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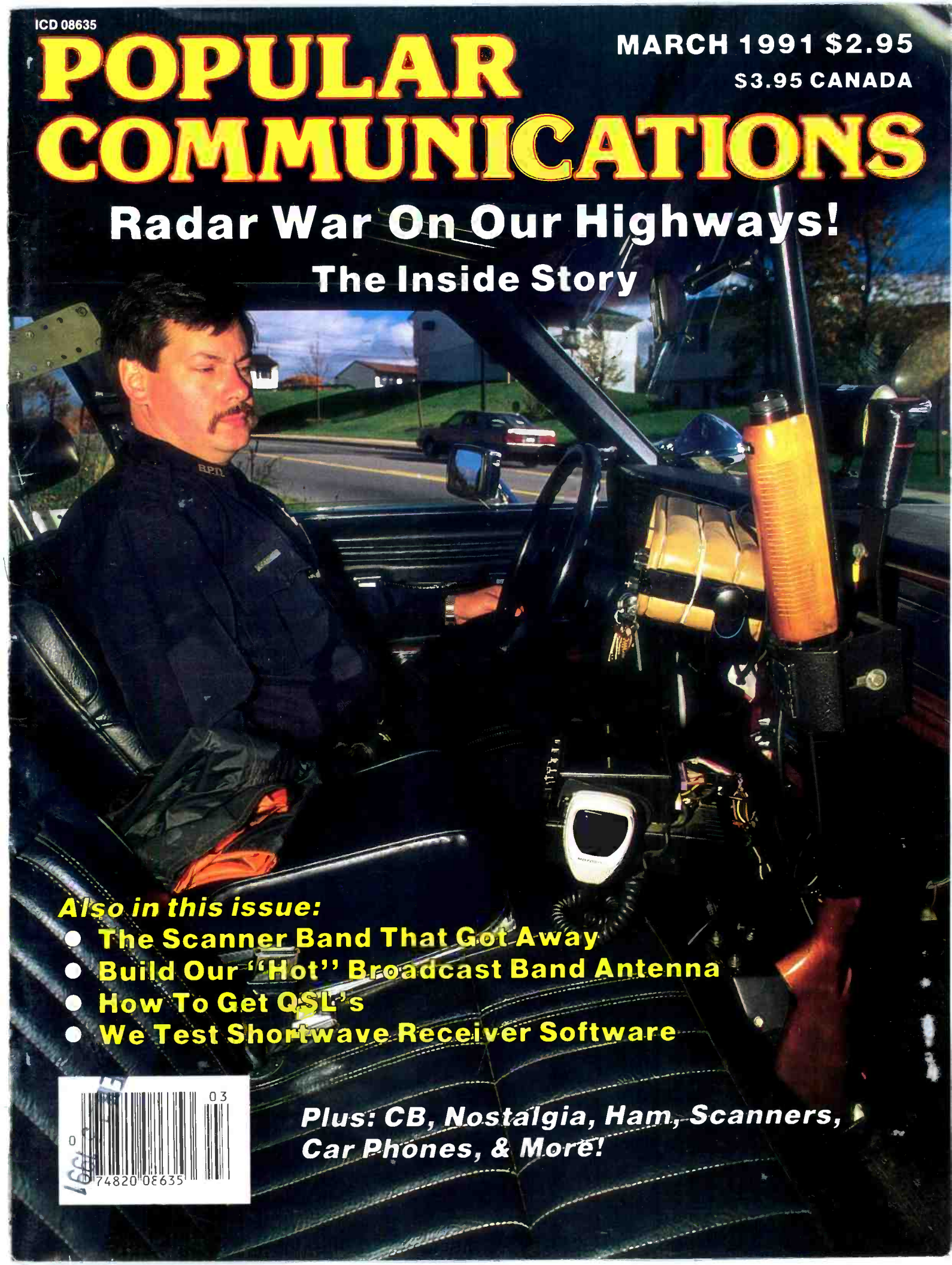

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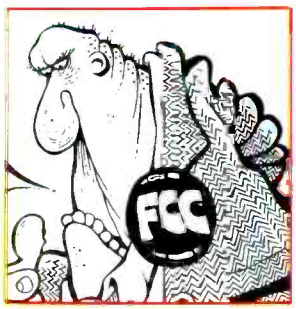
MARCH 1991 **VOLUME 9, NUMBER 7**



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FEATURES

COLUMNS

DEPARTMENTS

This month's cover: *USA – Officer Guy Riedinger of the Beacon, NY police department running the radar unit. Photo by Larry Mulvehill.*

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BEAMING IN

BY TOM KNEITEL, K2AES

AN EDITORIAL

That Was Then, This Is Now

Pirate (unlicensed) broadcasters have been cyclical in nature, ebbing and flowing like the tide. Tradition has shown that the formula has been that their species multiplies until a certain point. At whatever that "certain point" is, the FCC activates and busts a few of the most prominent pirates. That's usually enough to scare a goodly number of stations off the air, and dissuade the would-be operators of new stations from opening. Things are quiet for a while, and then the cycle goes on the upswing again until the FCC activates.

Of late we have seen an upswing of the cycle. But there's a problem, a big one. The current cycle doesn't appear to be behaving the way its supposed to, despite the FCC pressing all of the buttons that have worked so well in the past. The FCC has recently raided many pirates, but still new ones keep coming!

To be sure, the FCC isn't amused. They view broadcasting without their blessings and authorization as a challenge to the agency's authority, but mostly a violation of the Communications Act. Maximum penalties for such activities could include fines as high as $10,000, with criminal penalties as much as $100,000, with a year in prison tossed in. Most first-offense pirates, however, seem to have their equipment confiscated and/or receive a $1,000 fine, and even that may not happen until the FCC realizes that a warning letter to the operator isn't going to quiet the station.

There's obviously something taking place that is changing the tried-and-proven formula for charting the pirate cycle, and has neutralized the FCC's pirate panic button. But, what is it? I suspect that it's several vital factors.

Tradition specifies that pirate stations are mostly run by teen-agers so that they can jam legitimate broadcasters, or talk dirty and send out music and comedy that is either too obscure, raunchy or awful to ever get air time on a commercial broadcast station. This amuses their friends and horrifies parents, school officials, and other stuffy members of the adult world. The popular press, TV, and films have generally propagated and fortified this high-jinx image, which may have been largely accurate for many pirates of the 1960's, the 1970's and the early 1980's. Case in point, the 1990 feature film about pirate radio, *Pump Up The Volume*. Case in point, the Fox TV Network sitcom *Parker Lewis Can't Lose*, which ran a pirate radio installment last November. Certainly, this image is still true of some pirate stations and their operators.

If the operators of such casual operations haven't gone dark on their own after a few weeks because they've gotten bored with broadcasting, then they can usually be intimidated into leaving the air upon receipt of an FCC warning letter. This, plus occasional FCC raids on a few pirate stations has been effective in sending out enough shock waves to silence large numbers of other stations for months, or forever.

Indeed, maybe the FCC goes to the movies and watches TV, and therefore views all pirates as being puckish kids in need of a scolding. It suits the agency to keep that image going in front of the general public. Last November, *Broadcasting* magazine quoted FCC Field Operations Bureau Chief, Dick Smith, as having defined the bulk of pirate broadcasters as "misguided, overzealous students." He observed that they are "defiant" because they believe that licensed broadcasters are not meeting their needs. He noted such operators are on the rise.

Pirate stations on the rise? Yes. Misguided, overzealous students? Not for the most part. That's why the FCC can't get their trusty old shut-down button to work any longer. The wires on the button are no longer connected to anything. The agency is working on an outmoded perception of pirate broadcasters.

For the past five or so years, the type of music and comedy available over licensed broadcasters has gotten very weird. If you tune around in the regular AM/FM bands, you can hear everything from smutty mouthed shock jocks to music that covers every taste, no matter how bizarre or obscure. Today, AM and FM broadcasters routinely present virtually the same offbeat programming that teenage pirate radio broadcasters used to say justified their existence. One major commercial FM station in California even took out a copyright on the term "Pirate Radio" to describe a freewheeling type of format. In the real world of pirate radio, this stuff has mostly become passe. Commercial and college broadcasters ripping off their format has probably done more to silencing teenage pirates than the FCC ever did!

In fact, a different breed of unlicensed broadcaster began rapidly evolving years ago, and has now become predominant. These aren't defiant kids with a desire to infuriate parents and school officials or jam other stations. These aren't casual stations, operated from secret locations as a lark, with an "FCC, catch-me-if-you-can" attitude. They are run by adults, sometimes with expensive professional equipment. In many instances, the operators have substantial on-air or engineering experience at commercial stations.

Yes, it's true that some of these operators believe licensed stations aren't meeting audience needs. They feel that certain viewpoints are ignored by or unpopular in the mass media. Others never claimed that existing broadcasters have failed, but simply wished to broadcast from their own personal stations because they see it as a form of self expression, like painting, singing, writing, sculpting, mountain climbing, or dancing, which demand an outlet. Such persons are serious broadcasters, despite the FCC's insistence that they're all just rebellious teen-agers. These days, thanks to CB, FAX machines, computer BBS networks, business radio, cellulars and other consumer telecommunications developments, it's natural for people to have come to regard electronics as a viable, reasonable and very personal way to propagate their thoughts to others.

Such stations now permeate the pirate broadcasting scene, and they aren't as easily diverted from the idea of broadcasting as the juveniles of past decades had been. Some of these stations are run by people with potent, and at times unpopular, political, environmental, social, religious or other points of view. Whether or not one cares for their strong viewpoints, you'd have to agree that they weren't afraid of commencing their broadcasting activities minus an FCC license, nor do they seem inclined to quickly close up shop.

To a kid, a pirate station may primarily be fun, but adult pirate broadcasters see it on a different level. To them, being permitted to express their views through the medium of broadcasting is a Constitutional right. They would be willing to obtain a broadcasting license if only they could, but they see the FCC regulations as being deliberately and immovably devised so as to prevent the average person from ever getting such a license.

For example, a modern pirate station was run by a married couple in Adrian, MI. They established the *Citizens Emergency Broadcast Service* on 89.5 MHz. The only programming on CEBS was a repeating tape loop of a religious message relating to the couples' annoyance with a local gay activist group. CEBS was hardly an undercover operation, and was heavily publicized in Adrian. Not long ago, the FCC closed down CEBS, but received reports that the operators would put the station back on the air again, anyway. *(Continued on page 72)*

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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.

Calls For A New Deal

The public needs a radical new vision when it comes to radio communications. The question is the extent (if any) the government should be permitted to exercise such rigid control over the so-called "public" airwaves. These airwaves needed to be opened more to access by the general public without licensing formalities.

The FCC has an obligation to prevent airwave anarchy, but the idea of "overcrowded" airwaves is a myth. In reality, there are huge chunks of spectrum that are underutilized or completely unused. Many of the bands already allocated are poorly shared out, and the opening of the UHF, UHF-T, and 800 MHz bands has added more than enough room for everybody, given existing technologies. Yet, access by the public to the use of these frequencies is essentially the same as it was done more than forty years ago when most two way operations were crowded below 50 MHz, with the 152 to 174 MHz band just becoming available.

The public should call out for a revamping and updating of the attitudes regarding using the airwaves, with less emphasis on controls for the sake of control, and doing things "the old way" because it's easier than giving up control of programs.

There is a sad lack of any real debate on many topics these days. The mass media usually takes the same position on all problems. Most cities have only a single newspaper, and all broadcasters merely agree with one another. Opening the airwaves to the public might not make a major difference, but it would be a move in the right direction.

Among the things we need, for instance, is that CB radio should be recognized as a long range AM/FM communications service with 10 watt transmitters (25 watts PEP for SSB). Channelization should be eliminated and the band should be expanded to 27.500 MHz.

Bands between 500 kHz to 5 MHz in size should be established in most or all 100 MHz segments across the usable spectrum that aren't taken up by military, commercial or ham users. There's plenty of room. Reasonable power limits, and the ability for the public to have free access to these bands should be assured.

Public access to such communications could eventually feed new members into the ranks of ham radio.

Robert LaForest,
Bossier City, LA

A Question of Humor

I noticed that on an old Heath AR-3 general coverage receiver, at exactly 30 MHz it is marked with the letters WWV. This callsign is also marked at 2.5, 5, 10 and 15 MHz, which is where I know WWV operates. But, don't you think it's funny that this receiver is marked that way?

Bill Huntsinger,
Pawnee, OK

Mildly humorous, maybe. But definitely not as funny as falling down a flight of stairs. —Editor

Late Addition

In the October issue there was a story about Native American radio. Although I realize that it wasn't intended to contain an exhaustive listing of stations, I'd like to add that KTNN/660 kHz, Window Rock, AZ also runs Native American language, and is heard over a wide area. I can here KTNN here in Oregon!

Howard Ragan, K7ATU,
Cornelius, OR

Call For Help

I just purchased a Hammarlund HQ-100A receiver. It's in mint condition. Would any reader be able to help me out with a a schematic or owner's manual for this equipment?

Jan Preisler,
4336 Bradford Drive,
Grapevine, TX 76051

Motorists' Radio Service

In the December issue of *Beaming In*, you elaborated on a concept for a motorists' emergency communications system. This idea is a winner, I hope that future issues will pursue this further.

John J. Penney, WB5TMO,
Tulsa, OK

The thoughts about the motorists radio service expressed in the December *Beaming In* are similar to an idea that I've been thinking about. Such a radio service should be considered. I have talking with Canadian Department of Communications officials in order to try and get something like this in Canada, but there's little hope of movement here in Canada until the FCC takes the first step.

My thought is that such a service might be well suited to the 216 to 220 MHz band. From what I can gather, in the USA, there is a Waterways Communications System along the Mississippi River allocated here, plus some telemetering. I have, however, never seen reports of scanner owners having monitored communications of any kind in the 216 to 220 MHz band.

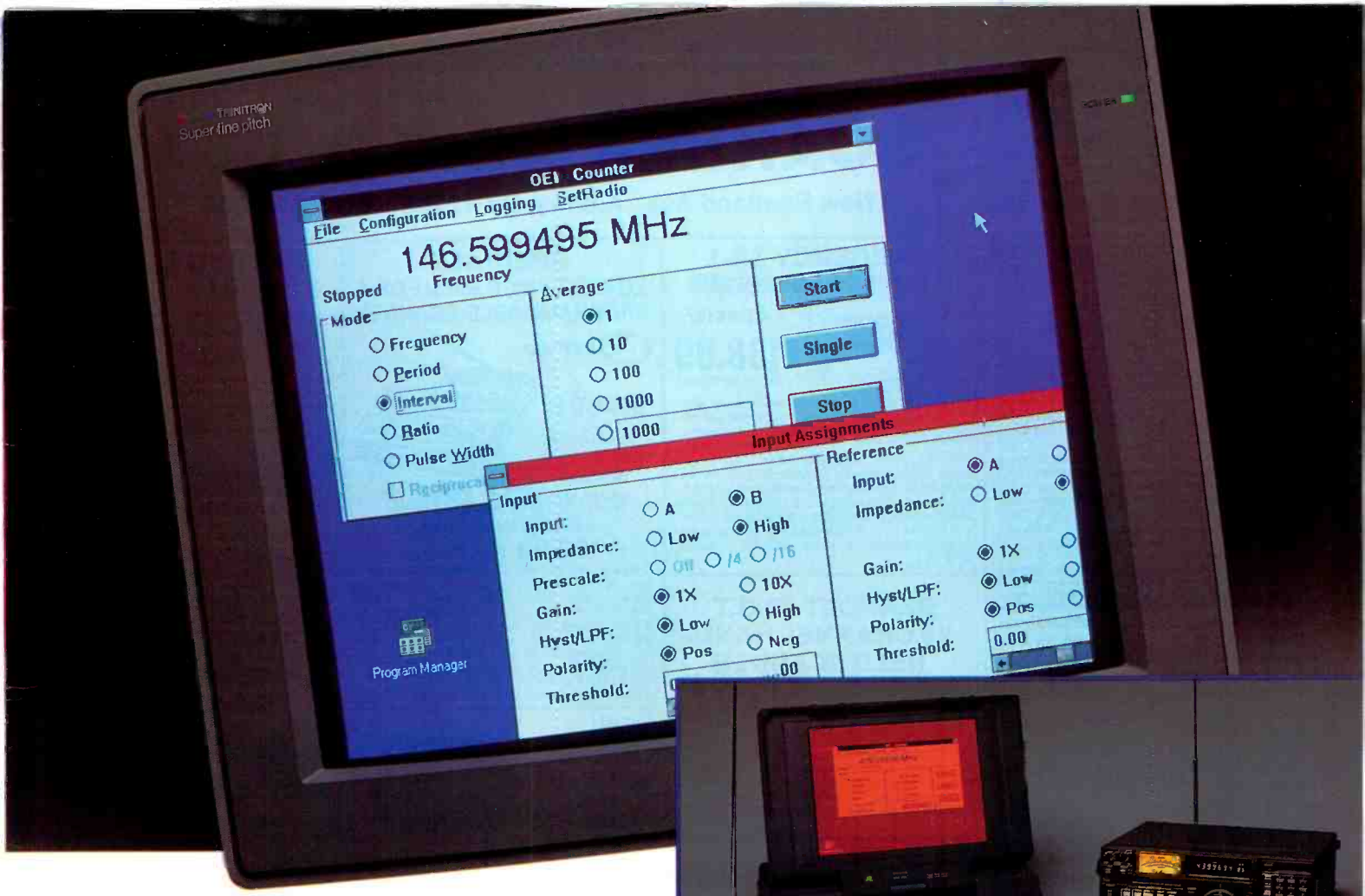
It would be of interest and help to me if readers would write and let me know if they have actually monitored any activity between 216 and 220 MHz. If so, what type of activity, how much, in what geographic areas, and any other relevant information.

If this band is, as I suspect, greatly underutilized, it could become a candidate for a future Public Radio Communications Band. It may require doing some convincing with the FCC and DOC, but it's a fight that might be won with enough resources, organization, and information. Your magazine could be a great catalyst in helping this to become a reality.

Right now, I'm collecting information on this band, and I'm hoping that your readers will contact me. I have already made a presentation to a panel of Canadian government officials regarding a possible new personal and business radio service between 216 and 220 MHz. But I need information on activity on these frequencies in the USA.

Joseph Cusimano, VE3OV,
2480 Bayview Avenue,
Willowdale, Ontario,
Canada M2L 1A7

Joe sounds like he's on to a good idea. I hope that readers with scanners capable of tuning 216 to 220 MHz will let him know if they are monitoring any activity there. The Mississippi River communications of which Joe speaks refers to the Inland Waterways Communications System (IWCS), authorized under FCC Part 81 (Subpart T), and FCC Part 83 (Subpart DD). The IWCS provides for voice, FAX, and RTTY along the Mississippi and its tributaries. There are eighty channel pairs (25 kHz spacing), with coast stations operating between 216.0125 and 217.9875 MHz. Ships operate from 218.0125 to 219.9875 MHz. Like Joe, we have never yet come across anybody reporting activity in this band. If it's a vast wasteland, maybe we can get it made useful!— Editor. ■



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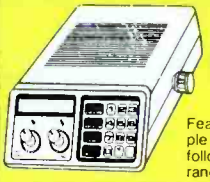

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CIRCLE 64 ON READER SERVICE CARD

Radar War On Our Interstate Highways

Are There Stealth Cars On Our Interstates? Here's How High Tech Hits The Highways As The Duel Of Wits Intensifies.

BY TOM KNEITEL, K2AES, EDITOR

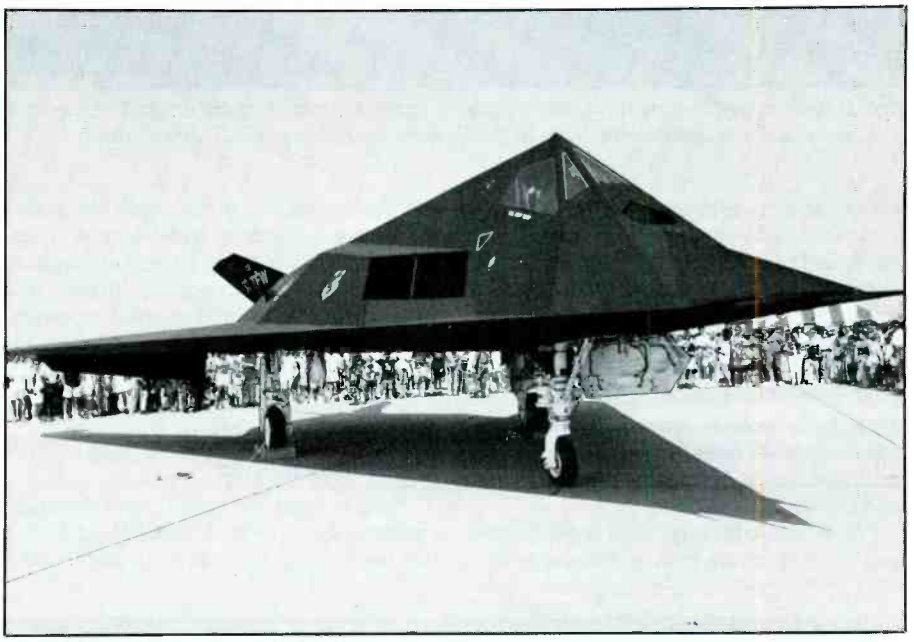
Several times in recent months, TV programs have shown a sleek black Corvette that is known as a "Stealth Corvette." The terminology immediately suggests that perhaps it doesn't register on radar speed clocking devices. Each time the vehicle shows up on TV, *POP'COMM* gets a flood of inquiries asking for information on this technology. If it works, how it works, and where it is obtained.

As old Chevy Corvette fans often say, there's a persistent rumor that the unique shaping of the vehicle's Fiberglass front end causes radar signals to reflect peculiarly. Supposedly, at a distance, the radar waves striking the 'Vette don't register on a speed meter, thus allowing the driver time to slow down when picking up the signal on a radar detector and thereby stay out of trouble. The story further goes that the USAF's radar-invisible *Stealth* bomber and fighter aircraft were designed with some aspects of Corvette styling because of its peculiarities of shape. So far as I can determine, both of these rumors are preposterous.

Most likely a Corvette was selected to be made into a so-called Stealth car because their owners sometimes drive them fast, it's showy, photogenic, and also the vehicle that happened to be owned by the person who decided to devise a vehicle he named in honor of Stealth technology. For all the Stealth Corvette can and can't do, and for all it is and isn't, any vehicle could do the same.

Many Things Happening

Perhaps it was more than coincidence that Stealth technology seems to have apparently moved out onto the highway at this particular time. Police radar and other speed measuring techniques are evolving into far more sophisticated stages than in previous years. Moreover, motorists in some areas are complaining that there are more speed traps than ever before, created by municipal, county, or even state jurisdictions seeking to perk up their sagging economies with a new source of easy revenue.



The USAF's F-117A Stealth fighter, with its strange looks, has been claimed by some to have been inspired by the Chevy Corvette. (Photo by Charles McAtee, WV.)

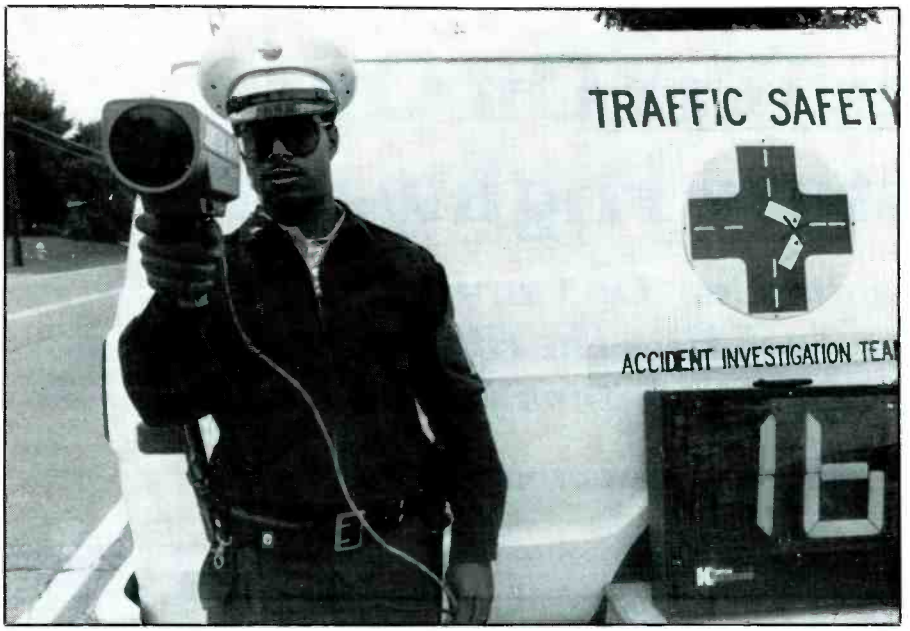
Then, there are serious movements afoot at the federal level to ban radar detectors from commercial vehicles. Some groups have questioned the true motives behind the lobbying efforts for such a law, and whether self-interest is more of a factor than safety. Janice Lee, President of the Radio Association Defending Airwave Rights, Inc. (RADAR), a 10,000 member organization representing detector manufacturers, vendors, and owners, says, "There are approximately 14-million detectors in use across America, yet highway deaths are dropping and the fatality rate is at the lowest level ever. Why are the Insurance Institute for Highway Safety and its allies so fired up about banning radar detectors?"

Lee claims that the primary opponent of radar detectors is the insurance industry, led by the IIHS, and that detectors have never been linked to accidents by the IIHS. Nor, says Lee, has the IIHS offered evidence that detectors promote unsafe driving.

A 1988 study by a national trucking association found that companies with strict no-detector policies for drivers, actually had *worse* records of chargeable accidents than carriers with no such restriction. In addition, researchers in a 1989 federally funded study found no relationship between detector use and safety. Connecticut and Virginia, the two states with detector bans, do not have vehicle fatality rates that differ greatly from their neighbors. In 1986, Michigan and the Canadian province of Alberta repealed their detector bans, and accident/fatality rates improved.

Critics complain that police radar is prone to errors caused by interference, poorly trained operators, improperly calibrated or operated equipment, certain traffic patterns, and numerous other tangible and intangible factors. Remember the tree they clocked as a speeder in Florida a couple of years ago?

From what most surveys indicate, detec-



Not all radar speed meters run continuously. A radar gun may require only a fraction of a second of transmission in order to get an accurate reading. (U.S. Army photo.)

This Uniden BC-1 mobile scanner is factory preprogrammed with state police channels in all states. All the motorist need do is make the state abbreviation show up on the display and the unit does the rest.

Radio Shack's new Road Patrol radar detector includes three bands (including the new Ka-band) in its coverage.

tor owners appear to use them for what they were intended— paying closer attention to the speed of their vehicle. People who are inclined to drive far beyond posted speed limits will do so with or without a detector on the dashboard. If a detector causes them to slow down, even briefly, then that's an improvement. The question arises whether we are just interested in trying to increase revenues, or are we seriously hoping to get drivers to be aware of how fast they're going, and slow down if necessary?

For whatever reasons, all of these factors, and possibly others, have combined to herald the opening of a high tech electronics war between motorists and detection equipment. It has heightened interest in the possibilities of speed metering, Stealth cars, and other defensive technologies for motorists, legal and otherwise.

Let's survey some of the things involved.

Speed Detection Developments

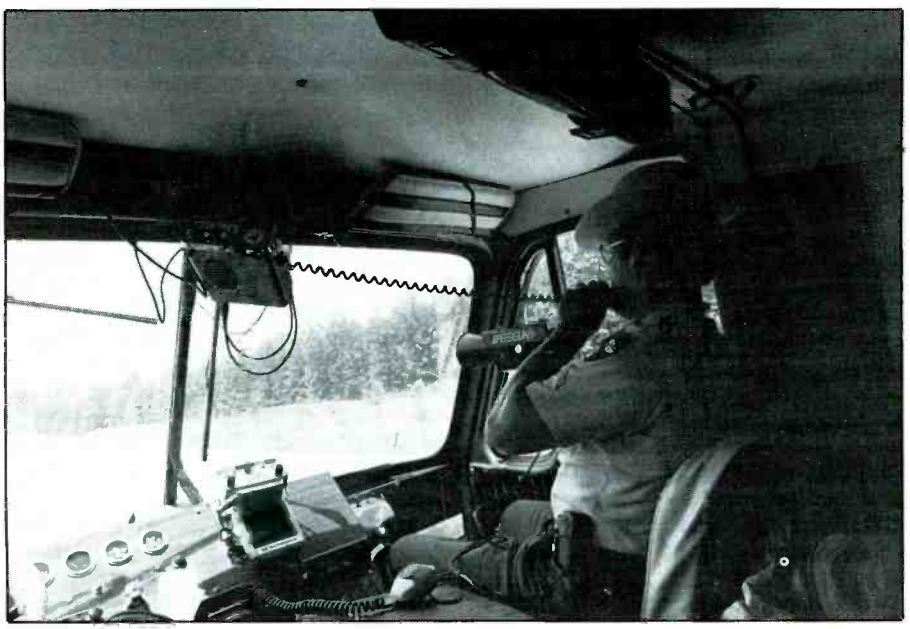
Keep in mind that not all speed detection equipment uses radar. VASCAR is a device that has been around since the 1960's and utilizes straightforward visual sighting techniques that don't rely upon radar. Another approach is the use of lasers, now available in the Laser Technology, Inc. LTI 20-20 speed meter. Even the best radar detectors will not pick up the use of such equipment.

Aircraft used to spot and visually clock speeding vehicles will also not register on detectors intended to pick up standard highway radar.

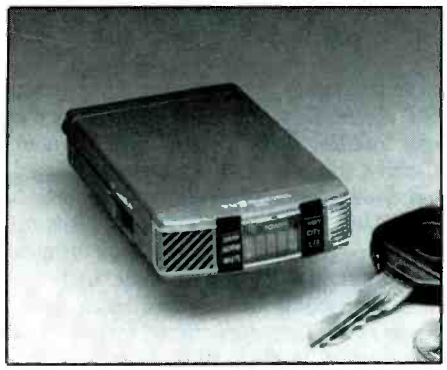
Even when it comes to radar, though, things are far from being a pushover. Some radar speedmeters don't need to send out a steady signal, but flash on only for a split second to get their reading. Others can make do with only a small fraction of the radiated power of most speed measuring devices, or can operate by being beamed at vehicles from radical angles that register on radar detectors too late to warn speeding vehicles in time to avoid a ticket.

A unit called *PhotoCop* operates in the new 34 to 36 GHz Ka-band and aims at the road from a 22 degree angle, which prevents it from being picked up very far down the highway. Also, it uses very little energy in a pencil-thin beam. It's not easy to detect this unit in use until it's taken a 35 MM color photo of the vehicle superimposed with the date, time, and speed at which the speeding vehicle was clocked. Although glare and other factors ruin 30% of the photos, the 70% success rate is considered acceptable.

The color photo is simply mailed out along with the summons, and the results have been satisfactory in areas of California and Arizona where it's been in use.



You can't always depend on visually spotting a radar clocking operation by seeing the trooper's vehicle on the side of the road. This Maryland State Police radar check point is located in a tractor-trailer truck, and the officer is chatting with the unsuspecting truckers on CB Channel 19.



Electrolert's tiny Fuzzbuster PRS can detect radar pulses as short as 25-thousandths of a second.

Another approach is the *Stalker* from Applied Concepts. This is a relatively inexpensive handheld speed gun that also operates in the new Ka-band, for which only a few radar detectors are currently available. The manufacturer hopes to get FCC approval to permit *Stalker* users to be able to reset the exact operating frequency of the gun to any of numerous channels within the Ka-band, thus rendering it difficult to detect by standard-design detectors covering the band. Detector manufacturers, on the other hand, claim that their new Ka-band units can check out all possible channels within the band.

In areas where detectors are banned in cars and/or trucks, some agencies are using something called the Technisonic VG-2, made by Technisonic Industries, Ltd., Mississauga, Ontario. This is the fabled "radar detector-detector." What it does is let roadside police officers spot vehicles in which radar detectors are in use. And, believe it or not, it works!

The idea behind the VG-2 operates on the concept that the local oscillator frequency of superhet radar detectors is 11.5 GHz. The VG-2 can detect signals on that frequency that are radiated by radar detectors. When the signal is detected, an LED signal strength meter reads out and a warning beeper sounds. The reading increases as the vehicle approaches, hits a peak, and then instantly drops out. When it vanishes, it means that the vehicle with the detector just drove by.

Apparently, some current detectors can be spotted with the VG-2 from as far away as a half-mile down the highway. A detector with an especially "dirty" local oscillator might be picked up by the VG-2 from as far away as two miles. The VG-2 has been used in many areas of Canada, and it's been in use against truckers using detectors in New York State. Maybe other areas, too.

From The Driver's Seat

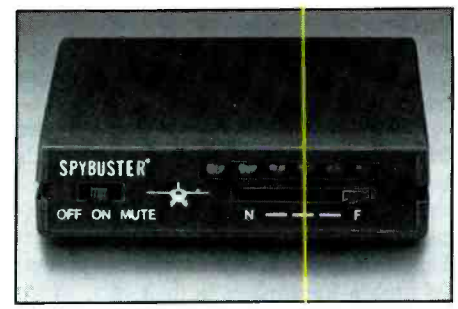
Insofar as the motorist goes, and as shown in the TV reports of the Stealth Corvette, the vehicle seeking maximum electronic defense covers as many bases as possible by employing an assortment of technologies.

For instance, a standard tool, and absolute must, is a CB radio. It's kept tuned to monitor communications on Channel 19, with an ear peeled for reports of *picturetakers* (as speed meters are usually called by CB operators).

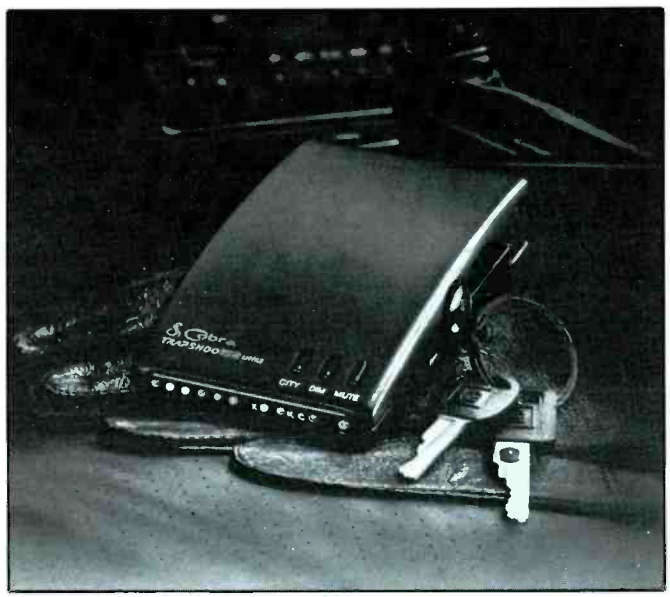
Another basic defense unit is the radar detector, at this time permitted in cars except in DC, VA, CT and seven Canadian provinces. Some other areas (such as NY State) appear to ban them in trucks but permit them in cars. Some 2-million new units go on line each year. They sell in all price ranges heading up as high as about $400 for the more exotic types to as low as roughly $30 for a simple unit. The cheap units are poorly built, tend to activate on false signals, and they usually lack some of the more desirable frills such as sensitivity adjustment, volume control, dual audio/visual alerting, adequate sensitivity, etc.

The typical modern radar detector is a dual-conversion superheterodyne type designed to pick up signals on at least both the X-band (10.525 GHz) and the K-band (24.150 GHz). Those professional drivers to whom I have spoken tell me that they have certain units they especially like. Frequently mentioned are the Cobra RD-3170 *Trapshooter Ultra*; Cincinnati Microwave's *Passport* and *Escort* units; Radio Shack's new *Road Patrol* detector that covers the X, K and Ka-bands; the *Fuzzbuster PRS* from Electrolert; and the tri-band Bel-Tronics Legend-3.

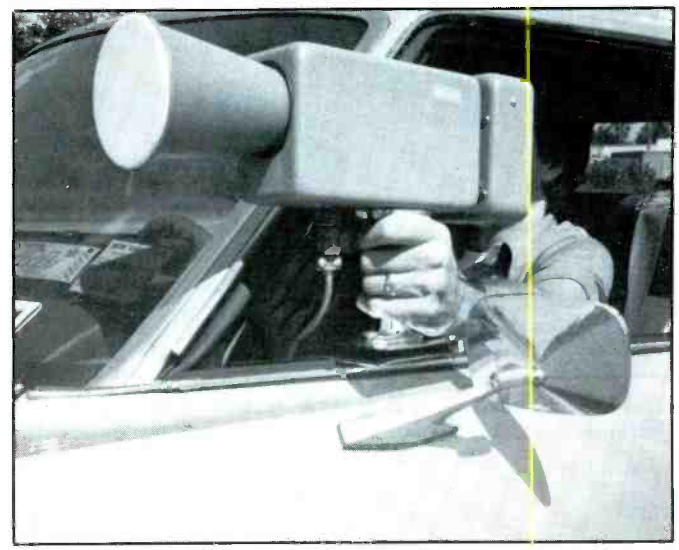
The CB and the radar detector are the bare minimum essentials for the hopeful road warrior. From there, more demanding drivers begin to get creative. Like using a mobile scanner. This gets tricky because, in many areas, there are restrictions against installing scanners in private vehicles. However, a scanner permits a driver to monitor the action on communications frequencies



The Spybuster is an exotic electronics unit made by Electrolert designed to detect surveillance aircraft.



The Cobra RD-3170 Trapshooter Ultra detector is highly regarded by professional drivers.



Surplus police X-band radar speed meters sell for about $200 and up, but they sometimes end up in the hands of motorists who use them to thwart their former owners in the electronics war on the highways.

A radar detector test set could be misused to cause deliberate interference to the operation of speed measuring equipment.

used by the radar cars or surveillance aircraft.

A variation on the mobile-installed scanner may be a device marketed under the name of the *Chips Detector* by a company in Colorado. They promised to furnish us with details and a photo, but never sent anything. But, from what I can determine, this device could possibly be no more than a mobile scanner the seller has pre-programmed to receive the mobile extender frequencies used by state police.

Transmitters used on mobile extender frequencies are low-powered handhelds being used outside the patrol cars. The handhelds use the extender frequency to contact their dispatchers or other vehicles utilizing the relay capabilities of the more powerful mobile transmitters in their cars, which act as repeaters. So if you hear activity on mobile extender channels while you're driving, then you can assume you are pretty close to police activity. This assumes that the speed meter operators are state police units and that they are using handhelds. Others have said that if you're close enough to pick up these transmissions, it's probably too late to slow down to avoid a ticket.

Of course, if a person knew the mobile extender frequencies used by the various state police agencies, they could just program the frequencies into their existing scanner. State police and highway patrol mobile extender frequencies are shown in Table I, and are indicated with the letter "E." The other frequencies in Table I are state police air surveillance and radar patrol channels believed to be in use. The Stealth Corvette shown on TV appeared to have a scanner *plus* one of these *Chips Detector* gizmos. No explanation as to why both were needed.

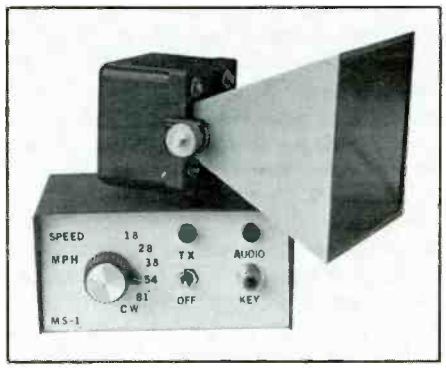
An extra edge is provided by Electrolert's *Spybuster*, designed to detect surveillance aircraft. Surveillance aircraft clock speed by visual measurement of the time it takes a vehicle to travel between sets of spaced white lines painted across a road. When a vehicle is clocked as speeding, the aircraft radios a chase car that issues a ticket.

The *Spybuster*, which is a small dash-mounted box, takes advantage of the fact that while the traffic surveillance aircraft is flying around, an FAA ground-based radar system is tracking the aircraft. The *Spybuster* has an omnidirectional sensor that detects the powerful FAA radar signals as they reflect down from the nearest surveillance aircraft. When that happens, the *Spybuster* alerts the driver. It will detect these radar reflections from as far as six miles away. What with surveillance aircraft speed detection on the increase, this is a clever device.

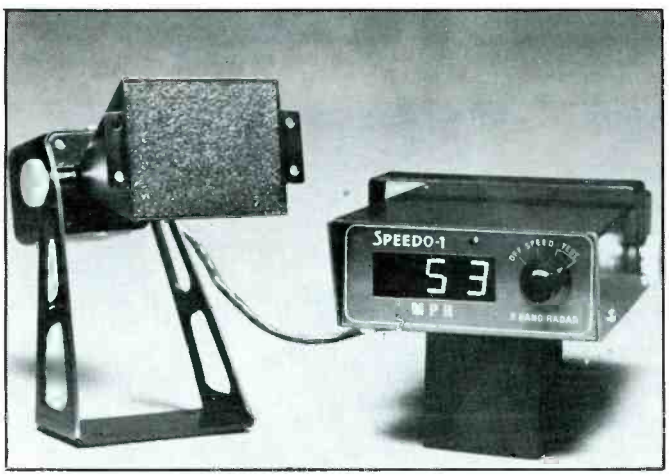
At the darker, outer fringes of the motorists' electronic war are the tacky units that can interfere with, or jam, police radar. Clearly, this is as dirty a trick as it is illegal, yet devices capable of doing it are readily available. Moreover, the Stealth Corvette shown on TV had a radar jammer installed and blatantly displayed and described!

Units capable of jamming radar speed meters are sometimes offered for the stated purpose of testing radar detectors. One company sells used police X-band and K-band radars for $200 and up, advising that they're useful for "car and boat racing, baseball, speed calibration, traffic surveys."

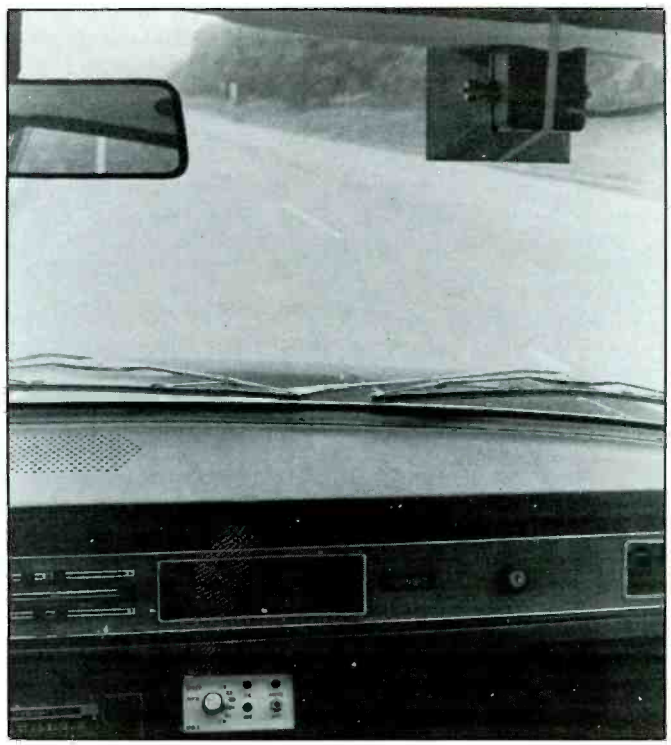
A leading automotive supply catalog boldly shows an X-band radar gun at a price



The MS-1 was a 10.4 GHz mobile ham radio, except that its dial settings were shown in "Speed MPH." Gee, I wonder if it would jam police radar on 10.525 GHz? The FCC also wondered.



This X-band speed measuring radar unit wasn't made for law enforcement use. It has a few legit uses, but could just as easily be used to mess up police radar.



The MS-1 "ham radio" microwave rig installed beneath the dashboard. The horn antenna is mounted on the sun visor, ready to feed its signals into any ham rigs monitoring 10.5 GHz that might be ahead on the highway. "QRZ 10.5 GHz. Car 54, where are you?"

Table 1
State Police Mobile Extender, Air Surveillance & Radar Patrol Frequencies

Arkansas	154.785E 465.3875E 465.5625E
California	154.905E
Connecticut	42.30 42.32 154.83E
Delaware	465.475E
Florida	155.92 465.1625E
Turnpike	156.18E
Georgia	458.4875E
Illinois	155.505E
Indiana	155.445E
Iowa	155.43 453.625E
Kansas	45.14
Kentucky	453.30 464.665E
Louisiana	453.45E
Maine	154.985 460.225E
Maryland	155.73E
Massachusetts	154.92E
Michigan	42.98 45.50 154.695E
Minnesota	171.575 453.25E 458.25E
Mississippi	158.97E
Missouri	154.92 154.905E
Nebraska	42.04 460.525E 465.525E
Nevada	154.92E
New Mexico	460.15E 465.15E
North Carolina	154.68E 155.445E 159.21E
North Dakota	453.45E
Ohio	45.02 465.375E 465.525E 465.55E
Turnpike	465.425E
Oklahoma	154.905E 154.92E 159.21E
Pennsylvania	154.755E
South Carolina	155.445E
South Dakota	453.375E
Tennessee	154.905E
Virgina	453.35E
Washington	159.075 453.475E
West Virginia	155.505E
Wisconsin	465.125E

Table I shows known mobile extender, air surveillance, and radar patrol frequencies believed in use by state police and highway patrols. Frequencies coded with an "E" suffix are the extender channels. Of course, county and municipal agencies (which aren't listed in this table) may operate on other frequencies.

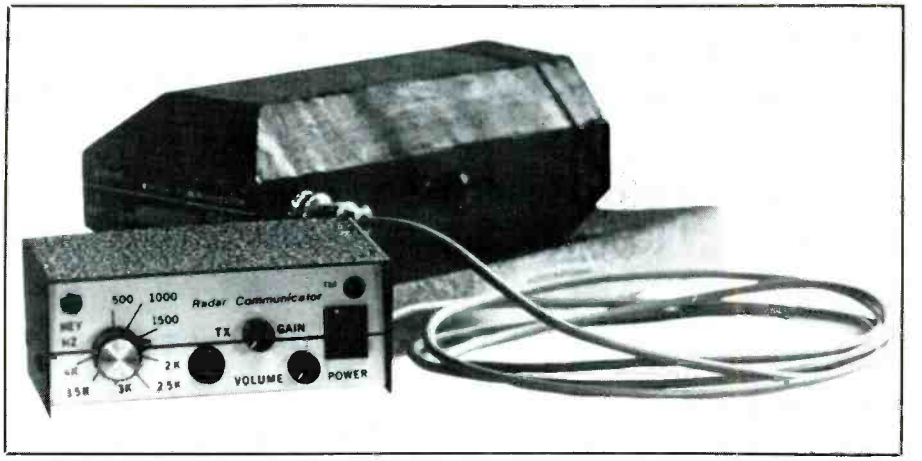
of $489.99. The unit is rated as having a 300 ft. range, and is represented as not needing a license. They say it's "a must for every serious racing enthusiast." Note that this isn't shown on a page displaying any other racing accessories, but on the same page as several radar detectors.

