Radar War On Our Highways!
The Inside Story

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High Tech Hits The Highways As The Duel Of Wits Intensifies
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Monitoring For The Feds In The Little Band Everybody Stole. They Wuz Robbed!
By Chuck Robertson

Radio Of Yesteryear
Don't Touch That Dial! Stay Tuned For News Of An Earlier Era!
By Alice Brannigan

String Up A Hot Broadcast Band Antenna
A Simple Project That Really Pulls In Those Distant Stations.
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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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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 disuade 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 upsweep 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 obscene, 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-finx 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 conception 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 rippling 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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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 news medium, and all broadcasters merely agree on 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 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 call sign 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

Motorists’ Radio Service

In the December issue of Beamng 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 Beamng 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, VE30V, 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 D). 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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Features include: 100 programmable channels, one touch memory, extended warranty, 10 channel digital programming, AC adapter, and battery on board. Includes AC adapter and 1 year extended warranty.

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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.

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.)

Motor 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 speedometers 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.

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

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.

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.
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.
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...
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.

<table>
<thead>
<tr>
<th>State</th>
<th>Frequencies</th>
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</thead>
<tbody>
<tr>
<td>Arkansas</td>
<td>156.785E 465.3975E 465.5425E</td>
</tr>
<tr>
<td>California</td>
<td>154.295E</td>
</tr>
<tr>
<td>Connecticut</td>
<td>42.30 42.32 151.83E</td>
</tr>
<tr>
<td>Delaware</td>
<td>465.4375E</td>
</tr>
<tr>
<td>Florida</td>
<td>155.92 465.1625E</td>
</tr>
<tr>
<td>Georgia</td>
<td>453.0875E</td>
</tr>
<tr>
<td>Illinois</td>
<td>155.505E</td>
</tr>
<tr>
<td>Indiana</td>
<td>155.495E</td>
</tr>
<tr>
<td>Iowa</td>
<td>155.43 453.625E</td>
</tr>
<tr>
<td>Kansas</td>
<td>45.74</td>
</tr>
<tr>
<td>Kentucky</td>
<td>453.30 464.645E</td>
</tr>
<tr>
<td>Louisiana</td>
<td>465.455E</td>
</tr>
<tr>
<td>Maine</td>
<td>154.985 460.225E</td>
</tr>
<tr>
<td>Maryland</td>
<td>155.73E</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>155.92E</td>
</tr>
<tr>
<td>Michigan</td>
<td>42.98 45.60 151.695E</td>
</tr>
<tr>
<td>Minnesota</td>
<td>171.575 453.15E 455.35E</td>
</tr>
<tr>
<td>Mississippi</td>
<td>154.87E</td>
</tr>
<tr>
<td>Missouri</td>
<td>154.92 156.905E</td>
</tr>
<tr>
<td>Nebraska</td>
<td>42.04 460.525E 465.525E</td>
</tr>
<tr>
<td>Nevada</td>
<td>154.92E</td>
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<tr>
<td>New Mexico</td>
<td>465.155E 465.15E</td>
</tr>
<tr>
<td>North Carolina</td>
<td>154.68E 155.445E 156.21E</td>
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<tr>
<td>North Dakota</td>
<td>453.45E</td>
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<tr>
<td>Ohio</td>
<td>45.62 465.375E 465.525E 465.555E</td>
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<tr>
<td>Oklahoma</td>
<td>465.425E</td>
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<tr>
<td>Oklahoma</td>
<td>154.9005E 154.92E 159.21E</td>
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<td>155.945E</td>
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<td>453.375E</td>
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<td>154.905E</td>
</tr>
<tr>
<td>Virginia</td>
<td>453.35E</td>
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<tr>
<td>Washington</td>
<td>158.025E 463.675E</td>
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<tr>
<td>West Virginia</td>
<td>155.595E</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>465.125E</td>
</tr>
</tbody>
</table>

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 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 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 Interstate. 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.
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!

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 they 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
Now You Can Scan Up to 400 Channels in Less Than 16 Seconds!

