom Hitzges, "that the PV-40 is going to change the way people think of camcorders." It's sure going to change the way they talk about them.

Panasonic has not announced the price of the PV-40.

Down the hallway at Panasonic's Technics division, they're unveiling a unique speaker system "recognized for its innovative design." It's the SST-1 Twin Load Horn Speaker and Technics proudly announces that it has been accepted into the prestigious design collection of The Museum of Modern Art in New York City.

Technics says that the SST-1 "effectively mirrors the shape and function of a fine musical instrument." We think that it looks more like a car horn ripped from beneath the hood of an aging Dodge Dart.

The SST-1 comes in three colors: metallic red, metallic black and pearlized white and retails for $2,000.00 a pair. Wonder how they'd stand up to a flying eraser head with fuzzy logic.

See something interesting in your pile of fresh junk mail? Send it in! Be sure to include the name of the catalog, the item's description, price, shipping information and phone number. Send to "Catalogs," P.O. Box 98, Brasstown, NC 28902.

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Radio-Electronics 7MT02

Doug DeMaw

Reduce QRN with an On-Ground Receiving Antenna

Does man-made noise in your neighborhood wipe out reception when you monitor the medium- and shortwave bands? This problem is a plague for many listeners who live in urban areas. It can also affect those of us who dwell in rural settings. Such items as electric motors, electric fences, noisy power lines and all manner of household appliances can spoil reception by covering up weak signals with hash and buzz.

Ordinary antennas that are high above ground can seldom reject this unwanted local noise. We can combat neighborhood QRN by installing antennas that are laid on the ground. If the noise reduction is not complete, we may often reduce it to an acceptable level with on-ground antennas.

Why Do These Antennas Help?

The intensity of man-made noise is usually maximum when the receiving antenna is aloft and close to the noise source, such as power lines. When the antenna is close to ground it is often out of the most intense part of the noise field, and hence we can enjoy quieter reception.

Also, most man-made noise is vertically polarized. This means that the worst receiving antenna you can use (relative to noise pickup) is one that is vertically polarized. A horizontal antenna discriminates against much of this raucous noise. A horizontally polarized antenna that is near ground or on the ground may not respond to the QRN, whereas a vertical antenna may pick up so much noise that signals can't be copied.

Practically all electrical conductors radiate noise. This includes your house wiring, the drop lines from the power source and even the phone lines. The source of the noise may be a block or two away from your home, but the noise pulses are carried on the phone or power lines to your area. They are radiated along the way to cause interference. This is similar to using a transmitter to supply RF power to a transmitting antenna.

The logical method for suppressing noise is to treat it at the source. AC line filters, for example, can be installed close to electrical motors that cause QRN. The power company should be consulted if you suspect a noisy transformer or insulators in your neighborhood. Most power companies are cooperative when you ask for help.

TV receivers often radiate a buzzy signal that occurs every 15.75 kHz across the tuning range of your receiver. This is the energy from the 15.750 kHz horizontal oscillator. This circuit produces rich harmonics that occur every 15.75 kHz in the MF and HF bands. The problem is especially troublesome from LF through the lower HF spectrum (100 kHz to, say, 4 MHz).

The TV QRN can usually be cured at the TV set by installing an ac-line filter and grounding it to a cold-water pipe or earth ground. A high-pass filter in the TV receiver antenna feeder also helps.

Placement of Your Antenna

When you erect your receiving antenna, try to keep it as far away from phone and power lines as practicable. In a like manner, keep it away from the house and its internal wiring. These are all prime noise radiators. Your antenna should be at a right angle to the power line or drop line. Never route your antenna under or over a power line. This can be lethal!

A center-fed dipole with balanced feeders (300-ohm ribbon or 450-ohm ladder line), if used with an antenna tuner, also helps to reduce noise. The feeder is balanced, and this prevents the feed line from picking up noise -- especially vertically polarized noise energy. The antenna tuner is used in the radio room, and it is adjusted for maximum signal strength for the medium- or shortwave band of your choice.

Examples of homemade antenna tuners are provided in *The ARRL Antenna Book* and in *The W1FB Antenna Notebook*. Both of these publications are available from the ARRL, Inc., Newington, CT 06111.

Some On-ground Antennas You Can Try

The least complicated on-ground antenna consists of a long random-length wire that is laid on the ground. The longer the wire the better. Try to install it in a straight line. If you can't do this, bend it to fit within your property area. A small antenna tuner will be helpful at the receiver in order to tune the wire to resonance at the receive frequency. It does not matter what wire size you use, nor should you be concerned whether or not the wire has thick insulation. This simple antenna may solve your noise problem.

A more effective low-noise receiving antenna is known as the coaxial "snake." Figure 1 shows the details of this unusual antenna. It is made from a random length of RG-58 or RG-59 coaxial line. The far end is short-circuited. Connect the inner conductor to the shield braid and seal it against the weather.

The receiver end of coaxial cable is not shorted. Rather, the center conductor is hooked to an antenna tuner or the receiver antenna jack, and the shield braid is left floating (no electrical connection to anything). This has been a very effective

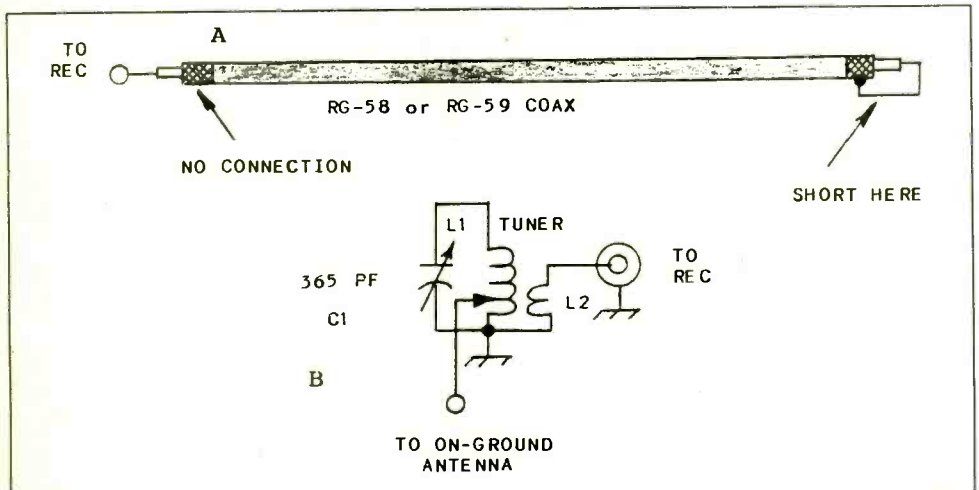


Figure 1 -- Illustration of a snake antenna for low-noise short-wave reception (A). The coaxial cable may be any length, but the longer the better. Use at least 75-100 feet of cable or greater for best results. Illustration B shows how an antenna tuner is arranged for use with wire or snake antennas. The antenna is tapped up and down on L1 to obtain maximum signal while adjusting C1. L2 consists of 3-6 turns of insulated wire over the grounded end of L1. The inductance of L1 is chosen to provide resonance with C1 at the receive frequency.

noise-free antenna for a number of users. I have used it successfully for Amateur Radio low-noise reception on 160 meters.

Here again, the longer the snake antenna the greater the signal pickup. Do not expect any on-ground antenna to provide signals that are as strong as those from a normal above-ground antenna. You may have to advance the receiver audio-gain control to a higher setting in order to yield comfortable copy when using an on-ground antenna.