A few years ago, a company brought out a supposed "ham radio" unit dubbed the MS-1 that transmitted on the 10.4 to 10.5 GHz Amateur band, which happens to lie adjacent to the police X-band radar frequency. They agreed that using their mobile transmitter to jam police radar would be illegal, although the fact that the numbers on the front panel dial were designed as "Speed MPH" was (they claimed) only a coincidence. They suggested that "MPH" stood for Modulated Power in Hertz." *Right!*

Actual ham operations in this microwave band couldn't and wouldn't affect speed meter operations. On the other hand, legitimate ham use would scarcely be expected to include in-transit mobile usage with the horn antenna mounted on the sun visor and beamed straight down a highway.

After a number of complaints (including from the FCC), the front panel of the MS-1 was changed to remove the offending terminology. They claimed that the circuitry was also redesigned, and it was renamed the *Radar Communicator*. Still, some folks suspected there may have been fewer hams than motorists interested in owning one.

Of course there are numerous nameless



The old MS-1 was redesigned, renamed the "Radar Communicator," and given a new faceplate that made no reference to "speed" or "MPH." It was just the thing for the mobile ham active on the popular 10.4 GHz band.

radar jammers made in basements and garages that are sold at certain speed and auto custom shops. As illegal as it all is, those who make and sell the jammers say it's a brisk market. It's not as difficult as you might imagine to put together a gadget that that will toss out electronic garbage. Years ago, when radar speed meters used the S-band (2.45 GHz), a reader told me that he built a primitive jammer out of a doorbell buzzer that had a 4.75 inch antenna placed across the spark gap. He claimed it made a nifty little spark transmitter that had a wicked signal in the S-band. Unfortunately, it wiped out even the AM broadcast band.

You may not have realized it, but there's quite a high-tech war going on out there on the Interstates. It incorporates communications, radar, and other technologies. Frankly, it's beginning to turn into a bit of a nasty little war, on both sides. Maybe, now that you've been made aware that it's taking place, and growing sneakier by the minute, you'll want to follow its progress. **PC**

The Band That Got Away

Monitoring For The Feds In The Little Band Everybody Stole. They Wuz Robbed!

BY CHUCK ROBERTSON

Look on a frequency allocation chart for the USA. You'll see that 27.540 to 27.995 MHz is reserved for use by federal agencies. But you know if you take a quick scan through those frequencies you're going to hear hobbyists chatting; legal hobbyists, illegal hobbyists, and everything between. These are the so-called *outbanders*, and, thanks to squatters' rights, this somehow unofficially became their band back in the 1960's. What with ionospheric skip conditions, this band is crowded with outbanders from one end of the world to the other.

But, this band is still carried on official records as a federal band. So, where are they?

Over the years, many federal agencies have fled these frequencies for VHF and UHF. A radio tech at the Bonneville Power Administration says that agency stopped using these frequencies many years ago. So, it's a dead issue, right?

No way! It's still Sam's band. But you've got to know where to listen for him as you dodge those wild outbanders!

The antenna atop the tower indicates that this is one fed agency that is still active in the 27 MHz fed band.

Four For The Road

This odd little battered band has been mostly ignored by monitors, but still has some secrets worth exploring. To sleuth its inky depths requires looking closely at assorted clues.

For example, from time to time the FCC has given some thought to turning over this band to CB'ers, probably in an effort to gain better control on the many bootleg communications stations occupying the frequencies there.

During one such period of consideration, the FCC went so far as to ask other federal agencies if the would have any objections to relinquishing the federal allocation of the 27.540 to 27.995 MHz band so that it could be given over to CB use. One response they received was especially interesting.

On October 15, 1976, the Office of Telecommunications Policy, Executive Office of The President of The United States, wrote to the FCC on the topic. The FCC was told that the specific frequencies 27.575, 27.585, 27.625, and 27.980 MHz were sufficiently vital to federal operations that the government "would retain exclusive use of them even if the rest of the band were eventually released for non-government use."

Looking through the *"Top Secret" Registry of U.S. Government Radio Frequencies, 7th Edition*, as well as whatever official federal data is available, there are additional clues.

We see that 27.575 and 27.585 MHz are used, nationwide, by a great many federal agencies, including the NRC, DoE, FEMA, Treasury, Postal Service, Dept. of State, FAA, and others. Portable, mobile, base, and fixed systems are allowed. Emissions are AM, SSB, RTTY and telemetry. But all stations are limited to a power maximum of 4 watts.

Frequency 27.625 MHz is used by the FAA.

Frequency 27.980 MHz has been monitored with MARS comms, and is also believed to be used by the U.S. Coast Guard Auxiliary.

Various federal frequencies in this band are shown in the chart.

Covert Action

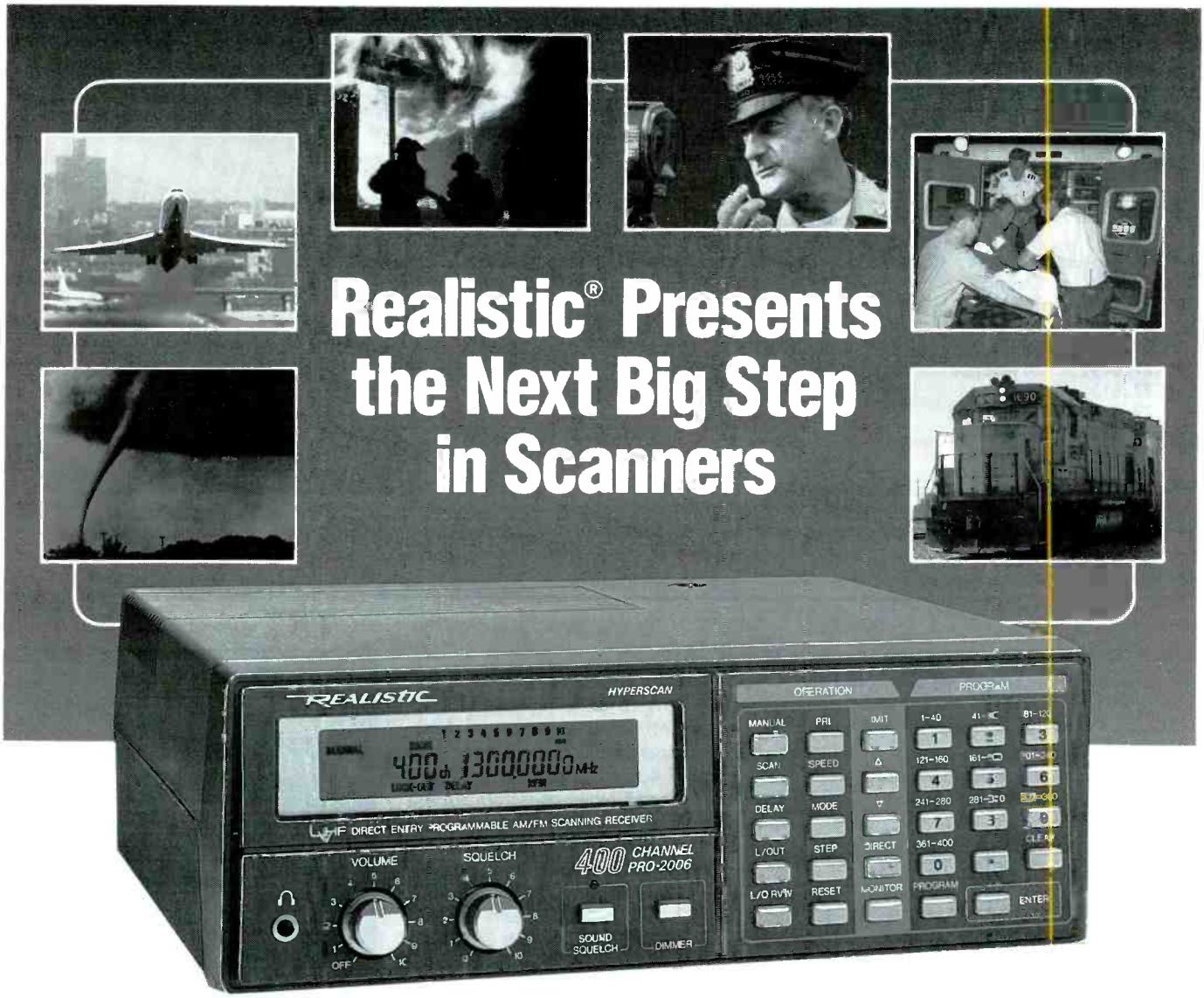
Not all federal comms here seem to be quite as traditional as others. Some may well use more than 4 watts of power, and be part of various undercover operations.

Take the case of the mysterious "Unit 283," monitored on 27.555 MHz by a *POP'COMM* reader last year. The station was heard announcing a Panama location and was attempting to get a message through to DEA headquarters in Washington, DC. This took place just after Manuel Noriega was removed from power in Panama. Some US outbanders heard the call and contacted the DEA by landline.

USAF Strategic Air Command (SAC) comms have been confirmed on 27.870 MHz using the channel ID of "Papa." It's not surprising, I've heard SAC comms in all sorts of weird places, like 30.60 MHz (WFM mode).

Around The World

Surprisingly little is known about usage of this band around the world. It's somewhat of a gray area between HF and VHF. The fact that most stations run low power causes them to be left out of many listings. Still, as



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CIRCLE 119 ON READER SERVICE CARD

The Not-So Abandoned Federal Band Voice Allocations

27.545:	USN, DoE, Army	**27.725:**	NASA
27.550:	USN, DoE, Army	**27.7375:**	USAF
27.555:	DEA(?)	**27.740:**	Gov't. Contractors
27.565:	DoE, Army	**27.750:**	Army
27.575:	Army, HHS, Transportation, EPA, USN, VA, DoE, USCG, GSA, Agriculture, FAA, USPS, Interior, USAF, TVA, Commerce, NASA, State, Treasury, NRC, Int'l. Boundary & Water Cmsn.	**27.775:**	USAF
		27.780:	Army
		27.790:	Army
		27.800:	Army, USN
27.585:	Army, HHS, Transportation, USAF, USPS, EPA, USN, Agriculture, FAA, VA, DoE, HHS, Interior, TVA, Commerce, NRC, Int'l. Boundary & Water Cmsn.	**27.810:**	Army
		27.820:	Army
		27.8305:	USN
27.595:	DoE	**27.850:**	Army, USN, FEMA
27.600:	Army	**27.870:**	USAF
27.605:	DoE	**27.8785:**	USAF
27.610:	Commerce	**27.900:**	Army, USN, USAF, NASA, FEMA
27.615:	DoE	**27.9215:**	USAF
27.625:	FAA, DoE	**27.949:**	USN
27.630:	NASA	**27.950:**	Army, USN
27.635:	DoE	**27.9635:**	USN
27.645:	DoE	**27.9755:**	USN
27.650:	Army, USN, FEMA	**27.980:**	USAF, USCG
27.655:	USAF, DoE	**27.9865:**	USAF
27.665:	FAA, DoE	**27.9895:**	USAF
27.675:	DoE	**27.9925:**	Army
27.700:	Army, USN, DoE	**27.9955:**	USAF

CB operators and 10 meter band hams know, when skip conditions are right between 27 and 29 MHz, you don't need a lot of power to be heard over great distances.

Canada uses the band much like the USA. Nationwide civil defense comms have been monitored on 27.655 and 27.800 MHz, AM-mode.

The International Red Cross is on 27.998 MHz, SSB. Also check 29.701 MHz.

Interpol, in France, is listed on 27.845 MHz with CW and RTTY. Most likely, the operations here are in FEC mode.

In The UK, the legal CB band runs from 27.600 to 27.995 MHz.

In all, the listings for this band are rather sparse. If you have any information to add to ours regarding operations around the world, we'd like to hear from you.

What It Is

Sam's band is located just lower in frequency than the 10 meter ham band, which begins on 28 MHz, and just above the little-known Business Radio Service band that runs from 27.430 to 27.530 MHz. Below that is the CB band, which goes from 26.965 to 27.405 MHz.

Those Business Radio frequencies aren't as popular as they once were, but are still active. The channels are 27.430, 27.450, 27.470, 27.490, 27.510, and 27.530 MHz. A maximum of 110 watts is allowed on the lower three frequencies, with only 2 watts permitted on the two high channels. Either AM or FM is permitted.

Frequency 27.490 MHz is for itinerant use. Listen for portable and mobile units used by truckers, circuses, private detectives, construction crews, barges, and others.

This portable is programmed to monitor 27.575 MHz, which is an active fed channel. Unfortunately, the frequency is often in heavy use by one of the outbander networks.

Rumors persist that several of the licensees on 27.490 MHz are simply hobbyists who have a license to run 110 watts and chat with other units operating under that same license. Well, listening there at times doesn't do anything to dispel that rumor of the "legal outbanders."

Outbanders

While hobby communications may well

be permitted between 27.540 and 27.995 MHz in some nations of the world, in the USA and Canada, such activities are strictly unauthorized. Moreover, the FCC has never been at all happy about the situation and has recently increased its efforts to crack down on outbanders, many of whom refer to these frequencies as the *freeband*.

Outbanders are, more or less, the same as unlicensed hams operating outside the low-frequency edge of the 10 meter ham band. After so many years of operation, although illegal, outbanding has become rather structured and with a considerable following of enthusiastic supporters.

Operations on these frequencies call for modified CB or ham equipment, or so-called "CB export" transceivers. Some of this equipment runs a couple of hundred watts. The periodic FCC enforcement efforts in this band aren't directed only at the operators, but also at those who modify, import, and sell the transceivers and amplifiers.

There have long been clubs around the world catering to outbanders and promoting operation on these frequencies. From time to time, the FCC cracks down on such clubs in the US, charging their officers with encouraging illegal operation. Most outbander clubs have designated net channels in this band for calling and working other members. LSB mode predominates.

Although the outbanders don't seem to be intent on causing interference to authorized operations, undoubtedly they do so inadvertently. The last time I tried to monitor the fed comms on 27.575 MHz, all I could hear there were outbanders identifying themselves as members of the Transamerican Network.

Even the best of the FCC's long-term, but sporadic, efforts to clean the outbanders off these frequencies have been disappointing. Results have mostly been temporary and highly localized. Still, those caught yakking here, or trading in illegal equipment, usually end up shelling out big bucks in FCC fines and thinking that maybe *freeband* didn't quite live up to its name.

Conclusion

This really is a strange little corner of the communications spectrum, a wild, shadowy band filled with a mix of local and distant stations, bootleg hobbyists, fed stations, and who knows what else. This time of the year, it's wide open for long distance F2 layer skip, so you're liable to hear just about anything there.

Check this band at sunrise for Europe, USSR, Africa, and the Middle East. The Pacific comes in a couple of hours later. Then the entire American continent is open for grabs during most of the daylight hours and into early evening.

Now that we have investigated this curious band, and you know the best monitoring frequencies, it's worth a try. What will you discover there? ■

Radio of Yesteryear

Don't Touch That Dial! Stay Tuned For News of an Earlier Era!

BY ALICE BRANNIGAN

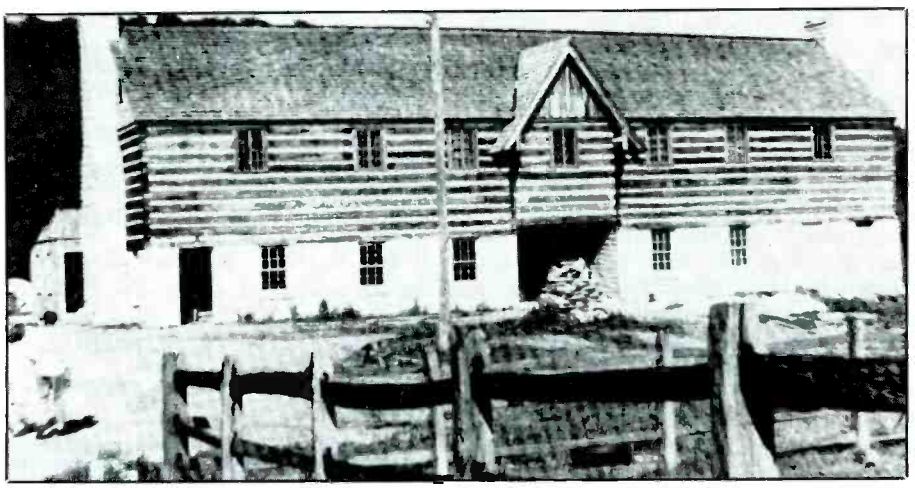
Probably no topic we have mentioned here in years has brought in as much mail as the item we ran on the broadcasting studio in Renfro Valley, KY. Although the "mystery photo" seeking identification ran last October, mail is still arriving with comments.

Among the recent arrivals in this regard was a note from R. C. Watts, of Louisville, KY. A letter QSL he received last October verified his reception of WRVK/1460, Renfro Valley, KY. The station pointed out that the photo in the October *POP'COMM* showed the building that was used as the original WRVK studios when the station began operations in 1957. The letter went on to state that WRVK was founded by John Lair, who also founded the Renfro Valley Museum.

When we ran the photo, we observed that there was no antenna to be seen in the photo. We now learn from this same letter that an antenna tower was located just to the right of the building, but was beyond the edge of the photo. Presently, the WRVK studios and transmitter are still located on the northern end of picturesque Renfro Valley. The WRVK signal reaches north past the Kentucky River, south beyond London.

The QSL letter was signed by WRVK's owner and manager, Larry A. Burdette, who noted that he began his broadcasting career at the station twenty five years ago with John Lair.

Bill Harr, of Knoxville, TN went to Renfro Valley shortly after our October issue appeared. He very thoughtfully sent us some memorabilia from this region.



The Renfro Valley building that served as the original studios of WRVK. (Courtesy Bill Harr, TN.)

Incoming

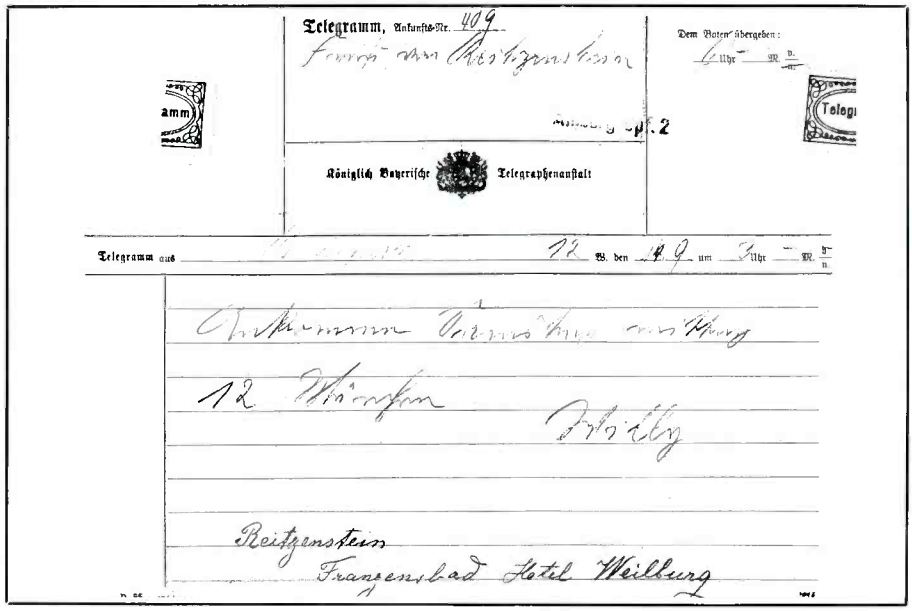
Two items of interest were received from a reader in Appleton, WI who requests anonymity. First, we have a telegram, written in German that we are asked to identify. From what we can determine, this appears to be an official German Government telegram sent in 1915, during World War I. It is addressed to a person staying at the Hotel Weilburg, and invites "Oberleutenant Reitzenstein" and his wife to a formal celebration. The official stamp at the top was used to seal the telegram closed, and was torn in half when the document was opened for reading.

Next, the same reader sent us what he believes to be a "large radio transmitting tube, possibly quite old." This certainly is a very attractive piece of workmanship, and is glass, with a bakelite base, being 15 inches in length overall, 13 inches in circumference around its top and bottom and 8 inches circumference at its middle.

The only markings to be seen are the large letters "AEG," plus the designation "HR-2/100/1.5A" at the top end of the tube. The tube doesn't terminate in pins under the base, but in eighteen short brass strips distributed around the sidewall of the base.

A look at the top end of the tube, how-

"Old Joe Clark," one of the early deejays on WRVK. (Courtesy Bill Harr, TN.)



We get lots of assorted communications-related things to identify. This is an official German Government telegram sent during World War I.

ever, shows it to be white, flat, and circular. This, and the way the insides are structured, are the clues that this isn't a transmitting tube, but a 3.5 inch cathode ray tube (CRT). I suspect that it is German, and of World War II manufacture. I don't know whether it came from a piece of communications, test, lab, or scientific equipment, as it would have been suited to all such applications.

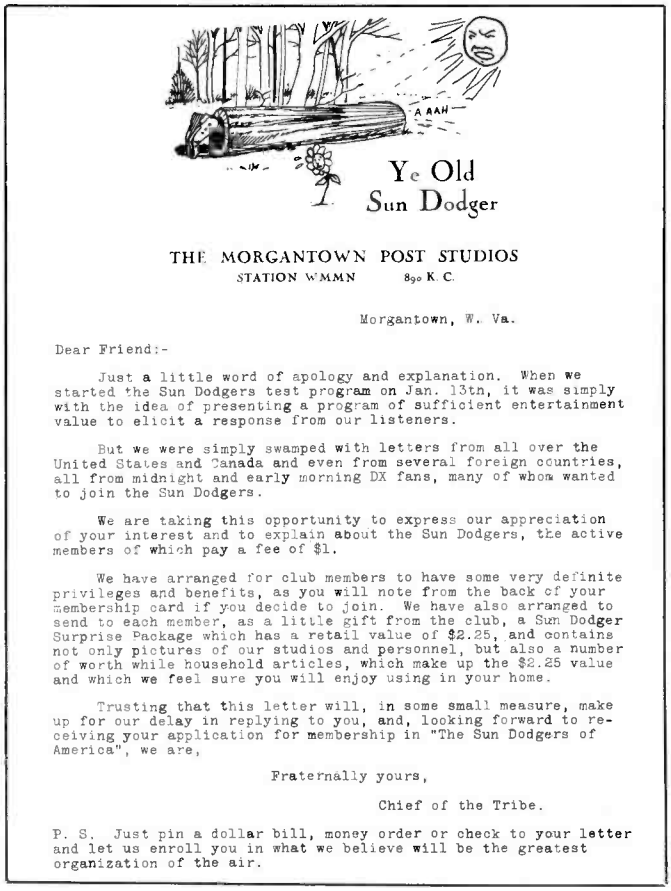
Listeners' Clubs

Over the years, many broadcasters have started clubs for their distant nighttime listeners. This was a good gesture of friendship as well as a way to keep those listeners on a somewhat regular basis. In the 1930's, clubs such as the WDAF *Nighthawks* built up sizable membership rolls, plying their listeners with membership cards, trinkets, contests, and other promos.

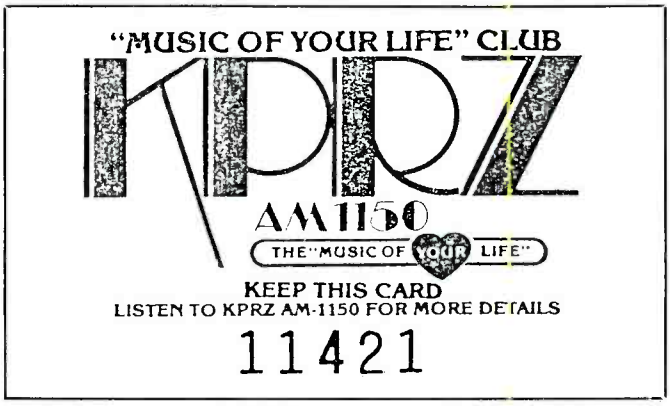
We are reminded of this from time to time when readers send us letters or cards relating to these clubs. For instance, David A. Rawley, N4XO, of High Point, NC (himself a broadcaster for a quarter a century), sent along a listeners' club letter that dates from the 1930's. He located it at a local flea market!

The undated letter was sent out by West Virginia's WMMN on behalf of their newly forming *Sun Dodgers* club. The name referred to those who slept all day and then stayed up all night to tune in the WMMN signals. The letter observed that they were "swamped with letters from all over the United States and Canada and even from several foreign countries, all from midnight and early morning DX fans . . ."

WMMN began operation on December 22nd, 1928, with 500 watts on 890 kHz. It was operated by the Holt-Rowe Novelty Co., 325 Adams St., Fairmont, WV. In 1936, the station had briefly moved to Jefferson, WV under the direction of A.A.

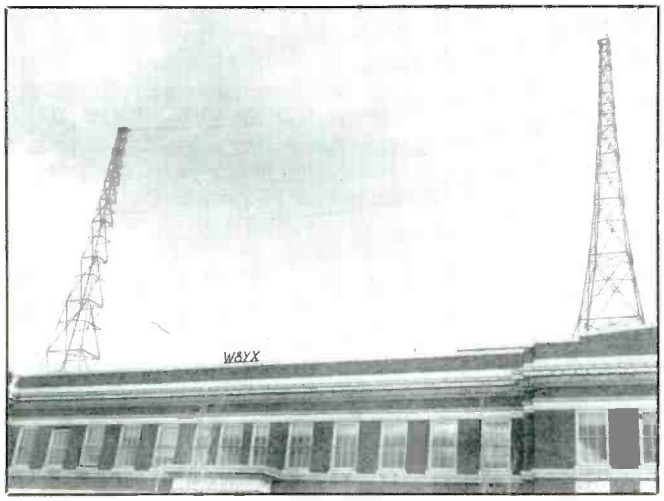


A logo showing a DX'er hiding from the sunlight topped off this club-related letter from West Virginia's WMMN. (Courtesy David Rawley, Jr., N4XO.)

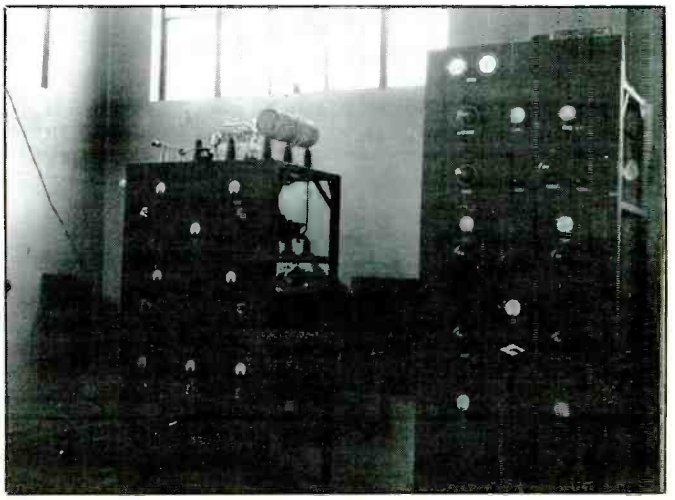


The listeners' club of KPRZ sent out these membership cards. (Courtesy George Schwenk, CA.)

CKMO, in British Columbia, had a club known as the "Midnite Prowlers." Here's the membership card! (Courtesy Phillip Wharton, VE3RE.)



The W8YX towers, as they looked in 1930.



The old W8YX transmitter used in 1930.

Rowe, Inc., which was probably the successor to the original owners.

But WMMN moved back to Fairmont and later came under the ownership of the Monongahela Valley Broadcasting Co., with studios at 208 Adams St., and transmitter at Monongah, WV. Beginning in the early 1940's, WMMN shifted its frequency to 920 kHz with 5 kW.

Still in Fairmont, WMMN remains on 920 kHz with 5 kW, but has been owned by the Marion Broadcast Corp. since 1976. They play a mix of oldies and adult contemporary music. The old *Sun Dodgers* are scarcely a memory at WMMN, these days.

As for listeners' clubs, they still exist, although not exactly for all of the same DX-inspired reasons of the 1920's and 1930's. George Schwenk, of San Pedro, sent us copies of several membership cards from more recent times.

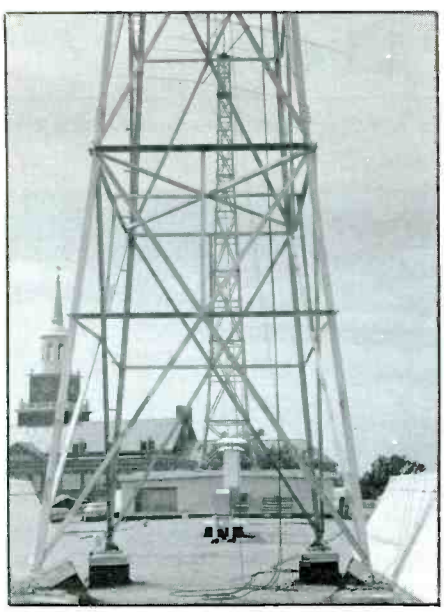
One we liked was from the old short-lived KPRZ/1150, previously known as KRKD when it was located in the Spring (Street) Arcade Building in downtown Los Angeles, and announcing "Album music from the heart of Los Angeles." After that, it played big band oldies as KPRZ. Presently, this station is Top-40 formatter KIIS ("Kiss") on 1150 AM and 102.7 FM, but (under one set of call letters or another) it dates back to 1927!

Update

In the March, 1986, issue we ran some 1930 photos of W8YX, the station operated by the University of Cincinnati Amateur Radio Club. People keep copies of *POP'COMM* for a long time, and even though that was five years ago, it caught the attention of Mark Milliron, N8NAC, when he was looking through the club's large magazine collection just recently.

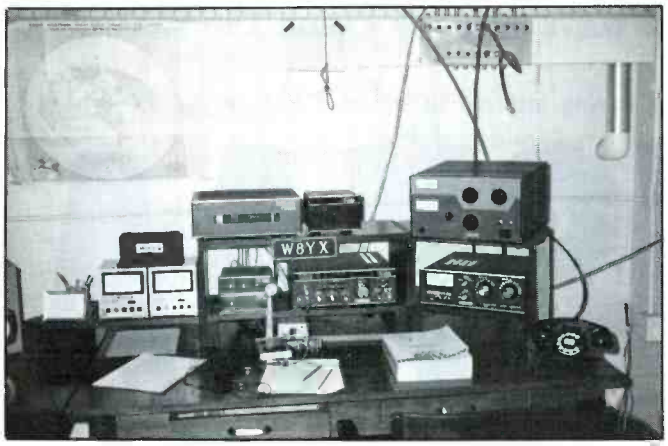
Mark wrote to tell us that W8YX went on the air in 1924 under its original callsign of 8CAU. The 1930 photo we ran showed the large towers atop UC's Swift Hall, and some interior views. Mark says that W8YX is in the same rooms in Swift Hall, and still uses the same 80 ft. towers. He even sent along some photos of how W8YX looks today, including the station's venerable towers.

The present-day W8YX has a complete HF station, a packet station, a satellite station, and a 2-meter repeater.

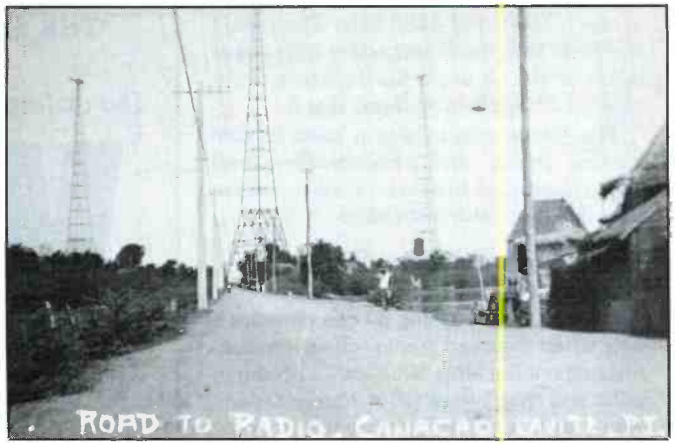


The W8YX towers as they look today. They're the same ones in the 1930 photo. (Courtesy Mark Milliron.)

The word "radio" had been hyped to the public long before it popularly related to wireless or broadcasting. This early-1900's view in Hot Springs, Arkansas touts a cure all called Radio Magnesia Spring Water. It was suggested for rheumatism, malaria, indigestion, dyspepsia, upset nerves, gout, kidney stones, and many other ailments of man and beast.



Modern-day W8YX is located in the same room as the station in the 1930 photo, but looks more compact. (Courtesy Mark Milliron.)



This photo shows the U.S. Navy's historic wireless station at Cavite, Philippines. (Courtesy Fred Contrero, OR.)

Early Wireless Station

Among the many interesting things that arrived at our offices this month was a rather ancient (although undated) photographic radio postcard sent in by Fred Contrero, of Oregon.

Fred tells us that this card has long reposed in a family album of photos of his ancestral homeland, the Philippines. He's always wondered about what it depicted, but those family members who put it there have been departed for many years. He hopes we can identify the station shown.

Let's first say that the photo shows a wide, unpaved road leading to a rather tall transmission tower located in the distance. This central tower is flanked by two other towers, which are probably the same height as the one in the center, but appear shorter because they are set further away from the camera.

The caption on the photo reads "Road to Radio, Cancao, Cavite, P.I."

Without any doubt, this is the U.S. Navy's powerful radiotelegraph station at Cavite, Philippines. Records from as early as 1906 show this station with the call letters, UT. Later UT became known as NPO. One listing for 1919 we have in the archives rates it as "high powered" and shows it operating on longwave frequency 25.0 kHz for commercial and governmental maritime traffic.

Official records for 1924 indicate that operations were then taking place on longwave 17.3, 25.0, 33.0, 50.4, 111.1, 125.0, 315.1, and 500 kHz. NPO was among the first stations regularly operating on shortwaves, showing up in 1926 records as oper-

ating on 3548 and 4283 kHz. The station shown in the photo was active until it was taken off the air when the Japanese occupied the Philippines in World War II.

The Cavite station was a most historic wireless facility, and undoubtedly a well known landmark to all who lived anywhere near the impressive installation.

From Wireless to Radio

There are at least three letters per month, sometimes more, asking if I can pinpoint a date when the word "radio" came into use, phasing out the term "wireless." I hasten to point out that "wireless" is hardly a dead word, as it is still in popular use in some areas of the world.

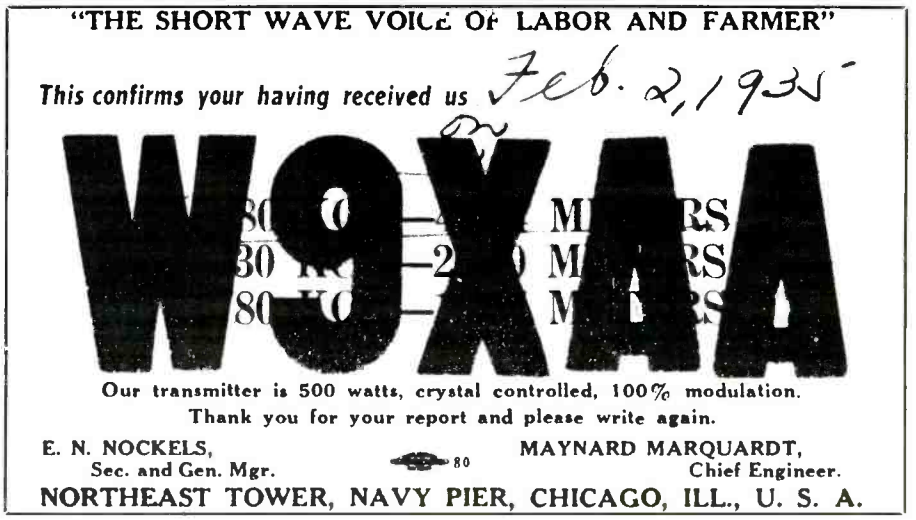
Furthermore, there isn't any exact date when, in North America, folks began saying "radio" instead of "wireless." From what I am able to determine, it was a gradual changeover that took place during World War I, which began in 1914 and ended in 1918. By 1919, words like "radio" and "radiotelegraph" were in common usage in the U.S.A., and for several years after radio broadcasting became popular in late 1921, and 1922, the term "wireless" implied (to Americans, anyway) only non-voice communications.

But note that the word "radio," which dictionaries usually claim is derived from the Latin "radius" (meaning radiation or a ray), is older than you probably imagine. My research indicates that the earliest use of the word was in the sentence, "Radio kol sheholekh misaph hapalm vuad sophoe." This translates from Hebrew into English as, "Radio, a voice that goes from one end of the world to the other." Not a bad definition of radio, either, especially when you realize that it was written 1,800 years ago! The translation is from the *Talmud* (Yoma, fol. 21).

Remember, too, that by 1903, Pierre and Marie Curie had received the Nobel Prize (along with Antoine Becquerel) for physics for discovering radium and plutonium. Then, in 1911, Marie Curie, received the Nobel Prize for chemistry for her work on the isolation of radium and plutonium. As a result, words like "radium" and "radio" were being hyped to the public on a myriad of scientific gadgets, snake oils, quack cure-all products, and other nostrums that had nothing to do with either radium or radio. Eighty years ago, words like this were sure-fire sellers; the equivalent of mentholated cigarettes of the 1940's, or oat bran of the 1990's. So, the public was already pre-sold on the word "radio" and how great it was by the time somebody finally got around to devising a practical and widespread use for the invention that we now know by that name.

Shortwave Relay

We have previously mentioned how, in the 1930's, the FCC was willing to permit American broadcasters to establish shortwave relay stations on a temporary, experimental basis. This was a wonderful idea which many stations tried. In the mid-1930's, most of the shortwave relays were below 18 MHz. As technology improved during the late-1930's, the trend was towards utilizing frequencies above 25 MHz. When the we entered the war in 1941, the shortwave relay experiment ended in the USA, and was never started up again. In Canada, however, shortwave relay experiments were continued, and some of these stations remain active on the 49 meter band.



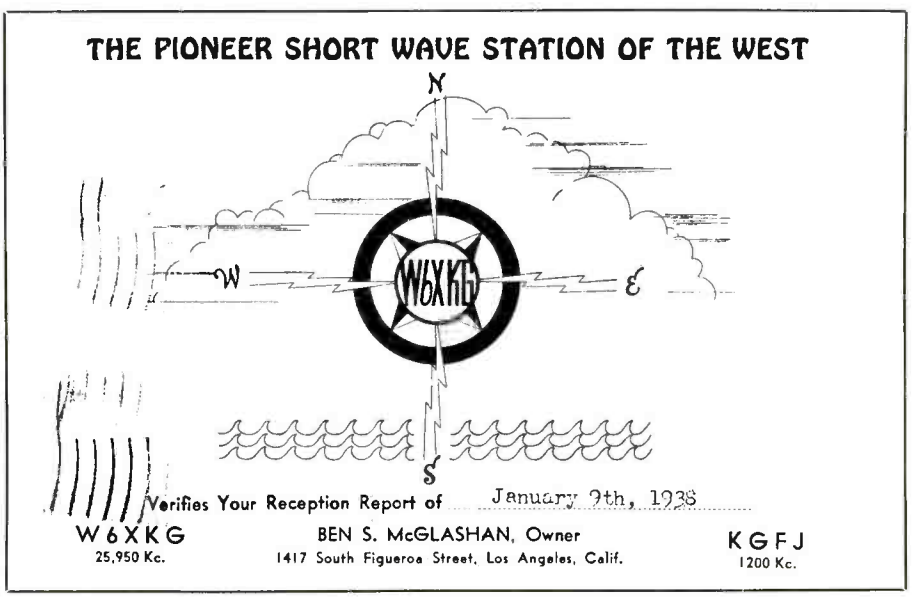
W9XAA was the shortwave relay of Chicago's WCFL. (Courtesy Henry Ward, Quebec.)

Our readers maintain a continuing interest in the early shortwave relay stations, and sometimes send us the QSL's that these stations so freely sent out to listeners around the world. This month, we have a 1935 veri issued by W9XAA, Chicago, IL.

W9XAA was operated by famous broadcaster WCFL. The relay operated on 6080, 11830, and 17780 kHz with 500 watts. This station operated on a daily schedule.

An example of the higher-frequency relays used later in the 1930's is shown by the 1938 QSL from W6XKG, operated by Los Angeles broadcaster KGFJ. W6XKG ran 100 watts on 25950 kHz, and shared the frequency with 50 watt W4XH, relaying WSPA in Spartanburg, SC; also 1 kW W9XUP, which relayed KSTP, St. Paul, MN. Both of these QSL's were submitted by Henry Ward, Sherbrooke, Quebec, Canada.

Oops! We've run out of our allotted space, but we will return in April, just like the crocuses. Thanks to all who furnished us with various items for these pages and the archives, including old QSL's (originals or good photocopies), old skeds, old photos or postcards, old station directories, and whatever. Sooner or later, we use just about everything! ■



When shortwave relays moved above 25 MHz, there was W6XKG. It rebroadcast Los Angeles' KGFJ. (Courtesy Henry Ward, Quebec.)

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CIRCLE 123 ON READER SERVICE CARD

String Up A Hot Broadcast Band Antenna

BY JOHN R. SOMERS KC3YB

I can easily remember exactly what it was that fired my interest in radio and was ultimately responsible for the first good job I ever had—not to mention a lifelong hobby. It was a big Silvertone 3-band AM/Shortwave radio I got for Christmas when I was in the eighth grade. With it, I was able to listen to foreign broadcasts from all sorts of exotic places, strange squeals, howls, and rapid-fire Morse code from Amateur Radio operators all over the world.

At some point, I became enthralled with Broadcast Band DX'ing. I recall sitting patiently through news, commercials, and music I didn't like, hoping to catch the call letters of the station. Then I would look it up in my trusty copy of White's Radio Log. With luck, it would be more than two or three states away. I would then dutifully copy the station information, transmitter power and notes on program material into my log, and move a little up or down the dial.

I quickly lost interest in the clear channel stations and sought the ones running less power, 500 or a thousand watts. It was then that I realized that the ferrite rod built into the radio was sorely lacking. As the only relief seemed to be a long, wire antenna, I sent a couple of my hard-earned, teenager's dollars to Lafayette radio and soon received everything I needed: wire, insulators, and a hank of green vinyl insulated lead-in wire. In some periodical I received at the time, I located a novel way of coupling the antenna to the radio without a direct connection, merely a general positioning of the radio. I was soon logging stations all over the USA and Canada. What is so unusual about this scheme is that I have never seen it repeated in any other publication. While it is undoubtedly familiar to some people, it is certainly not very well known.

The essence of this antenna system is simplicity itself, and while the designer of the American Radio Relay League (ARRL) logo probably didn't have this particular antenna in mind, it is what he drew: a simple antenna, inductor, and ground. Although Figure 1 shows a conventional sort of wire antenna, it can just as easily be nothing more than a length of insulated hook-up wire dangling out of an apartment window, with a hand-sized coil of wire taped together and a ground connection to the screw of a receptical cover. A word of caution though. A simple antenna, as well as the most elaborate system, has the potential of bringing lightning strikes into your home, with disastrous, and possibly deadly, effects. Use a good ground when it is not in use. There is no sense in taking chances.

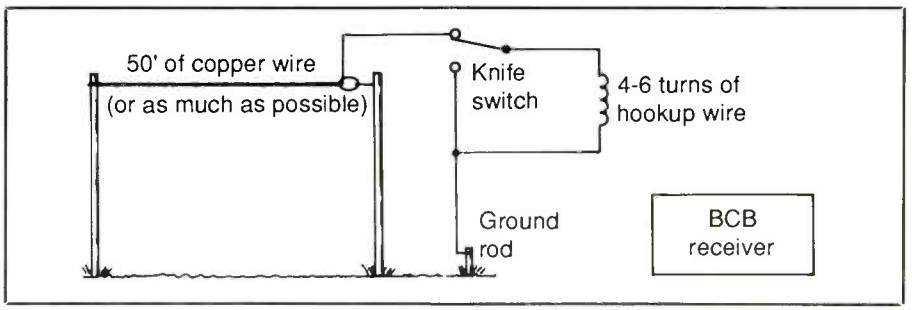


Fig. 1. BCB Antenna System (simplified)

The heart of this system, if such a simple project can have a heart, is the coil feedline positioned near the radio. Just wrap four to six turns in a circle, then tape the coil near the radio location, perhaps against the wall. Ground one end, connect the other to the antenna, and you are in business.

You will find you will have to position the radio in relation to the coil for maximum effect. This is a simple matter, and proper placement will be indicated by a terrific increase in volume from the desired station.

There is nothing tricky or technical about this antenna. Period. It does have some interesting possibilities, though. When I was attending college, I worked for a retail electronics store, which was situated in a steel building. There were no strong radio stations nearby, and the few that should have been heard clearly were scarcely audible in the store. Not exactly the environment in which to try to sell portable radios. I ran a wire antenna outside and positioned the feedline coil inside a glass display case. I made the coil quite large, about one by three feet and taped it to the glass top. The other end was grounded. The change was remarkable; when the radios were anywhere near the coil, stations could be received from one end of the dial to the other.

Although this project will not vex anyone's mental capacity or construction skills, it does work, and work very well. Anyone interested in Broadcast Band DX'ing will find it a good antenna with which to get started. Of course, a serious listener will soon graduate to a more elaborate receiver, with a few of the features we quickly come to appreciate, such as various filters and noise blanking circuitry. Because of noisy conditions that often prevail on the Medium Frequency band, a noise reducing Wave antenna will likely become a coveted addition.

Wave Antennas

In the struggle to overcome the noise that is so often prevalent in the medium frequency range (generally speaking, that part of the radio spectrum which includes the AM Broadcast band, up through the 160 meter Amateur band), many antenna experimenters have turned to the so-called 'wave' antennas for relief. Although there are several types of wave antennas, they share a number of characteristics, namely large physical size, a directional nature, and a terminating resistor on the end of maximum gain.

The term 'wave antenna' is the result of an unusual phenomenon found in wire antennas of this sort, that is, radio signals arriving at a low angle relative to the horizon and in line with the antenna induce currents in the wire that travel in the same direction as the signal, e.g. toward the receiver, and in the opposite direction. While the desired waves add up in phase with the signal, any static or interference coming from the end of the antenna in the direction of the receiver, adds up at the far end. As these antennas are customarily terminated by a non-inductive resistance at that end, the built up static is drained to the ground.