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CIRCLE 119 ON READER SERVICE CARD
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 communications have been monitored on 27.655 and 27.800 MHz, SSB. Also check 29.701 MHz. In the UK, the legal CB band 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 operations around channels without removing that frequency from database. Either AM or FM is permitted.

REQUIREMENTS: MS-DOS microcomputer with 128K memory, with minimum 512K memory DELTACOMM’s performance is proportional to baud rate setting. (40 characters wide) for channel information.

I COM™ R7000 Sweeping 1300 Channels/Min.

DELTACOMM™ 1.04 gives you a custom interface and optimized software that will not just control but will maximize the potential of your R7000. Spectrum log at speeds in excess of 1300 channels/min. while automatically generating a histogram of frequency activity. Advanced priority channel monitoring and program control, by channel, of remote tape recorders during scanning. Here are a few (there are many more) examples of the advanced features DELTACOMM has to offer:

- Birdie log during frequency search automatically characterizes your R7000, then looks out those frequencies.
- Auto histogram and scan file creation during spectrum log.
- Scan file channel lock-out feature allows scanning around channels without removing that frequency from database.
- Rescans scan and maximum monitor values unique on each channel scanned.
- Each frequency within a scan file has an area (40 characters wide) for channel information.
- Auto frequency detection and storage during search and spectrum log.
- User friendly installation program reduces need for DOS knowledge.
- Full support of serial ports COM1- COM4.
- On-screen HELP reduces need to refer to user manual.
- Manual or automatic log file creation.
- Minimum 512K memory DELTACOMM’s performance is proportional to baud rate setting. style of display card and type of computer used.

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.

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-
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.
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 KLIS ("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 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.
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-
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 shehholakh misap hapalmu vuad sophoeh." This translates from Hebrew into English as, "Radio, a voice that goes to 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 developing 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 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.

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, Ill. 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!
Once again JRC breaks new ground in shortwave receiver design. The new NRD-535 has all the features SWLs and amateurs have been waiting for. General coverage from 0.1 to 30 MHz in AM, USB, LSB, CW, RTTY, FAX and Narrow FM modes. Advanced ECSS operation for phase-lock AM reception. Variable bandwidth control (BWC). Tuning accuracy to 1 Hz possible with direct digital synthesis. 200 memory channels with scan and sweep operation. Triple Superheterodyne receiving system. Superb sensitivity, selectivity and image rejection. Dual-width noise blanker eliminates impulse noise. Squelch, RF Gain, Attenuator, AGC and Tone controls. Optional RTTY demodulator available. 24 hour clock/timer. Easy to read vacuum fluorescent display with digital S-meter. AC and DC operation. Plus the most comprehensive computer interface found on any radio to date. Call or write today for a full color brochure, price list and dealer information.
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 rapidfire 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.

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
measured in terms of acres rather than linear feet, the simplest and best known, the 'Beverage' antenna, consists of little more than a long wire (one to three wavelengths), 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 Bever- age. 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 not 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."
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 AJFRS 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 transmitters have 30 mile ranges, the rest are low powered units that cover only three or four 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 programming isn't being generated, there's a bubble feed from Sun Valley, CA to keep programming. WOWB is a satellite feed from Sun Valley, CA to keep programming.

Another TIS station reported to be on 530 kHz at Williamsburg, KY on 1-75. 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 KTNY-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 didn't 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 FCC 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-
Applications For New FM Stations

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Permits Granted For New FM Stations

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<td>N. Highlands</td>
<td>89.3</td>
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<td>95.7</td>
<td>3</td>
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<td>Farmington</td>
<td>95.7</td>
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<td>IN</td>
<td>Buchanan</td>
<td>99.1</td>
<td>3</td>
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<td>IN</td>
<td>Newburgh</td>
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<td>NV</td>
<td>Sparks</td>
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<tr>
<td>NY</td>
<td>Oneonta</td>
<td>91.7</td>
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</tr>
<tr>
<td>OR</td>
<td>Brownsville</td>
<td>102.3</td>
<td>345 watts</td>
</tr>
<tr>
<td>TX</td>
<td>Bryan</td>
<td>99.5</td>
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<tr>
<td>VA</td>
<td>Lynchburg</td>
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FM Frequency Changes Approved