Signals can be made louder by installing a preamplifier between the receiver and the feed point of your on-ground antenna. Keep an eye out at radio flea markets for one of the old RME DB-22A or Millen R-9er preamps. Ameco also built preamps that are suitable for this purpose.

Loop Antennas

Loop antennas (large or small) are inherently quiet receiving antennas. This is because they are closed-circuit antennas. Above-ground full-wave loops are much quieter with regard to local manmade noise than are dipoles or verticals.

A loop can be any convenient shape, but a circular loop has the most gain. Next comes the square loop and then the triangular one. You can determine the overall wire length from L (ft) = 1005/f(MHz). The loop has a feed impedance of roughly 115 ohms, but you may feed it with RG-59 (75-ohm coax) and have suitable results for receiving.

The loop can be located high above ground and it may be erected vertically or horizontally. I use a square loop that is 50 feet above ground on one side and only six feet above ground (tilted) at the far side. It has an overall length of 529 feet. I feed it with 450-ohm ladder line, a 4:1 balun transformer and 10 feet of 50-ohm coaxial cable into an antenna tuner.

It works very well from 1.8 to 30 MHz. It is the quietest receiving antenna I have used to date, and I have a 4800-V power line on my property that is only 100 feet away from my loop.

Figure 2 shows how a loop may be installed. It can be any convenient overall size -- the larger the better -- if you use a tuner with it. Small receiving loops work well also, but they are not very sensitive. A preamp is generally required with small loops (less than 1/10th wavelength, overall). *The ARRL Antenna Book* describes small loops in detail.

You may also lay your loop on the ground for low-noise reception. Use insulated wire if you do this. I like to use no. 14 house wiring with vinyl plastic insulation. Ordinary insulated hookup wire may also be used.

Closing Comments

The name of the game is "experimentation." Try various on-ground antennas and determine which one works best for you at your location. Small receiving loops with preamplifiers are excellent for indoor use. This should appeal to condo dwellers and those of you who can't have an outdoor antenna. An on-ground or near-ground antenna can often be out of the major field of the radiated QRN, so it's worth a try. The simplest of antennas may end your noise problem forever.

mt

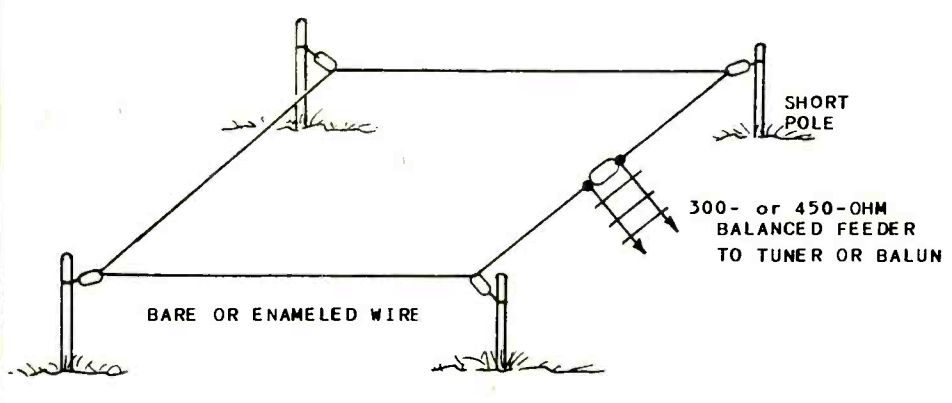


Figure 2 -- Details for a loop antenna that is close to the ground. It can be supported on short masts that are only a few feet high (see text). The balanced feeder may be replaced by coaxial cable without significant impairment of the performance. A 4:1 balun transformer may be installed at the feed point to allow the use of RG-58 coaxial cable between the loop and the receiver.

Rich Arland, K7YHA

The Bearcat 140 -
A BC-145 in Plain Clothing

This month's Experimenter's Workshop column is dedicated to you Uniden/Bearcat owners out there who want equal representation. All scanner manufacturers market a "basic" scanner that can, by simple modification, be "enhanced" or upgraded to include advanced features. By doing this, manufacturers save tooling and production costs and are able to market two or three scanner models based upon one board design.

Some features that are included on the PC board but disabled on the inexpensive models are extended frequency coverage (you know, the Sacred Cellular Frequencies), additional channels, dual scan speeds, priority scan, weather channels, battery operation, etc.

Uniden is no exception. The Uniden Bearcat BC-140 is their entry level scanner, and with a little snip here and a little snip there, it can be "upgraded" into the equivalent of the BC-145. Uniden also packages the BC-145 under the Cobra trademark and calls it the Cobra SR-9000.

The BC-140 has been advertised in various hobby magazines for well under $100, new. This is an exceptional buy since it has ten programmable channels, and covers 29 to 54 MHz, 136 to 174 MHz and 406 to 512 MHz. Although there is no 800/900 MHz coverage on this model, the price is definitely right, and you can always add an outboard block converter to get into the 800 MHz range if desired. The BC-140 also features a scan delay of 2-3 seconds and each channel can be locked out of the scan loop, should it be necessary.

The primary differences between the BC-140 and the higher priced BC-145 (Cobra SR-9000) are an additional six channels, a priority scan feature and "instant" weather button. The priority scan feature checks channel 1 every two seconds regardless of the activity on any other channel.

This is an especially useful feature when you need to monitor the action on a frequency while continuing to scan the rest of the programmed frequencies. The "instant" weather feature allows monitoring the VHF NOAA weather broadcasts in your area with a flip of the switch, especially handy when severe weather is imminent.

The BC-140 can be easily converted to a BC-145 and the rest of the column will be devoted to showing you how. Uniden designed the BC-140 to be easily upgraded into the BC-145 with some simple modifications.

16 Channel Upgrade

Obviously, the first thing to do is get the scanner apart. Turn off the scanner and unplug it from the AC voltage source. Then remove the whip antenna from the back of the scanner. Turn the BC-140 over on its top and remove the four (4) screws that hold the top and bottom halves together. Then carefully separate the two cabinet halves and expose the printed circuit board. The two cabinet halves are wired together, so be extremely careful not to break any wires.

A snip here, a snip there, and voila, your 140 becomes the more prestigious BC-145

Looking at the top of the printed circuit board, locate the corner where all the connectors furnishing connection to the front panel appear. Near this area there is a 30 pin DIP IC that says "Uniden" on the top. This is the largest IC on the board, so you should have no problem locating it. Near this IC there is a diode with insulating tubing over the leads. One lead of this diode is connected on the top of the board and the other lead goes over the edge and is soldered on the bottom of the board.

NOTE: FOR ANYONE INEXPERIENCED IN WORKING ON HIGH-DENSITY CIRCUIT BOARDS, DO NOT UNDER ANY CIRCUMSTANCES, ATTEMPT THIS MODIFICATION. NEITHER MYSELF NOR MONITORING TIMES MAGAZINE WILL BE RESPONSIBLE FOR ANY MODIFICATIONS OR REPAIRS ATTEMPTED BY OWNERS OF PRODUCTS DISCUSSED IN THIS COLUMN.

To restore the missing six channels, simply clip either lead of this diode. Since I doubt that you will need this diode in the future, it is advisable to completely remove it from the board. Now you have a 16 channel scanner in place of the original 10. Not bad for ten minutes' worth of work with a pair of wire cutters, huh?