Although the more complicated of the wave antennas, such as the 'fishbone', is

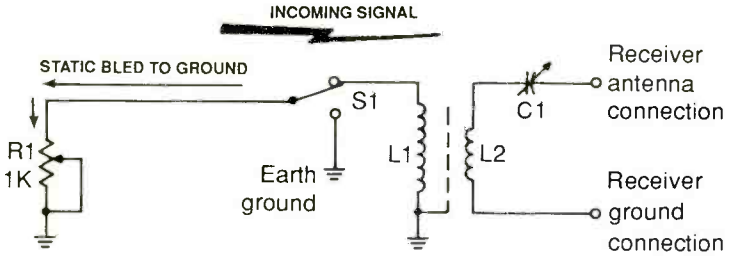


Fig. 2. Parts List

R1—1k Potentiometer Linear Taper
C1—400 pf variable
S1—Heavy SPDT knife switch
L1—65 turns 3.5″ diameter spaces to equal 5″ length #14 enamel wire
L2—6 turns #14 enamel wire, 2.5″ diameter, closewound centered inside L1 (shield = 1 layer aluminum foil, grounded leave ½ × full length uncovered to facilitate coupling)

Fig. 2. The Beverage Antenna

measured in terms of acres rather than lineal feet, the simplest and best known, the 'Beverage' antenna, consists of little more than a long wire (one to three wavelenths), which at the frequencies in question can amount to a mile or more. While the fishbone, consisting of numerous parallel wires running perpendicular to each of two feedlines, achieves its low angle response due to its height, typically up to one hundred feet, the Beverage is mounted at a much more manageable height, perhaps 20 to 30 feet at broadcast frequencies.

Figure 2 shows the simplest form of Beverage. The receiver coil is located inside, and centered on, the antenna coil. The shield consists of nothing more than a single thickness of aluminum foil wrapped around the inner coil (insulated from it, of course), and grounded. A lengthwise 1″ slit in the foil serves to reduce stray noise effects, while at the same time allowing coupling between the two coils. An antenna noise bridge can be invaluable in determining the values of the coils and capacitor. As this antenna is designed for receiving rather than transmitting, the components are not subjected to high voltages. As in all antenna projects, provisions for lightning protection should be included.

POP'COMM Reviews:

Datametrics' "Communications Manager" Computer Aided Scanning Software Program

Do you own either an ICOM IC-7000 or IC-R71A and an IBM-compatible computer? Are you interested in having your computer enhance the operation of your listening shack? If the answer to both of these questions is "yes", read on, as Datametrics has a software product called "Communications Manager" that will provide you with complete computer control over either ICOM receiver.

Overview

Years ago, scanning was accomplished by literally "turning the tuning knob." Needless to say, the digital age has made the radio monitor's life much easier with products such as "Communications Manager". The program allows you to have computer control over scanning frequencies, computer display of frequency purpose and other related information, and computer recording of the scanning results. It also allows you to change the scan delay, tuning increments, and scanning speed in the ICOM receivers as well as increasing the number of memory channels. The package is entirely "menu driven", therefore, easy to use. Additionally, a number of file utilities are included to allow you to maximize the program's use.

Your IBM-compatible does not have to be the latest, "whiz-bang," system. The program will work fine with the earlier 8086 or 8088 CPU-based computers. The computer must have at least 512K of RAM (Random Access Memory) and a serial communications port; the program supports either monochrome or color video.

The installation of the program couldn't be easier because of its menu driven user interface. Although the user's manual is very well written, you may not have to refer to it too often due to the program's ease of use. Just let the program guide you through the installation.

The program had about the right amount of usable features without making things complex. Most functions are "called up" by the use of the keyboard's "F" keys. Using a preestablished "Scan Frequency File," the program will scan, log, and graph the frequency spectrum for you. You can also set a specific "Range Scan" which will allow scanning between any two frequencies of your choice. One of the program's best features is the "Autolog" function; this automatically creates a summary or a detailed file of all monitoring activity. Its channel memory and scan delay enhancements for the ICOM receivers make a fine receiving system even more versatile.

Summary

Datametrics' "Communications Manager" program has the necessary ingredients that make Computer Aided Scanning fun and easy to use. Staying up all night and dial- twisting was fun. But, today the digital age has helped elevate the word "fun" to an even higher level! Contact Datametrics, Inc., 2575 South Bayshore Drive, Suite 8A, Coconut Grove, FL 33133 for price and availability of the latest version of the "Communications Manager" program.

Reviewed by Pop'Comm Staff

HOW I GOT STARTED

POP'COMM invites readers to submit, in roughly 150 words (give or take), how they got started in the communications hobby. Each month, we'll accept them (preferably) typewritten, or otherwise easily legible. If you have a photo of yourself taken recently, or when you got started, please enclose it with your story. We can't return or acknowledge material, whether or not it is used. Your story need be submitted only once, we'll keep it on file and consider it for future issues. All submissions become the property of *Popular Communications*.

Entries will be evaluated taking into consideration if the story they tell is especially interesting, unusual, or amusing. We reserve the right to make any necessary editorial changes to improve style or grammar.

Each month, our new winner will receive a 1-year gift subscription (or subscription extension if already a subscriber) to *Popular Communications*, the world's leading monitoring magazine.

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

Our Winner For March

The winning entry for March was sent in by Curtis Sadowski, of Bloomington, IN. Curtis wrote:

"My interest in radio began in 1967 when I was five years old. My grandparents lived on the northwest side of Chicago, and I always enjoyed visits to this exciting place. In their living room, they had a large European hi-fi set in an ornately carved mahogany cabinet. To me, this magnificent piece of equipment was a never-ending source of fascination.

"Somehow, I figured out how to turn it on, and eventually found myself listening to broadcasts in strange languages, with music such as I had never before heard. Obviously, I had my first taste of shortwave radio. It struck me with a sense of wonder that I have never forgotten, and that I still get every time I tune across an international band.

"When my grandfather explained to me that some of the stations I was hearing were in Europe, on the other side of the world, while others were in additional distant lands—I knew that this was going to be radio to turn on again, and again, and again. "Other visits let that reality come to pass. And in my mind, I can still vividly see all of those controls, that great illuminated tuning dial with all of the numbers and words, the heavy, slow, feel of the tuning knob in my hand as I was encouraged to seek out the next distant station and have its location and language explained to me.

"It was several years before I was given a shortwave receiver of my own. By that time, I had become very familiar with what could be heard during an afternoon's worth of tuning across the 16, 19 and 16 meter bands. I've never lost my enthusiasm, or that magical feeling when first hearing the world from that beautiful radio in my grandpa's living room." ■

BROADCAST DX'ING

BY ROGER STERCKX, KVT1JH

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

Good Morning, Saudi Arabia: English speaking military personnel participating in *Operation Desert Shield* have a local broadcaster to bring them pop music and news from home.

The programs come from the *Desert Shield Network FM-107*, located in to AFRTS trailers jokingly dubbed "Camp Schmooz." These studios feed twelve transmitters established in Saudi Arabia, although more were being shipped in, along with 30,000 receivers. Three ODS transmitters have 30 mile ranges, the rest are low powered units that cover only three or for miles.

Backed by 8,800 rock music CD's, the station takes requests, and also dispenses sports, news, and information bulletins. Operating around the clock, when local programming isn't being generated, there's a satellite feed from Sun Valley, CA to keep things going.

Heading up operations at Camp Schmooz is Lt. Arnie Pon (USN). The deejays include two U.S. Army specialists and two USAF staff sergeants. Thanks to E. Wallesen, La-Grange, IL for this info.

Welcome To The Airwaves: Reader Gary K. Hamlin, Registered Monitor KNY2AAW, Utica, NY passes along details of a new broadcaster in his area, WOWB, 105.5 MHz, in Little Falls, NY. The station runs 3 kW and has its antenna atop the tower of AM sister station WLFH. Future plans are to obtain FCC approval to erect a tower on nearby Shumaker Hill, and increase power to 6 kW. WLFH runs a country music format, but WOWB is programmed separately.

Story Behind The Story: From Parma, OH comes a letter written by John C. Thomas regarding an item that appeared in one of our recent FM frequency change listings. It showed WBWC seeking to move from 88.3 to 91.5 MHz, and that rang a bell with John. He tells us that WBWC is a college station at Baldwin-Wallace College in Berea, OH. They have been running 140 watts on 88.3 MHz for as long as John can remember. The station is 6 miles southwest of John's location and has a weak signal there.

What was interesting to John was that 91.5 MHz is used by WOBC, Oberlin College, Oberlin, OH. They run 440 watts and are 18 miles west-southwest of his location, and are received very well.

John tells us that WBWC was off the air for a few weeks in October, but came back on late in the month. John called there one night and spoke to the deejay who told him that they had been off the air to rebuild the station, which had been upped to just under 600 watts and would soon go to 3 kW. The deejay also said the station was changing frequencies. He wasn't certain, but he thought the new frequency would be 91.8 MHz (obviously an error, since there is no such FM broadcast frequency in the USA). John told the deejay that he read in *POP'COMM* that the new frequency was to be 91.5 MHz, which seemed strange inasmuch as WOBC was already on that frequency. The deejay said he had heard WOBC was going to move to 88.3 MHz!

Travelers Aid Station: The Kentucky State Government installed a new 530 kHz TIS station at Frankfort. It identifies as WNPM473 and is programmed by the Frankfort-Franklin County Tourist and Convention Commission, 100 Capital Ave., Frankfort, KY 40601. Although it runs only 10 watts, R.C. Watts, of Louisville, KY tells us that he was able to pick it up on his car radio from 35 miles distant!

Another TIS station reported to be on 530 kHz at Williamsburg, KY on I-75. It's programmed by the Williamsburg Tourist Commission. Other TIS stations noted in Knoxville and Louisville. Thanks to R.C. Watts for this information.

It's About Time: Humberto Luna, Los Angeles' morning KTNQ-AM/1020 radio personality (and film star), was honored with a star on the Hollywood Walk of Fame. Luna is the first Latino radio personality to receive this honor. We send him our heartiest congratulations!

Blowin' In The Wind (And Sun): In Steamboat Springs, CO station KFMU calls itself the "Sound of the Wind." Very appropriate, because for the past 15 years KFMU has relied upon wind power (plus a backup diesel generator) to power its FM transmitter. To maintain its energy independence, a few months ago KFMU added solar modules capable of generating 720 watts of power. It is expected that the combination of solar and wind power will supply enough power to maintain a full charge on the twenty 6V 220-amp-hour batteries required to run the transmitter for about 85 hours.

WSNS-TV: Last month we reported that the FCC had refused to renew the license of Chicago's WSNS-TV/44 because the FCC claimed that the station didn't provide enough public interest programming back in 1982 when it was running subscription TV. The community certainly did not agree with the FCC decision against the continuation of the Hispanic station. Many friends of the station have rallied enthusiastic popular support for WSNS-TV and are pressing the agency to renew the license. If the FCC fails to go along with the renewal, they vow to go all the way to the U.S. Supreme Court, if necessary, to keep the WSNS-TV license valid.

Women In Broadcasting: A new booklet entitled *Women On The Job: Careers in the Electronic Media* has been issued to de-

New FM Call Letters Assigned

KCNE-FM	Chadron, NE
KMNE-FM	Bassett, NE
KPNE-FM	N. Platte, NE
KQEX	Rohnerville, CA
KRNE-FM	N. Platte, NE
KSBZ	Sitka, AK
KVLI-FM	Isabella, CA
KVRU	St. Peter, MN
KVRV	Cassville, MO
KVRW	Lawton, OK
KVRX	Sparks, NV
KXHA	Shafter, CA
KXHC	Sierra Vista, AZ
KXHM	Orland, CA
KXHV	Sacramento, CA
KXHW	Marked Tree, AR
KXIO	Clarksville, AR
LZPD	Ash Grove, MO
WBGE	Peoria, IL
WECL	Elk Mound, WI
WEKX	Newburgh, IN
WFTZ	Manchester, TN
WHZT	Mahomet, IL
WKVF	Kankakee, IL
WRBE-FM	Lucedale, MS
WRTQ	Harrisburg, PA
WTKC	Kankakee, IL
WUEZ	Christopher, IL
WXSB	Benton Harbor, MI
WXSC	Tell City, IN
WXSE	Calhoun, TN
WXSF	Bicknell, IN
WXZB	Golconda, IL
WXZD	Columbus, MS

Changed FM Call Letters

New	Was	
KBTR	KAWV	Oracle, AZ
KEZU	KBSS-FM	Booneville, AR
KFMQ-FM	KFMQ	Lincoln, NE
KHFI-FM	KQFX	Georgetown, TX
KIOA-FM	KDWZ	Des Moines, IA
KITY	KRMD	Shreveport, LA
KKMR	KROI	Sparks, NV
KMXL	KRGK	Carthage, MO
KONZ	KXMK	Arizona City, AZ
KQAK	KWBX	Bend, OR
KSQQ	KSJQ	Morgan Hill, CA
KULE-FM	KGDN	Ephrata, WA
KVET-FM	KHFI-FM	Austin, TX
WBAR-FM	WZBR	Lake Luzerne, NY
WBOP	WJNA	Churchville, VA
WCKO	WAQT	Carrollton, AL
WDCK	WQSF	Williamsburg, VA
WDJB	WBBE	Columbia City, IN
WFSQ	WFSU-FM	Tallahassee, FL
WFSU-FM	WFSQ	Tallahassee, FL
WHKX	WQHI	Lafayette, FL
WHUM	WYPR	Avis, PA
WJIB	WOCB-FM	W. Yarmouth, MA
WKSY	WQTI	Marion, SC
WMNX	WMFD-FM	Wilmington, NC
WMXH	WGRT	South Bend, IN
WNNK-FM	WNNK	Harrisburg, PA
WOCW	WBHH	Parris Island, SC
WQLZ	WMSR-FM	Manchester, TN
WRIP	WOVR-FM	Versailles, IN
WSYE	WCPC-FM	Houston, MS
WVMX	WRFB	Stowe, VT

Applications For New FM Stations

AK	Sitka	103.1 MHz	3 kW
AL	Valley	98.1 MHz	3 kw
NC	Atlantic	107.3 MHz	6 kW
VA	Lexington	89.9 MHz	1 kW

Permits Granted For New FM Stations

CA	Ione	88.3 MHz	2 kW
CA	Lake Isabelle	104.5 MHz	200 watts
CA	N. Highlands	89.3 MHz	1 kW
IL	Carlinville	95.9 MHz	3 kW
IL	Farmington	95.7 MHz	3 kW
IL	Mahomet	105.9 MHz	3 kW
IN	Buchanan	99.1 MHz	3 kW
IN	Newburgh	106.1 MHz	3 kW
MN	Granite Falls	93.9 MHz	3 kW
MN	Nisswa	93.3 MHz	96 kW
NC	Hope Mills	103.5 MHz	3 kW
NE	Bassett	90.3 MHz	92 kW
NM	Los Lunas	106.3 MHz	3 kW
NV	Sparks	92.1 MHz	440 watts
NY	Oneonta	91.7 MHz	400 watts
OR	Brownsville	102.3 MHz	345 watts
TX	Bryan	99.5 MHz	3 kW
VA	Lynchburg	105.9 MHz	3 kW

FM Frequency Changes Approved

KTFA	Groves, TX	92.1 MHz	Move to 92.5 MHz, 50 kW
WIDL	Caro, MI	104.9 MHz	Move to 92.1 MHz, 6 kW
WOBN	Westerville, OH	105.7 MHz	Move to 101.5 MHz
WVGN	Charlotte Amile, VI	107.1 MHz	Move to 105.3, 32 kW

AM Facility Changes Approved

KWWJ	Baytown, TX	1360 kHz	Increase days to 5 kW
WNJO	Seaside Park, NJ	1550 kHz	Move to Toms River, 6 kW/ 3 kW
WWBJ	Vineland, NJ	1360 kHz	Move to Washington, NJ; 5 kW days

Applications For AM Facility Changes

WJOT	Lake City, SC	1260 kHz	Increase days to 5 kW

FM Call Letters Changes Requested

Present	Seeking	
KMIO	KIOT	Espanola, NM
KPLW	KYTC	Northwood, IA
WHLP-FM	WNKX-FM	Centerville, TN
WQTR	WWFN	Lake City, SC

AM Call Letters Changes Requested

Present	Seeking	
WFXP	WRNE	Pensacola, FL
WHLP	WNKX	Centerville, TN
WHZI	WRJL	Hanceville, AL
WOKG	WAZP	Warren, OH

Requests Withdrawn For Call Letters

Present	Sought	
KRMD	KITY	Shreveport, LA
WDJY	WTKZ	Washington, DC

Changed AM Callsigns

New	Was	
KAPX	KTID	San Raphael, CA
KFMQ	KLMS	Lincoln, NE
KHYM	KTLG	Gilmer, TX
KKCR	KGTM	Wichita Falls, TX
KOJY	KSUR	Soledad, CA
KTUN	KBBQ	Santa Barbara, CA
WMRZ	WNWS	Miami, FL
WNNK	WHGB	Harrisburg, PA
WQAI	WHOG	Fernandina Beach, FL
WSSH	WKKU	Boston, MA

This sticker reading "LG 73" may look mysterious, but if you came from Vancouver, BC you'd know that it's from CKLG/730, which plays contemporary hits. (Sent in by Jack Nortman, Vancouver, BC.)

KGMG-FM, a/k/a "Magic 102.1," is now rockin' in San Diego. Steve Sellers is New Director there—and a POP'COMM reader!

scribe many challenging and rewarding career opportunities. The booklet describes various jobs, the qualifications, and who to contact about getting started. Broadcast-related fields, such as advertising, public relations, and broadcast law are included.

Women are actively being sought for broadcast opportunities in the areas of engineering, news, production, promotion, programming, sales, and elsewhere.

To obtain a copy of this free booklet, send a request (you must enclose a self-addressed label) to American Women in Radio and Television, 1101 Connecticut Avenue N.W., Suite 700, Washington, DC 20036. Be sure to request the booklet by name.

Southern California Beat: Steve O. Sellers, N5GZP/6, News Director of KGMG-AM/FM (1320 kHz and *Magic 102.3*), San Diego, CA brought some news from here and there.

For instance, KISS/99.5 in San Antonio, TX recently dropped their rock format, said goodbye to their announcers, and became an oldies station. This was quite a surprise since KISS was the only rocker in town, and there already were several other oldies stations in the market. Nobody (except KISS) seems to know why the change was made.

In San Diego, KGMG-FM changed from classic rock to a full-blown rock format. The morning show there is run by Steve and his partner, Greg Stevens. They're on from 5:30 to 9 in the ay-em. And, by the way, if

Here's the all-new 13th Edition of the FM Atlas. If you DX on FM, or listen for the programming, or are in the FM-casting industry, this is the reference book for you!

you're in the U.K., you can also hear Steve over the BBC's *Greater London Radio* (1450 kHz and 94.9 FM), where he does a weekly music report. Steve says that GLR is a totally wild and wacky station, not like the BBC World Service we hear on shortwave.

Unusual Situation: As you may know, FCC regulations don't allow one licensee to operate two AM (or FM, or TV) stations in the same local area. A waiver of these regulations until April 22 (this year) was granted in regard to two stations in Dallas, TX. These are KLIF and KKWM.

The owners of KLIF purchased KKWM in order to replace KLIF with KKWM to enhance its nighttime coverage in the Dallas-Ft. Worth market. The intention is to sell off KLIF to new owners, however not before a transition period during which the existing KLIF audience (hopefully) will be shifted over to KKWM. KLIF runs a talk format, with mostly news reports and issue-oriented programming, and that's what's being shifted over to KKWM. There has been a one week simulcast period, with no commercials being presented over KLIF. After that, KKWM will run the talk format and KLIF will be operated with a different format while efforts are made to sell the station before the end of April. During this period, KLIF and KKWM will have separate programming and sales staffs.

New FM Atlas, 13th Edition: Bruce Elving's popular *FM Atlas* is now available in its 13th Edition. The 192-page guide to US, Canadian, and Mexican FM'casters is the best way we know of to keep track of these stations. It includes 92 pages of maps to help pinpoint some 6,750 FM stations, both commercial and public. FM translators and boosters occupy a special nine-page section (and are shown on the maps).

The directory listings are arranged by location and frequency, give program formats, stereo and technical data, "non-ID's," multi-city ID's, and SCA activities.

Text covers the demise of Canada's CKO news network; small town stations trying to move to large cities; Class A stations getting upgrades; the vanishing "beautiful music" format; Alice Brannigan's biography of FM's inventor; and more!

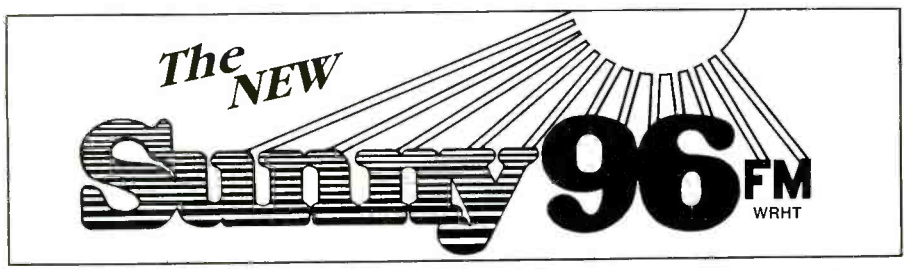
This new edition is completely revised and updated from the previous (gray cover) 12th Edition, reflecting all of the many changes and additions. the 13th Edition of the *FM Atlas* is $10.95, plus $2 postage to addresses in USA/Canada/APO/FPO, from CRB Research Books, Inc., P.O. Box 56, Commack, NY 11725. Residents of NY State, please add 79 cents sales tax.

Swiss FM station "Radio Neuchateloise," 97.5 MHz, has these nifty stickers. (Submitted by DeMartin Ferdy, Switzerland.)

Night Flight: The FCC was wondering how much potential relief to existing 540 to 1600 kHz nighttime operations there will be when some stations begin shifting up to the new 1605 to 1705 kHz portion of the broadcast band. In a purely hypothetical situation, they selected one station (WXTZ, Indianapolis, IN) on 1430 kHz and calculated any increase in the nighttime coverage that might be expected by some other stations on the frequency should that one station migrate from 1430 kHz to a frequency in the new band.

For instance, WHNK, Madison, TN would note an increase in its nighttime coverage from 17 to 29 sq. miles. Station WBRB, Mt. Clemens, MI would have 68 sq. miles of night coverage instead of the present 41 sq. mi. Station WFOB in Fostoria, OH would jump from 132 sq. mi. of night coverage to 353 sq. mi. Station KLO, Ogden, UT, which now covers 1092 sq. mi., would increase to 1127 sq. mi. Still, other stations would experience virtually no improvement at all. These included KALI, KNTA, WLKF, WWGS, WXKS, WDEX, WNJR, KCRX, WENE, KYKN, WVAM, KEES, KCLK, and KBRC.

An interesting study, showing that even one station can make a lot of difference in the nighttime coverage of stations located quite far away. Remember, however, that WXTZ was selected as a hypothetical example by the FCC for these calculations, it doesn't mean that the station actually has any plans to change frequency. ■



"Sunny 96" is WRHT, Moorehead City, NC on 96.3 MHz. This was sent in by Bob Aitken, of Havelock, NC. Hey Bob, is King's BBQ still over on Highway 70 in E. Kinston? Yummy!

KISS rocks no more, so this is now a rare bumper sticker. (Sent in by Steve Sellers, San Diego, CA.)

COMMUNICATIONS ELECTRONICS INC.

Emergency Operations Center has expanded to our new two acre facility and World Headquarters. Because of our growth, CEI is now your *one stop source* for emergency response equipment. When you have a command, control or communications need, essential emergency supplies can be rushed to you by CEI. As always, for over twenty two years, we're here and ready to help.

Our RELM two-way radio transceivers were especially created for government agencies. When you need to talk to police, fire, ambulance, or state, federal and international response forces, RELM transceivers may be quickly programmed for up to 48 frequencies. Listed below, are some of our most asked about transceivers. For additional assistance, call CEI at 313-996-8888.

NEW! RELM® RSP500-A

List price $465.00/**CE price $319.95/SPECIAL**

20 Channel • 5 Watt • Handheld Transceiver

Frequency range: 148-174 MHz. continuous coverage. Will also work 134-148 MHz. with reduced performance.

The *RELM* RSP500B-A is our most popular programmable 5 watt, 20 channel handheld transceiver. You can scan 20 channels at up to 40 channels per second. It includes CTCSS tone and digital coded squelch. Snap on batteries give you plenty of power. Additional features such as time-out timer, busy-channel lockout, cloning, plug-in programming and IBM PC compatability are standard. It is F.C.C. type accepted for data transmission and D.O.C. approved. We recommend also ordering the **BC45** rapid charge 1½ hour desk battery charger for $99.95, a deluxe leather case **LC45** for $48.95 and an external speaker microphone with clip **SM45** for $59.95. Since this radio is programmed with an external programmer, be sure to also order one **PM45** at $74.95 for your radio system.

NEW! RELM® UC102/UC202

List price $128.33/**CE price $79.95/SPECIAL**

Now...Handheld gear you can afford.

CEI understands that all agencies want excellent communications capability, but most departments are strapped for funds. To help, CEI now offers a special package deal on the RELM UC102 one watt transceiver. You get a UC102 handheld transceiver on 154.5700 MHz., flexible antenna, battery charger and battery pack for only $79.95. If you want even more power, order the RELM **UC202** two watt transceiver for only $114.95.

NEW! RELM® RH256NB-A

List price $449.95/**CE price $299.95/SPECIAL**

16 Channel • 25 Watt Transceiver • Priority Time-out timer • Off Hook Priority Channel

The *RELM* RH256NB is the updated version of the popular RELM RH256B sixteen-channel VHF land mobile transceiver. The radio technician maintaining your radio system can store up to 16 frequencies without an external programming tool. All radios come with CTCSS tone and scanning capabilities. This transceiver even has a priority function. A 60 Watt VHF 150-162 MHz. version called the **RH606B** is available for $429.95. A UHF 15 watt, 16 channel similar version of this radio called the **LMU15B-A** is also available and covers 450-482 MHz. for only $339.95. An external programming unit **SPM2** for $49.95 is needed for programming the LMU15B.

NEW! RELM® LMV2548B-A

List price $423.33/**CE price $289.95/SPECIAL**

48 Channel • 25 Watt Transceiver • Priority

RELM's new LMV2548B gives you up to 48 channels which can be organized into 4 separate scan areas for convenient grouping of channels and improved communications efficiency. With an external programmer, your radio technician can reprogram this radio in minutes with the **PM100A** programmer for $99.95 without even opening the transciever. A similar 16 channel, 60 watt unit called the **RMV60B** is available for $489.95. A low band version called the **RML60A** for 30-43.000 MHz. or the **RML60B** for 37-50.000 MHz. is also available for $489.95.

RELM® Programming Tools

If you are the dealer or radio technician maintaining your own radio system, you **must** order a programming tool to activate various transceivers. The **PCKIT010** for $149.95 is designed to program almost all RELM radios by interconnecting between a MS/DOS PC and the radio. The **PM100A** for $99.95 is designed to externally program the RMV60B, RML60A, RML60B and LMV2548 radios. The **SPM2** for $49.95 is for the LMV25B and LMU15B transceivers. The **RMP1** for $49.95 is for the RMU45B transceiver. *Programmers must be used with caution and only by qualified personnel because incorrect programming can cause severe interference and disruption to operating communications systems.*

★★★ *Uniden CB Radios* ★★★

The *Uniden* line of Citizens Band Radio transceivers is designed to give you emergency communications at a reasonable price. Uniden CB radios are so reliable they have a two year limited warranty.

PRO310E-A3 *Uniden* 40 Ch. Portable/Mobile CB ... $72.95
PRO330E-A3 *Uniden* 40 Ch. Remote mount CB ... $99.95
GRANT-A3 *Uniden* 40 channel SSB CB mobile ... $152.95
PC122-A3 *Uniden* 40 channel SSB CB mobile ... $113.95
PC66A-A *Uniden* 40 channel CB Mobile ... $78.95
PRO510XL-A3 *Uniden* 40 channel CB Mobile ... $34.95
PRO520XL-A3 *Uniden* 40 channel CB Mobile ... $49.95
PRO535E-A *Uniden* 40 channel CB Mobile ... $73.95
PRO538W-A *Uniden* 40 ch. weather CB Mobile ... $78.95
PRO640E-A3 *Uniden* 40 ch. SSB CB mobile ... $133.95
PRO810E-A *Uniden* 40 channel SSB CB Base ... $174.95

★★★ *Uniden Radar Detectors* ★★★

Buy the finest *Uniden* radar detectors from CEI today.

CARD-A3 *Uniden* credit card size radar detector ... $127.95
RD3XL-A3 *Uniden* 3 band radar detector ... $124.95
RD9GTL-A *Uniden* "Passport" size radar detector ... $89.95
RD9XL-A3 *Uniden* "micro" size radar detector ... $107.95
RD25-A *Uniden* visor mount radar detector ... $54.95

Bearcat® 200XLT-A

List price $509.95/**CE price $239.95/SPECIAL**

12-Band, 200 Channel • 800 MHz. Handheld Search • Limit • Hold • Priority • Lockout

Frequency range: 29-54, 118-174, 406-512, 806-956 MHz. Excludes 823.9875-849.0125 and 868.9875-894.0125 MHz.

The *Bearcat* 200XLT sets a new standard for handheld scanners in performance and dependability. This full featured unit has 200 programmable channels with 10 scanning banks and 12 band coverage. If you want a very similar model without the 800 MHz. band and 100 channels, order the **BC 100XLT-A3** for only $179.95. Includes antenna, carrying case with belt loop, ni-cad battery pack, AC adapter and earphone. Order your scanner now.

Bearcat® 800XLT-A

List price $549.95/**CE price $239.95/SPECIAL**

12-Band, 40 Channel • No-crystal scanner Priority control • Search/Scan • AC/DC

Bands: 29-54, 118-174, 406-512, 806-912 MHz.

Now...nothing excluded in the 806-912 MHz band.

The Uniden 800XLT receives 40 channels in two banks. Scans 15 channels per second. Size 9¼" x 4½" x 12½." If you do not need the 800 MHz. band, a similar model called the **BC 210XLT-A** is available for $178.95.

NEW! Uniden® MR8100-A

List price $849.95/**CE price $486.95**

12-Band, 100 Channel • Surveillance scanner

Bands: 29-54, 116-174, 406-512, 806-956 MHz.

The *Uniden* MR8100 surveillance scanner is different from all other scanners. Originally designed for intelligence agencies, fire departments and public safety use, this scanner offers a breakthrough of new and enhanced features. Scan speed is almost 100 channels per second. You get four digit readout past the decimal point. Complete coverage of 800 MHz. band when programmed with a personal computer. Alphanumeric designation of channels, separate speaker, backlit LCD display and more. To activate the many unique features of the Uniden MR8100 a computer interface program is available for $19.95. Due to manufacturers' territorial restrictions, the MR8100 is not available for *direct* shipment from CEI to CA, OR, WA, NV, ID or UT.

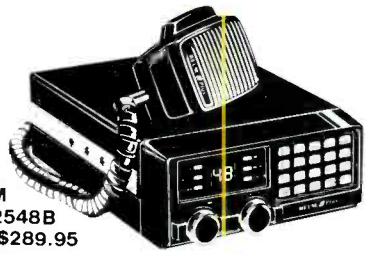
NEW! Ranger® RCI2950-A

List price $549.95/**CE price $249.95/SPECIAL**

10 Meter Mobile Transceiver • Digital VFO Ful! Band Coverage • All-Mode Operation Backlit liquid crystal display • Repeater Splits RIT • 10 Programmable Memory Positions

Frequency Coverage: 28.0000 MHz. to 29.6999 MHz.

The *Ranger* RCI2950 Mobile 10 Meter Transceiver has everything you need for amateur radio communications. The RF power control feature in the RCI2950 allows you to adjust the RF output power continuously from 1 watt through a full 25 watts output on USB, LSB and CW modes. You get a noise blanker, roger beep, PA mode, mike gain, digital VFO, built-in S/RF/MOD/SWR meter. Frequency selections may be made from a switch on the microphone or the front panel. The RCI2950 gives you AM, FM, USB, LSB or CW operation. For technical info, call Ranger at 619-259-0287.



RELM LMV2548B Only $289.95

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CT785S-A *Uniden* speakerphone cordless phone ... $109.95
BC55XLT-A *Bearcat* 10 channel scanner ... $114.95
AD100-A Plug in wall charger for BC55XLT ... $14.95
PS001-A Cigarette lighter cable for BC55XLT ... $14.95
VC001-A Carrying case for BC55XLT ... $14.95
BC70XLT-A *Bearcat* 20 channel scanner ... $159.95
BC142XL-A *Bearcat* 10 ch. 10 band scanner ... $84.95
BC147XLT-A *Bearcat* 16 ch. 10 band scanner ... $94.95
BC172XL-A *Bearcat* 20 ch. 11 band scanner ... $134.95
BC177XLT-A *Bearcat* 16 ch. 11 band scanner ... $134.95
BC590XLT-A *Bearcat* 100 ch. 11 band scanner ... $194.95
BC760XLT-A *Bearcat* 100 ch. 12 band scanner ... $254.95
BC002-A CTCSS tone board for BC590/760XLT ... $54.95
BC003-A Switch assembly for BC590/760XLT ... $22.95
BC855XLT-A *Bearcat* 50 ch. 12 band scanner ... $199.95
BC1-A *Bearcat* Information scanner with CB ... $129.95
BC330A-A *Bearcat* Information scanner ... $99.95
BC560XLT-A *Bearcat* 16 ch. 10 band scanner ... $94.95
BP205-A Ni-Cad batt. pack for BC200/BC100XLT ... $39.95
ATS808-A *Sangean* shortwave receiver ... $159.95
ATS803A-A *Sangean* shortwave receiver ... $159.95
ATS800-A *Sangean* shortwave receiver ... $99.95
MS103-A *Sangean* shortwave receiver ... $84.95
74102-A *Midland* emergency weather receiver ... $39.95
77116-A *Midland* CB with VHF weather & antenna ... $66.95
77118-A *Midland* CB mobile with VHF weather ... $62.95
77913-A *Midland* CB portable with VHF weather ... $79.95
76300-A *Midland* CB base station ... $92.95
FBE-A Frequency Directory for Eastern U.S.A. ... $14.95
FBW-A Frequency Directory for Western U.S.A. ... $14.95
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RFD2-A CT, ME, MA, NH, RI, VT Directory ... $14.95
RFD3-A DE, DC, MD, NJ, NY, PA, VA, WV Dir. ... $14.95
RFD4-A AL, AR, FL, GA, LA, MS, NC, PR, SC, TN, VI ... $14.95
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RFD6-A CA, NV, UT, AZ, HI, GU Freq. Directory ... $14.95
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ASD-A Airplane Scanner Directory ... $14.95
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CBH-A Big CB Handbook/AM/FM/Freeband ... $14.95
TIC-A Techniques for Intercepting Communications ... $14.95
RRF-A Railroad frequency directory ... $14.95
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A70-A Base station scanner antenna ... $34.95
USAMM-A Mag mount VHF ant. w/ 12' cable ... $39.95
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Add $4.00 shipping for all *accessories* ordered at the same time. Add $12.00 shipping per radio and $4.00 per antenna.

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TELEPHONES ENROUTE

BY TOM KNEITEL, K2AES

WHAT'S HAPPENING WITH CELLULAR, MARINE & MOBILE PHONES

A letter from John L. Donaldson, Virginia Beach, VA brings up an interesting point. John comments that many cellular service suppliers advise their subscribers that they can call 9-1-1 in the event they have a mechanical problem with their vehicles, or if they want to report an apparent drunken driver.

His point is that he was under the impression that 9-1-1 was an emergency number to be used only when there was an urgent need for assistance from police, paramedics, or fire personnel. John fears that loading up 9-1-1 systems with calls about mechanical breakdowns and reports of erratic drivers who might be drunk could saturate such systems with those calls, thereby detracting from their ability to handle the types of serious emergencies for which they were created. He thinks that those calls, while important, aren't actually urgent. Therefore, they should be routed to public safety agencies by dialing up their non-emergency number. Further, he hopes that law enforcement agencies discourage the public's use of 9-1-1 for all calls that do not require their immediate response in life threatening situations, or to respond to felonies in progress.

John's point is well made, and comments from readers are invited.

An office in the car comes in handy if you've got a job like this USAA staff appraiser, Chris Severson.

Ticket to Ride

We have gotten numerous news clippings about problems some drivers have had while driving and simultaneously using a cellular. These problems have ranged from traffic tickets to fender benders. My own use of a cellular quickly taught me that it is an art that required a bit of mastering before it could be done with grace and safety. The manual that came with the cellular has nothing to say of any value on the subject.

Apparently the problem has become sufficiently widespread for the cellular industry, itself, to take note and issue a set of thoughts for safely using cellulars from vehicles.

First, they suggest that the cellular is mounted properly and securely, and that you have mastered the use of the device before you take to the open road with the thing.

Then, they advise making fullest possible use of all hands-free components, especially if the vehicle has a stick shift transmission.

Next, they counsel advising the other party on the line that you're calling from a cellular and that if "a traffic problem occurs," you might have to abruptly end the conversation. Personally, I think it's a good idea to give them that information, but for other reasons. It warns them not to discuss any private matters over the air. Also, although the cellular industry decided not to mention it, cellulars tend to experience service dropouts. That means, when your car passes into a poor signal coverage area, your call is likely to suddenly disconnect, leaving the other party wondering what happened.

They think that it's a good idea to reduce your driving speed while you're chatting. So, they advise that you safely pull into the slow lane for your calls. My own feeling is that once you've placed your call, and you're fully hands-free, there really isn't any reason not to resume your normal cruising speed. It's no more involved than chatting with a passenger in your vehicle.

They do caution, however, that complex conversations that require note taking or reading from notes are unsafe being accomplished even at slow driving speeds. Those calls should be done while pulled over to the side of the road and stopped in a safe location. Or offer to return the call as soon as you can stop.

If your cellular has quick dialing, memory dialing, or other (one or two digit) dialup systems not requiring you to press seven, or ten, or more digits, be sure to use that function. If you dial a full series of numbers to place a call, it's a good idea to do it in segments. Dial . . . pause . . . dial. You don't have to dial the entire number at once. Pause between each three or four digits to check the road.

And, in general, if you're bogged down in heavy stop-and-go traffic, or driving in a drenching rain, in heavy snow, on ice-covered roads, or are experiencing other traffic conditions that are unsuited to taking or placing calls, turn the phone off until the environment becomes more suited for telephone conversations.

New Doings

Hughes Network Systems (of Germantown, MD) and McCaw Cellular Communications, Inc. (of Kirkland, WA) announced that they intend constructing and operating a digital, nationwide in-flight telephone data transmission service for use aboard airliners. The new service, which requires FCC approval, will operate under the name Clairtel. Agreements have already been reached with Alaskan Airlines and Northwest Airlines to use the service. Negotiations are under way with other carriers.

Clairtel offers high quality voice service, plus FAX and computer data transmission capabilities, plus at-seat video. For the first time, passengers will be able to receive calls as well as place them. They will also be able to receive FAX and computer data transmissions while in flight.

Amtrak's New England Express Service between New York City and Boston has now started offering GTE Railfone cellular service to passengers. This service has been in use on Amtrak's Metroliner and San Die-

The small Ricoh PF-1 FAX unit is made to be used with cellulars.

gan passenger trains, and has handled an average of 4,500 calls each week. Railfone telephones are in each of the club/dinette cars and at least one coach car per train. The phones accept most major credit cards or the AT&T Calling Card.

Data Doings

A new technology from L.A. Cellular and SIT subsidiary of Spectrum Cellular Corp., has made information systems more accessible and accurate with the *Star*Data*. Accessed by dialing a star, plus the letters DATA on any L.A. Cellular activated phone equipped with Spectrum's cellular technology, customers can perform a number of 100% error-free information transmission functions from the field.

Potential applications for this are accessing a company's mainframe to determine the location of needed materials or stock, accessing commercial database services such as CompuServe, accessing billing or service agreement files, and field processing of orders.

USAA, an insurance and financial services company headquartered in San Antonio, TX has its claims adjusters using laptop computers in their cars. Combining voice and computer communications over cellular phones, USAA auto appraisers and property adjusters have what amounts to fully-equipped rolling offices that can be taken to tow yards, repair shops, and into client's driveways for "on the spot" appraisals without waiting for papers to go through the mails.

USAA appraisers can now track down an insured's wrecked car in a towing yard, for instance, evaluate the damage, and then key that information into the insured's claim file. The appraiser can then contact the vendor's database to get the costs of parts and repairs, and finally phone up the insured directly from the yard with a status report.

Among the latest equipment for the well-equipped rolling office is the new Ricoh PF-1 portable FAX machine. This small (11 × 7 × 2 inches) device provides a previously unavailable level of compensation for static interference via an error correction mode recently adopted as an international ECM standard. It helps to deliver landline-quality FAX reproduction from cellular facilities, and is compatible with all Group 3 FAX machines. It operates at 4,800 bits per second, which takes about 34 seconds to transmit a document.

More information on the Ricoh PF-1 is available from Ricoh Corp., 5 Dedrick Place, West Caldwell, NJ 07006.

Digital Doings

International Mobile Machines Corp. (IMM), of King of Prussia, PA announced a new wireless *Ultraphone* telephone network that allows telephone companies to offer digital mobile service throughout North America, utilizing Time Division Multiple Access (TDMA) technology within the normal 4,400 square mile *Ultraphone* cell. This will allow telephone companies to take advantage of the recent FCC ruling permitting mobile service on the Basic Exchange Telecommunications Radio Service (BETRS) frequencies. BETRS is a radio service open to telephone company operating that permits the installation of radio telephones in homes, farms, ranches, cabins, and other places located in areas so remote that landline service isn't feasable. Mobile service is also permitted. Frequencies in the 454 MHz band are used, as well as several in the 800 MHz band. In other words, it will be a competitor to cellular technology.

IMM demonstrated the technology at 800

MHz with hand-off and four conversations per 25 kHz channel. A purchase order for the first of these systems was received from the Dell Telephone Cooperative, which serves large areas of western Texas and New Mexico.

HQ's of IMM is at 2200 Renaissance Boulevard, Suite 105, King of Prussia, PA 19406.

TDMA's applications in the cellular marketplace have been undergoing field tests since January in Las Vegas, NV by the Centel Cellular Co., of Chicago, IL. Specifically, this is Motorola's version, called Narrow Advanced Mobile Phone Service Standard (N-AMPS). All units participating in the field test have dual-mode operating capabilities, so they will be compatible with either digital or standard analog cellular systems.

Motorola dual-mode cellulars use more than 2,400 digital channels to transmit and receive, or they can function on the 832 available analog channels which occupy the same frequency spectrum.

Panasonics's HP600 ultra-compact handheld has just been announced.

Ultra Compact Cellular

Panasonic brought out their tiny HP600 handheld cellular as the latest entry in the mini-phone market. The HP600 is about 6.5" tall. Panasonic says they could have made it even smaller but it would have been counterproductive because that's the average distance between the human ear and mouth.

The HP600 offers dual NAM capabilities, a 100-number alphanumeric memory that includes alpha tagging of stored numbers and nine special memories for pause dialing. On a single battery charge, the HP600 offers about 90 minutes of talktime, or 16 hours standby). A function menu guides users through the steps in operating all of its functions.

We especially liked its automatic repeat dialing, and the fact that when it rings it can be answered by touching just about any keypad button. There's an optional 3-watt carmount kit for those times when higher power is needed.

The MSRP of the HP-600 is $1,200. Definitely classy. More information from Panasonic Communications & Systems Co., Telecommunications Division, 2 Panasonic Way, Seacaucus, NJ 07094, or circle 101 on our Readers' Service.

We are always anxious to hear from our readers with comments, opinions, questions, and anecdotes about personal communications. Happy, too, to hear from manufacturers and service providers.

BY GERRY L. DEXTER

CLANDESTINE COMMUNIQUE

WHAT'S NEW WITH THE CLANDESTINES

The Gulf crisis continues and we still have not heard (or heard of) any pro-Kuwait, anti-Iraq clandestine shortwave operations, although the Kuwait government in exile is said to be airing programs on medium wave.

Radio Baghdad, however, has added more "anti" broadcasts to its schedule. *Holy Medina Radio* is carried as part of Baghdad's general Arabic service and is scheduled at 1900-2200 on 6055, 11990 and 21675. *The Voice of Arab Egypt* (or Voice of Egypt of Arabism) is airing via Baghdad between 2020-2200 on one or more of the following frequencies: 15150, 15170, 15310, 15620 and 17720. These programs oppose President Mubarak and the Egyptian government. Another anti-Saudi program is the *Voice of the Peninsula and Arabian Gulf*. This is part of Baghdad's Voice of the Masses service on 6055 at 1300-1500. Other Baghdad frequencies may be used from time to time. Baghdad has taken over the frequencies formerly used by Radio Kuwait and seems to be making constant adjustments on the times and frequencies of all of its services.


CUBA will be Free again CASTRO CANT STOP Progress Alpha 66

QSL

CERTIFICADO DE SINTONIA

A R.C. Watts — Kentucky

MUCHAS GRACIAS POR SU INFORME DE RECEPCION.

TENEMOS EL GUSTO DE CONFIRMAR QUE LA EMISORA SINTONIZADA ES LA NUESTRA: 9465 KHz 1130 UTC 0730 EDT.

LA VOZ DE ALPHA 66

De Sept 15/90

Dr. Diego A. Medina

The business side of La Voz de Alpha 66's attractive QSL card. (Thanks to R.C. Watts, KY.)

La Voz de Alpha 66, aired over WHRI, is replying to reports with an attractive QSL card. The address is P.O. Box 420067, Miami, FL 33142. R.C. Watts in Kentucky and Robert Ross, Canada report getting cards.

For a time we thought there might be a new Nicaraguan clandestine on the air, perhaps run by the Sandinistas. That still might be, but it seems more likely now that the station may simply be trying to jam the anti-Colombian station *Radio Patria Libre*. Ohio's George Zeller has been tracking this situation and says the unknown station uses a slogan or ID "Del Pueblo Respunde" (The City Responds). It moves around the area between 6290-6315 and is noted in the 0030 to 0115 time period or later, a schedule similar to that of Radio Patria Libre. Incidentally, Patria Libre has added a morning broadcast at 1130 UTC.

One of the top people at Iran's *Flag of Freedom*, Cyrus Elahi, 46, was murdered in his Paris apartment last October. Manouchehr Ganji, Flag of Freedom's top dog says Elahi—whom he described as his right hand man—was killed by Iranian government agents. Ganji says Flag of Freedom broadcasts 5½ hours a day into Iran. Flag of Freedom is scheduled at 0330-0530 on 9045 and 15565, 0645-0730 on 15100 and 15565 and is believed to transmit from Egypt. The station is often logged in the US and QSL's are available from this address: c/o Sazeman Derafsh Kaviani, Postboks 103, DK-2670 Greve Strand, Denmark.

