

POPULAR COMMUNICATIONS

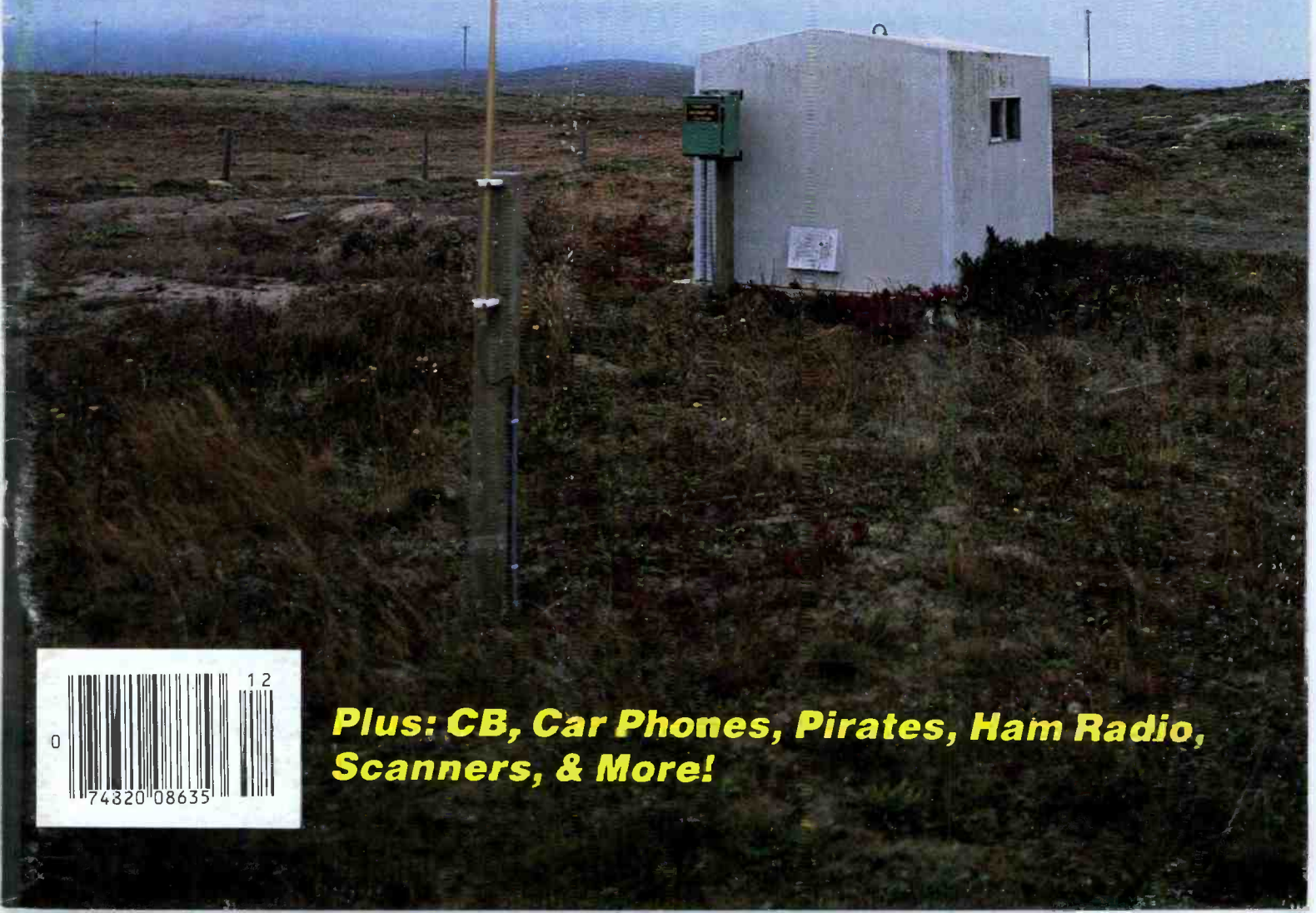
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Mini-Broadcasters: Hear Them!

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- Scanning The Private Detectives
- Radio's Turncoats & Traitors
- World Band Directory Pull-Out Centerfold



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ICOM IC-R9000 (left) • Covers 100 kHz-1998 MHz, all modes. Multi-functional CRT Display shows receive frequencies and displays memory list and contents of 10 memory channels. Spectrum Scope feature shows nearby receive frequencies, and can be used as a RTTY/Packet terminal monitor. Frequencies and memories selected via direct keyboard entry. 1000 memory channels in 10 banks store frequencies, modes, filter width and tuning steps. Memory Editor allows move, copy or delete. Dual clock and timer, AFC. Scan Functions: Programmed, ΔF, Priority, Memory, Selected Mode Memory, Selected Number Memory and Auto Memory Write. Noise blanker, IF shift, Notch. 120V AC. 16.7" w x 5.9" h x 14.4" d, 44.1 lbs.



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DECEMBER 1990

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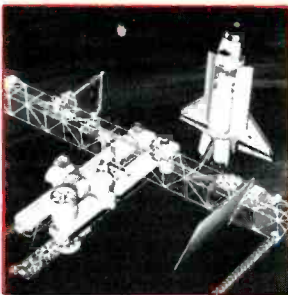
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This month's cover: USA—Travelers' Information Station, National Park Service, Point Reyes, CA. Photo by Larry Mulvehill.

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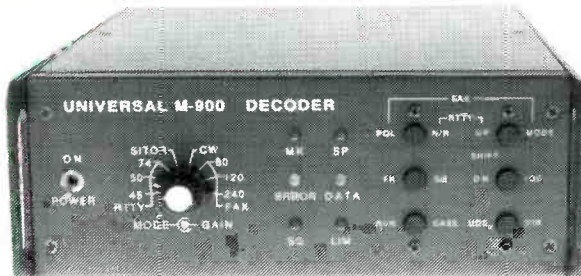
By E. Noll. Low cost, easy to erect antennas for LW, MW, FM, SW, SCAN and HAM. \$16.95

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- 12 VDC Power Supply
- Your SW Receiver
- Video Monitor
- Parallel Printer
- Cables for above

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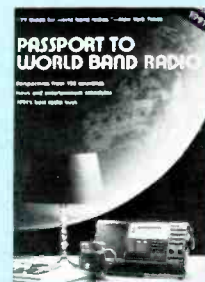


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Reading The Mail

We get a lot of mail here. Everything that's addressed to me, and isn't in the anonymous/hysterical category, does find its way to my desk and gets read. Much of it is very clever and exceptionally funny, our readers have a uniquely wry way of looking at themselves, their hobby, and the world; it makes for very enjoyable and entertaining reading.

Of course, there's a lot of serious mail, too. Some readers come up with ideas for new communications applications and equipment, and (whenever possible) I try to steer these people in a direction where their ideas can be turned into commercial realities. Sometimes, the kernel of a good idea is contained in a letter that's attempting to make a point about something totally different.

That's sort of what happened with the lengthy letter I received from Robert LaForest, of Bossier City, LA. The overall scope of Bob's letter was that the common belief that the radio spectrum is overcrowded is a complete myth; that careful analysis of frequency allocations and usage reveals that there's actually more than enough room for everybody.

Hidden away in a remote corner of Bob's letter was an idea that deserves more than the few sentences it received there. Bob suggested that a VHF or UHF frequency or band be provided for highway communication, something that would reach out for five or ten miles. He didn't amplify the thought.

Think about the idea, though. CB on 27 MHz is great for hobby purposes, but it was badly located for most other uses. CB's original premise was that it would be useful for summoning help on the highway, but CB didn't develop that way. Early FCC restrictions against hobby use had to be dropped when it became apparent that Americans had defined the service to be something totally different than the FCC had in mind. When skip begins coming through, you can hardly talk across town because you're being stepped on by hobbyists from Germany to Guatemala. That goes for Channel 9, too. Many police departments long ago gave up on monitoring CB from their headquarters because the dispatchers and desk sergeants didn't want to listen to the incessant local and DX hobby chatter, truckers, foul language, and other antics.

GMRS, with its FM and repeaters on 462 MHz, was supposed to have been a more sophisticated version of CB. It's really a fine communications service, except that it

never clicked with the public or with manufacturers. Most people never heard of GMRS, though it's been standing in the wings for decades.

Cellular phones are OK, but are an expensive overkill for people who would like to have a reliable two-way mobile radio only to summon help during a road emergency. Besides, cellular service isn't available in many areas.

That's where Bob's idea comes in. You'd buy a special VHF or UHF transceiver. Most likely, it would operate in the 800 MHz band. It would run only enough power to get out for several miles. Maybe it's a handheld, or operates from the vehicle's cigarette lighter. Like an emergency CB rig, it could have a magnetic mount antenna, or it could use a standard cellular antenna. Mobile stations wouldn't need to be licensed, but would automatically transmit a special ID number programmed into the unit that identifies its owner.

Base stations would also run only a few watts. They'd be operated by public safety agencies, using the agencies' existing license. Other base stations would also operate. They wouldn't need licenses, but would require authorization from an area public safety agency. Such authorizations would be given only to organized highway assistance volunteer organizations meeting certain established standards.

My thought would be that this would best be a paired channel simplex system; the motorists on one frequency, base stations and their associated mobile units operating on the paired frequency. This means that motorists could communicate only with bases, or with mobiles sent out to provide help. It couldn't turn into a motorists' intercom channel with smokey reports and other comms not related to actual calls for assistance.

Most likely, only a few channel pairs would be required once it's established that motorists aren't going to be able to hear or yak-yak with one another. One channel pair would be established as the nationwide primary, with two other pairs for backup use in case things got busy. There's ample room at 800 MHz to make room for this.

Surely, no-frills transceivers for this could be produced at a reasonable cost to motorists. What's more, refinements in the system could be made as time went on. A one-way channel could be established where police or sheriff base stations could broadcast repeating tape emergency messages to advise motorists when there were accident

areas, construction detours, hazardous road conditions, flood zones, etc. Nothing fancy, just a few words.

An economy approach would be like a transportable highway callbox. A handheld transmitter could have four pushbuttons; police, fire, medical, and tow truck. You'd push the appropriate button and it sends out the alarm automatically, along with your identifying code. Then a timer allows you 60 seconds of voice transmitting time to give your location and fill in the details of your problem. After that, it won't work for another ten minutes. A deluxe model could allow two-way comms for two minutes.

This highway emergency service wouldn't take away from any other communications service. You could still have your CB, ham, cellular, or business band radios, and this would only supplement what they offer. There wouldn't be any skip coming through, nobody asking where smokey is hiding—only pure, no nonsense, no toll-charge, no license, help when you need it on the highway, anywhere in the nation.

With new uses always being sought for communications services to benefit the public, here's one that we think would have practical value. If you have any thoughts on it, you're welcome to pass them along.

Another letter arrived that needs a mention, too. This one came in from a listener who reports that he was tuned to 14470 kHz (USB) monitoring a Spanish language contact between two stations. Suddenly, the contact was broken by station using a U.S. Navy MARS callsign who advised the other stations (in English), "You are on a military frequency. Please QSY por favor." For those who don't know what "QSY" means, it's an invitation to get off the frequency and talk somewhere else.

Our correspondent tells us that he was appalled at the nerve and lack of respect shown by the MARS station (whose callsign checked out to be assigned to an individual in Maryland, and not to a station at a naval ship or shore facility). The other stations were there first. Furthermore, they were engaged in what sounded like communications that were important. They weren't whistling bird calls, endlessly repeating "ola, ola, ola" or engaged in other frequency jamming practices.

The stations who had been using the frequency probably should have stood their ground and told Mr. MARS to buzz off. But

(Continued on page 71)



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MAILBAG

LETTERS TO THE EDITOR

Each month we select representative reader letters for our Mailbag column. We reserve the right to condense lengthy letters for space reasons. All letters submitted for consideration must be signed and show a return address. Upon request, we will withhold sender's name should the letter be used in Mailbag. Address letters to Tom Kneitel, Editor, Popular Communications Magazine, 76 North Broadway, Hicksville, NY 11801.

Seeing America By Radio

In the August issue *Beaming In*, you wrote of driving through rural areas and tuning in on the sounds of local broadcasters. It's true that there's a big difference between "urban" and "rural" radio regarding the music, commercials, and general programming. As you mentioned, being used to big city broadcasting doesn't prepare you for what you hear a hundred miles away. But just think, a person who grows up in a small, rural community hears lots of commercials for livestock feed, gas, crop spray, and agricultural supplies. Imagine the surprise when that person heads towards the big city and doesn't hear any of this. Instead, the airwaves are filled with commercials for drinks, cellular phones, car rentals, restaurants, diet plans, and rock concerts. It's an education, and radio makes it possible!

David Olson,
Watford City, ND

In *Beaming In*, you wrote that you enjoyed driving into the boonies and listening to a day or two of broadcasting that sounds different than what may be heard in a large metro area. But, how about those of us who would like to hear some of that big city "distilled, purified, professional, refined, sophisticated, and structured" radio? After living in various parts of North America, and finally returning to my home town area, the lack of both professionalism and format variety is missed. In fact, it is both disappointing and embarrassing after enjoying what is heard over stations in the "big city." So far as I'm concerned, if you live close enough to a big city to hear its broadcasters, you're lucky, indeed. Maybe, you're also spoiled. After a dose of how professional radio broadcasting can sound, small-town radio can be irritating as well as a few steps downward in quality. I survive only on shortwave!

Martin L. Tobias,
Westfield, MA

You wrote about driving around and enjoying the bluegrass music on WAMU-FM/

88.5 in Washington, DC. I live in the southern suburbs of Philadelphia and used to be able to pick up their signal regularly. That ended recently when local WXPB-FM moved to 88.5 from 88.9 MHz, in company with two new college stations on 88.5 MHz. I use a Tecnic ST-G70 with a rotatable QFM-9 FM antenna. I enjoy FM DX'ing. Distant stations are great to hear, as you mentioned. FM DX'ing lets you do it without even leaving home!

Dan Cashin,
Havertown, PA

The Right To Listen

Three cheers for your efforts to eliminate the ECPA. Do Americans have the right to hear? What about *overhear*? Making extraordinary efforts to overhear whispers may be an invasion of privacy, but hearing what people shout seems to be a Constitutional right. The logic of the ECPA is that we are Constitutionally required to go out and buy ourselves earplugs. If a person demands the right to propagate their conversations aided by a PA system or a cellular phone, the Constitution doesn't guarantee that everybody else will shut their ears. Somehow, the ECPA manages to surpass the Constitution in making such a guarantee.

Ed Jones, WB2DVL,
Somerset, NJ

A Nice Place To Visit?

Enclosed herewith is information your readers will want to know. First, I am sending you a clipping from the *St. Petersburg Times* telling how the Florida Highway Patrol now writes speeding tickets against drivers who exceed the speed limit by as little as 5 mph. Also, I am enclosing a copy of Florida law #843.16, since it seeks to restrict the use of scanners in the state.

Mike Albergo,
Hudson, FL

The scanner law is, like similar laws from other areas, poorly conceived, badly worded, and has several loopholes large enough to drive an 18-wheeler through. The aim of the law is to prohibit police scanners in vehicles, except those operated by law enforcement agencies, or designated as emergency vehicles. It also doesn't allow police scanners in any "business establishment." But, through too much legalese and wordiness, it essentially renders itself rather meaningless. Right from the start, it specifies that you can't "install" the scanner, rather than "locate" or "place" the device. By using a portable scanner, one could probably put up a

good argument that it wasn't installed, in that it wasn't physically connected to the vehicle or structure. Next, the law specifies that the violation really only occurs when the scanner is tuned to actually receive frequencies assigned by the FCC to city, county or state law enforcement agencies. One could debate the status of frequencies entered into a scanner, but locked out. Or, suppose the scanner was adjusted slightly off the FCC assigned frequency, but still close enough to copy the communications? Furthermore, among other loopholes, it excuses all holders of ham licenses from being covered by the law. Nevertheless, no matter how badly written they may be, we have always considered such laws to be odious. The only real purpose they serve is to restrict the casual and hobby use of scanners by the average person who harbors no evil intent; the same boob who gets a speeding ticket for driving 5 mph above the posted speed limit. Those who would use scanners in connection with illegal activities are hardly going to sell their UZI's and get scared into a life of honest work by this type of low grade, meaningless legislation. — Editor

Jam Session

I live in a college dorm. One of the residents on our floor enjoys blasting his radio at what sounds like full volume. This is particularly annoying to many others who live on the same floor of the dorm. Asking him to turn it down, and also complaining to the dorm authorities have brought only short-term relief. Quite by accident, I discovered a solution, and that is by tuning my own FM radio 10.7 MHz (the IF frequency) below the station he's playing, I can jam his receiver. For instance, if he would be listening to a station on 105.9 MHz, I would tune in 95.2 MHz. My receiver (a Radio Shack 12-625) has a strong local oscillator and can zap his receiver from 100 ft. away. I'm not certain if this is legal, but after a few minutes he seems to get the message. His dorm mate tells me that every time it happens, he hits the set with his fist, fiddles with it, shakes it, then turns it off in disgust and frustration.

Ted Giovanni,
Milwaukee, WI

Making It Easier

From an ad in your magazine, I recently ordered a copy of Bill Cheek's *Scanner Modification Handbook*. This book is superb, and a "must read" for the serious scanner enthusiast. I've been an electronics technician for 25 years, and been involved in scanning for 17 years. Still, I've learned several useful things from reading the book.

William R. Young,
Merrillville, IN

Listening For Liberia

Tuning In On This Troubled Land To Find Out What's Behind The Headlines

BY GERRY DEXTER

Note: When this article was written the situation in Liberia was still in a very fluid state. By the time you read this the dust may have settled and the civil war ended. It will have no bearing on the fact that DX'ing Liberia is an activity worth your while.

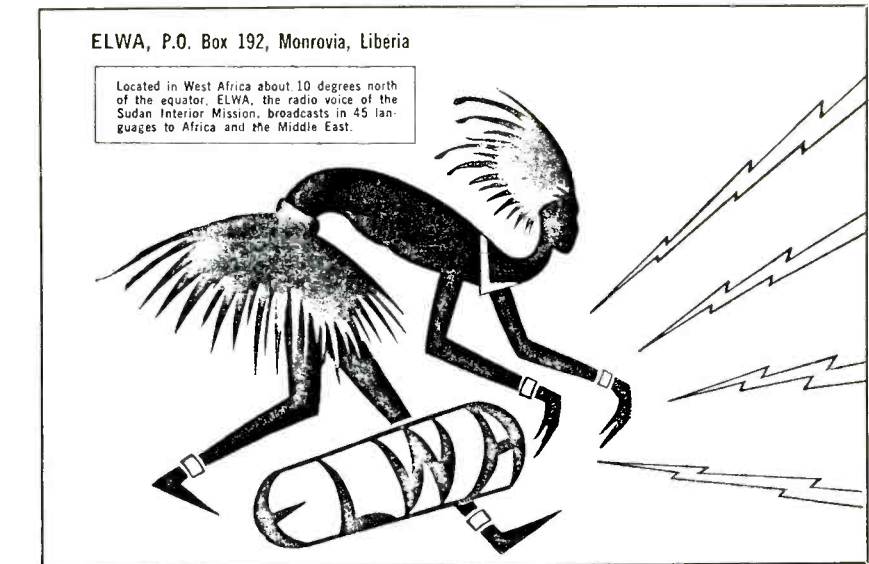
They entered the country last December, crossing the border with the Ivory Coast and into the Province of Nimba. The 150 or so rebels of the National Patriotic Front of Liberia took a few villages in the area. The government responded with brutalities against the people as much or more as against the rebels, in the process fueling anti-government, pro-rebel feelings. It was the boost the rebels needed and they made steady gains in the months which followed, practically all the way to Monrovia, the Liberian capital. They took over much of the country's sources of income, including the 125 thousand acre Firestone Tire and Rubber Plantation—largest in the world.

By this past summer, though, things had come to a standstill, a marking time waiting for—no one knew what. The rebels sat some miles from Monrovia and waited. And so did everyone else.

The rebel forces are led by Charles Taylor, a former senior official in the Doe government, who fled to the United States after having been accused of embezzling nearly a million dollars. Taylor said Doe framed him. Taylor said President Samuel K. Doe must get out of office. Doe said he wouldn't go until his term expired in October, 1991. Doe gained power in a bloody 1980 coup that saw then President William Tolbert, Jr. and several government officials bayoneted and shot on the beach. Many say Doe stole the election held five years later. Doe was killed last September.

Doe was a member of the Krahn, one of 16 ethnic groups in Liberia and one which includes only about 4% of the population. Yet Doe had placed many Krahn in important government posts. He was accused of discriminating against other tribal groups, particularly the Gio and Mono which supported the rebels.

Taylor, who is American-Liberian, is accused of getting weapons and training from Libya which is something Taylor denies, saying the weapons have all been taken from government soldiers. There are signs that the rebels are not completely unified since there have been instances during which a faction led by Prince Johnson has



ELWA's distinctive QSL card has found its way to thousands of DX'ers since the station began in 1954.

fought against rebels loyal to Taylor. Some experts think Monrovia was left twisting in the wind while Taylor solidified his position as rebel leader. As this is being written nobody's clearly in control.

Liberia has a special historical relationship with the United States. The country was founded by freed slaves who landed there in 1822. Its constitution was written at Harvard Law School. It uses the American dollar as its currency. Monrovia is named after President James Monroe who occupied the White House when the first American settlers arrived. Congress appropriated funds to allow these settlers to buy land from local tribal chiefs. By 1847, Liberia had become the first independent African republic. The American-Liberians (who still only amount to 5% of the population) gained control of the economy and government. Until the 1980 coup against President Tolbert, an American-Liberian had always been president of Liberia. The American-Liberians have long been resented by the rest of the population.

Although English is Liberia's official language there are some 20 other languages spoken in various parts of the country. Half a million of the population of 2.55 million live in Monrovia.

The situation in Monrovia and the rest of the country is bleak and will stay that way for

a long time, no matter who winds up in charge. The war has made a shambles of a country that already had a marginal economy. The nation is said to be nearly bankrupt. Aside from the death and destruction resulting from war actions there have been hundreds of brutal, "get even" murders, much of them ethnically motivated. The professionals and educated have mostly left. The UN is gone, the Peace Corps closed down, most of the airlines are no longer providing service.

Some in Washington say the US has little to lose in Liberia; many others disagree. Liberia gives the US landing and refueling rights for military aircraft and ships—the only sub-Saharan country which does. There is a low frequency Omega radio navigation station in Liberia which also serves as a backup system for the US nuclear submarine fleet. There are two communications relay stations which handle diplomatic and intelligence messages. And, of course, the Voice of America's relay base is in Carysburg, just outside of Monrovia.

Liberia, whether involved in civil war or in the long cleanup and rebuilding era, makes an interesting and timely DX target. There are three stations and you can draw one from each category up there on the big board—easy, fairly hard and very difficult.

The easy one, of course, is the VOA Re-

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LIBERIAN BROADCASTING SYSTEM
P.O. BOX 594, MONROVIA, LIBERIA.

ELBC's "Sound of Progress" slogan doesn't ring true these days.

lay Station at Carysburg, about 20 miles northeast of Monrovia. The installation has half a dozen 250 kilowatt and a pair of 50 kw transmitters in use, in addition to a couple of lower power communications transmitters. The relay went on the air in 1964 and serves primarily sub-Saharan Africa with Voice of America programs. A couple of dozen frequencies are in use at various times of the day and night. Recent loggings by DX'ers indicate that the following times and frequencies will offer the easiest reception by North American listeners: Try the 0300 UTC sign on on 3990, 6035, 7280, 9525 and 11835. 6180 and 7265 come into use at 0430. 11915 begins at 0600. During the daytime hours try 15315 from 1900 sign on and 15600//17870 from 1600 to 2200 sign off. The Voice of America's Washington, DC headquarters will confirm reception reports.

More difficult to log is ELWA (Eternal Love Winning Africa), which, when it went on the air in 1954, was Africa's first Christian radio station. The first transmitter was a 1 kW medium wave unit, but a 10 kW shortwave was soon added and a second 10 kW unit came on in 1963. In the meantime, ELWA put a 50 kW transmitter on shortwave in 1960 and then added a second in 1968.

ELWA was the inspiration of three students at Wheaton College, Wheaton, Illinois back in 1949. One of those students, Stan Bruning, still serves ELWA as its Director of Broadcasting. The station is part of the Sudan Interior Mission, headquartered in Cedar Grove, New Jersey. In addition to religious programs, ELWA carries a great deal of material on farming, health, sanitation and so on, as well as local news, birth and death announcements, schedules of town meetings and the like. ELWA also operates a hospital and Christian academy.

ELWA is scheduled with English broadcasts on 4760 daily at 0600-0800 (Friday to 0815, Saturdays to 0830) and at 1900-

2300. On Sundays from 0700-0830 and 1900-2230. 7270 is in use for English at 0830-1830 (not likely to be heard in the US). Vernaculars are carried on 3230 at 0610-0800 and 1805-2210 (2150 on Fridays) and also on 4760 at 1730-1900 (again, not likely to be heard in North America). The best opportunity in the above schedule is the 0600 sign on on 4760.

ELWA has an eternal service which includes Arabic on 11955 at 0700-0815 and 11910 at 1530-1700. French and vernaculars are carried on 11830 (Saturdays and Sundays) at 0800-1000, 1200-1330 on 9550, 1630-2015 and 2135-2205 on 11830. English is offered from 0630-0800 and 1240-1630 (Sundays). 1600-1630 and 2015-2135 weekdays on 11830. Several listeners have had good reception of ELWA on 11830 at various daytime hours over the past several months. ELWA is a fine verifier of reports, which should go to PO Box 192, Monrovia.

Certainly the most difficult of the three is the Liberian Broadcasting System and its shortwave station ELBC. Even though it is listed as running 50 kW, it still falls into the category of a fine DX catch. Actually, it is more than possible that the station may not even be on the air currently, due either to the war or worn out equipment, or both. The station is listed for operation on 6090 from 0900-1900, but reception on this frequency is almost never reported. A better opportunity is the station's 90 meter band frequency—3255, which is said to be in use when 6090 is not. A winter or two back there was loggings of this one around 2300. Another good time to try would be 0600, especially if ELWA on 4760 is coming in well. So, try for it, yes; but don't hold your breath. If you do get lucky and wish to send a report the address is PO Box 594, Monrovia. In years past, ELBS was a reliable QSL'er but today—who knows?

Still another broadcaster in Liberia is the Liberian Rural Communications Network

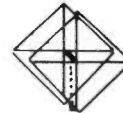
(LCRN). Created in 1986, the "Voice of Rural Liberia" operates 3-10 kilowatt transmitters on medium wave. Its programs focus on health, agriculture, education and community development on the local level. The network is comprised on ELRG at Gbarnga (588 kHz), ELRV at Voinjama (585 kHz) and ELRZ at Zwedru (1260 kHz). Each station produces about 80% of its own programs and concentrates on education and development at the local level. A production center in Monrovia does programming and public service announcements which center on national topics.

For a brief time in 1987 DX'ers were hearing LRCN on 3975 upper sideband as it relayed programming to the local stations. We know LRCN has a 10 kilowatt shortwave transmitter which it was using for this purpose, but there's no information as to what has happened to it or why it is apparently no longer being used on shortwave. Indeed, it is an open question as to whether any of the three medium wave stations are even on the air. At the very least, the one in Zwedru must be in rebel hands. Hopefully LRCN will continue and perhaps even make use of its shortwave feeder service again in the future.

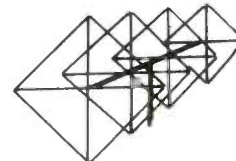
Although it may be years before Liberia returns to normal, at least two of the three shortwave stations should continue to operate regularly so some shortwave voices will remain in this beleaguered nation.

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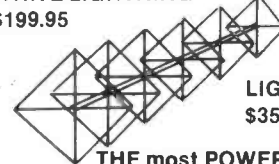


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BY "SMOKI" WHITFIELD



If you've visited any of the historic and scenic facilities operated by the National Park Service, you may have noticed that many have large signs directing guests to tune their radios to certain frequencies for information on parking, park services, things to see, etc. Similar stations are also in a number of National Forests.

Crossing the border from Mexico into San Diego, CA? Your radio will bring you English/Spanish information on Customs Ser-

vice requirements, vehicle waiting time at the border crossing point, and other useful data.

Or, maybe you have pulled into a larger airport and seen billboards advising you to use your car radio to hear which parking fields have available space.

Been to see the volcano at Mount Saint Helens, WA? A transmitter has been set up there to advise motorists of flash flood potentials, what "No Entry" signs mean, de-

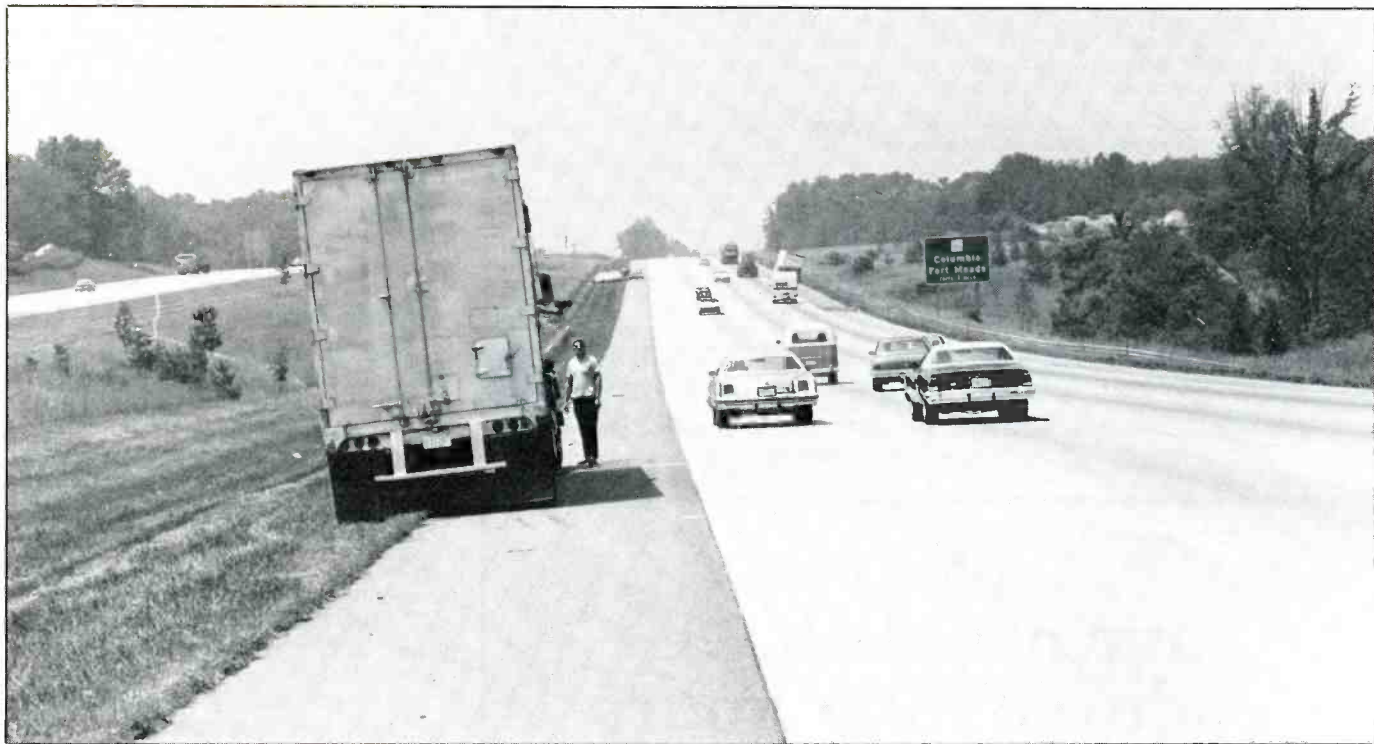
scribes what to do if a siren is heard, and tells where exhibits are located.

Possibly you were driving on an Interstate highway and, as you approached a construction zone or a complex traffic interchange, you saw a sign offering help. That sign requested that you turn on your radio in order to get useful information on detours, congestion, delays, accidents, exits, and routing.

These are just some of the uses of Travel-



You may find these micro stations at entrances to tunnels and bridges.




Interstate highways can be rich sources of TIS activity.

WXT 613
 Travelers Information Radio
 Kenton County Airport Board

1610 kHz, 2 Watts, monopole antenna 47.5 feet above the ground 10 miles SW of Cincinnati, Ohio, in Boone County, Kentucky.

We confirm your reception of our radio transmission on the 6 day of Nov, 1972.

J. E. J. Dackelbaum
 Chief Engineer


 Box 75000
 Cincinnati, Ohio 45275


Printed QSL card from the TIS facility at the Greater Cincinnati Airport. The transmitter runs 2 watts, is located in KY.

ers Information Stations (TIS) that you may have encountered and thought little about after you made use of their services and then went on your way. But wait, if you pause to think about it, they are miniature broadcasting stations. They usually have call signs, and licenses, and they are as much to be considered candidates for hobby listening as any other stations you tune for. Unfortunately, most people just take them for granted.

Those who view them properly, as stations to actively pursue as DX challenges, have a lot of fun and are often rewarded with QSL's to verify their reception.

The Nature of The Beast

Privately operated TIS transmitters are FCC licensed in either the Local Government or Experimental radio services. Those operated at federal facilities don't need to be FCC licenses. Nevertheless, just about all


 United States Department of the Interior
 NATIONAL PARK SERVICE
 Acadia National Park
 P. O. Box 177
 Bar Harbor, Maine 04609


August 26, 1982
 N382J

Howard G. Kemp
 140 Court Street
 Laconia, N.H. 03246

Dear Mr. Kemp:

We verify receiving your letter announcing that you had heard the radio broadcast identified as KFB 759 on 1610 KCS, August 16, 1982 from 3:25 pm to 3:29 pm.

We hope this acknowledgment satisfies your request.

Sincerely,

 Robert Rothe
 Chief Park Naturalist

Howard Kemp, who lives in NH, received this QSL letter after reporting reception of the TIS transmitter at Acadia National Park, on the coast of ME.

TIS transmitters are assigned call signs (even if they don't use them).

The typical TIS station uses a vertical monopole or directive array being fed from a 5 to 10 watt transmitter. The antenna can't exceed 49 feet above ground level. Some other TIS stations use a buried cable antenna that extends a mile or two along a driving route. Stations with cable antennas can run as much as 50 watts. The basic idea is to limit the service area of a TIS to a restricted area in the immediate vicinity of the transmitter. This primary service area is probably consid-

ered to be a mile, or up to about six miles. The Customs Service transmitter on 1610 kHz at San Diego uses only 100 milliwatts and covers three to six miles normally.

Most TIS activities are simply a continuously repeating tape message lasting perhaps thirty seconds; just long enough for a vehicle to travel from signal access to signal loss without missing any of the information. Certain TIS facilities, such as some at National Parks, may play the same descriptive message for months at a time. Those located on highways may require updated information every hour, or even more often. Updated information is sent to the local TIS transmitters by landline from the central office that controls their operation.

The FCC regulations regarding the operation of a TIS are quite specific. The stations must be non-commercial in nature. Their operation must relate only to traffic and road conditions, traffic hazard and travel advisories, directions, lodging availability, rest stops, service stations, and descriptions of local points of interest. A TIS must be located either near a transportation (air, train, bus) terminal, at a public park, or historic site, or bridges and tunnels, or where highways intersect with a Federal Interstate highway. Lastly, the TIS can't cause interference to any broadcasting stations operating on adjacent frequencies.

Traditionally, TIS activities have been on 530 and 1610 kHz. Now that the high frequency end of the AM broadcast band is being extended from 1605 kHz to 1705 kHz, the TIS frequency on 1610 kHz will undoubtedly be moved (possibly to 1710 kHz).

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Note that in Canada, TIS operations in National Parks are to be found on 1230 and 1490 kHz, instead of the frequencies used in the US. The Ontario Travel Information in Sarnia operates on 1150 kHz (10 watts). There's a 50-watt TIS at Toronto's Pearson International Airport, however, that uses 530 kHz.

Others, Too

There are other low powered AM stations, too, that don't exactly fit into the TIS format, although their operations may be intended to reach motorists.

For instance, there are many drive-in movie theatres running the sound from the films on 530 or 540 kHz. There is a drive-in church in South Daytona Beach, FL, reported to have their Sunday morning services broadcast to attending worshippers on 657 kHz. The entrance to Captree State Park, in NY, tells drivers to tune their radios to 640 kHz for parking information.

Walt Disney World, in FL runs low power transmitters at 810 and 900 kHz at EPCOT Center, plus 1030 and 1200 kHz at the Magic Kingdom.

Real estate brokers have been reported using short range (1 block) AM transmitters to transmit a repeating message to entice house hunters driving by to pull over and visit their model homes. A sign placed on the roadside advises the frequency to tune for the broadcasts.

All of the TIS and the many other low powered short-range AM broadcasters, then, are just sitting there waiting to be heard. While it is their intention to be heard only over a very limited range, it's a fact that the diligent DX'er can actually snag stations from hundreds of miles away. This is the time of the year to try, too!

When you're trying to hear flea-powered stations, you certainly are going to have to work hard, and wait, before you can show off a wall full of QSL's. Check 530 kHz and 1610 kHz (or whatever frequency 1610 kHz eventually becomes) regularly, especially beginning at sunrise and for the following two hours, also for the two hours before sunset, and right on into the wee hours.

If you hear commercial or religious programming on 1610 kHz, that's a legit 50 kW station on Anguilla, British West Indies. Known as *The Caribbean Beacon*, their signal dominates this frequency at night in many areas of North America. However, the 530 kHz frequency should be generally free of interference from high-powered broadcasters.

Some TIS stations will QSL, several have received so many reception reports that they've made up their own printed QSL cards. By all means, if you collect QSL's, send reception reports to any of these micro broadcasters you hear. This is good DX, by any definition of the term. And, let us know how you made out!

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Remembering Radio's Turncoats, Traitors, Treasonists, Tricksters, & Trouble Makers!

World Turmoil Has Produced Many Strange Broadcasting Personalities and Stations

BY ALICE BRANNIGAN

Recently, I was reading about how the events in the Middle East have generated a spate of psychological warfare (psywar) broadcasters, clandestine and otherwise. These are stations that direct programming into specific areas for the purposes of presenting disinformation, fomenting confusion among or frightening civilians, inciting rebellion, demoralizing the military, and similar. Those that are clandestine operate from unannounced locations. Ostensibly, these stations are operated by expatriates or dissidents from the nations whose audiences they seek to reach.

At times, such stations are just what they claim and seem to be. In other instances, they are counterfeits; "gray" or "black" undercover operations of the military or intelligence services of various governments, sending out programs that seek to influence events in a direction beneficial to their interests.

In either case, the aim of the operators of these stations is to line up air personalities whose commentaries will be heeded by the audiences. This is usually considered most effective when the commentators sound like, and may actually be, genuine expatriates. The governments on the receiving end of their comments are invariably furious about such programming.

Who and Where?

Clandestine stations have long existed in abundance, issuing calls to arms, like *Radio Euzkadi*, which many DX'ers reported in the 1960's and 1970's. This was the station of the Basque resistance movement whose goal it has been to start an independent nation for the one million Basques in northern Spain.

The station was anti-Communist, and against the Franco government of Spain.



In WWII, many hours each day of psywar programming were prepared by enemy forces for the "entertainment" of American GI audiences. Air personalities such as "Tokyo Rose" and "Axis Sally" became hated, but well known, by our troops.

Although the exact location of *Radio Euzkadi* was never revealed, the assumption was that the transmitter was somewhere in France, since that was where the movement was headquartered and also where the QSL's were sent from.