Instant weather and priority scan

Adding the instant weather and priority scan features will be a bit more involved, but well worth the effort, I can assure you. For both of these mods, you will need to procure a set of SPST toggle switches (check your local Radio Shack store). I suggest that you buy the smallest switches you can find in the name of space conservation.

The addition of these two features requires the removal of the five screws that hold the circuit board to the bottom half of the case. Unsolder the two black wires that connect the circuit board to the ground shield mounted on the bottom half of the case. This will provide access to the bottom of the circuit board.

Next to the large IC pins 24 and 25 there is a place on the PC board for a resistor that was not originally installed. The diode previously removed was soldered into one of these holes. Completely remove the diode (if you haven't done so already) and solder a 220 ohm resistor into these two holes.

Locate the connector that goes from the circuit board to the keyboard. It has nine

(9) wires in it and is the connector closest to the edge of the circuit board. Solder a piece of hook-up wire to the circuit board so that it connects to the black wire in this connector. Solder the other end of this wire to one side of both SPST switches (this is the ground wire for the instant weather and priority scan features).

Take another piece of hook-up wire and solder it to the other side of the switch you have selected to be the instant weather switch. Solder the other end of this wire to the PC board trace that connects to the brown wire on the connector. Take another piece of hook-up wire and run it from the priority scan switch to the PC board trace that connects to the red wire on the connector. That's all there is to the modification. You now have a BC-140 that has 16 channels and priority scan and instant weather features.

You will have to locate a point on the cabinet that will hold the switches and carefully drill out two holes in the cabinet to accommodate the two switches. Be sure you allow enough clearance for the PC board. A good place for both of these switches is the rear panel, since it won't deface the front panel and you won't be using these two features constantly. It is a simple matter to reach over the back of the scanner and flip whichever switch you want.

All that is left is to reconnect the two black ground wires and reassemble the scanner. Check-out of the modifications is simple. Insert the antenna into the connector on the back and apply power. The first obvious thing to note is that the scanner now counts through 16 channels instead of only 10. Program the six new channels just like normal.

Next activate the Instant Weather switch. You should see a short vertical bar in the LED display just below the location of the Lockout display indicator. You should also hear a continuous NOAA weather broadcast (once you program the local frequency into the scanner). To revert to normal operation, just flip the switch and press the scan button.

The Priority Scan feature can be checked as follows: flip the Priority Scan switch and wait for the scanner to stop on some lengthy transmission (other than on channel 1). Every two (2) seconds the display will jump to channel 1 to check for any activity. If there is any signal present on channel 1, the scanner will lock up on that channel and display a "P" in the LCD readout. Once activity stops on the priority channel, the scanner will resume scanning.

We hope you like these mods to the Bearcat BC-140 and find them useful. They will expand the capabilities of your scanner and allow you more flexibility in your scanning efforts. I'd like to thank Bob Baetke for submitting these mods to "Experimenter's Workshop."

A word about submissions for EW:

This column is dependent upon input from the readership. If any of you have mods for your favorite radio or scanner, please send them along to the Brasstown address and we'll see about getting them into print. *It is imperative that these mods actually work.* Now that may sound a bit obvious, however, some people tend to be very imaginative and clever at the expense of the naive or inexperienced radio hobbyist that looks to this magazine for support in his/her listening efforts.

Monitoring Times invites you to submit your favorite projects for publication. For more information, contact Rich Arland, c/o MT, P.O. Box 98, Brasstown, NC 28902. Any letter requiring a reply must include an SASE.

Please note: If you write to me and expect an answer, please include an SASE for the reply. Between the phone calls and the volume of mail that comes to me directly and via *Monitoring Times* Headquarters in Brasstown, North Carolina, I cannot answer letters that do not include an SASE.

mt

A Convention Special for the SWLer

Last month I told you about an antenna that I had specially tailored to the needs of those readers who want to get in on the local VHF-UHF scanning action at the *Monitoring Times* Radio Convention coming up in October. But how about the shortwave listeners and and other non-scanner monitoring enthusiasts going to the convention? Is there a simple special antenna they can take with them to the convention so that they can get in on the local action which the convention will generate?

You bet; it's a simple active antenna, and it's also one of the simplest antenna projects you will see. And if you've never built a simple solid-state project before, this is the one to start on. It requires only one capacitor, two resistors, one transistor, a connecting cable and the battery to run it.

Although this antenna is ideal for use in monitoring the local HF, MF and LF action at the *Monitoring Times* Radio Convention, it is a great project for anyone who would like a very small, easily portable active antenna which is useful from 100 kHz through 30 MHz. Its very small size and low power requirements (small 9-volt transistor battery) make it ideal for taking on trips to conventions or on other trips where you don't have time or space to set up something larger.

In terms of performance, this antenna is not a high-gain device. It is probably about the equivalent of a 50 to 75 foot random-length wire on the lower portion of its frequency range, perhaps a 20 to 30 foot wire at the mid-portion of its range and to a 15 to 20 foot wire on the upper portion of that range. On signals below 8 MHz or so it will generally beat a random-length wire strung around your room.

Its claim to your attention is that it provides all-band local coverage from 100 kHz to 30 MHz with the ease of a short (7 foot) length of wire hanging from your operating position to any handy point nearby. Wherever you travel, if you want to monitor the local action, this antenna can help you. It also pulls in the stronger DX signals. If you have time and space to rig a larger antenna, do it. If not, this convenient little guy may be a friend waiting to meet you.

Let's Build One

Believe it or not, I built this active antenna right on top of the battery connector that plugs onto its 9-volt battery. Since this adds only about 3/8 inch or so to the battery's height, the size of this little antenna is hardly more than that of the battery itself.

1. Obtain a 330-ohm resistor and a 100 k resistor (both resistors can be of any wattage rating), a .01 mfd disc capacitor, a 2N3819 N-channel FET, a 7-foot length of light flexible insulated wire, a short connecting cable of small-diameter coax (RG-58 or smaller) with a plug to fit your receiver attached, a connector for a 9-volt rectangular transistor battery and a 9-volt rectangular transistor battery.

I used a five foot length of thin coaxial cable (about .1 inch diameter) for the connecting cable. The length is so short for this cable that the higher loss of small diameter cable is no problem. I also had good results using nothing more than a six inch long pair of wires, lightly twisted around one another, in place of the coaxial cable.

If you wish, you can get the battery connector by salvaging it from a worn-out battery. You can do this by carefully opening the battery's case with pliers and removing the connector that's built into the battery's top.

2. Check over both the schematic and pictorial wiring diagrams of Figure 1. Refer to them often as you wire the components together in the steps which follow.

3. Solder the "source" lead of the transistor to the negative electrode of the battery connector. Do your soldering quickly so as not to overheat the transistor. If you want to be able to change the transistor easily (which is nice) use a transistor socket.

4. Trim the 330-ohm resistor leads to about 3/8 inch each. Then solder one lead of the resistor to the positive electrode of the battery connector.