Hamara Kashmir (Our Kashmir) is an anti-Indian government station which Indian authorities say is operated by the Jammu and Kashmir Liberation Front. JKLF denies any connection with the station. Broadcasts are said to be aired on Fridays only. No times or frequencies are known, though it seems likely the broadcasts are on medium wave.

Radio Libertas, the program presented by the Croatian Committee for Human Rights, is anxious to receive reception reports and other observations about its broadcasts. A recent letter from the group indicates it is looking for ways to achieve better reception, although the exact types of suggestions it wants are a little unclear. It may be interested in suggestions for better frequencies or perhaps even possible additional outlets. It also says it's added a brief segment of news from Croatia—in English. This airs sometime after 1640. Radio Libertas is aired daily at 1600-1700 on 11790 and 21840 and Sundays at 2100-2200 on 15450 and 17830. Send reports to the Croatian Committee for Human Rights, 1174 Clarkson Rd., North Mississauga, Ontario L5J 2W2 Canada.

The U.S. government continues to fund *Radio Free Afghanistan*, carried over the facilities of Radio Free Europe/Radio Liberty. The current schedule is 0230-0300 in Pashtu, 0300-0330 in Dari on 7255, 9540, 9555 and 11770. Also at 1330-1400 in Pashtu and 1400-1430 in Dari on 17895, 21510 and 21530. An attractive QSL card is available through the usual RFE/RL address—1775 Broadway, New York, NY 10019.

Dedicated clandestine hunters will certainly benefit from having on hand a copy of the Danish Shortwave Clubs International *Clandestine Stations List*. The most recent edition, August, 1990, sorts out currently active stations and broadcasts by both frequency and time. A listing by country includes the broadcast schedule, name of backing organization, history, text of the station's identification, address and QSL info if known. The booklet is available by airmail for seven International Reply Coupons (available from your post office). Write to the DSWCI, Tableager 31, DK-2670, Greve, Denmark.

Another anti-Ethiopian station is the *Voice of the Oromo Liberation* now scheduled at 1500-1545 and 1900-1945 on 9540. The transmitter is believed to be in the Sudan.

Here's the usual reminder that we need your informational input in the form of clandestine station loggings, data on QSL's received, addresses, background information on sponsoring groups or the stations themselves. Your name can be kept confidential if you desire. Every little bit helps and your continuing support is much appreciated!

Until next month—good hunting! ■

YOU SHOULD KNOW

BY HARRY HELMS, AA6FW

INTERESTING THOUGHTS AND IDEAS FOR ENJOYING THE HOBBY

Last month we looked at the right way to report reception of major international broadcasters. If you follow a few simple rules, it's easy to get a QSL from the big shortwave broadcasters (except for a few cases, like Radio Finland, who seem to take a perverse pride in their refusal to QSL). The situation is a lot different with domestic shortwave stations. Not only are these stations tougher to hear, they're also harder to QSL. You'll have to put in more time and effort into your report, but the results are often worth the effort!

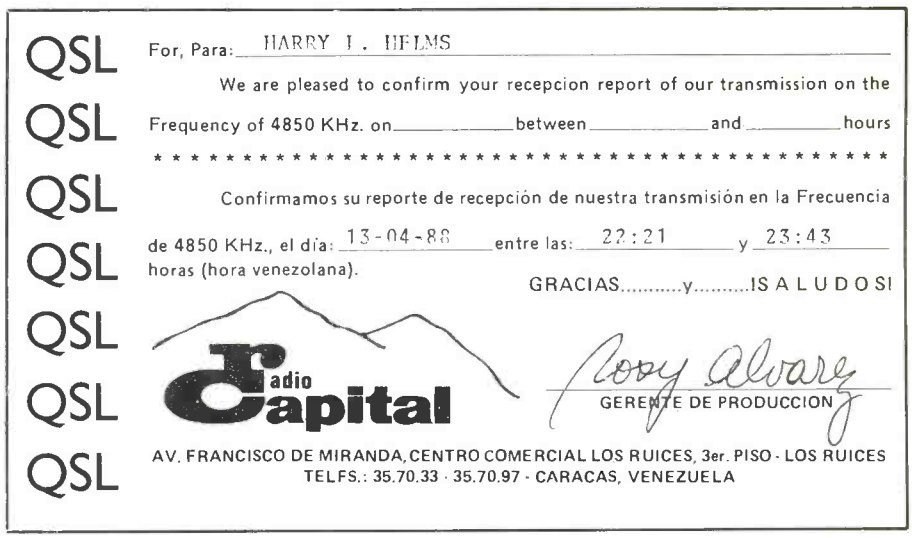
The Problems

The biggest problem lies in the very definition of a domestic shortwave station—one that broadcasts for audiences within its own country. They don't necessarily care if you heard them on the other side of the world—they're more concerned if people in their own country can hear them. This means you have to give a domestic shortwave broadcaster a *reason* to want to send you a QSL.

The language barrier is another problem. Many domestic stations broadcast only in languages such as Spanish, Portuguese, Indonesian, or obscure local dialects only a linguist professor could love. That means you'll have more difficulty in getting verifiable reception details (". . . let's see, what's he saying in Urdu?"). And you'll usually have to write your reception report in the language used at the station, since English will often not be understood by anyone there. (Think about it for a second: how soon would you—or could you—answer a letter to you written in Indonesian?)

Finally, the situations at many domestic stations isn't too conducive to QSL'ing even if they're sincerely interested in reports from faraway listeners. For one thing, many small domestic stations simply lack the money or people to answer reception reports. The mail service in some countries or remote areas isn't always the greatest, and letters from the United States and Canada, have been known to "vanish," apparently because they are thought to often contain money sent home by emigrants.

Are you discouraged? Well, you're entitled to be. No matter what you try, you're going to spend more time, money, and effort QSL'ing domestic shortwave stations than you will major international broadcasters. And, despite your best efforts, your percentage of QSL's received for reports sent out will be lower. But it's possible to improve your success rate and get some eye-popping QSL's for your collection if you try the techniques we'll discuss this month.


QSL For, Para: HARRY J. HELMS

We are pleased to confirm your recepcion report of our transmission on the

QSL Frequency of 4850 KHz. on _____ between _____ and _____ hours

* *

QSL Confirmamos su reporte de recepción de nuestra transmisión en la Frecuencia

QSL de 4850 KHz., el día: 13-04-88 entre las: 22:21 y 23:43

QSL horas (hora venezolana).

GRACIAS.....y.....IS A L U D O S!

QSL Radio Capital

Roby Alvarez

GERENTE DE PRODUCCION

QSL AV. FRANCISCO DE MIRANDA, CENTRO COMERCIAL LOS RUICES, 3er. PISO - LOS RUICES

TELFS.: 35.70.33 · 35.70.97 · CARACAS, VENEZUELA

Breaking The Barrier

You don't have to master several foreign languages to QSL domestic stations, but you should at least learn what different languages sound like, such as being able to tell the difference between Japanese and Chinese or Spanish and Portuguese. You should also learn what phrases such as "this is radio station . . ." sound like in different languages. This isn't as difficult as it sounds; one good way to practice is to listen to the non-English services of major international broadcasters such as the Voice of America and BBC. A few months of practice will let you recognize languages and identify the stations you do hear.

Writing the report in a foreign language is simplified by the foreign language reception report forms available from many SWL clubs. There's also a series known as *Language Lab* available. Edited by *POP'COMM* Gerry Dexter, each book in the series is produced by experts in such languages as Spanish and French to allow you to put together a well-written, grammatically correct report in a foreign language.

The content of reports to domestic shortwave broadcasters should be similar to those international stations, giving the time, date, and frequency on which you heard the station along with enough details to prove that you heard the station. One big

change involves how you express the time. Instead of UTC give the time as the local time of the station you're reporting; most personnel at domestic stations won't have a clue what UTC is or how to convert it to their local time.

Most foreign language report forms and guides include enough different words and phrases to enable you to give a convincing account of what you heard. While you won't be able to understand much, if any, of the programming you hear, you'll still know whether an announcer was male or female, the type of music played (often, a surprising amount will be in English), when a station signs on or off the air, and other details to prove your reception. Commercials are often heard on Latin American stations, and these are excellent items to prove your reception. As your ear gets more accustomed to Spanish, you'll start to recognize certain brand names, such as "Inca Cola."

Getting Reports To The Right People

A station can't verify your report if it doesn't get it. Sending your report to the right address—and the right person—is important. Unfortunately, it's not always easy.

Addresses for domestic shortwave broadcasters can be found in publications such as the *World Radio Television Handbook*. Unfortunately, these aren't always 100% accurate, as stations do change their mailing addresses and it can take a couple of years for the new addresses to show up in such publications. The best bets for the latest station addresses are the bulletins of SWL clubs. Some stations have a person who is responsible for answering listener mail, and your report should be addressed to the person *if possible*. The names of these "verification signers" can be found in SWL club bulletins. However, beware of names that are more than a few months old, the verification signer might have left the station and all incoming mail for that person might be discarded.

Give 'Em A Reason

Since domestic stations aren't trying to reach foreign listeners, you have to give them a reason to QSL beyond the fact you heard them. This means you have to put some extra effort into your reports!

One good way to make your report stand apart from the crowd is to include a small gift or souvenir. Picture postcards from your area are good, as are stickers and decals from local colleges and radio stations. Stamp collecting is a universal hobby, and some cancelled commemorative or low denomination mint stamps are usually appreciated by someone at the station. If you've had your own SWL or ham QSL cards made up, include one. Regardless of what you choose to send, remember that it's always easier to get someone to do you a favor (such as replying to a report) if you do them a favor first.

You'll notice that many foreign language report forms and guides tend to be wordy, with several paragraphs extending greetings and compliments to the station but telling nothing about your reception. You might be tempted to omit these paragraphs to save time and space. *Don't!!!* The sort of direct, to-the-point letter that English speakers prize for its efficiency and conciseness is often considered abrupt and rude for native speakers of such languages as Spanish and Japanese. It's common in many countries to spend more time on the social aspects of a transaction than on the business at hand. Those long paragraphs that seem to say nothing actually set up—politely—your request for a QSL!

Since you're asking a stranger to do a favor for you, you shouldn't expect him or her to pay for the return postage. For years, SWL's have used *international reply coupons (IRC's)*, available at most large post offices, to pay for return postage. IRC's can be exchanged at foreign post offices for the amount of postage necessary to send a letter back to you by surface mail; if you want an airmail reply, you'll need to send three or four IRC's. For years, IRC's were the way to go in providing return postage, but today they're not such a good idea. For one thing, they're expensive—currently 95 cents

(Continued on page 76)

POP'COMM's World Band Tuning Tips

March, 1991

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.

The list includes broadcasts in many languages besides English and most of the transmissions are not 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 stations difficult or impossible to receive. Your own receiving location and equipment also have a bearing on what stations you are able to hear.

Note: EE, SS, FF, etc are abbreviations for English, Spanish, French, etc. All times are in UTC.

Freq.	Station/Country	Time	Notes
2390	LV de Atitlan, Guatemala	0000	SS/indian
2410	R. Enga, Papua New Guinea	1200	EE/pidgin
2485	ABC-Katherine, Australia	1200	
3200	TWR, Swaziland	0300	vernacular
3215	R. Orange, South Africa	0300	Afrikaans
3225	R. Occidente, Venezuela	0300	SS
3240	TWR, Swaziland	0300	vernacular
3245	R. Clube Varginha, Brazil	0100	PP
3250v	R. Luz y Vida, Honduras	0200	SS
3255	BBC relay, Lesotho	0300	
3275	Radio Mara, Venezuela	eves	SS
3280	LV del Napo, Ecuador	0200	SS
3300	R. Cultural, Guatemala	0200	SS/EE
3320	R. Orion, South Africa	0230	Afrikaans/EE
3330	CHU, Canada	24hr	time signals
3345	RRI Pontianak, Indonesia	1230	II
3360	GBC, Ghana	0530	EE
3381	Malawi BC Corp	0255	sign on, EE, vern
3385	RRI Kupang, Indonesia	1230	II
3400	R. Ed. 6 de Agosto, Brazil	0030	PP
3450v	R. Oyon, Peru	1000	sign on, SS
3535	V of the Strait, China	1100	CC
3925	R. Tanpa, Japan	1030	JJ
3927	Capital R., Transkei, S. Af	2245	EE
3945	RRI Denpassar, Indonesia	1200	II
3955	BBC	0300	
3990	RFE/RL	0400	
4000	R. Bafoussam, Cameroon	0430	FF
4300	R. Moderna, Peru	0300	SS
4418	R. Freq. Lider, Peru	0400	SS
4485	Petropavlovsk, USSR	1130	relay Moscow
4635	Dushanbe, USSR	0100	RR & Tadzhik
4680v	R. Nac. Espejo, Ecuador	0200	SS
4725	V of Myanmar, Myanmar (Burma)	1200	Burmese
4740	R. Kabul, Afghanistan	1200	via USSR
4765	Moscow Relay, Cuba	eves	various services
4770	R. Nigeria, Kaduna	0430	sign on, EE/vern
4790	R. Atlantida, Peru	0300	SS
4800	R. Lesotho	0300	sign on, Sesotho/EE
4810	Voz de Galapagos, Ecuador	0100	SS
4825	R. Cancao Nova, Brazil	0900	PP
4830	R. Botswana	0255	sign on
4830	R. Tachira, Venezuela	0300	SS
4845	R. K'ekchi, Guatemala	0130	indian/SS
4860	R. Maracaibo, Venezuela	0200	SS; irregular
4865	Voz del Cinaruco, Colombia	0400	SS
4875	Voice of Jinling, China	1200	CC
4880	R. Five, South Africa	0300	sign on
4904	RN Tchad	0430	sign on, FF
4915	R. Cora, Peru	0200	SS
4920	ABC, Brisbane, Australia	1200	EE
4940	RTV Ivoirienne, Iv. Coast	0600	sign on, FF
4953	R. Nacional, Angola	0400	PP, irregular
4970	R. Rumbos, Venezuela	0330	SS
4975	Ondas del Orteguaza, Colombia	1000	SS
4990	R. Ancash, Peru	0500	SS
5004	R. Nacional, Eq. Guinea	0500	SS
5020	ORTV, Niger	0530	sign on, FF
5025	R. Rebelde, Cuba	0400	SS
5035v	R. Bangui, Cent. Af. Rep.	0430	sign on, FF
5068	R. Progresso, Ecuador	0300	SS
5286	R. Moundou, Tchad	0500	FF
5900	Kol Israel	2200	AA
5910	BRT, Belgium	2200	EE/SS
5945	RFI, France	0000	FF
5955	Voz de Centauros, Colombia	0900	SS
5965	R. Havana Cuba	0300	FF
5982	Union Radio, Guatemala	1100	SS
6015	R. Austria Int'l	0500	various
6020	R. Netherlands	0030	
6025	R. Illimani, Bolivia	1000	SS/Quechua
6030	R. Globo, Brazil	0100	PP
6050	R. Nigeria, Ibadan	2305	sign off
6065	Super Radio, Colombia	eves	SS
6070	CFRX, Canada	24h	relay CFRB, Toronto
6075	Deutsche Welle, Germany	eves	various
6090	R. Luxembourg	2330	GG
6100	Observatorio Naval, Venezuela	eves	time signals/SS
6106	Panamericana, Bolivia	1000	sign on, SS
6115v	La Voz del Llano, Colombia	0500	SS
6120	R. Japan	1100	EE, via Canada
6135	R. Univ. de Concepcion, Chile	0930	SS, irr
6150	Caracol, Colombia	eves	SS
6155	R. Austria Int'l	0400	various
6165	R. Netherlands	0030	via Bonaire
6175	BBC	0000	world service
6185	R. Educacion, Mexico	0400	SS
6248	Vatican Radio	0600	various
6250	R. Nacional, Eq. Guinea	0500	SS
6305	Voz del CID (clandestine)	0500	SS (anti-Castro)
6500	PBS Qinghai, China	1300	Tibetan
6691	R. Cutervo, Peru	0200	SS
6726	R. Satelite, Peru	0100	SS
6840	CPBS, China	1200	CC
6900	Turkish Met. Radio	0500	TT
6937	PBS Yunan, China	1200	CC
7105	Voice of America	0100	via Greece
7115	RFE/RL	0400	various
7124	RN Guinee, Guinea	0600	FF
7145	R. Polonia, Poland	0000	Polish
7180	BBC	1100	via Hong Kong
7200	R. Mogadishu, Somalia	0300	sign on, Somali/AA
7205	R. Australia	1100	
7220	R. Yugoslavia	0300	SS
7255	Voice of Nigeria	0500	sign on
7270	R. Polonia, Poland	0000	Polish
7300	R. Tirana, Albania	eves	various
7315	WHRI, Indiana	eves	
7325	BBC	0300	world service
7340	Voz del CID (clandestine)	eves	SS, anti-Castro

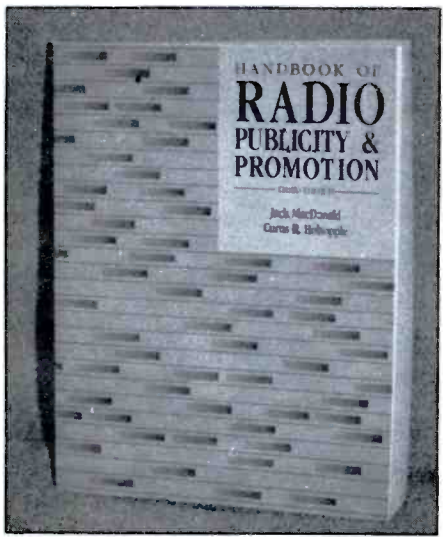
Freq.	Station/Country	Time	Notes
7365	KNLS, Alaska	1200	RR
7405	R. Beijing	1400	EE
7537	Voice of Europe, Italy	0500	
9325	R. Pyongyang, N. Korea	1300	EE, others
9360	Spanish National R.	0200	SS
9396	V of Greece	0100	Greek
9410	BBC	eves	
9445	V of Turkey	eves	EE/TT
9465	WMLK, Pennsylvania	2000	
9475	R. Cairo, Egypt	0200	EE
9480	TWR, Monaco	0640	EE
9500	V of Libyan People	1800	AA (clandestine)
9515	BBC	0300	SS
9530	R. Beijing, China	1200	EE
9540	R. Nacional, Venezuela	1100	SS
9545	SIBC, Solomon Is.	0730	
9560	R. Jordan	2000	
9570	R. Korea, S. Korea	1130	various
9575	RAI, Italy	0100	EE
9580	Africa No. One, Gabon	0500	FF
9585	R. Excelsior, Brazil	0900	sign on, PP
9590	R. Norway	1300	NN
9600	R. Portugal	0130	PP
9605	Vatican Radio	0030	FF/EE
9610	ABC, Australia	1100	
9615	KGEI, California	0400	SS
9625	CBC, Canada	1130	EE, others
9645	R. Japan	0300	EE/JJ, via Gabon
9645	TIFC, Costa Rica	1030	SS/EE
9655	HCJB, Ecuador	0200	RR
9670	AWR Europe	0600	various, via Portugal
9675	R. Japan	0800	JJ, others
9685	R. Gazeta, Brazil	1000	PP
9690	RAE, Argentina	0100	SS
9695	V of UAE	0200	AA
9700	R. Sofia, Bulgaria	0300	GG
9710	R. Havana Cuba	0200	EE
9715	R. Netherlands	1200	
9725	AWR, Costa Rica	eves	SS/EE
9730	Deutsche Welle, Germany	eves	
9745	HCJB, Ecuador	0030	EE
9765	V of Mediterranean, Malta	0600	EE/AA
9790	R. France Int'l	eves	FF/EE
9835	R. Budapest, Hungary	eves	various
9845	FEBC, Philippines	1100	CC
9875	R. Austria Int'l	eves	various
9895	R. Netherlands	eves	various
9940	R. Cairo, Egypt	2030	AA
11550	RTT Tunisia	0500	AA
11570	R. Pakistan	1645	Urdu
11580	Voice of America	0000	
11605	Voice of Israel	0400	EE
11640	R. Iran	0200	Farsi (clandestine)
11660	R. Netherlands	0030	PP
11680	BBC	00000	SS
11700	TWR, Guam	1200	CC
11705	R. Sweden	0200	Swedish/EE
11715	R. Korea, S. Korea	1030	EE, via Canada
11720	R. Sofia, Bulgaria	0400	
11734	R. Tanzania, Zanzibar	1800	Swahili
11735	Radio Denmark	0230	DD, via Norway
11735	R. Yugoslavia	0000	EE
11750	BBC	eves	via Ascension Is.
11760	R. Havana Cuba	eves	various
11780	VOIRI, Iran	0330	AA
11780	Radio Nacional, Brazil	2200	PP
11790	UAE Radio	1500	AA/EE
11800	RAI, Italy	0100	EE
11805	TWR, Guam	1100	RR
11815	R. Brazil Central	0900	PP
11835	R. Japan	2300	EE, via Gabon
11835	R. El Espectador, Uruguay	0100	SS
11855	Radio Canada Int'l	1200	
11870	AWR, Costa Rica	1100	EE
11880	Spanish National Radio	0000	EE/SS
11890	R. Oman	0300	AA
11905	CBS, Taiwan	1100	various
11930	TWR, Bonaire	0300	EE
11938	V of People of Cambodia	1200	EE
11940	R. Moscow	1200	
11965	R. Record, Brazil	2230	PP
11970	Radio Havana Cuba	eves	
11985	V of the UAE	2000	EE/AA
12005	RTT Tunisia	2300	AA
12015	R. Ulan Bator, Mongolia	1100	various
12035	Swiss Radio Int'l	eves	various
12050	R. Cairo, Egypt	2200	AA
12085	R. Damascus, Syria	2000	
13620	R. Baghdad, Iraq	2100	AA
13650	R. Pyongyang, N. Korea	1200	various
13675	BRT, Belgium	2300	various
13720	WRNO, Louisiana	2200	
14670	CHU, Canada	24hr	time signals
15060	BSKSA, Saudi Arabia	1800	
15090	Vatican Radio	1500	various
15100	Iran's Flag of Freedom	0330	Farsi (clandestine)
15105	R. Yugoslavia	0000	EE
15115	HCJB, Ecuador	1500	
15130	R. Beijing, China	0000	
15135	R. Record, Brazil	2200	PP
15140	R. Portugal	1400	PP
15140	R. Nacional, Chile	2030	SS
15150	R. Canada Int'l	2100	FF/EE
15165	R. Denmark	1230	DD, via Norway
15190	Lao National Radio	1100	FF, via USSR
15190	RTVC, Congo	1400	FF
15190	R. Bangladesh	1200	EE
15210	R. Japan	2200	JJ, via Gabon
15230	HCJB, Ecuador	0030	EE
15235	LBC, Libya	2200	AA
15260	R. Canada Int'l	1900	EE/FF
15280	KGEI, California	2200	various
15300	WCSN, Maine	2200	
15315	R. Netherlands	0030	via Bonaire
15330	FEBA, Seychelles	1500	
15335	RTVM Morocco	2000	A
15345	RAE, Argentina	1200	
15345	TWR, Bonaire	1100	EE
15350	R. Luxembourg	2300	
15360	BBC	1200	via Singapore
15365	All India Radio	1230	CC
15400	UAE Radio	2000	AA
15405	R. Sweden	0100	EE/Swedish
15420	WRNO, Louisiana	2000	
15430	R. Austria Int'l	1200	GG
15440	WYFR, Florida	eves	
15475	Africa No. One, Gabon	1900	FF
15480	R. Peace & Progress, USSR	1330	EE
15485	V of Israel	1530	various
15495	R. Baghdad	2100	AA
15500	R. Peace & Progress, USSR	0000	Creole
15520	R. Bangladesh	1230	Bengali
15540	RTBF, Belgium	1600	FF
15560	R. Netherlands	2030	EE
15575	R. Korea, S. Korea	1400	EE
15580	KUSW, Utah	2200	
15615	V of Israel	2200	Hebrew
15630	Voice of Greece	1400	Greek
15640	Voice of Greece	2100	various
15690	WWCR, Tennessee	0000	
15880	CPBS-Taiwan-2, China	1230	CC
17535	Voice of Greece	1500	Greek
17550	BRT, Belgium	1230	EE
17595	R. Cairo, Egypt	1400	
17595	RTVM Morocco	1530	
17605	R. Netherlands	1330	Indonesian
17610	RTT Tunisia	1600	AA
17630	Africa No. One, Gabon	1500	FF
17645	V of the UAE	1400	AA
17675	RTBF, Belgium	1800	FF
17680	R. New Zealand	0200	
17715	Spanish National Radio	2300	SS
17730	Vatican Radio	1600	AA
17735	R. Oman	1400	AA
17740	R. Yugoslavia	1200	
17745	R. Algiers, Algeria	2200	FF
17755	R. Surinam Int'l	1700	various, via Brazil
17775	KVOH, California	days	SS
17800	R. Havana Cuba	1830	various
17810	R. Japan	2100	EE
17815	Spanish National Radio	1700	SS
17820	R. Canada Int'l	1300	EE
17825	R. Japan	0200	EE
17880	R. Sweden	1430	Swedish
21470	HCJB, Ecuador	2130	
21530	R. Portugal	1500	PP
21550	R. Finland Int'l	1400	Finnish
21555	R. Yugoslavia	1200	EE
21605	UAE Radio	1600	AA/EE

BOOKS YOU'LL LIKE

BY R. L. SLATTERY

Let It Be Known

In this age of overcrowded airwaves, most radio listeners have a large selection of stations that play their kind of music or give them the news they need. Radio stations used to get by just fine on solid programming, a good play list, a couple of likable deejays, and a decent news department. These days those things are still vital, but they're no longer enough to guarantee the station's success. Promotion has become the key.



Broadcasting is now supplemented by a barrage of dazzling contests, giveaways, gimmicks and other promos. Whether they're done weekly, daily, or on an hourly basis, the station that knows how to do it best gets an immediate edge on other local broadcasters in the battle to attract the largest audience. But, doing it best is far from a hit-and-miss effort. Successful radio promos are more an exacting science than you might imagine. A seemingly slight change in timing or wording can make the difference between a promo that's a howling hit or a monumental (and costly) disaster.

More than twenty years ago, Jack MacDonald wrote what became a popular reference manual for running successful broadcast promos. Now, this guide is back, completely updated by Curtis R. Holsopple to reflect the many changes in culture, demographics, technology, and the radio industry itself. Now it's called the *Handbook of Radio Publicity & Promotion, 3rd Edition*, and it's 483-pages of useful information.

The hundreds of promos in this book cover every possible occasion and approach, ranging from inexpensive to "the full treatment." There's a virtually limitless supply of promo ideas here, ones that have proven effective. They are presented with scripts, suggested prizes, and information on making them work with teasers, tie-ins, and community participation.

If you're a broadcaster looking to get the jump on that other station with the bigger audience, this book will give you many terrific ideas. If you're a listener, this book will give you a good insight into the clever methods used by the most successful broadcasters to gain and retain audience interest in a highly competitive market place.

Curtis Holsopple is a broadcasting professional, and is currently the General Manager of an FM station in Virginia. He holds a First Class 'Phone license, as well as an Extra Class ham ticket. He knows his stuff, and his book is as interesting as it is informative.

Handbook of Radio Publicity & Promotion, 3rd Edition is $24.95 (plus $3 postage in the US, $5 to Canada) from Tab Books, Blue Ridge Summit, PA 17294-0840. Order book #3390. Add applicable state and local sales tax.

We Know Where You Are!

It's not easy locating most of the world's highest profile personalities. Well, that's the way they want it. You can see them in movies and on TV, go to their concerts and play their albums, even vote them into office. But that's all they're willing to let most folks have of themselves. Otherwise, they figure they'll be tracked back to their respective lairs by the general public.

Still, despite their best efforts, they do manage to get located by professionals, such as attorneys, the news media, collection agencies, private investigators, the tabloid press, the paparazzi, agents, salespeople, and others. These people seem to be able to communicate directly with celebs with amazing accuracy and speed, bypassing numerous protective layers of studios, agents, secretaries and other buffer people.

It turns out that the best way of getting a line on high profile celebrities, and the method used by many who do it professionally, is simply by looking them up in the insider's professional directory of celebrity names and addresses. Using this approach, it's actually very easy, except that most folks don't have access to the directory. Until now, that is.

It's all in a newly revised 204-page sourcebook called *Star Guide, 1991-1992 Edition*. This guide has more than 3,200 names and addresses of major celebrities from every field. The directory includes movie stars (1930's to the present); TV stars and personalities (actors, hosts, soaps, producers, network news people, tabloid TV and quiz show people, etc.); music stars (pop, rock, country, soul, classical, jazz, rap); sports (athletes, managers, coaches, team executives, commentators); world leaders; political figures; royalty; and other famous people (scientists, astronauts, business leaders, authors, columnists, etc.).

This is a reliable and up-to-date publication that many professionals rely upon heavily. Certainly it would be a help to non-professionals in collecting autographs, requesting things like photos, letters, jobs, interviews, endorsements, advice, or recommendations, or knowing where to send suggestions, letters of praise or criticism. Or, maybe you'd like to know where to go to eavesdrop on their cordless telephones (just kidding). There are obviously innumerable reasons this type of information could be of interest and use to most people. It's a fine reference source. Arranged according to categories, it is fully cross-indexed by name for maximum versatility.

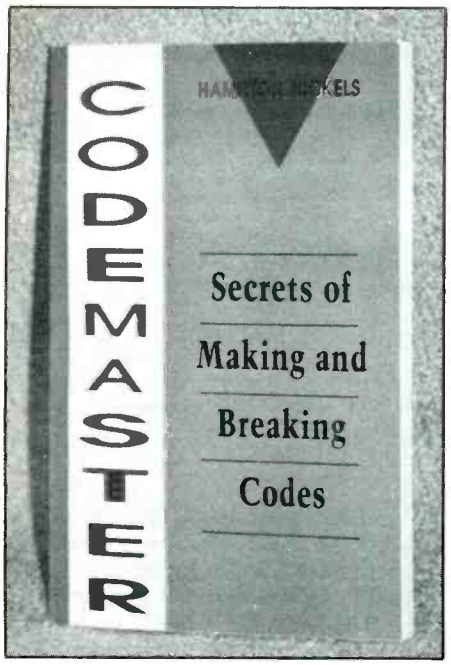
Star Guide, 1991-1992 Edition is available at $12.95 per copy, plus $2 postage (to US/Canada/APO/FPO addresses) from CRB Research Books, Inc., P.O. Box 56, Commack, NY 11725. Residents of NY State, please add 97 cents sales tax.

A Winter Code

Codes and ciphers have been around since humans began to communicate and realized that they had secrets to keep; secrets of state, war, commerce, or the heart. No sooner were the first methods devised to keep messages secret, there were those busy at work trying to figure out the contents of the secreted messages. By arranging, substituting, or transposing symbols, any

message can be encoded or decoded—if you know how.

The book *Codemaster*, by Hamilton Nickels, is a 136-page practical field manual designed to teach the basic mechanics of enciphering and deciphering communications. The author has used his wide knowledge and experience in electronic communications and languages, as well as his fascination with codes, to take the mystery out of cryptography. Using plain English, and simple, workable systems that don't rely upon complex mathematics, or on obscure philosophies, you learn how it's done as well as how to do it yourself. You learn about the most simple schemes as well as those using computers. Several actual computer programs are included.



For the practical user, *Codemaster* contains expedient systems that need little more than a paper and pencil. There are also systems you can use with your pocket calculator, or with the most popular home computers. You never know when you'll want to encrypt a message, a telephone number, a bank account or vault number, a commercial process, a radio frequency, or whatever. This worthwhile book tells you how.

Codemaster is $16.00, plus $3.50 for postage, from Paladin Press, P.O. Box 1307, Boulder, CO 80306. Residents of Colorado, please add 59 cents sales tax.

In Addition . . .

According to a press release we received, a new book entitled *Institutional Video: Budgeting, Production & Evaluation*, by Carl Hausman is now available. The book is intended to provide sufficient information to allow a person having no training in video production to plan, budget, write, direct, and edit a video production in an institutional setting, be it business and industry, hospitals, government, or education. Latest technologies are covered. The book is $32.50 from Wadsworth Inc., 10 Davis Drive, Belmont, CA 94002.

Another press release announced a new 261-page report entitled, *United States Telecommunications in a Global Economy; Competitiveness at a Crossroads*. This is an examination of the current status of U.S. industry to produce and sell quality telecommunications goods and services in domestic and overseas markets. It also examines the effects foreign telecommunications policies and practices have on the industry, then goes on to suggest Government and the private sector can improve problem areas. This report is available for $13.00 from the Superintendent of Documents, Dept. 36-HY, Washington, DC 20402-9325. Order stock number 003-009-00583-3.

We liked the copy of the new *Shortwave Catalog* we received from EEB, 323 Mill Street N.E., Vienna, VA 22180. This is a 36 page job, brimming over with receivers, scanners, antennas, accessories, and publications offered by EEB. In addition to product specs, there's quite a bit of useful reference info included. Well worth having around the radio room. Copies are free, and they'll send you one upon request. Be sure to say you read about it in *POP'COMM*!

LISTENING POST

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

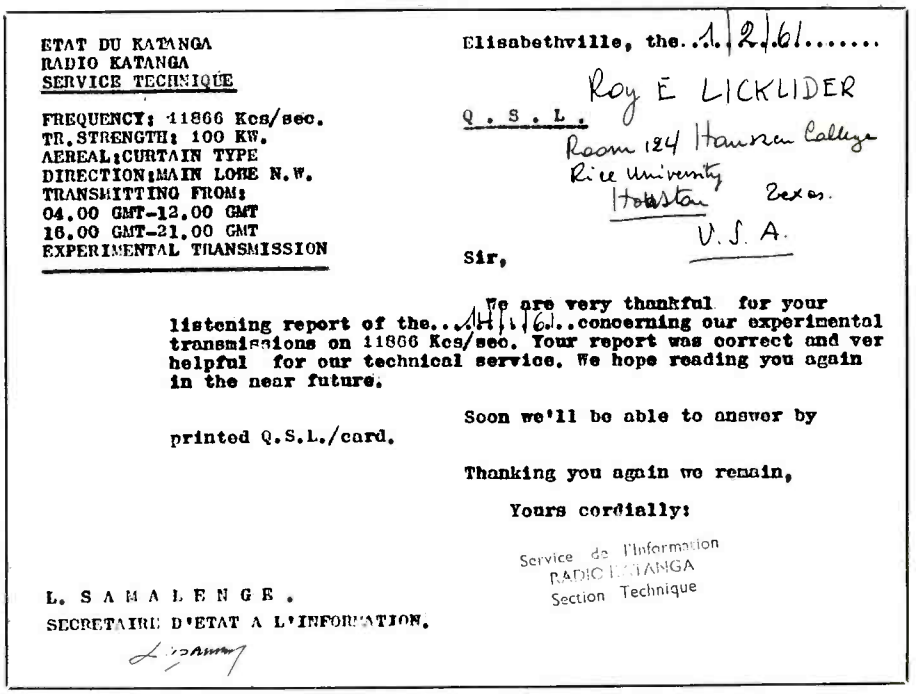
It didn't work. Carlson Communications' attempt to create a commercially viable, US-based shortwave broadcast station has been given up. KUSW, Salt Lake City, was sold last fall and, once FCC approval of the sale is given, KUSW will be no more. That may have already happened. The new owner will be Trinity Broadcasting, based in Tustin, California. Trinity is a religious broadcast organization which is active in local radio and on cable TV. It also owns a number of low-power TV stations. Our information is that Trinity will program religion on shortwave 24 hours per day, feeding the programs via satellite from California. Now, at long last, we have what we really need—*another* all-religion shortwave station!

Deutsche Welle has made quick use of the former Radio Berlin International transmitters and frequencies to help choose some gaps in their coverage—particularly Bulgaria, Romania, Turkey and other places in southern Europe. DW says it is trying to "maintain the links which RBI built to listeners around the world through special DX and mailbag programs." We don't know, however, if that means that DW will institute its own DX program—or (dare we hope) even adopt RBI's exemplary QSL policy. In other news from this station, DW says that its Trincomalee relay in Sri Lanka is once again off the air due to the problems in that country. Apparently this facility may be written off and closed for good.

Speaking of relays, the VOA had some problems at its Tinang site in the Philippines last September. A bomb went off at the base of one of the station's towers but the tower remained standing and there was no disruption in service. No one was injured and no one claimed responsibility for the act, though it's not hard to guess who the culprits were.

Radio Norway International, which not long ago added English programs on Saturdays—they had been Sunday only for years—now says it would like to air English on a daily basis. A program on RNI, monitored by William Walbesser in New York, featured an interview with station officials. Mention was made that they are considering "daily broadcasts in English and are particularly interested in FM broadcasts to American and Canadian listeners if relay agreements can be accomplished." Not sure what that means, exactly.

Another minus item to go on the shortwave ledger. RFO Numea, New Caledonia has left shortwave so New Caledonia can no longer be heard by SWL's. The station closed its 7170 frequency and now operates using only medium wave and FM. Unhappy news!



ETAT DU KATANGA
RADIO KATANGA
SERVICE TECHNIQUE

FREQUENCY: 11866 Kcs/sec.
TR. STRENGTH: 100 KW.
AEREAL: CURTAIN TYPE
DIRECTION: MAIN LOBE N.W.
TRANSMITTING FROM:
04.00 GMT-12.00 GMT
16.00 GMT-21.00 GMT
EXPERIMENTAL TRANSMISSION

Elisabethville, the 1/2/61

Roy E LICKLIDER
Q. S. L.
Room 124 Hanszen College
Rice University
Houston Texas.
U.S.A.

Sir,

We are very thankful for your listening report of the 1/1/61 concerning our experimental transmissions on 11866 Kcs/sec. Your report was correct and ver helpful for our technical service. We hope reading you again in the near future.

Soon we'll be able to answer by printed Q.S.L./card.

Thanking you again we remain,

Yours cordially:

Service de l'Information
RADIO KATANGA
Section Technique

L. S A M A L E N G E .
SECRETAIRE D'ETAT A L'INFORMATION.

This QSL from Radio Katanga is apparently a carbon copy of several the station typed at once received by Roy Licklider in 1961.

Radiobras (Brazil) has dropped its 0200 English broadcast to North America and retimed it to 1100! Radio France International has discontinued its 0315 English broadcast, leaving just the morning ones at 1230 fand 1400 (plus the longstanding 1600-1700 segment to Africa). Someone should tell these folks that we don't all adhere to the old "early to bed, early to rise" philosophy!

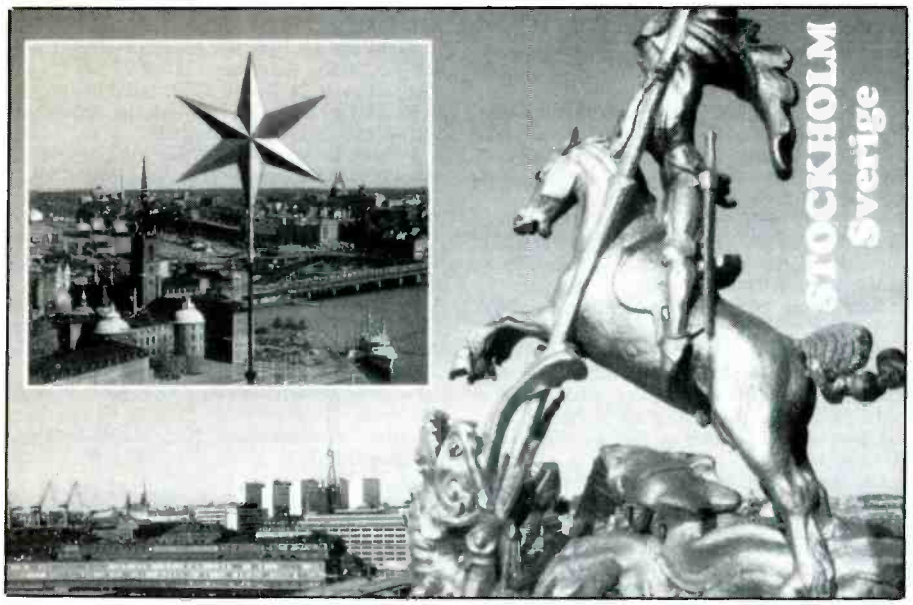
The DX Partyline program on HCJB has been lengthened and now starts at 1920 Saturdays and UTC Sundays at 0050, 0250, 0520 and 0750. Sweden Calling DX'ers, which has been a stalwart among DX shows practically forever, is being cut back from its weekly schedule to just twice a month, on the first and third Tuesday. The printed summary of DX tips which was sent to those who reported to the program has been discontinued and is now available only via electronic mail.

The ultimate DX catch—Tristan Radio—has a new schedule for its 40 watt transmitter. Broadcasts are now aired from 1230-1330, 1600-1700 and at the odd start time of 0709 to 0815, all on 3290. Don't hold your breath!

The Peruvian Radio Andina in Huancayo on 4996 is off the air. Members of the Shining Path guerrillas stole the station's transmitting tubes. There's no telling when more can be obtained and put into use, considering the situation in that country.

THE MAIL brings a letter from Edouard S. Provencher of Biddeford, Maine, who says he has a Radio Berlin International QSL card for a broadcast he heard on the day the Berlin Wall came down. Edouard says it would be a prize catch to get one for the last day of RBI's operation. Indeed! And we wrote to RBI a couple of weeks before the end, suggesting that very thing, but got no response.

Their stickers show Radio Romania International's new name, but the QSL cards still say "Radio Bucharest." (Thanks William Moser, PA)



A recent Radio Sweden QSL, with views of Stockholm. (Thanks William Walbesser, NY)

Abbreviation Used In Listening Post

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
pgm	Program
PP	Portuguese
RR	Russian
rx	Religion/ious
SA	South America/n
SS	Spanish
UTC	Coordinated Universal Time (ex-GMT)
v	Frequency varies
w/	With
WX	Weather
YL	Female
//	Parallel frequencies

Mike Perry in Texas is finding fascination in listening to the Guatemalans lately and wonders where some of them are targeted. Mexico? Central America? Most of the smaller ones (Nahuala, Tezulutlan, Man, etc.) serve a strictly local, Guatemalan audience—often just a particular indian group. Some, such as Radio Cultural (TGNA) do serve a somewhat larger audience as well.

Mike got a letter from the English external service of the South African Broadcasting Corporation providing their English schedule. In the absence of Radio RSA's broadcast to North America you might want to check out: 0400-0500 on 7270 and 11900 and 1100-1200 on 9555, 11805, 11900 and 1835, all beamed to African targets.

Thanks to Ray Licklider of Highland Park, New Jersey, who sent a copy of a QSL he received from Radio Katanga which he heard back in 1961 during the year or so when Katanga broke away from the Belgian Congo (now Zaire). He heard the station on 11866 on a Philco portable in a college dormitory Texas! That's one that always sticks out, Roy. In response to our report to this station we received an envelope with a lot of neat stamps on it—but nothing inside!

Welcome back to Jack Linonis of West Middlesex, Pennsylvania who's been absent from these pages for sometime. Jack says it's "absolutely amazing" how the changes in Eastern Europe have changed the "face" of shortwave broadcasting. Jack also says that SWL's should support their favorite stations even if it's just a short note complimenting them on their programming. After all, says Jack, "it is *us* that keep them going!" Absolutely right, Jack!

Remember to "keep those cards and letters coming, folks!" We welcome your loggings, letters, station schedules and information, extra QSL's you don't need returned, news clippings, comments and questions. We'd really like to include more photos of readers in their listening posts so how about sending yours in? Remember, loggings should be by country, double spaced and with your last name and state abbreviation indicated after each. Loggings that don't follow those simple specs are unlikely to be used.

Here are this month's loggings. FF, SS, PP, etc are language abbreviations for French, Spanish, Portuguese, etc. English is assumed to be the language used if not otherwise indicated. All times are in UTC.

You can hear more English out of Radio Tele-Luxembourg these days. Try listening on 15350.

Alaska: KNLS, heard at 0800 on 11715. (Bailey, AR)

Albania: Radio Tirana, 7300 at 0258 with IS and sign on. 9500 at 0330 with sign on and ID. 1835 at 0235 with commentary, off 0255. (Carson, OK)

Antigua: BBC relay, 5975 at 0030 and 17760 at 2039. (Walbesser, NY)

Deutsche Welle relay on 9545 at 0230. (Moser, PA) 17810 at 2007 in GG. (Walbesser, NY)

Ascension Island: BBC relay, 11750 at 0028. Also 6005//9600//15400 at 0520, 21660 at 1300. (Walbesser, NY)

Australia: Radio Australia, 9580 at 1314 with messages to Australians in Iraq and Kuwait. (Walbesser, NY) 15160 at 0815 and 15320 at 0820. (Bailey, AR) 17630 at 1530. (Perry, TX) 1720. (Zamora, ND) 17795 at 0423. (Carson, OK)

Austria: Radio Austria International, 9870//9875/13730 at 0130. (Walbesser, NY) Same three in GG at 0157. (Moser, NY) (Bill—believe 6015 is only Sackville frequency—ed) 9875 at 0130. (Pellicciari, CT)

Belgium: BRT on 9925 at 0030. (Bailey, AR) 9925//13675 in SS at 2315. (Walbesser, NY) 13675 at 1350, also 0054 to 0056 close. (Zamora, ND) 21815 at 1830. (Pellicciari, CT)

Brazil: Radiobras, 11745 to North America at 0020. (Linonis, PA) (Believe the EE to North America now discontinued—ed)

Radio Cultura Araquara, 3365, tentative at 0411. (Perry, TX) (Assume this was in PP? ed)

Radio Cultura do Para, Belem, 5045 at 0015 in PP. (Walbesser, NY)

Bulgaria: Radio Sofia, 116600/15330 at 2317. Also 11720//11750 at 0300. (Walbesser, NY) 11750 at 0328. (Moser, PA)

Canada: Radio Canada International, 5960 at 0000. (Pellicciari, CT) 9535 at 0143, 15260 at 1830. (Walbesser, NY) 9635 at 1248. (Moser, PA) 9755 at 2300. (O'Leary, MA) 13670 at 2130. (Carson, OK) 13720 at 0100 with PP sign on. (Zamora, ND)

CBC Northern Quebec Service, 9625 at 2250 in FF. (O'Leary, MA)

CFRX, Toronto, relay CFRB, 6070 at 2245. (O'Leary, MA) 0000. (Miller, GA)

CKZN, St. John's, 6160 with local programs at 2350. (Provencher, ME)

CFCX, Montreal, relay CFCF on 6005 at 2240. (O'Leary, MA) 1000. (Watts, KY)

CHU time signals, 7335 at 2240 in EE/FF. (O'Leary, MA; Perry, TX)

Radio Japan via Sackville, 5960 at 0102. (Moser, PA)

Chile: Radio Nacional, 15140 at 2200 in SS with news, comment. (Linonis, PA)

China: Radio Beijing, 9690 at 0334. (Carson, OK) (via Spain, ed) 15100 at 0034. (Perry, TX) (via Mali, ed)

Colombia: Caracol, Bogota, 5075 in SS at 0025. Man announcer and ID. (O'Leary, MA)

La Voz del Cinaruco, Arauca, 4865 at 0237 in SS. (Walbesser, NY)

Costa Rica: Radio For Peace International, 7375 at 0315. (Linonis, PA) 21565 at 2036 with Red Cross Program. (Carson, OK) Noted at 2018 and 0158. (Walbesser, NY)

Adventist World Radio, 9725 at 0005 with religious programs. (O'Leary, MA) at 1245. Some SS along with the EE. (Moser, PA)

Cuba: Soviet All Union Radio, 4765 at 0201 in RR with USSR home service relay. (Walbesser, NY) 0424 in RR. (Perry, TX)

Radio Rebelde, 5025 at 0240 in SS. (Carson, OK) 0230. (Walbsser, NY)

Radio Havana Cuba, 9505//11820 at 0231. 11760 in SS at 0000. (Walbesser, NY) 11800 to North America at 0045-0100. (Linonis, PA) 11820 at 0006; 0228. (Moser, PA; Bailey, AR)

Cyprus: Cyprus Broadcasting Corp. on 7180 at 2212 with guitar IS and sign on in Greek at 2215. Beamed to the UK. (Watts, KY) (Weekends only. Editor)

BBC relay, 21470 at 1300. (Walbesser, NY)

One of the world's top DX'ers is Danish DX'er Finn Krone.