Another popular clandestine bent on sedition was *Radio Free Russia*, operated from the 1950's to about 1974 by the right-wing National Alliance of Russian Solidarity (NTS). Starting out with a mobile transmitter in West Germany, RFR later was also transmitted via the facilities of various other stations, including *Radio Caribe* in the Dominican Republic; the Broadcasting Corp. of China, in Taiwan; the CIA's semi-clandestine *Radio Libertad*, and other stations.

Sometimes, the programming isn't even done in a clandestine manner. The expatriate is simply put in front of a microphone of the high-powered official government broadcasting station of the hostile nation. At that point, words such as "treason," "traitor" and "turncoat" begin to be used, and the situation escalates in serciousness. Scarcely a hot, warm, or even cold war has gone by since the 1930's without noteworthy examples of this, and with broadcasting having been used as an important political tool as well as a psychological warfare weapon.

A Matter of Perception

There has been, of course, debate as to how these personalities are perceived.

DEAR FRIEND:-

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Villa Acuña, Coah., Mexico.

DOCTOR, MRS. J. R. BRINKLEY AND JOHNNY BOY

Millford, Kansas.

A 1930 QSL from Doc Brinkley's Mexican station, XER. At this point he was still allowed to run his Kansas clinic, but his broadcasting station there had been shut down by the government. (Courtesy Joe Hueter, PA.)

Some would say that all individuals have a right (or even moral obligation) to express their deeply held, heartfelt convictions and dissenting views of actions their government takes, no matter how wrong most of their fellow citizens feel those views may be. Of course, there's a world of difference between expressing an opposition viewpoint and making propaganda broadcasts on behalf of your nation's enemies. At that point, people tend to consider such apparent dissenters as merely crackpots or dupes; eager and willing puppets of the enemy. Sorting out and defining some of these people isn't quite as simple as it might seem.



Doc Brinkley's station (XER/XERA/XERF) was located just across the Mexican border from Del Rio, TX. It ran 250 kW, or more, and could easily be heard throughout North America selling quack medical cures. The station also offered thinly-veiled pro-Nazi propaganda spun out by American commentators.

We can look back on Ronald Ramsey, a Los Angeles dissident who made anti-war tapes that were broadcast from Hanoi in the mid-1960's. In 1966, Ramsey sent a telegram to Canadian Prime Minister Lester Pearson. It read: "On behalf of free speech and the right to travel, I beseech you and the great Canadian People for refuge as a dissenter to my own country's policy of genocide and denial of self-determination in Vietnam."

But let's not forget the more well-known accused turncoats of the World War II era who weren't going the "free speech" route, like American Iva Ikuko Toguru D'Aquino Tokyo Rose, American Mildred Gillars, known as Axis Sally, or the equally infamous Brit turncoat, Lord Haw Haw. William Joyce (the Englishman known as Lord Haw Haw) was heard over the Nazi-operated official and clandestine stations (such as the so-called *New British Broadcasting Station*) reading news releases from the Imperial Fascist League that told of "Jewish ritual murder," and how Hitler was primarily concerned with defending Germany from Communism. He implored the British to surrender.

What about Norman Baillie-Stewart? He had been an officer in the Seaforth Highlanders, but in the early 1930's he was convicted of passing British military secrets to German agents. That put him in prison for five years. After his release in 1937, he quickly left England and wasn't heard from again until his voice turned up on Nazi propaganda broadcasts from Austria during WWII. He was taken prisoner in 1945 by American forces.

He Wasn't The Doc of The Bay

During the 1930's, closer to home, Doc Brinkley's old border blaster radio station (variously known as XER, XERA, and

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XERF) at Villa Acuna, Mexico, was hawk- ing more than goat glands and quack medi- cal cures to its American audiences. It also featured the radical political views of Brink- ley's crony, Gerald B. Winrod, a Wichita preacher so friendly towards the Nazis, he was facetiously called the Kansas Fuhrer. Another featured Brinkley air personality was his friend, William D. Pelly, leader of a 1930's pro-Nazi American paramilitary or- ganization called the Silver Shirts.

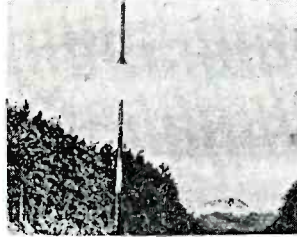
These were manifestations of Brinkley's own anger at the United States. Earlier, our government had revoked the license of his broadcasting station (KFKB) in Milford, Kansas. At that point, he moved his broad- casting activities to a spot just across the Mexican border from Del Rio, TX. Eventu- ally the authorities in Kansas revoked his license to practice medicine there, later also shutting down his clinic. His saga was told in *POP'COMM* of February, 1983.

The 1956 Richard Widmark movie, *Run For The Sun*, showed *Lord Haw Haw* living in luxurious postwar exile on a Mexican plantation. *Haw Haw* was effectively por- trayed by actor Trevor Howard. But the reality was that *Lord Haw Haw* had been hanged for treason by his fellow Britons years earlier. Norman Baillie-Stewart went to prison for five more years. Winrod was indicted for sedition (but never convicted). Pelly was convicted of sedition and served time in federal prison.

Tokyo Rose, whose story was told at length in *POP'COMM* of December, 1985, received a ten year prison sentence and a \$10,000 fine, after a lengthy and controver- sial trial that began in 1949. She was re- leased from the federal reformatory in 1956 with time off for good behavior. Eventually she was able to satisfy the fine that had been imposed. In 1977, President Gerald Ford



His haughty and contempt-filled speaking style earned Englishman William Joyce the nickname of *Lord Haw Haw* to his listeners in Britain. His wartime pro-Hitler broadcasts from Germany during the 1940's led to his being found guilty of treason, and an eventual date with the hangman.



RADIO EUKADI — EUKADI IRRATIA

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- 21.30 GMT
- 22.30 GMT

80 KW

- 23 m. 13.250 KHz.
- 19 m. 15.080 KHz.
- m. _____ KHz.

"La Voix de la Résistance Basque"

"The Voice of the Basque Underground"

Basques were a free nation throughout history. Franco's uprising in 1936, assisted by Hitler and Mussolini, crushed the Basques depriving them of the remnants of their ancient freedom. Now under Spanish rule, without elementary human rights, Basques fight under cover to restore democracy in their land.

Les Basques: un peuple uni par l'histoire, par sa langue et par sa volonté de vivre en liberté. Le but de notre lutte est une Euzkadi libre dans une Europe unie en délivrant le peuple basque de la tyrannie.

Radio Euzkadi was a clandestine that sought to incite Basques to rebellion in Spain.

granted a full pardon and restored citizen- ship to Mrs. D'Aquino. She had claimed (and many agreed) that her own personal role in the wartime broadcasts was minimal, and that she had been no more than an un- fortunate victim of circumstances. Many American GI's, instead of being demoral- ized by the *Tokyo Rose* programs, said that they found them enjoyable.

When Baillie-Stewart went on trial for his WWII broadcasts, he defended his actions by saying that he had become a German citizen before those broadcasts started. There- fore, he claimed that he wasn't to be consid- ered a traitor. The court disagreed, deter- mining that it's a bit of a sticky wicket to change your nationality (to that of an ene-

my) in wartime. On the basis of this deter- mination, he was convicted. This avoided the necessity of the court dealing with his motives for broadcasting, and with the con- tent, truth, or falsehood, of his broadcasts.

Burn, Baby, Burn

Broadcasting was put to no less a tactical use by Robert F. Williams, at that time an American fugitive who had been heard on occasion in the 1960's over Radio Peking and Radio Havana. He really hit his stride over Radio Free Dixie, in Cuba. Using the facilities of 50 kW Radio Progreso (670, 680, 690, and 700 kHz), Radio Free Dixie presented nightly English-language pro-




QSL from the clandestine known as Radio Free Russia.



Mrs. Iva D'Aquino (shown at her trial in 1949) was actually only one of several Radio Tokyo announcers who were known as "Tokyo Rose."

Nazaki Station Longitude 138°51'00" E
Latitude 36°10'44" N

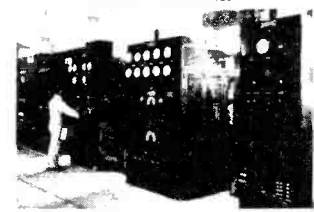


I Overseas broadcast for North America, Hawaii, etc.
Transmitter:
JVN 10660 K.C. 20 KW. Beam Antenna
JVH 14990 K.C. 20 KW. " "
Program:
0500-0600 GMT. News in English and Japanese, Music, Entertainment, Lecture, etc.

II Relaying broadcast for Manchukuo and Formosa
Transmitter:
JVT 6750 KC. 20 KW. Vertical doublet Antenna
JVP 7510 " 20 " " "
JVN 10660 " 20 " " "
JVM 10740 " 20 " " "
Program:
0900-0910 GMT. Weather forecast, Market quotations
0240-0245 Market quotations
0340-0410 News, Market quotations
0650-0720 Market quotations, News
0900-1230 Children's Hour, News, Lecture, Entertainment, Music, Drama, etc.
1230-1300 Time Signal, News, Weather forecast, etc.
2220-2240 Physical Exercise

III. Overseas Broadcasting Test
Transmitter:
JVP 7510 K.C. 20 K.W. Beam antenna
JVN 10660 " " " "
JVM 10740 " " " "
JVH 14600 " " " "
Program:
1. For the East Coast of North America & South America
2100-2200 G.M.T. Announcement, Gramophone music, Etc.
For Europe
1900-2000 G.M.T. Announcement, Gramophone music Etc.

20 KW. Transmitter



Multi-station QSL from the Japanese stations that would become known collectively as Radio Tokyo during WWII. This card was issued shortly before war was declared in December of 1941. (Courtesy of Howard Kemp, NH.)

gramming intended for black American audiences. Radio Free Dixie was apparently intended to promote unrest, subversion, and urban riots. Williams' broadcasts were impassioned and stirring.

Williams had achieved prominence in the mid-1950's as a civil rights activist. However, he left the North Carolina NAACP after expressing views that included using violence "when necessary." In 1961, Williams turned up in Monroe, NC, at a cotton-



John Amery (shown with his French wife) was the English son of a Secretary of State for India. When the British captured him in Milan in 1945, he pled guilty to making wartime propaganda broadcasts on behalf of the Nazis. He was hanged for treason.

mill strike sponsored by the National Freedom Council (NFC). After the KKK caused a fracas during the strike, Williams (acting against NFC orders) and a few others were alleged to have retaliated by kidnaping a white couple. With the FBI in hot pursuit, a defiant Williams left for Cuba.

His militant pronouncements over Radio Free Dixie were, curiously, as strongly against civil rights legislation as were those of the KKK, although he came to his views via a different thought process. Williams said that integration and civil rights laws were ineffective appeasement, a meaningless sham, a sellout, only tokenism, and far less preferable than an armed uprising.

The Vietnam War

Getting back to where we began, let's look closer at Ronald B. Ramsey and his 1966 Hanoi broadcasts directed at American forces serving in Vietnam.

Ramsey was born in the middle-class Los Angeles suburb of Compton. That was in 1939. By 1953 he had been thrown out of the local junior high school for making speeches in defense of Julius and Ethel Rosenberg, an American couple convicted of selling atomic secrets to the Soviets. There is some question as to whether he ever went back to school after that.

The year 1955 saw Ramsey, at age sixteen, publishing *The Nationalist Summary* on behalf of an organization called Americans for America. The publication claimed that Bernard Baruch and Eleanor Roosevelt were Communists, and it spoke out against our participation in the Korean War. It supported radical groups fighting integration in the South. The Anti-Defamation League of B'nai B'rith characterized Ramsey's publication as being anti-Semitic.

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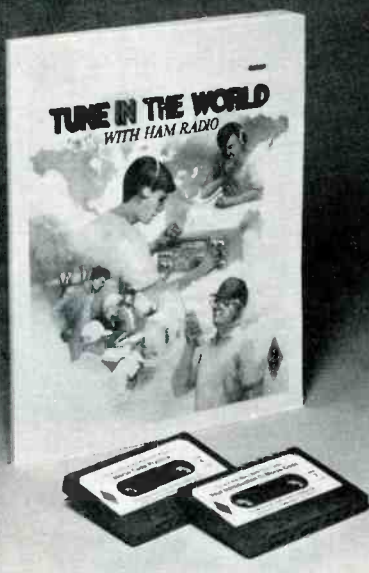
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CIRCLE 53 ON READER SERVICE CARD

Oddly, Ramsey later claimed that he had once been arrested while participating in a civil rights march. Nevertheless, after working to get Richard Nixon elected in 1960, Ramsey entered the army, served two years, was discharged, and ended up taking some classes at Berkeley.

Somehow, in early 1964, Ramsey appeared in Kenya. Allegedly, he then made broadcasts on behalf of Jomo Kenyatta's black supremacist regime. But, after only a month or two, he had borrowed \$1,000 from the American embassy in order to buy a ticket back to the States.

When next heard from, it was in February of 1965. The police in Algeria told our embassy they were holding an American "psychologist" on unspecified charges at the Mustapha Hospital prison ward. The embassy sent someone over. It was Ramsey, and what a story he had to tell about himself!

Ramsey's tale was that he had been summoned to Algeria by strongman Ahmed Ben Bella so that he could broadcast propaganda. That's when, he later hinted, he learned the basics of broadcasting, including production, recording, and tape editing.

Maybe Ben Bella didn't like his work. For whatever reason, in late December of 1964, the Algerian police showed up one night to arrest him on charges that were never stated. Ramsey said that he was tortured with electric shocks, and suffered a damaged kidney. The hospital allowed him to hold a press conference and to speak to embassy personnel (who believed his story), but they wouldn't release him.

Freedom finally came in May, when the Algerians turned Ramsey over to the American embassy on the condition that he get out of Algeria right away and never return. Ramsey again borrowed \$1,000 from the embassy to buy a ticket for home. After he was safely out of their country, the Algerians admitted that they had arrested him because he was acting suspiciously and they felt he might have been an American intelligence agent.

Back in the U. S. in May of 1965, Ramsey soon became involved in protest demonstrations against the war in Vietnam, ultimately getting arrested in October during a protest in Washington. That's then he came up with the idea of making tape recordings that could be heard by American troops in Vietnam, in which he would urge them to go home. He said that at the moment the idea struck him, a *Granny Goose* brand potato chip truck happened to be driving by. He saw this as a fortuitous sign, so he thereupon decided to use *Granny Goose* as his name on the radio, although he also used the air name *Joe Libre Epstein*.

Watts The Matter

Ramsey did all of his programs from a two-story wood-frame house in the Watts area of Los Angeles. Via tape recordings made for Hanoi's *Radio Stateside* and

REICHS-RUNDFUNK

European Service



William Joyce, otherwise known as "Lord Haw-Haw" at the microphone, while reading his "Views on the News"

To hear the News in English from the European Service of the Reichsrundfunk, tune in to the following stations and frequencies:

| | |
|--|------------------------------------|
| 6.30 a. m. German Summer Time (or British Extra Summer Time) | |
| Deutschlandsender | on 191 kilocycles (1571 metres) |
| Calais | on 785 kilocycles (396 metres) |
| Bremen | on 160 kilocycles (1875 metres) |
| Friesland | on 232 kilocycles (1293 metres) |
| Luxemburg | on 232 kilocycles (1293 metres) |
| 2.30 p. m. German Summer Time (or British Extra Summer Time) | |
| Calais | on 785 kilocycles (396 metres) |
| Bremen | on 160 kilocycles (1875 metres) |
| Friesland | on 232 kilocycles (1293 metres) |
| Luxemburg | on 232 kilocycles (1293 metres) |
| short-wave-transmitter DJL | on 15110 kilocycles (19.85 metres) |
| 5.30 p. m. German Summer Time (or British Extra Summer Time) | |
| Calais | on 785 kilocycles (396 metres) |
| Bremen | on 160 kilocycles (1875 metres) |
| Friesland | on 232 kilocycles (1293 metres) |
| Luxemburg | on 232 kilocycles (1293 metres) |
| short-wave-transmitter DXJ | on 7240 kilocycles (41.44 metres) |
| 9.30 p. m. German Summer Time (or British Extra Summer Time) | |
| Calais | on 785 kilocycles (396 metres) |
| Luxemburg | on 232 kilocycles (1293 metres) |
| short-wave-transmitter DXM | on 6200 kilocycles (48.39 metres) |
| short-wave-transmitter DXJ | on 7240 kilocycles (41.44 metres) |
| 6.30 p. m. German Summer Time (or British Extra Summer Time) | |
| Calais | on 785 kilocycles (396 metres) |
| Bremen | on 160 kilocycles (1875 metres) |
| Friesland | on 232 kilocycles (1293 metres) |
| short-wave-transmitter DXJ | on 7240 kilocycles (41.44 metres) |
| 11.30 p. m. German Summer Time (or British Extra Summer Time) and | |
| 12.15 p. m. German Summer Time (or British Extra Summer Time) | |
| Calais | on 950 kilocycles (316 metres) |
| Breslau | on 658 kilocycles (456 metres) |
| Cologne | on 658 kilocycles (456 metres) |
| short-wave-transmitter DXM | on 6200 kilocycles (48.39 metres) |
| "Views on the News" by William Joyce (otherwise known as Lord Haw-Haw) are broadcast daily | |
| at 10.30 p. m. German Summer Time (or British Extra Summer Time) | |
| via: | |
| Calais | on 950 kilocycles (316 metres) |
| Breslau | on 658 kilocycles (456 metres) |
| Cologne | on 658 kilocycles (456 metres) |
| Luxemburg | on 232 kilocycles (1293 metres) |
| short-wave-transmitter DXM | on 6200 kilocycles (48.39 metres) |

This WWII sked for English language medium and shortwave European Service broadcasts from Hitler's Germany was printed for the benefit of Britons. The photo at the top is proudly identified as "William Joyce, otherwise known as Lord Haw-Haw." The English detested this traitor almost as much as they hated Hitler, himself.

Radio Liberation, Ramsey generated hours of popular music, local news, and anti-war propaganda programming.

At first, beginning with just a stock tape recorder, Ramsey soon put together a professional quality recording and production studio. The taped programs would be mailed to a friend in Quebec, then to a certain address in Prague. After that, it was only a matter of weeks before they were aired in Hanoi and GI's could hear his rather irritating high-pitched voice. They hated the voice even more than the rhetoric.

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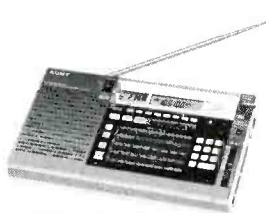
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- Precise-Feel Analog Tuning
- 10-Key Direct Access™ Tuning
- 350 Memory Presets With Station Name Labeling
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Mildred Gillars, shown in a photo taken sixteen years after the war ended, was an American who was put on trial for making the infamous "Axis Sally" wartime broadcasts for the Nazis.

Broadcasts usually consisted of anti-war commentary and remarks possibly intended to have a demoralizing effect. There would also be lots of hometown (Los Angeles) news, especially relating to GI's. Separating the spoken items were pop tunes that had been recorded off the air from Los Angeles stations.



Ronald Ramsey, a 26-year old American, said he was the mysterious "Granny Goose" whose broadcasts were taped in Los Angeles and then broadcast by Hanoi. The half-hour programs seemed intended to demoralize American troops in Vietnam, although Ramsey claimed that he was a "super-patriot" who was against the war. This photo was taken at his 1966 press conference at U.N. Plaza in New York City.

A Slow Pace, Until The Feds Appeared

Ramsey said that although the *Granny Goose* broadcasts were each one half-hour in duration, sometimes he would spend several days tape recording the comments to be used on a single program. Then, he would edit out fluffs or ideas he didn't like, splice in the musical selections, and end up with the finished program. This leisurely pace was an inefficient method of cranking out programs. Ramsey made a total of only eleven *Granny Goose* tapes from the time he began in October of 1965 until he left California in February of 1966.

Actually, Ramsey left in a hurry. It was just slightly before government agents came knocking on his door with a subpoena from the House Un-American Activities Committee. He left behind the whole recording studio. Ramsey later showed up in New York City, telling reporters that he had brought along his Norelco Carry-Corder and was still producing programs from friends' apartments.

The strange thing was that it was Ramsey's own actions that eventually gave away *Granny Goose's* identity. Otherwise, he might have remained unidentified for an indefinite period.

A Case of Foot-in-Mouth Disease

Seems that Ramsey had anonymously sent a *Granny Goose* demo tape to Pacifica's Los Angeles FM station, KPFK. Pacifica's stations have always offered an open forum to an extremely wide range of viewpoints on all topics, but Ramsey's tape was auditioned with alarm by KPFK's staffers.

Among the choice quotes on the tape was one that said, "We're not asking you to shoot your commanding officer or sergeant in the back; not at this time." Comments such as this caused KPFK's manager to call the FBI about the tape.

Ramsey eventually called KPFK to ask why they hadn't broadcast his tape. They told him that the tape would be played January 1, 1966 over KPFK, also on Pacifica's other stations, KPFA in San Francisco, and WBAL, in New York City.

Flushed with his apparent fame and success, Ramsey contacted the Los Angeles offices of *Newsweek* and told them about *Granny Goose*. He said that he didn't consider himself a Communist, but a super-patriot acting in the best interests of the United States. By then, the government knew the identity of *Granny Goose*.

The FBI was trying to figure out how to regard Ramsey inasmuch as the U.S. wasn't officially at war with Vietnam. If there wasn't a declared war, then they weren't exactly certain that treason could exist. Congress wanted to speak with him anyway, and they issued their subpoena. But Ramsey was gone by the time it arrived.

Ramsey hit the news media on March 6,

1966 with a press conference on the steps at U.N. Plaza, outside the United Nations Building in New York City. He complained to the press that the government had forbade him to use his passport to try and leave the country. As he was speaking, two men attempted to push their way towards him through the crowd of reporters. Ramsey mumbled a couple of words about government investigators, then bolted up the steps. Apparently he slipped quietly out of the country after that, and *Granny Goose* was never again heard from.

Twenty-five years later, in 1990, American GI's are being given a helping of the same type of broadcasts. Most recently, it's Baghdad Radio, the official Iraqi government station, with the Iraqi announcer speaking in broken English. This time it isn't an American, it's local talent. "Do you want to go back home from this place? Would you like to be one of the wounded who are remembered only during charity ceremonies? Ask your friends what happened in Vietnam. The American soldiers' corpses are lost forever in Vietnam after they had been eaten by worms."

It's not quite *Granny Goose*, or even *Hanoi Hannah*, but it's still the same old message that's been played over and over to different troops, in different languages, on different frequencies, by different announcers, in different wars.

Are you tuned to your radio this Holiday Season, listening to the soothing sounds of Silent Night, and the cheery message of how Santa Claus is Coming to Town? Then, how about giving an extra good thought and a special prayer to all service personnel stationed far from their families this time of the year, especially those whose radios bring them the discomfiting sounds of psywar instead of Holiday music.

More Information

Propaganda and psywar broadcasts are a fascinating aspect of radio history. The most informative books on the subject are *Clandestine Radio Broadcasting*, by Prof. Lawrence C. Soley and John S. Nichols (Praeger Publishers, New York, NY, 1986); also *Radio Warfare*, by Prof. Lawrence C. Soley (Praeger Publishers, New York, NY, 1989); and *Cuban-American Radio Wars*, by Howard H. Frederick (Ablex Publishing Corp., Norwood, NJ, 1986). Larger libraries should have these available.

Till Next Month

We offer you our best wishes of the Season. And we thank you for your cards and kind letters, photos, QSL's, and other items for this column sent throughout this past year. As usual, our December column has been dedicated to members of the armed forces. Hope you join us in the January issue when we will return to our more traditional column format.

PC

NEW PRODUCTS

REVIEW OF NEW AND INTERESTING PRODUCTS



Communication Manager For The ICOM™ IC-R7000 Receiver

DELTA RESEARCH is delivering its MS-DOS version of DELTACOMM™ 1.04, a state-of-the-art communication manager for the ICOM™ R7000 receiver. With speed as a design goal, DELTACOMM's™ spectrum log function can sweep a frequency spectrum at approximately 1300 channels/minute, generate a histogram and log frequency/activity to the disk. DELTACOMM™ offers a multitude of exceptional features including priority channel monitoring, software control of a tape recorder, Morse Code ID of an active channel, automatic receiver characterization (birdie lockout), on-screen HELP and import/export file transfer capability.

Unsurpassed priority channel sampling every 2.5 seconds combined with software control of a tape recorder and Morse Code ID of channel number offers unlimited monitoring and logging possibilities.

Receiver characterization with birdie log automatically stores all receiver birdies prior to a frequency search operation. The birdie channels are then automatically skipped during a frequency search operation.

DELTACOMM's™ powerful function allows priority channel selection and the parameters of each channel number are individually programmable. The parameters are frequency, mode, resume scan delay (1-99 seconds), maximum monitor (1-999 seconds), tape record channel (on/off), channel information field (40 characters), channel lockout, clear activity counter and Morse Code ID.

The optimized spectrum log feature can sweep a frequency spectrum at approximately 1300 channels/minute, display a histogram in realtime and log frequency/activity information to disk. The disk file created during a spectrum log is a scan compatible file that may be used with DELTACOMM's™ scan function.

A unique search operation stores all frequencies found active and then automatic-

ally skips those frequencies during the remaining search cycles. This feature eliminates redundant logging of channels during a search process.

User friendly window style screens with on-screen HELP reduce the need to reference the user manual.

DELTACOMM's™ delimited file information exchange capability allows unlimited possibilities for custom report generation with the user's favorite spreadsheet or database software, thus saving many hours of typing.

DELTACOMM™ comes complete with communication interface, power supply, cabling and components required to interface to the R7000 receiver. The DELTACOMM™ interface requires no internal receiver connections.

For more information, contact Delta Research, PO Box 13677, Wauwatosa, WI 53213, or circle 102 on our Readers' Service.



Monitor Offers Spectral Analysis And Logging Functions

Indianapolis: ACE Communications has announced the availability of a computer driven frequency logging and analysis system. The complete package consists of a receiver that covers 100 kHz to 2036 MHz, plus control software and serial interface hardware.

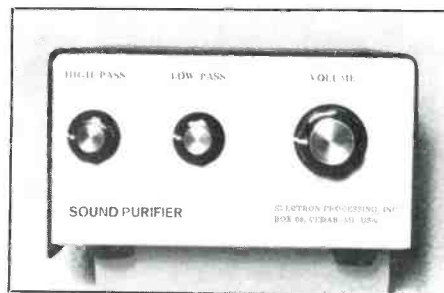
The new system is designed for stand-alone, unattended monitoring and logging of any group of frequencies within the receiver coverage range, in Wide FM, Narrow FM, AM, or single sideband operating modes.

Two basic types of analysis and logging functions are offered with the package. The first, a tabular method, lists active calls by frequency, signal strength, date, time, and even keys the call to a tape recording of the audio portion of the radio transmission.

A Spectrum Analyzer type display is the second basic method of logging and analysis. On a computer monitor, the display will show "spikes" of received frequencies vertically ranked by signal strength. The horizontal axis represents the radio frequencies being received. The display can be either viewed on a screen printed on a dot matrix or laser printer. Tabular data can also be printed, or stored to disk.

The RS232C serial interface allows for remote operation and future expansion capabilities. A transfer rate of 4800 baud is supported.

A suggested retail price of \$1,290 has been set for the system. For further information contact ACE Communications at 1-800-455-7717 or via FAX at 1-800-448-1084, or circle 101 on or Readers' Service.



Noise Reducing Audio Filter

Electron Processing, Inc announced an audio filter that improves reception of signals that are either weak or experiencing interferences. The SOUND PURIFIER makes reception more enjoyable by effectively sharpening your receivers' filters and eliminating annoying "garbage" from the sound.

Noise and interference are greatly reduced, thanks to two multi-stage active "switched capacitor" audio filters. Operation is easy with the two front panel tuning controls. A handy volume control is also provided. A potent 5-watt audio amplifier delivers plenty of sound, too!

Easily used with any receiver or transceiver, the SOUND PURIFIER connects between the external speaker and the receiver. The unit is housed in a handsome 6" x 5.25" x 3": metal cabinet and powered by regular 115 VAC. For mobile use, a +12V DC powered version is also available for an additional \$4.

The SOUND PURIFIER is priced at \$89.95 with a special limited time introductory price of \$79.95. For additional information, contact Electron Processing, Inc. at PO box 68, Cedar, MI 49621 or call (616) 228-7020, or circle 103 on our Readers' Service.

Look, Up In The Sky . . .

Mark Long's 1991 *World Satellite Annual* arrived. Formidable, yes! Each of its sections are printed on different color paper—pink, yellow, blue, white, and tan. The book doesn't have consecutively numbered pages, but it's well over an inch thick and must be at least 600 pages.

This is a comprehensive and detailed reference book for dish owners, researchers,

engineers, manufacturers, technicians, and everybody else who needs to know about the present status of present and future commercial satellites.

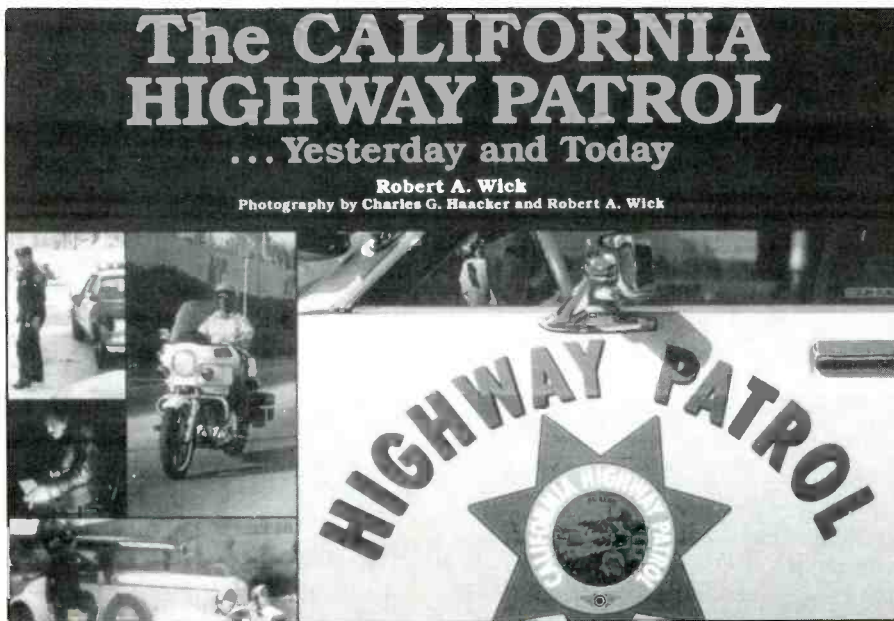
Learn what's new with DBS, launch vehicles, satellite news gathering, new antenna technologies, and new scrambling systems. There's information on next-generation satellite systems from many nations, plus updates on existing systems. There are more

than 100 new charts, graphs, and signal contour footprints.

Satellites covering each of the world's three ITU Regions are listed individually in separate sections of this book. This information tells of the history and ownership of each satellite, its tech specs, its usage, coverage, and more. Another large section of the book provides details of the locations of each satellite, and the purpose/frequency of each of its transponders, plus other related data.

There's an enormous amount of information here, and if you've got any professional or hobby interest in what's going on in the realm of commercial satellites, this big book certainly will give you more than you need to know.

The 1991 *World Satellite Almanac* is available for \$49.95, plus \$7 postage (US and Canada) from MLE Inc., P.O. Box 159, Winter Beach, FL 32971. Residents of Florida, please add \$3 state sales tax.



CHiP's Ahoy!

A new 224-page fully-illustrated book by Robert A. Wick is entitled *The California Highway Patrol . . . Yesterday and Today*. Containing more than 475 photos and other illustrations, the text of the book is a wide-ranging history and examination of one of the world's best-known public safety organizations.

The author delves deeply into the structure of the CHP, describing in each of the agency's individual divisions in considerable detail, including the operations of the organization's well-equipped Communications Center. There's information about uniforms and equipment, aircraft, ranks, awards, vehicles, and other equipment.

You'll learn about how CHP personnel train for uniformed and non-uniformed jobs within the agency. You'll find out about the civilians who work for the CHP, the various inspectors, and other specialized employees.

The book covers just about everything you'd ever want to know about the agency. Furthermore, the volume is attractive and well-produced. For those who are intrigued

by this agency, which has always had a definite charisma, this book will certainly be appreciated. Even if you haven't heard any of the agency's communications activities directly, you've probably become familiar with the CHP via the considerable coverage it receives on TV and via Hollywood.

The one thing that we would have liked to have seen added to this fine book would have been detailed information on the CHP's large statewide communications system, including frequencies, stations, call-signs, procedures, etc. There are no frequency or station listings of any kind in the book. Listings of this type would have been a great finishing touch to complete the author's portrait of the agency.

Still, it's a most worthwhile reference overview of this important agency.

The California Highway Patrol . . . Yesterday and Today, is available at \$18.95, plus \$3 shipping, from Phase Three Publishing, Dept. EJ, P.O. Box 151210, San Rafael CA 94915. Allow 4 to 6 weeks for delivery. California residents, please add \$1.14 sales tax.

Guide To Shortwave Intrigue

Harry Helms, AA6FW, scored a winner when he came up with the idea for the *Underground Frequency Guide*. The original edition of the book came out in 1989 and was an instant success. Harry defined it as, "a guide to spies, smugglers, guerrilla forces, and other unusual signals on short-wave radio." And, who better than Harry Helms to put together such a book? As our regular readers of *POP'COMM* know from his by-lines on features in our pages, he's an authority on intercepts of strange and unusual transmissions.

An all new, greatly revised, and expanded 2nd Edition of *The Underground Frequency Guide* is now available. There's text up front, some of it totally new, the rest revised from the earlier edition with new information. This material gets into Helms' very astute observations, perceptions, analysis and tidbits of hard information relating to numbers stations, phonetic alphabet stations, single-letter HF beacons, "KKN" stations, the National Communications System, foghorn, raspers, pulsers, and all manner of other (as he aptly calls) "good stuff." This includes things like Soviet spaceship tracking nets, unidentified CW nets, odd Cuban comms, smugglers, bootleggers, piccolo stations, and even a very strange announcement intercepted on a USN frequency.

The rest of the book is a huge helping of straight-by-frequency listings of mystery and other curious station intercepts. Information is given relating to the station identification,

THE UNDERGROUND FREQUENCY GUIDE

Harry Helms

A guide to spies, smugglers, guerrilla forces,
and other unusual signals on shortwave radio

language, mode, time heard, type of operation noted, and other relevant data of use to monitors. The frequency listings are all new (from the previous edition) and reflect the latest logging reports from intercept stations at various locations. There are numbers stations, mysterious networks, odd signals, and a great assortment of things to assist you in tuning in on shortwave radio's most baffling and curious signals and stations. When you tune in these mystery stations, you realize that there's a lot of strange stuff going on in the world. Not knowing what some of this stuff is might even be a blessing!

This 2nd Edition is now in a large 8½ × 11-inch format, and it's as good looking as it is useful and information-packed.

The 2nd Edition of *The Underground Frequency Guide* is 10.95, plus 1.00 postage from CRB Research Books, Inc., P.O. Box 56, Commack, NY 11725. Residents of NY State, please add 82 cents sales tax.

In Addition . . .

Universal Radio issued a new 1990-91 Edition of *The DXer's Directory*, compiled by Fred Osterman. This is a "who's who" type directory of more than 1,800 DX listeners in 75 nations of the world. It shows names, addresses, special interests, call signs, club affiliations, telephone numbers, and other handy data. Listings are arranged geographically, with Americans listed according to states and cities. A separate section lists useful information on about 125 DX clubs, worldwide. The 88 page book is \$4.95 (plus \$1 shipping) from our friends at Universal Radio, 1280 Aida Drive, Reynoldsburg, OH 43068.

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Scanning The Private Detectives

Now It's Your Turn To Check Out Those Professional Snoops

BY CHUCK ROBERTSON

Like most scanner owners, I'm fascinated by a good police stakeout, surveillance, or chase. But I've discovered that there's also plenty of surveillance activity taking place in the realm of private detectives and private investigators. Their operations can be every bit as thrilling as any federal, state, county, or local police investigation—often more colorful. So, put on your trench coat and sunglasses; we're going to spy on the pros!

Type Cast

The private detective business is actually divided into two types of operations, private investigators (PI's), and private guards (so-called rent-a-cops). PI's are, by far, the most interesting to monitor. Their activities include determining the credibility of witnesses; the cause, origin, or responsibility of fires and accidents; the location or recovery of stolen property; securing evidence to be used in civil or criminal cases; checking out certain insurance claims; giving polygraph tests; acting as confidential couriers; executive protection; bringing back bail jumpers; locating runaways and persons who are trying not to be found by creditors, spouses, and others; investigating industrial espionage and pilferage; integrity shopping; electronic sweeps; executive protection; pre-employment background investigation; child custody recovery; and more.

Perhaps more than anything else, marital



Handheld and binoculars ready, the PI is set for work.

cases are the bread and butter of most PI's. Some of the things they have to do (and need to discuss over the radio) makes afternoon soaps seem like tame stuff. "I followed our client's wife to the strip pits, and well... his suspicion was right. I got photos for him to see."

One of the most intensive auto surveillances I ever heard came from a crew of PI's

in Granite City, IL. As I was tuned to 30.76 MHz, I listened as they wove their way through the labyrinth of city streets, each taking periodic turns following the target vehicle for only a few blocks so the driver wouldn't become suspicious. Agent ID's and most locations were concealed in alphanumeric codes, as good as anything you'd hear on any regular law enforcement

Table 1
VHF Low Band Channels Preferred By PI's

| | | |
|-------|-------|-------|
| 27.39 | 31.00 | 35.14 |
| 27.41 | 31.04 | 35.18 |
| 27.43 | 31.16 | 35.70 |
| 27.45 | 31.20 | 35.72 |
| 27.47 | 31.24 | 35.88 |
| 27.49 | 33.14 | 35.90 |
| 27.51 | 33.16 | 35.92 |
| 27.53 | 33.40 | 35.94 |
| 30.76 | 35.02 | 35.96 |
| 30.80 | 35.04 | 35.98 |
| 30.84 | 35.06 | 42.96 |
| 30.88 | 35.08 | 42.98 |
| 30.92 | 35.10 | 43.00 |
| 30.96 | 35.12 | |

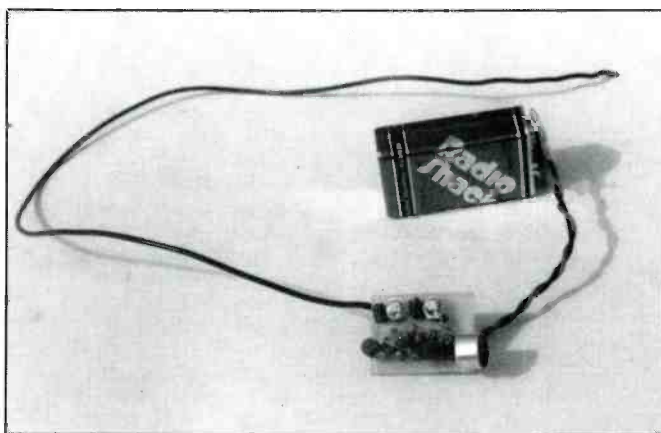
Table 2
Band Ranges Used By PI's For 2-Way Comms

| |
|--|
| 72.02 to 72.98 in 20 kHz steps. |
| 75.42 to 75.98 in 20 kHz steps. |
| 150.815 to 151.475 in 30 kHz steps (PR & VI only). |
| 151.625 to 151.995 in 30 kHz steps. |
| 152.27 to 152.42 in 15 kHz steps. |
| 154.515/154.54/154.57/154.60 |
| 157.41 to 157.68 in 15 kHz steps. |
| 460.65 to 462.175 in 12.5 kHz steps (paired +5 MHz) |
| 463.20 to 464.975 in 12.5 kHz steps (paired +5 MHz) |
| 471.1625 to 511.4375 (Portions of band; major cities). |
| 854.7625 to 865.9875 in 25 kHz steps (paired -45 MHz) |



Guards, watchmen, and other descriptive terms are applied to the uniformed operatives of private security forces.