5. Trim the leads of the capacitor to about 1/4 inch.

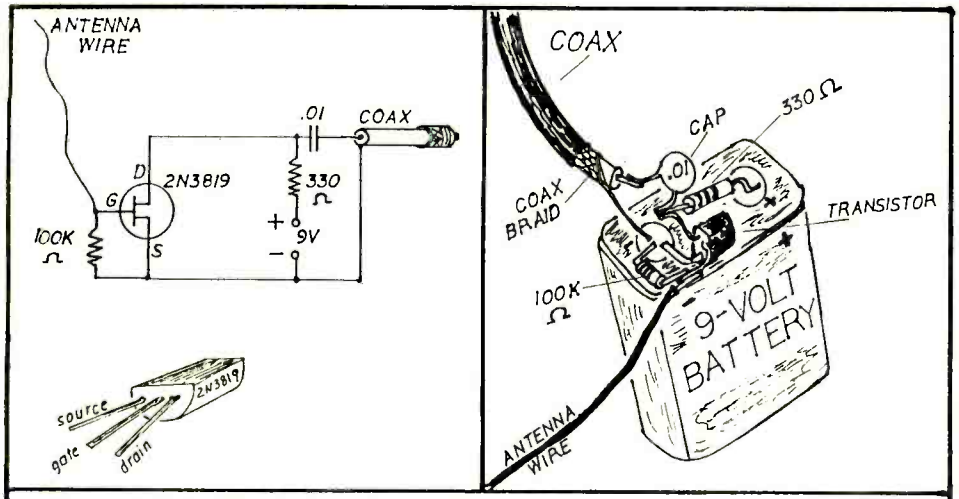


FIG. I. CIRCUIT DIAGRAM OF A SIMPLE LF, MF, & HF ACTIVE ANTENNA.

6. Bring the free lead of the resistor, the drain lead of the transistor, and one lead of the capacitor together and solder them. If necessary, you may hold them together for soldering by wrapping them all together with a short piece of fine wire prior to soldering.

7. Solder a seven foot piece of light flexible wire to the gate of the transistor.

8. Prepare the end of the coax by exposing the center conductor as in Figure 1. Solder the braided conductor of your coax cable to the negative electrode of the battery connector. Solder the center conductor of this cable to the free end of the capacitor.

9. Trim the leads of the 100 k resistor to 3/8 inch and solder one end to the antenna wire attached to the gate of the transistor and the other end to the negative terminal of the battery connector.

10. Attach the connector cable's plug to your receiver, snap in the battery, toss the free end of the antenna wire over some convenient point and you're set to monitor. When you're not using the antenna, unsnap the battery to prevent its running down.

Tips on Using the Antenna

For really strong signals, a foot of wire may often be enough. If you want to go for nonlocal (weaker) stations you may want to increase the length beyond seven feet. If you are in a building with a lot of metal used in its construction, it may be difficult to get good reception. In this case, try hanging the flexible pick-up wire in, or out of, a window where it can "see" the outside.

RADIO RIDDLES

Last Month: we built the *Monitoring Times* Radio-Convention-Special UHF-VHF Antenna, one variant of the J-antenna, so-called because of the shape outlined by its elements. I then asked you to recall any other antennas named after letters of the alphabet?

Well, how did you do? You probably got the inverted-V, but did you get the V-beam? How about the lazy-H? And did you know that the legendary Guglielmo Marconi invented an antenna called the inverted-L? Then there are all the T-antennas.

The antennas just mentioned are each named for a letter of the alphabet which their outline resembles. But if we include just any antenna that happens to be named with letters of the alphabet, we could include antennas like the 8JK, the G5RV, the ZL-special, the DDRR, and even LPDA and the LPVA. The 8JK is, of course, W8JK7's famous close-spaced beam, the G5RV is a type of multi-band dipole, and the ZL-special is a beam said to increase one's probability of being able to communicate with the antipodes.

Maybe you already know that the DDRR is the directional-discontinuity ring radiator antenna which, I guess, we could reasonably call the O-ring antenna, if we wanted to start a new name for it. The LPDA and LPVA are log-periodic antennas: log-periodic dipole array, and log-periodic V array respectively. Well, what ones did I leave out? Write and let me know.

This month: Just what is "active" about this month's "active antenna?" Does it jump up and down, wiggle, or move around a lot? And does an active radio-antenna have anything to do with "radioactivity?" Find out right here next month. In the meantime, have a good Independence Day. Peace, DX and 73. mt

ask bob

Bob Grove, WA4PYQ

Q. I notice that a neighbor's wireless baby monitor comes in loud and clear when I hold my hand-held scanner at a certain angle to my wire shortwave antenna. How come? (JK, OH)

A. Large metallic masses capture significant amounts of radio energy, some of which is re-radiated in its environment. It is similar to an old trick which really enhances broadcast-band reception on portable sets that have only an internal ferrite-rod loop antenna for signal pickup: Wrap several turns of wire around the radio and attach one lead to a long wire and the other to a ground.

Q. Although Uniden has acquired Regency, I have trouble locating repair parts for my Regency scanner. Is there a source?

A. Several Regency-brand scanners were actually private-labelled for them by AOR of Tokyo, Japan. These included the MX5000, MX5500, MX7000, MX4000, MX4200, HX2000 and HX2200.

Try contacting ACE Communications, the US importer of AOR equipment at either of two locations: 22511 Aspan St., Lake Forest, CA 92630-6321 (ph. 1-800-523-6366), or 10707 E 106th St., Indianapolis, IN 46256 (ph. 1-800-445-7717).

Q. Can I tighten the tuning dial of my YAESU FRG8800? It seems to have developed some "slack" with age. (Gerhard Plessinger, Canton, OH)

A. No. The shaft is part of an encoder switch which must be replaced if it is worn.

Q. Can my NRD525 step selection allow 5 kHz intervals on AM, SSB, CW and RTTY rather than just FM? (Peter Schoeltzel, Lohhof, West Germany)

A. Unfortunately, no. That step increment is controlled by the microprocessor and enabled only when the FM mode switch is pressed.

Q. Recently I monitored tactical military communications on 46.9 MHz. What was this? (Sean Petty, Downingtown, PA)

A. Low band is a popular frequency range for Army tactical training, especially National Guard. You will frequently hear message transferrals, gunnery range communications and other training comms. Using temporary three-character callsigns like "Bravo Three Charlie", 46.9 MHz is one of these frequencies.

Q. The Ontario Provincial Police transmit a constant machine-gun-like pulse to foil scanner monitoring, interrupted only for their voice transmissions. Is there a filter available which can defeat the irritating noise? (Peter Dougan, Clearwater, Ont.)

A. We are unaware that any agency is using such an anti-scanner device and would prefer to think that the sound is some sort of automatic dispatch or location system. Can any of our readers help Peter on this one?

Q. Can you receive single sideband signals on the AM band? (Joseph Johnson, Savannah, GA)

A. If you are referring to the 540-1600 kHz medium wave broadcast band, the answer is no, there are no SSB transmissions in that part of the spectrum. If you mean is it possible to monitor SSB signals on a shortwave radio that has only the AM (amplitude modulation) mode, the answer is still no.

Q. Does coordinated universal time (UTC) as announced by WWV apply to a particular time zone? How do I figure my own time? (T.A. Thomas, Aiken, SC)

A. There are 15 time zones around the earth, each separated by one hour, becoming earlier the farther west you travel. The standard, formerly called Greenwich Mean Time (named for Greenwich Observatory), is in England. Time broadcasts are given for the time at Greenwich.

If you are on the U.S. east coast, Greenwich is 5 hours later (4 hours during summer daylight savings time); 6 hours later Central; 7 hours Mountain; and 8 hours Pacific. Thus, at noon in jolly old England, it is only 7 AM in New York and 4 AM in Los Angeles.