Czechoslovakia: Radio Prague International, 5930 at 0300 with news. (Pellicciari, CT) 5930//7345//11680 at 0326. (Moser, PA) Plus 11990 at 0000. (Walbesser, NY)

Denmark: Radio Denmark, 9615 at 0230 in Danish. Also in Danish at 2005 on 15165, all via Radio Norway facilities. (Walbesser, NY)

Ecuador: HCJB on 9610//11835//15270 at 0708. (Moser, PA) 11775 at 0120. (Bailey, AR) 15155 at 0030. (O'Leary, MA) 17890 at 1444. (Walbesser, NY) 25950 USB at 2118 with religious program, full ID and frequencies at 2129. (Carson, OK)

Egypt: Radio Cairo, 9475 at 0200. (Linonis, PA) Parallel 9675 at 0228 (Carson, OK) 15255 at 1255, 15375 at 1230 and 17720 at 1315. (Northrup, MO)

England: British Forces Broadcasting Service, to British servicemen in the Gulf via BBC facilities—7125 at 0200 with greetings and pop/rock. (Miller, GA) 13745 at 0200. (Provencher, ME)

BBC 5975 at 0100 (via Antigua—ed). (Pellicciari, CT) 7325//9915 at 0030, 9410 at 2350, 15070 at 1900 and 15070//17705 at 1300. (Walbesser, NY) 15260 at 2010. (Bailey, AR)

Finland: Radio Finland International, 15185 at 2319. (Walbesser, NY) 15400//21500 at 1259 with sign on, Northern Report. (Carson, OK) 1413. (Bailey, AR)

France: Radio France International, 5945 at 0145 in FF. (O'Leary, MA) 7120 at 2353 in FF. 7135//7280//9790//9800//11705//11995 at 0315 in EE with personal messages from individuals to English-speaking persons in Iraq and Kuwait. (Walbesser, NY) 17620 at 1600. (Pellicciari, CT) 21635 at 1248. Into FF at 1257. (Carson, OK)

French Guiana: Radio Beijing relay on 11685 at 0433. (Walbesser, NY)

Gabon: Africa No. One, 9580 at 2220 in FF with African and some US music. (Linonis, PA) 17630 at 0713 in FF. (Walbesser, NY)

Germany: Deutsche Welle, 6040 at 0100. (Carson, OK) 6145 at 0110 with news. (Moser, PA) 7285 at 0239 to South Asia, 9565 at 0145, 15275 in GG at 2007. (Walbesser, NY) 13770 at 0250—an old RBI frequency. (Carson, OK)

Radio Free Europe, 7165 in Romanian at 0225. (Paun, CA)

Greece: Voice of Greece, 9395 at 0046, 0100, 0155. (O'Leary, MA; Linonis, PA; Bailey, AR) Parallel 9420 at 0155. (Moser, PA) 11645 at 0131. (Perry, TX)

VOA Relay, Kavala, 7205//15160 at 0132. (Walbesser, NY)

Guam: KTWR, 11650 at 1555 with religious programs. (Perry, TX)

Guatemala: Radio Cultural, TGNA, 3300 at 0301. (Perry, TX)

Radio Buenas Nuevas, 4799 at 0315 in SS. (Perry, TX)

Radio K'ekchi, 4844 in SS or indian language at 0211. SS ID at 0233. (Perry, TX)

Radio Maya Barillas, 3324 in SS at 0115. (Perry, TX)

La Voz de Nahuala, 3359 in possible SS at 0145. ID 0154. (Perry, TX)

Hawaii: WWVH time signals, 15000 at 0043. Woman announcer. (O'Leary, MA)

Honduras: HRVC, La Voz Evangelica, at 0058 in SS. (O'Leary, MA) 0215 in SS. (Walbesser, NY) 0324. (Perry, TX)

Hungary: Radio Budapest, 9520//9835//11910//15160 at 2333. (Walbesser, NY) 9520 at 0130 and 11910 at 0235. (Carson, OK) 9835 at 0034. (Bailey, AR)

India: All India Radio, 11620 at 2151 with Sports Roundup, program preview, news, commentary and Women Today program. (Miller, GA) 15305 at 1220 with music. (Northrup, MO)

Iraq: Radio Baghdad, 11830 at 0239. (Walbesser, NY) 13655 at 1920 in FF. 13660 at 2105 with anti-Israel items. (Carson, OK) 13660 with AA music, news, US pops. 2000-2250. (Provencher, ME; Miller, GA; O'Leary, MA; Bailey, AR)

Israel: Kol Israel, 9435//11605 at 0004. (Moser, PA) //12077 at 0200. (Walbesser, NY) 11605 at 0015 close. (Perry, TX) 0123; 0200. (Bailey, AR; O'Leary, MA) 15640 at 2009. (Walbesser, NY)

Italy: RAI on 9575 at 0010 in Italian. Into EE at 0100. (O'Leary, MA) 11800 at 0100. (Bailey, AR)

Japan: RAdio Japan, 5960 via Canada at 0100 to North America. (Linonis, PA) 11835 via Gabon at 2334; 15195 at 2323 and 21700 (via Gabon, ed) at 1516. (Walbesser, NY) 11865 at 1505. (Perry, TX)

Libya: Radio Jamahiriya on 15235 at 0020 in AA. (O'Leary, MA)

Lithuania: Radio Vilnius, 11770 with EE to North America at 2300. (Linonis, PA) 15180 at 2304. (Carson, OK)

Luxembourg: Radio Luxembourg, 6090 at 2258 with EE, ID 2305. (Moser, PA) 2315. (O'Leary, MA) 15350 in EE with oldies at 2009. (Miller, GA) 2329.

Mali: Radiodiffusion Malienne, 4835 in FF at 2345. (Walbesser, NY)

Radio Beijing relay, 15100 at 0003 in EE. (Moser, PA)

Malta: Voice of the Mediteranean with an 0600 sign on on 9765. (Walbesser, NY) Noted at 0621. (Bailey, AR)

Deutsche Welle relay, 11865 at 0111 but no ID for Malta site noted. (Moser, PA)

Mexico: Radio Huayacacotla, 2390 in SS at 0045. Off or lost at 0107, though noted on another day to past 0200. (Perry, TX)

Morocco: VOA relay, 15205 at 1900. (Walbesser, NY)

Netherlands: Radio Netherlands, 6020, at 0040; 0042. (Walbesser, NY; Moser, PA) 15560 at 0050. (Carson, OK)

Netherlands Antilles: Radio Netherlands Bonaire relay, 6165 at 0100 to North America. (Linonis, PA) 0400. (Walbesser, NY) 9590 at 0330 sign on. (Moser, PA)

Trans World Radio, Bonaire, 9535 at 0316. (Bailey, AR) 0330. (Linonis, PA) 11930 at 0300. (Carson, OK)

New Zealand: Radio New Zealand on 17675 at 0220 and 0441 with relay of national radio service. (Carson, OK)

Nicaragua: Radio Nicaragua, 6100 at 0500 in Spanish with news and commentary. Has this station every changed! (Linonis, PA)

Nigeria: Voice of Nigeria with EE sign on at 0458 on 7255. (Perry, TX) 0556. (Walbesser, NY)

North Korea: Radio Pyongyang, 15115 at 0042 to sign off at 0048. (Walbesser, NY) 17785 at 1215 in unidentified language. (Northrup, MO)

Norway: Radio Norway International, 9615 at 0100 with first day of Saturday EE transmissions. (Provencher, ME) 0213. (Walbesser, NY)

Oman: Radio Oman, 17735 in AA at 1535. (Perry, TX)

Paraguay: Radio Nacional on 9735 with music and SS. (O'Leary, MA)

Poland: Radio Polonia, 7270 at 2255 with request for letters and sign off in EE. (Moser, PA)

Portugal: Radio Portugal, 9600//9680 at 0250 with to North America. (Linonis, PA) 9680//9705 at 0230. Also 15250 to Africa at 2000. (Walbesser, NY)

Romania: Radio Romania International, 5990//9510//9570//11940 at 0252. (Walbesser, NY) 9570 at 0235, 11940 at 0404. (Carson, OK) 11940 at 0200 with news. (Moser, PA) 15380 at 0225. (Paun, CA)

Rwanda: Deutsche Welle Kigali relay, 17860 at 2007 in GG. (Walbesser, NY)

Seychelles: BBC relay on 15420 at 0300. (O'Leary, MA)

South Africa Radio RSA, 11900 at 0355 with IS and into news. 15365 at 1356 with IS, ID, anthem and into Swahili. (Carson, OK) 15365//17745 at 1947. (Walbesser, NY)

Radio Orange, 3215 at 0340 with music. Weak and couldn't ID language. (Perry, TX) (EE or Afrikaans. editor)

South Korea: Radio Korea, 15575 at 0012. (Walbesser, NY)

Spain: Spanish National Radio, 9630 at 0500. (Pellicciari, CT) Here and on better 11880 at 0005. (Moser, PA) 11880 at 0128. (Bailey, AR) 15110 at 1930 sign on in SS. Also at 1925 on 15375. (Walbesser, NY) 17815//21570 in SS at 1700. (Zamora, ND)

Sweden: Radio Sweden, at 0228 with IS and sign on in unidentified language. (Moser, PA) 17880//21500//21655 (the latter to the mideast) at 1530. (Walbesser, NY)

Switzerland: Red Cross Broadcasting Service, via Swiss Radio, 12035 at 0315. News of Red Cross activities in the Gulf and elsewhere. (Provencher, ME)

Swiss Radio International, 6095//6135//9885//12035 at 0200. (Walbesser, NY) 6135 at 0200 to North America. (Linonis, PA) 9885 at 0200. (Pellicciari, CT) 12035 at 0202. (Moser, PA) 17830 at 1511 with IS, Swiss music at 1515 and start of EE at 1530. (Carson, OK)

Syria: Radio Damascus, 12085 at 2045-2105 and 15095 at 2120-2210. (Perry, TX) 15095 at 2017. (Walbesser, NY)

Taiwan: Voice of Free China, 9680 (via WYFR, ed) at 0501 with national anthem and into CC. (Perry, TX) 17750 (Via WYFR) at 2206. (Carson, OK)

Tunisia: RTT, Tunis, 11550 at 0500 with news in AA, music. (Pellicciari, CT)

Turkey: Voice of Turkey, 9445 at 2209; 0307. (Walbesser, NY; Bailey, AR)

Ukraine SSR: Radio Kiev, 11790 at 2340. (Moser, PA) 15455//15485 at 2313. (Walbesser, NY)

United Arab Emirates: UAE Radio, Dubai, 9600//11985 at 2230, scathing denouncement of Iraq and Hussein. (Linonis, PA) 11945//13675//15435 at 0230. (Walbesser, NY) 13675 at 0330. (Pellicciari, CT; Bailey, AR)

United States: Radio Marti, SS to Cuba, 9525 at 0030. (Linonis, PA)

WMLKL, Bethel, PA, 9465 at 0433 with religion, ID. (Perry, TX)

WINB, Red Lion, PA, 15295 at 1728. (Bailey, AR)

Voz de la OEA (Organization of American States), via VOA, 9665//11830//15160 at 2345 sign on in SS. (Walbesser, NY)

USSR: Radio Moscow, 9530 at 0007. (Moser, PA) At 0000 on 11710//11730//11780//11850//11980//12040//15290/ At 1330 on 17810//17830//17585. At 2035 on 9735//11930 and 1830 on 15375. (Walbesser, NY) 11840 at 2000. (Carson, OK) 17810//17585 at 1703. (Zamora, ND)

Radio Peace and Progress, 11980 at 2000 with "Round-up of Events," Review of Soviet Press and UN program. (Miller, GA)

Vatican: Vatican Radio, 6150 at 0050. (Bailey, AR) 9605 at 0050 with ID and religious program. (O'Leary, MA) 17865 at 1210. (Northrup, MO) 17870 at 1457 with IS, into possible Hindi. 21650 at 2030 with IS, drums, into FF. (Carson, OK)

Venezuela: Radio Tachira, San Cristobal, 4830 at 2344 in SS. (Walbesser, NY)

Radio Rumbos, Caracas, 4979 at 0445 in SS with music, news, ID. (Perry, TX)

Ecos del Torbes, San Cristobal, 4980 at 0015 in SS. (O'Leary, MA) 4979 at 0227 in SS. (Walbesser, NY)

Vietnam: Voice of Vietnam, 9840 in presumed JJ to 1220 sign off with ID and music. (Perry, TX)

Yugoslavia: Radio Yugoslavia, 9620 in SS to Latin America at 0000. (Linonis, PA) 11735 at 0000. (Carson, OK) 0008 with home news. (Moser, PA) 21715 at 1300. (Provencher, ME)

A tip o' the hat to the following good folks: Edouard S. Provencher, Biddeford, ME; Kelly Bailey, Midland, AR; Mike Perry, Beeville, TX; William Walbesser, Ravena, NY; William Moser, New Cumberland, PA; Jack Linonis, West Middlesex, PA; Larry Zamora, Grand Forks, ND; Laura J. O'Leary, Somerville, MA; John Miller, Thomasville, GA; Steve Pelliciarri, Norwalk, CT; Mark Northrup, Gladstone, MO; John Carson, Jr., Norman, OK; Adrian Newell Paun, Hayward, CA.

Thanks to all. Until next month—good listening! ■

THE HAM COLUMN

KIRK KLEINSCHMIDT, NT0Z
AMERICAN RADIO RELAY LEAGUE HQ

GETTING STARTED AS A RADIO AMATEUR

Remedial Radio

The latest wave of FCC crackdowns on illegal HF operations, last year's DX'pedition problems and a ham from the south who told me an incredible story of Amateur Radio rudeness have all prompted me to discuss this month's topic: on-air behavior and good operating practices.

In the grand cycle of ham radio evolution, bad manners never really go away. Hams exhibit them, talk about them and write about them—to Amateur Radio magazines, the ARRL and even the FCC. It seems as though bad manners and sloppy operating procedures are again a popular item. This month's column points out only a few DOs and DON'Ts; but remember, like Smokey the Bear, only *you* can stop poor operating procedures and on-air behavior! Take steps to learn and use proper procedure. Be considerate. Practice the Golden Rule of ham radio: Do Onto Another's Frequency As You Would Have Him Do Onto Yours.

Ken Neubeck, WB2AMU, of Patchogue, New York, has a rather fearsome DX contest assistant. At WB2AMU, Godzilla's not just a microphone holder, he helps Ken work an impressive number of Japanese stations.

Misplaced Priorities

The other day, a fellow ham told me of an experience in Florida. He had gone there to join some friends in a short bicycle tour. A short distance out, he came upon an injured cyclist who had broken or dislocated her hip in a fall to the pavement. Because she couldn't be moved, an ambulance was needed. Enter ham radio.

After failing to raise any of the 2-meter repeaters within a 50-mile radius, the ham sprinted back to his car and turned on his HF rig. He quickly found an active net on 40 meters, checked in and asked to pass emergency traffic. Several hams who were on frequency offered to call the Florida Highway Department, so the two slipped off frequency a few kiloHertz to exchange information. So far so good.

As the two started their exchange on what sounded like a clear frequency, they were rudely interrupted by a ham who demanded to know the nature of the emergency and who belligerently disrupted their communications. He had been ragchewing with a friend when the emergency came up. This self-appointed "policeman" didn't think that a woman with a potentially broken hip, painfully lying on a Florida roadside, was anything to get worked up about, much less relinquish "his" frequency for.

After trying to reason with the guy, the two moved elsewhere and passed the traffic. The ambulance came (several minutes later than it could have) and the woman was saved.

Folks, in my opinion, this is unacceptable behavior. It's just as childish as tuning up on someone, running a vacuum cleaner next to your microphone or shouting obscenities on the repeater. If there had been a heart attack victim lying beside that Florida road, the "frequency hog" could have cost the victim his life!

The moral of the story is: don't do it! In the long run, it takes less effort to be considerate than it does to be an ogre, whether Novice or Extra, on phone or CW—whatever.

How To Find A Clear Frequency

In light of the previous story, let's take a look at how the considerate operator finds a clear frequency. It's really quite simple.

First, tune up your rig or antenna tuner with a dummy load or as little power as possible. Throwing a loud carrier on someone else's frequency definitely falls into the "rude behavior" category. Besides, your antenna tuner will probably tune up just fine on 10 watts instead of 100.

Before you call CQ, tune around the part of the band you want to operate on and *listen*. Then listen some more. This will give you a good idea of propagation and the general activity level. There's a big difference between an evening on 75 meters and an evening on 10 meters during a sunspot cycle minimum. One's wall-to-wall, the other's virtually dead.

After you've found what *sounds* like an unoccupied frequency, say (on phone): "Is this frequency in use? This is NT0Z." (Remember to use your own call sign.)

On CW you'd send: "QRL? de NT0Z." (Again, with your call sign.) Regardless of its meaning in the early days, QRL? is now accepted to mean "Is this frequency in use?"

If the frequency you're inquiring about is in use, you should be rewarded with a polite, "Yes, it is, thanks for asking," or something similar.

On CW you might hear "QRL." Without the question mark, QRL means "Yes, this frequency is in use. Thanks for asking." You may also hear the Morse letter "C," short for "Yes," or (incorrect, although heard occasionally) the Morse letter "R," short for "Roger."

Even if you don't get an immediate reply, the frequency may still be in use. This occurs frequently on 10 and 15 meters, where two stations are conversing, but you can only hear one of them.

Considerate operating practices should be the rule, not the exception. Strive to accommodate. Strive to set the best possible example for others. When that DX station says "listening for sixes," don't transmit unless your a six, even if a half-a-dozen other ops do. When the DX station says "listening up five," transmit only where he's listening for calls, not on the DX station's transmit frequency. You get the idea.

If you're wondering where you can find out more information on how to operate the right way, you've come to the right place. *The ARRL Operating Manual* has just about everything you need to know. It covers SSB and CW, of course, but it also covers many other modes and interests such as RTTY, AMTOR, packet, traffic handling, DXing, QRP operating and so on. It's a worthwhile investment, and it's available from the ARRL.

If you'd like more information, drop me a line at ARRL, Department PCN, 225 Main Street, Newington, CT 06111. See you on the bands. And be nice! ■

SATELLITE VIEW

BY DONALD E. DICKERSON, N9CUE

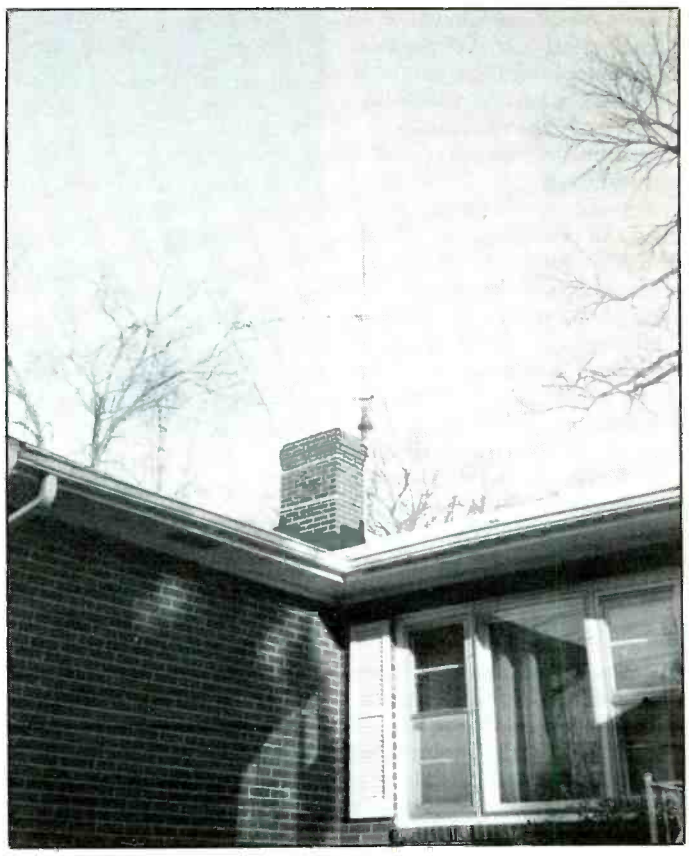
INSIDE THE WORLD OF SATELLITE COMMUNICATIONS

Mailbag

Time for letters. Let's find out what's been on the minds of some of our readers. Our first letter comes from Walter Liu of Taipei, Taiwan. Walter is a sophomore in high school and a space enthusiast. Walter wants to know if the 'NASA feed' mentioned in the March issue is "live" video from the Space Shuttle and can it be seen in Taiwan. The answers are yes and no, respectively, Walter. The live video from the Shuttle can be seen on Satcom F-2R located at 72° W on transponder 13, the audio is at 6.8 MHz and can be received on any TV satellite receiver and dish system. As this satellite is out of range of Taiwan, you will not be able to receive it directly. You can, however, listen for radio station WA3NAN during Shuttle flights. This is the Goddard Amateur station that broadcast live audio of the missions on the following frequencies: 3.860, 7.185, 14.295, 21.395 and 28.650 MHz. This can be heard on any shortwave receiver that has a BFO for Single Sideband (SSB) reception. I am not aware of any video feeds going to Europe or Asia. This does not mean, however, that non exist. For example, some US cable TV companies will use the NASA feed to fill unused channels on their systems. This could be possible in other areas as well.

Our next letter is from Dave Nihart of Hopewell, VA. Dave reports he has been operating the RS-10/11 Amateur Radio satellites for just over a week now. It's lots of fun, but he has some questions about antennas. Dave is currently using a 10 meter beam and a two meter beam as shown in photo. Well, Dave, your antenna system is just like mine. Your question about the ground plane is a valid one. A ground plane, under some circumstances, can be an asset. The satellites are turning slowly. That is something you will notice by the variation in signal strength. To give you the best and most consistent signal (one with little fading) a twist or circularly polarized antenna is best. However, a system like yours works very well and in theory has a 3dB gain advantage over a twist antenna during the part of the satellite's rotation in which the spacecraft and the ground station's antenna polarity match. So my advice is to keep it like it is. I know I will.

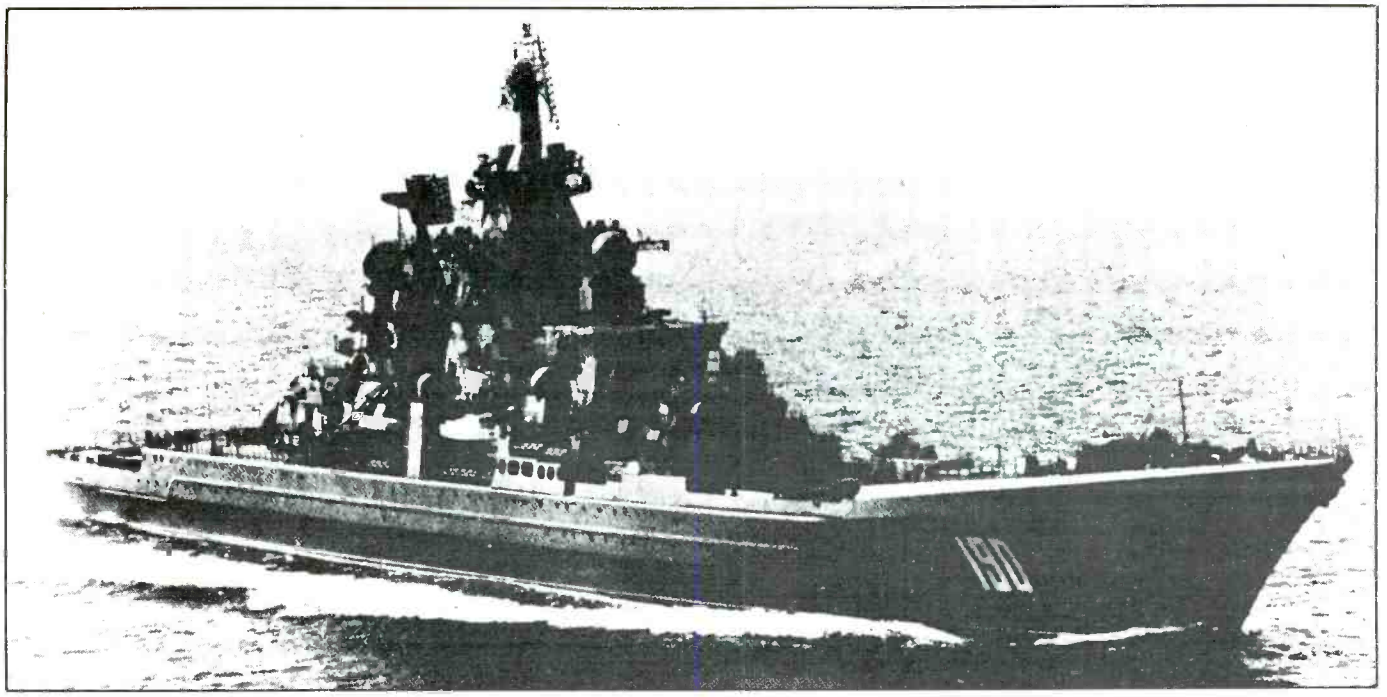
Vernon R. Pollard of Pt. Clear, Alabama and Pat Kinsella of Cleveland, Ohio both have Apple II computers and want to know what type of software is required to receive data from the IKI Network of Soviet tracking ships mentioned in the August issue. A program called ORBIT or the original W3IWI, both available from AMSAT Software Ex-



Dave Nihart's RS-10/11 Antenna system.

Time (Z)	Frequency	Notes
1156	147.450 MHz	Astronauts getting ready to board
1410	3.860 MHz	(80m outlet of WA3NAN)
1411	14.295 MHz	(20m outlet of WA3NAN)
1423	20.196 MHz	T-20 minute hold for computer program verification & closing of cabin door;
1429	20.196 MHz	resumption of T-20 minute hold
1440	20.196 MHz	T-9 minute hold
1513	147.450 NHz	Major status check w/all KSC coordinators; callsigns: OTC, TBC, TTC, LPS, FLIGHT, FTM SAFETY CONSOLE, SBE, NTD, CDR, BLT, LRD, SRO
1521	20.196 MHz	Noted QRM from "data-like" signal which identified itself in CW: "QRA de KOS212"; may be related to KSC, as controllers were often referring to "212"
1528	147.450 MHz	Resumption of T-9 minute hold
1530	147.450 MHz	Final checks; Orbiter access arm retracted; APUs started
1537	147.450 MHz	Lift-off!
1539	147.450 MHz	SRB separation
1545	147.450 MHz	Main engine shut-down
1549	147.450 MHz	Aquisition of Discovery thru TDRSS
2044	147.450 MHz	UHF-only radio test thru Vandenburg
1535	147.450 MHz	Beginning of de-orbit burn
1551	147.450 MHz	Beginning of radio blackout
1637	147.450 MHz	Touchdown! MET: 04d 01h 00m 08s
1659	147.450 MHz	Sign-off of WA3NAN by KA3HDO

James Webb's Shuttle radio log.



Soviet tracking ship. (Courtesy USAF).

change, P.O. Box 27, Washington D.C. 20044 or phone (301) 589-6062. You can also find a virtual cornucopia of information on NASA and related space topics on CompuServe. For more information on this service call 1-800-638-9636 and ask for operator 176.

Sam Ricks, a Satellite View regular, writes to inform us that the IKI network of Soviet tracking ships is being down-sized. Four ships have been scrapped and a fifth has been re-fitted as the "world's largest aerospace ecology center." This ship is the NIS Kosmonaut Vladimir Komarov. It is being re-fitted at the Lenigrad shipyard. Thanks for the update Sam.

Joseph C. Kirksey of Houston, Texas not only tracks satellites by computer, but spots them visually as they pass over his station. Joseph uses a Tandy 1000TL2 and the TRAKSAT program. This or similar programs will tell you when the spacecraft you want to see will be above the horizon from your location. Satellites rising above the horizon near sunrise or sunset will have a dark sky for a backdrop and the spacecraft will be high enough to reflect the light of the sun. This makes them easy to spot. This method will work for any object in space. Remember, however, that not all objects in space have an inclination that will bring them over your location.

James Webb of Lessburg, VA writes with a short list of radio log entries he made during a recent Shuttle launch. He was also pleasantly surprised to find many satellites still operating in the low band (137 MHz).

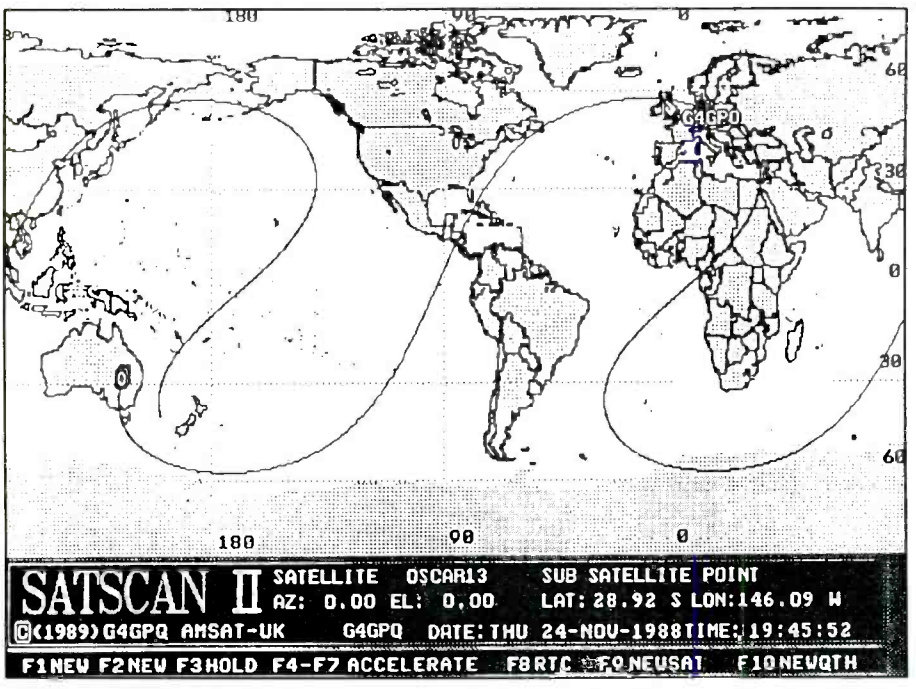
Tony Colonello of Adelanto, CA wants to know the transmitting frequency of the new SPOT satellite. SPOT is a French Imaging spacecraft. It transmits on 2.205 GHz (2205 MHz). I'm afraid I can't help you with the exact mode of operation. Perhaps one of our readers can help?

Jim Voigt of Bonfield, IL wants to know what satellites and services use frequencies above 2500 MHz. That's a lot of frequency space, Jim, but here are some of the services for the particular bands you asked about:

2500 to 2700 and 3600 to 3700 MHz are occupied by international telecommunication satellites which includes InSat (India) Arabsat, Molniya and Raduga spacecraft. 3.7 to 4.2 GHz is the C-band of TV satellites. The other bands you asked about—11.7 to 12.7 and 17.7 to 20.2 GHz—these are TV satellite bands.

Well, that just about does it for this session. Remember your questions, comments, suggestions, intercepts and photos are always welcome.

See you next month. ■



SATSCAN TWO - IBM Software for the Radio Amateur Satellite user, Weather Satellite user, and professionals in the space business.

EMERGENCY

BY GORDON WEST, WB6NOA

COMMUNICATIONS FOR SURVIVAL

800 MHz Receive On Some Ham Sets

Metropolitan police departments, fire departments, and rescue squads are switching up to 800 MHz trunked radio systems. Frequency congestion in major metropolitan areas has made 800 MHz a logical choice for clear channel reception where "bleed-over" and "DX capture" are not a problem. It has also been found that 800 MHz signals propagate much better in major downtown areas among buildings than signals at 460 MHz and 155 MHz.

It's in the 850's and 860's where you may have the greatest opportunity to spot your local municipality public safety department transmitting on the relatively new 800 MHz band. Most agencies will operate on a computer controlled "trunked radio" system, with mobile and base units operating on up to 6 discrete channels assigned for that particular trunked radio system. A computer within the base and mobile units (even the handhelds!) keeps track of the data channel, and will continuously hop around for a preassigned open channel when radio traffic builds up. During light periods, the computer usually assigns all base and mobile units a common home channel which rarely changes.

If you know the frequency that your particular rescue squad or emergency group operates on, scan the 5 channels, locking out the data channel on a daily basis. The data channel will usually change at midnight. After about a week of playing with your scanner, you will find that one channel usually picks up the majority of your station's calls, and that's the channel you may wish to leave in your priority mode.

FCC rules are quite clear about scanning the cellular phone channels—this is illegal, and you are not permitted to do so.

What You Might Find On The 800 MHz Band

Frequency	Use
800 MHz - 806 MHz	UHF television
806 MHz - 809 MHz	Private land mobile
809 MHz - 821 MHz	Commercial land mobile radio trunked service
821 MHz - 825 MHz	Land mobile satellite uplink
825 MHz - 845 MHz	Cellular phone, portable and mobile unit side
845 MHz - 851 MHz	Cellular phone
851 MHz - 861 MHz	Base station side of trunked radio systems, including ambulance, fire, and police
866 MHz - 870 MHz	Land mobile satellite downlink
870 MHz - 890 MHz	Cellular phone, base stations
890 MHz - 896 MHz	Cellular phone
896 MHz - 902 MHz	Private land mobile

Many emergency communicators also hold an amateur radio license. Most licensed hams operate on the 2-meter band (144 MHz - 148 MHz), and many also operate on the 70-centimeter band, or 430 MHz - 450 MHz. And many hams may not realize their 2-meter and dual-band 2-meter band/70-centimeter equipment will also tune in, on receive, 800 MHz as well!

Alinco Electronics (438 Amapola Avenue, Lot #130, Torrance, California 90501; 213/618-8616) was one of the *first* manufacturers to offer 800 MHz receive as part of their 2-meter and dual-band equipment. Both the Alinco DR-110T and DR-410T 2-meter and 450 MHz transceivers offer 800 MHz receive capabilities. The requirements are a simple pair of scissors and a screwdriver to open up the set. Cut the yellow wire loop that hangs out from the back of the display circuit board. Reset the microprocessor by turning the power on while holding the function button, and then function up the MHz button, until you get to the 800 MHz band. 800 band coverage varies with different production models, but if you already have an Alinco 2-meter or 450 mobile set, give it a try and see what you can pick up.

The Alinco Model 112 is an updated version of the Alinco 110, and some units also contain the 800 MHz board. Open up the set, and look for an additional circuit board with components mounted on it. If you see components, cut the wire loop and you have 800 MHz. A few sets have the board, but no components and no wire loop. Sorry, no 800 MHz on these later units.

The Alinco dual-band DR-510 mobile transceiver as well as the dual-band DR-570 transceiver also contain an 800 MHz board. Open up the set, find the yellow loop wire, cut it, and see how high and how low you can tune in 800 MHz.

But why does Alinco have an 800 MHz board in their sets? The answer is simple—in Japan, their personal radio service operates

Alinco DR-570 tunes in 800 MHz with a simple modification.

This ICOM set tunes in all public safety calls at 800-900 MHz.

on 800 MHz, and this is the receive board for those frequencies. No, none of the Alinco units, nor any ham units, can transmit on 800 MHz. That takes a very special trunking radio system.

At ICOM (2380 - 116th Avenue NE, Bellevue, Washington 98004; 206/454-8155), the ICOM IC-24AT dual-band handheld also contains an 800 MHz receiver strip. In fact, the ICOM dual-band offers almost continuous coverage from 110 MHz all the way through 900 MHz! While there are a few gaps in the coverage on VHF and UHF, the gaps are on generally unused spectrum, except for a slight reduction of sensitivity on the 220 MHz band. But at 800 and 900 MHz, the ICOM 24AT dual-band handheld is as sensitive as any commercial radio around.

On most ICOM handheld transceivers, energizing the 800 MHz board will require only a few key punches on the key pad. Simultaneously hold down the light button, the "B" button, and the pound (-) key. Have a friend turn the handheld off, and then on again. Release the buttons after the display unscrambles. The extended range of 850 to 905 MHz is now unlocked, and you can tune everything in via the top frequency knob. For adding easy 10 MHz key pad frequency selection to the dual-band ICOM IC-24AT handheld, hold the light button, and the "2" key, and again switch on the IC-24AT. For all digit frequency entry, hold the light button and the "3" key, and again switch on the IC-24AT. Your IC-24AT dual-band ham radio transceiver is now a terrific wide-range scanner/receiver. If you have a question regarding your IC-24AT, their new service hot line is 206/454-7619.

Kenwood has just announced a new dual-band miniature transceiver, the TH-77. There is 800 MHz coverage within the radio after a slight modification.

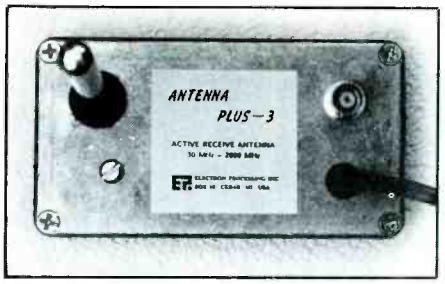
It takes a very special antenna to pull in 800 MHz signals well. Comet Antenna Company (NCG, 1275 N. Grove Street, Anaheim, California 92806; 714-630-4541) offers a complete line of tri-band antennas to cover 2 meters and 70 centimeters, plus 800 and 900 MHz for receive. Remember, none of these ham sets transmit on 800 MHz, so all you need is a good tri-band antenna for transmitting and receiving on the regular ham bands, plus 800-900 MHz receive. Comet has both mobile as well as base station antennas for terrific reception.

If you are an amateur radio operator, and thinking of purchasing new equipment—or already own Alinco equipment or the ICOM and Kenwood handhelds—it makes good sense to add 800 MHz to your 2-meter and 450 MHz station. As frequencies throughout the country get more and more congested on high band and on UHF, expect to see more and more public safety services go 800 MHz.

Remember, the law forbids tuning in cellular phone frequencies, so confine your 800 MHz scanning to only those frequencies for which you are authorized to tune in.

NEW PRODUCTS

REVIEW OF NEW AND INTERESTING PRODUCTS



Scanner Antenna Boosts Signals

Greatly improved scanner signals from an indoor antenna are now possible with the ANTENNA PLUS-3, announced today by Electron Processing, Inc. Using just a 36-inch telescoping whip, the ANTENNA PLUS-3 makes these weak stations strong. Reception is "peaked" for scanner frequencies and is further enhanced by a special filter that eliminates interference caused by local AM broadcast and shortwave transmitters. Strong signals are assured by the unit's 15-20 db internal amplifier. Receives 30-2000 MHz.

Quick and easy to install with adapting cables available for most scanners (not included). The ANTENNA PLUS-3 is available with choices of BNC, Phono, SO239 (UHF), N and F connectors for connection to virtually any type of receiver. The antenna is powered by standard 115 VAC. A version with a built-in antenna splitter and second output jack are also available.

Pricing starts at $89.95 for the standard model and $109.95 for the dual output model with quantity discounts available. For a limited time we are offering a special introductory price of $79.95 for the standard model. For more information, contact Electron Processing, Inc. at PO Box 68, Cedar, MI 49621, or circle 102 on our Readers' Service.

Scanner Developed For Public Safety

Uniden America Corporation introduced a scanner developed exclusively for public safety organizations. The MR 8100 Turbo Scanner is a high performance scanning radio receiver built to endure extreme environments encountered in mobile and emergency applications.

Features of the MR 8100 include the following: Dispatcher Controlled; Oversized Controls and Large Readouts; PC Programmable; 6 Watts of Audio; Rack Mounting Versality; and 29-956 MHz Frequency Coverage.

The oversized, illuminated controls and an alphanumeric LCD display allow simple error-free operation in critical conditions. Most functions are prompted through messages appearing in the display. Each programmed channel is identified with the name of the service. Electronic performance includes supervisory pre-programming from a PC limiting or eliminating the need for field programming. Frequency coverage includes all public service and federal bands in the range 29 to 956 MHz (including VHF air band). The MR 8100 is capable of super turbo scanning nearly 100 channels per second, yet supersensitive to avoid missing communications on any one channel.

Uniden's MR 8100 Public Safety Scanner—the first scanner developed for public safety by public safety engineers.

Telephone Controller

The TeleCommand System 100 is a telephone-controlled automation system that lets you control up to 100 electrical devices throughout your home or business by dialing simple touch-tone commands from any phone, on or off premise. Just plug the Tele Command into a telephone jack and AC outlet. Devices can be connected directly to the rear panel AC outlet or plugged into control modules (sold separately) that respond to command codes carried through the existing AC wiring. (Relay terminals are also provided for low voltage applications.) Applications include: lighting and appliance control, computer access protection, security systems, selective call screening, remote monitoring, heating/air conditioning, etc. Two remote access codes provide protected off-premise control. The TeleCommand comes pre-programmed, ready to use, and can be re-programmed by phone, on or off premise (no computer required). It works with standard, cordless, cellular (car or portable), and multi-line phones or 1-way radio transceivers (mobile, marine, CB, Ham) for remote control in areas without telephone service. Auto-dialers can be used for one-touch multiple commands. The Telecommand is compatible with control modules by X-10, Radio Shack, Leviton, Stanley, and most powerline control systems. Price: $499. JDS Technologies, 17471 Plaza Otonal, San Diego, CA 92128, or circle 103 on our Readers' Service.

CB SCENE

BY BILL SANDERS, SSB-295

27 MHz COMMUNICATIONS ACTIVITIES

CB operators squawk that every rig is a mobile unit and there are too few base stations available. Here's one of those rare birds, a base station, although it's versatile enough to also be used as a mobile unit. It's the Radio Shack Realistic *Navajo TRC-434* (#21-1548).

The *Navajo* is an AM station with a channel selection via direct entry on a keypad, which is unusual in CB equipment. An especially bodacious feature is that there's a front panel switch that allows you to cut back on the unit's power output for those close-in contacts. Other worthwhile features include a removable mike, a switchable NB/ANL, up/down channel scanning, signal strength indicator, large LED channel display, and a headphone jack. The *Navajo* can operate from 110 VAC and 12 VDC.

The *Navajo* sells for $149.95. You can see one on display at your nearest Radio Shack store.

The Radio Shack Navajo AM base station.

Mobile Mount

There's a question about mounting an SSB rig in a 1986 Toyota truck. With no room to mount the unit in (or under) the dash, the question arises as to where the rig could be mounted so that the driver can still have it within arm's reach so that the clarifier, channel selector, and other controls might be used.

The man with the problem is Jim Kalach, SSB Network member SSB-30R, of 975 Meriden Rd., #5, Waterbury, CT 06705. Jim thinks that inside the roof might be a good spot, if only he knew how to mount it there so that it would have sufficient support, and also so that the roof itself wouldn't need to be punctured all the way through.

We saw one mounted like that using *Velcro* strips with adhesive on the back, and it was said to have done a decent job on the lightweight rig involved. A larger or heavier rig might not be suited to this type of installation. If anybody has ideas on this, please contact Jim, directly.

Overseas Items

A letter from Peter Urae, Kelowna, British Columbia, contained photos of a German CB'er who's known by the handle *Skydriver*. That handle belongs to Hartmut Kraski, Eberstein Weg 4, D-1000 Berlin 37, Germany.

Hartmut uses FM (it's legal in Germany) via a Zodiac M-244 rig containing an interesting feature, CTCSS tones. The tones allow Hartmut and some of his local CB pals to have communications open only to those within their own group. Sounds like a feature that could come in handy from time to time.

By the way, Hartmut's antenna is a ¼-wave spider type. He monitors Channel 26.

Dave Lowrey, WX7P, of Concord, CA passed along a clipping from the *Washington Post*. A story by Mary Battiata told how CB has finally taken off in Poland, now that the political structure of the country has become more Westernized. There are apparently more than 10,000 CB'ers there now, with some 3,000 actually having licenses, and 40 license applications per day being filed.

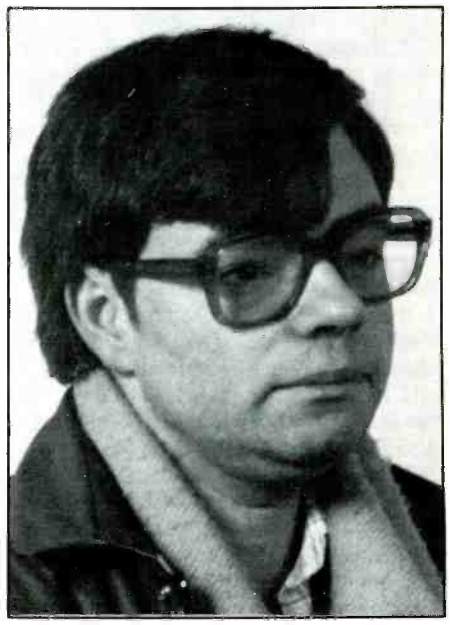
CB was actually legalized in Poland seven years ago, but the Communist government wasn't allowing citizens to own the equipment. Now that things are different, reports the *Washington Post*, CB is rapidly forming along the same lines as it did in the US and Canada fifteen years ago, with clubs, CB *handles*, CB lingo, and lots of crazy antics.

Of course, there's a serious side to CB in Poland, too. It turns out that CB equipment is the only two-way radio hardware that is available for use by many small businesses, as well as ambulances, and even police and fire departments. Even taxicabs use CB radio.