Wireless microphones may be used during the course of an investigation. This one is supposed to operate between 70 and 130 MHz, but can be tuned to beyond 300 MHz.



channel. Of course, many PI's are retired law enforcement professionals, so they're making use of years of experience.

It isn't always that way. In stark contrast, some PI's monitored on 30.60 MHz (a Special Industrial Radio Service channel) were an unintentional laugh riot. During the course of something they kept referring to as *Operation Cantaloupe* (Can't Elope?), the agents (Mr. T. and Forehead), followed the target vehicle to a house, then moved in close under cover of darkness. From their joking around, it seemed as if they were having a ball.

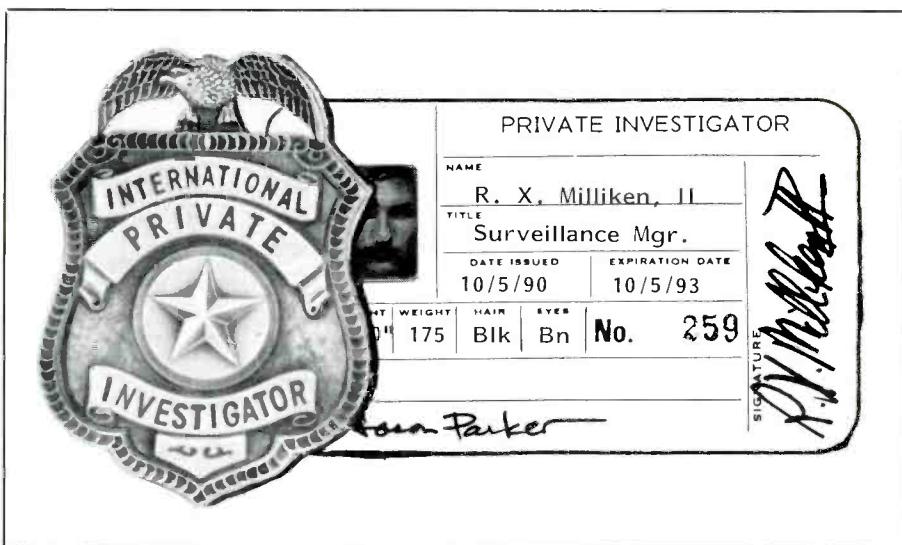
These comms were heard via Sporadic-E skip, so I'm not sure where they originated. Most PI's are licensed in the Business Radio Service, so these jokers were most likely not even licensed for operation on 30.60 kHz. But, not all PI's always play strictly by the rules.

Someone Is Listening

Wireless microphones fall into the category of being part of a PI's tools. It's not always possible to determine what frequency they may be using for such surveillance, although you can take some educated guesses.

Most professional wireless mics will operate somewhere between 26 MHz and 1 GHz (1,000 MHz). I recently purchased a wireless mike kit with specs that claimed wide FM mode operation between 70 and 130 MHz. As verified by an Optoelectronics frequency counter and an Icom R7000 receiver, with a little tinkering the unit could be made to transmit from 65 MHz to 320 MHz.

Wireless mikes with wide FM (WFM) output are almost impossible to copy on most standard scanners, since those scanners are intended to pick up NFM mode signals.



Although much of the PI's work is plodding and routine, the job has plenty of fascinating and intrigue-filled highlights. This is especially true of surveillance and undercover assignments. You can hear it on your scanner. (Credentials courtesy CRB Research.)

You'd be lucky to hear an occasional burst of audio. Use a scanner with WFM capabilities to sleuth these low-power devices.

The FCC has allocated several VHF frequencies for wireless mikes. These are: 169.45, 169.505, 170.245, 170.305, 171.045, 171.105, 171.845, and 171.905 MHz. Any of the Land Mobile services might turn up on these channels (using NFM as well as WFM). Everything from fast food restaurants to the police could appear, so keep an ear open.

Auditory assistance transmitters for the hearing-impaired may (illegally) be used for eavesdropping. They operate in the 72.025 to 72.975 MHz and 75.425 to 75.975 MHz ranges. Most channels are NFM, a few are set aside for WFM.

Wireless mics are made for use in the TV broadcasting and motion picture industries, and undoubtedly some of this hardware has been (again, illegally) put to illegal use for surveillance work by PI's. The tie-clip mics used by anchormen are examples of these devices, so you can see how well-suited they are as body mics ("wires").

The bands available for such units include 54 to 72 MHz, 76 to 88 MHz, 174 to 216 MHz, 470 to 608 MHz, and 614 to 806 MHz, in 25 kHz steps. As many as eight WFM channels can be thus "stacked." Also check out 26.10 to 26.48 MHz, 161.625 to 161.775 MHz, 169.00 to 172.00 MHz, 50.05 to 450.925 MHz, 55.05 to 55.925 MHz, and 94.0 to 952.0 MHz for illegal use by PI wireless mics.

List 3

Selected Private Detective & Related Frequencies

| | | | |
|---------|--|---------|--|
| 27.45 | Eagle Detective Agcy., Worcester, MA | | Miley Security, Greenwich, CT |
| 27.47 | Brooks Armored Car Svc., Wilmington, DE | | Lane Security, Marco Isl., FL |
| 30.76 | United Security, Gallipolis, OH | | Kelly Detect. Agcy., Chicago, IL |
| 31.04 | Private Detective Svc., Warren, OH | | Rollo Security, Laplace, LA |
| 31.16 | Security Patrol, Summerville, SC | | Cape Home Security, Dennisport, MA |
| 33.16 | Eagle Security, Lancaster, PA | | Thompson Investig., Millersville, MD |
| 35.08 | Sizemore Security Int'l., Augusta, GA | | Amer. Bur of Investig., Southfield, MI |
| 35.10 | Baker Prot. Svc., Los Angeles area, CA | | Gulf States Invstgtns., Biloxi, MS |
| 35.12 | D&G Patrol, Longmont, CO | | Williams Detectv. Agcy., Elizabeth, NJ |
| | Private Detective Invstgns., Jamestown, NY | | Fielding Security, S. Glens Falls, NY |
| 35.92 | Neo Invstgns., Ashtabula, OH | | Youngstown Secur. Patrol, Cleveland, OH |
| 35.94 | Bomard Invstgns., Salisbury, MD | | Protective Security, Johnstown, PA |
| | Daken Invstgtve. Svc., St. Paul, MN | | New England Secur., Westerly, RI |
| 35.96 | Indst'l. Secty. Det. Agcy., Greensboro, NC | 151.805 | Ball Investig., Nashville, TN |
| | Gold Star Security, Camden, NJ | | Liberty Park Patrol, New York, NY |
| | Baker Protective Svc., Hempstead, NY | | Pacific NW Investig., Veradale, WA |
| 35.98 | Baker Protective Svc., Ann Arbor, MI | | Arkansas Prisoner Trnspt., Little Rock, AR |
| 42.96 | Ariz. Prot. Agcy., Tucson, AZ | | Baker Protec. Svc., Colo Springs, CO |
| | Korbel Security, Guerneville, CA | | Guardman Security, Coral Gables, FL |
| | Sentry Security, Haily, ID | | Ill. Counties Det. Agcy., Mt. Prospect, IL |
| | Gloss Guard & Invstg., Glen Ellyn, IL | | Cook Security Agcy., Evansville, IN |
| | Nat'l. Detect. Bur., Huntington, WV | | Bay Security, Quincy, MA |
| 43.00 | Int'l. Security Police, Mobile, IL | | Thompson Detect. Agcy., Millersville, MD |
| | Investigation Svc., San Francisco, CA | | Merchants Detect. Agcy., Lincoln Park, MI |
| | Search Security, Battle Creek, MI | | Security Svc., Helena, MT |
| | Palitz Detect. Agcy., Tooele, UT | | Baker Protec. Svc., Charlotte, NC |
| 151.625 | IB1 Security Svc., Hauppauge, NY | | Valade Investig., Nashua, NH |
| 151.655 | ABA Guard Svc., Miami, FL | | Burns Int'l. Security, Albuquerque, NM |
| | Gulf States Invstgns., Biloxi, MS | | MCI Security, Great Neck, NY |
| | Stroupe Security Ptrl., Charlotte, NC | 151.835 | Security & Investigs., Inc., Dayton, OH |
| | Gemini Security, Newark, NJ | | Penn. State Invstgns., Inc., State Coll., PA |
| | Security Svc., Inc., Findlay, OH | | Burns Int'l. Detect. Agcy., El Paso, TX |
| | Security Svc. Assn., San Antonio, TX | | Tom King Detect. Agcy., Oakland, CA |
| 151.685 | Gore Security, Flagstaff, AZ | | Tri State Secur. Patrol, Panacea, FL |
| | Logan Invstg., Newark, DE | | Souther Security Svc., Norcross, GA |
| | Suburban Security, Nicholson, GA | | Cosmopolitan Det. & Investig., Chicago, IL |
| | Hurst Security, Kankakee, IL | | Twin Co. Secur. Agcy., E. Chicago, IN |
| | Clark Detect. Agcy., Evansville, IL | | Security Guard Svc., Baton Rouge, LA |
| | CES Security, Baltimore, MD | | Cober Security., Acushnet, MA |
| | Executive Invstg. Svc., Champlin, MN | | Hi Teck Invstgns., Glen Burnie, MD |
| | Barnhart Invstgn. Co., Lee's Summit, MO | | CVC Security, Muskegon, MI |
| | Schneider Security Agcy., Fayetteville, NC | | Spartan Security, Jamaica, NY |
| | NH Security Guard Svc., Manchester, NH | | Loss Prevention Consultnts., NY, NY |
| | Ace Security, Haledon, NJ | | Command Security, Hato Rey, PR |
| | Four Corners Alarm/Patrol, Farmington, NM | 151.865 | Winders Security, Rock Hill, SC |
| | Miley Protec. Agcy., Allentown, PA | | ABCO Int'l. Security, Houston, TX |
| | JRS Security Svc., Conroe, TX | | Lambert Det. & Secur., Princeton, WV |
| 151.715 | American Protec. Svc., Oakland, CA | | Crabtree Security, Rncho. Cucamonga, CA |
| | Bullens Detect. Agcy., Hockessin, DE | | Associated Investigs., Orlando, FL |
| | Municipal Protec. Bur., Hallandale, FL | | Pacif. Security Alarm Co., Agana, GU |
| | HI Protec. Assn., Honolulu, HI | | Ohlson Investig. & Secur., Bloomington, IL |
| | Omni Security Grp., Chicago, IL | | Custom Intell. Det. Agcy., Linden, MI |
| | Recon Security Svc., Indianapolis, IN | 151.895 | Statewide Investigs., Rocky Mount, NC |
| | Carolina Secur. Patrol, Williamton, NC | | Valencia Secur. Patrol, Beler, NM |
| | Spear Detect. & Secur., Jersey City, NJ | | Yaurel Security, Ponce, PR |
| | Mills Patrol Svc., New York, NY | | Continental Secur. Guards, Phoenix, AZ |
| | Acrux Invstg. Agcy., Bellefontaine, OH | | Fox Security, Fremont & San Bruno, CA |
| | Pilgrim/Meyer Secur., Chickasha, OK | | Mountain Det. Agcy., Powderhorn, CO |
| | Sloan Detect. Agcy., Camp Hill, PA | | J&R Security Guard Svc., Joliet, IL |
| | Sutton Invstg. & Secur., Greenville, SC | | JMC Security, Milton, MA |
| | American Protec. Svc., Murray, UT | | Dennis Detect. Agcy., Severna Pk., MD |
| | No. County Secur., Essex Jct., VT | | No. NM Security, Angel Fire, NM |
| 151.745 | Loop Detect. Agcy., Chicago, IL | 151.925 | Bay Ridge Security Patrol, Brooklyn, NY |
| | Security Svc., Southfield, MI | | Spartan Private Patrol, Lorain, OH |
| | Research Svc. Det. Agcy., Asheville, NC | | Protectors Secur., Inc., Santurce, PR |
| | Cruz Aha Secur. Svc., Taos, NM | | Protective Secur., Irasburg, VT |
| | Centurian Secur., Steubenville, OH | | Highland Secur., Sitka, AK |
| | Investig. & Protec., Svc., Altoona, PA | | Sanders Det. Agcy., Hot Spgs., AR |
| | Int'l. Security, Rio Piedras, PR | | C&L Investg. & Secur., Honokaa, HI |
| | BFW Security, Texarkana, TX | | Apollo Detect. Agcy, Calumet Park, IL |
| | Globe Security, Vienna, VA | 151.955 | Z Int'l. Investig., Long Beach, NY |
| | Northwest Prot. Svc., Seattle, WA | | Palen Investigs., Decatur, GA |
| 151.775 | Ban Security, Hamilton, AL | | Baker Protec. Svc., King of Prussia, PA |
| | C&S Security, Cortez, CO | | Fogarty Security, Barstow, CA |
| | | | Beverly Hills Surveillance, Bev. Hills, FL |
| | | | 2 Star Det. Agcy., Cedar Rapids, IA |
| | | | Hall Security, Louisville, KY |

| | | | | | |
|---------|---|----------|--|--|--|
| | Rocky Mtn. Secur., Bozeman, MT | | | | |
| | Special Police Svc., Lakewood, OH | 462.025 | | | Colt Protec Svc., Las Vegas, NV |
| | Douglas Secur., Roseburg, OR | 462.05 | | | Securguard, Washington, DC |
| | Security Enforcer, Inc., Santurce, PR | | | | ERS Secur. & Det. Agcy., Chicago, IL |
| | Pinkerton Det. Agcy., Edina, MN | 462.125 | | | Dinatale Det. Agcy., Boston, MA |
| | ILI Security, Fayetteville, NC | 462.175 | | | Protectors Security, San Diego, CA |
| 154.515 | United Intelligence, New York, NY | 462.55 | | | Ogden Security, Hartford, CT |
| 460.90 | Baker Prot. Svc., San Francisco, CA | | | | L&M Security, Denver, CO |
| | Baker Prot. Svc., Atlanta, GA | 462.575 | | | Explorer Investig., New York, NY |
| | Baker Prot. Svc., Oahu, HI | 462.70 | | | Carrs Security, San Jose, CA |
| | Baker Prot. Svc., Buffalo, NY | 462.725 | | | Perry Investig., Chicago, IL |
| | Baker Prot. Svc., Chicago, IL (& 462.725) | 462.7625 | | | Young Detect. & Secur., Jackson, MS |
| 460.925 | Bay Alarm Co., Oakland, CA | 463.225 | | | IBI Security, Hauppauge, NY |
| | Baker Prot. Svc., St. Louis, MO | | | | W. Coast Secur., S. San Francisco, CA |
| | Day Decectives, Jackson, MS | 463.25 | | | Airport Private Security, Miami, FL |
| 461.05 | On Guard Svc., Miami, FL | | | | Diamond Secur., Washington, DC |
| | Louisiana Patrol Svc., New Orleans, LA | | | | Executive Secur., Washington, DC |
| | Nationwide Secur., Detroit, MI (& 463.60) | | | | Fiallo Detect. Agcy, Miami, FL |
| | Twin City Security, Minneapolis, MN | 463.35 | | | Berkshire Investig. Agcy, Atlanta, GA |
| 461.075 | Doyle Det. Bur., Rochester, NY | | | | Atlanta Investig Agcy., Atlanta, GA |
| 461.10 | Centennial Security, Chicago, IL | 463.375 | | | Private Protect. Agcy., Charlotte, NC |
| | Lomprey Investig., Las Vegas, NV | | | | Unio Detect. Agcy, Miami, FL |
| 461.125 | 6 Flags Secur. & Investig., Mobile, AL | | | | Brownlee Detect. Agcy, Atlanta, GA |
| | Little Rock Alarm Co., Little Rock, AR | 463.45 | | | Intercept Investigators, Baltimore, MD |
| 461.15 | Rainey Security, Washington, DC | 463.475 | | | Warfield Security, Wichita, KS |
| | Buccolas Detect., Agcy, New Orleans, LA | | | | B&B Investig. Svc., Miami, FL |
| | Jabar Secur. & Detection, Detroit, MI | 463.50 | | | Statewide Detect. Agcy., Chicago, IL |
| 461.175 | CBA Security, Phoenix, AZ | 463.525 | | | Baker Prot. Svc., Louisville, KY |
| | G&B Investig. Agcy., Atlanta, GA | 463.575 | | | Statewide Investig., Las Vegas, NV |
| | Quality Investig., Chicago, IL | 463.60 | | | Becker Investig. Svc., New Orleans, LA |
| | A-1 Detect. & Patrol Svc., Jackson, MS | | | | Botac Investig. Agcy., Atlanta, GA |
| 461.20 | L&L Investigs., New Orleans, LA | 463.6375 | | | Renaissance Investig., Detroit, MI |
| | Multi Facts Investig., Detroit, MI | 463.675 | | | Worldwide Secur. Svc., Detroit, MI |
| 461.275 | ARC Security, Atlanta, GA | 463.725 | | | Huffmaster Detect. Svc., Detroit, MI |
| 461.325 | Caribbean Security, Miami, FL | 463.75 | | | Interstate Detect. Agcy., Boston, MA |
| | Executive Security, Chicago, IL | 463.80 | | | Nat'l. Investig., New Orleans, LA |
| | Alpha Detectives, Inc., Boston, MA | 463.85 | | | Barton Protec. Svc., Atlanta, GA |
| 461.35 | Peays Detect. Agcy., Gary, IN | 463.875 | | | Warriors Secur. Agcy., Ft. Lauderdale, FL |
| | Executive Security, Las Vegas, NV | | | | Citywide Det. Agcy., Chicago, IL |
| 461.375 | K9 Suburban Secur., Buffalo, NY | 463.925 | | | Maximum Secur., Albuquerque, NM |
| 461.40 | Sonitrol Security, Charlotte, NC | 463.95 | | | Sentry Guard Svc., Ft. Lauderdale, FL |
| 461.425 | New Orl. Pvt. Det. Agcy., New Orl., LA | 464.00 | | | Able Secur., Washington, DC |
| | Watkins Security, Baltimore, MD | 464.025 | | | Spence Prot. Agcy., Wilmington, DE |
| 461.55 | Marill Security, Ft. Lauderdale, FL | 464.05 | | | Professional Secur., Albuquerque, NM |
| | D&H Security, Gary, IN | 464.15 | | | Sepac Secur., Long Beach, CA |
| 461.60 | A&F Security, Miami, FL (& 461.65) | 464.175 | | | Guerette Investig., Charlotte, NC |
| | Circle Security, Chicago, IL | 464.225 | | | Burns Int'l. Det. Agcy., Miami, FL |
| 461.625 | 4-R Security, Chicago, IL | | | | Shields Security, Washington, DC |
| 461.65 | Collins Prot. Svc., Atlanta, GA | 464.375 | | | Best Security, Ft. Lauderdale, FL |
| 461.675 | Colorado Secur., Washington, DC | 464.475 | | | Mills Det. Agcy., Louisville, KY |
| 461.70 | Marill Security, Miami, FL | 464.575 | | | Burns Int'l., Fond du Lac, WI |
| 461.725 | Valley Isle Secur., Honolulu, HI | 464.60 | | | Intersports Secur., Miami, FL |
| | Associated Security, Neptune, NJ | | | | First Secur., Hartford, CT |
| 461.75 | Pinkertons, Milwaukee, WI | 464.75 | | | Galaxy Secur., Springfield, IL |
| 461.825 | Sun Nat'l Secur., Detroit, MI | 464.80 | | | BPS Guard Svc., San Diego, CA |
| 461.85 | 50 States Secur., Miami, FL (& 464.00) | 464.875 | | | Shrader Investig., Baltimore, MD |
| 461.90 | Lake Shore Det. Agcy., Chicago, IL | 464.95 | | | Wells Fargo Guard Svc., Miami, FL |
| 461.95 | EFEC Security, Washington, DC | | | | GER Security, St. Louis, MO |
| | Delta Secur. & Det. Agcy., Boston, MA | 471.3625 | | | Shore Points Detectives, Atlantic City, NJ |
| 461.975 | Burns Int'l. Secur. Svc., Oahu, HI | 471.7125 | | | Bazooka Secur., Miami, FL |
| | Target Detect. Agcy., Chicago, IL | 472.1875 | | | Secur. Officers Svc., Los Angeles, CA |
| | Omega Detect. Agcy., Boston, MA | 480.9625 | | | Star Detect. & Secur., Chicago, IL |
| | Wallace Protec. Agcy, Albuquerque, NM | 490.2375 | | | HSC Security, Hicksville, NY |
| 462.00 | Nuclear Security, Boston, MA | 506.2125 | | | Anza Patrol Svc., Oakland, CA |
| | | | | | VCB Security, Burbank, CA |

There are plenty of inexpensive wireless mics made for operation in the 49.61 to 49.97 MHz band, as well as the 88 to 108 MHz FM broadcasting band. Anybody can buy and use these, however few professionals would use either band because of the interference from cordless phones, room monitors, FM broadcasters, and the like.

Some imported mics operate on non-

FCC approved frequencies. I have heard them between 33 and 34 MHz, 35 and 36 MHz, and 39 to 40 MHz.

Have Gun, Will Travel

The second category of private detective operatives are the private guards, which takes in watchmen, special officers, security

patrols, plant security, and various other similar persons (usually uniformed, sometimes armed) privately hired for the protection of individuals or property.

These operatives might be hired for residential or industrial security, or working at hotels, resorts, sports events, hospitals, condominiums, banks, marinas, concerts, piers, construction sites, shopping malls,

casinos, airports, private residential subdivisions, office buildings, stores, factories, warehouses, theatres, schools, and as VIP or payroll escorts.

When the skip comes in from California, I often hear Baker Protective Service conducting their residential security checks on 35.10 MHz. If you didn't realize that this was a Business Radio Service frequency, you'd think it was a municipal police operation.

Three Alarm Burglary

Some security companies incorporate a Central Station (alarm company) into their activities to provide a broader range of services to their customers. In the event of a break-in or other emergency, a transmitter located in the subscriber's residence or business sends a signal to the Central Station office. The operator on duty then dispatches guards, or contacts the appropriate agency,

such as fire. The police might also be contacted.

In some areas, because of too many false triggerings, police no longer permit home burglar alarms to automatically direct-dial 9-1-1 to send a recorded announcement of a break-in. Persons owning such devices can, however, arrange with a Central Station company to take such calls, and the Central Station can then take whatever action is required.

Many Central Stations operate in the 460.8875 to 461.0125 MHz band, in 12.5 kHz steps. These channels are paired with ones 5 MHz higher. Telemetry is permitted in addition to voice.

Other Central Station activities are in the bands 952.0125 to 952.3375 MHz, and 956.2625 to 956.4375 MHz (25 kHz steps), used for the office to send out a (non voice) interrogation signal to check the operational status of remote security systems.

The remote systems can respond in the 928.0125 to 928.3375 MHz, and 956.2625 to 956.4375 MHz bands, 25 kHz steps.

Spymaster's Guide

Knowing where to look for the private security services can save a lot of time. Most are found on Business Radio Service channels, as listed in the Tables 1 and 2.

Some PI's use cellulars and other car phones as their only two-way comms. This gives them the opportunity to contact their clients directly from the field to ask questions and report progress. Baker Protective Service, in Miami, FL operates its own private car phone system with the base on 151.15 MHz, and the mobiles on 158.61 MHz.

Private guards may utilize the frequency of the firm for which they provide security. For instance, guards at an oil refinery may be hired from a private agency, but their radios may all be operating on a Petroleum Radio Service frequency licensed to the company that operates the refinery.

Armored car and transport companies are often licensed on frequencies in the Motor Carrier Radio Service.

A local security patrol operating in a fancy subdivision near me uses CB radios. To keep vandals and burglars guessing, they change to a different frequency every night.

Handhelds can show up on 'most any frequency, but the low-power Business Radio channels are best bets. Look for them at 25 kHz intervals in the following bands: 460.6625 to 462.1875 MHz, 463.2125 to 464.9875 MHz, 465.6625 to 467.1875 MHz, 468.2125 to 69.9625 MHz.

Other low-power channels include: 27.51, 27.53, 30.84, 33.14, 33.40, 35.02, 2.98, 154.57, and 154.60 MHz.

Also try itinerant Business frequencies: 27.49, 35.04, 43.04, 151.625, 464.50, 464.55, 469.50, and 469.55 MHz.

Hey, they also turn up on all sorts of strange and unauthorized frequencies, like certain VHF-FM marine channels. Favorites are 156.525 and 156.625 MHz, because those frequencies usually sound like chaos anyway, and they aren't often (or at all) monitored by the FCC or the Coast Guard. Also, because handheld transceivers for this band are cheap and easy to get. But, mostly because even clever people under surveillance would never think to listen there to snoop back on those who are spying on them.

It's Your Turn

Well, as a POP'COMM reader, you know where to listen, why to listen, and also how to listen. If you like police and federal surveillance ops, you'll probably like these comms, too. Once you find one of these stations, be prepared to get hooked. Table 3 presents a listing of some of these stations. There are others, but these are a sampling.

Turn off your lights, turn on your scanner, move in slowly!

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CIRCLE 43 ON READER SERVICE CARD

CLANDESTINE COMMUNIQUE

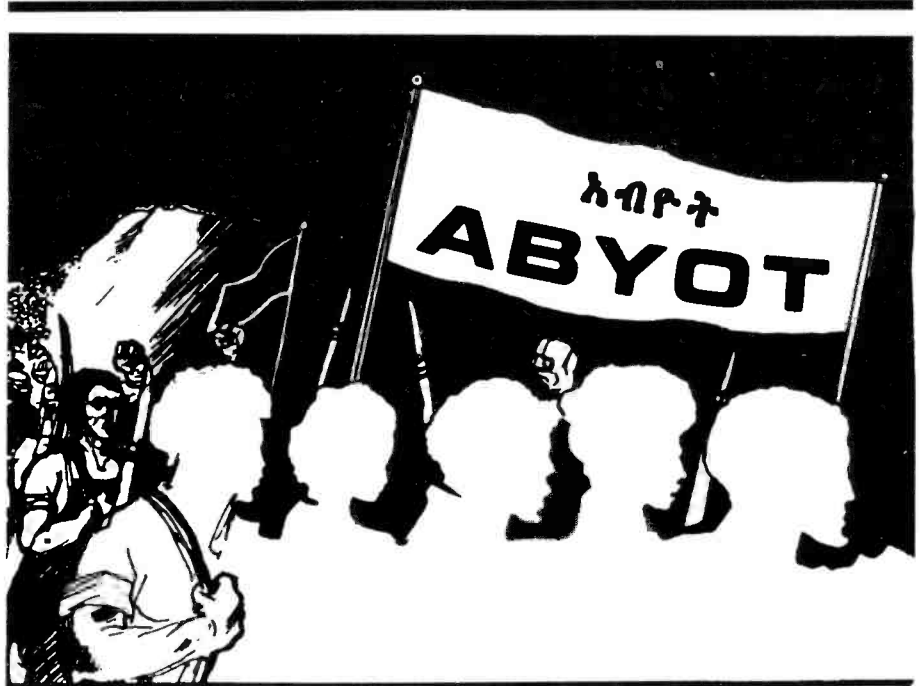
WHAT'S NEW WITH THE CLANDESTINES

The anti-Castro radio war is notching up a few degrees. *La Voz de Alpha 66*, the voice of the Alpha 66 group, is now running a regular program over religious broadcaster WHRI in Indiana. The Alpha 66 program is on the air Monday-Friday at 2330-0000 on 7315 and 9495, repeated at 1130 on 9465 and 11790. *La Voz de Alpha 66* has had at least two other shortwave runs, both times with its own transmitter and both times being closed down by the FCC, though not until after a fairly lengthy period of operation. The only address we have for Alpha 66 at the moment is several years old, so it might be better to write to them in care of WHRI (PO Box 12, South Bend, IN 46624).

The other anti-Castro program aired on WHRI, *La Voz de Fundacion*, produced by the Cuban American National Foundation, is reported to have increased the length of the broadcast to two hours. R.C. Watts in Kentucky and George Neff in Florida report receiving QSL cards from *La Voz de Fundacion*, along with a schedule, bumper stickers and a copy of *The Cuban Monitor*. Neff says he suggested to CANF that they include an English language segment in their broadcast. Reception reports go to CANF, 7300 NW 35th Terrace, Suite 105, Miami, FL 33122.

Another player has walked onto the stage of this Cuban-American radio drama, albeit in a minor role. Listeners in Florida report hearing *Radio Cuba Libre* with occasional five minute transmissions in Spanish on 7100.5. The station has been monitored at various times between about 0030 and 0115, also announcing 7040, 7060 and 7080. The broadcasts are heard only weakly in Florida (where they likely originate) and so are not likely to be from a very powerful transmitter. There was a *Radio Cuba Libre* active around ten years ago, operated by the *Movimento Democratica Christiano*, but it's uncertain whether this new version speaks for that group or is something new using the same name.

We've obtained some information about the Ethiopian People's Revolutionary Party which, as we mentioned recently, is operating the *Voice of EPRP*. The station began operating on May 1 and claims to be located in territory liberated by the EPRP. It began with two half-hour broadcasts per day, but plans to increase that amount and to broadcast in more of the languages of Ethiopia as well. The EPRP says the radio "will be used in the service of the democratic struggle of our people and will observe the need to be objective and truthful." As we noted last month, the station is currently scheduled for broadcasts in Amharic at 0330-0400 and



"Abyot" is published in English by the Ethiopian People's Revolutionary Party's foreign committee.

1730-1800 (0330 offers the best chance for a log) on 7010 and 9400. The group also publishes several newsletters through its Ethiopian Studies, Publications and Information Center. It has offices in Dallas and Alexandria, Virginia, as well as Paris. The EPRP seeks to establish a multi-party democracy in Ethiopia.

The war being fought by various guerrilla groups against the Ethiopian government is going badly for Addis Ababa and the EPRP's is only one of several voices now being raised against the Mengistu regime. Some of these appear to have some chance of being picked up by North American listeners, though no one seems to have done so yet. Try the *Voice of the Ethiopian People for Peace, Democracy and Freedom*. The best opportunity in North America would be 0430-0500 on 7890 and 9335. *The Voice of the Tigre Revolution* is said to be active on those frequencies at 0530. The *Voice of the Broad Oromo Masses* airs at 0400-0430 on 7890 (and perhaps 9335). In all cases, both of those frequencies should be considered as quite variable.

Still another station, though one which won't be heard here on its initial schedule, is the work of the *Ethiopian Democratic Revolutionary Movement*, scheduled for Sundays at 0800-0830 and 1930-2000 on frequencies in the 49, 44, 43, 41, 40, and 31

meter bands. Not much to go on!

ELWA, the longtime religious broadcaster in Liberia, operated by the Sudan Interior Mission, became a rebel station last July when it was taken over by the forces of Charles Taylor as he sought to overthrow Liberian leader Samuel Doe. The situation is still fluid as this is written. A QSL for reception of ELWA during this period would certainly be a prize!

The German newsletter, *Clandestine Calling*, reports that the anti-Turkey stations *Bizim Radio* and *The Voice of the Turkish Communist Party* were the work of the East German government, specifically, the Department for International Alliances through the State Committee for Broadcasting. The broadcasts were aired via transmitters at Konigs Wusterhausen (where Radio Berlin International has transmitters). No QSL's were ever issued by either of these stations, even though they began announcing an address around 1988. The stations were discontinued in 1989.

Contributions to "Clandestine Communique" are greatly appreciated. We need your loggings of clandestine broadcasts, copies of material you receive from stations or the groups which back them, schedules, news items—anything about clandestine radio.

Thanks and—good hunting!

PC

Is Nothing Sacred?: When you look through our charts showing call sign changes this month, you may notice one especially important change. That would be the famous old Cleveland station WGAR dropping that venerable call sign after six decades of use. This was tied in with a change in ownership for the station. If memory serves me correctly, our own Alice Brannigan did a write-up on the history of WGAR within the past year.

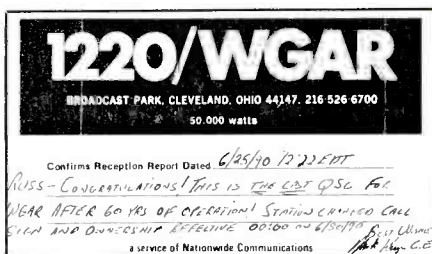
WGAR's new owners decided to change the station's call letters to WKNR. Sorry to see the old call sign dim into history, although one of our readers was lucky enough to obtain the very last QSL card ever to be issued by WGAR. That was Russ Hill, of Oak Park, MI. His WGAR veri was certified as the last of an era by the station's Chief Engineer, who wrote that information across the bottom of the card. Russ sent us the QSL for a look at this trophy!

Russ is trying to get a location for Canadian station CIGM on 790 kHz, which he can just barely hear in the sidewash of nearby powerhouse CKLW on 800 kHz. It's not listed in any directory he has available. If anybody can help Russ, his address is 22041 Sunset, Oak Park, MI 48237.

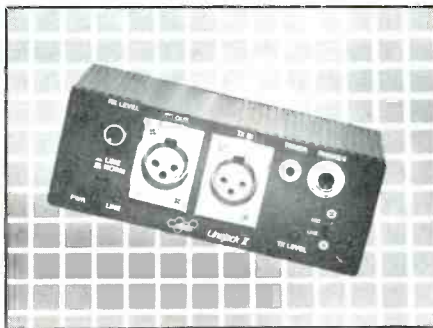
As if the WGAR fadeout weren't bad enough, there's more bad news. Philadelphia's WCAU/1210, the 50 kW CBS outlet that has used that call sign since it went on the air in 1922, also tossed those call letters into the dustbin. WCAU decided to change its format from news and talk and begin simulcasting some of the oldies programming of its more popular sister station, WOGL-FM/98.1 MHz. It seemed to make more sense to ditch the old WCAU call letters and turn the station into WOGL (AM) rather than to let the historic call sign remain intact. The WCAU identification has long been an institution in the Philly area, many listeners were quite annoyed. The changeover also meant the loss of jobs of about 35 full-time WCAU staff members.

Commenting on the WCAU fiasco, reader Giles Berry, of New Castle, DE, wrote, "I'm not a sentimental nut, but it was very strange to do away with a fine old call sign like WCAU. They should have made the FM outlet WCAU-FM if they wanted to change something. Who's running CBS, anyway?"

Cellular Remotes: Listeners may not be aware of it, but cellular phones have had a big impact on broadcasting. Many remote news pickups and interviews that used to be conducted on auxiliary broadcast frequencies in the 161, 450, and 455 MHz bands are simply being fed through cellars these days. Moreover, cellars give the station's listeners a chance to call in breaking news



End of an era. Russ Hill was awarded the last QSL card ever to be sent out by pioneer broadcaster WGAR in Cleveland, OH.



The Linejack II is a new piece of broadcast hardware intended to make it easier for stations to patch through cellular calls, inasmuch as they are becoming a regular feature of news reporting.

stories right from the scene, and be patched through "live" on the air.

One of the newest pieces of broadcast hardware is therefore an interface that easily permits stations to patch cellular calls through mixers, amplifiers, and other station equipment. This is the *Linejack II*, a small device with two balanced female XLR type connectors for input and output, a mini jack for external (mono) audio tuner input, a phono output jack for monitoring of tuner and XLR output audio sources, transmit and receive level pots with 12 dB adjustment, and a line level switch for microphone or line levels. You can plug a mike right into this thing for emergency or immediate broadcast requirements.

The *Linejack II* sells for less than \$300. For more information, contact Cellabs, 20335 Ventura Blvd., Suite 310, Woodland Hills, CA 91364. Cellabs' William Collier will fill you in on the unit, but be sure to let him know you read about it in *Popular Communications*.

Southern California Update: George Schwenk, San Pedro, CA, wrote to say that although our August column mentioned that KKGO switched from jazz to classical music, we should have presented more of the interesting background that led up to the format change.

New FM Call Letters Assigned

| | |
|---------|-------------------|
| KMUS-FM | Burns, WY |
| KOUA | Mena, AR |
| KWHU | Midland, TX |
| KXDA | Chowchilla, CA |
| KXDE | Merced, CA |
| KXDJ | N. Ft. Valley, KS |
| KXDL | Browerville, MN |
| KXDM | Littlefield, TX |
| KXDR | Auberry, CA |
| WFBR | Cambridge, MD |
| WLGL | Riverside, PA |
| WTNR | Waynesboro, TN |
| WXJA | Emporia, VA |
| WXJB | Harrogate, TN |
| WXJD | Oscoda, MI |
| WXJE | Henderson, NY |
| WXJF | Omega, GA |
| WXJG | Bappanee, IN |
| WXJH | Milbridge, ME |
| WXJI | Grand Rapids, MI |
| WXJJ | Mt. Vernon, KY |
| WXJK | Farmville, VA |
| WXJN | Lewes, DE |
| WXJO | Bethalto, IL |
| WXUT | Toledo, OH |
| WYFV | Cayce, SC |

New AM Call Letters Assigned

| | |
|------|-----------------|
| KXDS | Princeville, HI |
|------|-----------------|

AM Callsign Changes Requested

| Present | Seeking | |
|---------|---------|--------------|
| WGZB | WOCC | Eminence, KY |
| WKXF | WXLN | Corydon, IN |

FM Call Letter Changes Requested

| Present | Seeking | |
|---------|---------|-------------------|
| KLRS | KDBQ | Santa Cruz, CA |
| KOFY-FM | KDBK | San Francisco, CA |
| WLSI-FM | WJDX | Jackson, MS |

Requests Withdrawn For Changed FM Callsigns

| Present | Wanted | |
|---------|--------|--------------|
| KSVN | KXEQ | Ogden, UT |
| WIRJ | WUNI | Humboldt, TN |
| WOFM | WTZR | Moyock, NC |

Changed AM Callsigns

| Present | Seeking | |
|---------|---------|----------------------|
| KMYC | KRFD | Marysville, CA |
| KTFS | KMLA | Texarkana, TX |
| WBUG | WKOL | Amsterdam, NY |
| WDMF | WMRE | Knoxville, TN |
| WJDS | WJDX | Jackson, MS |
| WKHL | WHUM | Hugesville, PA |
| WKNR | WGAR | Cleveland, OH |
| WKNW | WDHP | Sault Ste. Marie, MI |
| WKRU | WTKS | Burnettown, SC |
| WMRH | WLKD | Waupun, WI |
| WMXF | WEWO | Laurinburg, SC |
| WUJM | WXCH | Goose Creek, SC |
| WVBS | WXBG | Burgaw, NC |
| WVWW | WOHO | Toledo, OH |
| WYAK | WXMB | Surfside Beach, SC |

Applications For AM Facility Changes

| | | |
|------|-----------------|------------------------------|
| KNTA | Santa Clara, CA | 1430 kHz Drop to 1 kW nights |
| KVCL | Winnfield, LA | 1270 kHz Drop to 820 W days |
| WCCF | Punta Gorda, FL | 1580 kHz Drop to 710 W |
| WZGO | Portage, PA | 1470 kHz Drop to 140 W |

Applications For FM Facility Changes

| | | |
|---------|---------------------|--------------------------------|
| KLUA | Kailua, HI | 93.5 MHz To 93.9 MHz 32 kW |
| KIOW | Forest City, IA | 102.3 MHz To 107.3 MHz 50 kW |
| KRCD | Chubbuck, ID | 98.3 MHz To 98.5 MHz 6.2 kW |
| KRDI-FM | Decorah, IA | 100.9 MHz To 100.5 MHz 50 kW |
| KTSR | College Station, TX | 92.1 MHz To 107.3 MHz 25 kW |
| WBYQ | Baltimore, MD | 96.7 MHz To 94.3 MHz |
| WHHS | Havertown, PA | 89.3 MHz To 107.9 MHz 14 Watts |
| WIRQ | Rochester, NY | 90.9 MHz To 94.3 MHz |
| WJNA | Churchville, VA | 106.7 MHz To 106.3 MHz 25 kW |
| WSEK | Somerset, KY | 96.7 MHz To 97.1 MHz 27.5 kW |

FM Facility Changes Approved

| | | |
|---------|----------------|--------------------------------|
| KBSS | Booneville, AR | 92.1 MHz To 104.7 MHz 50 kW |
| KCWD | Harrison, AR | 96.7 MHz To 96.1 MHz 8 kW |
| KKLL | Colusa, CA | 96.5 MHz To 103.1 MHz 134 kW |
| KYQT | Newport, OR | 102.5 MHz To 102.7 MHz 99.2 kW |
| WFFN | Cordova, AL | 92.9 MHz To 95.3 MHz 2.1 kW |
| WHUB | Cookeville, TN | 94.3 MHz To 98.5 MHz 50 kW |
| WOLR | Branford, FL | 91.3 MHz Move to Lake City, FL |
| WRAJ-FM | Anna, IL | 92.7 MHz To 96.5 MHz 20 kW |
| WRJT | Monterey, TN | 107.1 MHz To 106.9 MHz 34 kW |

AM Facility Changes Approved

| | | |
|------|-----------------|--|
| KSEV | Tomball, TX | 700 kHz Increase to 25 kW days |
| KTER | Terrell, TX | 1570 kHz Increase to 600 W |
| WCTF | Vernon, CT | 1170 kHz Increase to 2.5 kW days |
| WHUM | Hughesville, PA | 1190 kHz Move to 1200 kHz, 10 kW/250 W |
| WLPR | Prichard, AL | 960 kHz Increase to 5 kW days |
| WNOG | Naples, FL | 1270 kHz Drop to 1.9 kW nights |

George advises that fifty-year veteran classical music station KFAC (AM/FM) was sold. The FM outlet became rock music KKBT. The AM'er was sold to Spanish language KWKW, which hopped over to 1330 kHz from 1300 kHz. A new all-Asian station (KAZN) moved in on 1300 kHz.