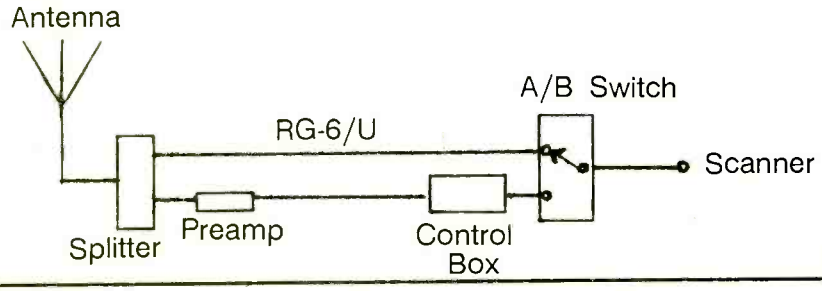
Q. A recent Grove ad for the TUN4 amplified preselector said, "Tune in a weak station...switch on the...amplifier...and hear an astounding improvement in signal strength"; yet, in that

Bob's Tip of the Month:

BYPASS THAT PREAMP

Martin Toomajian, Jr., DDS, of Watervliet, New York, came up with this clever way to switch out an in-line preamplifier like the popular Grove PRE4 when necessary for transmitting, attaching other accessories, or simply using the antenna alone. Martin uses a standard VHF/UHF TV splitter and a video A/B switch available from Radio Shack and most department stores.

If the preamplifier module is remote-located at the antenna, a separate coax down-lead is required; we would recommend a low-loss coax like RG6/U available from the same outlets as well as Grove Enterprises. With an indoor preamp, only a short length of coax is needed.



A comprehensive list of questions and answers regarding monitoring may be found in Bob Grove's *"Scanner and Shortwave Answerbook,"* $12.95 plus $2 shipping from Grove Enterprises, P.O. Box 98, Brasstown, NC 28902.

same issue, in "Ask Bob", you say that preamplifiers simply boost noise right along with the signal for no net improvement! Which should I believe? (John Walk, San Antonio, TX)

A. Both. If the signal is weak because of a poor antenna which can't capture enough signal to appear stronger than the receiver's own internally-generated (thermal) noise, a low-noise preamplifier will boost the signal above the receiver's noise significantly.

On the other hand, if the antenna is picking up a weak signal as well as external man-made and/or natural noise, no preamplifier can boost the signal above that noise. All that will happen will be that the S meter will read higher, but the signal will still be hard to hear. You are no better off than if you merely turned up the volume control!

The bottom line is: Use the best antenna and feedline you can; don't use a preamplifier in a strong-signal environment; and if you want to try a preamplifier, buy it from a dealer who will give you a refund if it doesn't meet your expectations.

Q. Is it harmful or ineffective to combine two radios into one antenna lead-in? (Steve Zeigler, So. Portland, ME)

A. It is neither harmful nor ineffective, but it invites mutual interference -- signals generated by one radio being heard by the other. This can be reduced by the use of a TV-type VHF/UHF splitter such as found in home electronics departments of chain stores, but you will need to scrounge for appropriate adaptors.

A universal series of couplers, adaptors and interconnect cables for scanner and shortwave applications is found in the Grove catalog.

Q. Can I use an ordinary scanner connected to a TNC (terminal node controller) and my home computer to copy two-meter amateur packet transmissions, or do I need special equipment? (Greg Reid, San Jose, CA)

A. You have listed everything you need. Any scanner will do just fine.

Q. In one issue of MT you listed UHF space shuttle frequencies as 296.8 MHz primary and 259.7 MHz secondary; in the very next issue you reversed the frequencies. Which is correct? (Izak Luchinsky, Baltimore, MD)

A. The problem is semantics. While NASA lists 296.8 as primary and 259.7 alternate, every shuttle in the last several years has used 259.7 MHz as the main UHF backup.

Q. What are those large microwave towers used by the telephone company for? (Edward Audi, Burlington, VA)

A. Operating in the 4, 6 and 11 GHz range, these point-to-point microwave services carry long distance telephone calls, data and supervisory signals for the phone companies. Because of their frequencies, they are a common source of terrestrial interference (TI) which shows up as "sparklies" on TV satellite receivers.

Q. The BNC connectors used on the old Radio Shack PRO2004 were not of the highest quality. Can this weak link be improved? (Bob Kenyan, Tombstone, AZ)

A. For a quick fix, try pinching the forked center connector together slightly with an appropriate tool. If that doesn't work, you may have to replace the connector with another from the Radio Shack catalog.

PRO-2005 30 kHz Search Increments

In the May column, "M.M. from Poughkeepsie" noted that a 30 kHz increment could be seen dimly on the display of the PRO-2005, but it couldn't be seclected by the increment key.

Chris Thompson of Los Angeles (and others) informed us that the increment is automatically activated if cellular frequencies are restored by clipping one lead of diode D-502 (located behind the "3" key on the front panel). The RESET button must be pressed after the modification.

Questions or tips sent to "Ask Bob," c/o MT, are printed in this column as space permits. If you desire a reply by return mail, you must enclose a self-addressed, stamped envelope.

LETTERS

continued from page 3

Signal Officer for the Artillery Brigade of which that NIKE battery was a part. My memories of the occasion," continues the Major," are slightly different than the version Mr. Pitts relates in that the only reason why more damage was not caused by the accidental launch of the missile was that the pin locking the missile to the launcher was not removed in the excitement of what was assumed to be a real fire mission. The launcher accompanied the missile to the Washington/Baltimore Freeway!!! That is what aborted the missile's flight and not the self-destruct button."

It's an incredible story. Thanks for the "inside" scoop, Major.

Oh, and before we forget, we didn't remember to thank Donnie Pardue of Sanford, North Carolina, for suggesting the Don Pitt's article. Thanks.

"As a long-time subscriber to *Monitoring Times,"* writes Koert Koelman of Belmont, California, "I want to congratulate you on your fine magazine. I like Experimenter's Workshop (I've already built the wave trap filters featured a few months ago and they worked fine), Antenna Topics, Demaw's Workbench, Uncle Skip's Corner (a favorite of mine), and the Satellite TV section (even though I do not have a dish). Although my primary interest is in listening to shortwave broadcasts, I read your magazine from cover to cover and look forward to my copy each month."

Thanks, Koert. We appreciate the nice words.

"Here's my check for another three years of *Monitoring Times*," writes Phil Colwart. "As a professional broadcaster and ham radio operator, I depend on *MT* for timely, accurate frequencies, ideas, and construction projects. In fact, I've been reading *Monitoring Times* since 1984."

Does Phil's name sound familiar? He used to be a DJ on WRNO Worldwide. He reminds us we printed his picture on page 34 of the October (1984) issue. Phil is now with WHMD-FM and WFPR-AM in Hammond, Louisiana.

We received this anonymous letter the other day. It has to do with programming the priority channel on the Radio Shack PRO-2005. "The manual says," claims the writer, "that you should press program, channel number and [PRI]. This is wrong. First select the desired channel with manual, press program, then press [PRI]. Hope this helps."

MONITORING POST PIN-UP

Ronald Hester of Winston-Salem brags on his BC 312-N receiver made in 1943 and still running on the original tubes. Made for the U.S. Army Signal Corps, it came in a wood box and was manufactured by Farnsworth TV & Radio Corporation, Ft. Wayne, Indiana. The R-388, on the other hand, isn't in such good condition, he admits.