The biggest use in Poland, however, is just for chatting. The nation's antiquated landline telephone system is not only expensive, but also absolutely awful, still using switching equipment that's been in service more than sixty years. Many citizens, especially in rural areas, never had telephones, or couldn't get service that was of any practical value. CB has opened up lines of communications that these people have never before had. There are even channels set aside for making dates!

From Belgium, however, the CB news isn't quite so upbeat. This column received a letter from Marcel Coenen, an officer of the Belgian *Radio Pirate DX Network* (a CB club in that nation). Marcel complains that in Belgium, CB'ers are restricted to 20 channels of AM with ½-watt, with full 4-watt power allowed on 40 channels only in FM mode. The use of SSB or beam antennas is forbidden in Belgium.

Still, Marcel reports, that the government had been very lenient with enforcing these restrictions and, since the mid-1970's, hasn't bothered more traditional types of CB activities so long as there weren't complaints of interference caused by specific stations.



Hartmut Kraski, who operates from Berlin with the CB handle "Skydriver."

The CB station used by "Skydriver" in Germany. He monitors Channel 26, but uses FM.

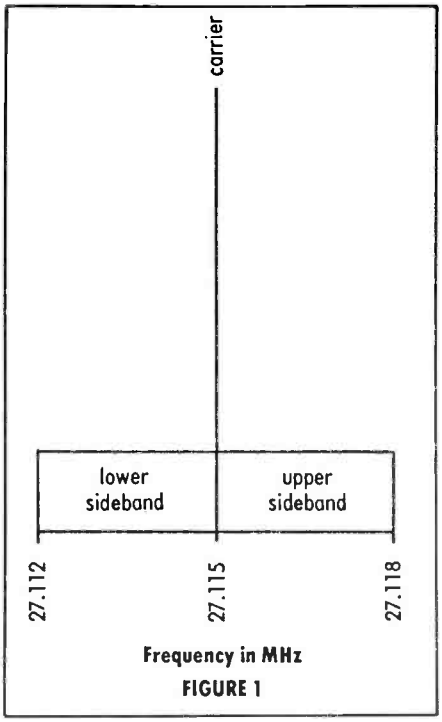


FIGURE 1

TABLE 1

CB CHANNEL HARMONICS

harmonic	CB [MHz] Channel 1	CB [MHz] Channel 2
2nd	53.930	54.510
3rd	80.880	81.765
4th	107.860	109.020
5th	134.825	136.275
6th	161.780	163.530
7th	188.755	190.785
8th	215.720	218.040
9th	242.685	245.295
10th	269.650	272.550

TABLE 2

VHF TELEVISION CHANNELS

TV channel	band occupandy [MHz]	TV channel	band occupancy [MHz]
2	54-60	8	180-186
3	60-66	9	186-192
4	66-72	10	192-198
5	76-82	11	198-204
6	82-88	12	204-210
7	174-180	13	210-216

That's all changed now. Within the past year, about 80% of all Belgian CB stations have been charged with not observing the CB regulations. This sudden enforcement program came as quite a shock, and the explanation for it from the PTT (the Belgian equivalent of the FCC) was that it was brought about by complaints from the PTT in Norway, which supplied a list of operators' names and addresses copied down over the air, claiming that they were causing interference to stations in Norway.

Belgian SSB operators have been receiving fines equivalent to between $170 and $450 (in US funds). But, says Marcel, the whole thing seems odd because Belgian SSB operators don't normally announce their full names over the air, and never give more than a box number address. Therefore, Marcel is strongly suspicious of the list of operators' names and addresses supposedly supplied by the Norwegian authorities, and doubts that any such information was actually furnished to the Belgian PTT. He thinks the Norwegian story is a lie, and that the sudden about face in enforcement policies came about as a result of political forces within the Belgian PTT.

Marcel hopes that, as the leading publication read by CB operators in North America, *POP'COMM* will bring this situation to the attention of its readers. He hopes that clubs and individual operators in North America will write letters in strong protest of this policy. Letters should be written to: Mr. Marcel Colla, Minister of PTT, Wetstraat 56 Box 3, B-1040 Brussels, Belgium.

Interference Item

We get lots of mail asking for more information on TV interference (TVI), and why it happens, presented in language that can be easily understood.

For the most part, TVI doesn't occur when a stock (legal) CB rig is in use, and the affected TV set is reasonably modern, in good repair, and connected to an adequate antenna system. Not that all of these conditions always exist simultaneously.

If you had a perfect AM transmitter, it would emit only the channel carrier signal when you aren't speaking into the mike (no modulation). When you talk into the mike, it emits two sidebands plus the carrier. This total signal now occupies 6 kHz of space (see Figure 1).

But, there isn't any perfect transmitter. In addition to the carrier, harmonics of the carrier are transmitted. When you strike a piano key to produce a 440 Hz note, the piano string vibrates 440 times a second to produce the fundamental note. It also vibrates at multiples (harmonics) of 440 Hz to produce a richer sound. The second harmonic of 440 Hz is 880 Hz, the third harmonic is 1320 Hz, and so on.

The harmonics (up to the tenth) of the highest and lowest CB frequencies are listed in Table 1. The harmonics of the other CB channels lie between those listed. Table 2 lists the VHF TV channels, each of which is 6 MHz wide.

The second harmonic of most CB channel frequencies falls into TV Channel 2. The third harmonic falls into TV Channel 5. The seventh harmonic falls into TV Channel 9. The eighth harmonic falls into TV Channel 13. The second harmonic is usually the strongest and, if radiated through the CB antenna, could wipe out TV Channel 2 for some distance around the neighborhood. The third harmonic might affect TV Channel 5, the seventh might affect TV Channel 9, the eighth TV Channel 13, although it's rare that TVI goes above TV Channel 9.

The harmonics are usually filtered out adequately within the CB transceiver by filters and traps required by the FCC before the equipment may be marketed. If interference is observed only when the TV set is tuned to TV Channels 2, 5, and/or 9, but not on other channels, it indicates that harmonics are being radiated by the CB transmitter. This could be because of failure or detuning of the CB rig's internal filtering components. One way to rectify this is to have a CB service technician check the CB set out. Another possible solution would be by the use of an add-on low-pass filter. This is a small device that easily connects to the CB rig's antenna connector and doesn't allow the passage of any signals above a certain specified cutoff frequency, for example 41 MHz.

Ham filters for the 10 meter (28 MHz) band are rated for 1 kW, but CB filters are smaller, less extensive, and are intended for lower power ratings. In addition to this type of filter, a CB'er experiencing TVI on his own TV set might also try a power line filter.

On the other hand, if the TVI is noted on all TV channels, or TV Channels other than TV Channels 2, 5, 8, and 13, the problem could well be the fault of the TV receiver, assuming that the CB rig isn't running more power than allowed. Most TV sets have lousy rejection of unwanted signals, especially if they are using poor antennas or are in weak TV signal areas. Some TV sets are worse than others, and those that are out of repair can be very susceptible to interfer-

(Continued on page 76)

WASHINGTON PULSE

FCC ACTIONS AFFECTING COMMUNICATIONS

Texas Pirate Station Shut Down

An engineer from the FCC's Dallas Office located and shut down pirate broadcast station "Midnight Radio." The station was operating on 7410 KHz. This frequency is allocated to the International Fixed Public Radiocommunication Services. The unlicensed station was located at Rowlett, Texas, in the residence of Michael Shawn Zurbrick.

Pirate Radio Station Shut Down In Western New York

The Buffalo Office of the FCC's Field Operations Bureau recently shut down an unlicensed FM radio station operating on 90.5 MHz in western New York State. FCC engineers using mobile direction-finding equipment located the station in the Town of Lancaster, at the residence of Jeffrey Domin. Domin was fined $1,000 for the unlicensed operation of a radio station.

Pirate Radio Station Operator Fined $1,000

The FCC's Kingsville Office issued a $1,000 fine to George P. Hopp, Jr. for operating an unlicensed pirate broadcast station on 7435 kHz. This frequency is assigned to the International Fixed Public Radio Service band.

An FCC Engineer from the Kingsville Office using mobile radio direction-finding equipment located the station at Donna, Texas, the home of George P. Hopp, Jr. The station was using the callsign "XERK."

Pirate Radio Station Shut Down In San Rafael, California

The FCC's San Francisco Office shut down an unlicensed pirate broadcast station operating on 7435 kHz on the International Fixed Public Radio Service band. The unlicensed station was operated by amateur operator Stephen P. McGreevy (N6NKS), who was fined $1,000 for unlicensed operations. The pirate station was identified as "The Muddy Sound of KMUD."

An FCC engineer from the San Francisco Office using mobile radio direction-finding equipment located the station at San Rafael, California, the home of Stephen P. McGreevy.

FCC Seizes Illegal Radio Equipment From A Pennsylvania Amateur Operator

Engineers from the Federal Communications Commission's Philadelphia Office and the U.S. Marshall Service executed an *in rem* seizure of unlicensed amateur radio equipment.

John E. Rahtes, Engineer-in-Charge, using mobile direction-finding equipment traced the signals to the Norristown, PA residence of amateur operator Ernest Wood (KA3WHZ). Authorities stated that Wood was using handheld transmitters, which had been modified to broadcast on NHF in the 130 to 175 megaHertz range.

This action took place after the Pennsylvania State Police, the Norristown Fire Department, and the Norristown Yellow Cab Company all complained about illegal broadcasts and interference to their assigned frequencies. The interference included impersonating firemen and police officers, interruptions to emergency communications, harassing remarks and obscene language.

Unlicensed operation of a radio transmitter 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. Such 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.

Unauthorized Changes In Long Distance Carriers

In 1985 and 1986, consumers were sent ballots which gave them the chance to choose their long distance carriers. Consumers are always free to change their long distance companies. Recently, however, a number of consumers have complained to the Federal Communications Commission (FCC) that their long distance service has been switched without their permission to a long distance company. Such unauthorized switching violates FCC rules and consumer protection policies.

Unauthorized switching sometimes happens as a result of unfair sales tactics. Some long distance companies hire special sales groups, known as telemarketers, to sell you their services over the telephone. The telemarketers can provide you with useful information about special promotions and reduced rates. Telemarketers may also misinterpret any agreement on your part to let them send you information about their company to mean that you are ordering their service.

This bulletin gives you information about your rights as a telephone service consumer and suggests steps you can take if your long distance service is switched without your permission.

You have the right to get long distance service from the long distance company *you* have chosen. No one has the right to switch you to a company you don't want.

You are always free to change your long distance company. Even if you did agree to take service from a new company, you can be changed back to your previous long distance company—or switched to another long distance company—whenever you want. You will be required to pay a small charge. Sometimes the new company will pay the "change charge" in order to get you to try its long distance service.

If you have been switched to a long distance company *without* your permission, you have the right to be switched back to your previous company, at no charge to you for the switch. However, you must pay for any long distance calls you made using the unauthorized long distance service.

You have the right to have service problems resolved by your local telephone company.

You have the right to receive accurate information

If you are called by a telemarketer and you are interested only in receiving information, but you do not want to change your long distance company, make sure that the telemarketer understands that *you are not ordering service from the company he or she represents, but only want to be sent information about the new company.*

Pay particular attention to any letter from a telephone company which says something like "thanks for choosing (XYZ company) as your long distance carrier." Such letters are verification letters. The verification letter will contain a form letter called a "letter of agency." Sign and return this form *only* if you want to change long distance companies. Although you can order a change in telephone service over the phone, the letter of agency makes your intention to change clear. If you did not order a change in service, *call the company which sent you the letter of agency immediately.* Tell them that they have made a mistake and that you did not order a change. (You should also check with other people in your household to make sure that none of them ordered a change.)

Always read the phone bill from your local telephone company carefully. Your local telephone company is completely separate from all long distance companies (including AT&T). Many long distance companies, however, pay the local phone company to do billing for them. Long distance charges are listed on a separate sheet included in your local bill. The name of the long distance company serving you and its telephone number is at the top of this sheet.

If you find that you have been billed for a

long distance company which you did not choose, call your local phone company, tell them that you did not order service from the new company and that you want any "change charges" suspended while they investigate the unauthorized switch. Remember, however, that you must pay for any long distance calls you have made during the unauthorized switch.

Next, call the long distance company you were switched away from and report that you were switched without your permission. Ask to be reconnected. There should be no charge for this reconnection. The long distance company you want to go back to will also send you a verification letter and form, which you should sign and return.

You can also file a complaint with the Federal Communications Commission. Such complaints, with copies of any documents you have received, should be sent to: Kathie A. Kneff, Enforcement Division, Common Carrier Bureau, Federal Communications Commission, 2025 M St. NW, Washington, DC 20554.

Propose Amendments To Rules To Implement Global Maritime Distress And Safety System

The FCC initiated a preceeding to implement the Global Maritime Distress And Safety System (GMDSS) in its rules. The new system will change international distress communications from Morse code and manual operation, to automated or semi-automated communications using satellite and digital technologies. Today's action by the Commission initiates the last in a series of proceedings designed to implement the Final Acts of the 1987 World Administrative Radio Conference (WARC) for Mobile Services.

Over 10 years ago, the International Maritime Organization (IMO), an agency of the United Nations, began revising the 1974 Convention for the Safety of Life at Sea (SOLAS) to improve maritime safety. The system designed by the IMO was named the GMDSS. By incorporating advanced communications techniques and by using ship-to-shore communications links, the GDMSS will bring to international shipping, a unified satellite technology, automated reception of maritime safety information, and rapid distress communications with Rescue Coordination Centers. It will also provide flexibility for choosing equipment and maintenance options and establishes new radio operator requirements. More importantly, the proposed changes will improve the safety of life and property at sea throughout the world by providing a more efficient and reliable distress system.

The proposals put forth by the Commission would require that ships subject to the SOLAS Convention or Title III, Part II of the Communications Act of 1934 conform to the GMDSS provisions. These ships are currently required to carry certain radio equipment for safety purposes and are termed compulsory ships or vessels. For this proceeding, compulsory ships include all passenger ships carrying 12 or more passengers and all cargo ships of 300 gross tons engaged in international voyages. Other ships fitted with the same equipment are termed voluntary ships or vessels. The proposals would not affect small ships, such as fishing vessels and recreational yachts. By using improved technology, the Commission said that ships can be assured distress signals sent over long distances will be received on shore.

The GMDSS will be phased-in from February 1, 1992, to February 1, 1999. During this period, both the present distress and safety systems, based on manual Morse code telegraphy, and the new GMDSS, based on satellites and automated digital technology, will be operational. The schedule for implementing GMDSS is February 1, 1992, for voluntary ship compliance; February 1, 1995, when new compulsory ships must be GMDSS equipped; and February 1, 1999, when all compulsory ships must be GMDSS equipped.

Also, the GMDSS provisions require that as of August 1, 1993, all compulsory ships must have a NAVTEX receiver for the reception of maritime safety information and a satellite emergency position-indicating radiobeacon to provide a distress alerting function and the location of a ship survival craft.

Other proposals include adding a new GMDSS endorsement to the Commission's rules to reflect the skills necessary for operating the GMDSS equipment. This endorsement would be based on the requirements contained in the General Operator's and Restricted Operator's Certificates adopted by the 1987 Mobile WARC. With respect to maintenance, the Commission proposes to allow licensees the choice of duplication of equipment, shore-based maintenance, or at-sea maintenance, as prescribed in the Final Acts of the 1988 IMO Conference. Comments are requested on whether a certificate is needed for at-sea maintainers to assure the functioning of equipment during a distress situation, and whether the maintainer should be licensed and who should issue the license, the FCC, the U.S. Coast Guard, or private schools. Commenters should also address whether specific standards should be defined in the Commission's rules and what they might be.

Laser Form

The FCC Form 574L, "Land Mobile/GMRS Radio Station License," is now being produced on a laser printer. This method will save Commission resources as well as provide the public with a more acceptable license document. In the past, land mobile licenses had a tendency to smudge (possibly due to carbon interleaved sheets) during mailing, rendering some licenses illegible.

This new process eliminates this problem. The laser printer version contains the license, one copy each of the FCC Form 715A, "High Intensity Obstruction Lighting Specifications for Antenna Structures." FCC Form 715, "Obstruction Marking and Lighting Specifications for Antenna Structures," and license conditions and administrative notes. For further information contact the Private Radio Bureau's Consumer Assistance Branch, telephone 717-337-1212.

Maximum Reimbursement Fee For An Amateur Operator License Examination

The FCC announced that the maximum allowable reimbursement fee for an amateur operator license examination will be $5.27. This amount is based upon a 6.2% increase in the Department of Labor Consumer Price Index between September 1989 and September 1990.

Volunteers examiners (VEs) and volunteer-examiner coordinators (VECs) may charge examinees for out-of-pocket expenses incurred in preparing, processing, or administering examinations for Technician, General, Advanced, and Amateur Extra Class operator licenses. The amount of any such reimbursement fee from any examinee for any one examination session, regardless of the number of elements administered, must not exceed the maximum allowable fee. Where the VEs and the VEC both desire reimbursement, they jointly decide upon a fair distribution of the fee.

No fee is allowed for the Novice Class operator license examination.

This announcement is made pursuant to Section 97.527 of the Commission's Rules, 47 C.F.R §97.527.

Minor Changes To Amateur Rules Proposed

The Commission proposed minor changes in the Amateur Service rules, including changes in terminology, technical standards and operating requirements.

The changes were requested by William H. King, Gordon Girton, The American Radio Relay League, Inc. (ARRL), and B. Lewis Trexler. While the Commission found merit in some of their suggestions, it determined that others were inappropriate or unnecessary.

ARRL requested approximately 20 minor technical and operational changes in the rules, including new definitions, renaming sections of the rules, authorization of automatic control of auxiliary stations and relaxation of the limited conditions under which an amateur operator may accept compensation for being the control operator. ARRL and Girton sought to revisit a few previous decisions including the ban on certain high power external amplifiers that are capable of transmitting on Citizens Band (CB) Radio Service channels and the structure of the volunteer examiner system.

Trexler requested that certain amateur stations be required to identify at the beginning of a communication in addition to the identifications now required. King requested that amateur stations be authorized to transmit tone modulated telegraphy on additional frequencies. Girton requested numerous changes in the amateur operator licensing requirements and the volunteer examiner system.

The Commission said that the changes requested were generally minor rule changes which they believed would make the rules more useful. Some of the requested changes reflected preferred terminology or clarify the application or assist in understanding a rule. Other requested changes, however, were repetitions, the Commission said, or clearly did not warrant a rule change.

Reconsideration Denied Concerning Devices Without An Individual License

The Commission denied joint requests by the United States Coast Guard (USCG) and the Federal Aviation Administration (FAA), for partial reconsideration and further rulemaking of an Order revising Part 15 of its rules regarding operation of radio frequency devices without an individual license.

The USCG and the FAA expressed concern that non-licensed Power Line Carrier (PLC) systems operating under Part 15 would have the potential for causing interference to LORAN-C radionavigation operations. LORAN-C is a radionavigation system operating at 100 kHz that was originally developed for maritime use. The USCG and the FAA requested that the Commission impose field strength limits on PLCs, at least on an interim basis, and that the Commission institute a further rulemaking into the matter.

Denying reconsideration, the Commission stated that the USCG and the FAA had presented insufficient information to demonstrate a need for field strength limits on PLCs. The Commission said that while it recognizes that LORAN-C use will increase on and over the land areas of the United States, it remained unconvinced that field strength limits to protect LORAN-C signals from interference are warranted at this time.

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SCANNING VHF/UHF

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

How do you become a master of scanning? What are some of the most important tips an experienced scanner listener can pass along to the novice monitor?

One of the first things you might want to do is join a scanner club. There are several loosely organized groups across the United States and Canada, and some even publish newsletters, such as Northeast Scanners and Radio Monitors of Maryland. It's good to join a regional or local scanner club because the group can devote its energy to covering one particular area, rather than the entire country. Imagine belonging to a scanner club that published maybe two frequencies of interest to you in an entire year. That's about what you'd expect from a national club.

Next, get yourself a scanner directory from a local radio store. Some local directories are slick publications chock full of information, including not only frequencies, but also radio codes and unit numbers. Then there are some scanner directories so incomplete that they actually might have incorrect information in them. Page through the directory before you buy it and make sure it's worth the money. Some of the information published might be available for free just by contacting a radio dispatcher.

Another good source of frequencies for the beginning scannist: get yourself a copy of the FCC rules and regulations for two-way radio users. The FCC rules book will be technical, but it also is chock full of list of what frequencies are used by which radio services. For instance, if you look under the rules for the fire radio service, there will be a list of all frequencies that can be used by fire departments.

After you have all these lists, you should start to put together a list of local frequencies that may be in use in your area. For instance, you may identify a list of frequencies your local police department is using, according to one of the better scanner guides such as the Uniden Bearcat Series. However, scanner guides sometimes list channels planned for future use. You've got to weed out any unused frequencies by taking them out of your scanner if you don't hear activity on them. However, keep in mind that there may be frequencies that may be used by detectives for surveillance only on a very irregular basis or a frequency that may become active in the future may indeed be active as soon as tomorrow. Never discount any frequency that may not appear to be in use.

After you start identifying all the local frequencies that are supposed to be in use, you may want to start searching the bands trying to find new channels. Put your scanner in the search mode in an attempt to locate new channels that may not show up in scanner guides or surveillance channels that may be "unlisted." However, when searching through the bands, a tip many experienced scanner listeners will pass along is to limit the width of your search. Most will limit their searches to 1-MegaHertz widths so they don't miss something, however, some may limit their search to even narrower widths, such as a half-MegaHertz (as in 154.5 to 155 MHz).

As long as you have the capability to do so, erect an outside antenna to improve your scanner reception. It will allow you to hear mobiles and handheld radios much better. Keep your cable run from the antenna to the radio as short as possible, but at the same time, the higher the antenna, the better the reception will be.

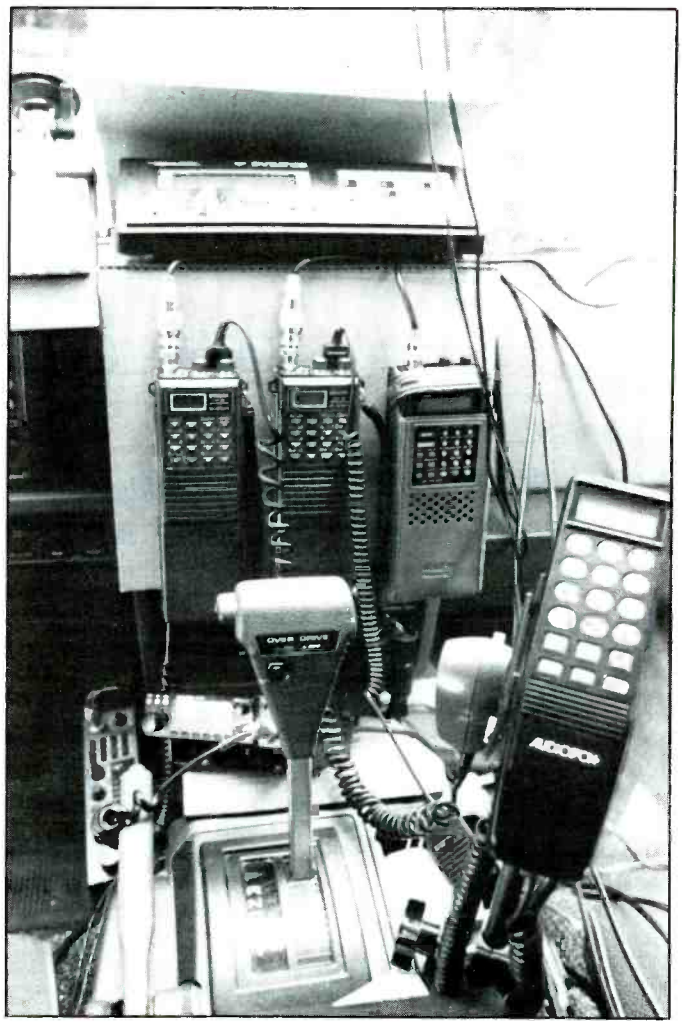
One of the biggest mistakes in putting up an outside antenna, however, is putting on the connectors wrong that go from the cable to the antenna or the radio. If you solder the connectors on wrong or don't get a good ground in doing so, you aren't enhancing your monitoring. If you never have soldered on connectors before, it's recommended that if you don't get a good book that shows you the proper procedure that you at least buy a cable set from a reputable dealer that has the connectors already soldered on to the ends of the cable. Then all you need to do is to plug in the antenna and radio and you're all set.

If there's something of interest that you are trying to tune in on your scanner, keep in mind there are right times for listening to various things. For instance, if you want to listen to federal agents, keep in mind that most seem to work on a 9-to-5 basis, so you'll need to listen during the day for the most activity. If you are trying to find school buses, you're better off before and after school. If it's a police department you're looking for, chances are Friday nights might be the best bet when officers are out looking for drunks on the roads.

Another tip would be to listen to hams on the VHF and UHF bands and even eavesdrop on radio technicians on radio shops' frequencies. In doing so, you're bound to gain some knowledge just in listening to others who are more experienced. There even might be a scanner group in your area that is using business band or general mobile radio service (462.550 to 462.725 MHz) repeaters to communicate about scanner-related information.

Don't overlook putting an ad in a publication such as this or even your local newspaper in an effort to meet others who also are interested in the hobby in your area. Somebody in your own neighborhood might be saying to himself or herself that

BY CHUCK GYSI, N2DUP



Here's the well-equipped mobile station of Thane A. Huffman, KB9ECI, of Goshen, Indiana. Thane's equipment includes handi-talkies on the 220 and 440 MHz bands as well as a Bearcat 200XLT and mobile radios for 2 meters, CB and cellular. There's also a Radio Shack PRO-2004 on top of the dash. There isn't much action this mobile station will miss. But where do the passengers sit?

there doesn't seem to be anyone else interested in listening to oddball frequencies.

Once you start developing your own frequency lists, you should consider putting together your own disaster-preparedness frequency lists. For instance, if you live on the river and there was a major oil spill, you wouldn't want to miss any of the action. The same goes if a factory in your community were to explode or two planes were to collide in midair over your town. If such a major incident were to happen in your town, would you be left wasting valuable time digging up frequencies that should be monitored? If you preplanned for disasters, you already would have a list of frequencies that might be used for a plane crash. Such frequencies would include local fire departments, federal investigators, news media and cellular channels, not to mention some aero frequencies. If you were to have such a list at your fingertips, all you would have to do would be to program in the needed frequencies so that no action would be missed.

As you can see, there are many numerous techniques that experienced monitors can pass along to the novice listener. By making contact with others in the hobby, you will enhance your knowledge of scanning.

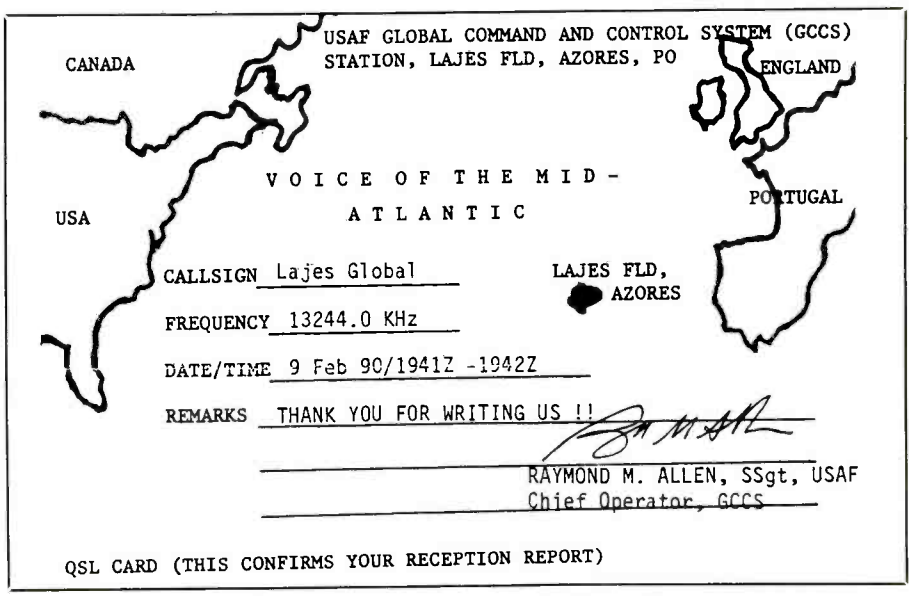
We'd like to hear about what you're listening to on your scanner. We welcome your frequency lists, as well as photographs of your listening posts and any antenna farms you happen to stumble across in your travels. You can send your questions, too, to: Chuck Gysi, N2DUP, Scanning VHF/UHF, Popular Communications, 76 North Broadway, Hicksville, NY 11801-2909. ■

BY DON SCHIMMEL

COMMUNICATIONS CONFIDENTIAL

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

Scheduled for completion this Summer is the new computer center for the US Coast Guard. The center is being moved from its present location at Governor's Island, NY to Berkeley County, WV. Approximately 100 persons will be employed at the 37,000 square-feet center which is located on a 10 acre Business Park on the South side of W. Va. Route 9 (East) near the Berkeley Jefferson county line. This new center will support such activities as Search and Rescue operations, Marine Safety Information System, tracking icebergs in the North Atlantic, law enforcement missions and anti-drug operations. Ground breaking ceremonies were held in the Fall of 1990 with officials from the Coast Guard and GSA in attendance along with W. Va Senator Robert C. Byrd. At the ceremonies, CG Vice Commandant Martin Daniell Jr. said "This center will bring a significant enhancement in Coast Guard Capabilities and will help us work smarter and take on the challenges of the future."



This QSL was received by R.C. Watts, KY

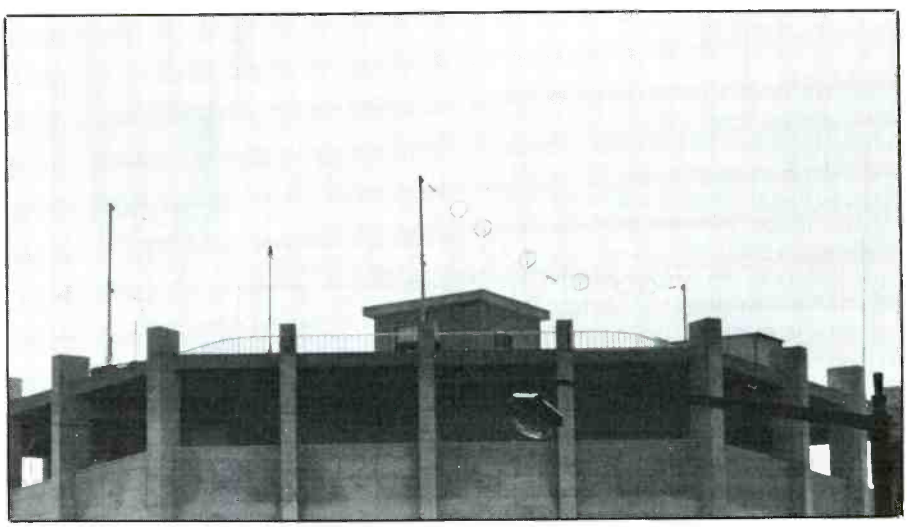
Simon Mason, England advises that his study of German numbers stations showed that toward the end of 1990 there were still about 70% of these stations continuing to be active in comparison with those active in 1989.

Simon also pointed out that he had not detected any decrease in signal strength of the German numbers signals thus seeming to indicated there had been no change in location of such stations. Most interesting! We eagerly await the next report from Simon.

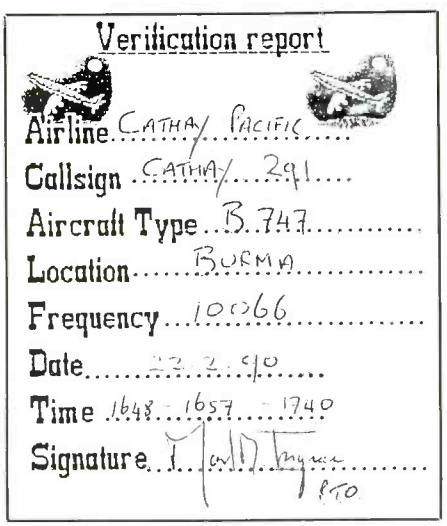
Bob Powers, LA and several other contributors including your Editor have heard YVTO, Caracas, Venezuela Time Signal station transmitting on 5000 kHz so it has apparently made a permanent move there from 6100 kHz.

Tom Bennett, Canada has provided a clarification of the callsign for the Airborne Early Warning (AWACS) aircraft operated by the USAF. Tom says many people mistake "SENTRY" which is the correct callsign, for "CENTURY" Tom obtained his confirmation of this matter from the Public Affairs Officer at Tinker AFB, home of the AWACS Wing. In answer to the question "what is the general radio callsign for any AWACS aircraft when if is airborne?," the PAO replied "it is SENTRY, for the aircraft is an E-3A Sentry."

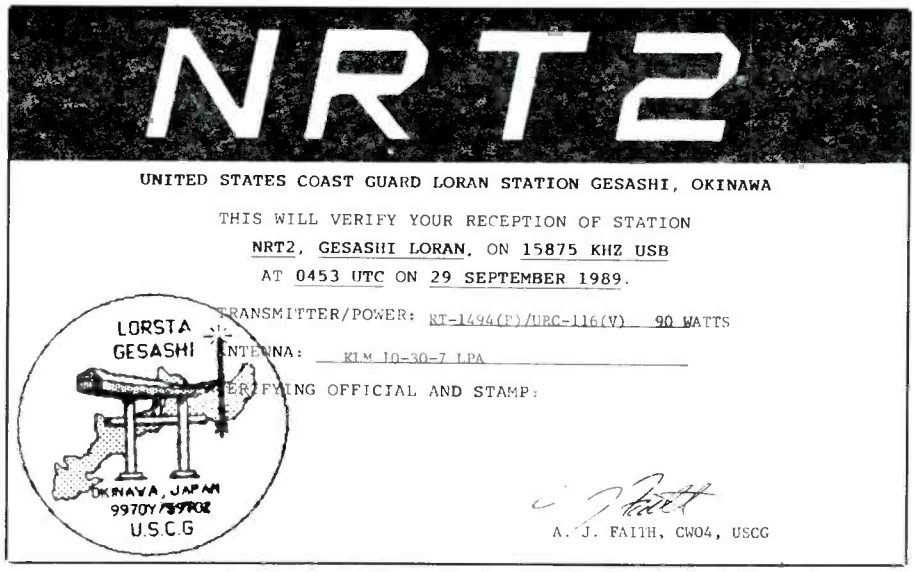
When Kurt Mueller, Switzerland went on vacation in Southern France, he took his Sony CRF-1 and Sony PRO-80 with him. For antennas he had a 50 meter longwire and an active longwave loop for beacon monitoring. Two pocket dictating machines completed the equipment. One signal he picked up was very strong and this was Mossad "VLB2" transmission heard on 14750 kHz AM at 1247. The callup was repeated



Soviet Embassy antennas, Lisbon, Portugal. Photo courtesy of Desmond Ball, Australia.



Here's one from the collection of Dick Moon, Republic of South Africa.



NRT2

UNITED STATES COAST GUARD LORAN STATION GESASHI, OKINAWA

THIS WILL VERIFY YOUR RECEPTION OF STATION

NRT2, GESASHI LORAN, ON 15875 KHZ USB

AT 0453 UTC ON 29 SEPTEMBER 1989.

TRANSMITTER/POWER: RT-1494(F)/URC-116(V) 90 WATTS

ANTENNA: KLM 10-30-7 LPA

VERIFYING OFFICIAL AND STAMP:

LORSTA GESASHI

OKINAWA, JAPAN

U.S.C.G

A. J. FAITH, CWO4, USCG

Dave Sabo, CA shares hi PFC returned by a USCG Loran station.

at 1345 and 1445. At 1540 traffic commenced with several messages sent until carrier off at 1640.

In checking out his longwave loop, Kurt logged 76 beacons from France, Switzerland, Germany, Italy, Spain, Yugoslavia and Romania.

Miles E. Hess Jr., FL says he has been a HAM for over 25 years and enjoy mostly CW. He added "it sure is easier to copy CW today using an ICOM 735 xcvr instead of the Hallicrafters S-38 receiver I originally started out with." Miles included a copy of his letter received from the Radio Officer of the ship Frotachile. The officer, Ary Clos, listed the ships of the line Frota Oceanica Brasileira S.A. with their callsigns. The list is as follows: PPVZ Frotasingapore; PPNH Frotamanila; PPFA Frotasantos; PPGY Frotavega; PPUT Frotaargentina; PPML Frotachile; PPUW Frotavento; PPNP Frotadurban; PPEJ Frotario; PPGJ Frotasirius; PPUX Frotauruguay; PPMK Frotamerica; PPFT Frotaoeste. All are cargo transport ships.

From Jeff Burns, OH we received this note. "I submitted across something interesting in the 20 meter Amateur band during a European DX contest. The signal strength of the communications heard was strong and readable and appeared to be VOX actuated SSB. A female voice said in English 'A seat in the non-smoking section' and this was followed by the same phrase in German. Next a male said 'A seat next to the window' and this was followed by the German equivalent. More phrases were heard each followed by the German translation. Then a different male voice started talking about men's clothing, suits, ties, material, etc. The HAM station, DK0EP, operating on the same frequency made a comment about jamming. I searched around for a commercial station with this material and didn't find one, that along with the VOX action, leads me to believe that this wasn't an image of any kind. I'm puzzled!" Can any readers cast any light on these strange transmissions?

M. Stuart, DE informs that US Army MARS callsign AEM3UO has been assigned to troops in Saudi Arabia with "Desert Shield." The facilities of USN MARS Nets are utilized for transmissions from AEM3UO.

An interesting letter was received from Norman Pritchett, CA who wrote: "I am 27 years old and have been shortwave listening for 13 years. Currently, I use a Realistic DX-400 with a 145 ′ helically-wound dipole."

Norm continued "West coast listeners of the USAF/SAC Giant Talk frequencies should note that although SAC takes measures to conceal the identity of the ground stations with daily changing callsigns and varying EAM broadcast schedules, the station heard broadcasting EAMs at 45 minutes past the hour is always constant and is, I believe, McClellan AFB, CA. I live within single-hop distance of McClellan and have noticed that McClellan Airways on 8989 kHz and the station broadcasting EAM's at hh +45 are the only USAF stations I can hear 24 hours a day, regardless of radio propagation conditions—even during geomagnetic storms."

Norm had a query on the subject of Giant Talk communications. He said he had been trying to make sense of the low-level weather reports submitted by the SAC bombers and tankers. He has figured out some of it but is hoping that someone could provide additional insight.

These weather reports are a fixed format consisting of 8 items.

Item	Content
1	"1B" (used by bombers/tankers) or "B" (used by weather recon a/c)
2	Aircraft callsign
3	Zulu time of weather observation
4	Instrument route being flown at time of observation. Reported as "IR" followed by 3 digits
5	Almost always "Y". An "N" was reported by a bomber aborting their current IR route because of thunderstorms
6	"R" or "H". "H" was used by a/c reporting precipitation
7	"I" or "V".
8	Miscellaneous comments

Andy Gordon, CT wrote "I received a nice QSL letter from USNS Comfort T-AH-20 which was in the Persian Gulf. They have MARS callsign NNN0CCF.

BRITISH ANTARCTIC SURVEY

Please quote in reply
No. 533/34A

PORT STANLEY,
FALKLAND ISLANDS

1st April, 1965

Dear Sir,

Thank you very much for your letter of the 2nd February, 1965 indicating reception of our transmission on 12.3 mc/s on the 26th January. This transmission that you intercepted was our international 'FICOL' transmission on which we re-broadcast for international information all the observations collected from our Antarctic Stations during the previous six hours.

For your information 12.3 mc/s was radiated at 7 KW.

ZHF88 is the communications centre of the British Antarctic Survey.

Yours faithfully,

E.C.J.Clapp., O.I.C.,
BRITISH ANTARCTIC SURVEY

Mr. Owen Williamson,

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

Andy also described activity he heard while monitoring the Space Shuttle Discovery launch on 5246 kHz. Cape radio made radio checks with NMAP, USS Vreeland FF1068 and NHNC, USCGC Harriet Lane WMEC903. Alert 1 and Alert 2, both are USN P3C Orion ASW a/c, were also heard as was King 1 and King 2 which are USAF chase a/c. Andy followed the entire launch sequence and noted after Discovery was launched that Cape radio thanked all stations for their assistance. Andy added that his monitoring station now has JRC NRD 515, ICOM IC R71A, Sony ICF 2010 and Sony ICF PRO80 and a Regency HX 1500 for VHF.

Roy Hafeli, Canada described his location as being Mission, BC which is about 40 miles East of Vancouver and on the 725′ level of the South side of a rise overlooking a river. Roy reports that this location is a very quiet site for receiving. Roy is employed as a Broadcaster at CFVR/850 in Abbotsford, BC.

I find it necessary to ask contributors that if they desire submitted photos, QSL's, PFC's, etc returned, they not send the originals to me. Please send copies, since I can no longer return such items. Also, when you have queries please include a SASE for my reply. During 1990 I found I was handling an average of three letters per week. As you can appreciate the associated postage cost has become substantial.

Thanks.

FAA Beechcraft Super King Air based at Atlantic City, NJ. Photo taken by Charlie McAtee at Eastern WV Regional Airport Martinsburg, WV.

17.1: UMS, Moscow, USSR at 1500 w/mkr in CW. (Mueller, France)

119: IDQ, Italian Navy, Rome in CW at 1006 w/mkr. (Mueller, France)

320: Beacon A, Point Arena LS, CA at 0823. (Vaage, CA)

326: Beacon MCY, Reno, Mercury, NV at 1830. (Vaage, CA)

332: Beacon RHI, Rhine, Switzerland at 0210. (Mueller, France)

337: Beacon NA, Santa Ana, CA at 1944. (Vaage, CA)

350: Beacon NUC, San Clemente Is., CA at 1851; Also Beacon NY, Enderby, BC, Canada at 0834. (Vaage, CA)

360: Beacon Wallisellen, Switzerland at 0207. (Mueller, France)

370.5: Beacon GW, Gatow/Berlin, Germany at 2155. (Mueller, France)

383: Beacon CNP, Chappell, NE at 1042. (Vaage, CA)

386: Beacon SYF, St. Francis, KS at 0914. (Vaage, CA)

391: Beacon EBY, Neah Bay, WA at 0912. (Vaage, CA)

392: Beacon RW, Tegel/Berlin, Germany at 0120. (Mueller, France)

400: Beacon HU, Sacramento, CA at 0936. (Vaage, CA)

426: Beacon MIQ, Mike (Ingolstadt), GFR at 0200. (Mueller, France)

432: Beacon LOS, Losinj, Yugoslavia at 0210. (Mueller, France)

473: Beacon FHA, Friedrichshafen, GFR at 0205. (Mueller, France)

2302: CW signal at 2319 sends TAE0319ARARARAR, two mins later sends TAE0321ARARARAR. Continued this every 2 mins. (Tubbs, FRG)

2716: NNIK, USS Wabash AOR5 clg Long Beach Control 2 at 1030. (Gordon, CT)

2899: Gander wkg Clipper 467 for company msg in USB at 0305. (Hill, MI)

3207.9: T7F (u/i) w/5L grps in CW at 0550. This is second time I've caught this stn. (Scalzo, PQ, Canada)

3380: Rapid pips from 2030-40. Then YL/RR w/729 callup until 2045. Then 55, 55 and into 5F grps. AM mode (Mason, England)

4090: Stn has sked every Thursday. YL rptng sedm dventa tronta presta zero zero 723/00 between 2100-05. (Mason, England)

4196: Cruiseship Seaward in USB at 0345 w/pp thru WOM, Miami, FL. WOM on 4425 kHz. (Symington, OH)

4373: U/i stn giving open water conditions for the Great Lakes. (Grote, IL)

4391: Cruiseship Mardi Gras in USB at 0215 w/pp thru WOM, Miami, FL (Symington, OH)

4443: OM/SS w/5F grps in AM at 0208. (Hill, MI)

4818: Three notes rising tone from 2000-03. Then YL/GG w/Achtung x2 and into 5F grps (29 grp msg) This is a repeat of a bcst sent here on 20 Sept 1988. Over 2 years ago!! (Mason, England)

5047: YL/EE at 2300 w/881 rptd x3 then 1-0 count. At 2310 10 tones, count 75 x2 and into 3+2F grps. Rptd at 2317 and end at 2324. (Eager, NY)

5284: YL with Alfa Lima from 0800-05 w/tones. Then 5F GG groups for 969 and 043. Rptd 0830 on 5770 kHz. (Mason, England)

5310: COMSTA New Orleans wkg USCGC Buttonwood, WLB-306, shifted to 6961 kHz. USB at0319. (Hill, MI)

5692: CG 6592 wkg Detroit Air for wx in USB at 2355. (Hill, MI)

5696: COMSTA Boston wkg USCG Rescues (Helo) 1493 and a/c 2101 and Canadian P3-Rescue 116, responding to report of 78′ fishing vessel on fire. Comms started on 6506 kHz at 2334. USB at 2347; At 0301, Rescue 1489 wkg COMSTA Portsmouth. Reported airborne from E. City Air at 01. Request Portsmouth take radio guard. Also gave location plus other info. At 0315 CAMSPAC San Francisco wkg Rescue 1484, requesting flight ops report. USB mode. (Hill, MI)

5850: Two mil stns passing tfc. Stns id'd as N55 and N44. 44 told 55 to stay on freq til notified. At 3:30, N55 became 55Z. At 3:33 N65 asked when Regiment C would be in position. At 3:45, stns moved to Channel 3S. (Grote, IL)

6221: WXX7702 wkg WXX7270, Mississippi River tfc. USB at 1310. (Hill, MI)

6388: Stn ID'ing as Course Control at 2352 in USB giving headings to 503 and VB. At 2400 VB stated he completed Box 1 at 248 degrees true. When Course Control tried contacting 503, they announced they were moving to 1-3. (Grote, IL)

6430: CFH, Maritime Command Radio, Halifax, NS, Canada in CW at 0530 w/wx. (McAtee, WV)

6628: KLM 741 wkg Santa Maria for position & info at 0244; MAC J4039 wkg NY for position & info at 0248. Both in USB. (Hill, MI)

6708: YL/GG rptng 462 x3, 73976, 60 between 13-05. Then into 5F grps. Heard here every Monday. (Mason, England)

6753: Station VXA, Edmonton Military, Alberta, Canada in USB at 0020 w/wx for Canadian Airports. (Grote, IL)

6756: SAM 496 wkg Andrews, saying "We'll be on the deck in 3 minutes." USB at 0214. (Hill, MI)

6761: Belt Loop clg Exxon 63 (KC-10). "All frequency call." No answer. USB at 2103. (Hill, MI) Eyetooth w/SKYKING bcst in USB at 2359. (Grote, IL)

6785: WK4469 wkg WK4402 in USB at 0250 w/chit-chat. (Hill, MI)

6825: Welcome back! Rumanian "SKYLARK" violin tune at 2100. OM said 'Terminat' x3 after music. Also hrd on 5425 kHz. (Mason, England)

6840: YL/SS here at 0238 w/4844 and 2245. Off at 0240. (Mason, England)

6825.4: KKN50, Dept of State, Washington, DC in CW at 0250 w/mkr. (McAtee, WV)

7421.5: Charlie 8 X-ray in USB wkg USCG Mayport Group, Commsta Miami, FL at 0415. This freq id'd as Circuit 3A9. (McAtee, WV)

7485: NKID, USS Kidd DDG993 wkg SESEF Charleston at 1630 for emitter tests. (Gordon, CT)

7535: NTNR, USNS Tanner T-AGS-40 (Ocean Surveying ship) wkd Norfolk SESEF at 1630; USS Cowpens CG63 and USS Chosin CG65 tested emitters w/Norfolk SESEF at 1500 and 1400 respectively. (Stuart, DE)

7602: FDI (Aix-les-Milles Air) and FDX (Paris Air) wkg simplex on CW at 0829. (Tubbs, FRG)

7786: RDY2, Salekhard, USSR DE RCY71, Minsk in CW at 2300. (Tubbs, FRG)

7887: YL/EE rptng 05418 between 2100-2110 w/tune 'Lincolnshire Poacher' in between. At 2110 six tones and into 200 grps of 5F. Paired freq has changed to 6959 kHz from 9251 kHz. (Mason, England)

8291.1: WYP-9173, tug Gauntlet in USB at 1753 wkg WPE, Jacksonville, FL. (O'Connor, NH)

8687.9: WNU53, Slidell, LA in CW at 0430 w/mkr. (McAtee, WV)

Abbreviations Used For Intercepts

AM	Amplitude Modulation mode
BC	Broadcast
CW	Morse Code mode
EE	English
GG	German
ID	Identifier/Ied/ication
LSB	Lower Sideband mode
OM	Male operator
PP	Portuguese
SS	Spanish
tfc	Traffic
USB	Upper Sideband mode
w/	with
wx	Weather report/forecast
YL	Female operator
4F	4-figure coded groups (i.e. 5739)
5F	5-figure coded groups
5L	5-letter coded groups (i.e. IGRXJ)

Table 1

New frequencies for public coast stations working A1A or J2A radiotelegraphy. Use of these frequencies is effective 1 July 1991.