Saul Levine, owner of KKGO/KKJZ, began KKJZ (in Hesperia, CA) several years ago as show-tune station KSHO. It then changed to KKGO-AM to simulcast jazz with KKGO-FM. After increasing power and becoming all-jazz KKJZ, the station was moved from Hesperia to Costa Mesa. KKGO now fills the classical void left by the demise of KFAC in Los Angeles.

In other news of the area's stations, George writes that old timer KHJ has undergone changes during recent decades, becoming rocker KRTH (along with the FM outlet) a number of years ago. RKO recently sold both the AM and FM, and the AM owner converted it to Spanish language KKHJ

(since the FCC wouldn't reissue the old three-letter KHJ call).

Anaheim's KEZY (AM/FM) has also undergone numerous changes, according to George. In turn, the station has programmed easy listening, rock, all news, talk, and now music of the 1940 to 1959 era, using a variety of callsigns (presently KORG). KEZY-FM continues as a soft rock outlet.

Nashville Sound: Station WAMB, Nashville (Donelson), TN, puts a 50 kW (directional) signal out on 1160 kHz during daylight hours. At night, however, the station is required to drop its power to 1 kW and run it into a directional antenna. WAMB complained to the FCC that their 1 kW nighttime signal isn't good enough for WAMB to be heard locally, what with 300 kW Cuban *Radio Taino* on 1160 kHz. The FCC granted WAMB, which has no regular FM outlet, special temporary authorization to duplicate its programming on an FM chan-

nel in order to escape the serious nighttime interference from the Cuban station.

Jersey Channel: One of our readers, James J. Esposito, Jr., of Stratford, NJ, is employed at TV station WNJS, Channel 23, in Camden, NJ. He tells us that WNJS is part of the New Jersey Network, with other NJN stations located in Montclair, New Brunswick, and Trenton. A translator will soon be opened in Cape May Court House, NJ. The main NJN studio is in Trenton.

Jim tells us that WNJS has an ERP of 2.34 MegaWatts. He sent along some photos to share with our readers.

Story Behind The Statistics: James W. Hester, Registered Monitor KMS5BQ, of Jackson, MS, writes to tell us something about changes in his home town, as will be noted in our column's listings this month.

He writes that a most unusual situation recently occurred in Jackson. WJDX/620 is Jackson's oldest radio station (started 1929), so people were surprised when it

Applications For New FM Stations

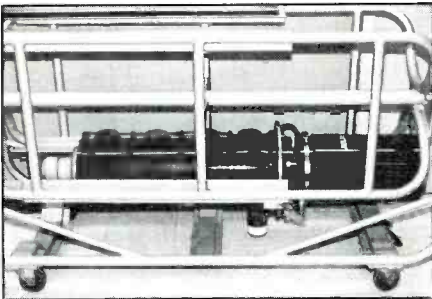
| | | | |
|----|------------|-----------|----------|
| GA | Harlem | 95.1 MHz | 6 kW |
| GA | Unadilla | 103.5 MHz | 6 kW |
| IN | Austin | 92.7 MHz | 3 kW |
| IN | South Bend | 89.7 MHz | 87 kW |
| KY | Philpot | 94.7 MHz | 3 kW |
| MO | Ellington | 103.9 MHz | 3 kW |
| NC | Durham | 90.7 MHz | 50 kW |
| NE | Lincoln | 88.5 MHz | 5 kW |
| NJ | Bridgeton | 89.3 MHz | 4 kW |
| NY | Hudson | 91.1 MHz | 80 Watts |
| NY | Jamestown | 90.9 MHz | 10 kW |
| SC | Belvedere | 88.3 MHz | 4.5 kW |
| TX | Abilene | 100.7 MHz | 100 kW |
| TX | Amarillo | 96.9 MHz | 100 kW |
| TX | Amarillo | 102.9 MHz | 100 kW |
| TX | Brownfield | 103.9 MHz | 3 kW |
| TX | Howe | 95.3 MHz | 6 kW |
| TX | Lubbock | 93.7 MHz | 100 kW |
| TX | Midland | 92.3 MHz | 100 kW |
| TX | San Angelo | 93.9 MHz | 100 kW |
| TX | Slaton | 92.7 MHz | 100 kW |
| WV | Charleston | 90.9 MHz | 8 kW |

Permits Granted For New FM Stations

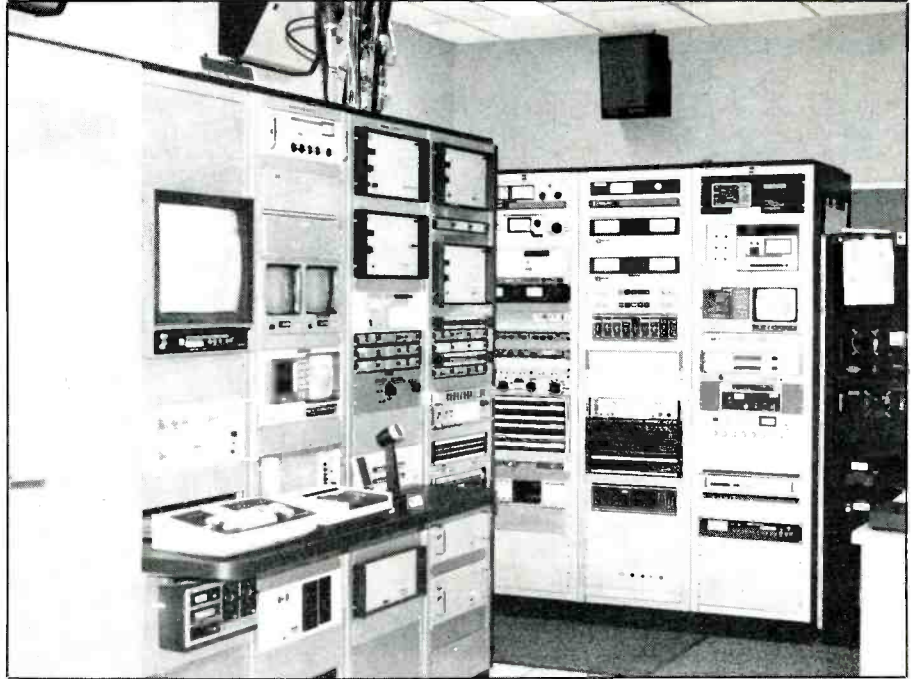
| | | | |
|----|-------------------|-----------|----------|
| AK | Talkeetna | 88.5 MHz | 1.9 kW |
| CA | Ford City | 102.1 MHz | 3 kW |
| CA | Thousand Oaks | 88.3 MHz | 3 kW |
| IA | Eldora | 99.5 MHz | 3 kW |
| IL | Danville | 94.9 MHz | 6 kW |
| KY | Berea | 106.7 MHz | 3 kW |
| MD | Cambridge | 94.3 MHz | 3 kW |
| ME | Thomaston | 106.9 MHz | 50 kW |
| MN | Thief River Falls | 91.5 MHz | 100 kW |
| MO | Ash Grove | 104.1 MHz | 3 kW |
| NY | Hoosick Falls | 97.5 MHz | 1.8 kW |
| OH | Ripley | 99.5 MHz | 3 kW |
| OH | Toledo | 88.3 MHz | 17 Watts |
| PA | Berwick | 103.5 MHz | 2.1 kW |
| PA | Meyersdale | 93.3 MHz | 3 kW |
| TX | Midland | 95.1 MHz | 2.5 kW |
| TX | Muenster | 106.5 MHz | 3 kW |
| UT | Moab | 89.7 MHz | 100 kW |
| VA | Chase City | 99.9 MHz | 3 kW |
| WA | Goldendale | 102.3 MHz | 3 kW |
| WI | Tomah | 96.1 MHz | 3 kW |
| WV | Clarksburg | 90.1 MHz | 1.5 kW |



The RCA TTU60B transmitter and associated exciter and driver at UHF-TV station WNJS. (Courtesy Jim Esposito, NJ.)



A spare Varian klystron in its rack at WNJS. The transmitter uses three of them. Each weighs 430 lbs., but it will beat a 6L6 any day! (Courtesy Jim Esposito, NJ.)



WNJS' STL and intercity relay microwave gear, monitors, and other associated terminal equipment. The black panel to the right is a new Harris exciter/driver. (Courtesy Jim Esposito, NJ.)

changed its call letters to WJDS. No more surprised than when FM station WSLI/96.3, which is licensed to a different owner, chose the same time to pick up those call letters and become known as WJDX. But that's not the real shocker!

What could top that? When WJDS (ex-WJDX) and WJDX (ex-WSLI), in the same town and owned by competing broadcasting companies, began simulcasting the same programming most of the day! Yes, even though each of these stations already had existing sister stations in Jackson. The combined programming is known as "Mix 96."

Apparently it's all part of a complex arrangement that turns out to be the first of its kind in the nation. Mostly, it had to do with new owners taking over at the former WSLI. They figured out a quick way of reducing costs (eight employees were cut from the staff), while the station was still able to be programmed locally and didn't have to rely upon a syndicated, but anonymous, satellite feed from a distant city. It took a while to get all of the ripples of the unusual agreement worked out with the FCC, but it finally happened.

Oregon Trail: Douglas H. Stingley, Salem, OR notifies us of the new FM station on 104.1 MHz to serve the area around the city of Sisters. This station will be running 1.3 kW with an antenna atop Three Creeks

Butte, 69 ft. above ground, and 216 ft. above the average terrain.

The owner of the proposed station is Schuyler H. Martin, of Burlingame, CA. He's the programming and research director of KSOL, in San Mateo, CA.

Doug tells us that he's relocating to Hawaii and he will be picking up some of the Asian broadcasters in the 153 to 279 kHz band. He asks if we would be interested in getting any reports of this DX. Doug, I don't know if you have ever been to Vermont in the winter. It's beautiful here, but anybody who tells me that they're going to send something to this place from Hawaii is certainly going to be given a green light without any hesitation.

With The FCC: A check of the broadcast licenses in the FCC's computer, as of the end of July, showed a total of 4,979 AM stations, 5,756 FM broadcasters, 1,851 FM translators and boosters, 1,458 TV stations, 4,960 TV translators, and 720 Low Power TV stations.

The FCC is working on the anticipated arrival on the scene of digital radio broadcasting. This will be a form of broadcasting that will provide higher sound quality than can now be provided by existing AM and FM broadcasting services. Digital modulation techniques promise to provide CD quality audio, improved stereo separation, greater dynamic range, better signal-to-noise and interference performance, and elimination (or reduction) of multi-path and fading problems.

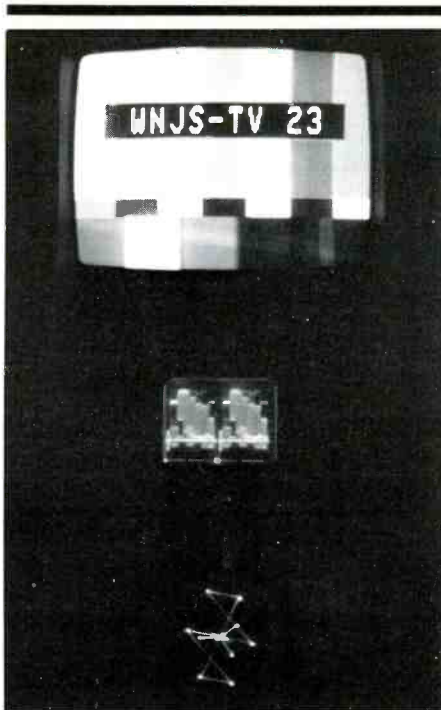
The problems with digital seem to lie in the area of FCC regulations more than anywhere else. The FCC is trying to understand

Changed FM Callsigns

| New | Former | |
|---------|---------|-------------------|
| KDBK | KOFY-FM | San Francisco, CA |
| KDBQ | KLRS | Santa Cruz, CA |
| KHCA | KSKT | Wamego, KS |
| KHMX | KNRJ | Houston, TX |
| KKVU | KUKF | Omaha, NE |
| KRGR | KCPI-FM | Albert Lea, MN |
| KROG | KHUG-FM | Phoenix, OR |
| KRSR | KQZY | Dallas, TX |
| KSJQ | KRAC | Morgan Hill, CA |
| KTFS-FM | KMLA-FM | Ashdown, AR |
| KTHK | KOKL-FM | Okmulgee, OK |
| KZSR | KWNJ | Reno, NV |
| KZUS | KTDO-FM | Toledo, OR |
| WBKW | WPHH | Dublin, VA |
| WDHZ | WEXX | Mt. Hope, NY |
| WEYE | WLKW | Surgoinsville, TN |
| WJAZ | WUCP | Summerdale, PA |
| WKHL-FM | WKHL | Salladasburg, PA |
| WKNW-FM | WKNW | Canaan, VT |
| WMBP | WQHD | Belpre, OH |
| WMXF-FM | WSTS | Laurinburg, NC |
| WOOO | WSVL | Shelbyville, IN |
| WPVA | WCQR | Waynesboro, VA |
| WPVB | WPAV | Culpeper, VA |
| WRHD | WRCN-FM | Riverhead, NY |
| WRXZ | WMLA-FM | Leroy, IL |
| WSEO | WAIS-FM | Nelsonville, OH |
| WSHK | WZMX | Russellville, AL |
| WUJM-FM | WUJM | Goose Creek, SC |
| WWEC | WQHE | Elizabethtown, PA |
| WWHK | WGKY-FM | Greenville, KY |
| WWWM-FM | WWWM | Sylvania, OH |

Applications For New AM Stations

| | | |
|----|------------|----------|
| NY | Youngstown | 770 kHz |
| PA | Ridgeway | 770 kHz |
| TX | Abilene | 1340 kHz |



A roll-around rack at WNJS, with test and monitoring equipment aboard. (Courtesy Jim Esposito, NJ.)

what impact digital radio might have on existing AM and FM broadcasting services. Next, it hasn't yet been decided where to wedge digital radio into the spectrum so that everybody is happy, and the service is able to operate at its maximum potential. Next, since several frequency ranges have been proposed, the FCC wonders if one set of policies should be developed covering all



You've got to go some to beat the bumper sticker from country music station KPIG/107.5, Freedom, CA. It was submitted by David Palmer, CA.



KISW/99.9 is a rock favorite in Seattle, WA. Their attractive bumper sticker was sent in by Steve Saunders of that city.



Great bumper sticker from WCXR/105.9 FM, the Number One rock station in Washington, DC. It was sent in by Brad Lust, Registered Monitor KMD3HL, who is a jock at the station. Hey Brad, how 'bout some photos of the layout at WCXR and its sister station, WCPT/730 kHz?

frequencies, or if each band is going to require its own special regulations.

Satellite CD Radio, Inc., suggests the allocation of digital broadcasting frequencies to be used by satellites and terrestrial transmitters operating on channels now used for aeronautical telemetry. The Radio Satellite Corporation wants to build an earth station to uplink digital broadcasts along with mobile services through the mobile satellite system licensed to the American Mobile Satellite Corporation. Another applicant, Stro-

ther Communications, Inc., wants Experimental licenses for Washington, DC, and Boston which would provide fourteen digital audio programming channels on a single UHF-TV channel.

The engineer in the control room is giving us the "wind it up" signal for this issue, so we'll say "30" and wish you a Happy Holiday. We are always looking for AM/FM/TV bumper stickers, stories, photos, recent QSL's, clippings, loggings, or anything along the fringes.

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INTERESTING THOUGHTS AND IDEAS FOR ENJOYING THE HOBBY

Organization Of Your World-Band Listening

When you tune to your local news station on the MW band say, ten-sixty (1060), it is always there. Things are much different when tuning shortwave bands because of the many time and frequency changes. Also, there is multiple occupancy on almost every channel. It is common for more than one station to operate on the same channel during different times and sometimes they operate on the same channel simultaneously. Usually the other stations are weak, or not even heard, because they are located in some other part of the world and are not directing their beams to your location. At times, however, two or more stations may be heard on the same frequency. Neither or perhaps one of the stations may be directing its beam in your direction. However, propagation conditions are not always predictable and there can be interference to a station that is beaming to your location. However, one station may eventually take over because of a propagation angular emphasis in directivity that raises one of their signal levels clearly above the other. Propagation, too, changes on a long term basis of weeks and months, and it may well be that other station now dominates the frequency. These variable reception conditions are more pronounced on the higher shortwave broadcast bands. The time and/or frequency of one or both stations may be changed if they keep receiving bad reports.

What to do! Do keep notes in a spiral or loose-leaf notebook. Use a pencil to jot down the information because there are numerous time and frequency changes throughout the year. Sometimes you have heard a good weekly show and you want to hear it again, you keep listening but you can't find the program again. Keep your records near the set so you can write down day, time and frequency. At other times the station may actually be broadcasting, but propagation is not favorable in your location. When two stations are on-frequency and interfere with each other you can often bring the one of interest above the other with two, or several antennas among which you can switch, especially when using an indoor antenna arrangement.

When a station announces frequency or time changes that affect programs, write down the information. Log it immediately. Also, request that you be kept on the list to receive schedules from the particular station. This is often taken care of automatically if you send in a station report several times a year.

It is helpful to have a listing for each band in your notebook and keep them spaced and occupying an adequate number of pages. By so doing you can add information about the particular band over a period of years.

The included table is a sample put together over a couple weeks by occasionally listening in on the 19 meter band. They were all English-language programs. Most were of good readability; others, weaker and sometimes difficult to copy. Some were excellent one day and poor the next. I will mention and disclose some of the unusual facets of world band radio broadcasting. (See Table.)

Afternoon and Evening Signals

1. 1500: The WWV-WWVH time and frequency station is not a world band broadcast station. However, at the beginning of each minute, an exact time tone is given with time stated in UTC. You can use it to set the clock on your receiver to UTC time and the other clocks in the house to your own time zone. It is highly accurate frequency source and has many other time and frequency applications. 15000 is a convenient check for use because its frequency is at the very beginning of the 19M band allocation.

A SELECTION OF 19M BAND LOGGINGS Late Afternoon and Evening Hours

| KHZ | Station and Country | UTC |
|-----------|---------------------------------------|-------------|
| 1. 15000 | WWV-WWVH Boulder, CO and Hawaii | 24 hours |
| 2. 15070 | BBC England and other locations | most of day |
| 3. 15100 | China, Radio Beijing | 0000-0100 |
| 4. 15105 | Germany (DW) relayed from Malta | 0100-0145 |
| 5. 15120 | RSA South Africa | 0200-0300 |
| 6. 15125 | Germany, Radio Berlin | 0144-0230 |
| 7. 15155 | HCJB Ecuador | 0030-0230 |
| 8. 15160 | Hungary, Budapest | 0030-0100 |
| 9. 15180 | USSR, Radio Kiev | 0300-0330 |
| 10. 15205 | VOA Greenville, NC | 0000-0200 |
| 11. 15205 | Germany (DW) relayed from Malta | 0300-0345 |
| 12. 15215 | WYFR Florida | 1500-2245 |
| 13. 15240 | Australia (multiple locations) | 0000-0100 |
| 14. 15260 | BBC Ascension Island | 2000-0330 |
| 15. 15280 | USSR, Armavir | 0300-0400 |
| 16. 15300 | WCSN Maine, USA | 2200-0000 |
| 17. 15315 | Netherlands, Bonaire relay | 0030-0130 |
| 18. 15320 | Australia, Shepparton | 0300-0400 |
| 19. 15325 | NHK Japan, Relayed from French Guiana | 0300-0330 |
| 20. 15330 | RTV Rome, Italy | 0345-0415 |
| 21. 15566 | WYFR Florida, USA | 1945-2145 |
| 22. 15580 | KUSW Salt Lake City, Utah | 2200-0230 |
| 23. 15640 | Israel Tel Aviv | 0000-0030 |

Daytime Hours

| | | |
|-----------|---------------------------------|-------------|
| 24. 15000 | WWV-WWVH Boulder CO and Hawaii | 24 hours |
| 25. 15070 | BBC England and other locations | most of day |
| 26. 15115 | HCJB Ecuador, Quito | 1200-1650 |
| 27. 15150 | RCI Radio Canada to Africa | 2130-2200 |
| 28. 15160 | VOA Philippines (weak) | 1400-1500 |
| 29. 15215 | WYFR Florida | 1500-2230 |
| 30. 15310 | Norway (Sunday only) | 1600-1630 |
| 31. 15325 | RCI Radio Canada to Europe | 2100-2200 |
| 32. 15330 | Bulgaria, Sofia | 2130-2230 |
| 33. 15360 | RFI France | 1600-1700 |
| 34. 15400 | BBC Ascension Island | 1600-2300 |
| 35. 15420 | WRNO USA, New Orleans, LA | 1600-2100 |
| 36. 15475 | USSR, Moscow | 1700-2000 |
| 37. 15590 | KUSW USA, Salt Lake City, Utah | 1800-2200 |
| 38. 15600 | VOA Monrovia, Liberia | 1600-2200 |
| 39. 15690 | WWCR USA, Nashville, TN | most of day |

2. 15070: A utility BBC broadcast station which is used to transmit from various locations into chosen target areas as needed. It is on much of the day. Signals are weak or strong depending upon its objective at various times. Frequency is used exclusively by the BBC.

3. 15100: China was a good pick-up, with a good propagation path to America during these weeks. Signal was strong. Be on the listen for openings that bring up the strength of distant signals. They are more common during the spring/summer months on the higher frequency SW bands.

4. 15105: Germany (DW) is relayed from Malta in the Mediterranean to North and Central America from this location. Program length is 45 minutes. Nine additional stations occupy this frequency at various times of the day. All but a few SWB frequencies are occupied by a number of stations. Power levels and antenna directivities minimize interference if the station is broadcasting to your target area.

5. 15120: The Republic of South Africa directs its signal to the Americas during prime-time. This particular frequency acts as a back-up for its 9580 frequency. Spain has been using 15110 to back up its 9630 frequency during one part of the year. Presently the back-up frequency is 11880. Some stations use four or more frequencies on various bands and sometimes one or two extra on the same band simultaneously to

insure good prime coverage of the Americas. Switch among them to find the best signal.

6. 15125: Radio Berlin International is operated by the East German Government in Berlin. Its signal is strong and programming is interesting as the west and east portions adapt to the vast changes that have occurred in Europe.

7. 15155: Frequency is used by HCJB in Quito, Ecuador for English language broadcasts on religion and related subjects. Also other programs present descriptions of Ecuador as well as renditions of their appealing latin music. The schedules change frequently. Keep in touch.

8. 15160: This is a one-hour English program from Budapest, Hungary targeted on eastern North America. It is an alternate that can be used often during portions of the year when conditions are not favorable in your area for copying their 31 meter signal.

9. 15180: USSR Radio Kiev signal beamed on Western USA can also be copied in the east when conditions are right.

10. 15205: You can pick up the Voice of America signals from their Greenville, North Carolina installation even though signals are directed to Central and South America. Much VOA programming is good.

11. 15205: German relay station in Malta beams the signal on eastern North America.

12. 15215: WYFR with transmitters in

Florida beam religious programs all over the world. They are on the air for more time and on a variety of frequencies as compared to most international broadcast stations. This particular time beams its program to western USA but it is also received well in the east. Beam antennas are not perfect and radiate energy in other directions, too.

13. 15240: Australia is on the other side of the world and in recent years directs no transmission our way. However, when conditions are right, their signals can be heard. Their most reliable signal in the northeast is their early morning signal 9580, often readable as late as 10 AM EST. Also, check for their 15320 signal during prime-time hours later. When propagation conditions are just right from any station to your target area, the signal will appear even though its transmitter power may be weak and the directional beam directed toward some other some other part of the world.

14. 15260: BBC Ascension Island relay station is readable here in eastern USA although it is directed toward South America during prime-time hours. In fact, for much of the day, when the Ascension Island relay station is on the air, it can be copied well at may location.

15. 15280: This Soviet station, although it is directing its program in English to other parts of the world, comes through very well

(Continued on page 43)

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CIRCLE 47 ON READER SERVICE CARD

POP'COMM's World Band Tuning Tips

DECEMBER, 1990

This Pop'Comm feature is designed to help you hear more shortwave stations. Each month this handy, pull-out guide will show you when and where to tune to hear a wide variety of local and international broadcasters.

Not all of the listings are for transmissions in English, nor are most beamed to North America. Keep in mind that stations make frequent changes in their broadcast times and frequencies. Changes in propagation conditions may also make certain broadcasts difficult or impossible to receive at times. Your own receiving location and equipment also have a bearing on what stations you are able to hear.

All times are UTC.

| Freq. | Station/Country | UTC | Notes | Freq. | Station/Country | UTC | Notes |
|-------|---------------------------------|-------|-----------------------|-------|------------------------------|------|--------------------|
| 2390 | LV de Atitlan, Guatemala | 0000 | Spanish/vern. | 4990 | R. Ancash, Peru | 0500 | SS |
| 2410 | R. Enga, Papua New Guinea | 1200 | English/pidgin | 5004 | R. Nacional, Eq. Guinea | 0500 | SS |
| 2485 | ABC-Katherine, Australia | 1200 | | 5020 | ORTV Niger | 0530 | sign on, FF |
| 3200 | TWR Swaziland | 0300 | vern. | 5025 | R. Rebelde, Cuba | 0400 | SS |
| 3215 | R. Orange, S. Africa | 0300 | Afrikaans | 5035 | R. Bangui, Cent. Af. Rep. | 0430 | sign on, FF |
| 3225 | R. Occidente, Venezuela | 0300 | SS | 5059 | R. Lircay, Peru | 0400 | SS |
| 3240 | TWR Swaziland | 0300 | vern. | 5286 | R. Moundou, Tchad | 0500 | FF |
| 3245 | R. Clube Varginha, Brazil | 0100 | PP | 5900 | V of Israel | 2200 | AA |
| 3250 | R. Luz y Vida, Honduras | 0200 | SS | 5910 | BRT, Belgium | 2200 | EE/SS |
| 3255 | BBC, Lesotho | 0300 | | 5945 | RFI, France | 0000 | FF |
| 3270 | Ecos del Oriente, Ecuador | 0200 | SS, irregular | 5955 | Voz de Centauros, Colombia | 0900 | SS |
| 3280 | Voz del Napo, Ecuador | 0200 | SS | 5965 | Radio Havana Cuba | 0300 | FF |
| 3300 | R. Cultural, Guatemala | 0200 | SS/EE | 5982 | AWR Guatemala | 1100 | SS |
| 3320 | R. Orion, S. Africa | 0230 | Afrikaans/EE | 6015 | R. Austria Int'l | 0500 | various |
| 3330 | CHU, Canada | 24hr | time signals | 6020 | R. Netherlands | 0030 | |
| 3345 | RRI Pontiak, Indonesia | 1230 | II | 6025 | R. Illimani, Bolivia | 1000 | SS/Quechua |
| 3360 | Voz de Nahuala, Guatemala | 0100 | SS, vern. | 6035 | Voice of America | 0500 | via Liberia |
| 3366 | GBC, Ghana | 0530 | EE | 6050 | R. Nigeria, Ibadan | 2305 | sign off |
| 3381 | Malawi Bc Corp | 0255 | sign on; EE, vern. | 6065 | Super Radio, Colombia | eves | SS |
| 3385 | RRI Kupang, Indonesia | 1230 | II | 6070 | CFRX, Canada | 24h | relay CFRB |
| 3400 | R. Ed. 6 de Agosto, Brazil | 0300 | PP | 6085 | RBI, Germany | 2345 | sign on |
| 3450v | R. Oyon, Peru | 1000 | sign on, SS | 6090 | R. Luxembourg | 2330 | GG |
| 3535 | V of the Strait, China | 1100 | CC | 6100 | Radio Nicaragua | 0300 | SS |
| 3925 | NSB/R. Tanpa, Japan | 1030 | JJ | 6106 | R. Panamericana, Bolivia | 1000 | sign on, SS |
| 3927 | Capital Radio, Transkei, S. Af. | 2245 | EE | 6115v | La Voz del Llano, Colombia | 0500 | SS |
| 3945 | RRI Denpassar, Indonesia | 1200 | II | 6120 | R. Japan via Canada | 1100 | EE |
| 3955 | BBC | 0300 | world service | 6135 | R. Univ de Concepcion, Chile | 0930 | SS, irregular |
| 3990 | Voice of America | 0500 | via Liberia relay | 6150 | Caracol, Colombia | eves | SS |
| 4000 | R. Bafoussam, Cameroon | 0430 | FF | 6155 | R. Austria Int'l | 0400 | various |
| 4300 | R. Moderna, Peru | 0300 | SS | 6165 | R. Netherlands | 0030 | via Bonaire |
| 4418 | R. Frecuencia Lider, Peru | 0400 | SS | 6175 | BBC | 0000 | world service |
| 4485 | Petropavlovsk, USSR | 1130 | relay Moscow | 6185 | R. Educacion, Mexico | 0400 | SS |
| 4635 | Dushambe, USSR | 0100 | RR & Tadzhi | 6250 | R. Nacional, Eq. Guinea | 0500 | SS |
| 4680 | R. Nacional Espejo, Ecuador | 0200 | SS | 6305 | Voz del CID (clandestine) | 0500 | SS |
| 4725 | V of Myanmar, Myanmar (Burma) | 1200 | Burmese | 6482 | Vatican Radio | 0600 | various |
| 4740 | R. Kabul | 1200 | via USSR | 6500 | PBS Qinghai, China | 1300 | Tibetan |
| 4765 | Moscow relay, Cuba | eves | various services | 6691 | R. Cutervo, Peru | 0200 | SS |
| 4770 | R. Nigeria, Kaduna | 0430 | sign on, EE & vern. | 6726 | R. Satellite, Peru | 0300 | SS |
| 4790 | R. Atlantida, Peru | 0300 | SS | 6840 | CPBS, China | 1200 | CC |
| 4800 | R. Lesotho | 0300 | sign on, Lesotho & EE | 6900 | Turkish Met. Radio | 0500 | TT |
| 4810 | Voz de Galapagos, Ecuador | 0100 | SS | 6937 | PBS Yunan, China | 1200 | CC |
| 4825 | R. Cancao Nova, Brazil | 0900 | PP | 7105 | Voice of America | 0100 | via Greece |
| 4830 | R. Botswana | 0350v | sign on | 7115 | RFE/RL | 0400 | various |
| 4830 | R. Tachira, Venezuela | 0300 | SS | 7124 | RN Guinee, Guinea | 0600 | FF |
| 4845 | R. K'ekchi, Guatemala | 0130 | vern. | 7145 | R. Polonia, Poland | 0000 | Polish |
| 4860 | R. Maracaibo, Venezuela | 0200 | SS | 7170 | RFO, New Caledonia | 0700 | FF |
| 4865 | Voz del Cinaruco, Colombia | 0400 | SS | 7180 | BBC | 1100 | Hong Kong relay |
| 4875 | V of Jinling, China | 1200 | CC | 7200 | R. Mogadishu, Somalia | 0300 | sign on, Somali/AA |
| 4880 | R. Five, S. Africa | 0300 | sign on | 7205 | R. Australia | 1100 | |
| 4904 | RN Tchad | 0430 | sign on, FF | 7220 | R. Yugoslavia | 300 | SS |
| 4920 | ABC, Brisbane, Australia | 1200 | EE | 7255 | Voice of Nigeria | 0500 | sign on |
| 4940 | RTV Ivoirienne, Ivory Coast | 0600 | sign on, FF | 7270 | R. Polonia, Poland | 0000 | Polish |
| 4950 | R. Cora, Peru | 0200 | SS | 7300 | R. Tirana, Albania | eves | various |
| 4953 | RN Angola | 0400 | PP, irregular | 7315 | WHRI, Indiana | eves | |
| 4970 | R. Rumbos, Venezuela | 0330 | SS | 7325 | BBC | 0300 | world service |
| 4975 | Ondas del Ortuquaza, Colombia | 1000 | SS | 7340 | Voz del CID (clandestine) | eves | SS |

| Freq. | Station/Country | UTC | Notes | Freq. | Station/Country | UTC | Notes |
|-------|----------------------------------|------|-----------------------|--------|--------------------------------|-------|---------------------|
| 7365 | KNLS, Alaska | 1200 | RR | 12205 | RTT Tunisia | 2300 | AA |
| 7405 | R. Beijing | 1400 | EE | 12015 | R. Ulan Bator, Mongolia | 1100 | various |
| 7538 | V of Europe, Italy | 0400 | | 12035 | Swiss R. Int'l | eves | various |
| 9325 | R. Pyongyang, N. Korea | 1300 | EE, others | 12050 | R. Cairo | 2200 | AA |
| 9360 | Spanish National Radio | 0200 | SS | 12120 | CPBS, China | 1200 | CC |
| 9395 | V of Greece | 0100 | Greek | 13650 | R. Pyongyang, N. Korea | 1200 | various |
| 9410 | BBC | eves | | 13675 | BRT, Belgium | 2300 | various |
| 9445 | V of Turkey | eves | EE/TT | 13720 | WRNO, Louisiana | 2200 | |
| 9465 | WMLK, Pennsylvania | 2000 | | 14670 | CHU, Canada | 24h | time signals |
| 9475 | R. Cairo, Egypt | 0200 | EE | 15060 | BSKSA, Saudi Arabia | 1800 | vern. |
| 9480 | TWR, Monaco | 0640 | EE | 15090 | Vatican Radio | 1500 | various |
| 9500 | V of Libyan People (clandestine) | 1800 | AA | 15100 | Iran's Flag of Freedom (cland) | 0330 | Farsi |
| 9515 | BBC | 0300 | SS | 15105 | R. Yugoslavia | 0000 | EE |
| 9530 | R. Beijing, China | 1200 | EE | 15115 | HCJB, Ecuador | 1500 | |
| 9535 | TWR, Bonaire | 0300 | EE | 15130 | R. Beijing, China | 0000 | |
| 9540 | R. Nacional, Venezuela | 1100 | SS | 15135 | R. Record, Brazil | 2200 | PP |
| 9545 | SIBC, Solomon Is. | 0730 | | 15140 | R. Nacional, Chile | 2030 | SS |
| 9560 | R. Jordan | 2000 | | 15150 | RCI, Canada | 2100 | FF/EE |
| 9570 | R. Korea, So. Korea | 1130 | various | 15160 | Org. of America States | 2345 | SS, via VOA |
| 9575 | RAI, Italy | 0100 | EE | 15165 | R. Denmark | 1230 | DD via Norway |
| 9580 | Africa No. One, Gabon | 0500 | FF | 15190 | Lao National Radio | 1100 | FF via USSR |
| 9585 | R. Excelsior, Brazil | 0900 | PP, sign on | 15190 | RTVC, Congo | 1700 | FF |
| 9590 | R. Norway | 1300 | NN | 15190 | R. Bangladesh | 1200 | EE |
| 9600 | R. Portugal | 0130 | PP | 15210 | R. Japan | 2200 | JJ via Gabon |
| 9605 | Vatican Radio | 0030 | FF/EE | 15230 | HCJB, Ecuador | 0030 | EE |
| 9610 | ABC, Australia | 1100 | | 15235 | LJB, Libya | 2200 | AA |
| 9615 | KGEL, California | 0400 | SS | 15260 | RCI, Canada | 1900 | EE/FF |
| 9625 | CBC, Canada | 1130 | EE, others | 15280 | KGEL, California | 2200 | various |
| 9645 | R. Japan | 0300 | EE/JJ via Gabon | 15300 | WCSN, Maine | 2200 | |
| 9645 | TIFC, Costa Rica | 1030 | SS/EE | 15315 | R. Netherlands | 0030 | via Bonaire |
| 9655 | HCJB, Ecuador | 0200 | RR | 15330 | FEBA, Seychelles | 1500 | |
| 9655 | HCJB, Ecuador | 0200 | RR | 15335v | RTVM Morocco | 2000 | AA |
| 9670 | AWR Europe | 0600 | various; via Portugal | 15345 | RAE, Argentina | 1200 | |
| 9675 | R. Japan | 0800 | JJ, others | 15345 | TWR, Bonaire | 1100 | EE |
| 9685 | R. Gazeta, Brazil | 1000 | PP | 15350 | R. Luxembourg | 2300 | FF |
| 9690 | RAE, Argentina | 0100 | SS | 15360 | BBC | 1200 | via Singapore |
| 9695 | V of UAE | 0200 | AA | 15365 | All India Radio | 1230 | CC |
| 9700 | R. Sofia, Bulgaria | 0300 | GG | 15400 | UAE Radio | 2000 | AA |
| 9710 | R. Havana Cuba | 0200 | EE | 15405 | R. Sweden | 0100 | EE/Swedish |
| 9715 | R. Baghdad, Iraq | 0300 | AA | 15420 | WRNO, Louisiana | 2000 | |
| 9725 | AWR, Costa Rica | eves | SS/EE | 15430 | R. Austria Int'l | 1200 | GG |
| 9730 | RBI, Germany | 0230 | GG/EE | 15445 | Voice of America | 2000 | via Liberia |
| 9745 | HCJB, Ecuador | 0030 | EE | 15475 | Africa No. One, Gabon | 1900 | FF |
| 9765 | V of Mediterranean, Malta | 0600 | EE/AA | 15480 | R. Peace & Progress, USSR | 1330 | EE |
| 9790 | R. France Int'l | eves | FF/EE | 15485 | Voice of Israel | 1530 | various |
| 9825 | BBC | 000 | SS/PP | 15495 | R. Kuwait | 2100 | AA |
| 9835 | R. Budapest, Hungary | eves | various | 15500 | R. Peace & Progress, USSR | 0000 | Creole |
| 9845 | FEBC, Philippines | 1100 | CC | 15505 | R. Kuwait | 20000 | AA |
| 9875 | R. Austria Int'l | eves | various | 15520 | R. Bangladesh | 1230 | Bengali |
| 9895 | R. Netherlands | eves | various | 15540 | RTBF, Belgium | 1600 | FF |
| 9940 | R. Cairo, Egypt | 2030 | AA | 15560 | R. Netherlands | 2030 | EE |
| 11550 | RTT Tunisia | 0500 | AA | 15575 | R. Korea, So. Korea | 1400 | EE |
| 11570 | R. Pakistan | 1645 | Urdu | 15580 | KUSW, Utah | 2200 | |
| 11580 | Voice of America | 0000 | | 15615 | Voice of Israel | 2200 | Hebrew |
| 11605 | V of Israel | 0400 | EE | 15630 | Voice of Greece | 1400 | Greek |
| 11640 | R. Iran (clandestine) | 0200 | Farsi | 15640 | Voice of Israel | 2100 | various |
| 11660 | R. Netherlands | 0030 | PP | 15690 | WWCR, Tennessee | 0000 | |
| 11680 | BBC | 0000 | SS | 15880 | CPBS Taiwan-2, China | 1230 | CC |
| 11700 | TWR, Guam | 1200 | CC | 17535 | Voice of Greece | 1500 | Greek |
| 11705 | R. Sweden | 0200 | Swedish/EE | 17550 | BRT, Belgium | 1230 | EE |
| 11715 | R. Korea, So. Korea | 1030 | EE, via Canada | 17595 | R. Cairo, Egypt | 1230 | EE |
| 11720 | R. Baghdad, Iraq | 2100 | AA | 17595 | Lao National Radio | 1100 | FF, via USSR |
| 11734 | R. Tanzania-Zanzibar | 1800 | Swahili | 17605 | R. Netherlands | 1330 | Indonesian |
| 11735 | R. Denmark | 0230 | DD, via Norway | 17610 | RTT Tunisia | 1600 | AA |
| 11735 | R. Yugoslavia | 0000 | EE | 17630 | Africa No. One, Gabon | 1500 | FF |
| 11750 | BBC | eves | via Ascension | 17645 | Voice of the UAE | 1400 | AA |
| 11760 | R. Havana Cuba | eves | various | 17675 | RTBF, Belgium | 1800 | FF |
| 11780 | VOIRI, Iran | 0330 | AA | 17680 | R. New Zealand | 0200 | |
| 11780 | Radio Nacionala, Brazil | 2200 | PP | 17715 | Spanish National Radio | 2300 | SS |
| 11790 | UAE Radio | 1500 | AA/EE | 17730 | Vatican Radio | 1600 | AA |
| 11800 | RAI, Italy | 0100 | EE | 17735 | R. Oman | 1400 | AA |
| 11805 | TWR, Guam | 1100 | RR | 17740 | R. Yugoslavia | 1200 | |
| 11815 | R. Brazil Central | 0900 | PP | 17745 | R. Algiers, Algeria | 2200 | FF |
| 11835 | R. Japan | 2300 | EE, via Gabon | 17755 | R. Surinam Int'l | 1700 | various, via Brazil |
| 11835 | R. El Espectador, Uruguay | 0100 | SS | 17775 | KVOH, California | days | SS |
| 11855 | RCI, Canada | 1200 | | 17800 | R. Havana Cuba | 1830 | various |
| 11870 | AWR, Costa Rica | 1100 | EE | 17810 | R. Japan | 2100 | EE |
| 11880 | Spanish National Radio | 0000 | EE/SS | 17815 | Spanish National Radio | 1700 | SS |
| 11890 | R. Oman | 0300 | AA | 17820 | RCI, Canada | 1300 | EE |
| 11905 | CBS, Taiwan | 1100 | various | 17825 | R. Japan | 0200 | EE |
| 11930 | TWR, Bonaire | 0300 | EE | 17880 | R. Sweden | 1430 | Swedish |
| 11938 | V of People of Cambodia | 1200 | EE | 21470 | HCJB, Ecuador | 2130 | |
| 11940 | R. Moscow | 1200 | | 21530 | R. Portugal | 1500 | PP |
| 11965 | R. Record, Brazil | 2230 | PP | 21550 | R. Finland Int'l | 1400 | Finnish |
| 11970 | R. Havana Cuba | eves | | 21555 | R. Yugoslavia | 1200 | EE |
| 11985 | V of UAE | 200 | EE/AA | 21605 | UAE Radio | 1600 | AA/EE |