With a coax switch sporting inputs for ten antennas, Ronald uses every connection for his long wire, vertical, and tuned dipoles.

"I heartily agree with the letter from Barbara Brown," says Susan Meade of Baltimore, Maryland. "I, too, am a newcomer to shortwave broadcasts and have found the 'jargon' tossed about in the hobby to be quite mystifying at times."

Several people have told us the same thing, Susan. We've put Uncle Skip on it. Part one of his two-part glossary is in this issue. We hope that it helps clear some of the smoke.

"Thanks for the 'plug'" says Karen Perez of Hornbrook, California. Karen, her husband Richard, and a whole group of folk from that neck of the woods put together an excellent magazine called *Home Power*. "HP," as it is affectionately known by its readers, is a magazine very much like this one only the topic is energy -- how to power your home (or radios) using solar energy, wind, and so forth. Karen writes to point out that samples are free and not $2.00 as we indicated in the article.

If you'd like to receive a free copy of *HP*, write Karen at P.O. Box 130, Hornbrook, California, 96044.

Brian Cassidy of Hatboro, Pennsylvania, says that he "has no interest in monitoring cellular or regular car phones" although he does admit to tuning in cordless phones --"but not my neighbors." The calls coming from a nearby apartment, he says, are more interesting than "my boring middle class neighbors."

In any case, what Brian really finds amazing, are the conversations that come from the intercoms of McDonald's employees working at a local store. "You would not believe some of the things the teenage girls say." Fortunately (or unfortunately, depending on how you look at things, Brian leaves us hanging without telling us what those things are. Perhaps some are talking about Vladimir Posner.

Our good friend Ken MacHarg has written from Costa Rica where he and his wife are undergoing language training in preparation for work at HCJB. Despite his location, DXing is not easy for Ken in San Jose. "We live in the actual shadow of the AM tower of TIFC, the Lighthouse of the Caribbean. Also on the property are the shortwave antennas for the station. Their FM is on Mount Irazu, about fifty miles away.

"As a result, we hear TIFC on all unused frequencies on medium wave [AM], and across the FM band. The station even has a tendency to take up some extra space on the

shortwave bands as well."

Interestingly, a second DXer, Richard McVicar of Canada, is also expected to arrive shortly at language school in Costa Rica, also in preparation for work at HCJB. We wish both of these gentleman the best of luck. Should you wish to financially support either in their work, you can send a check to HCJB, P.O. Box 553000, Opa Locka, Florida 33055-0401. You must write the name of the person you wish to support on the check.

Jeff Callahan of Atlanta, Georgia, writes in to alert us to a tiny station "down in Louisiana."

"They gave no call sign but identified...as 'American Guerilla Radio' and every Saturday morning they have a live show from their studio set up in a place called 'Carriers Lounge and Feed Store.' The proprietor is Berlan Carrier, and the place is 'half way between Eunis and Mamu,' deep in Cajun country. The station supposedly runs 40 watts, presumably on AM. The frequency is unknown, but programming is local talent, zydego music and commentary, all in French."

"Don Bishop really flaked out in his article, 'Touch of Class' regarding the last days of pirate station WNYS." That's the opinion of Daniel Hays of Great Bend, Kansas. "The article," says Daniel, "implies that station operator Fred Stark should be viewed as a legend or hero and that some kind of sympathy is due him. YS' operation was unlicensed and illegal -- and I don't think illegal activity should be praised! Any sympathy, in this case, is due to WNYS' listeners -- as it sounds like they lost some interesting Sunday programs."

And with that we conclude this edition of "Letters."

We'd like to hear your opinions and comments on 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, Brasstown, NC 28902. Please include your name and address; we will withhold your name at your request.*