Coast Stations

Working Carrier Frequencies (kHz)

17199.2	17208.8	17218.4
22569	22599	22657
22663.5	22675.5	22681

Table 2

New Call & Reply Radiotelephony Carrier Frequencies (in kHz) effective 1 July 1991

Channel	Coast Transmit	Ship Transmit
821	8779	8255
1221	13137	12290
1621	17302	16420
2221	22756	22060

8765.4: COMSTA Boston wkg Cutter Nordland at 0555 re why PSR was 25 hours old? Honolulu wx hrd in background. Portishead w/resmsn of SOS—MV Asifi SRON-6 contacted Falklands w/MAYDAY—water in engine room. (Westinghouse, MA)

8846: Brittania 392A in USB at 1658 w/posit report to NY. (O'Connor, NH)

8861: Lufthansa 521 in USB at 0222 w/position report & SELCAL check request to Dakar, Senegal; SELCAL is BLAE. (O'Connor, NH)

8891: Minverve 819 to Oslo radio w/position report and selcal check. USB at 0715. (Scalzo, PQ, Canada)

8989: Navy 50511 wkg McClellan for 2 pp's. USB at 0219. (Hill, MI)

8993: Navy 50511 wkg MacDill for rdo check. USB at 0217. (Hill, NI)

9037: MKL, Pitreavie, Scotland DE 6WW, Dakar, Senegal in CW at 0020 w/TAF wx for various UK locations. (D.P., NC) TAF is name of code form for Aerodrome Forecasts. (Ed.)

9040: Stn in USB rpts Sierra Bravo x4 then tones for 10 sec., at 2336 goes into 3F grps in German (?). D.P., NC)

9325: YL w/November Zulu from 2200-05 w/tones. Then 5F GG grps for 202 and 955. USB mode. (Mason, England)

9457: Music Box w/Swedish Rhapsode here every Sat/Sun at 1000. At 1005 YL/GG w/5F grps for 3 addressees. The same text is rptd at 2000 Sat on 5340/ /4778/6507 kHz. (Mason, England)

9950: SESEF Charleston hrd wkg NESEA (Naval Engineering Systems Engineering Activity) San Diego at 1600. (Stuart, DE)

9996: CQ DE RWM, Moscow, USSR in CW at 1309 w/time signal. (Tubbs, FRG)

10069: Swissair 124 enroute to Chicago clg Berna Rdo re result of just completed bicycle race (Tour de Suisse). Hrd at 1448. (Mueller, France)

10740: YL w/Tango Papa from 0900-05 w/tones. Then 5F GG grps for 738 and 696. (Mason, England)

10884: ETD, Addis Ababa, Ethiopia DE AEKC, Vessel Autumn Moon (pleasure ship) in CW at 2050. (Tubbs, FRG)

11055: Andrews AFB in LSB wkg SAM flights, one SAM ran pp w/Embassy in Moscow. Hrd at 1625. (Tubbs, FRG)

11176: MAC 1745, MAC 2209M, MAC 60205 wkd Ascension w/various pp's 0427-0555. (Symington, OH) MAC Foxtrot 2279 in USB at 1807 wkg Croughton, England GCCS w/request for wx in Torrejon, Spain; PAT 139 in USB at 1755 w/pp to u/i gnd stn thru Croughton GCCS. (O'Connor, NH)

11200: RAF W. Drayton, England Volmet in USB at 0040. (Grote, IL)k

11233: A/c 6440 wkg Trenton Military, reporting 11 passengers, one propeller & prop stand to be off-loaded. Due Trenton at 2220. Also made 2 pp's. USB at 1853. (Hill, MI)

11243: Black 41 clg Skybird at 0025. Sandhill at 0029 clg in blind for Exault 40. Patchwork to Liberate at 0356 w/Skyking bcst. All SAC in USB. (Watts, KY)

11246: MAC 80220 (C-5) in USB at 1735 w/pp thru MacDill AFB GCCS, FL. (O'Connor, NH)

11267: Papa 5 Lima w/coded msg in USB at 1217. (Hill, MI)

12315: NEXS, USS Emory S. Land AS39 wkg Norfolk SESEF at 1500. Shifted from 7535 kHz, no joy. (Stuart, DE)

12320: YL/EE rptng 724 at 1900. Then 695 x2 and into 5F grps. In Jan 90 724 was sent but with 00000 and no text. (Mason, England)

12695: DE KFS, Palo Alto, CA in CW at 0444. (Mueller, France)

12535: URL, Sevastopol USSR w/mkr at 0207. At 0208 went into high speed CW tfc, looked like shipping tfc. (Scalzo, PQ, Canada)

12835.3: DE GKB3, Portishead, England in CW at 0223. (Scalzo, PQ, Canada)

12842.2: GYU, Gibraltar Naval Radio w/mkr DE GYU QSX 8. Hrd in CW at 0219. (Scalzo, PQ, Canada)

12887.5: EAD44, Araguez, Spain in CW at 0300 w/mkr. (Scalzo, PQ, Canada)

13244: AirEvac 38976 at 1712 wkg Lajes, enroute McGuire; Blue 81 at 1858 wkg Lajes enroute Mindenhall, England; King 30 at 1755 wkg MacDill; MAC 222SM at 1903 wkg Lajes; MAC 60187 at 1851 wkg Lajes enroute Charleston, SC; MAC 80217 at 1909 wkg MacDill enroute Dover AFB, DE; Shamu 11 (KC-10) at 1651 wkg Lajes. All in USB. (O'Connor, NH)

13306: TAP 304 calls Sta. Maria Aeradio, AZR at 1057; TWA 917 calls Sta. Maria Aeradio, AZR at 1100. (Mueller, France) Air France Concorde 002 in USB at 1739 w/position report & Selcal check request to NY. Selcal is AKHJ. (O'Connor, NH) Exxon 99 (KC-10) wkg NY w/position report, bound for Robbins AFB, GA. USB at 1451. (Hill, MI)

13330: TWA? 523 wkg NY LDOC for pp to National Hurricane Center, Miami, FL for position & movement of tropical depression #12. USB at 1738. (Hill, MI)

13330.5: American Airway 918 in trouble, losing oil. Ft Worth and Tulsa being consulted. A/c wanted to know how many quarts of oil they can lose before damage to engine. After consultation w/maintenance Tulsa, Pilot decided return Grand Cayman. USB. (Ed.)

13333: A siren sound, then net call-up. Calls incl ZWG, ZQ8Y, 480G, 3QC0, BCUE & GOAW. Some tfc but sigs distorted. Lasted about ten mins. USB at 0059. WHOZIT?? (Hill, MI)

13360.6: GPA5, Portishead, England w/mkr phased w/ARQ sig which id'd as BRLIY. Hrd at 0022. (Scalzo, PQ, Canada)

13890: YL w/Lima Alfa from 1100-05 w/tones. Then 5F GG grps for 363 and 355. Same text rptd 1130 on 12314 kHz. (Mason, England)

14467: NNN0CWO, USS Flint wkg NNN0NUW, Whidbey Island in USB at 2245; NNN0NXK, USS Iwo Jima wkg NNN0NUW, Whidbey Island in USB at 2233. Both contacts nvolved pp's. (Symington, OH)

14470: MARS pp's. NNN0CXN, USS Portland wkg NNN0NIK Mayport at 2250; NNN0NXK, USS Iwo Jima wkg NNN0MCL, Camp Lejeune at 2045; NNN0CYY, USS San Jacinto wkg NNN0XPQ at 2241; NNN0CXN, USS Portland wkg NNN0XPQ at 2252; NNN0CRH, USS Manitowoc wkg NNN0XPQ at 2302; NNN0CMX USNS Henry Kaiser wkg NNN0EBC at 0025. (Symington, OH)

14477: MARS pp's. NNN0CNP, USS Bainbridge wkg NNN0QLP at 2142; NNN0CMU, USS Seattle wkg NNN0QLP at 2136; NNN0COW, USS Trenton wkg NNN0QLP at 2105. (Symington, OH)

14483: MARS pp's. NNN0CSE, USS Elmer Montgomery wkg NNN0KRQ at 2113; NNN0CUS, USS Inchon wkg NNN0KRQ at 2120; NNN0CUS, USS Inchon wkg NNN0NIG, Pensacola at 0100. (Symington, OH)

14555.5: V's K V's K V's K. Then sent UCNQ, u/i Soviet vessel DE RIW, Khiva, UZ, URS. Soviet Naval comms in CW at 1455. (Ed.)

14818: NNN0CYZ, USS Whidbey Island wkg NNN0ZTI at 2035 w/MARS pp. (Symington, OH)

15015: Army 270 in USB at 1820 w/pp thru Albrook, Panama GCCS. (O'Connor, NH)

15035: CHR, Canadian Forces, Trenton, Canada w/wx at 1430. (Mueller, France)

16055: YL w/Juliet Bravo and electronic tones between 1000-05 then 5F GG msgs for 606 and 995. (Mason, England)

16363: QRA DE KKN50, Dept of State, Wash DC in CW at 0928. (Mueller, France)

16463.1: GLNE, Oceanographic Research ship Discovery in USB at 1902 w/phone tfc thru GKT62, Portishead, England. (O'Connor, NH)

16961.5: FUF, Fort de France Naval Rdo, Martinique in CW at 0420 w/mkr. (McAtee, WV)

17008.5: TAH, Istanbul, Turkey w/id & tfc list in CW at 2100. (Scalzo, PQ, Canada)

17079.4: VVV DE VHI, Royal Australian Navy, Canberra in CW at 1433. (Mueller, France)

17113.5: GKB2,3,4,5,6, - Portishead, England in CW at 1610 w/mkr. (McAtee, WV)

17420: YL/GG rptng 174 x3, 000 in AM between 1630-1635. (Mason, England)

17950: Eagle wkg Nighthawk w/MARS type pp's. Appeared to be Army. USB at 2308. (Hill, MI)

18019: MAC 004 clg MacDill for rdo check. No answer. USB at 2130. (Hill, MI)

18022: Eagle w/10 count, then "Standing-By." USB at 2137. (Hill, MI)

18525: QRA DE KKN50, US Dept of State, Wash DC in CW at 1456. (Mueller, France)

21964: Honolulu Aero wkg various flights for wx, position & info. USB at 0222. (Hill, MI)

22348.5: VVV DE VHI, Royal Australian Navy, Canberra in CW at 1124. (Mueller, France)

22376: VVV DE IAR, Rome, Italy in CW at 1158 w/tech info msg, "DUE TECHNICAL REASONS IAR IS STILL CUT OFF WITH HIS RTF/SVC AN DABT RTTX AVAILABLE ONLY 8 MHZ STOP SHIPS WILL INFORMED AS SOON AS THOSE MENTIONED FAILURES CEASED." and back to call mkr. (Ed.)

22440: CQ DE JOU, Nagasaki, Japan in CW at 0907. (Mueller, France)

22473: CQ DE CBV, Valparaiso, Chile in CW at 1535. (Mueller, France)

22476: DAM, Nordeich, W. Germany in CW at 1650 w/mkr. (McAtee, WV)

23402: 901 clg Atlas in USB at 2030. At 2042 910 clg 901. (Thomas, BC, Canada) Remainder of logging unclear. (Ed.)

25265: Youngster chit-chatting w/another stn. No calls. Only hrd one side. Poss CB outbander. AM at 0245. (Hill, MI)

26035: VLF471 in Oceno, FL wkg WAT1366 in Putten, Netherlands and Riverside 510 in Oxford, UK. USB at 1510. WHOZIT? (Hill, MI)

29582: KWZ99, u/i DE KWX78, US Embassy Athens, Greece in CW at 0842. (Tubbs, FRG) ■

RTTY

BY ROBERT MARGOLIS

THE EXCITING WORLD OF RADIOTELETYPE MONITORING

You won't find the town mentioned in many atlases or travel guides. As a matter of fact, it lies off the beaten track and is called "the most isolated urban community in Greenland."

But it was from this place that a new radiofacsimile station was discovered by me last October operating on the 20 MHz band. Faster than you can say, "The quick brown fox . . . ," the signal disappeared after few days of operation, and it was not heard again.

The signal was coming from OXM, Scoresbysund Radio, Greenland, a.k.a. Ittoqqorttoormiit by the International Telecommunications Union, Ittoqqortoormiit (for T's instead of five) in Greenlandic, and Itseqqortoormiit by the National Geographic Society. (Caution: Don't try to pronounce Ittoqqorttoormiit while eating peanut butter —Ed.) Scoresbysund is what the Danes choose to call the place. After all, they own the whole darn island.

Anyway, it's located on the eastern coast of Greenland, at the mouth of Scoresby Sund, and is 70 degrees, 28 minutes, 42 seconds north, and 21 degrees, 51 minutes, 23 seconds west (see map, figure 1). The ITU says the radio station is owned by "Groenlands tekniske Organisation," Copenhagen, Denmark.

The station attracted by attention as I came upon it transmitting a weather chart on 20002 kHz at 1159 UTC. After the chart was completed, a CW ID marker identified the station as OXM.

You may be wondering why OXM was operating on a frequency only two kiloHertz higher from where station WWV in Fort Collins, Colorado sends its time signals. I can only guess that it was because WWV was not using 20000 kHz at that time. WWV's time signals were not heard until 1338, about 15 minutes before OXM went off the air.

For two hours on Oct. 2, I watched OXM send the same weather chart five times, with the ID marker after each transmission. It was dated Sept. 28, 1990, with a notice that the next chart would be plotted on Oct. 1 (figure 2). Therefore, the transmission I saw was out of date. Was this a snafu, or what? The following day, Oct. 3, I found a new chart being faxed (Figure 3). This one was dated Oct. 1, with another chart due Oct. 5.

Both charts showed the southern tip of Greenland, and what appeared to be the location of icebergs. A seal showing rings surrounding a crown indicated the charts were plotted by the Denmark Meteorological Institute. The charts were sent at a drum speed of 120 rpm, and an IOC of 576.

The Oct. 1 chart was run again for the next couple of days, always with several repeats. The signal was always quite good, except when WWV came on the air and caused strong interference.

Then, after not tuning in the station for several days, I came back to check on it and found it was not there. Nor was it heard during spot checks on following days. OXM is not listed for FAX or CW operation in any utility station reference guide, but only for single sideband voice communications, which made this a particularly good catch.

The Greenland Tourist Service says (with

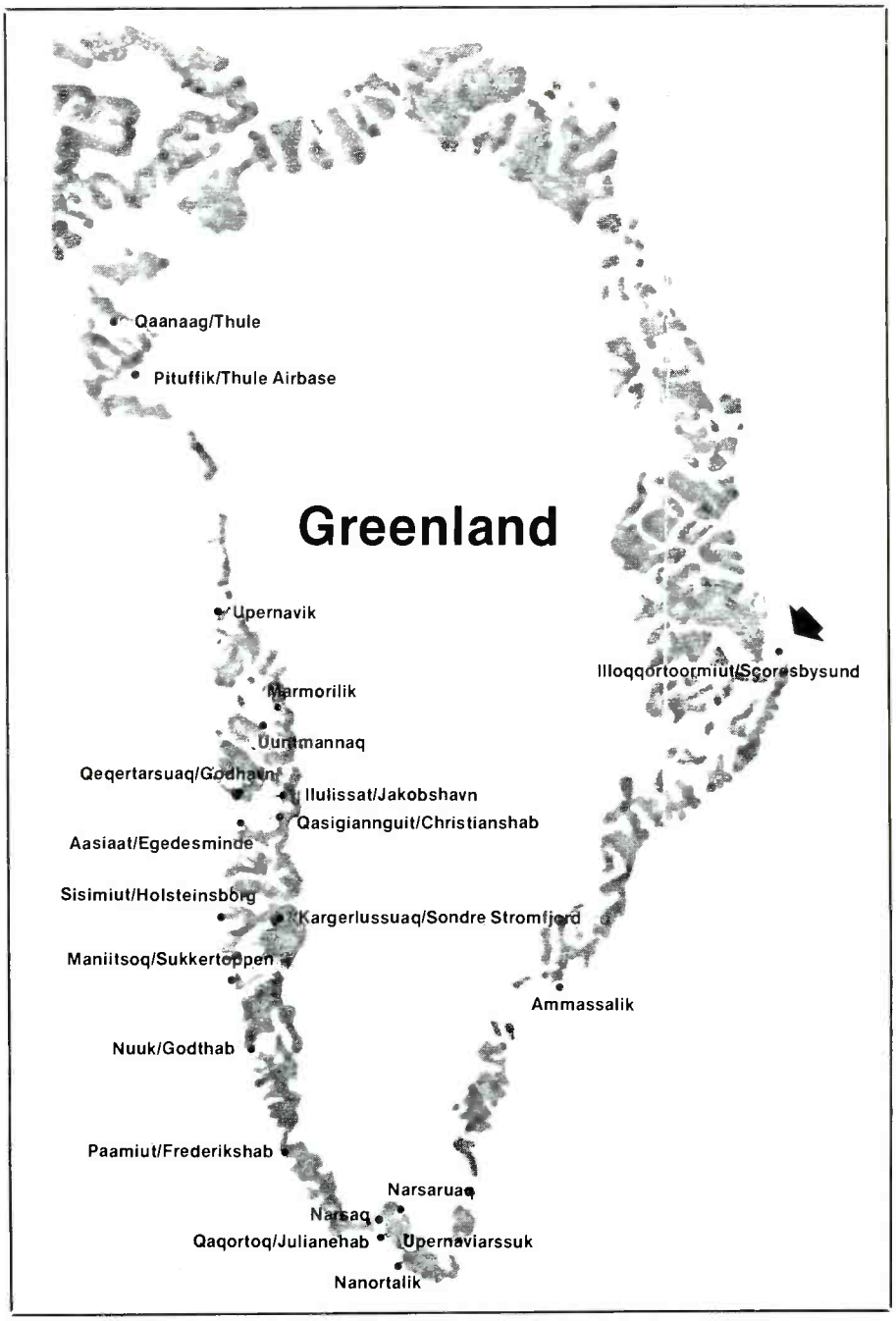


Figure 1 - OXM, the coastal radio station in Scoresbysund (a.k.a. Ittoqqortootmiit in Greenlandic) Greenland, had a radiofacsimile operation briefly on the 20 MHz band, although the station is chiefly known to use SSB communications. The location of OXM is shown by the arrow. The Greenlandic name of the town is misspelled "Illoqqortoormiut" on this map, published by MFA, Copenhagen, Denmark. Greenland is a Danish possession. (Courtesy of the Royal Danish Consulate General, Chicago, Illinois)

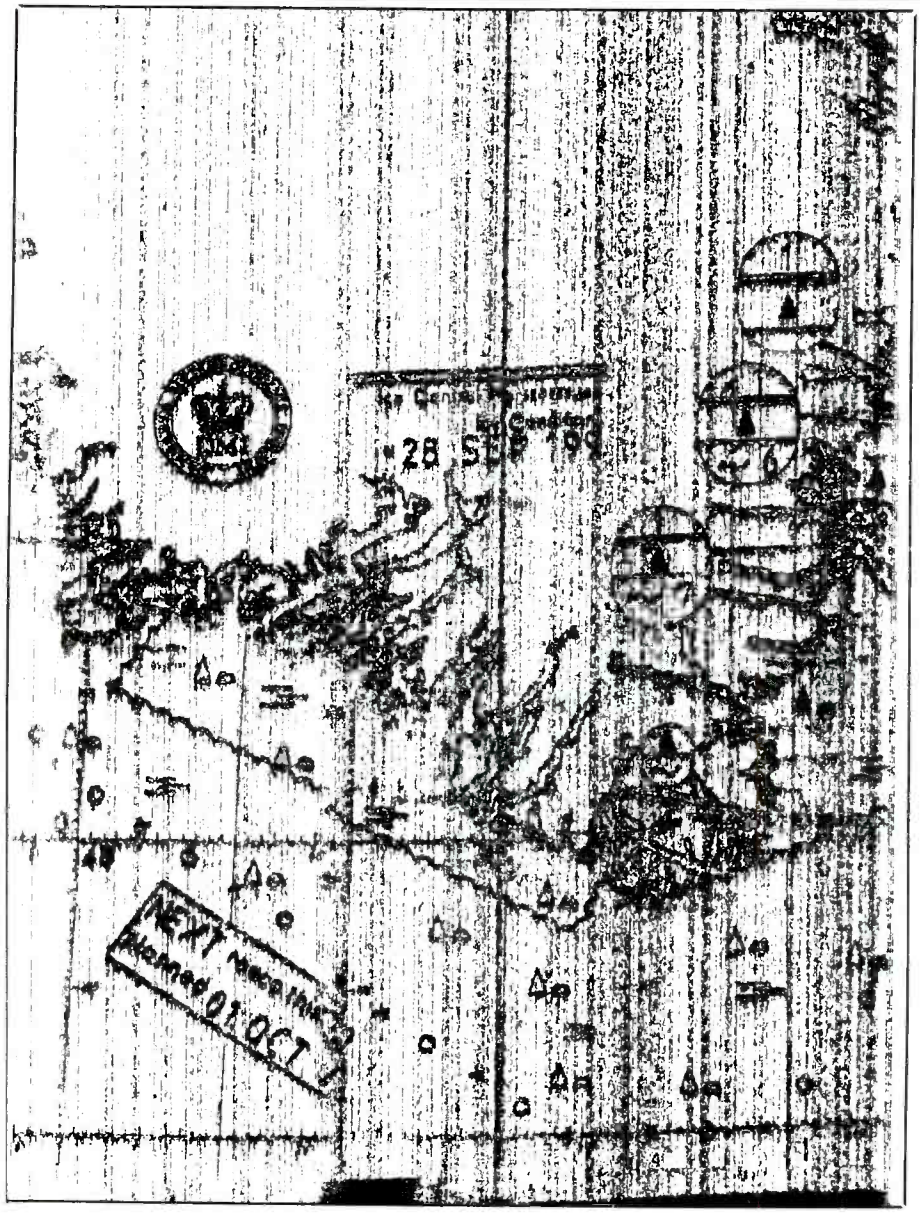


Figure 2 - Although monitoring conditions were just fair, most detail of this radiofacsimile map, released by OXM, Scoresbysund Radio Greenland, showing iceberg locations off the southern tip of Greenland, can be seen clearly. This map, sent Oct. 2, 1990, was dated Sept. 28, and had a notice that an update, in fact, was not released until Oct. 3. (Chart from RTTY column editor)

a straight face) that Ittoqqortoormiit "is not markedly a tourist area . . . (it) is the most isolated urban community in Greenland. It is predominantly a hunting society."

About 20 years ago, Scoresbysund had been slated to be bulldozed to the ground, but was saved by the efforts of a Danish government official. So, that's why OXM exists today.

In other FAX news, I came across an unidentified FAX station on 2252.5 kHz at 0355, with a transmission in progress. Bad QRN prevented any legible printout, so no ID could be made. Thought I'd pass this one along to those who keep records of such things.

More FAX stuff . . . NPM, U.S. Navy, Pearl Harbor, Hawaii, was found transmitting FAX weather charts on 14467 kHz, a frequency usually by USN MARS stations for SSB voice communications. I got printouts of two 24-hour, one 48-hour, and one 12-hour prognoses charts, after 1931 UTC. The FAX decoder was set to 120/576. This was logged last October, so there's no telling if NPM's still using 14467 this month for FAX operations.

If you know that an event of historical proportions was about to occur, you might consider plans to link your RTTY monitoring to that event. That's what I did on Oct. 3, 1990, the day East and West Germany merged into one nation. I tuned to MFA, Bonn, at 1659 and caught the beginning of its news transmission (figure 4) telling of the events that occurred throughout Germany on the first day of unification. The transmission was on 20022.4 kHz, and the mode was FEC-A/96. The original copy is in my RTTY scrapbook, and a photocopy was used for reproduction here.

After getting a printout of the German transmission, I resumed scouting around for interesting RTTY intercepts. At 1729 UTC, I came across 300-baud packet radio transmissions on 26838 kHz with some unusual callsigns. All appeared to be of European origin. The callsigns were formed into several different combinations. There were those of the two number, two letter, two number variety, such as 01PG36, 14PG08, 21PG04, 34PG01, 47PG02, and 47PG32. The leader of this group, called the "PG net," which was part of an "international" packet BBS, was 14PG10, a sysop by the name of Hubert, in France. Most of these callsigns seem to be of French origin. 01PG36 was observed, however, sending a "propagacion" report in Spanish, including data on the "flujo solar" (solar flux).

Another callsign combination consisted of three numbers, two letters, one number, such as 141PG1, 196PG1, and 212PG1. A third combination had three letters, one number, two letters, i.e., FCC3MG, FCO2MG, and GUA3AA. The first three letters of FCC3MG stood for France Communication Computers. If anyone has an inkling as to what these stations are, please share your thoughts with us.

The Civil Air Patrol has a packet radio net on 7921.5 kHz. It operates at 300 baud at about 2200 UTC. Some stations I monitored were NE0004, "Wigwam," Nebraska; MN0004, "Star Fish," Minnesota; IN2001, "Red Fire," Marion, IN; CO0335, "Pike's Peak," Colorado Springs, CO; PA0018, "Keystone," Pennsylvania; and MO0023, "Blue Bird," Missouri.

In a lighter vein, I came across a network on 8169.5 (45 baud at 1904) that appeared to involve U.S. Army units, possibly in RTTY training, for two of them acted quite unprofessional in the use of radio etiquette. One of the soldiers tried to show his off-color humor without success. Every time he'd ask a riddle that was in bad taste, he would be ignored by the others when he wanted an answer. After a long period of waiting for someone to respond, he would type in the question again, this time with the answer. Again there would be no response.

Some of the callsigns used in the net were "57th HQ31," 132HHC" (also sent as HHC132), "HQ51," HQ200," 264th engr gp," HQ40," HHC32" (also 32HHC), and HQ32nd." The net was in operation for over two hours.

Last month, I reported on an unidentified station in the United States sending some type of unencrypted data on 1742.5 kHz in the 170-meter band. Within days of finishing that column, the station changed over to encryption at 150 baud ASCII, and moved down one kiloHertz. Meanwhile, I found another unidentified station using encryption, 110-baud ASCII, on 1930 kHz at

0348 UTC, in an area populated mostly by amateur radio stations.

The Italians have begun to join in the merry art of devising cutesy RTTY test tapes. They join the Americans and French in trying to see who can come up with the cleverest sentences.

First came the Americans with test sentences such as, " The quick brown fox . . . ," "Now is the time for all good men . . . ," and "Of all the fishes in the sea, the mermaid is the one for me."

Then it was the French, who didn't want to do things the American way. They thought up, "Voyez le bricks . . . " Now it's the Italians who want to have it their way.

I found an Italian station on 20052 kHz at 1501 UTC, sending RY's at 50 baud. It soon became apparent that this was a sign off transmission, and an ID could not be learned.

After a line or two of RY's came, "La bandiera dei tre colori est sempre steta la pui bella . . . ," followed by "TEST The quick brown fox . . . lazy dog," a 10 count, then "Appelle figlio di Apollo fece una palla di pelle di pollo . . . ," and one more line of RY's thrown in for good measure before going off the air. "La bandiera dei tre colori" means the three-colored flag, and "figlio di Apollo" means Apollo's son. Yes, folks, RTTY monitoring can be fun.

Many RTTY hobbyists are familiar with the way Cuban diplomatic stations send encrypted circulars. A bunch of Z's are strewn around the crypto soup, followed by an encrypted header consisting of the sender's location and the type of traffic being sent, followed by more Z's, and another encrypted text.

I spotted a variation of that system recently, but don't know who the sender is, yet. Short streams of RY's are interspersed within continual encryption. At the tail end of the RY's, however, before continuing with more encrypted text, comes this tag of letters, "VMTCNNBH." The tag never varies from one message to the next. This station was logged on 8493 kHz at 2220 UTC, at 100 baud. It went off the air at 0000 without a sign off.

Are you an aviation enthusiast who enjoys monitoring the aeronautical RTTY stations? If so, the Aviation Society of Ireland is looking to meet you. The club publishes a monthly magazine that contains a RTTY section devoted exclusively to aero messages such as Notices to Airmen, flight safety messages, and filed flight plans. The magazine also contains extensive HF Radio SSB listings, according to club president Michael Kelly.

For details on joining the group and receiving the monthly magazine, write to Mike at the society, 156 Shantalla Road, Santry, Dublin 9, Ireland.

Mike photocopied some pages from past issues and sent them to me as a sampling of what the magazine has to offer. One that I especially like was a NOTAMN out of London that was sent by Santa Maria Aero, Azores. It read, in part, "Temporary restricted area, owing to the disturbance at Glen Parva, Leicester. Restriction of flying regulations have been made under article 74 of the air navigation order 1989 in the area bounded by . . . Pilots are forbidden to fly below altitude 3500 ft within the designated area without the permission of Leicestershire constabulary (emergency controlling authority) . . . " A club member's accompanying notation read, "All due to another prison riot!"

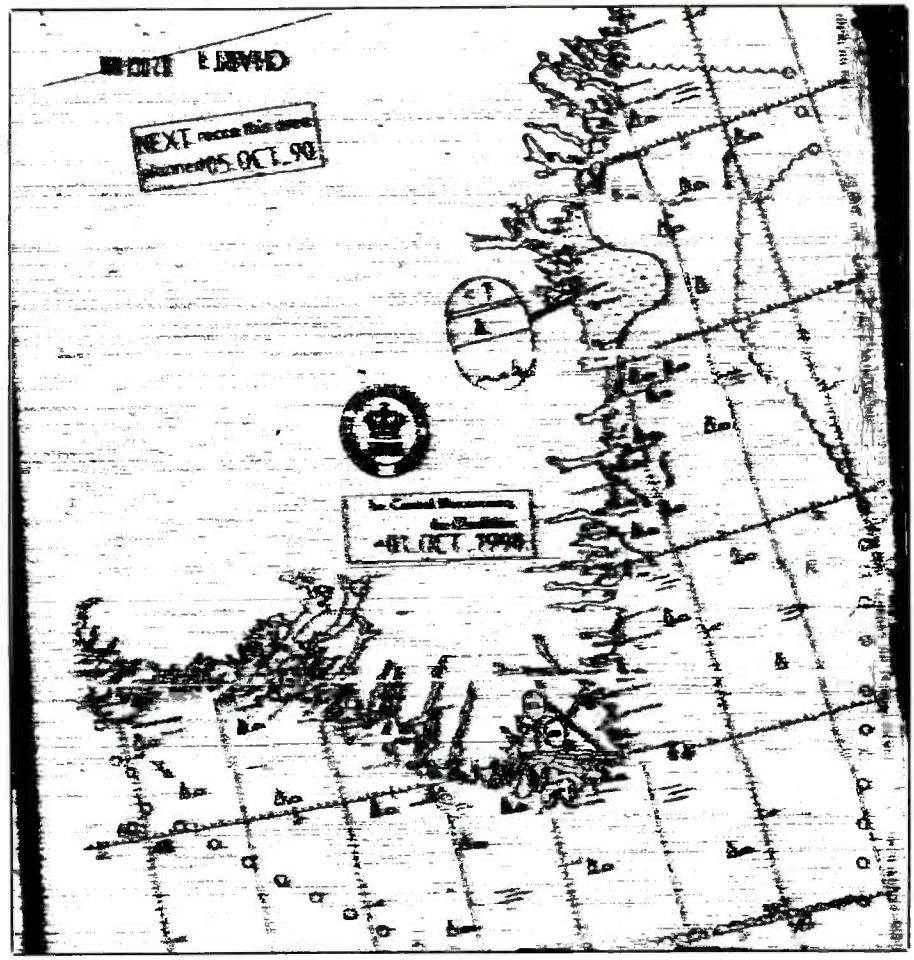


Figure 3 - Monitoring conditions were much improved on Oct. 3, 1990, when this updated weather chart was released by OXM. The wording in the seal containing the crown reads, "Denmark Meteorological Institute." A few days later, and on subsequent days, OXM was not found on the air, and it appeared that its radiofacsimile operations were shut down. (Chart from the RTTY column editor)

RTTY Intercepts

4353: VCS, Canadian CG, Halifax, NS, w/a wx forecast at 2319, FEC (Ed.).

4464.5: TRK, ASECNA, Libreville, Gabon, w/RYRY, 50 baud at 2315 (Ed.).

4489: GFL26, Bracknell Meteo, England, w/coded wx at 2314, 50 baud (Ed.).

4550: LRO9, DyN, Buenos Aires, Argentina, w/nx in SS at 2311, 75 baud (Ed.).

5879: 7OC, Khormaksar Aero, Yemen, w/RYRY & correct c/s usage instead of the often seen 70C (zero in place of "O"). Was 50 baud at 2253 (Ed.).

6848: SOG284, PAP, Warsaw, Poland, w/RYRY at 2351 & nx in EE at 2358, 50 baud (Ed.).

6909.2: AAA3USA, U.S. Army MARS, Ft. Meade, MD, w a MARSgram to AAM3FC, 300-baud packet at 0130 (Ed.).

7868: Possibly CGT2, Ottawa, ON, Canada, w/encryption, 1523-1723, ARQ-M2/96 (Ed.).

7973.5: SPW, Warsaw R., Poland, w/ARQ tfc at 2343 (Ed.).

7980: Y3I, Potsdam Meteo, Germany, w/CQ & RYRY at 2337, and coded wx at 2339, 100 baud (Ed.).

8085: RVL21, Khabarovsk Meteo, USSR, w/coded wx, 50 baud at 0021 (Ed.).

8140: CLN219, PL, Havana, Cuba w/nx in EE, 50 baud at 0824 (Ed.).

8214.5: "ECO1" clg "ECO3" at 0013, "Tango3" clg "Tango1" at 0111, & "ECO3" clg "ECO4" at 0123, 300-baud packet (Ed.).

9220: PTT, Hanoi, Vietnam, w/tfc in EE t oPTT, Beijing, China, 50 bd at 1255 (Takashi Kuroda, Japan).

10177.7: RFFA, Defense Ministry, Paris, France, w/tfc at 0834, ARQ-E3/192 (Ed.).

10220: JAE50, Jiji, Tokyo, Japan, w/QRA & RYRY, 50 baud at 0843 (Ed.).

10232.8 & 10233.9: VOA, Greenville, NC, w/RYRY & QRA, FDM 75 baud at 2211 (Ed.).

10283: "RFLI," French Navy, Fort de France, Martinique, w/"controle de voie," ARQ-E3/72 at 0904 (Ed.).

10332: "DFZG, " MFA, Belgrade, Yugoslavia, w/RYRY, 75 baud at 0914. Sig weakened considerably at 0918, and tfc became badly garbled (Ed.).

10380.8 & 10382.2: VOA, Greenville, NC, w/nx in EE, FDM 75 baud at 0923 (Ed.).

11211.7: MFA, Cairo, Egypt, w/msgs in AA, ARQ

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ORA ORA ORA DE DFX69H6 AUF 23697,6 KHZ
INFORMATIONSFUNK DER BUNDESREGIERUNG FUER M I T T E L A M E R I K A
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DFX69H6 RYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRY


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H I E R  SENDUNG FUER  M I T T E L A M E R I K A
INFORMATIONSFUNK DER BUNDESREGIERUNG


BONN, DEN 03. OKTOBER 1990
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2042D/1-0310: NA_HRICHTENSPIEGEL INLAND

DEUTSCHLAND IST 45 JAHRE NACH ENDE DES ZWEITEN WELTKRIEGES WIEDER
EIN VEREINIGTER UND SOUVERAENER STAAT. DIE EINHEIT WURDE IM
GESAMTEN LAND (AP: MIT VERHALTENEM JUBEL) GEFEIERT. HOEHEPUNKT
WAREN DIE FEIERLICHKEITEN IN B_RLIN. DIE ZAHL DER ZWISCHENFAELLE
BLIEB LT. DPA VERGLEICHSWEISE GERING. DIE BERLINER POLIZEI NAHM
BEI KLEINEREN AUSSCHREITUNGEN UEBER 30 PERSONEN FEST. VOR DEM
REICHSTAGSGEBAEUDE FEUERTE EIN SICHERHEITSBEAMTER WARNSCHUESSE AB,
UM EINE AUF DI_ EHRENTRIBUENE DRAENGENDE MENGE ZURUECKZUHALTEN. IN
HAMBURG KAM ES ZU ETLICHEN UEBERGRIFFEN VOR ALLEM RECHTER GRUPPEN.
DIE MAGDEBURGER POLIZEI GING MIT WAFFERWERFERN GEGEN SKINHEADS
VOR. AUS LEIPZIG UND SCHWERIN BERICHTETEN AUGENZEUGEN VON
SCHLAEGEREINEN ZWISCHEN RECHTS- UND LINKSRADIKALEN (DPA, DDP, AP,
RTR).

IN EINEM STAATSAKT IN DER PHILHARMONIE RIEF BPR V. WEIZSAECKER DIE
DEUTSCHEN ZU GEGENSEITIGER SOLIDARITAET AUF: SSSICH ZU VEREINEN,
HEISST TEILEN LERNEN.'' IM HINBLICK AUF DIE AUFARBEITUNG DER
STASI-VERGANGENHEIT FORDERTE WEIZSAECKER IM ZDF ''GERECHTIGKEIT,
DIE NICHT AUF VERGELTUNG ABZIELT, SONDERN AUF INNEREN FRIEDEN''.
BUNDESTAGSPRAES. SUESSMUTH SPRACH SICH IN DER PHILHARMONIE FUER
EIN SOLIDARISCHES, EUROPAEISCHES UND ''PARTNERSCHAFTLICHES
DEUTSCHLAND, MIT WEITBLICK UND VERANTWORTUNG IN DER WELT'' AUS
(VGL. AUCH DEN SUESSMUTH-BEITRAG IN DER WELT UNTER DER
UEBERSCHRIFT ''BLUEH' IM GLANZE DIESES GLUECKES''). BK KOHL SAGTE
IM REICHSTAG: SSWIR MUESSEN DEN FRIEDEN UND DIE FREIHEIT ERHALTEN,
WIR MUESSEN WELTOFFEN BLEIBEN UND NICHT NUR AN UNS DENKEN.'' _EIN
HAUPTZIEL DER DEUTSCHEN _OLITIK WIRD ES - SO KOHL IM ZDF - IN DEN
NAECHSTEN JAHREN SEIN, DAS ENTSTEHEN EINER WOHLSTANDSGRENZE
ZWISCHEN DEUTSCHLAND UND DEN OSTEUROPAEISCHEN STAATEN ZU
VERMEIDEN. BRANDT SAGTE IM ZDF, DEUTSCHLAND SEI EIN BUNDESSTAAT,
DER BEREITS JETZT ''EUROPAEISCH EINGEBETTET'' SEI. ES MUESSE
DARAUF HINWIRKEN, DASS KEINE NEUE M_UER ENTSTEHE. SSERUOPA ENDET
NICHT AN ODER UND NEISSE.'' EBENFALLS IM ZDF WANDTE SICH DE
MAIZIERE GEGEN BEDENKEN UEBER EIN IM ZUGE DER EINHEIT IN EUROPA
ENTSTEHENDES UNGLEICHGEWICHT. GGUE. DER DW SAGTE BM GENSCHER, DAS
GROESSERE POLITISCHE UND OEKONOMISCHE GEWICHT VON NUN BALD 80 MIO.
MENSCHEN WOLLTEN DIE DEUTSCHEN NICHT FUER ANSPRUECHE AUF MEHR
MACHT EINBRINGEN, SSSONDERN FUER UNS BEDEUTET DIESES GROESSERE
GEWICHT DAS BEWUSSTSEIN EINER GROESSEREN VERANTWORTUNG''.
LAFONTAINE MAHNTE IM SR, VON DER NEUGEWONNENEN SOUVERAENITAET UND
STAERKE BEHUTSAM GEBRAUCH ZU MACHEN. IN SEINEM TAGESBEFEHL ZUR
VEREINIGUNG SAGTE BM STOLTENBERG, DAS EINTRETEN FUER DAS VEREINTE
DEUTSCHLAND BEDEUTE, AUCH MIT DEN VERBUENDETEN DEUTSCHLANDS IN
EUROPA UND NORDAMERIKA ZUSAMMENZUARBEITEN. NACH DEN WORTEN VON
DGB-VORS. MEYER SIND FRIEDEN UND FREIHEIT FUER GESAMTEUROPA NOCH
NIE SO KONKRET UND SO GREIFBAR GEWESEN WIE ZUR ZEIT (AGENT.).

WELT VEROEFFENTLICHT IPOS-UMFRAGE: UEBERWAELTIGENDE MEHRHEIT
BEGEISTERT UEBER DIE EINHEIT. FREUDE UEBER DIE EINHEIT GABEN 77,1
VH AN. HINTER DER VEREINIGUNGSPOLITIK VON BK KOHL STEHEN 43,7 VH,
WE VH HALTEN DIE POLITIK LAFONTAINES FUER DIE BESSERE.

KY/MI +++
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Figure 4 - Events occuring in Germany on the first day of its reunification, Oct.3, 1990, obviously was going to be the lead item in a news broadcast sent by MFA, Bonn, to all its embassies and consulates worldwide. This is the text of that historic occasion. (Printout made by the RTTY column editor)

Abbreviations Used In The RTTY Column

AA	**Arabic**
ARQ	**SITOR mode**
BC	**Broadcast**
EE	**English**
FEC	**Forward Error Connection mode**
FF	**French**
foxes	**"Quick brown fox . . . "test tape**
GG	**German**
ID	**Identification/ied**
MFA	**Ministry of Foreign Affairs**
nx	**News**
PP	**Portuguese**
RYRY	**"RYRY . . . "test tape**
SS	**Spanish**
tfc	**Traffic**
w/	**With**
wx	**Weather**

at 2130 (Kuroda, Japan).

11213: Egyptian Embassy, Kuwait City, Kuwait, w/tfc to Cairo, ARQ at 2056 (Kuroda, Japan). Takashi logged this two days after the Iraqi invasion of Kuwait —Ed.

12502: EQPS, the Iranian cargo ship "Iran Jamal," w/an ETA msg at 1617, ARQ (Ed.).

12739: UAT, Moscow R., USSR, w/nx in GG, 1650-1700, ARQ (Ed.).

12818: AV63, Goeteborg R., Sweden, w/nx in Swedish, 1712-1721, FEC (Ed.).

13848.7: "RFFXL," French Mil., Beirut, Lebanon, w/"controle de voie," RYRY, le brick, & 10 count, ARQ-E/72 at 2200 (Ed.).

13901.4: "RFQP," French Mil., Djibouti, w "controle de voie," ARQ-M2/200 at 2303 (Ed.).

13926: DFN92, PIAB, Bonn, Germany, w/nx in GG & EE, FEC-A/96 at 1445 (Kuroda, Japan).

13977.8: "RFGW," MFA, Paris, France, w/a 5L msg, ARQ-M2/200 at 2133 (Ed.).

14442: "G8T," French Embassy, Belgrade, Yugoslavia, w/tfc at 1135, 50 baud (Kuroda, Japan).

14478.5: OEC, MFA, Vienna, Austria, w/msgs in GG, SI-ARQ/96, 5 characters, at 2120 (Kuroda, Japan).

14490: RNK36, Tass, Moscow, USSR, w/nx in EE, 50 baud at 1927 (Ed.).

14462.5: TNL, ASECNA, Brazzaville, Congo, w/RYRY, 50 baud at 1503 (Ed.).

14497.6: CSY, Santa Maria Aero, Azores, w/aero wx at 1511, 50 baud (Ed.).

14585.7: "RFFVA," French AF, Paris, France, w "non protege" msgs, ARQ-M2/200 at 1915 (Ed.).

14925: "RFHJ," French Navy, Dakar, Senegal, w/"controle de voie," ARQ-E3/100 at 1453 (Kuroda, Japan).

15647.2: PCW1, MFA, The Hague, Holland, w/ARQ phasing sig + CW ID at 1550 & 2154 (Ed.).

15684: FSB, Interpol, Paris, France, w/ARQ phasing sig & ID in CW at 2155 (Ed.).

15705: YZL6, Tanjug, Belgrade, Yugoslavia, w/nx in FF, 50 baud at 1551 (Ed.).

15751.3: CNM66X2, MAP, Rabat, Morocco, w/pooled nx in FF, 50 baud at 1558 (Ed.).