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|--|------------------------------------|-----------------------|-------------------|
| MEM 394 K STACK 1 K | SELECT | FUNCTION | MODE= USB |
| DATE: 10-24-1989 | | | LOCAL : 16:54:00 |
| | | | U.T.C. : 20:54:00 |
| 1. READ MEMORY CHANNELS | 7. MEMORY CHANNEL | DIAL | |
| 2. INPUT DESIRED FREQUENCY | 8. WRITE MEMORY TO VFO | VFO A | |
| 3. 500 KHZ UP | 9. UTILITY MENU | | |
| 4. 500 KHZ DOWN | ALT-P. CHANGE MENU PAGE | | |
| 5. ACTIVATE/DEACTIVATE CLARIFIER | ALT-Z. DISPLAY OR PRINT LOG | | |
| 6. SWEEP BETWEEN 2 LIMITS | ALT-Q. END | | |
| A. AVIATION (VHF) COMMUNICATION | D. F.M. BROADCASTING | | |
| B. TELEVISION BROADCASTING | E. AMATEUR FREQUENCIES (VHF) | | |
| C. COASTAL MARINE FREQUENCIES | F. MISCELLANEOUS FREQUENCIES (VHF) | | |
| PORT= COM2 BAUD= 9600 | CURRENT PARAMETERS | FILTER | RDLY= 0.138 |
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NEW

week. This particular program is broadcast in English on Sunday only.

31. 15325: RCI (Radio Canada International) has excellent programs. They also broadcast some of the Canadian Broadcast Company's fine internal shows.

32. 15330: Bulgaria broadcasts late afternoon English-language programs to Europe. Sometimes they provide good copy here in eastern USA.

33. 15360: Programs in English from France are directed toward East Africa and are sometimes readable here.

34. 15400: BBC Ascension Island relay signals directed to Africa are often readable here. The DX'er must be careful about identification. A beginner could think it is a BBC signal transmitted from England. You must always be aware there is a difference between direct and relayed signals in regard to your logging.

35. 15420: WRNO. This is a USA commercial station from New Orleans that broadcasts a considerable number of rock programs and at times rebroadcasts the program material used by its sister FM broadcast station.

36. 15475: This is a Soviet station that broadcasts English programs to the United Kingdom and eastern North America.

37. 15590: KUSW transmits its early afternoon programs on this frequency.

38. 15600: VOA signals from Monrovia, Liberia which are being direct to West Africa. Relay often delivers a good readable signal at this time in eastern USA.

39. 15690: WWCN broadcasts religious programs from Nashville, TN during morning, afternoon and evening hours.

Some Special Frequencies

In the previous listings we covered many of the English broadcast programs from around the world on 19M. There are more of them to seek out. Also, there are many stations that do not carry any English programming on the band but nevertheless you can enjoy their programs or do some DX logging. More important there are other bands you can organize and keep updated.

for convenient scheduling and program listening. You might want to tackle next the active 31 meter band which concentrates much prime-time broadcasting to America. A big help is a copy of "Passport to World Band Radio." Remember though that frequency and schedule changes are frequent and it is a continuing process of updating for all SWB publications. And for you, too, if you are to keep up with international broadcasting, its good programming and almost complete absence of commercials.

Here are a few additional items that cover other frequencies of interest on the 19M band. Radio Chile operates on 15140 with programs for the Americas at various times each day. They transmit some good Latin music but no English programming. Four Arabic countries, Kuwait (11505), Iran (15085), Syria (15095) and Iraq (15110 and 15400). Syria does transmit English on 15095 (2000-2100). In my location it is usually covered with interference. Maybe you have a better spot. I am limited to working indoors with an indoor antenna. Also English-language programs can be found on other bands for stations that do not have English services on 19 meters.

If you can copy Luxembourg on 15350 and know French you can listen to pop music all day. If you like the blend of African and French music you can listen to Africa direct programs from France on 15300 (0700-2045) or the Gabon broadcast on 15475 (1600-2100). For the latter there is often interference from Radio Moscow. Here USSR usually fades out late in the afternoon and Gabon comes out on top.

Whether you are a confirmed listener or DX'er, records save much time once completed and give you available intervals to do some avid international listening on a routine basis. Don't forget to try for Tahiti (15171) late at night. You must wait it out until the heterodyne from 15170 fades out or the station on that frequency signs off. Then you must hope that the path is good from Tahiti. Enjoy your logging and the follow-up shortwave listening you can do on 19 meters and the remaining 12 bands.

24. 15000: WWV-WVH (Refer back to #1.)

25. 15070: BBC (Refer back to #2.)

26. 15115: (Refer back to #7.) This is a morning signal broadcast to the Americas from HCJB.

27. 15150: A Radio Canada signal beamed to Africa is usually good here because of the nearness to its transmitter located at Sackville, New Brunswick.

28. 15160: This is a VOA broadcast to East Asia from the Philippines. Signal was weak but readable. DX copy of this type is not a regular occurrence, especially with my all-indoors listening post. If you are a beginning DX'er, take a tune across the entire band when conditions seem good. Search for the weak DX signals.

29. 15215: WYFR transmits afternoon religious programs for North America 30. 15310: Norway. On some bands various stations only transmit very short programs, one or several every day, per

You Should Know (from page 39)

16. 15300: WCSN is the Christian Science News Outlet and its program content follows the guidelines of their Christian Science Monitor Newspaper. Programs and news coverage are of high quality, enlightening and devoid of sensationalism. Its transmission site is in Maine. The 15300 transmissions at this time are being directed into Africa.

17. 15315: Netherlands relay station in Bonaire often relays Radio Netherlands programs into the Americas. It gives you a good substitute when the reception of the 6020 frequency or other 31M frequencies is difficult.

18. 15320: Look out for this signal when propagation is right. It is often a strong signal until 1 AM EST. These good results occur when the band is open between eastern USA and Australia and other western nations.

19. 15325: NHK Japanese programs are relayed into the Americas from a really facility in French Guiana. Signal is very good. Japanese programs are also relayed into the United States by Radio Canada International during the prime-time hours on the 31 meter band.

20. 15330: Late evening signals when the band remains open to southern Europe come through from the International Broadcast Station in Rome, Italy.

21. 15566: WYFR is active at night send religious programs to Africa and Europe.

22. 15580: KUSW in Salt Lake City, Utah beams rock and other music to eastern North America during the afternoon and early evening. It is a commercial station and accepts advertising.

23. 15640: Israel broadcasts in Hebrew, English and other languages into Europe and the Americas on this frequency.

Daytime Signals

24. 15000: WWV-WVH (Refer back to #1.)

25. 15070: BBC (Refer back to #2.)

26. 15115: (Refer back to #7.) This is a morning signal broadcast to the Americas from HCJB.

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CB SCENE

27 MHz COMMUNICATIONS ACTIVITIES

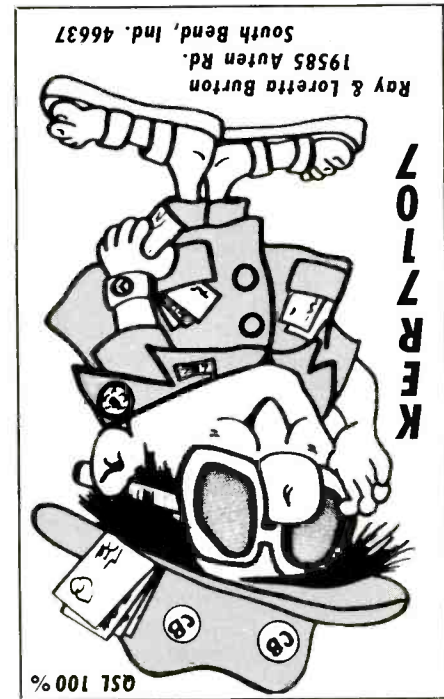
Here's a reminder of just how vital CB can be. A letter from John W. Kellington, Jr. of Waynesboro, VA tells us that last July he was tuning across the frequencies between the CB band and the 10 meter ham band (these frequencies are 27.410 to 27.995 MHz).

Near 27.485 MHz (LSB), he heard a station identifying itself as RG-905 and giving its location as Trinidad. Since this was during the military coup in Trinidad, he decided that he would stick with the frequency. The operator of the station was trying desperately to reach any station in the New York City area, and he eventually made contact with such a station ID'ing only as Unit 302.

The RG-905 operator, Raymond, said that all citizens had been warned to stay in doors. Any person seen on the streets would be shot on sight. All broadcasting and communications facilities had been shut down. There was no electricity; he was running his CB rig from the power in his car battery. Raymond told Unit 302 that he had relatives in Brooklyn and was trying to get word to his brothers and sisters that he was OK. He gave Unit 302 the phone number to call, along with the name of the person to ask for.

John Kellington wrote that this incident about the Agent 595 mystery communication from Panama on these same frequencies. We don't normally give much coverage to these frequencies because this is a CB column and, in North America, these aren't CB frequencies. Although there has never been any shortage of North American two-way hobby communications in this band, none of it is legal. Operators in North America who get caught operating here end up in lots of trouble, as do those who make, sell, or modify equipment for operation in this band. We aren't here to tell you how to get in trouble, nor to suggest that you do, nor preach to you on how to behave yourselves. What you do is your decision, and your business.

Nevertheless, it is a fact that in other parts of the world there are operators who are roughly equivalent to CB'ers in the US and Canada. The international operators use this band rather freely and openly. Some use these frequencies illegally, however others appear to reside in nations where such communications are actually permitted, or where communications regulations are so lightly enforced that they virtually don't exist at all. These stations assume that stations in North America have the same freedom to use the frequencies that they do. To friendly American and Canadian hobbyists, the shouts of these international DX



Anybody out there remember the old CB call signs? This really ancient CB QSL from KER-7107 was sent to us by Larry Flegle, N4TMW. We figure it to be from the mid-1970's, or older.

We strongly advise against unauthorized transmissions on any frequencies, but you might find it interesting just monitoring there because there are many exotic stations that can't be heard on CB Channels 1 through 40. Furthermore, these frequencies seem to produce exciting activity during times of crises such as revolutions, military action, major storms, floods, etc. There's nothing illegal about simply listening to the activity. The FCC has never been able to stop the illegal activity by Americans on these frequencies. It's been going on since the 1960's. Between the signals from thousands of North American and thousands more international stations, these frequencies have become virtually useless for any purposes other than they presently serve. Even if all Americans and Canadians were

This QSL comes from George, SSB Network Member SSB-0A256, of the Lone Star State. George has been an SSB Network member since 1982. Thanks to Jim, SSB-9, for sending in George's QSL.



Our DX QSL this month comes from station 16-RP-405, Adrien, in Halen, Belgium. We appreciate it being sent to us by Bert, SSB Network member SSB-35F, of Sanford, TX.

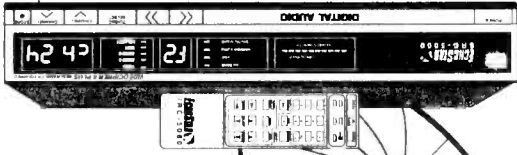


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posed to have been, the proper users could have been able to get a word in edgewise and establish themselves. Or, might we suggest that, with but minor effort, people who like this part of the spectrum and enjoy DX'ing, could get a Tech Class ham ticket. Such a license grants FCC-sanctioned modifications in a portion of the adjacent 28 MHz band. I bring up these points as two examples of the various arguments used by those who are in favor of just letting the situation continue status quo.

The reason we mention these frequencies in this column is because so many of those who operate there are also CBers, or were CBers before they moved off the CB channels into this never-never land. This is probably why the FCC generally likes to consider such operators as "illegal CBers." Oddly enough, many of the *outbanders* happen to also hold ham tickets, so "illegal hams" could be equally appropriate. Those who hold ham licenses but operate on these frequencies, say they do so because it's a different group of operators whose company they enjoy separately from the people they find on the 28 MHz ham band.

Perhaps our readers would like to let us know their thoughts on what (if anything) should be done to resolve and improve the situation on these frequencies. Mail we continually receive on this typically suggests that the FCC should capitulate and arrange for these frequencies to become a form of

In East Oakland, CA, there was a CBer who called himself *Plumb Crazy*. Since 1983, the FCC has received about thirty complaints from his neighbors saying that his radio activities didn't mix well with their use of telephones and TV sets.

It's not that the FCC didn't know who the CB'er was. They did. They knew him to be a chap who lives on Camden Street. Twice since late 1988, the FCC turned up on his doorstep to try and get a look at his station. He refused to admit them, they issued fines for his refusal. The transmissions continued, and the FCC characterized the CB'er as "torturing his neighbors."

The third time the FCC showed up was last summer. This time they brought along an armed federal marshal and a civil order

Speaking of Too Much Power

what I mean, Vern?

super-CB with special consideration for license-free sideband DX'ing at a 25 to 50 watt PEP maximum. Some think it should be made a ham band for Tech Class licensees (not a very practical proposal). Others tell us that all the *outbanders* should be tossed into the nearest lake. Some readers want the FCC to make the penalties so severe that few would chance operating there, no matter how slim the chances are of getting caught. Let us know, but please don't make it the 900-page history of the world going back to the formation of planet. Know

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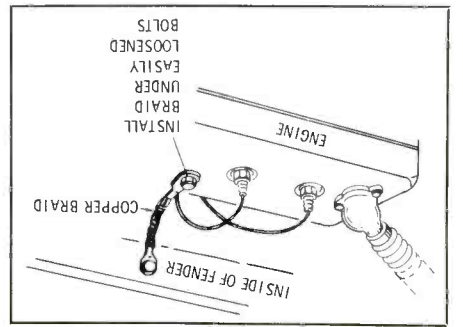
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gals on these otherwise useless frequencies doesn't make much sense; at least, not to me. Some way, somehow, it's a situation that should be faced in a manner which is both reasonable and realistic. The agency has invested more than twenty-five years in unsuccessful attempts to clean up operations there. Maybe it's time to try a new approach.

Taking the position of the devil's advocate, we then ask if twenty-five years of exercising squatters' rights on frequencies intended for other users deserves to be rewarded by having their stewardship given over to the squatters.

Maybe, had these frequencies ever been allowed to be used the way they were sup-

Bonding between engine and frame to reduce CB noise



PC This column seeks your input in the form of QSL's, photos, news clippings, club functions, opinions, and questions.

Your Turn

This is a disaster just waiting to happen. receiver, the frequency is effectively blocked. When these two signals arrive in an aircraft's 135.375 MHz is running only on 10 watts, ground station with which it is competing on sound like much to you, but the FAA be equal to a 4 watt signal. That may not be fact, the 5th harmonic might well station could well be using a 1,000 watt lin- Channel 10 (27.075 MHz). Moreover, the harmonic of someone's operation on CB information that this is caused by the 5th Some calculations have come up with the miles around Memphis.

and pilots say that his voice blocks the use of the frequency for an area of 154,000 square MHz. The operator's handle is *Nighthawk*, years on VHF aero frequency 135.375 encing CB interference for more than two ACT International mentions a strange inci- dent. The FAA in Memphis, TN, is experi- The REACTor, official publication of RE-

In A Harmonic Putting The Harm

Daily check-ins are on Channel 32 (USB), and hosted by Bert, TCR-1000. They begin at 6 a.m. Eastern time (some members show up earlier), and usually run for two hours. Stations check in from as far away as Kitchener, Niagara Falls, and even into NY State. Bert is north of just about everybody else, so that's where to point your beam.

For more information about the TCR, write to Trans Canada Radio Club, Box 101, Port Perry, Ontario, Canada L9L 1A9.

Note From Canada

A letter from Laird Solomon, Oshawa, Ontario, Canada mentions that the Trans Canada Radio Club (TCR) holds weekly coffee-breaks in several Ontario locations, namely Oshawa, Scarborough, and Hamilton. Monthly breaks are in the Ontario cities of Kitchener and Orillia, plus one at a city he didn't name in Quebec Province. None of the coffee-breaks are held during the summer months.

There's a yearly gathering, too. It's in Blackstock, Ontario, in the fall. Everybody is invited. Laird didn't let us know in time to get this year's CB Fest into the October issue, but the date is October 28th (10 a.m. to 5 p.m.) at the Blackstock Recreation Centre. Perhaps if you get this issue of *POP* COM early enough, you can still make the get-together.

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either through cleaning or the addition of straps made from lengths of heavy copper braid. It not only helps reduce noise radiation, but it also reduces interference that may occur from the vibration of loose metal. An important point for bonding is between engine block and car frame. Since rubber motor mounts can insulate the block from the frame, short pieces of braid should be installed between engine and frame at several points. The inside surface of the fender's car's muffler and tailpipe should also be grounded to the frame at the underside of the car. Leave enough slack in the braid to permit flexing as the car moves over the road.

Other points that may be bonded with braid: generator to engine block; mechanical linkages (from the carbrator, for example) to the block; and metal tubing or hoses. The hood may also be bonded to the frame.

To the accompaniment of cheers from all of the offending equipment. They said that they'd been trying to collect the earlier \$1,200 fines from the operator. The neighbors hope that ends the problem with *Plumb Crazy*, previously known as *The Traveling Fisherman*, and *Thunder and Lightning*. We kinda hope so, too!

Unless adjoining sections of metal in a car are in good electrical contact, they can create or aggravate noise interference. Poor contact might occur due to corrosion, grease, or an intervening layer of paint. Bonding is a process of establishing electrical contact, warts.

push out somewhere between 300 and 400 a cache of no less than five modified transceivers, also two linear amplifiers that could let them in. Once inside, they discovered

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DIPLO Paris RTTY transmissions are alive and kicking on HF Radio. Well, at least they are through DIPLO's relay station at Noumea, New Caledonia, where news transmissions in French are beamed to Asia.

It had been announced in this column in the Sept. '89 POPCOM that DIPLO was to have gone QRT from HF radio by the end of 1989, as the remainder of its broadcast was to have been shifted to satellite. This was according to a spokesman for the Ministry of Foreign Affairs in Paris, whose staff assembled and wrote news for DIPLO.

But ever since March of this year, I had been seeing news in French on 16106 kHz, one of the former DIPLO frequencies. Solar storms played havoc with the signal, causing severe garbling, and I couldn't get a handle on the sender. Moreover, the transmission always ended at 1300 UTC (0800 EST). Hampered by the early hour, I had further problems in solving this puzzle.

June soon came, and, while prowling around the 20 MHz band at about 0130 UTC, I came across this same station on 20078 kHz, another frequency used in the past by DIPLO. This time, the signal was loud and clear, and I could identify the familiar news format used by DIPLO.

At 0455, the news broadcast ended for the day, and the station sent RY's, "le bricks" and a frequency list, confirming this station, and the one on 16106, as DIPLO. The frequencies and call signs given were FZ191 on 9187.5, FZM23, 12307; FZM62, 16106; and FZM7, 20078. All run at 425/50.

Fred Osterman, SWL Market Manager for Universal Radio, Reynoldsburg, OH, tells me that in receiving RTTY intercepts the normal reverse polarities of a signal will vary from one brand of software radio receiver to another, even if manufactured by the same company. What would be interpreted as being in the normal sense on one radio would be in reverse sense on another, and vice versa.

month, we are fortunate to have representatives from Canada, England, West Germany, and Japan sharing their loggings with us. On top of that, one of them, Takashi Kuroda of Japan, whets our appetites by showing us intercepts of some of the latest RTTY modes found on HF radio.

RTTY Intercepts

Seasons. I came across this same station on 20078 kHz, another frequency used in the past by DIPLO. This time, the signal was loud and clear, and I could identify the familiar news format used by DIPLO.

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This discrepancy "can potentially lead to confusion" to readers of this column or users of frequency guides, Fred says, if one tries to tune to a polarity as published. For this reason, he continued, the various guides don't use a signal's polarity.

Fred says that in his own loggings, meant for his own use, he'll list the polarity so that he can refer to it again in the future. He recommends this for anyone's personal loggings, but to omit that detail when the loggings are for general distribution.

Therefore, we will omit the N and R designations from the teletype settings found in the intercepts section of this column beginning with this issue.

In our RTTY intercepts section this

10331: Un-ID w/wx at 1500, FDM-B/75 on channel 2 (Peter T., England). Might be the USAF at Croughon, England—Ed.

10549.3: GFL23, Bracknell Meteor, England, w/wx at 2324.398/50. Later seen w/coded wx (Don Schimmel, WV).

10754: HVH, PTT, Vatican City, Vatican, w/a telex in EE addressed to priest in St. Louis, MO. Was TDM2 425/95-B at 0921 (Ed).

10892: GXQ, British Army, London, England, w/foxes & RY's, FDM-D/50 at 1357 (Peter T., England).

10892.3: LRB39, Telam, Buenos Aires, Argentina, w/nx in SS, 792/50 at 2341 (Schimmel, WV).

11100: RHH74, Kubychev Meteor, USSR, w/coded wx, 850/50 at 2219 (Black, NY).

11060: Un-ID w/5F msgs at 2012, 450/75 (Peter T., England).

11084: Un-ID w/foxes & 10 count, FDM-D/75 on channel 3 at 1949 (Peter T., England).

11133: BZG41, Xinhua, Beijing, China, w/RRY, 425/50 at 1346 (Dallas Williams, CO).

11445.9: Probably KNY37, GDR Embassy, Washington, DC, w/5L gps, 2110-2118, 425/50 (Williams, CO). Or it could be Y7L36, GDR Embassy, Havana, Cuba, which has used this freq in the past for CW file—Ed.

12082.7: Un-ID w/nx in EE at 1726, 425/50. Have not listing for anything here (Williams, CO). Now you do—it's IRJ50, ANSA, Rome, Italy—Ed.

12102.7: Un-ID w/foxes at 1200 & 1530, 170/75 (Manthey, NY). It's CIL Canadian Forces, Shilo, MB—Ed.

12154.3: Probably Mexican government w/plain text wx in SS for Mexico, Central America, & Gulf of Mexico. Was 170/50, 1716-1722 (Williams, CO).

12174: EDT3, Addis Ababa Aero, Ethiopia, w/coded wx at 2010, 85/50 (Williams, CO).

12468.5: NBA, USN, Baboia, Panama, w/RRY, SGGG, & counting at 1303, 850/75 (J.M., KY).

12469.7: 71KPF of the Spanish Navy, w/RRY & SGGG to 781JU, 850/75 at 0525 (Williams, CO).

12826: GYU, Royal Navy, Gibraltar, w/foxes & counting at 0449, 796/75 (Blodeau, IL).

AA: Arabic

ARQ: SITRA mode

BC: Broadcast

EE: English

FEC: Forward Error Connection mode

FF: French

foxes: "Quick brown fox . . . " test tape

GG: German

ID: Identification/led

MFA: Ministry of Foreign Affairs

PP: Portuguese

nx: News

SS: Spanish

RRY: "RRY . . . " test tape

W: With

WX: Weather

December Book Buys



ANTENNAS

BEVERAGE ANTENNA HANDBOOK by Victor Miskolc, W1WCR
 Miskolc delves deep into the secrets of the single wire Beverage and SWA (Steerable Wave Antenna) with helpful hints and tips on how to maximize performance based upon wire size, height above ground, overall length and impedance matching. Transformer design information for both termination and feedline matching is completely revised. 2nd Edition. **Softbound \$14.95**

YAGI ANTENNA DESIGN by Dr. James Lawson, W2PY
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THE AMATEUR RADIO VERTICAL HANDBOOK by Cpt. Paul H. Lee, USN (Ret.), N6PL
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W1FB'S ANTENNA NOTEBOOK by Doug Demaw, W1FB
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EASY-UP ANTENNAS for Radio Listeners and Hams by Ed Noll W3FOA
 This book covers basic do-it-yourself antennas for SWL's, AM and FM CB/Bers, present and prospective Hams and scanner listeners. Includes dipoles, verticals, beams, long wires, and several special types and configurations. Also has time saving look-up dimension tables, constants and other helpful hints for antenna design. 1st edition, 164 pages © 1988. **Softbound \$16.95**

NOVICE ANTENNA NOTEBOOK by Doug Demaw W1FB
 Novices have long wondered what is the best all around antenna for them to install. Up until now, this was a difficult question to answer. Aimed at the newly licensed Ham, Demaw writes for the non-engineer in clear concise language with emphasis on easy-to-build antennas. Readers will learn how antennas operate and what governs performance. Also great reading for all levels of Amateur interest. 1st Edition © 1988. **Softbound \$7.95**

ANTENNAS by John Kraus, W8JK
 Kraus' classic antenna book has been extensively revised and updated to reflect the latest state-of-the-art in antenna design and theory. Includes over 1,000 illustrations and nearly 600 worked examples and problem solutions. Chapters cover basic concepts, print sources and point source arrays, dipoles, helices, broadband and frequency independent antennas, special applications and tons more of information. 2nd edition, 917 pages © 1988. **Hardbound \$59.95**

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by W6SAI & W2LX

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20992.2 ZSC Cape Town R, RSA, on standby in ARQ, 1200-1312, then DE ZSC GA (ED).
 20934 SPW, Warsaw R, Poland, w/nx in Polish, FEC at 1225 (ED).
 20996 CLP55, Cuban Embassy, Georgetown, Guyana, w/5L coded msg to CLP1 at 2100, 500/100, switched to 75 baud at 2110, sent nx in SS at 2130, foll by rpt of the 5L msg (Hetherington, FL).
 21848-7-21849.5: GXQ, British Army, London, England, w/fozes, RYTs & 10 count, on four FDM channels, 300/50 at 1241 (ED).
 22321 UJY, Kalingrad R, USSR, w/telegrams in RR, 170/50 at 1517 (ED).
 22356.7: SAB93, Goeteborg R, Sweden, w/a telez to ship, ARQ at 1516 (ED).
 22222: GYA, Royal Navy, London, w/test xmsn at 1540, 850/75 (ED).
 22457: PWZ33, Rio de Janeiro Navrad, Brazil, w/ navareas in PP & "preferencial" msgs, 850/50 at 1555 (ED).
 22464: UFB, Odessa R, USSR, w/telegrams in RR, 170/50 at 1602 (ED).
 22581: YSM, Ruegen R, GDR, w/a msg to ship w/c/s YSKF, ARQ at 1653 (ED).
 22888: DFZG, MFA, Belgrade, Yugoslavia, w/RRY, 75R at 1435 (Kuroda, Japan).
 22900: GPA7, Portsmouth R, England, w/ARQ phas-ing sig & CW ID at 1734 (ED).
 23049: CLP1, Havana, w/5L circulars at 2121, 500/50 (Hetherington, FL).
 23070.5: CLP1, MFA, Havana, w/ffc to sev em-bassies at 1414, 500/50 (Hetherington, FL).
 23697.6: DFX69H6, PIAB, Bonn, FRG, w/nx in GG, FCCA-425/96 at 1612 (ED).
 23716.5: RFL, French mil, Fort de France, Martin-ique, w/METAR msgs at 1457, ARQ-E-425/96 (ED).
 23772: "KL," "Northline-Westfalen Police, FRG, w/??? to Dusseldorf, ARQ-E 115/96 at 1330 (Hether-ington, FL). Details not given—Ed.
 23972: JMG6, Tokyo Metro, Japan, w/coded wx at 1450, 850/50 (Hetherington, FL).
 24846: Un-ID w/ "piccolo QRU NNNN GKCHU FKAEI" at 1200, ARQ-E 170/96 (Hetherington, FL).
 24852-2-24854.5: MKD, RAF, Akrotiri, Cyprus, w/fozes & counting on sev. FDM channels, 160/50 (Hetherington, FL). No time given—Ed.
 25020.5: URL, Sevastopol R, USSR, w/msgs in coded gps to many named ships, 170/50 at 1335 (Hetherington, FL).
 25344: ZRH8, Cape Town Navrad, RSA, w/(Hetherington, FL).
 RYRY, 170/75 at 1455 (Hetherington, FL).
 25417.7: FRG Embassy, Santiago, Chile, w/ffc in GG to MFA, Bonn, ARQ-E 170/96 at 1705 (Hethering-ington, FL).
 25421.5: FRG Embassy, Brasilia, Brazil, w/s/on to Bonn at 1430, ARQ-E 170/96 (ED).
 25531.5: LOL, Buenos Aires Navrad, Argentina, w/a coded msg at 1527, 425/100 (Hetherington, FL).
 26312: OBC, Lima Navrad, Peru, w/msgs to PWX, Brasilia Navrad, Brazil, 850/75 (Hetherington, FL). No time given—Ed.
 26450: Y7A92, MFA, Berlin, GDR, w/ADN nx in FF at 1414, 425/50 (Hetherington, FL).
 29870: Un-ID w/encryption, 170/100 at 1426 (ED).

Embassy, Washington, DC, w ARQ ftc in AA + a 5L msg (Ed).
 19970: PBC3, Goeree Island Navrad, Netherlands, w RRY, 850/75 at 2256 (ED).
 19980: 9B33, IRNA, Tiberian, Iran, w/nx in AA 1127, & nx in EE at 1710, 425/50 (ED).
 19991: "LR," w/fozes, 10C, & "LR sending," tun-ning 24 hrs, nearly every day for more than 5 wks, 850/75 (ED).
 20076.5: Un-ID w "zcc MLA0131" and "navarea po," 170/50 at 1403 (Tubbs, West Germany). Possible ID is Lugda Aero, Malta, which uses a circuit ID of MLA—Ed.
 20078: FZNF7, DIPLQ, Paris (New Caledonia relay), w/nx in FF, 0135-0455 s/off, 425/50, S/off w RRY, le brics, & xmsn schedule (Ed).
 20179.5: RFFAB, defense ministry, Paris, w/AP & AFP nx in FF, 1544-1915 (QRT), ARQ-E3 425/100 (Ed).
 20185: VHP, Belconnen Navrad, Australia, w/RRY & CQ, 0641-0644, 425/75 (ED).
 20201: RGA58, Bakhtar, Khabarovsk, USSR, w/nx in EE, 850/50 at 0507 (ED).
 20332: CCS, Santiago Navrad, Chile, w/RRY, 0005-0006, 550/75 (ED).
 20372: IRS23, ANSA, Rome, Italy, ends FF ncast at 1456, begins EE ncast at 1505, 425/50. Back to FF at 1600 (Ed).
 20402: YWM1, Maracabito Navrad, Venezuela, w/a telez for NBA at 1630, 850/75 (J.M., KY). Same w/uncles ftc to CCS, 1000/75 at 0008 (ED).
 20418.3: Un-ID FRG diplo sta w/s/off in GG at 1900, ARQ-E 170/96 (ED).
 20420: Y2V20, ADN, Berlin, GDR, w/nx in EE at 1745 & 1942, 425/50 (ED).
 20482.5: VOA, Poro la Union, Philippines, w/nx in EE at 0017 & 0527, 425/75 (ED).
 20556: "P6Z," MFA, Paris, France, w/encryption, FCCA/A/144 at 1450 (Kuroda, Japan).
 20560: JANA, Tripoli, Libya, w/nx in EE, 425/50 at 1623 (ED).
 20596: Possibly HBD20, MFA, Berne, Switzerland, w/a 5L msg in ARQ at 0539, then to standby at 0542 & off at 0613 (Ed).
 20615: RCC75, Tass, Moscow, w/nx in EE, 425/50 at 0615 (ED).
 20754.3: 5XR88, Intl Red Cross, Kampala, Ugan-da, w/a telez in FF to HBC88, ARQ at 1519 (ED).
 20799: Un-ID Russian sta, w/"elegancia odolet-do ghanz nu 1853, QRU post nr 57222 TR zam CW" Was (Hetherington, FL).
 20812: RFTJ, French mil, Libreville, Gabon, 425/75 at 1239, foll by CW s/off at 1239 (ED).
 20835.5: Un-ID Italian diplo w/s/off in II at 1558, 5L gps, ARQ-E3 850/48 (ED).
 20840: Y7A82, MFA, Berlin, GDR, w/nx in GG at 0626, and RYRY at 1237, 425/50 (ED).
 20921.9: CLP25, Cuban Embassy, Maputo, Mozam-bique, w/sunmary of previously sent msgs, 505/75 at 2020 (Hetherington, FL).
 20927: CLP33, Cuban Embassy, Addis Ababa, Ethi-opia, w/ffc to CLP1 at 1930, 500/50. Or this could be a relay from CLP25, Maputo (Hetherington, FL).



to a 5F msg, & nx in SC, 425/75 at 1437 (ED).
 19231: JBUT9, PTT, Tokyo, Japan, w/ffc in JJ to India, ARQ/425 at 1247 (ED).
 19233: DFZG, MFA, Belgrade, Yugoslavia, w/msgs in SC, 75R at 0115 (Kuroda, Japan).
 19234.5: RWW70, Tass, Moscow, w/nx in AA 1110, 425/50 (ED).
 19265: Cuban Embassy, Maputo, Mozam-bique, w/cyptio after ZZZZ, 425/75 at 1201. ID in s/off at 1221 (ED).
 19296.5: RFQP, French mil, Djibouti, w/a service msg at 2330, ARQ-E3 425/100 (Hetherington, FL).
 19323.5: Un-ID Italian diplo, using tact ID of "Yankee Golf Victor" in msg w 5L gps, ARQ at 1410, S/off 1417 w "AS AS VA ciao" (ED).
 19323.7: KAWN, Offutt AFB, NE, w/coded aere, 170/75 at 1418 (ED).
 19390: Y7A76, MFA, Berlin, GDR, w/nx in GG, 425/50 at 1223 (ED).
 19487: Egyptian Embassy, Kuala Lumpur, Malaysia, w/ARQ ftc to MFA, Cairo, at 1310 (Kuroda, Japan).
 19498.8: RFHJ, Papeete, Tahiti, w/"controle de voix" & 5L msg, ARQ-E3 425/100 at 1152 (ED).
 19517: Un-ID w/fozes at 1108, 850/75 (Tubbs, West Germany).
 19541.5: Un-ID w/a brief QSL in combined EE & FF, ARQ at 1402. Had rcvd coded gps ftc from an un-ID master sia (Ed).
 19606: GDR Embassy, Havana, Cuba, w/5F msgs at 1626, & QRU SR at 1630, 425/50 (ED).
 19648: "Y9L," Un-ID French diplo post, sig "P6Z," MFA, Paris, FCCA/A/144 at 1509 (Kuroda, Japan).
 19649: RCF, MFA, Moscow (The Kremlin), w/CQ/RYRY, 5F/5L msg, for sev. days at about this time, 425/75 at 1435 (ED).
 19671.5: MFA, Rome, Italy, w/msgs in II & a 5L msg to Addis Ababa, Ethiopia, ARQ at 1203 (ED).
 19731.6: PCW1, MFA, The Hague, Netherlands, riding in ARQ mode at 1408 (ED).
 19755: MFA, Jakarta, Indonesia, w/msgs in Indo-nesia, SI-ARQ/5/96 (Kuroda, Japan).
 19810: Un-ID, possibly a Hungarian embassy, xming in DUP-ARQ/125 mode at 1445 (Kuroda, Japan).
 19821.5: 4UZ, UN, Geneva, Switzerland, w/telezes in EE at 1554, ARQ (ED).
 19830: Un-ID w/what appeared to be telezes in AA, 425/50 at 1234. Had circuit ID of FHCU, At 1310 came HSHSHSHSHSHS "8CBW 171001 "HO. BANNNN, at 1325, 1339 & 1354, HSHSHS short msg in AA, foll by a final short msg at 1409 (ED).
 19845: RWW74, Tass, Moscow, w/nx in EE, 425/50 at 1839 (ED).
 50 at 1839 (ED).
 19866: YZ14, Tanjug, Belgrade, Yugoslavia, w/nx in SS at 1721, 425/50 (ED).
 19914.5: CLP1, MFA, Havana, w/presammix, 425/50 at 1908 (ED).
 19914.8: VOA, Tangier, Morocco, w/nx in FF, 425/75 at 1126 (ED).
 19920.5: CLP28, Cuban Embassy, Lusaka, Zam-bia, w/cyptio at 1712, 425/50 (ED).
 19921.5: Egyptian Embassy, Washington, DC, re-laying telezes in AA & a 5L msg from Caracas, Venez-uela to MFA, Cairo, Was ARQ at 1800. Went briefly to FCCA at 1905 (ED).
 19928: MFA, Vienna, Austria, xming at 1345, SI-ARQ/5/96 (Kuroda, Japan).
 19932.5: Un-ID USN sta rps "NAWS Charlie Yankee 00002," 2353-2357, 170/75, foll by encrypt-ion at 0000 (ED).
 19951.7: MFA, Cairo, Egypt, w/telezes in AA & EE to Washington, DC, at 1224, ARQ, & a brief msg in AA to Rabat, Morocco at 1330, FCCA. At 1537, the Egyptian

Test transmission of Goeree Island naval radio, The Netherlands, ran on 19970 kHz at 2256 UTC, 850/75

AVAILABILITY

FBC32/FBC34/FBC36/BUSY/FBC312/FBC317/BLANK/RYRYRYRYRYRYRYRYRYRYRYRYRYRYRY DE PBC 3 K

AVAILABILITY

FBC32/FBC34/FBC36/BUSY/FBC312/FBC317/BLANK/RYRYRYRYRYRYRYRYRYRYRYRYRYRYRY DE PBC 3 K

AVAILABILITY

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Amateur Radio: Pass It On



14-year-old Extra Class ham Scott Voyna, KB0DCU (1), of Cresco, Iowa, says he got started in Amateur Radio thanks to the encouragement of his grandfather, Lawrence Peters, KA0FTK. Scott is a freshman at Creswood High School, and when he's not on the air, he's into football, track and baseball. Congrats!