CONVENTION CALENDAR

Date	Location	Club/Contact Person
Jun 30-Jul 1	Jackson's Mill,WV	WV State Convention/ Robert Robinson KU8C Rt 3 Box 3012, Fairmont, WV 26554
July 1	Wilkes-Barre,PA	Murgas ARC/ Robert Nygren WA3YON RD 1 Box 134-6, Sweet Valley, PA 18656
July 7	Des Moines, IA	Des Moines RAA/ Jim Zellmer KA0VSL 6390 54th Ct, Johnston, IA 50131
July 7	Oak Creek, WI	S.Milwaukee ARC/ Robert Kastelic WB9TIK P.O. Box 102, S. Milwaukee, WI 53172-0102 Talk-in 146.580 FM simplex
July 7-8	Indianapolis, IN	Central Div Conv/ Cornelius Head WB9ZQE 9046 Mercury Drive, Indianapolis, IN 46229
July 7-8	Atlanta, GA	SE Div Conv/ Martin Stern KM4MG 882 Edgewater Trail NW, Atlanta, GA 30328
July 8	Pittsburgh, PA	North Hills ARC/ Bob Ferrey, Jr, N3DOK 9821 Presidential Ave #304,Allison Park,PA 15101
July 8	Alexander, NY	Genessee ARC/ Don Partis WA2AIV 8786 Broadlawn Ave,, Batavia, NY 14020
July 8	Downers Grove,IL	DuPage ARC/ Edwin Weinstein WD9AYR 7511 Walnut Ave, Woodridge, IL 60517
July 8	Old Westbury,NY	Hudson Div Conv/ Richard Moseson NW2L 19 Linden Ave, Bloomfield, NJ 07003
July 14	Eau Claire, WI	Eau Claire ARC/ Rev Bill Jablonske W9NNS 810 Pearl St, Chippewa Falls, WI 54729
July 15	Golden, CO	Colorado State Conv/ John Hewitt KA3RDZ 11123 E. Alameda #206, Aurora, CO 80012
July 15	Augusta, NJ	Sussex Co ARC/ Donald Stickle K2OX 185 Weldon Rd, Lake Hopatcong, NJ 07849
July 15	Washington, MO	Zero-Beaters ARC/ Dane Brockmiller NR0K Rt 2 Box 623, Union, Missouri 63084
Jul 20-22	Glacier, MT	Glacier&Watertown Hamfest/Geo Nichols W7IOJ 10305 Rustic Rd, Missoula, MT 59802
July 21	Union, ME	Maine Hamfest Assoc/ Polly Smith KA1MLF RFD #1 Box 475, Augusta, ME 04330
July 22	Van Wert, OH	Van Wert ARC/ Jack Snyder WD8MLV Rt 2 Box 153C, Ohio City, OH 45874
Jul 27-29	Flagstaff, AZ	ARC of Arizona/ Dale Finfrock KB7FG 3935 N. Country Club #30 A, Tucson, AZ 85716
Jul 28-29	Asheville, NC	W. Carolina AFS/ Nelda Williams KA4WPM 202 E Oakview Rd, Asheville, NC 28806
July 28	Texas City, TX	Tidelands ARS/ Carl Steele WA5WVP PO Box 73, Texas City, TX 77592
July 28	Marquette, MI	Hiawatha ARA/ Richard Schwenke 21 Smith Lane, Marquette, MI 49855
July 29	Timonium, MD	Baltimore RATV Soc/ Mayer Zimmerman W3GXK 8711 Allenswood Rd, Randallstown, MD 21133
July 29	Peotone, IL	Hamfesters ARC/ Donald Burch N9DWI 8438 S Kolin Ave, Chicago, IL 60652
Aug 3-5	OK City, OK	Oklahoma State Conv/ Frank Tassone AA5GI 3531 Wynn Circle, Edmond, OK 73013
Aug 3-5	Austin, TX	West Gulf Div Conv/ Joe Makeever W5EBJ 8609 Tallwood Dr, Austin, TX 78759
Aug 4-5	Jacksonville,FL	Florida State Conv/ Wayne Oehlman WB3DBE PO Box 23375, Jacksonville, FL 32241 Talk-in 146.16/76 MHz, W4IZ
Aug 5	Sugar Grove,IL	Fox River Radio League/ Phil Fors N9FXQ 104 May St, West Chicago, IL 60185
Aug 5	Crooked Lake,IN	Land of Lakes Hamfest/ Dorris Smith WB9GPC R2 Box 30, Angola, IN 46703
Aug 5	Greenfield, IN	Greenfield ARA/ Keith Dalrymple PO Box 7033, Greenfield, IN 46140
Aug 5	Berryville, VA	Shenandoah Valley ARC/ John Kanode N4MM RFD 1 Box 73A, Boyce, VA 22620
Aug 5	Randolph, OH	Portage ARC/ Joanne Solak KJ3O 9971 Diagonal Rd, Mantua, OH 44255
Aug 11	Bend, OR	Central OR ARC/ Cliff Fleury AI7Y 64174 Tumalo Rim Dr, Bend, OR 97701
Aug 11	Springfield, MO	SW Missouri ARC/ Linda Baxter KA0NXI 2616 W Woodlawn, Springfield, MO 65803
Aug 11-12	High Point, NC	High Point ARC/ Mark McMahan KB4MFP 122 Avondale St, High Point, NC 27260
Aug 12	Warrington, PA	Mid-Atlantic ARC/ Bob Josuweit WA3PZO 9 Derwen Dr, Havertown, PA 19083
Aug 12	Santa Barbara,CA	Santa Barbara ARC/ Don Fuller KA6KGF 7294 Georgetown Rd, Goleta, GA 93117
Aug 12	Georgetown, KY	Bluegrass ARS/ Bill DeVore N4DIT 112 Brigadoon Pkwy, Lexington, KY 40517
Aug 17-19	Arlington Hts, IL	DECALcoMANIA (radio promotional items club) For full info, SASE to Mark Strickert 3852 N Oconto Ave, Chicago, IL 60634
Aug 18	Victoria, TX	Victoria ARC/ Joanna Howard N5NEM 516 McCornick Dr, Victoria, TX 77904
Aug 18-19	Cedar Rapids,IA	Cedar Valley ARC/ Clifford Goldsberry KA0QEA 2926 Schaeffer Dr SW, Cedar Rapidas, IA 52404
Aug 18-19	Huntsville, AL	Alabama State Conv/ Don Tunstill WB4HOK 1215 Dale Dr SE, Huntsville, AL 35801
Aug 18-19	Hot Springs,SD	South Dakota State Conv/ Lon Seaboldt WS0V RR1 Box 100-A-2, Hot Springs, SD 57747
Aug 19	Dover, DE	Kent Co ARC/ Carl Shulak NS3G PO Box 322, Dover, DE 19903
Aug 19	Quincy, IL	Western Illinois ARC/ Michael Nowack NA9Q 2011 N Sheridan Dr, Quincy, IL 62301
Aug 19	Warren, OH	Warren ARA/ Frank Fitzhugh KD8KJ 3681 Hightree Ave, Warren, OH 44484
Aug 23-26	San Diego, CA	SW Division Conv/ Sybil Albright W6GIC 8658 Encino Ave, San Diego, CA 92123
Aug 25-26	Madison, GA	Confed Signal Corps Inc/ Roy Jordan WB4ILR 1146 Shoreham Drive, College Park, GA 30349
Aug 26	Mullica Hill,NJ	Gloucester Co ARC/ Frank Malinowski 7 Aspen Place, Bellmawr, NJ 08031
Aug 26	Marysville, OH	Union ARC/ Gene Kirby W8BJN 13613 US 36, Marysville, OH 43040

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 to: Monitoring Times Convention Calendar, P.O. Box 98, Brasstown, NC 28902.

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KENWOOD R-2000, CW filter, mint condition - $450. Call [714] 791-9307 leave message.

Needed - Operator's manual for JIL SX-200 scanner. Also schematics if possible. Write first with price. Bill Hartmann, 39 Lexington St., So. Hadley, Mass. 01075.

ICOM R71A - $650. ICOM R-7000 - $750, ICOM AH-7000 - $50 and AEA PK-232 - $200. Mint condition, w/original boxes. [301] 669-0766 evenings.

R-2000 with VHF converter - $700; PRO-2004 - $300. Call Rich Lane [608] 423-0665.

PRO-2005, perfect condition, cellular band restored. Box, manual, antenna, batteries, DC car adaptor included. Ship UPS/COD or prepaid - $229. Rick [201] 235-2713, 10-4 PM EST.

WILSON 1402 6 channel transceiver with 151.775 crystal installed. Leather case, desk charger and manual - $100. GRE converter - $50. [303] 457-4036.

YAESU FRG 8800 like new with VHF converter and FRT-7700 tuner also YH-55 headphones - $680. Greg after 6 p.m. [315] 788-1104.

For Sale: GRUNDIG SATELLIT 500, mint condition, original carton, AC adaptor, manual, KOK1 antenna plug - $385 includes shipping. Tony Spark, Box 605, Mattapoisett, Mass. 02739. [508] 758-9615.

Looking for individuals to RECORD RADIO STATIONS in major metropolitan cities. Will pay!! Call [919] 489-2164 or write P.O. Box 51554, Durham, NC 27717.

SONY AN-1 active antenna BN in the box - $50. UNIDEN 2510, 10 & 11 meter converted transceiver, 35-watt output, BN - $240. John [716] 693-5290.

Complete GROVE Indoor Scanner Antenna system plus MiniTuner for SWL - $65. REGENCY TS-2 complete cellular, needs volume switch - $120. KENWOOD R-2000 - $335. SONY PRO-80 - $215. INFORMANT-2 Delux - $140. New BC-140 - $60. All receivers in excellent condition. Original Carton/ Instructions. Send M.O.: Bill Maguire, P.O. Box 573, Harrisville, RI 02830. Will ship UPS/Ins. [401] 568-2152 after 7 p.m. EDT.

The newly formed Jewish Community Center of Metropolitan Detroit RADIO CLUB is looking for donations of Amateur Radio and SWL equipment for its station. Your donation will be greatly appreciated and acknowledged with a confirmation of your tax deductable contribution. Contact: The Jewish Community Center of Metropolitan Detroit, 6600 W. Maple, W. Bloomfield, MI 48322, Attention: Marty Oliff.

MONITORING CORPS INTERNATIONAL, a worldwide network of monitoring enthusiasts is recruiting all intersted persons on an international basis. For additional information send an SASE to P.O. Box 2100, Corona, California 91718 USA.

Closing Comments

The media revealed the frequency of cordless phones, and the eyes of the innocent were opened.

Dear Bob:

Nothing has shocked and angered me on the radio as much as the cordless conversations that I hear. The semi-rural community in which I live has old-line families; violent crime is unknown and personal safety is not an issue.