15801.5: "A1D," un-ID French embassy, but guessing at Fort de France, w/tfc in FF & 5L msgs to "RFGW," MFA, Paris, ARQ6-90/200 at 1904 (Ed.).

15856.7: German Embassy, Havana, Cuba, w encryption to Bonn, ARQ-E/96 at 1710 (Ed.).

16031.4: RBI75, PTT, Moscow, USSR, w/tfc to Kabul, Afghanistan, ARQ-M2/96 at 1430 (Kuroda, Japan).

16057.5: NNN0TLM, USMC MARS, Bessemer, AL, relaying MARSgrams to other stas, 300-baud packet at 1636 (Ed.).

16165.2: "RFFA," Defense Ministry, Paris, France, w/a 5L msg at 1103, ARQ-M2/200 (Ed.).

16254: TAD, MFA, Ankara, Turkey, w/an encrypted msg at 1445, FEC-A/144 (Kuroda, Japan).

17472: "RPFN," Monsanto Navrad, Portugal, w/RYRY & foxes to "RPTI," 75 baud at 1519 (Ed.).

18019.7: CLP1, MFA, Havana, Cuba, w prensaminrex, 75 baud at 1418 (Ed.).

18023: French Embassy, Ho Chi Minh Ville, Vietnam, w/encryption to MFA, Paris, FEC-A/192 at 2140 (Kuroda, Japan).

18028: Un-ID French embassy w/encryption, FEC-

A/192 at 1306 (Kuroda, Japan).

18033: PTT, Lubumbashi, Zaire, w/tfc in FF to Kinshasa, FDM 50 baud at 1336 (Ed.).

18033.5: French Consulate, Fort de France, Martinique, w/unclas msgs & 5L tfc to Bogota, Colombia & Port-au-Prince, Haiti, at 1626, ARQ6-90/200 (Ed.).

18040.5: HGX21, MFA, Budapest, Hungary, w/tfc in Hungarian and alphanumeric encoded msgs in grps of 5, DUP-ARQ, 1625-1655. Returned 1835 w tfc to HGX38, Hungarian Embassy, London, England, until 1840 (Ed.).

18065: CLP2, Cuban Embassy, Lima, Peru, w/5F msgs & a cable in SS, 100 baud at 1440 (Ed.).

18102: W1AW, ARRL HQ, Newington, CT, w/a propagation report in FEC at 1527-1530 (Ed.).

18111: FDY, French Air Force, Orleans, France, w "test de FDY," 50 baudf at 1343 (Kuroda, Japan).

18169.5 & 18169.9: HGX21, MFA, Budapest, Hungary, w/telexes in Hungarian to HGX52, Washington, DC, DUP-ARQ at 1540 (Ed.).

18190: FSB59, Interpol, Paris, France, w/msgs in Turk & EE, and encrypted police bulletins, to Interpol, Ankara, Turkey. Was in ARQ at 1554 (Ed.).

18355: 9MY63, Kuala Lumpur Meteo, Malaysia, w "CQ CQ de 9MY53 9643 kHz 9MY63 18355 kHz" at 1936, 50 baud (Kuroda, Japan).

18387: Un-ID embassy in Riyadh, Saudi Arabia w "RYRY RDHX813 11CC SV DIPL TT DD RYAD 2424." Was ARQ6-90/200 at 2119 (Kuroda, Japan).

18388.5: 5AF, Tripoli Aero, Libya, w/RYRY ^{s} "QJH HLLTYF, " 50 baud at 0619 (Ed.).

18447.7: Un-ID w a msg in FF, ARQ-M2/200 at 1628 (Ed.).

18553.7: "RFLI," French Navy, Fort de France, Martinique, w/"controle de voie," ARQ-E3/100 at 1608 (Ed.).

18600: RWN72, PL, Moscow, USSR, w/nx in PP, 50 baud at 1437 (Ed.).

18602: LOL, Buenos Aires Navrad, Argentina, w/unclas msgs to OBC, 75 baud at 1937 (Ed.).

18609.7: Either CLP1 or PTT, Havana, Cuba, w a telex at 1903, 50 baud. S/off at 1916, w no further clues to which sta it was (Ed.).

18648.5: SOT265B, PAP, Warsaw, Poland, w/nx in Polish, FEC at ??? (Kuroda, Japan).

18755: JPA24, Interpol, Tokyo, Japan, wkg 9MW, Kuala Lumpur, Malaysia, FEC at 0115 (Kuroda, Japan).

18769: Un-ID w encryption, ARQ-E/192 at 1625 (Ed.).

18775.3-18777.7: MKK, RAF, London, England, w/foxes, 10 count & RYI's, FDM 50 baud, all channels, at 1656 (Ed.).

18810: "Svenska Ambassaden Mexico" (Swedish Emb., Mex. City) w telexes at 1916, SWED-ARQ (Ed.).

18900: Un-ID USMC MARS sta relaying MARSgrams from USMC MARS stas in Japan, 2033-2100, 75 baud (Ed.).

19012: OST, Oostende R., Belgium, w/telexes, ARQ at 0600 (Kuroda, Japan).

19013.5: OST68, Oostende R., Belgium, w freq/time sked & tfc list, FEC at 1124 (Ed.).

19022: Pakistani Embassy, Kuwait City, Kuwait, w a "most urgent message" in EE, ARQ at 1452 (Kuroda, Japan). I bet it was most urgent, seeing that you logged it nearly three weeks after Iraq overran Kuwait. Maybe the msg had something to do with many Pakistani nationals trying to flee Kuwait—Ed.

19026.7: PWX, Brasilia Navrad, Brazil, w/RYRY, SGSG & 10 count to CXR at 2110, 75 baud (Ed.).

19184: Un-ID idling at 1127, ARQ6-90/200, then s/off at 1150 w "9 919 59926 SSSSS K" (Ed.).

19531.5: AAA6USA, U.S. Army MARS, Fort Sam Huston, TX, w/MARSgrams to AAA0USA, 300-baud packet at 2213 (Ed.).

19649: RCF, un-ID USSR, w/RYRY & CQ, 75 baud at 1444 (Kuroda, Japan).

19821.7: Un-ID sta in ARQ at 1535. Extremely garbled tfc in EE. Iran often mentd. Constant accidental shift to ###'s. Off 1550 in midst of text, w no s/off. Back on 1554 w TVVQ selcal for next several hours (Ed.).

19830: Un-ID nx sta in AA w/test tape reading "BFXX CDXRXF ? 76 19830 RV-DWVR" + RYRY at 1210, 50 baud. Nx in AA began 1215 (Ed.).

19850.2: GYA, Royal Navy, London, England, w/a test tape at 1453, 75 baud (Ed.).

20011.7: Un-ID w badly garbled ARQ tfc, due to QRN, 1256 to past 1413 (Ed.).

20013.5: HGX21, MFA, Budapest, Hungary, w/nx in Hungarian to HGX52, Washington, DC, at 1409, DUP-ARQ (Ed.).

20022.4: DFU20H3, PIAB, Bonn, Germany, w/RYRY at 1658, & nx in GG at 1700 to "mittelamerika," FEC-A/96 (Ed.).

20032.7: PAP, Warsaw, Poland, w nx in Polish, FEC at 1330 (Ed.).

20068.2: "PHWR," Hickam AFB, HI, w/aero wx, 75 baud at 1305 (Ed.).

20085.2: ISX20, ANSA, Rome, Italy, w/nx in FF, 50 baud at 1403 (Ed.).

20091: Former GDR Emb., Havana, Cuba, w/5L msgs, 1318-1327, 75 baud. This xmsn occurred 5 days before German unification (Ed.).

20093: MFA, Warsaw, Poland, w/a 5F msg to "Trypolisu" (Tripoli, Libya), POL-ARQ at 1318 (Ed.).

20123: French embassy? "Entry Tokyo Seoul" foll by 5F grps. Was ARQ6-90/200 at 0022 (Kuroda, Japan).

20127: VOA, Greenville, NC, w/msg to var VOA stas re VOA, Philippines changing xmtr freq from 9580 to 9570 kHz. Was 75-baud FDM at 1235 (Ed.).

20179.7: "RFFA," Min. of Def., Paris, France, w/"controle de voie," ARQ-E3/100 at 1732 (Ed.).

20190: USAF MARS sta AFA2XO relaying MARSgrams from AFA7RM, Rhein Main AB, Germany, 75 baud at 1734. MARSgrams to written by those involved in Operation Desert Shield in Saudi Arabia (Ed.).

20190.5: USAF MARS sta AFA2XO clg AIR1AF at 1435, Packet 300 baud (Ed.).

20418: Un-ID w tfc in PP, ARQ-E/96 at 1622 (Ed.).

20418.5: German Embassy, Managua, Nicaragua, w/encryption to Bonn at 2011, ARQ-E3/96 (Ed.).

22858: "RFHI," French Navy, Noumea, New Caledonia, w/"controle de voie," ARQ-E3/100 at 0348 (Kuroda, Japan).

20465.2: CME342, Bulgarian Emb., Havana, Cuba, w/crypto after DDDDD, 75 baud at 1958. Off the air at 2008, returning at 2020 w"DKI" ID + RYRY (Ed.).

20475.5: Un-ID w/foxes & 10 count. Foxes ended w "lazy dog" instead of "lazy dog's back." Was 75 baud at 1623 (Ed.).

20518: Un-ID w encryption, ARQ6-90/200 at 1552 (Ed.).

20556.5: "RFGW," MFA, Paris, France, w/a 5L msg & a telex to "G7M," poss Bangkok, Thailand, FEC-A/144 at 1505 (Ed.).

20560: 5AQ88, JANA, Tripoli, Libya, w/nx in EE, 50 baud at 1738. Went off the air at 1743 in midst of a nx item. (Ed.).

20584: MFA, Rome, Italy, w/very brief ARQ tfc, mostly idling, 1600-1605 (Ed.).

20590: HBD20, MFA, Berne, Switzerland, w/tfc to

(Continued on page 76)

PIRATES DEN

BY EDWARD TEACH

FOCUS ON FREE RADIO BROADCASTING

Midnight Radio confirms that P.O. Box 109, Blue Ridge Summitt, PA 17214 is their correct address. They run a talk format inviting listener phone-ins to (214) 888-1551.

One Voice Radio also uses the Blue Ridge address. In a reply to Donald Wiemken of Illinois the station says it operates around 0000 to 0300 on or near 7415. Programs are mainly health-related.

KBLU was noted by Joshua Wilkes of Kentucky who heard them on 7415 USB with Beatles music, a mailbag show and a feature called the "Pirate Radio Zone." He had them later on 7401 and says the address is P.O. Box 123082, Ft. Worth, TX 76121. Skip Harwood in California heard them on 7398.2 at 0500 with top 20 and comments from manager "Tom Clandestine." Walter Talbot II in Pennsylvania caught them at 0420 on 7410.

Harwood had **KMUD** on 7435 at 0412 announcing their power as 25-30 watts from a location in northern California. Skip had this one at a later date saying it was their last broadcast from California; that they would be moving to Hawaii. Gave the Wellsville, NY maildrop. Van Hefner in California heard the station on 7393, closing at 0504 and, on another occasion signing off at 0530.

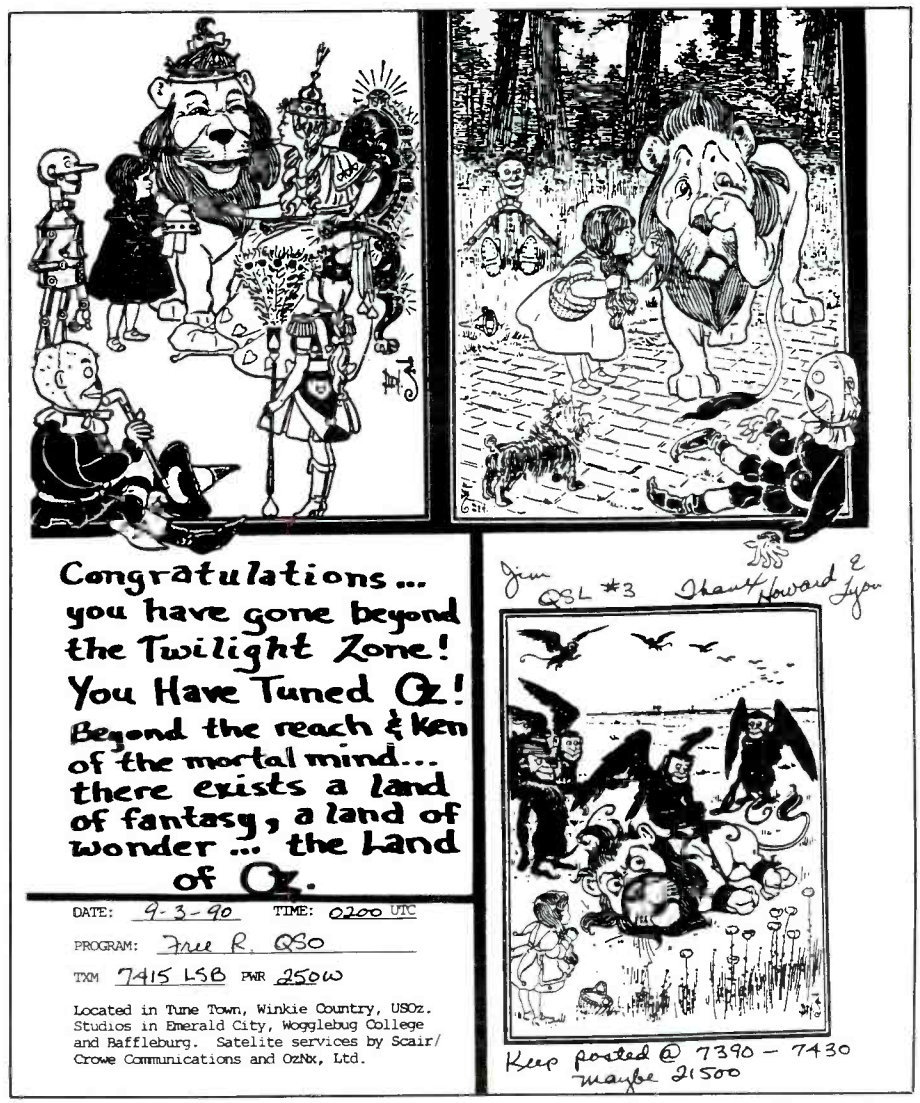
Tube Radio was spotted by Wilkes, who heard host "Ray Cathode" on 7416USB from 0435-0505. "Lady Diode" hosted a mailbag show. They jokingly announced their location as "off the coast of western Nebraska." Evan M. Anderson of Indiana had them on about 7415 at 0434 "broadcasting from a tube in western Nebraska." Reports to P.O. Box 6527, Baltimore, MD 21219. Elmer Cronkright in Michigan caught them at 0245 on 7420.

Wilkes had **4th of July Radio** on 7404 from 0515-0555 with host Jett Johnson, novelty and rock music and Blue Ridge address.

Radio Beaver was logged by Robert Ross of Canada on 7415USB at 0100-0144 with an ID as "Radio Beaver, from the Big Nickel in Sudburn." Host is Bucky Beaver. Pat Murphy in Virginia had this at 0112, it claimed to be Canada's newest pirate and mentioned that they used a Johnson Viking Ranger transmitter. Jeff Foster in Michigan had this on at 0115.

Wilkes had **One Voice Radio** on 7418 at 0410-0459 with medical talks. Cronkright had them at 0030.

Pat Murphy discovered **The Crooked Man** at 0248 on 7415.10. The announcer (The Crooked Man) claimed he was an FBI agent in the Special Forces, babbled on to say Barbara Bush was really Queen Elizabeth, and that he was Hitler's son, plus similar brilliant things. Off abruptly with no QSL'ing info given.



The Voice of Oz sends this QSL sheet for correct reports. (Thanks to Jim Kalach, CT.)

Hope Radio International was logged by Cronkright on 7390 at 0223. And by Foster on 7392 at 0158-0258 with Phil Muzic playing 50's and 60's songs, pirate radio news, promos from other pirate stations and a comedy sketch. Bobby Pearce of Texas had them at 0220. Ross logged them on 7415.6 at 2310 with oldies and an announcement that it was their "last and final broadcast."

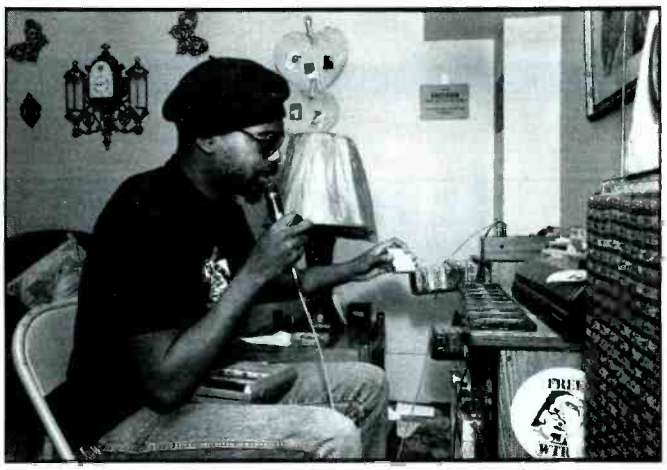
The Voice of The People of Iraq was the ID of a station Ross heard on 7415USB at 2350-2351 sign off. A male announcer asked for the surrender of Saddam Hussein. A pirate pretending to be a clandestine, it would surely seem.

Talbot had **Radio USA** on 7417 at 0043 with punk rock and host Marco Polo. Wellsville address. Cronkright found them at 0315 on 7415.

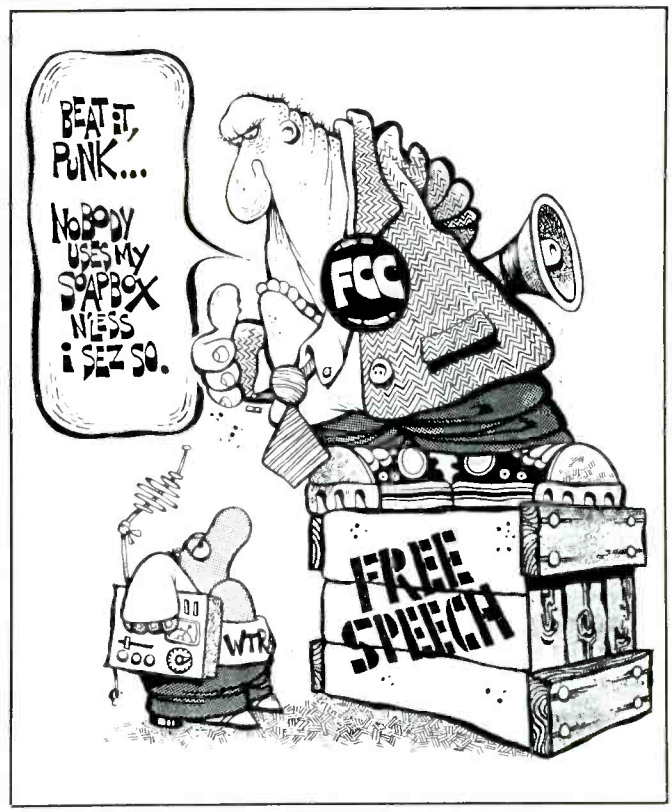
Robert Ross had a CW transmission from something ID'ing as the **Free Radio Project**. The ID was repeated over and over, along with mentions of 25 watts into a double zepp at 50 feet.

CFBN - Fly By Night Radio was logged by Cronkright at 0213 on 7419. Talbot reports a "CBSN" on 7410 at 0250, also with the Fly By Night slogan and calling themselves "Canada's very worst" - something which CFBN does. Asking for $1 or $2 to defray mailing costs. A bit much, eh?

Radio Wolf International was heard by Foster on 7415 at 0145. Jeff says it seemed a joint effort by pirates Sparky and the Radio Animal. Cronkright had this one at 0126. *(Continued on page 74)*



Mbanna Kantako, operating his unlicensed low-power community broadcast station in Springfield, IL. The station has remained on the air despite government efforts to shut it down.



The plight of all broadcasters who can't obtain licenses was aptly summed up in this cartoon that appeared in the January 11th, 1990, edition of the Springfield weekly, "Illinois Times." The cartoon accompanied a lengthy story about WTRA entitled, "Radical Radio: Why are the feds trying to shut down Dewayne Readus' little radio station?" The FCC is telling the broadcaster, "Beat it punk. . . Nobody uses my soapbox n'less I sez so."

And what about the unlicensed 1-watt WTRA, better known as *Zoom Black Magic Liberation Radio*, an FM station that first went on the air in November of 1986? It was still in operation last time we heard, despite FCC letters, threats, fines, and even court action. ZBMLR operates from Springfield, IL. A sister station was opened last August in Decatur, IL and plans are to open ZBMLR stations in Richmond, VA, Birmingham, AL, and also in Chicago.

ZBMLR is operating in the open, with wide publicity and community support. The station operator, Dewayne Readus, known to friends, neighbors, and his radio audience as Mbanna Kantako, points out that minorities are underrepresented by 600% in the ownership and operation of radio stations in the U.S., and that the FCC licensing regulations are stacked against minorities and low-income people. Moreover, the mass broadcast media, claims Kantako, doesn't adequately represent the interests and concerns of this excluded population.

He calls the ZBMLR concept "micro-radio." Although his station covers a range of about a mile and a half in the densely populated heart of Springfield, it has a a large and enthusiastic audience for its nightly programs. There are discussions and commentary, interviews with scholars and activists, anti-drug messages, political criticism, and rebroadcasts of speeches from Malcom X, Angela Davis, and other past and present black activists. All of this is punctuated by politically conscious rap and reggae music.

ZBMLR has been written up by the Associated Press, and in many leading newspapers. Mbanna has been interviewed on National Public Radio, on MTV, and on the Fox TV Network. He's hardly to be considered a "misguided, overzealous student." Whether or not you would find Mbanna's programming to be of interest to you, he is certainly a serious broadcaster who has as much a right to express his viewpoints as anybody else, including those persons with an FCC license.

Mbanna keeps ZBMLR going by means of public contributions, plus some sales of used books. The station is non-commercial. There is no paid staff, although neighborhood volunteers help out. The station's phone bill runs as much as $200 per month. ZBMLR was put on the air with about $600 worth of radio equipment. Mbanna is a person with a message to deliver, and an audience that wants, and has a right, to receive that message.

Radio Newyork International is another example. When RNI was running less than 1 kW on shortwave into a half-wave dipole, the FCC took extreme measures to force RNI off the air, after refusing to grant RNI's Al Weiner a broadcasting license. RNI found that the only way it could operate without FCC harassment was by the purchase of air time over a commercial shortwave broadcasting station. Cleverly, RNI turned up on Nashville's WWCR (7520 kHz, 100 kW into a rhombic) and runs its programming for four hours every Sunday night beginning at 0200 UTC. With their heavy emphasis on world peace and environmental conservation, the RNI programs are professional and always provocative.

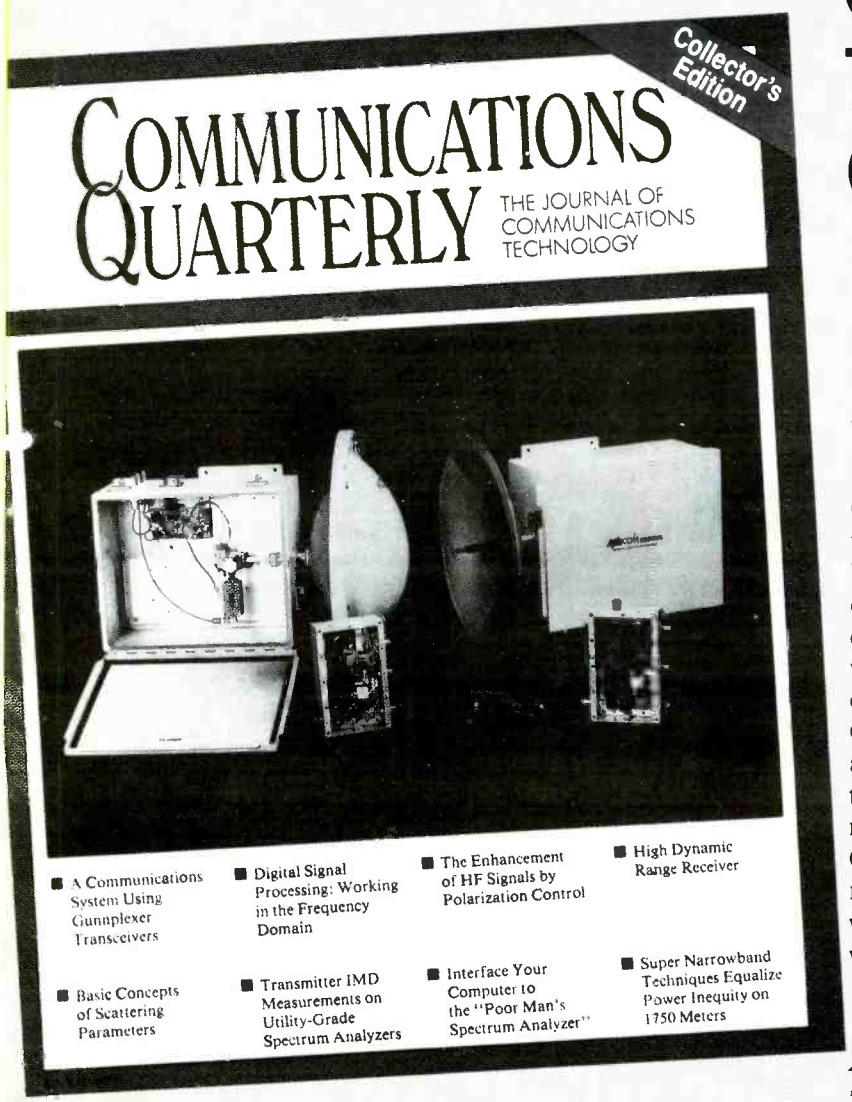
It's OK for RNI to broadcast over FCC licensed, 100,000 watt WWCR, so you'd have thought the FCC would have determined it OK for the same programs to be sent out via a transmitter running 1,000 watts or less, licensed to and operated by RNI, itself.

Then there was that San Francisco Bay area pirate that was reported to have operated sporadically in the aftermath of the 1989 earthquake, bringing one particular neighborhood vital information on emergency medical services, food, water, shelter, unsafe buildings, etc. When I heard about that station, it reminded me of the world's first known unlicensed broadcaster, David Thomas. Back in the 1920's, Thomas put his unlicensed fleapowered WUMS on the air for the first time in order to bring Proctorville, OH area residents emergency information on Ohio River flood conditions. WUMS operated in the open for decades on an intermittent basis, and was relentlessly pursued by the FCC for all of those years, which refused each of his many requests for a license.

We have heard about unlicensed stations dedicated to ecology, Native American rights, the environment, and other topics that their backers feel requires more intensive coverage, or a different perspective, than is available from other sources.

There are, of course, other people with other messages. These messages have the power to educate, inform, influence, entertain, amuse, aid, motivate, and sometimes even bore, or infuriate listeners. You may find some inspirational, you may think that

- Confused by today's electronics?
- Looking to learn and develop your building skills?
- Want to explore beyond Amateur communications?



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Al Weiner, of Radio Newyork International, is a 37 year old radio engineer. He views RNI's past problems with the FCC as centering on his First Amendment rights. RNI finally purchased air time over a commercial shortwave broadcaster in order to stay in operation.

others are off base or really dumb. To be sure, a couple of pirates, like racist *Voice of To-morrow*, will probably scare the hell out of you while also confirming your suspicions that it's a basic human right to be stupid. The concept of Free speech doesn't guarantee that you'll necessarily be amused or find what you hear to be very agreeable. If you look through the pages of *POP'COMM*, you'll see information on all reported unauthorized stations, including those stations the FCC has raided and/or notified of fines. It's not against any law to listen to unlicensed broadcasters.

The FCC automatically issues standard objections regarding unlicensed stations discovered operating, claiming they are causing interference to licensed stations. While there certainly have been definite instances of interference, all too often such claims are vague, non-specific, generalized, and also a bit fantastic. Typical example: when unlicensed RNI operated on FM, it used 103.1 MHz because RNI determined that it was an open frequency in their intended coverage area. RNI's FM operations on 103.1 had 1 kW with a simple two-ring horizontal antenna mounted only 100 ft. up.

As soon as RNI started its FM broadcasts, the FCC announced that RNI transmissions on 103.1 MHz were causing interference to licensed broadcasters. As usual, no specific stations were named. But, behold! Less than two years later, the FCC approved the construction of a new 3 kW station on 103.1 MHz at Bay Shore, NY using an antenna far more efficient than was RNI's, and mounted considerably higher. Bay Shore is less than twenty miles eastward along the same beach from RNI's former offshore location south of Long Beach, NY! Makes you wonder about which stations suffered, or were in danger of experiencing interference from RNI, doesn't it? Are any or all such FCC claims against unlicensed stations justified?

In fact, unlicensed stations seriously hoping to be heard would take pains to avoid causing interference. Unless they were simply being malicious, what would they gain by deliberately burying their low power signals under those of other stations running hundreds or thousands of watts, or jamming another broadcaster or communications service? Indeed, if the stations were permitted to enter the sphere of authorized stations, there would be FCC technical specs, regulations, and frequency assignments to follow that would eliminate or at least reduce questions of interference.

Today, it takes an absolute minimum of $50,000 (equipment costs, engineering surveys, legal fees, and proving to the FCC that you're solvent) to start the smallest, crummiest, minimum power (100 watts) licensed FM station. Is it valid that there should be what amounts to a $50,000 minimum admission fee to enable a person to broadcast their views over a station they own and control? Quite obviously, it's possible to actually put a low power (1 to 5 watt) non-commercial, community FM station on the air for far less than that. Many pirates have gotten started for under $1,000, sounded reasonably good, and neither their programming nor their cheap signals threatened the imminent collapse of western civilization.

RNI's Randi Steele tells me that he feels

Pirates Den *(from page 71)*

The Voice of Oz is another Foster log, at 0415 on 7415LSB, heard very weakly.

Still another Foster logging was **KRUD** at 0120 on 7415. The station asked listeners to stay tuned for future broadcasts.

Cronkright had **Radio Work** at 0245 on 7415, **Action Radio** at 0300 on 7380, **Samurai Radio** on 7415 at 0100 and **WXZR** at 0355 on 7413. Could you include some program details next time, Elmer?

Several reports of **Radio Newyork International**, which is now a full legitimate operation, aired 0200-0600 Sunday evenings on 7520 over WWCR in Nashville. The address for this one is P.O. Box 270, Flushing, NY 11352.

Frank Aden, Jr., in Idaho, says the phone number announced by the now defunct **XERK** was in the town of Donna, Texas.

Joshua Wilkes tells me that both **Radio Clandestine** and **Hope Radio** are selling t-shirts with their logos on them. Cost is $9 which may be sent to the station(s) in care of the Blue Ridge Summitt address.

To answer a question—all times in this column (and throughout the magazine) are in UTC.

That'll do it for this round. But, there'll be more next month so keep those reports coming in! I am anxious to hear from station operators, too.

See you all again next month! ■

that most of the (minimum) $50,000 fee is wasted in swimming through a complex morass of obligatory but relatively routine and pointless paperwork, dealing with endless forms, multiple filings, legal fees and other time-consuming and expensive jumps through bureaucratic hoops. That same money, instead of being wasted on a lot of useless paper shuffling, would much better serve the public if it were, instead, permitted to be invested in the station itself, its facilities, staff, and programming. Licensing for local stations could, and should, be streamlined down to a couple of simple forms.

It's very easy for the FCC to continue to trivialize and dismiss would-be personal broadcasters by laughing them off as "misguided, overzealous students." To me, it seems that by continuing to portray them in such a manner, it permits the agency to easily cop out on the necessity of having to face up to the fact that the time has come to at last acknowledge these people as requiring that a structure be established to permit them to legally broadcast.

The worn out "naughty kid" image is no longer a fair or accurate description of most current pirates. It doesn't seem reasonable for the FCC to continue to cling to its rickety old regulations, misleading definitions, and out-of-date perceptions, that are rigidly stacked against allowing low-power, noncommercial, personal broadcasting stations. Maybe, sixty or more years ago, when those rules were established, broadcasting was an elite form of communications available on a rather limited spectrum of frequencies to be entrusted to the wealthy and the privileged. But, I submit that this is no longer a valid attitude. All this has done is to continue the existence of an under-class of persons forced into the role of being lawbreakers for the apparent crime of wishing to use modern technology in order to express their views. These people would gladly obtain licenses if there were any way possible of them doing so short of each coughing up a bare minimum of $50,000.

The FCC has long demanded that its licensees meet the criteria of serving "public interest, convenience, and necessity." So be it. I have no quarrel with that. But, as a public agency, it should also be incumbent upon the FCC to serve the public's ever changing interest, convenience, and necessity. That seems only reasonable, so far as I can see. In their continuing refusal to recognize these stations as an evolving phenomenon that requires being accommodated with a special category of amateur or personal, low-power community broadcast license, we can only wonder why the agency is unwilling to meet these same reasonable criteria.

The term "pirate," in reference to radio, dates back to the 1920's. It was scornfully applied to unlicensed stations that came on the air, usurping (pirating) the frequencies and callsigns of licensed broadcasters in an effort to pass themselves off as stations they weren't. Such stations are about as far removed from the 1990's alternative broadcaster as one could ever hope to get!

By continuing to refer to unlicensed stations and their operators with the sleazy put-down label of *pirates*, all of us may well play our own role in perpetuating the injustice being done. It's neither their fault nor their preference that they continue to be outlaws. Ultimately, they are merely people with the much touted American trait of having something to say in a high-tech society that makes a lot of noise about encouraging "freedom of speech." Perhaps they are victims more than they are villains.

The FCC feels compelled to take action seeking to punish and/or close down unlicensed broadcasters, and the more publicized the station, the swifter and more media-conscious the FCC action. RNI's FCC closing was staged by the FCC as a full scale media event, covered by an army of newspaper and TV reporters. Under existing regulations, the FCC probably has no other choice. Fact is, it's the only way the FCC can hope or try to effectively stay in charge of the use of the airwaves. Were they to ignore unlicensed stations, it could result in eventual chaos on the airwaves. I don't quibble with this authority, just the continuing failure of the regulations to adequately address the many broadcasters who are effectively and unreasonably barred from becoming licensed.

Somehow they're trapped in one of those curious paradoxes; being damned for broadcasting without a license that the very agency which condemns them is unwilling to put within their grasp. Why? The only reason we have thusfar heard is the FCC's rather inaccurate insistence that they're all just mischievous children. Give me a break!

The old rock and a hard place. Not a good place to be. Although many in radio are content to ignore this topic, we think it's time to get a serious dialogue going.

You're invited to send along your opinions. ■

You Should Know *(from page 39)*

each. Moreover, they're not that convenient for the station. In some countries, only selected post offices will redeem IRC's, and such post offices aren't always near the station. Local postal workers may not understand what IRC's are, and often refuse to accept them.

One alternative many SWL's favor is to send mint postage stamps of the foreign nation with their reports. Stamps of the appropriate denomination for an airmail reply are invariably cheaper than the equivalent number of IRC's. Mint stamps can be obtained from stamp dealers or one of the various "DX stamp services" which sell stamps of the appropriate denominations to hams and SWL's.

My personal preference is a controversial one in some SWL'ing circles, but gaining in popularity: I simply send along a U.S. dollar bill ("greenstamp") with my report. In most of the Third World, the dollar pays for return airmail postage plus leaves something left over for the costs of QSL cards, envelopes, and related expenses involved in answering SWL reports. Some feel this approach is too much like "buying" a QSL, but to me it's a welcome gesture toward stations that are often operating on tight budgets.

When you report to domestic stations, don't be disappointed if you don't always get a reply to your first report. It's not uncommon for letters to get lost or stolen in some countries, and you may have to try two, three, four, or even more reports before finally getting that QSL. Patience, courtesy, and an understanding of the problems faced by domestic shortwave stations is a must. In return for your efforts, you'll get a collection of QSL's to be proud of!

Editor's Note: Harry Helms is the editor of the Umbra et Lux newsletter, c/o DX/SWL Press, 10606-8 Camino Ruiz #174, San Diego, CA 92126. ■

RTTY *(from page 70)*

Baghdad, Iraq, ARQ at 1749 (Ed.).

20609.5: Possibly HBD20, MFA, Berne, Switzerland, w/encryption, ARQ, 1652-1656 (Ed.).

20633.7: "RFVI," French Mil., Le Port, Reunion, w/"controle de voie," ARQ-E3/100 at 2059 (Ed.).

20734: 4UZ, UN, Geneva, Switzerland, w/nx in EE, ARQ at 1809 (Ed.).

20754.5: HBC88, Intl Red Cross HQ, Versoix, Switzerland, w/telexes in FF from HNC88A, Geneva, Switzerland, to HHR88, Port-au-Prince, Haiti, for rexmsn to Panama & Nicaragua. Was ARQ at 1446. S/off 1505 begins, "Haiti de Ver OK ere QRU . . ." (Ed.).

20834.5: Crypto after ZZZZZ either to/from Embacuba Brazzaville, Congo, 50 baud at 1640 (Ed.).

22013.5: HGX21, MFA, Budapest, Hungary, w/5F msgs & telexes in Hungarian to HGX52, Washington, DC, DUP-ARQ at 1406 (Ed.).

22321: UJY, Kalingrad R., USSR, w/RYRY, 50 baud at 1318 (Kuroda, Japan).

22356.8 SAG, Goeteborg R., Sweden, w/nx in Swedish, FEC, at 1700, to SAX, a Swedish c/s not listed in any of my refs (Ed.).

22453.5: PWZ33, Rio de Janeiro Navrad, Brazil, w/"preferencial" telexes in PP & 5L msgs, 75 baud at 2051 (Ed.).

22550.5: GYA, Royal Navy, London, England, w/a test tape at 1912, 75 baud (Ed.).

22590: WLO, Mobile R., AL, w/a wx advisory, FEC at 2108 (Ed.).

22857: "7L1," Czech Embassy, Havana, Cuba, w/a telex in Czech Embassy, Havana, Cuba, w/a telex in Czech & a msg in 5F grps to OMZ, 100 baud at 1739 (Ed.).

22904: Un-ID w/5L msgs. Hdr to msgs began w 11177 . . . Up until now, always believed this was a signature of MFA, Berlin, GDR, but since the GDR no longer exists, will have to find a new culprit. Was 75 baud at 1336. Went to CW at 1409 (Ed.).

22904.5: DMK, MFA, Bonn, Germany, w/tfc to New Delhi, India, ARQ-E/96 at 0200 (Kuroda, Japan).

22905.5: DMK, MFA, Bonn, Germany, w/a brief s/off msg in GG that begins, "Hallo Baires" (Buenos Aires). Was ARQ-E/96 at 1414 (Ed.).

22952: KCNA, Pyongyang, North Korea, w/nx in EE, 50 baud at 2213 (Ed.).

22954.5: ISX22, ANSA, Rome, Italy, w/nx in FF, 50 baud at 1419 (Ed.).

22960: "S5F," French Embassy, Brasilia, Brazil, w/a 5L-grpd msg & a telex in FF, ARQ6-90/200 at 1910 (Ed.).

22967.2: HBD20/5, MFA, Berne, Switzerland, w/5L msgs, ARQ, 1556-1705 (Ed.).

22972: MFA, Pyongyang, North Korea, w/a telex from the North Korean President to the President of India, 50 baud at 0346 (Kuroda, Japan).

23007.9: CLP45, Cuban Embassy, Luanda, Angola, w/crypto after ZZZZZ, 50 baud, 2050-2115 (Ed.).

23187.5: Un-ID w s/off in FF, "OK VX tks alors le score 3759 X 70067 aller VX bonne nuit a la prochaine mes sup 73s tres QRO." Was ARQ-E/96 at 1430 (Ed.).

23355: Un-ID Nigerian diplo, too weak to copy, FEC-A/96, 13367-1354 (Ed.).

23455: CLP9, Cuban Embassy, Aden, Yemen, w crypto after ZZZZZ at 1402, foll by a msg in SS & a 5F msg. Was 75 baud (Ed.).

23841.5: "RFFA," Mindefense, Paris, France, relaying a navarea from Washington, DC, at 1604, and w/a hydrolant at 1622, ARQ-E3/192 (Ed.).

23921.5: "RFFA," Defense Ministry, Paris, France, w/"non protege" msgs & 5L msgs. ARQ-E3/192 at 1532 (Ed.).

24370: "P6Z," MFA, Paris, France, w/a trainload of 5L-grouped msgs to "S5F," French Embassy, Brasilia, Brazil, was FEC-A/192 at 1558 (Ed.).

25012: GYA, Royal Navy, London, England, w/a test tape, 75 baud, at 1637 (Ed.).

25437: OXZ, Lyngby R., Denmark, w/telex tfc to ships, ARQ at 1657 (Ed.).

26141.8: Un-ID, quite possibly not a utility sta, w/badly broken up ARQ tfc in EE, due to QRN at 1405. Part of the tfc read, " . . . Coca Cola bottled that way before . . . " (Ed.).

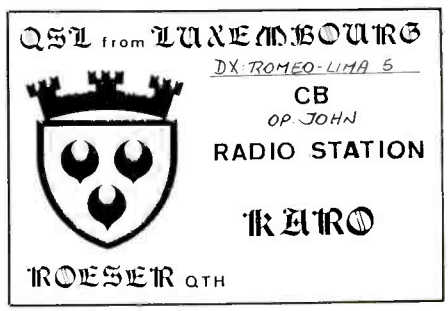
26207: "DFZG," MFA, Belgrade, Yugoslavia, w/encryption at 1455, 75 baud. (Ed.).

26441.5: "RFFA," Mindefense, Paris, France, w/AFP nx in FF at 1600, ARQ-E3/100 (Ed.).

26850: NBA, USN, Balboa, Panama, w RYRY & foxes (w/o the wd "quick"), 75 baud at 1741 (Ed.).

CB Scene *(from page 53)*

The "Radio Pirate" club in Belgium sent along this attractive award certificate.



Erroll Urbelis, SSB Network member SSB-6721, of Kings Park, NY provides us with a look at this QSL from "Karo" in Luxembourg.

ence from nearby transmitters. Their little front ends simply overload from practically everything.

So, by checking out which TV channels are affected by interference, it should be possible (in most instances) to easily determine who is at fault. It may be possible to reduce or eliminate TVI. While it is incumbent upon you to take whatever steps might be necessary in order to cut out harmonic radiation from your CB transmitter, you aren't required take any steps to add filters or otherwise repair the TV receiving setup of your neighbor who may be complaining about TV interference from your CB operations. If you wish to do so voluntarily, you can, but it's really not a good policy. Your neighbor is responsible for maintaining his TV receiving station in a suitable condition to meet his needs—it's not your responsibility. If you spend any money on one neighbor's TV set, you'll soon find that there are a dozen other neighbors who expect you to do the same for them.

If you live in a TV fringe reception area, the interference problem can be more difficult to clear up than if you live close to the TV station. This is true whether the TVI is the fault of the CB rig or the TV set. If the TV signals are weak, even the signals from a 4 watt CB rig will be perceived by TV sets as being (relatively) powerful. Luckily, cable TV has brought better TV signals to areas that were once so far out in the boonies that TV reception was very prone to interference from CB operations. ■

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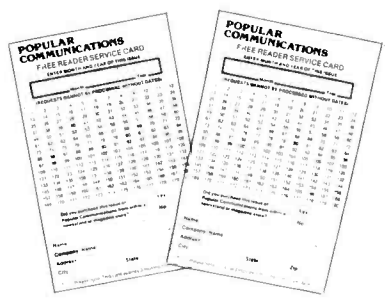

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FOR Sale: SGC SG-715 Portable HF Manpack with all accessories plus-MBO, NDH-95 Scanner/Timer (For NRD 92/93 receiver) - MBO. Universal M-7000 with options, New - $950.00. 2 ACE AR33 FM handheld receivers and accessories - $150.00 each. MX-5000 scanner, New - $325.00, MX-5000, used - $175.00. Daiwa CNA 2002 2.5KW Auto tuner-MBO, MFJ-989 3KW Manual tuner-MBO. Horizon LTD Marine Base station, New - $250.00. Yaesu FT103R with accessories - MBO, Kenwood TH-21AT with accessories -MBO. Will ship UPS COD (prepaid) only. Call John, (305) 253-1299. 5:30-7:00pm EST.

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- Manual tuning knob.
- Earphone jack, 3.5mm.
- AM, FM and wide band FM tuning modes.
- Backlighted LCD display.
- 10 Scan Banks, 10 Search Banks.
- Selectable Priority Channel.
- Delay, Hold Features.
- Selectable Search Increments, 5-955KHz.
- Permanent memory backup.
- 4 AA Ni Cad batteries included.
- AC adaptor/charger.
- Carry Case.
- Cigarette Lighter Charger.
- Belt Clip.
- Earphone.

Options:

External Speaker. Mobile Mount.	MS190	$19.50
Extended Warranty. 2/3 yrs		$45/$55

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.

AR950 $239

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- Earphone Jack & Attenuator.
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Mag Mnt Mobile Antenna. 15' coax.	MA100	$25.00
Cigarette Lighter power adaptor.	CP100	$4.00
External Speaker with mobile mount.	MS100	$19.50
Extended Warranty. 2/3 yrs		$40/$55

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.

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Standard Features
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- 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 (software & cable) offers spectrum display and database.	SCS2	$295.00

Specifications:

Coverage:	1 MHz - 1500MHz
Sensitivity:	.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, backlighted.
Dimensions:	2 1/4H x 5 5/8W x 6 1/2D Wt. 1lb.

AR3000 $995

400 Channels. 100KHz to 2036MHz.

Standard Features:
- Extremely compact size.
- Continuous coverage
- Attenuation Programmable by Channel.
- Manual tuning knob.
- Tuning increments down to 50Hz.
- AM, FM, wide band FM, LSB, USB, CW modes.
- 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 (software & cable) offers spectrum display and database.	SCS3	$295.00

Specifications:

Coverage:	100KHz - 2036MHz
Sensitivity:	.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 (NFM/AM)
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. 2lb 10oz.

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R-2000

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

Optional Accessories R-2000:

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

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 • **SP-50B** Mobile speaker • **HS-5** Deluxe headphones • **HS-6** Lightweight headphones

RZ-1
Wide-band scanning receiver

The RZ-1 wide-band, scanning receiver covers 500 kHz-905 MHz, in AM, and narrow or wideband FM. The automatic mode selection function makes listening easier. One hundred memory channels with message and band marker, direct keyboard or VFO frequency entry, and versatile scanning functions, such as memory channel and band scan, with four types of scan stop. The RZ-1 is a 12 volt DC operated, compact unit, with built-in speaker, front-mounted phones jack, switchable AGC, squelch for narrow FM, illuminated keys, and a "beeper" to confirm keyboard operation.

Optional Accessory

- **PG-2N** Extra DC cable

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

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