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<td>Groves, TX</td>
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<td>WIDL</td>
<td>Caro, MI</td>
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<td>WJCB</td>
<td>Westerville, OH</td>
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<td>WVGN</td>
<td>Charlotte Amile, VI</td>
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AM Facility Changes Approved

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<td>WKKJ</td>
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<td>WNOJ</td>
<td>Seaside Park, NJ</td>
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<td>WWBJ</td>
<td>Vineland, NJ</td>
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FM Call Letters Changes Requested

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<td>KPLW</td>
<td>KYTC</td>
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<td>WHLP-FM</td>
<td>WNKX-FM</td>
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AM Call Letters Changes Requested

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<td>WHZI</td>
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Requests Withdrawn For Call Letters

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Changed AM Callsigns

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<td>KFMQ</td>
<td>KLMS</td>
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<td>KTLG</td>
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<td>WNWS</td>
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<td>WNNK</td>
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<td>WQAI</td>
<td>WHOG</td>
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<td>WSSH</td>
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Applications For AM Facility Changes

<table>
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<th>Callsign</th>
<th>City</th>
<th>Frequency (MHz)</th>
<th>Power (kW)</th>
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<tbody>
<tr>
<td>WJOT</td>
<td>Lake City, SC</td>
<td>1260</td>
<td>Increase days to 5 kW</td>
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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!
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) 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.

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 WBRR, 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, KNAA, WWGS, WXKS, WDEX, WNJR, KCRX, WENE, KYKN, KVAM, Kees, KCLL, 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.)

Swiss FM station "Radio Neuchâteloise," 97.5 MHz, has these nifty stickers. (Submitted by DeMartin Ferdy, Switzerland.)
**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.  
There is an internal speaker microphone with clip SM45 for convenient grouping of channels and improved communications efficiency. With an external programmer, this unit can reprogram the radio in minutes with the PM100A programmer for $99.95 without even opening the transceiver. REPORT FUNCTION and 10 PROGRAM MEMORY positions are standard.  
The RELM RSP500-A is our most popular programmable 5 watt, 20 channel handheld transceiver. You can now save up to 40 different frequencies and 10 programmable positions with the newйт5 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 compatibility are standard. It is F.C.C. type accepted and meets all FCC specifications. We recommend programming by an authorized RELM distributor only. We recommend programming by an authorized RELM distributor only. The RSP500-A is also available for $489.95. A low band version called the RSP500L-A is available for $339.95. If you do not need the 800 MHz. band, a similar model is available for $339.95.  

**NEW! RELM® UC102/UC202**  
List price $128.33/CE price $79.95/SPECIAL  
Handheld gear you can afford.  
CEI understands that all agencies want excellent communications at a reasonable price. Uniden CB radios are so reliable they have a two year limited warranty. The Uniden line of Citizens Band Radio transceivers is especially created for government agencies. The Uniden MR8100 a computer interface program is just $128.33/CE price $79.95/SPECIAL  

<table>
<thead>
<tr>
<th>Brand</th>
<th>Model</th>
<th>Description</th>
<th>List Price</th>
<th>CE Price</th>
<th>Special</th>
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<tbody>
<tr>
<td>Uniden</td>
<td>MR8100</td>
<td>CB1000C 10 channel Scanner/Surv/Scan Band: 29-54, 118-174, 406-512, 806-956 MHz. NO SWM Scan</td>
<td>$128.33</td>
<td>$79.95</td>
<td>$79.95</td>
</tr>
</tbody>
</table>
|                |               | 120 memory channels, 10 band, LED backlit screen, battery charger and battery pack for only $79.95. If you are looking for a similar model called the BC1000XLT-A, it can be had for only $178.95.  

**NEW! Uniden® MR8100-A**  
List price $849.95/CE price $486.95  
12-Band, 100 Channel  Surveillance scanner Band: 29-54, 118-174, 406-512, 806-956 MHz.  
NO SWM Scan 120 memory channels, 10 band, LED backlit screen, battery charger and battery pack for only $79.95. If you are looking for a similar model called the BC1000XLT-A, it can be had for only $178.95.  