Since I started listening to cordless conversations, I have heard a prominent professional invite acquaintances to his home to buy marijuana, a divorcee convince her boyfriend to commit perjury in her litigation, a bank appraiser calling from a client's pool where he was being plied with pot by topless women to influence his appraisal, the owner of that home calling a friend in the institution's accounting department urging him to misrepresent his salary on the application, a married neighbor calling her boyfriend to write her at her post office box as they arranged their next liaison, and on and on.

These are my neighbors. Is crime and deception rampant in America? I'm beginning to think that every third family is involved in selling drugs, committing perjury, lying to the IRS or committing adultery. I've taken my scanner to other communities and have heard pretty much the same thing. What are other readers of *MT* hearing? Is crime vastly underreported? Is this the real face of America?

Cordially,
New York

Dear New York,

While I appreciate your concern about moral decay in America, I don't agree with you. Your technical surveillance of your neighbors simply reveals human foibles which have always been there; you simply didn't know about them before.

Your neighbors might easily ask, "What is the matter with someone who spends so much time snooping on us? Is he a voyeurist? What is this world coming to?"

While I am well equipped to monitor my neighbors, I don't do it; it isn't any of my business what they do in the privacy of their own homes. I am an idealist; I don't want to be disappointed in my esteem for others.

If I were to discover a neighbor flagrantly violating the law, especially if it involved the well-being of others, I would take action. But I see no reason to dig through their dirty laundry to strut my self-righteous indignation.

Are Americans lowering their moral standards? I don't think so. Recall the America of the past: slavery -- white and black, child labor, usury, genocide of the American Indian, internment camps and relocation centers, the War between the States, carpetbaggers, vigilantes, witch hunts, sweat shops, quack medicine, insane asylums, and countless other forms of human exploitation and decadence too numerous -- and too painful -- to recollect.

Today's Americans are less hypocritical and more open than in the past, and they are certainly better informed, but they aren't degenerate and they aren't perfect. Through resolve and collective experience we have evolved, not devolved, into a more enlightened society of introspection and gentility. In a world filled with persecution and corruption, we can hold our heads high.

There will always be those dregs -- a minority -- who will try to exploit our trust and our weaknesses, but the majority of us have integrity and respect the dignity and worth of our fellows. Vigilance, education, activism and open communication will perpetuate American idealism.

Sincerely,
Bob Grove, Publisher

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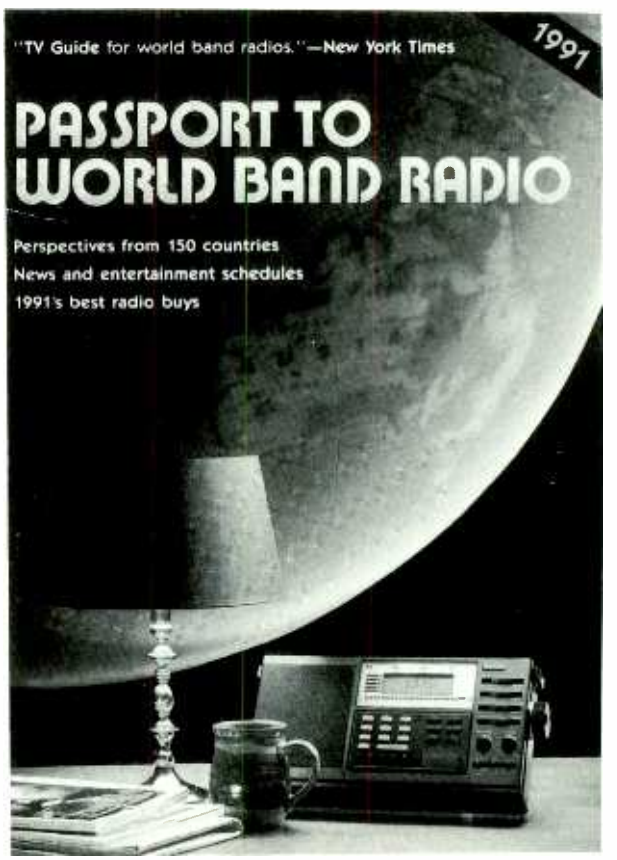

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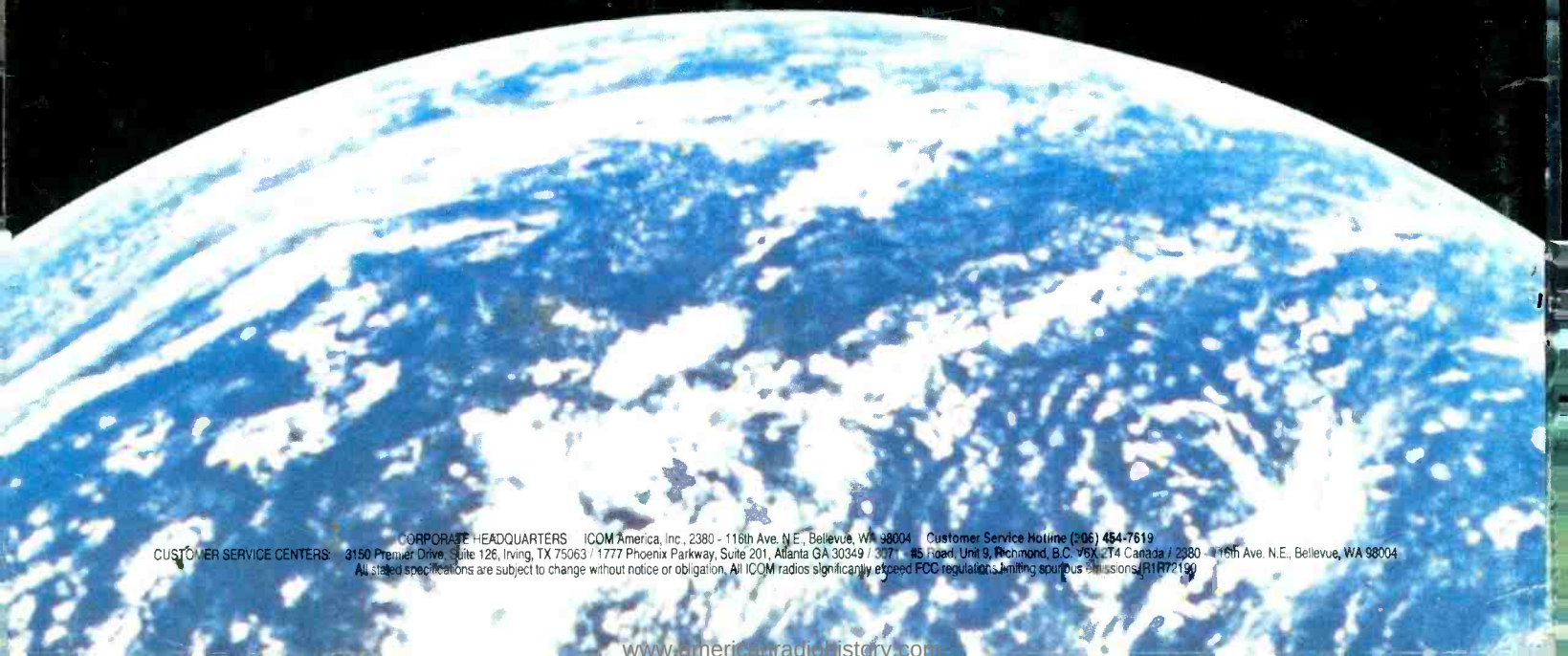

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