Getting your sons and daughters (nephews, nieces, your best friend's kids, etc) interested in Amateur Radio is a rewarding and worthwhile activity. For those hams who were lucky enough to have a dedicated in-the-family ham radio mentor, it's an experience they'll never forget. This month's column, written by Mike Crownover, KB5ILS, describes how he and his children discovered the magic of ham radio.

The sound of crackling voices coming from a radio receiver has intrigued me since I was a youngster. My friends at school could hardly believe that a person in the US could hear a Russian, speaking English, or that the distant culture of the Far East was readily accessible with the twist of a knob. Then, the excitement of receiving mail and QSL cards from these faraway lands was almost too much to bear. The thrill and excitement of shortwave radio had a grip on me. To this day, the knowledge I gained through listening has given me a greater insight into world events.

I had read about Amateur Radio and even received a pair of QSL cards from a couple of local hams who I heard on the bands. I had toyed with Morse code as a Boy Scout, but I shied away from the 5 and 13-WPM FCC code requirements. I was still determined, however, that someday I would get my amateur license.

As I grew older, however, the proverbial "fumes" of gasoline and perfume, gradually pulled me away from the hobby. The hours I had spent next to the radio had been exchanged for time spent next to those a little more dear to me than the announcers of Radio Prague. And so, the years came and went—marriage, college, college, transfers, college, etc—and my SWL'ing days were but a distant memory.

The only artifacts from my listening days were a few old copies of the *Swedish Calling DXers* bulletin. I shared these with my sons, Michael and Jacob, and wandered off into some old yarns about how I would sit up late at night or get up early in the morning to catch a new station. To my surprise, they were interested and even asked a few questions. Their interest was only a curiosity, however, and the idea died a quick death.

As fate would have it, one Christmas soon thereafter, Grandpa bought each of my boys easy-to-assemble shortwave radio kits. We quickly assembled them, rigged up a makeshift antenna and logged a couple of Not long after assembling the kits, the

That night, I plugged in the code tape that came with the course and began learning E's and T's. My oldest son, Michael, who was 12 years old at the time, came into the room Soon, we were copying words, then sentences—and my son was doing as well as I was. We studied the theory and quizzed one another. It became more and more apparent that I would soon be able to talk back to those who live in faraway places—not only me, but my son as well.

Harry, N5SR, our Boy Scout troop commander, but my son as well.

Ham radio has since had an impact not only on my everyday life, but in the amount

(Continued on page 71)

TELEPHONES ENROUTE

WHAT'S HAPPENING WITH CELLULAR, MARINE & MOBILE PHONES

W

hat's that old saying about "a myth is as good as a mile"? Well, the cellular industry has certainly been getting more mileage than you would have thought possible out of the focus-pocus they've generated surrounding the matter of cellular privacy.

For a long time it was the myth that there was complete privacy to cellular phone calls. However, last spring there were stories in the national media that shocked the public with the information that cellular calls could be, and were, easily intercepted by using readily available scanners. So much for being able to peddle the "complete privacy" myth, at least for a while.

Maybe there had to be a fall-back position to salvage bits and pieces of that tired old chestnut that had been used to sell so many cellular phones. We thought so when S. M. Yost, NMBR, of Kalakaska, MI sent us a copy of the July issue of an industry publication called *Cellular Business*. In a feature on the publication's editor wrote, supposedly to dispel cellular myths, the fact that there was no privacy had to be finally admitted. At that point, it was no longer going to be easy to keep insisting otherwise.

However, *Cellular Business* informed its readers, "in most cases, the eavesdropper needs a special type of illegal scanner to pick up portions of the call." The story then went on to describe a person who owns such a "special type of illegal scanner" as being "the criminal element trying to beat technology."

How the editor of an industry publication can seriously state that a scanner picking up the 800 to 900 MHz band is "illegal," is a mystery to me. Such equipment has never been illegal to manufacture, sell, own, or use in the USA. Moreover, persons who own this equipment, or who unintentionally

Berwick and Baldwin, LA. Also going on St. Mary's parish. The cell sites for this are in BellSouth Mobility has opened RSA cellular service, too. Their operations have brought service to Morgan City, LA and also Charlotte Counties. It will bring service to mobile, will cover Desoto, Hardee, and

motorists driving through on I-75, Highway 17, and State Roads 64 and 70. Florida's first Rural Service Area (RSA) recently received cellular car phone service. An RSA is a rural area where cellular phones can't be used because they're beyond the range of services operating in large cities. Lack of service in such areas has long brought complaints from motorists passing through, also from local RSA-area residents. The new service, provided by GTE

Charlottesville. It will bring service to mobile, will cover Desoto, Hardee, and

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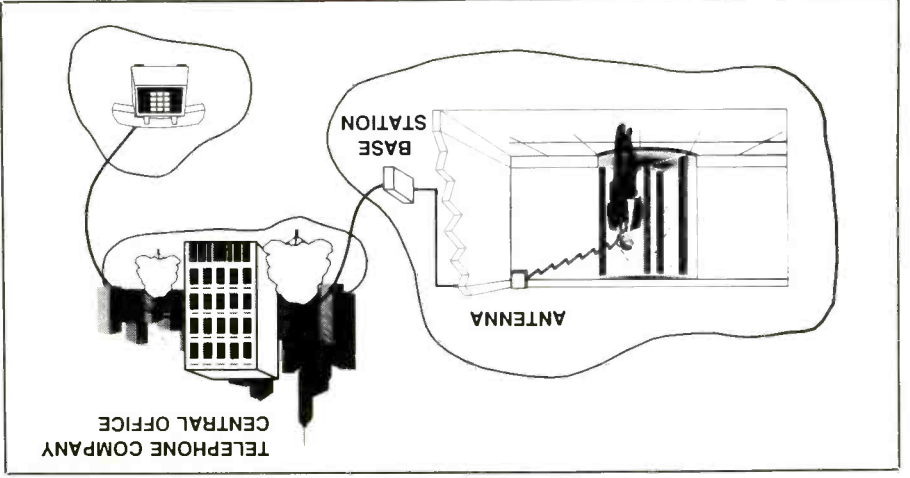
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Diagram of a typical CT-2 system, showing a single microcell.



A CT2 handset telephone in use. These short-range services are designed for pedestrians (walk-around) users, rather than mobile subscribers.

You Awake, You Talk

We have, in the past, mentioned that several concepts for short-range wireless personal telephone service (PTS) have been proposed. The best way of describing such pedestrian-oriented services is to say that they very roughly approximate a cross between a cellular and a cordless phone. Late in 1991, NYNEX Mobile Communications will introduce such service in New York City. It will use standard cellular frequencies, but (unlike cellular phones, which use analog technology), the new PTS service will be all-digital.

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DEALER INQUIRIES, PLEASE CALL

The tiny Mitsuishi Model 3000 is a full-featured cellular that's about as small as they come and still be used by a person with adult-sized hands, and normal eyesight!

We are always looking for your input in the form of newspaper clippings, questions, opinions, and information about car phones, radiopaging, marine telephones, and related matters. We would also like to hear from equipment manufacturers and service suppliers.



These new short-range services are working towards shrinking the size of the cellular equipment. Some of the pocket-sized cellular equipment is so small that it's probably about as compact as it's going to get within the current technology. Remember that a transceiver can only be made so small before it gets too small to be conveniently used by most people. The keypad simply can't be read or utilized if it's too miniaturized, and the display can't be read, either. Besides, you don't want a set that's so tiny that you mistake it for a quarter and drop it into the coin slot of a Coke machine.

Think Small

Mobile Systems, an English company with stateside offices in Arlington, VA.

The smallest and lightest convenient-to-use standard cellular handheld we have yet seen is the Mitsuishi Model 3000. This handheld weighs about 10 oz., is just over 2 inches wide, less than an inch thick, and a shade over 6 inches tall.

On a single battery charge, the Model 3000 delivers nine hours of standby time, or almost an hour and a half of talk time (at minimum transmit power). An extended life battery may be used that practically doubles these times.

Yet despite its tiny size, it's easy to use, and it has a lot of features, like an alpha-numeric display, battery level indicator, electronic menu function, and 14 memory functions (including 10 secret memories and 2 dedicated one-touch speed dial buttons). An excellent styling feature has the three most-used keys (power, send, and end) wrap-around (front/side) styled so you can locate them quickly and easily.

You can get the Model 3000 with a wrist strap, and it's also available in other formats and with a full line of accessories and options. There's a cigarette lighter adapter, also a one-hour battery charger.

What with full-featured standard cellulars available in sizes this small, competing personal radio services are going to have to sized up better selling points than small-their "no incoming calls" service as the way to go, even at a cheaper price.

A trial of a somewhat similar system called Telepoint CT2-CAL is under test by Bell Atlantic Mobile Systems. Their trial is being run in Philadelphia, PA and uses the 891.50 to 894.00 MHz segment of the standard cellular band.

In this system, the initials CAL stand for Common Air Interface. That means subscribers to one CT2 service would be able to make calls with their phones while roaming in any area served by a CT2 company. It is expected that CT2 systems will be working in many major European cities by 1993; it is already operational in the UK and several European nations. The CT2 equipment used in the Philadelphia test is from GPT

The service will permit outgoing calls to be made from the small handheld sets, but will not provide incoming calls. The units will, however, respond to paging signals for the subscriber. The handsets will operate through a large number of antenna sites (micro-cells) that have a range of about 600 ft., and will not hand-off calls from one to another, as with regular cellular service.

The digital technology used is called Code Division Multiple Access (CDMA), which was explained in these pages several months ago. It allows ten to twenty users to share the same channel pair simultaneously without interference or distortion. CDMA calls can't be monitored on existing scanners.

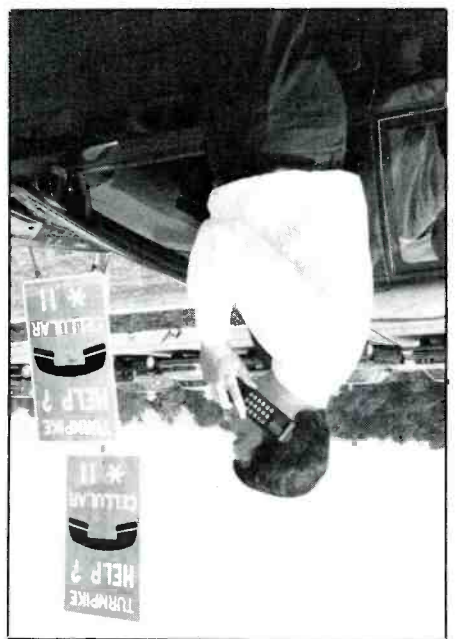
Handhelds (made by Qualcomm, Inc.) for the new service are expected to be smaller and less expensive than standard cellular phones. And subscribers will pay less for the service.

Carl Branstorf, of La Habra, CA tells us that a company called Advanced Cellular Technology, located in Santa Clara, CA, is marketing a cellular "extender" known as Celltalker. He reports that it costs less than \$250, and hooks up to your car phone in only a few minutes. You can then carry the extender's own handset with you (up to 1,000 feet away from the car), and should your car phone receive a call, you'll be able

For more information on the tiny Mitsuishi Model 3000, contact the Communications Equipment Sales Division, Mitsuishi International Corp., 1500 Michael Dr., Suite B, Wood Dale, IL 60191, or circle 105 on our Readers' Service.

The Pennsylvania Turnpike has just made it convenient for cellular car phone owners to call for help while traveling on that highway. These calls are toll-free. (Photo by Christine J. Richardson, Pennsylvania Turnpike Commission.)

The Pennsylvania Turnpike has just made it convenient for cellular car phone owners to call for help while traveling on that highway. These calls are toll-free. (Photo by Christine J. Richardson, Pennsylvania Turnpike Commission.)



COMMUNICATIONS FOR SURVIVAL

EMERGENCY

BY GORDON WEST, WB6NOA

Global Positioning System Now 24 Hours

The satellite location system is called NAVSTAR/Global Positioning System. It's been over a decade in its implementation, and now more than half of the proposed 21 satellites, plus 3 spares, are in perfect orbit to provide most parts of the country 24-hour-a-day position fixes. And for the emergency communicator, a precise latitude and longitude coordinate of the discovered crashed aircraft is a far better message to transmit than "We are just a little left of the big peak, about 1/4 mile from the grassy knoll, and a little over to the left." The new handheld GPS receiver will allow you to pinpoint your coordinates to within 100 yards of your actual position, day or night, anywhere in the continent, within 1 second of hitting the "fix" button.

The Global Positioning System will be the new national standard for position determining on land, in the air, and at sea. Not only will the orbiting satellites read out your exact location, but you will also know your height, velocity, and magnetic heading with a dynamic range greater than 1 second of your motion.

"Our Magellan NAV-1000 portable GPS receiver continuously collects almanac satellite data when operated in the continuous mode. This almanac data, a schedule of satellite positions stored in memory, allows our receiver to update the position of the operating every second," comments Richard Sill, Vice-President/Marketing & Sales, of Magellan Systems.

The GPS satellites serve as known reference points, and the receiver on earth determines its position by timing how long it takes radio signals from the satellites to arrive, comparing this data to the almanac information. The receiver then triangulates the position.

The GPS satellites transmit near 1,500 MHz, 10 times higher than the 155 MHz search and rescue band. A very small antenna captures these microwaves, and the radio waves are unaffected by engine noise, aircraft engines, skip, and atmospheric noise.

The satellites time their transmitted pulses with an onboard atomic clock. This \$100,000 clock is not nuclear powered, but does rely on the oscillations of a particular atom as a time reference. Your portable GPS receiver compares the time of the data transmission with its own clock in order to figure out the satellite's range. Receiver clock error is corrected by averaging the estimated ranges of several satellites until they intersect at a specific point.

A phenomenal accuracy of better than 25

yards of your precise position has been achieved until last June. In June, the Department of Defense "fuzzed up" the incoming signals, called Selective Availability, and this has now degraded our precise position information down to 100 yards, which is 300 feet. And 300 feet is worst case S/A. Most of your fixes will be better than 100 feet.

By the end of this century, the new GPS navigation system may cause the phase out of more traditional forms of radio location, such as radio beacons, Loran, transit satellite, Omega, and aeronautical Omni and Tacan. By the year 2000, GPS will become

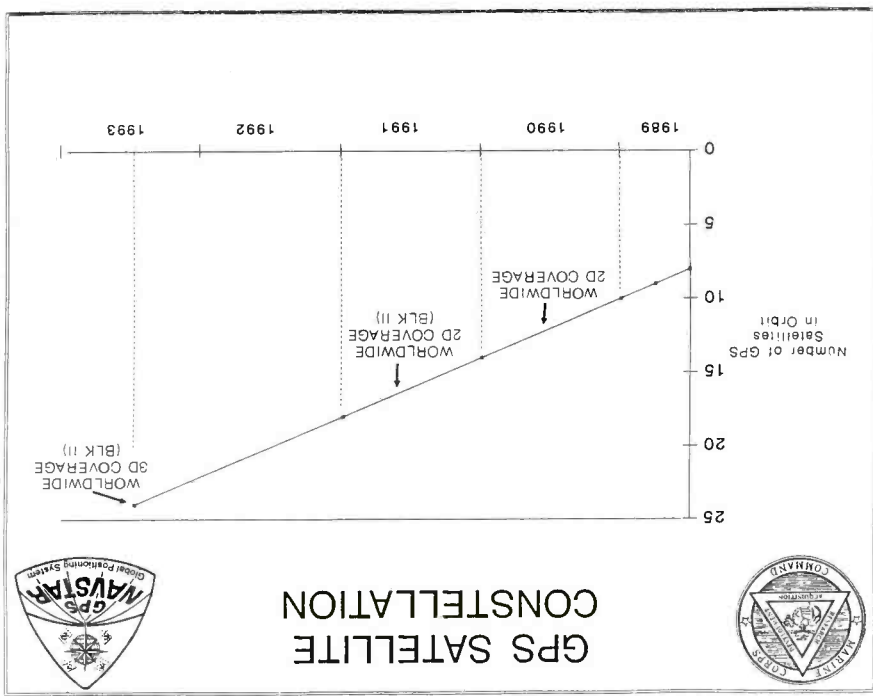
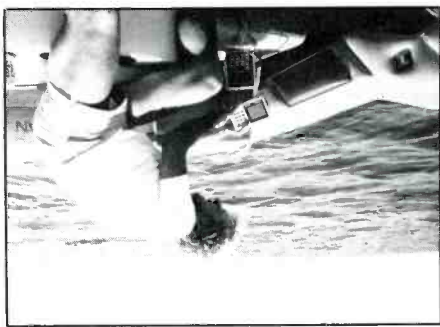
the national standard for surveyors, mariners, aviation, and rescue squads like yours, needing precise position information to transmit back to the rescue coordination center.

There are over 20 manufacturers of GPS receivers priced under \$5,000. The majority of these GPS receivers are designed for 12-volt permanent mounting in a boat, in a vehicle, in an airplane, or unattended operation on overland transport devices where automatic transfer of position information is broadcast back through alternate satellite systems. In other words, a trucking company will know instantly where their ve-

GPS receiver with built-in electronic chart to better visualize your position.



Gordon West tests new mobile GPS set on Harbor Patrol boat to mark the spot of a light plane crash in the ocean. Courtesy Gordon West.



GPS SATELLITE CONSTELLATION

CIRCLE 51 ON READER SERVICE CARD

PHONE RECORDING ADAPTER
 Records calls automatically. All Solid state connects to your telephone jack and tape recorder. Starts recording when phone is lifted. **\$28.50*** FCC APPROVED

VOX VOICE ACTIVATED CONTROL SWITCH
 Adjusts self contained. Adjusts sensitivity. Voices or other sounds automatically activate and control remote mike. **\$28.50*** Solid state. Self contained. Adjusts sensitivity. Voices or other sounds automatically activate and control remote mike.

12 Hour Model - SUPER LONG PLAY TAPE RECORDERS
 Modified Panasonic Simlino 6 high quality AC-DC provide continuous hours of quality recording & playback on each side of cassette for 12 hours total. Includes: Voice level control, etc. TDK - 120 Cassette, etc. **\$119.00***

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CIRCLE 49 ON READER SERVICE CARD

PC SWL \$99.00

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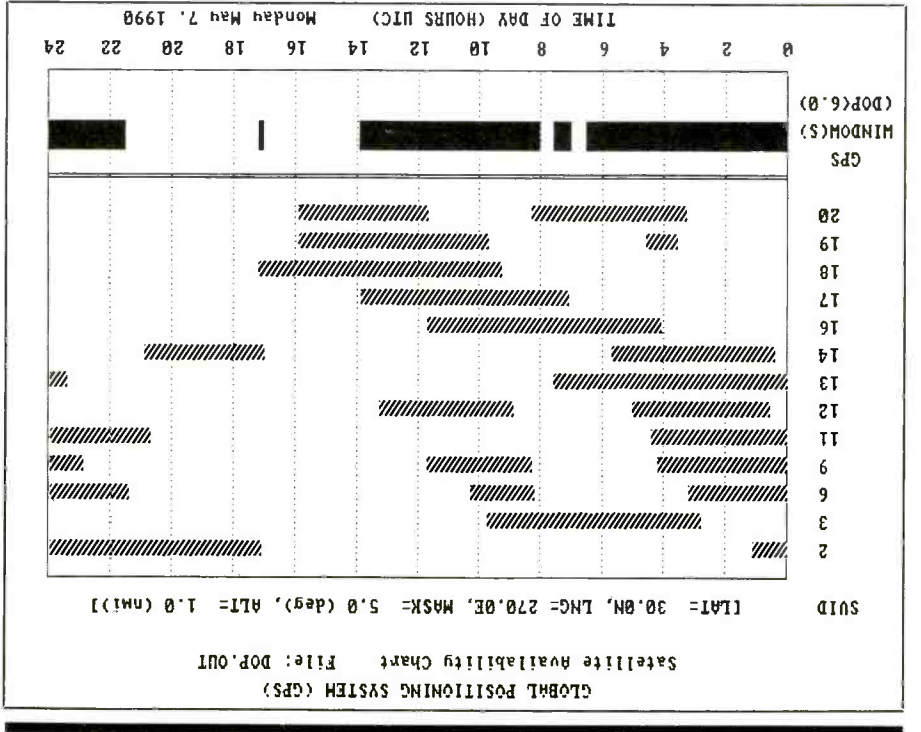
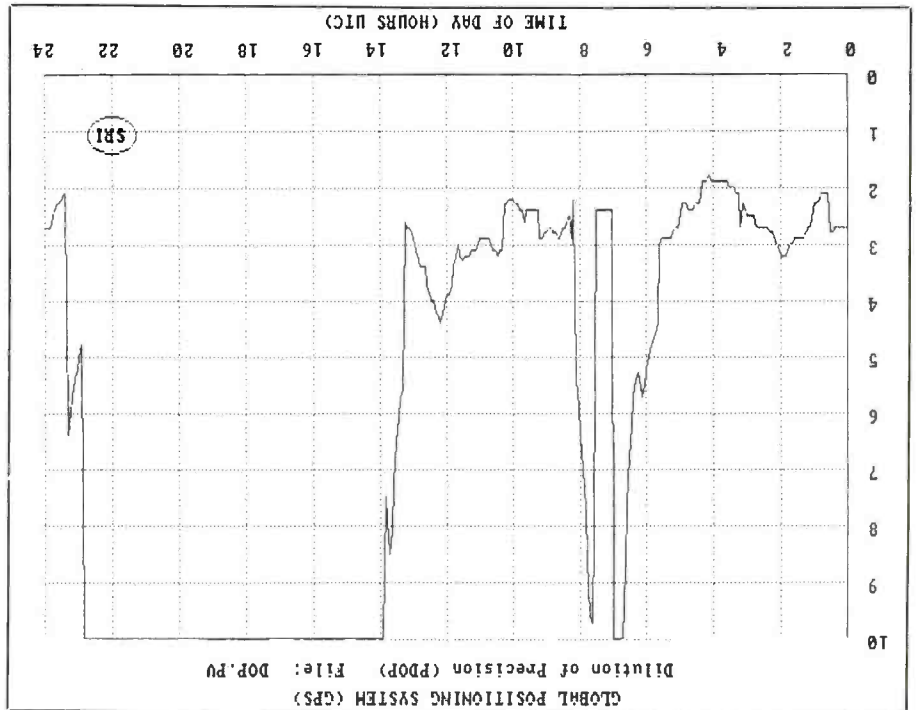
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hicles are, all over the United States. But it is the portable GPS receiver that holds the greatest promise for emergency communicators attached to cover the wilderness areas where there is not a benchmark or sign post for hundreds of miles. Magnavox (2829 Martcopa Street, Torrance, CA 90503; 213-618-1200) has been producing "Man Pack" military GPS receivers for several years. Their tiny sets operate up to 12 hours between charges, but like most Magnavox gear, is priced "high" for civilian users. But that didn't stop Trimble (585 N. Merry Avenue, Sunnyvale, CA 94086) from developing a similar premier an under-\$3,000 portable receiver, Monrovia, California 91016), the first to Magellan (260 E. Huntington Drive, reaction from an aircraft. This fast sequencing portable receiver is designed to respond to a quick change in direction from an aircraft. The rate at which they sequence enables these receivers to read all the message bits from each satellite under track, typically 4, which transmitted at a rate of 50 bits per second. This fast sequencing portable receiver is designed to respond to a quick change in direction from an aircraft. The rate at which they sequence enables these receivers to read all the message bits from each satellite under track, typically 4, which transmitted at a rate of 50 bits per second. This fast sequencing portable receiver is designed to respond to a quick change in direction from an aircraft.



Portable GPS receiver reads out position and bearings within 300 yard accuracy. Note small 1.5 GHz antenna on top of portable GPS set. Courtesy Gordon West.



Gordon West operates portable Magellan 1000 GPS receiver for a quick position fix. Courtesy Gordon West.



PC
If your communications team is considering position finding instrumentation equipment, GPS is now your logical choice. Now that we have 24-hour-a-day coverage, there is nothing close to it for finding yourself within several feet of where you really are within 1 second.

And every time you hear of a successful launch of a GPS satellite aboard a modified Delta rocket, do know that it will add more and more satellites in the NAVSTAR orbit.

For vehicle use, an external antenna will be required in order to "see" 3 or 4 satellites for a quick fix. Recently, the Department of Defense adjusted the orbits of the satellites coming over the U.S. to give us more available hours of day and night operation—now approaching 24 hours.

The suggested price for this completely portable GPS receiver is well below \$3,000. But there are some things that a GPS receiver can't do for the user—in deep canyon, it might take longer to acquire the orbiting satellites because the satellites must be in view of the tiny antenna. This also means the unit absolutely won't work in tunnels, deep inside an aircraft with no view of the horizon, nor underwater in a search sub.

"We even have a built-in simulator for self-teaching someone who is not familiar with how a GPS receiver works," adds Burrell. "The suggested price for this completely portable GPS receiver is well below \$3,000. But there are some things that a GPS receiver can't do for the user—in deep canyon, it might take longer to acquire the orbiting satellites because the satellites must be in view of the tiny antenna. This also means the unit absolutely won't work in tunnels, deep inside an aircraft with no view of the horizon, nor underwater in a search sub."

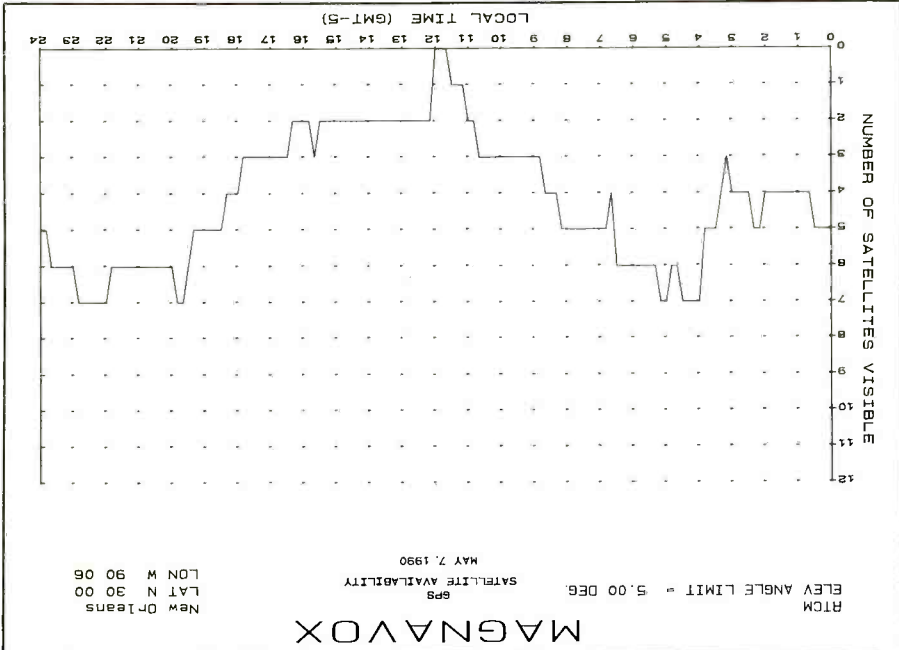
intelligence makes the receiver operation completely automatic and extremely easy to use," comments Gary Burrell, a well-known search and rescue flyer who was formerly with King Radio.

also the lowest priced unit on the market, now selling for around \$2,300 new. A brand new GPS receiver has been announced by Pro-Nav International (11206 Thompson Avenue, Lenexa, Kansas 66219), which weighs only 25 ounces and measures 6.25 inches x 2 inches x 3.95 inches. The display is an easy-to-read, illuminated LCD with LCD back illumination for each keypad for nighttime operation. The receiver allows the GPS-100 form Pro-Nav to track up to 8 satellites and provide continuous navigation updates while consuming less power and space than any other system on the market. "The unit's built-in-in-

The portable Magellan receiver will also indicate direction to a stored "Way Point." Courtesy Gordon West.



Excellent GPS satellite coverage, except for an hour in the early morning.



POP.COMM invites readers to submit, in not more than roughly 125 to 150 words, how they got started in the communications hobby. We'll accept them (preferably) type-written, or otherwise easily legible. If you have a photo of yourself taken recently, or a photo of yourself taken recently, please include it with your story. We can't return or acknowledge material, whether we use it or not. You need submit your story only once, we'll keep it on file to consider it for future issues. All submissions become the property of *Popular Communications*.

Entries will be judged taking into consideration if they tell a story that is interesting, amusing, or unusual. We reserve the right to make syntax, spelling, grammatical, or other editorial changes and corrections to improve style and readability.

Each month, the writer of the entry selected for use in this column will receive a 1-year gift subscription (or 1-year subscription extension) to *Popular Communications*.

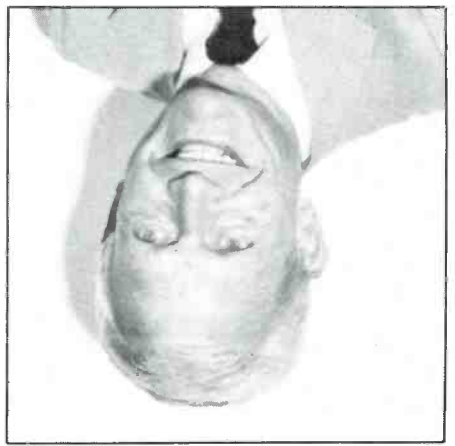
Address all entries to: How I Got Started, Popular Communications, 76 North Broadway, Hicksville, NY 11801.

Our Winner For December

The story selected this month was submitted by Colonel Jean Lafaurie, FD6ACC, of Paris, France. He wrote:

"Radio has been a part of my life since age ten, particularly with listening to the BBC news during World War II. Radio (especially shortwave) was a great mystery to me then. I was 16 in 1948, and I had a 5-tube superhet receiver with a "magic tuning eye." While tuning the shortwaves, I heard a nearby ham, F8PQ. Within three years, I had my own ham license, F3MB (a call sign I held until 1959).

Colonel Jean Lafaurie, FD6ACC, in a recent photo.



HOW I GOT STARTED

"Owing to my interest in communications, I was admitted as an officer in the Signal Corps during my military service, specifically in the police unit known as *Gendarmerie* in 1961.

"In 1986, my activity on NATO matters at the French Department of Defense directed my interests towards English language programming (VOA, BBC, WGSN, etc.). So, while I have long been a ham (presently

FD6ACC), I returned to SWL'ing. Now I use an ICF-7600-DS. Once, listening had been a necessity, now it's a pleasure.

"Today, I am military advisor to the Legion of Honor headquarters. I'll soon be retired, except (of course) for radio.

"Thanks to those who have helped further my interest in radio—Edouard Brany, General Ferrie, many others, and *Popular Communications*!"

PC



World's Most Powerful CB and Amateur Mobile Antenna*

Guaranteed To Transmit and Receive Farther Than Any Other Mobile CB Antenna or Your Money Back**

New Design

The Wilson 1000 higher gain performance is a result of new design developments that bring you the most powerful CB base loaded antenna available.

Many CB antennas lose more than 50% of the power put into them. The power is wasted as heat loss in the plastic inside the coil form and not radiated as radio waves.

We have designed a new coil form which suspends the coil in air and still retains the rigidity needed for support. This new design eliminates 95% of the dielectric losses. We feel that this new design is so unique that we have filed a patent application on it. In addition, we use 10 Ga. silver plated wire to reduce resistive losses to a minimum.

In order to handle higher power for amateur use, we used the more efficient direct coupling method of matching, rather than the lossy capacitor coupling. With this method the Wilson 1000 will handle 3000 watts of power.

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So far you have read about why the Wilson 1000 performs better, but it is also one of the most rugged antennas you can buy. It is made from high impact thermoplastics with ultraviolet protection. The threaded body mount and coil threads are stainless steel. The whip is tapered 177 ph. stainless steel. All of these reasons are why it is the best CB antenna on the market today, and we guarantee to you that it will outperform any CB antenna (K40, Formula I, you name it) or your money back!

*Inductively base loaded antennas
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58% MORE GAIN THAN THE K40

RELATIVE POWER GAIN (%)

| | |
|----|------|
| 35 | 1.30 |
| 36 | 1.45 |
| 40 | 1.60 |
| 45 | 1.75 |
| 50 | 1.90 |
| 55 | 2.00 |
| 58 | 2.00 |
| 60 | 2.00 |
| 65 | 2.00 |

FREQUENCY (MHz)

| | |
|--------|------|
| 26.965 | 1.30 |
| 27.015 | 1.30 |
| 27.065 | 1.45 |
| 27.115 | 1.60 |
| 27.165 | 1.75 |
| 27.215 | 1.90 |
| 27.265 | 2.00 |
| 27.315 | 1.95 |
| 27.365 | 2.00 |
| 27.405 | 2.00 |

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Aug 21, 1987
Wilson Antenna Company Inc.
3 Sunset Way Unit A-10
Green Valley Commerce Center
Henderson, Nevada 89015
Subject: Comparative Gain Testing of Citizens Band Antennas
FBI, Rye Canyon Antenna Lab File #870529
We have completed relative gain measurements of your model 1000 antenna using the K40 antenna as the reference. The test was conducted with the antennas mounted on a 16' ground plane with a separation of greater than 300' between the transmit and test antennas. The antennas were tuned by the standard VSWR method. The results of the test are tabulated below.

SCANNING VHF/UHF

MONITORING THE 30 TO 900 MHZ "ACTION" BANDS



Who says an elaborate listening post is necessary? This more-than-adequate station is owned by Ken Fowler of Fairfax, Virginia. His gear consists of a Uniden Bearcat 800XLT, a Radio Shack PRO-38 and a Radio Shack discone antenna on the roof.

of luck (unless of course you can find a schematic of such a device and are handy at building things).

Raymond Bethel of Coleman, Texas, also wrote in asking about the availability of descrambler devices, such as in a kit or pre-wired. Again, we don't know of anyone selling these (although black-market sales might be possible).

Bill Young of Merrillville, Indiana, says that he's used Bill Cheek's "Scanner Modification Handbook" to modify his Radio Shack PRO-34. He also made the cellular modification on his new Radio Shack PRO-2006, and Bill says the modification was accomplished in minutes! Bill says that he recommends that PRO-34 and PRO-2006 owners should make the simple modifications to their radios. Bill goes on to say that he gets a lot of useful and interesting information from Scanning VHF/UHF and enjoys the rest of POPCOMM, too.

Rich Dixon of Binghamton, New York, says he recently bought a Uniden Bearcat 100 handheld scanner. He wondered whether the radio could be modified to receive the 225-406 MHz military aircraft band in addition to the regular 118-136 MHz aircraft band it already receives. Rich, there's no way I've heard for this big band (or any similar) to be modified for this band from 225 to 406 MHz. It actually would be too wide a band for most scanners to handle anyway, when you consider that the widest receive coverage is either 20 to 25 MHz on

Joel M. Mero of Gaylord, Michigan, says that the Otsego County Sheriff's Department in his area has started scrambling their transmissions. Joel has attempted to obtain a descrambler through local suppliers, but has come up empty-handed and was wondering if we knew of a source. Unfortunately, descramblers died a quick death with the passage of the Electronics Communications Privacy Act of 1986. This federal law outlawed the use of these devices except by law enforcement agencies. Thus, without a market to sell these devices, such as had been done previous to 1986 without any problems, the firms selling descramblers got out of the market quickly to avoid having federal agents knocking on their doors to confiscate their supply of devices. Basically, unless you can find a hobbyist who is selling one second-hand, you're out

search Books Inc., PO Box 56, Commack, NY 11725. The fee is \$5.

Ken Fowler of Fairfax, Virginia, sends along some additional frequencies for his area: 855.4875, George Mason University police F-1; 855.7125, George Mason University police F-2 (special events at Patriot Center); 854.7875, Media General Cable dispatch for maintenance and construction. In addition, Ken says he runs a computer bulletin board conference for scanners. The Metro Net BBS can be accessed by calling (202) 475-7543 (band rate of 1200 to 9600; N-8-1; PC board software; Scanner Files).

Joel M. Mero of Gaylord, Michigan, says that the Otsego County Sheriff's Department in his area has started scrambling their transmissions. Joel has attempted to obtain a descrambler through local suppliers, but has come up empty-handed and was wondering if we knew of a source. Unfortunately, descramblers died a quick death with the passage of the Electronics Communications Privacy Act of 1986. This federal law outlawed the use of these devices except by law enforcement agencies. Thus, without a market to sell these devices, such as had been done previous to 1986 without any problems, the firms selling descramblers got out of the market quickly to avoid having federal agents knocking on their doors to confiscate their supply of devices. Basically, unless you can find a hobbyist who is selling one second-hand, you're out

inter time means cold-weather monitoring for most of the country, and that means plugging in the snowplowing frequencies for your area before the "big one" buries you under a few feet of flakes. Make sure you know your town's, county's and state's snowplowing frequencies so you know what roads have been cleared and are safe to drive. In the mean time, here's some scanner news for this month:

The Rev. Mike Dieckmann, KA0IAR, passes along some frequencies he found in use at St. Louis Blues ice hockey games. Father Mike reports the Blues using 466.5375 and 466.375 and maintenance units use 464.000. When in town, the Minnesota Red Wings have been heard using 464.550, and the Philadelphia Flyers were heard using 49.830 and 49.875. The Boston Bruins and Chicago Blackhawks use radios, however, Father Mike was unable to find their frequencies (how about it frequency sleuths?). Father Mike also reports that the new 800 MHz trunked system has been used by St. Louis police for more than a year now.

Pete Croydon of Victoria, Australia, writes in to query whether any stateide or Canadian scanner listeners are hearing any Aussie stations on the 68-88 MHz midband or on VHF lowband. He notes that East Coast listeners are hearing Europe and Africa, but is curious if Australian signals are being heard on the West Coast here. Any one tuning in down under?

Marc Hoppe of Milwaukee, Wisconsin, adds to some Blue Angels frequencies that appeared in the July issue. Marc says he's heard the Blue Angels flight team on 251.6, 275.35, 250.8 and 319.8. He also reports 142.000 and 143.000. Marc goes on to report that the Thunderbirds flight team uses 283.5, 322.6 and 382.9, as well as the VHF frequencies of 141.850 and 142.000. For air shows, Marc reports that the following ground support frequencies are used by the two flight demonstration teams: Thunderbirds on 413.000 and 413.025 and the Blue Angels on 142.025.

Dason L. Hutchinson of Killdeer, North Dakota, is yet another reader who inquires about what a "Registered Monitor" is and whether scanner listeners can apply for one. Yes, it's an ID that you can obtain for your SWL or scanner monitoring station. Although it doesn't purport to give you transmitting privileges, it does help identify your monitoring station to other hobbyists and professionals as a serious listening post. If you are interested in obtaining one of these registered monitor call signs (my own registered ID is KP3A3CA), apply to: CRB Registered ID is KP3A3CA), apply to:

POPULAR COMMUNICATIONS / December 1990

LISTENING POST

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

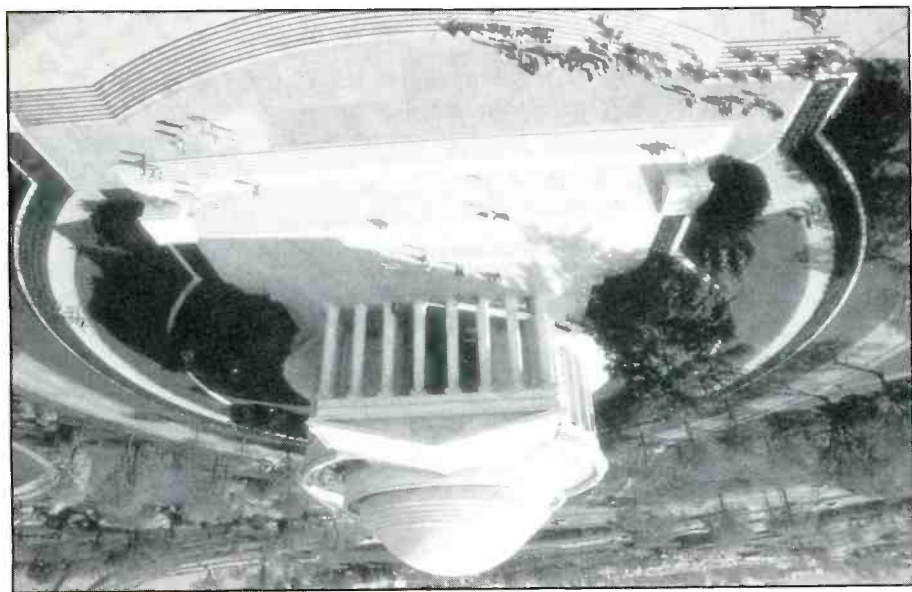
As this is being written we're still in the position of having to guess at the changes German reunification will mean for short-wave broadcasting here. But it seems logical to assume that Deutsche Welle will probably absorb Radio Berlin International—perhaps all at once, perhaps over a period of time. We may well have an answer by the time you read this. In any event, this is probably the last time we'll be listing East and West Germany in our logging section. A year ago, who'd've thought it!

We've already seen any number of changes in the world of shortwave which are direct results of the stunning and on-going changes in the USSR and its former pals. One of the most recent and more unusual involves a plan for reciprocal broadcasts between Radio Moscow and a local Danish station, Radio Viktor in Esbjerg, Denmark. Radio Moscow's Danish language programs are to be carried on Radio Viktor and vice versa. According to a report on Radio Denmark, quoted in the *Australian DX News*, Radio Viktor is also looking for a German shortwave outlet for its programs. If the target date was met the Danish-Soviet exchange should be in effect by now.

Another change which should have happened by now is the addition of a second weekly broadcast of Radio Norway's English program "Norway Today," which has been a once-per-week event for as long as we can remember. Thanks to Bill Walbesser in New York for that information. Incidentally, Radio Norway had to discontinue its regular programming for a period in June and July due to a labor dispute.

By now, HCJdB should have a couple of transmitters on the air broadcasting in single sidband. The station's "Ham Radio Today" program announced that 25950 will be used 24 hours a day and 21470 will be in operation from 0600-1600. The 25 MHz frequency will use a quarter wave omnidirectional vertical antenna and the other frequency, intended for Europe and the South Pacific, will use a rhombic. Thanks to Bill Walbesser for this item, too.

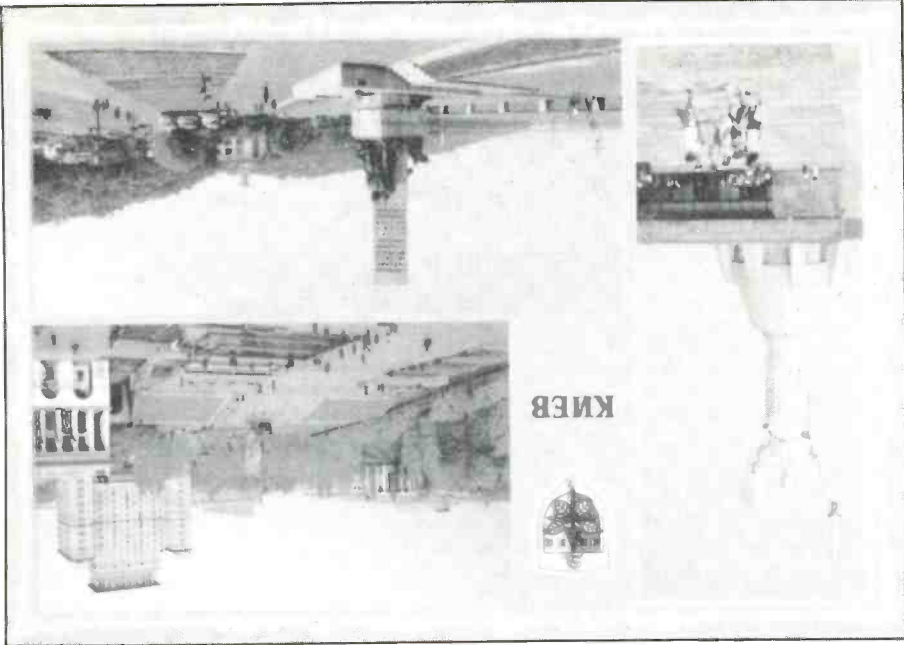
Israel's National Planning Board has voted to approve the VOA relay station in the Negev. The Israeli Parliament was expected to approve the Board's recommendation. The Israeli government had earlier decided to put any further work on the facility on hold until studies could be made on the possible negative impact on the environment though the two former governments were still going their separate ways, as of this writing. For North American listeners the best shot at hearing the station



Here's one of the color photo VOA QSL cards, one of a series they've issued over the years. (Thanks to R. Rogers, Vancouver, BC)

at San'a is from 0300 sign on on 9780 (actually closer to 9779). For the station at Aden, check 7170, also at 0300 sign on. All KHBN—The Voice of Hope in Asia—operated by High Adventure Ministries, may well be on the air from Guam by now. Voice of Hope programs have been aired over Adventist World Radio's KSDA on Guam for a number of months now, but that has been discontinued. KHBN will operate on 9830 from 1000-1600 and 9820 from 2000-0000. Programs will be in English, Chinese and Korean.

Bruce McGibbon ("Listener's Notebook" editor for *The Journal of the North American Shortwave Association*) reports that Radio Philippines says it is not active on shortwave now—even though 6170 is in use to relay programs to Philippine provin-



One of the current Radio Kiev QSLs. (Thanks to Bill Walbesser, NY)

All India Radio has upgraded the quality of its QSL replies in recent years. This one picture is an 11th century court dancer. (Thanks to John Miller, Thomasville, GA)



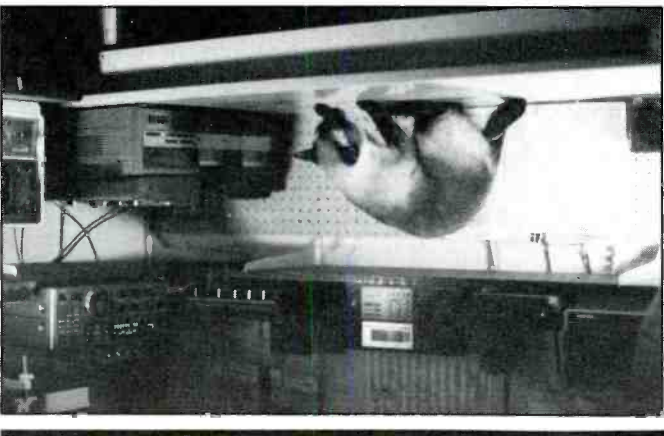
many. (Johnson, IL) 21450 at 0930 to the far east. (Burns, MA) Ecuador: Radio Jesus del Gran Poder, 5050 at 0935 in SS with music and talk, ID at 0945 and 1000. (Mierzwinski, PA) "Radio Comercio," (Burns, MA) HCJB, 17875 with DX Party Line at 0312. (Wal-besser, NY) 0124. (Zamora, MD) 0032. (Neft, FL) 17890 at 1459. (Olson, ND) Egypt: Radio Cairo, 0200 to North America on 9475. Also 15220 at 0038 with AA and very poor modulation. (Johnson, IL) England: BBC, 2232 on 9595, 2325 on 9590/9915. (Olson, ND) 12095 at 2106. (Zamora, CA) 17760 at 2000 sign on. (Miller, GA) Finland: Radio Finland, 11755 at 0600. Also noted 15000 booming in over WVVV at 0000 in possible RR Anthem and IS played at 0028. Not a receiver fault as my brother heard them. What gives? (Possibly a trans-

Austria: Radio Austria International, 9870/9875 at 0145 with DX program, ID, music. (Zamora, ND) 9875 at 0130. (Johnson, IL) Belgium: BRT with "Brussels Calling" on 13675 at 2339. (Johnson, IL) Botswana: Radio Botswana, 7255 at 0350 with baritone IS. (Johnson, IL) Brazil: Radiobras, 11745 at 0200 with announcement about program reconstruction & "best of Brazilian popular music." (Miller, GA) Bulgaria: Radio Sofia, 15290 at 0310 with commentary and mailbag program. (Johnson, IL) Canada: Radio Canada International, 9755 at 2345. (Olson, ND) 15275 to Middle East at 0453. Severe QRM from DW from 0455. (Walbesser, NY) 17875 at 2105 with Listener's Corner. (Neft, FL) China: Radio Beijing, 15100/17705 at 0015 with heavy QRM on 15100. (Walbesser, NY) 17705 at 0045. (Johnson, IL) 17855 at 1204. (Neft, FL) Costa Rica: Radio For Free International, 7375.1 USB, UN Radio features at 0215. Also on 13660 at 0200. (Johnson, IL) 21566 at 2300. (Neft, FL) TIAWR at 1245 on 9725 with ID, religious programs. (Northrup, MO) Cuba: Radio Havana Cuba, 9710 at 0400-0430. (Burns, MA) 9710/9750/11760/11820 at 0400. (Walbesser, NY) 11800 at 1902. (Neft, FL) Czechoslovakia: Radio Pragua International, 7375 with 0100 sign on, news, commentary. (Miller, GA) EE IDs at 1630, 1655, business news in Danish. (Vaage, CA) East Germany: Radio Berlin International, 11890/13610 at 0000, talk on US investment in Ger-

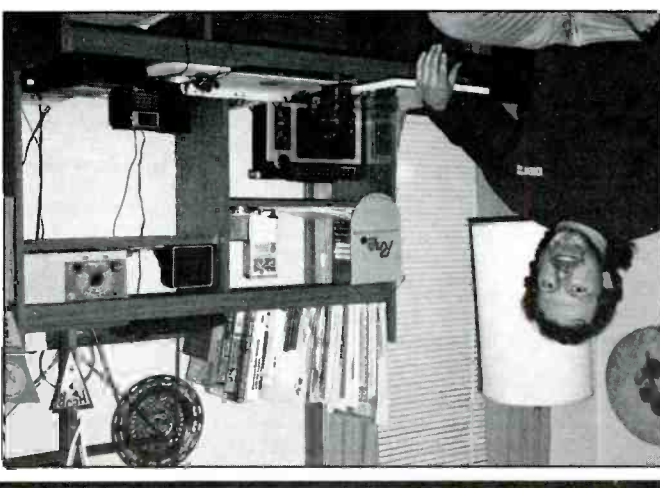
| | |
|-----|-------------------------------------|
| AA | Arabic |
| BC | Broadcasting |
| CC | Chinese |
| EE | English |
| FF | French |
| GG | German |
| ID | Identification |
| IS | Interval Signal |
| JJ | Japanese |
| MX | Music |
| NA | North America |
| NX | News |
| OM | Male |
| PP | Program |
| RR | Russian |
| SA | South American |
| SS | Spanish |
| UTC | Coordinated Universal Time (ex-GMT) |
| V | Frequency varies |
| W | With |
| WX | Weather |
| YL | Female |
| // | Parallel frequencies |

Abbreviation Used in Listening Post

Preston Sewell of Franklin, New Jersey didn't say whether his Siamese cat helps ID the stations Preston hears on that NRD525 shown in the upper right hand corner.



Here's broadcaster Mark Burns in his Somerville, MA shack.



Antigua: Deutsche Welle relay at 0310 on 15205. (Walbesser, NY) BBC relay on 5975 at 0256. (Walbesser, NY) Armenian SSR: Radio Yerevan at 0255 on 11770 with "Review of Your Letters." (Miller, GA) Australia: Radio Australia, 15320 at 0540 with news. (Burns, MA) 17795/21740 in Pacific Service at 0400. (Walbesser, NY) 21740 at 0150 with ID, sports news. (Vaage, CA)

Bill Walbesser wrote to comment very strongly about a commercial on an American shortwave broadcaster that calls on overseas listeners to send in \$10 for "valuable information on how to become an American citizen." Bill notes that such information is available free from embassies and notes that "\$10 is probably more than a week's income for many of the station's listeners in underdeveloped countries." Remember, we always welcome your loggings. Just list them by country, leave some cutting space between each one and add your last name and state abbreviation after each one. Your questions, comments, news clippings extra QSLs, schedules and other station literature are always appreciated. Let's hear from you!

Here are this month's reports. All times are UTC and language used is English unless indicated otherwise.

Antigua: Deutsche Welle relay at 0310 on 15205. (Burns, MA) 9710/9750/11760/11820 at 0400. (Walbesser, NY) 11800 at 1902. (Neft, FL) Czechoslovakia: Radio Pragua International, 7375 with 0100 sign on, news, commentary. (Miller, GA) EE IDs at 1630, 1655, business news in Danish. (Vaage, CA) East Germany: Radio Berlin International, 11890/13610 at 0000, talk on US investment in Ger-

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Improve Your World Image

Trans World Radio, Bonaire, features at 1120 on 11815 (Neff, FL)
New Zealand: Radio New Zealand International, 9855 at 1006 with news, cricket (Neff, FL) 17675 at 0550; report on Tongan History Conference (Johnson, IL)
Niger: La Voix du Sahel, 5020, Koran recitations in AA 0510 (Johnson, IL)
Nigeria: Voice of Nigeria, 7255 at 0505 with music, man in FF (Johnson, IL)
Norway: Radio Norway, 17765 at 1085, IS and announcement in NN/EE about reduced schedule due to an industrial strike (Johnson, IL) Dito at 1315 on 21705 (Zamora, ND) (Back to normal now, editor)
Portugal: Radio Portugal, 15285 at 1505 with music program and PP (Johnson, IL)
Romania: Radio Romania International, 5990 at 0202 with woman and news (Johnson, IL) Here and there //9510//9570//11940 at 0204 with tourist news and sports news in DD (Zamora, ND)
Netherlands Antilles: Radio Netherlands Bonaire relay at 0330 on 6165 (Walbesser, NY)
Netherlands: Radio Netherlands, 9895 at 0136 with Netherlands Antilles (Zamora, ND)
Mexico: Radio Educacion, 6185, 0405 with jazz "Theme For Living" (Johnson, IL)
Malta: Voice of the Mediterranean, 9765 at 0605, with talk and music; Heavy QRM (Perry, TX)
Malaysia: Voice of Malaysia, 15295 at 1233-1240 with pop (Johnson, IL)
Luxembourg: Radio Luxembourg, 6090 at 0110 better (NY)
Kuwait: Radio Kuwait, 13620 in AA at 0218 (Walbesser, NY)
Japan: Radio Japan, 11865 at 1455 with comment-ary and closing (Johnson, IL)
Israel: Kof Israel, 15640 at 2310 with mailbag, DX ture on an Iraqi artist (Johnson, IL)
Iraq: Radio Baghdad, 13660 at 2035 with music, fea-Arabic music (Johnson, IL)
French Guiana: Radio France International relay, 9800, 0315 with news (Perry, TX)
Radio Japan relay, 15325 at 0300 (Burns, MA)
Gabon: Africa No. One, 9580 at 2140 in FF with music (Johnson, IL)
Greece: Voice of Greece at 0215 in Greek on 11645 (Johnson, IL)
Guam: KRTWR on 11805 at 0907 with Swindall study guide, EE and CC word study (Neff, FL)
Honduras: Voz Evangelica, 4820 in SS at 0456-0500 with religious talk; ID, music, abrupt close at 0500 (Mierzwinski, PA)
Hungary: Radio Budapest, 0030 on 9835 with news, commentary (Rabinowitz, MI)
Iceland: SBS in Icelandic at 2300 on 13855//15770//17440. "Ulvarp Reykavik" ID (Johnson, IL)
India: All India Radio with sign on at 1230 on 11620 (Perry, TX)
Iran: VOIRI, 15084 at 0129 with IS, anthem, wom-

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Frank Mierzwinski, Mt. Penn, PA, Mike Perry, Beeville, TX; Hohn Miller, Thomasville, GA; George Neff, Lutz, FL; William Walbesser, Ravena, NY; David Olson, Watford City, ND; Larry R. Zamora, Grand Forks, ND; Bjorn F. Vaage, Granada Hills, CA; Mark A. Northrup, Gladstone, MO; Tim Johnson, Galesburg, IL; Sander J. Rabinowitz, Farmington Hills, MI and Mark T. Burns, Somerville, MA.

possible:
A toast to the following who made it various features (Miller, GA)
Yugoslavia: Radio Yugoslavia, 15105 at 2100 with sports ID (Perry, TX)
West Germany: Deutsche Welle, 11810 at 0330 2112 to 2128 close (Zamora, ND) and Mind program (Miller, GA) 21650 to Africa at Vatican Radio, 9605 at 0050 with "Heart and woman and ID, 1213-1229 sign off (Perry, TX)
Uzbek SSR: Radio Tashkent, 15460 news by man (Walbesser, NY)
USSR: Radio Moscow, 11710 at 2200, 17670/17695 at 1720 (Johnson, IL) 11895 at 1706 (Vaage, CA) 15355 at 2334, 15550 at 0000, 17560 at 0332 shirt offer (Neff, FL)
KUSW, 15590 at 1818 with Grundig commercial, WINB, 15295 at 1830, inspirational music (Neff, FL) WRNO, 15420 at 2030 (Johnson, IL)
al-Sunday nights - not to be missed
gram. This is a very strange show (Johnson, IL) 15690 at 1400, religion (Neff, FL) Radio New York International, WWCN 7520 at 0020 with Radio Free America pro-1235 (Northrup, MO)
United States: Radio Marti (via VOA) 9590 in SS at lish. Continued in AA (Zamora, ND)
"Beautiful Arabia" program, 1356 ID and close in Eng-United Arab Emirates: UAE Radio, Dubai, 15435 at 0530 in AA (Johnson, IL) 21605 at 1355 with "Beautiful Arabia" program, 1356 ID and close in Eng-fairs (Walbesser, NY)
United Arab Emirates: UAE Radio, Dubai, 15435 with WBEZ Chicago for open discussion of political af-

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SATELLITE VIEW

INSIDE THE WORLD OF SATELLITE COMMUNICATIONS

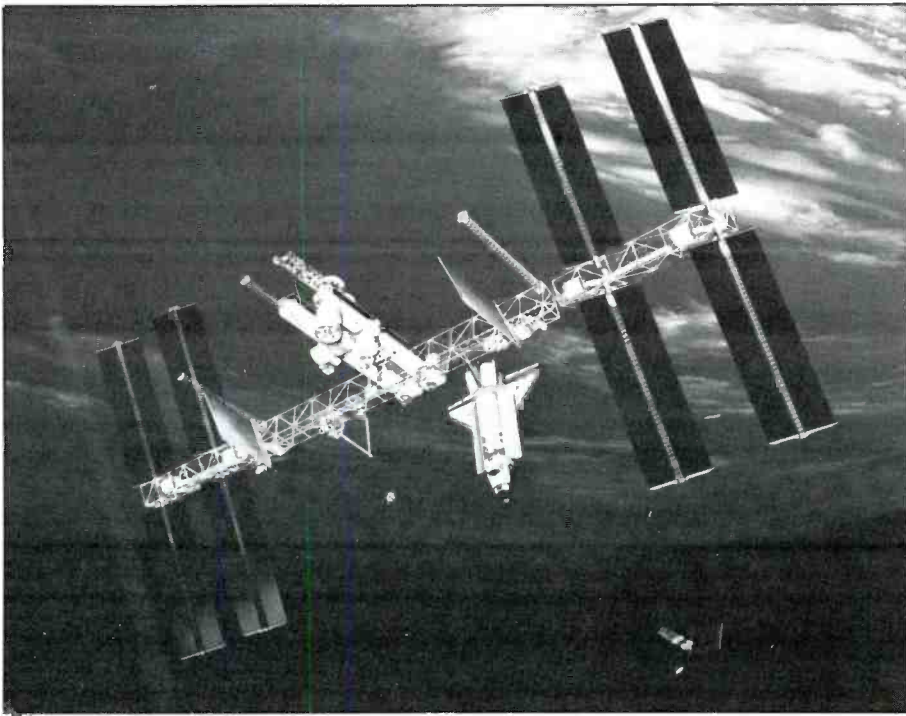
Freedom

Freedom is a funny thing. Ask a dozen people what the word means and you will get a dozen different answers. There is one definition spouted by those who think the government's only legitimate role is to collect taxes and to participate in wars. They don't feel the government has any role to play in people problems or any problem-fixing for that matter. A paraphrase of their philosophy would go something like this: "In this country you are free to succeed or fail totally on your own"; apparently without the help or interference of the government. Of course, such people forget about such things as Rural Electrification, TVA, Child Labor Laws, the 40 hour work week, Workers Comp, Social Security, the Post Office and even reaching the moon within ten years of President Kennedy's making it a national goal.

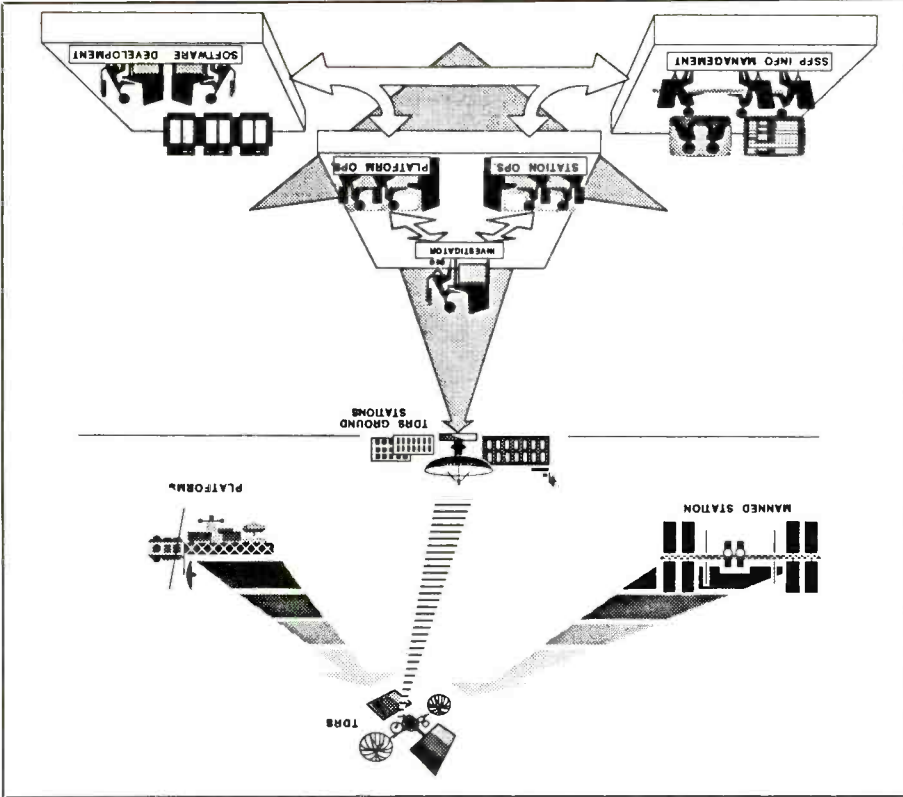
This brings us to the subject of Freedom, our proposed space station project. If the rather conservative formula for success or failure is applied to space station project, it would appear to be a failure, at best it is floundering. It has already taken longer to decide the configuration of the space station than it took us to reach the moon, starting from scratch 21 years ago. As NASA, DOD, and the government in general, flounder in the second decade without leadership or well-defined goals, (for the space program or any of the other pressing problems of our times, i.e., housing, health care, education, trade, the national debt, and, of course, now, the price of gouging by the oil companies) the cost of the space station has gone from 8 to 40 billion dollars. We have a Shuttle fleet we can't fly and we can't really afford them when they do. We even have trouble launching what could be called 'dumb' rockets with any regularity.

What has brought one of the more powerful nations to place second in space behind, of all countries, the economically crippled USSR? What has happened during the last ten years to turn our nation into the world's greatest debtor nation? We had always been the world's greatest lending nation. The nation that was instrumental in defeating the Germans and Japanese in World War II, and in holding off the Communists in Eastern Europe has been reduced to gloat-ing about its military victory over 50 Cubans with machine guns on an isolated rock in the Caribbean.

One of America's oldest professions is responsible, in part, for America's decline. No, not that one, but espionage. The Spy.



Artist conception of the baseline configuration of Space Station Freedom manned base.



FREEDOM FREQUENCIES

Proposed AMSAT (Phase IV bands)

| | | |
|--------|-----------------|-------------------|
| B-Mode | 145 MHz uplink | 145 MHz downlink |
| J-Mode | 435 MHz uplink | 435 MHz downlink |
| L-Mode | 1260 MHz uplink | 435 MHz downlink |
| S-Mode | 1260 MHz uplink | 2401 MHz downlink |

Proposed TDRS Video Link
1.750 - 2300 MHz

Proposed SAREX/Freedom bands
144.70 - 144.97 MHz uplink
145.51 - 145.59 downlink

AMSAT hopes to equip Freedom with all AMSAT bands as well as 220 and 10 meters to accommodate the new communicators class license.

EOS

One specialized area of operation for space station Freedom will be several free flying platforms. The EOS, Earth Observation System is one of three such systems planned for the station. EOS will be used to monitor environmental concerns on earth. The other two systems will be provided by The European Space Agency (ESA). The Columbus Polar Platform and Free Flying Laboratory will be used for experiments and projects that are too dangerous to be carried on Freedom. The platforms will orbit at 98 degrees inclination at 433 miles altitude

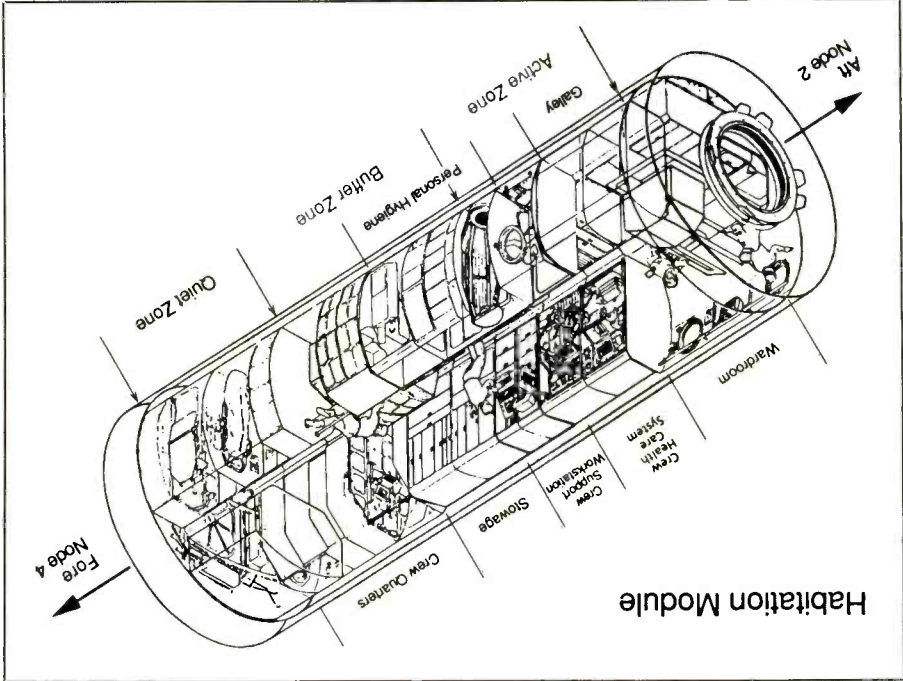
Industrial Complex, a marriage surely made in Hell, we would one day find ourselves facing our greatest National Security Risk, one of our own making. Instead of taking action to correct this problem, we have, during the last 10 years complicated any possible solution by an almost total deregulation

Freedom Radio

Bill Tynan, AMSAT's Manned Spaceflight Coordinator reports AMSAT and the ARRL have submitted a formal proposal to NASA for a permanent Amateur Radio station on board Freedom. Mr. Tynan further stated that the up-coming SAREX (Shuttle Amateur Radio Experiment) flights, STS-35 and STS-37, will play an important part in selling the idea to NASA. Both flights will demonstrate that Amateur audio, video and data transmissions can be sent from the Shuttle during normal operation. Once Freedom has been equipped with the Amateur gear, it will be used to provide regular demonstrations for our public school system. As Freedom will be in low earth orbit, at least three geostationary satellites will be needed to provide continuous communication for the educational system. AMSAT hopes to have its own satellites in place in the near future. Unlike the TDRS satellites will be used for the system.

Crew Quarters

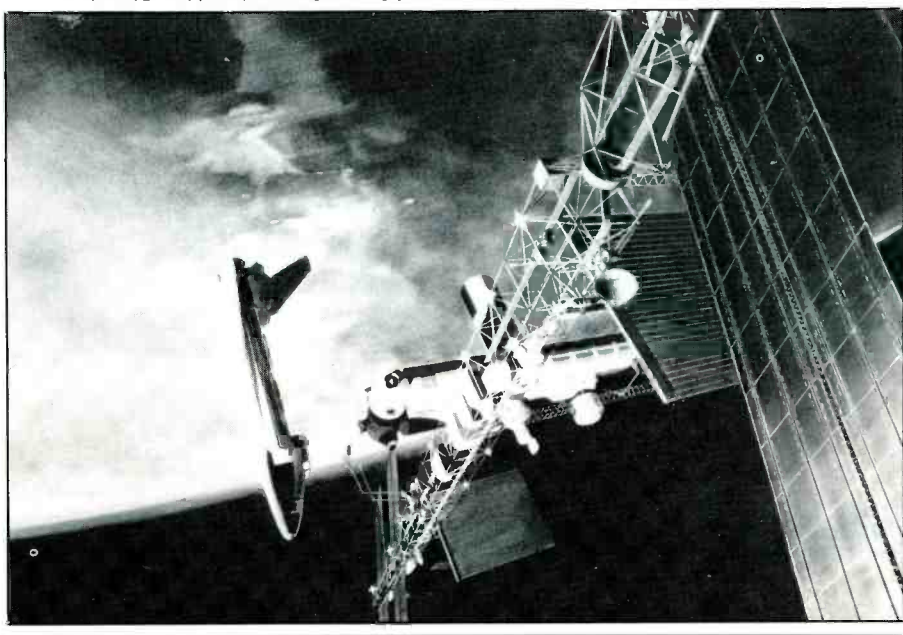
Each astronaut will have his own soundproof compartment on the new space station. It will measure 150 square feet and will contain a TV set, VCR, stereo, video telephone for those personal talks to the family, and a computer.



So what does this have to do with the case in the Challenger incident. Profits are the prime motivators of Capitalism. Profit is the code word for greed, white-hot uncontrolled Avarice. Corporate spies have so infiltrated every agency and department that it's hardly accurate to say we have any government at all. The mob, so to speak, has taken over. Of course, the only difference between a mobster and a businessman is getting caught. And even when DOD contractors, for example, are caught, as in the

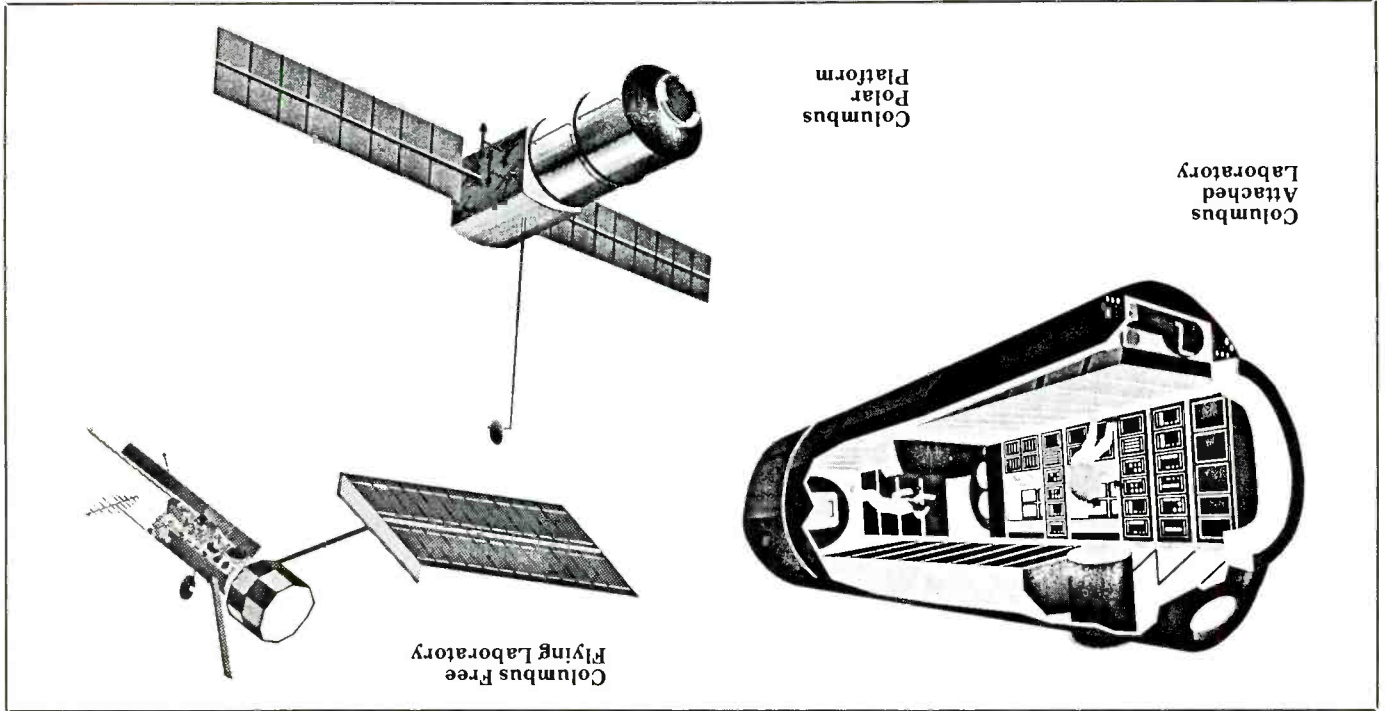
ago that unless the Federal Government took steps to control what he called Military

W. Will Hero and President of the US named Eisenhower. He warned us over 32 years



Artist conception of enhanced configuration of Space Station by: Alan Chinchar.

European Space Agency (ESA)



Please send all reader inquiries directly.

PC

of business at the same time we stopped any enforcement of antitrust laws. Even in the light of the Challenger incident, there is not and has been no accountability, and nothing in the system has been changed to prevent this from happening again. Why does a space shuttle explode in mid-air? Why can't we get a launch vehicle off the ground? Why is the Hubble space telescope a 2 billion dollar piece of space junk before it reaches space? And after 12 years in the planning we don't find out about it until after it reaches orbit. The answer, my dear Watson, is simple, the profit motive. Who gets the next multi-million dollar contract to build more poorly designed fuel tanks for the Shuttle? The contractor who built the first ones. Who do you think will get the multi-billion dollar contract to try to fix the Hubble? The contractor who built the first one. The Fox is in the henhouse as they say down on the farm. Even if we had the political will to change things, and I don't for a minute think we do, the fix would have to be radical. That's the same as saying it will never happen. 1984 will just arrive later than anticipated and Big Brother won't be the government, but multi-national corporations. If you don't believe it, just look at what happened to gasoline prices the day after Iraq invaded Kuwait.

If the Freedom project is an example of the best our Space and Defense contractors can do, it's time to Nationalize the industry. That would go a long way in retiring our national debt. With our current debt it is doubtful we could sustain a protracted war in the Middle-East; even if our war machines work better than our space machines, let's hope corporate greed has not already determined the winner of the next war.

See you next month.

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BY DON SCHIMMEL

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

Some more first time contributors have joined us. Thomas Nichols, IN uses a Sony 2010, Mag D2999 and a PRO 2005 for his

Keith Wyatt, CA says he has a Realistic DX440 with an indoor 65' dipole. He has been a SWL since the age of 15 and a Ham since he was 17. He was in the service stationed in W. Germany for 3 years and reports he heard numerous number transmissions that were S9 + 30. He and a friend tracked one of the stations and found it to be located only about 10 km from where he was stationed. The site had two large satellite dishes and several HF antennas.

Bjorn Vaage, CA recently got a new ICOM-765 HF Transceiver. It also covers the VLF band so he checked out that band to see what he could hear. After reducing the noise level by adding a 6' ground rod to the installation he heard many beacons. He lengthened his longwire antenna to 378'.

Darrell Larose, Ontario, Canada wrote "I have been monitoring VHF/UHF for about 5 years starting with a Realistic 2001, then a Realistic PRO-30, and now a PRO-2005. Last Winter, I bought an old Hallcrafters S-108 receiver and recently put up a 66' Windom suspended 25' high with 44' with the long leg running East/West and the short leg running SE to NW (due to lot size)."

We welcome these first time contributors and look forward to receiving additional loggings from them.

Larry McMahan, GA reports he heard Freemason on 17937 kHz calling Hammer for a "radio check on 17 MHz." At 1706, Freemason again called for a radio check from Hammer. Larry did not hear a reply to the two requests so he checked 17601 kHz, channel XG but likewise did not hear anything on that frequency. He later found another anti-smuggler freq of 17592 kHz which has the channel designation of "Yan-kee Foxtrot."

The latest information from Andy Gordon, CT indicated that the new Nimitz class aircraft carrier, USS George Washington CVN73, would have MARS call NNNOCGW and that the vans of the Fleet Electronic Warfare Support Group (COMFEWSG) all have their own sets of MARS call signs. These vans are called "CSS" vans. The CSS stands for Countermeasures Simulation System.

Andy also describes two emergency situations he heard while monitoring USCG communications. "A trawler was working USCG Comsta Boston to advise that the skipper and a trusted mate had locked

UNITED STATES NAVAL COMMUNICATIONS

To: NAORON
 From: NHR
 AI 2212 GMT
 Of: 8578
 KC On 23 DEC 19 64
 Remarks Thank you for your letter. This is one of several frequencies providing communications throughout the Pacific.
 Signature R. O. KOSLAND Executive Officer

QSL UR SWL RPT

QSL from the collection of Owen Williamson, MN. Sent in by Rita Williamson, TX.

themselves in the pilot house because the crew was threatening to kill them." The vessel was off Nantucket, MA and USCG Group Woods Hole and USCG Alert WMEC630 coordinated a rescue effort. A USCG Falcon aircraft was overheard with 2 rescue helos nearby. The crew gave in and let the trawler sail into New Bedford, MA.

The same type of scenario was also taking place out of Long Beach Island, NJ as a fishing vessel reported the skipper had been assaulted by a belligerent crew, also threatening his life.

The USCG Cape May, NJ station advised the vessel that they would try to get a Falcon a/c overhead, or a Cutter to them on the next day.

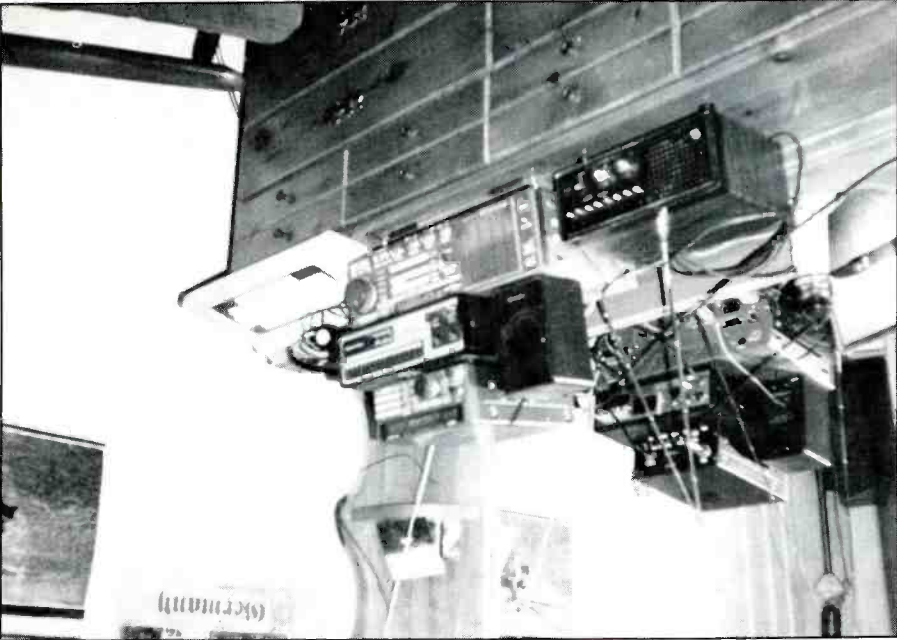
Communications concerning the two stations continued through the night between USCG Group Woods Hole, MA,

USCG Group Sandy Hook, NJ and USCG Group Cape May, NJ during 2330-0230 on 6200 and 2670 kHz.

Simon Mason, England, forwarded a British press item with a Bonn, West Germany dateline which described the discontinuance of a East German "Spy" broadcast. Simon passed on these comments about the article. "Here is a cutting from a recent edition of 'The Daily Telegraph' newspaper. Unfortunately, the frequency of the 'Lightship Bell' sign-on station was not the 3220 kHz indicated in the article, but rather was 3258 kHz. It also terminated transmissions in April 1990 and not in June as stated in the item text. The station was apparently an important one because it was on the air virtually every night from 1700-2100 and also sometimes around 0400-0600. It thus seemed to be a working station and not a bogus one like some EE & GG 3/2F stations that send the same text up to a year apart."

From Stephen Biro, FL, we received a news item carried in the "Orlando Sentinel" which seemed to be based on the same Bonn released information.

A person signing as "Anonymous, PA" sent in some details related to anti-drug operations in the Caribbean. AMBUSH is a military base possible in Puerto Rico. CON-DOR is a military base somewhere farther south of AMBUSH. ANGRY WARRIOR is possibly March AFB, CA. Morale calls are regularly heard on 17,443 kHz (Tango



Here is a photo of the listening station of Jerry Cody, WA. His equipment includes a Trio/Kenwood R2000, Yaesu FRG-9600, and a Realistic COMP-100 Scanner.

11545Y/L/Yiddish on USB a 2242 w/msg in 3/2F grps. Not in Hebrew as thought by some people. Nbrs sound like ein, isvet, drej, fier, fmet, seks, sibben, acht, nejn, and isetro (instead of the usual "nul" for zero). End at 2248 (Margolis, IL).

12315 NTCH, USS Thomas C. Hart FF1092 wkg Norfolk SESSEF at 1830 for testing on 12 megs. After that no joy on 7 megs. (Gordon, CT)

12907.5 VHP, Royal Australian Navy, Belconnen, Australia in CW at 1033 w/mkr of VVV (3x) VHP 2/3/4/5/6QK (Margolis, IL).

13113.3 USCG Comsta Guam at 0650 wkg Philp-pine ship Micronesia Commerce (on 12342.4 kHz) re-medivac case. Navy a/c Papa Romeo 42 and Rescue 04 were dispatched and arrived by 0815. Terms changed from "patient" to "body" so the subject didn't make it. Guam was also hrd helping US Army vessel Klingner con-duct RTTY tests (Watts, KY).

1324 MAC 60019 in USB at 2250 wkg Navy Jack-sonville via pp thru Ascension re cargo/passenger data, flight data, and wx. (Fernandez, MA)

13280. Tokyo, Japan Aeronautical radio w/wx re-ports at 0810. (Wyatt, CA)

13323. U/I sm ckg RG2 repeatedly. Sometimes sends RG2 DE but never completes with callign. CW at 1220. At 1223 begins send msg in broken EE. Xmsn ended 1253. (Margolis, IL) This poss from Taiwanese fishing vessels in Atlantic and/or Caribbean waters. (Ed.)

13330: Houston w/wx for Key 10416 in USB at 1826 (Watts, KY)

13907: OM/EE talking about test. Broke to headline contact USB at 2103 (Wyatt, CA)

13931.5: ONY27, NATO, Mons, Belgium in CW at 2000-2020 w/alphabetic numeric tic to ONY24 (u/i). Rpid same tic continuously as a mkr. (McMahan, GA)

13942: OM/SS & YL/SS w/comms on USB at 2017. This freq used by CLP1, MFA, Havana, Cuba for RTTY xmsns. (Margolis, IL)

13996: AGA0AS, Paraguay in USB at 0050 wkg 4BW in Puerto Rico. (Symington, OH)

14270: XYL/EE with YL/EE in background reading nbrs slightly before XYL. AM mode at 0455. Then at 0503 00000 & XYL stopped but YL said 136 (XB) then silence. (Larose, Canada)

14383: NNN0CXU, USNS Neosha wkg NNN0KRQ w/pp. USB at 0057. (Symington, OH)

1441.5: NZTV, USS Jettie CG29 (NNN0NZO) ckg "any Conus MARS station" at 0225. (Gordon, CT)

14465.5: U/I sm w/5F grps, zero cut as T, in CW at 2331. Msgs were sent to sin on 14465 kHz that gave QSL's in SS. Xmsn ended at 2342. (Margolis, IL)

14470: NNN0CED in USB at 0043 attempted 3 pps w/NNN0NM. (Symington, OH)

14487: YL/EE pping 75531 between 0600-0610 w/tune Lincolnton Peacher. The pair of this freq is 15682 kHz. Warble jammers not affecting station as is usually the case. USB mode. (Mason, England)

16244: U/I w/telex in FT requesting quick response for wx from a Director of Civil Aviation. Telex mentioned Air Mauritius. CW at 1232. At 1241 same msg sent in EE. Off at 1252 returning at 1300 w/bret coded msg with ltr O's and #s foll by request for clearance and overflight. Off at 1310. (Margolis, IL) One form of cut nbrs is where 1-9 are sent full but zero is cut as the ltr O. (Ed.)

17015: SLHFH "O" at 0015. The "O" sent 20 times per minute. (D. P., NC)

17952: Ranch House, Almighty and Slingshot w/rdch checks on Anti-Smuggler channel Yankee Foxtrol. USB at 1736 (McMahan, GA)

19070: Moscow Radiotelephone Service in LSB at 1623 with YL/EE test tape. (McMahan, GA)

19594: U/I in CW w/5L msgs that begin "OLOAD QRA DE RIQ...". First hrd at 1750 & ran con-tinuously for many hours. (Margolis, IL)

20129: U/I in CW pping VAVE ENDE UB4V (cut nbrs). Hrd 2337-2341. (Margolis, IL)

20720: PPK, Embraer, Rio de Janeiro, Brazil w/ton call in PP on USB at 2304. (Margolis, IL)

21863.5: North Korean Embassy, Havana, Cuba in CW at 1824 w/coded tic. Digits noted were 3,4,5,6,7 and letters were ADEFGHKMNPQRSTUWV. (Margolis, IL)

23946.3: OM/EE w/USB pp in dpx at 1530. Ap-peared be from USAF Ascension Island to Patrick AFB, FL. OM mentioned he was "on the island" and having been to Patrick. (Margolis, IL)

"Go Green" (encrypt) which they then did. (Wyatt, CA)

about 12 hour mission to SE Asia. Old Salt notified them 11342. USAF Task Force on USB at 0216. Talked son, England)

11309: Santa Maria Air Control in Azores w/post-ions of various North Atlantic a/c. USB at 0110. (Ma-chicks. (Nichols, IN)

6 Mike Sierra at 0238, no answer. All calls for rdo Tango Kilo calls Lima 3 Echo at 0237. Lima 3 Echo calls Lima 3 Echo calls 6 Mike Sierra at 0236, no answer. I

11267: 6 Mike Sierra calls 9 Romeo Alpha at 0235; upon arrival. (Wyatt, CA)

w/pp to Hickam AFB, VIP needed 20 lbs of ice at gate 2230 local due to quiet hours. Navy a/c 119 at 0145 eta to 3 hours later. Gunrunner advised K60 to arrive by 0825: a/c K60 w/pp at 0145 to Gunrunner. Changed

11239: 50257 (a/c) w/pp to McClellan in USB at upcoming landing sites in Germany. (Fernandez, MA)

wkg Trenton Metro via pp thru Trenton Military re wx at

11233: Canadian Force 409 (a/c) in USB at 2323 10135 kHz. USB mode. (Mason, England)

tones & Guppen 144. Text in 4F grps and simulcast on

11237: YL/CG w/-1-0 count and 349. At 1900 ten coded wx. (D. P., NC)

11212: U/I sm in CW at 0030 w/what appears be around England. USB at 0500. (Fernandez, MA)

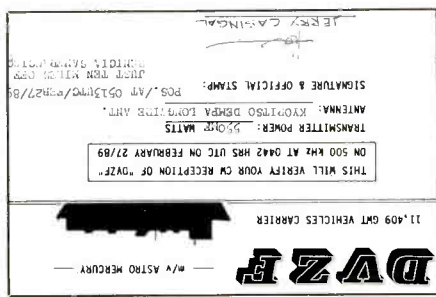
11204: Architect (RAF, England) w/wx for terminals 0028 w/wx. (D. P., NC)

11200: NVU, West Drayton, England in USB at a/c w/Aeroflot prefix IDs w/flight data in RR. (Ferman-

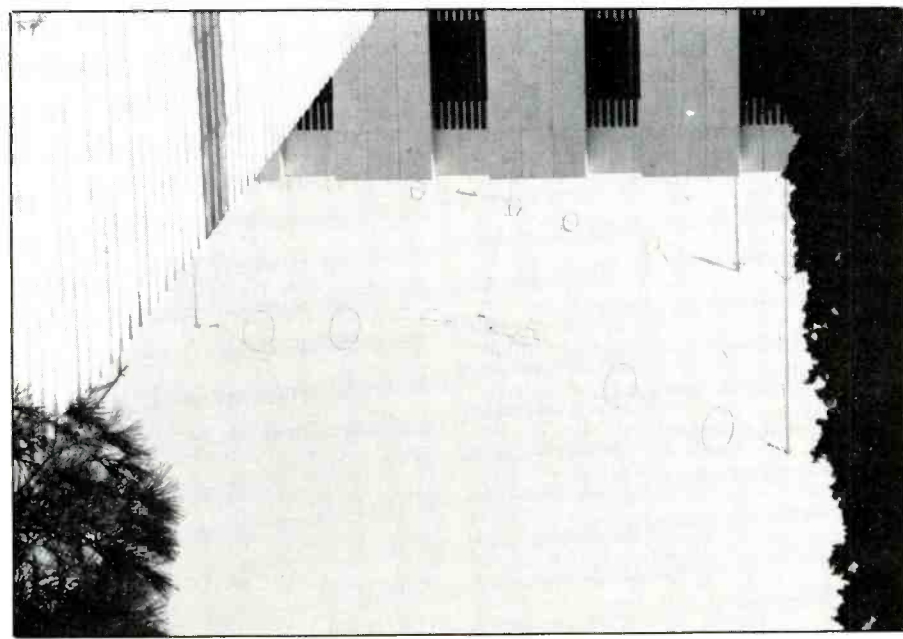
11193: Moscow ATC in USB at 2312 wkg several Capes. USB at 2310. (Fernandez, MA)

dar tracks. Ops similar to those of FACSFAC in Va-

This PFC was returned to Steve McDonald, BC, Canada.



Antennas on roof of Soviet Embassy, Athens, Greece. Photo courtesy of Desmond Ball, Australia.



11191: Hershey (Control) wkg several u/sims re-ra-APB, HI for upcoming landing. (Fernandez, MA)

mission status reports. Also request for wx at Hickham pp thru Letterman at 0450 re flight data, passengers & **11179**: MAC 60148 in USB wkg Command Post via x 2. (Fernandez, MA)

11160: YL/EE in AM at 0142 w/5F grps, each grp sailing & off at 0015. USB at 0010. (D. P., NC)

One said he had to fix his stabilizer. S/off w/"smooth foul language) to vent his feelings re current duty QTH. Lima 3 Echo calls 6 Mike Sierra at 0236, no answer. I

11111: 2. Two u/sims w/OM-EE ops (one using 2707 kHz. Rpid every 6 hrs. (Mason, England)

351/974/156/064 & 541 Simulcast on 7404. 5015 & AM w/electronic tones in background. At 0605 msgs for eta to 3 hours later. Gunrunner advised K60 to arrive by 0825: a/c K60 w/pp at 0145 to Gunrunner. Changed

11108: No text to follow. (Fernandez, MA)

10970: YL/EE in AM at 0148 w/Victor Lima Bravo upcoming landing sites in Germany. (Fernandez, MA)

wkg Trenton Metro via pp thru Trenton Military re wx at

10400: YL/CG in AM at 0210 w/3*2F grps. (Fer-Gordon, CT)

3 HF emitters in all modes then shifted to UHF testing tones & Guppen 144. Text in 4F grps and simulcast on

9950: NQTN, USS Fortify, MSO446 wkg Charleston (SESEF Charleston) at 1800. Fortify tested

9865: YL/CG in AM at 0438 w/3 + 2F grps. (Watts, by members. (McMahan, GA)

Command Post. Callign used by a/c carrying 1st Famli-Foxtrol, a/c enroute from ME w/pp to Meteo & SAM

9317: Andrews AFB in USB at 2330 wkg Executive 1 dez. (MA)

9222: YL/SS in AM at 0218 w/4F text. (Fernandez, gtp. Final at 0611. (Cafferty, MA)

9124: YL/SS at 0600 w/callup for 684-04 into 855F (Fernandez, MA)

9015: SLHFH "W" hrd at 0200. (Margolis, IL)

of/best of wx conditions at Canadian terminals at 0221. (Fernandez, MA)

9010: Halifax Military (RCAP), OM/EE in USB w/radar tracking at 0203. (Fernandez, MA)

kee, Romeo 6 Alpha & other sims (incl Blue Star) on nei-**8972**: USN-ASW Atlantic ops USB w/3 Mike Yan-nder. (MA)

pect a/c passing over airfield (no locations given). (Fer-**8912**: Two u/sims in USB at 0218 w/comms re sus-numerous a/c re flight data. (Fernandez, MA)

8867: Sydney, Australia ATC in USB at 0548 wkg 148 & other a/c re flight data. (Fernandez, MA)

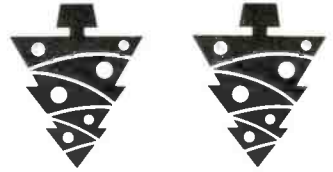
8846: New York ATC in USB at 2355 wkg Cubana Sunbal (on 8269 kHz) for pp. (Symington, OH)

8793: WOM, Miami, FL in USB at 0108 wkg m/v at 0749 w/mkr. (Wyatt, CA)

8592: HPP, Panama Inletmar Radio, Panama in CW 0110 wkg WOM, Miami, FL w/pp. (Symington, OH)

8288: WTF049, Yacht Queen Mary 4 in USB at

PC



Winding Down 1990

Here's a wish for all of the best wishes of the Holiday Season from us to you and yours!

The only plus to this is that if any cosmic civilization is also monitoring all of these lids, that's probably enough to convince them not to invade this place.

Of course, the image of Americans propagated via radio isn't limited to this alone. When you listen on certain ham frequencies (I have 3868 kHz and 14313 kHz in mind, but there are many others), and when you hear the barnyard sounds and distorted echo chambers on CB, you realize that we are hard at work painting a very negative image of ourselves, while also wasting a lot of spectrum.

Maybe the military should teach its communicators about radio etiquette when dealing with the public, even when it comes to foreign nationals blundering on to frequencies that they should know better than using because we think we own them.

It's that it's being transmitted so that everybody with a receiver, throughout the world, has a chance to hear it taking place. It goes a long way towards giving these people the image they have of Americans.

The worst thing about this policy isn't that it's incorrect, nor that it's rude and arrogant. The concept of having claimed such rights for a foreign station off a frequency based upon No station or nation has the right to order a bal basis, for its own military or other uses. exclusive claim to any frequency, on a global basis, for its own military or other uses.

They kept right on talking through continuing efforts by Fort Huachuca to evict them. There are some frequencies (like 500 kHz, 5680 kHz, 121.5 MHz, etc.) that are set aside internationally for specific purposes. But no one nation has the right to lay

claim to any frequency, on a global basis, for its own military or other uses. The worst thing about this policy isn't that it's incorrect, nor that it's rude and arrogant. The concept of having claimed such rights for a foreign station off a frequency based upon No station or nation has the right to order a bal basis, for its own military or other uses. exclusive claim to any frequency, on a global basis, for its own military or other uses.

I have, myself, noticed something very similar to this in the VHF "low band." A Spanish language comm system was being monitored when an official-sounding voice came on and advised them that they were on an operational frequency assigned to the U.S. Army at Fort Huachuca, and would they please vacate the frequency immediately. I don't know where the Spanish stations were, but either they couldn't hear Ft. Huachuca (in Arizona), and/or they couldn't understand English, and/or they were less than impressed with his directive. They kept right on talking through continuing efforts by Fort Huachuca to evict them.

Beaming In (from page 4)

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Inside Pirate Radio running time: approx. 60 minutes

Ham Column (from page 51)

of quality time my son and I spend together. Michael's confidence has increased tenfold, and he now thinks of ideas with a world consciousness. He is also ahead of me on DXCC.

I can think of few pastimes where father and son can participate on equal footing and learn so much about the world we live in. Additionally, we have gained technical knowledge as we have upgraded. Currently, Michael is a General Class and I am an Extra. Through pushing and encouraging one another, we achieved this in less than a year.

If there's a moral to the story, it's simple. Invest time in your children or your grandchildren. Encourage them in ham radio if you can. Encourage them to become SWLs. Either will mature them immensely. But if you can't, encourage them in some thing worthwhile. We can all afford to spend more time with our children and grandchildren, right?

Currently, my youngest son, Jacob, and my XYL, Cris, are working toward their No-vice tickets. Then, we'll have four hams vying for time on the radio. What a pleasant problem!—Mike Crowover, KB5L5.

If my mailbox is an indicator, you must be gearing up for the fall/winter operating season. Keep your letters and photos coming to me at ARRL, Department PCN, 225 Main Street, Newington, CT 06111. **PC**

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CIRCLE 63 ON READER SERVICE CARD

Pirate Station Shut Down Again In Floral Park, New York

The FCC's New York Office shut down an unlicensed FM radio station operating on 91.9 MHz on the FM band. The unlicensed station was being operated by Joseph Sapanaro, Jr., who was fined \$1,500 for unlicensed operation. The Commission had previously shut down a pirate radio station operated by Joseph Sapanaro, Jr. on January 7, 1981. The pirate station was called WFPA.

An FCC public affairs specialist heard the pirate station broadcasting on the evening of July 26, 1990. Subsequently, an FCC engineer used mobile radio direction-finding equipment to locate the station at a house in Floral Park, New York.

Amateur Operator Arrested After Threatening FCC Investigator

Unlicensed radio operation is a violation of Section 301 of the Communications Act of 1934, as amended. Sanctions may include administrative fines of up to \$10,000 and/or criminal penalties of up to \$100,000 and/or imprisonment for up to one year. Misuse of radio frequencies is a serious offense because of its potential for interfering with safety-of-life services such as aviation, law enforcement and marine.

This case came to the FCC's attention after members of the amateur community complained that Marcantonio was interfering with amateur radio communications by transmitting unidentified, disruptive signals on the two-meter amateur radio band. On July 27, 1990, FCC investigators, using direction-finding equipment, traced the signal to the Marcantonio home. The investigators discussed the situation with a family member who then shut the transmitter off. The transmissions resumed that evening and continued into the next day. It was then that Marcantonio made the threat.

On August 2, 1990, FBI agents with assistance of FCC investigators arrested a New York City amateur radio operator and seized 20 pieces of his radio transmitting equipment. The action took place after the amateur made death threats over the radio against an FCC investigator. The United States charged Anthony V. Marcantonio, of the Douglas section of Queens, with making threats by radio. This crime is a felony and carries a penalty of up to five years in prison, a \$250,000 fine, or both. A federal judge set Mr. Marcantonio's bond at \$50,000 following a hearing.

Mr. Marcantonio holds a Novice Class radio operator license, KA2ZGE.

Unlicensed Ham Radio Operator Convicted Of Felony

Richard A. Burton, an unlicensed radio operator, was found guilty in Federal District Court on July 20, 1990, in Los Angeles of operating an amateur radio station without an FCC license. A jury found the defendant had violated Sections 301 and 501 of the Communications Act regarding unlicensed radio operation. The latest conviction is a felony conviction since Mr. Burton had been convicted of similar violations in 1982.

Mr. Burton made the unlicensed radio communications in the two meter Amateur Band from his residence in Harbor City, California, during March 1990. His equipment was seized as evidence and on May 11, 1990, he was indicted by a Federal Grand Jury in Los Angeles.

The FCC had suspended Mr. Burton's radio operator's license in September 1981 for violation of several FCC Rules and Regulations. Shortly thereafter, evidence of his continued radio operation was obtained by the FCC's Los Angeles Office. At the time of his first conviction he was sentenced to six months in prison and placed on probation for five years.

For this latest offense, Mr. Burton faced a possible sentence of up to two years in prison and/or a fine of up to \$250,000.

FCC Reorganizes Emergency Broadcast System Functions

The Commission reassigned the Emergency Broadcast System (EBS) function, including responsibility for the Emergency Broadcast System Advisory Committee, from the Office of the Managing Director to the Field Operations Bureau (FOB).

The EBS was established in response to a Presidential statement of requirements and, in recent years, has been used extensively on a voluntary basis at the State and local levels to provide the public with emergency notification and information. The Commission is charged by statute with promoting national defense and safety of life and property in its regulatory activities. In addition, the Executive Office of the President has delegated or assigned to the Commission additional responsibilities for civil sector emergency communications. These activities are carried out under the overall direction of the overall director.

FOB will review the objectives of the EBS program and evaluate how well the current program meets them, and as necessary, develop and implement plans to better achieve the EBS objectives. The reorganization, the Commission stated, will integrate EBS activities into FOB's field infrastructure, thus increasing the technical and administrative support of the program. This will allow the FCC to work closely with states and local areas in maintaining an effective EBS program.

Restricted Radiotelephone Operator Permit In Domestic Aviation And Maritime Services Eliminated

The Commission has, in certain cases, eliminated the requirement for the Restricted Radiotelephone Operator Permit in the domestic Aviation and Maritime Services. Those aircraft pilots who fly only in U.S. airspace and those vessel captains and operators who communicate using only VHF frequencies and never plan to sail into a foreign port are no longer required to hold a Restricted Radiotelephone Operators permit. This action was taken by the Commission in PR Docket 84-760 in January of 1986 (FCC85-42). This is a reminder.

Amateur Service More Accessible To Handicapped Persons

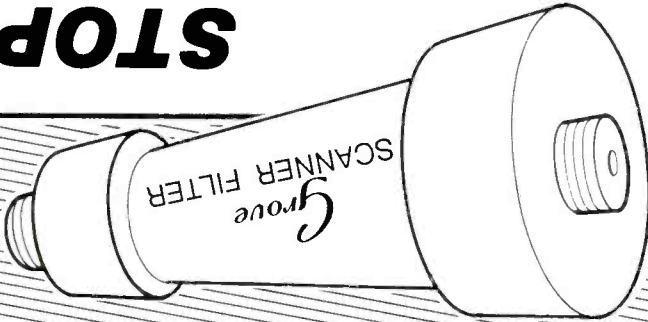
The Commission proposed amending its rules to make the amateur radio service more accessible to handicapped persons. The Commission is taking this action to accommodate those persons who, because of severe handicaps, have extraordinary difficulty in passing the higher speed Morse code telegraphy examinations for amateur operator licenses.

The amateur service is open to qualified persons interested in radio technique for personal reasons and without pecuniary interest and provides those individuals with the opportunity for self-training, intercommunication and technical investigation. To qualify for an amateur operator license, applicants must pass both written and telegraphy examinations which are used by the administering volunteer examiners (VEs) to determine the class of operator license for which the person is qualified. Currently, the required telegraphy speed for the Novice and Technician classes of operator license is 5 wpm, 13 wpm for the General and Ad-

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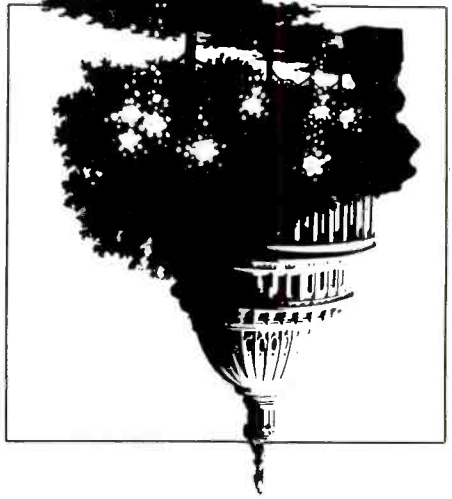
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- Frequency selection in the Model DX-EE is by a combination of special broadband RF choke-resonators and full size radiators on various ranges. An antenna loaded with a number of traps in each wire is so narrow-banded, its useful ranges are severely limited.
- Special hardware and connector arrangement on the Model DX-EE accepts either balanced or coax feed. With other brands you have to make a choice of models.
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- "No-Trap" design provides exceptional broad spectrum receive coverage from 5 MHz thru 30 MHz. Covers world-band broadcasts and "utility" frequencies in a single antenna.
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vanced classes, and 20 wpm for the Ama-

teur Extra class.

To make all classes of operator licenses accessible to persons who, because of their handicaps, cannot pass the required tele-

graphy examinations, the VEs, at the Com-

mission's request, have already expanded special procedures to accommodate handi-

capped individuals. However, the Commis-

sion said that there still remains a significant number of otherwise qualified licensees

who, because of their severe handicaps, cannot pass the higher speed examinations

even when provided with special accommodations. To assist such individuals, the

Commission has proposed to exempt from these examinations, individuals holding

current or renewable Novice, Technician, General, or Advance Class operator li-

censes. The Commission said that the exemption provision would be incorporated

into the existing volunteer examiner coordinator system.

In accordance with the Rehabilitation Act

of 1973, the Commission has proposed to

define the term "severely handicapped individual" as a person having a severe physical

or mental disability which seriously limits one or more functional capacities. Under

the proposed rules, the VEs would give examination credit to severely handicapped li-

censees seeking exemption from the 13 wpm or the 20 wpm telegraphy examinations.

The examinees would also be required to show an authentic certification

signed by a physician attesting that they cannot pass these examinations because of

physical or mental disabilities.

The Commission said that the internal requirement of this proposal would be

met because all licensees would have demonstrated their telegraphy proficiency by

having passed at least the 5 wpm telegraphy examination. Moreover, the proposed rule

changes would be more efficient and effective than reviewing waiver requests from severely handicapped individuals on a case-

by-case basis.

PIRATES DEN

FOCUS ON FREE RADIO BROADCASTING

BY EDWARD TEACH

Reader Philki Bekkala reports on a visit he made to **Radio Dublin**, at 26 years Ireland's oldest pirate station. Radio Dublin was running 25 watts on 99.5 FM and planned to increase that to 300 watts with a move to 101.4 FM. Radio Dublin also has plans to add mediumwave and shortwave services. Although the station was raided by the authorities last year, Phil says it is still going strong.

WRAR (Rock and Roll Radio) says it is running daily programs with 2.5 kW on 27.035 from "somewhere in Illinois." The station expects to have a mail drop soon.

Readers who logged the now defunct CHGO can send their reception reports to the station's operator and air person John Rosengarten (who used the name Long John Silver). He's at 4426 W. Atgeld, Chicago. IL 60639 and might QSL all correct reports.

Gary Daniels of the Voice of Bono tells me the station "really does exist" and, although a firm schedule isn't set, readers should keep an ear peeled for future broadcasts in the 7330-7450 area. Gary says their first broadcast brought a good deal of attention.

Pat Murphy of WNIS Radio in Norfolk, Virginia, notes that the SWL Net is a good source of pirate info. It's on Sundays at 1500 UTC on 7240.

We'll lead off the logs with a new one—**9X2V**—the Voice of 1932, heard by Jeff Foster in Michigan on 7415 at 0130 playing big band music. Address was given as POB 2112, Johnson City, TN 37601.

Radio ESP was heard by Pat Murphy at 0313 on 7415 with things like the Allman Brothers and Jefferson Airplane. The address in POB 452, Wellsville, NY 14895.

Radio Freddie's Nightmare and Radio Texaco were heard in contact on 7407 I USB at 0528. Chris Meloche of London, Ontario (who would like to get in touch with Robert Ross, also in London) says both stations gave an address in Blue Ridge Summit, PA as their maildrop.

Several heard **CFBN** (Fly By Night). Meloche heard them on 7418 at 0158 signing on with loon sounds and hosted by the "Fly Brothers" (Black and Horse). Uses the Wellsville address. Pat Murphy had them on 7420 at 0207 as "The North American Service of CFBN" and wildlife sound effects in the background. Sign off was at 0217. Keith Mehl in Iowa found them at 0115 on 7415 with the inaugural broadcast, including mentions of "100 megawatts" and an antenna tower. Jeff Foster heard them in military music. Michigan at 0111 with fake commercials and folk music.

"Joe" is on the air at Radio Dublin, Ireland's oldest pirate station. (Thanks: Radio Dublin via Phil Bekkala)



Tim Johnson in Illinois had **Action Radio** on 7415 at 0200 with comedy songs. Later that evening Tim heard them on 7480 and 7392. Wellsville address announced.

Murphy got them on 7415 at 0148 with a test broadcast during which they asked for information on the equipment used by listeners. Also noted they were broadcasting from the city of "three rivers." (I don't know if that's a name or a description, Pat) Off at 0155, after which someone called them on the air, unsuccessfully.

Rockabilly Radio was heard by Mehl on 7412 in sidebar at 0149 with a southern-accented announcer, country-western and country-rock music to sign off at 0154. Foster had them from 0134-0154 with host "Rockin' Rino," who said he'd responded to reports "in the usual North American short-wave radio publications."

Jeff got **Radio Free Massachusetts** (RFM) on 7400 at 0220 and again at 0415, including a broadcast of the song "We Want the Airwaves" by the Ramones at sign off. Meloche had this one also and Chris says the announcer ID'd himself as "H.V. Short" and promoted a special first anniversary QSL. Blue Ridge address.

Chris reports **Hope Radio International** on 7400 at 0224 with comedy skits and pirate radio news with "The Radio Animal" to 0301 sign off. Johnson had them at 0028 on 7370, including an offer to air any studio quality programming submitted to them. The host was "Justice Justice." Murphy had them at 0231 airing an announcement urging the designation of 1700-1800 KHz as an amateur broadcast service. Steve Gutierrez in Michigan heard the station in contact with several others between 0118-0138.

Foster had **One Voice Radio** a couple times with health readings.

Bob Ross in Ontario had **Radio Clan-destine** on 7399.12 at 2110 with rock, ID and funny commercials. Foster had them at 0315 on 7397.

Bob also had **WENJ** on 7414.8 at 0152 with rock, IDs as WENJ and "J-Rock," giving the Blue Ridge Summit address.

Foster had **The Cheap Radio Thrills Network** on 7415LSB at 0326 with a fake phone number for reports. The station interrupted its transmission a few times to take over the air input from listeners equipped with transmitters. No address noted.

K-ZAP was on 7415 at 0000 with ID and theme from The Munsters TV show, notes Tim Johnson. Foster had them with a mention of a special QSL card and the Blue Ridge Summit address.

Radio Happy Isles was the ID heard by Douglas W. Bauer in New York on 7420 at 0115. This was heard as part of a multi-station on-the-air discussion.

Tim Johnson had a tentative log of **WKND** at 2339 on 7415, signing on with the Dr. Who theme.

Due to space limitations I did not include a number of logs of two-way pirate contacts. An argument can be made that these aren't really broadcasts so they'll have to play second banana to reports on actual broadcasts, at least in this column.

That does it for this round. Keep those reports coming! And you pirate operators—remember the gang's always interested in having more info about your station, including QSL's and station photos!

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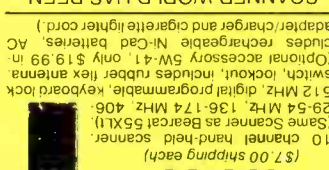
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Standard Features:

- Extremely compact size.
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Specifications:

- Coverage: 8-600, 805, 1300MHz
- Sensitivity: .35uV NFM, 1.0uV WFM, 1.0AM
- Speed: 20 ch/sec. scan. 40 ch/sec. search
- IF: 561.225, 58.075, 455KHz or 10.7MHz
- Increments: 5 to 955KHz selectable/ 5 or 12.5 steps.
- Audio: .4 Watts
- Power: Input 9 - 13.8 V. DC
- Antenna: BNC
- Display: LCD
- Dimensions: 6 7/8H x 1 3/4D x 2 1/2W. 12oz wt.

Specifications:

- Coverage: 27-54, 108-174, 406-512, 830-950MHz
- Sensitivity: .4uV Lo.Hi. .8uV Air. .5uV
- UHF. 1.0uV 800
- Scan Speed: 15 ch/sec.
- IF: 21.4MHz, 455KHz
- Increments: 10, 12.5, 25, 30
- Audio: 1W
- Power: 12.8VDC, 200MA
- Antenna: BNC
- Display: LCD w/backlight
- Dimensions: 2 1/4H x 5 5/8W x 6 1/2D. 14oz wt.

Options:

- Base type antenna 25 to 1000MHz w 50'coax. AS300 \$59.95
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- Backlighted LCD display.
- 4 Scan and Search Banks, Lockout in Search.
- 4 Priority Channels.
- RS232 control through DB25 connector.
- Delay, Hold Features.
- 15 band pass filters, GaAsFET RF amp.
- Sleep and Alarm Features.
- AC adaptor/charger. DC power cord.
- Telescopic Antenna.

Options:

- Earphone. EP200 \$2.00
- External Speaker. Mobile Mount. MS190 \$19.50
- Extended Warranty. 2/3 yrs. \$65/75
- Mobile Mounting Bracket. MM1 \$14.90
- RS232 Control Package. SCS3 \$295.00
- (software & cable) offers spectrum display and database.

Specifications:

100KHz - 2036MHz
Coverage: .35uV NFM, 1.0uV WFM,
1.0AM/SSB/CW
Speed: 20 ch/sec. scan. 20ch/sec. search
IF: 736.23, (352.23) (198.63) 45.0275, 455KHz
Increments: 50Hz and greater
Selectivity: 2.4KHz/-6dB (SSB) 12KHz/-6dB
Audio: 1.2 Watts at 4 ohms
Power: Input 13.8 V. DC 500mA
Antenna: BNC
Display: LCD
Dimensions: 3 1/7H x 5 2/5W x 7 7/8D Wt. 21b 10oz.

AR2500

\$499



2016 Channels, 1 MHz to 1500 MHz

Standard Features

- Continuous coverage
- AM, FM, wide band FM, & BFO for SSB, CW.
- 64 Scan Banks.
- 16 Search Banks.
- RS232 port built in.
- Includes AC/DC pwr crd. Antenna, Mntng Brckt.
- One Year Limited Warranty.

Options:

- Earphone. EP200 \$2.00
- External Speaker. Mobile Mount. MS190 \$19.50
- Extended Warranty. 2/3 yrs. \$65/75
- Mobile Mounting Bracket. MM1 \$14.90
- RS232 Control Package. SCS2 \$295.00
- (software & cable) offers spectrum display and database.

Specifications:

1 MHz - 1500MHz
Coverage: .35uV NFM, 1.0uV WFM,
1.0AM/SSB/CW
Speed: 38 ch/sec scan. 38 ch/sec. search
IF: 750.00, 45.0275, 5.5MHz 455KHz
Increments: 5.12, 5.25 KHz
Audio: 1.2 Watts at 4 ohms
Power: Input 13.8 V. DC 300mA
Antenna: BNC
Display: LCD, backlited.
Dimensions: 2 1/4H x 5 5/8W x 6 1/2D Wt. 11b.

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RZ-1 Wide-band scanning receiver

Specifications, features, and prices are subject to change without notice or obligation.

Optional Accessory
 • PG-2N Extra DC cable

Optional Accessories
 R-2000: VC-10 VHF converter
 DCK-1 DC cable kit for 12 volt DC use.

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

R-5000:
 VC-20 VHF converter • VS-1 Voice module • DCK-2 for 12 volt DC operation • YK-88A-1 AM filter • YK-88SN SSB filter • YK-88C CW filter • MB-430 Mounting bracket.

Other Accessories:
 SP-430 External speaker • SP-41 Compact mobile speaker • HS-5 Deluxe head-phones • HS-6 Lightweight headphones

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