**NEW! Ranger® RC9250-A**  
List price $549.95/CE price $249.95/SPECIAL  
10 Band, 100 Channel  Surveillance scanner Band: 29-54, 118-174, 406-512, 806-956 MHz.  
This Ranger RC9250 Mobile 10 Band Transceiver has everything you need for amateur radio communication. The Ranger RC9250 allows you to adjust the RF output power continuously from 1 watt through a full 25 watts UHF output for U.S. Armed Forces. You can get a noise blanker, roger beep, PA mode, mike gain, digital VOX, and various other features. Frequency selections may be made from a switch on the microphone or the front panel. The RC9250 gives you a good deal for the price. If you need more information, give us a call at Ranger 619-259-0287.
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.

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. John comments that many 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-
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 lap-top computers in their cars. Combining voice and computer communications over cellular phones, USAA auto appraisers and property adjusters have what amounts to cellular phones, USAA auto appraisers and voice and computer communications over the top computers in their cars. Combining 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.

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

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 NAMPS 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, Secaucus, 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.
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.

*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 Responde" (*The City Responds*). It moves around the area between 6290-6315 and is noted in the US primarily between 0200-0430 and 1900-2200. Other frequencies may be used from time to time. *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.

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 5/2 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 Jama 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.

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The U.S. government continues to fund Radio Free Afghanistan, carried over the facilities of Radio Free Europe/Radio Liberty. The current schedule is 0230-0330 in Pashto, 0300-0330 in Dari on 7255, 9540, 9555 and 11770. Also at 1330-1400 in Pashto 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!
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.

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 vocal 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. Charges 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.

Frequ. Station/Country Time Notes Frequ. Station/Country Time Notes
2390 LV de Atlan, Guatemala 0000 SS/Indian 4990 R. Ancash, Peru 0500 SS
2410 R. Enga, Papua New Guinea 0000 SS/Indian 5004 R. Nacional, Eq. Guinea 0500 SS
2485 ABC-Katherine, Australia 0000 E/Pidgin 5020 ORTV, Niger 0530 sign on, FF
3200 TWR, Swaziland 0300 vernacular 5025 R. Rebelde, Cuba 0400 SS
3225 R. Occidente, Venezuela 0300 SS 5068 R. Progresso, Ecuador 0300 SS
3240 TWR, Swaziland 0300 vernacular 5286 R. Moundou, Chad 0500 FF
3245 R. Clube Varginha, Brazil 0300 PP 5900 Kol Israel 2200 AA
3250v R. Luz y Vida, Honduras 0200 SS 5910 BRT, Belgium 2200 EE/SS
3255 BBC relay, Lesotho 0300 SS
3275 Radio Mara, Venenuela 0200 SS/SS 5945 RFI, France 0000 FF
3280 LV del Nago, Ecuador 0200 SS/EE 5955 Voz de Centauros, Colombia 0900 SS
3300 R. Cultural, Guatemala 0200 SS/EE 5965 R. Havanna Cuba 0300 FF
3320 R. Orin, South Africa 0230 Africains/EE 5982 Union Radio, Guatemala 1100 SS
3330 CHU, Canada 24hr time signals 6015 R. Aust Int'l 0500 various
3345 RRI Pontianak, Indonesia 1230 II 6020 R. Netherlands 0030 SS
3360 GBC, Ghana 0530 SS/Indian, vern 6025 R. Illimani, Bolivia 1000 SS/Quechua
3381 Malawi BC Corp 0255 sign on, SS, E/ver 6030 R. Globo, Brazil 0100 PP
3385 RRI Kupang, Indonesia 1230 II 6050 R. Nicaragua, Radan 2305 sign off
3400 R. Ed. de Agosto, Brazil 0600 PP 6065 Super Radio, Colombia 1200 SS
3450v R. Reyn, Peru 1100 CC 6070 BBC relay, Lesotho 0000 SS
3450v R. Reyn, Peru 0000 sign on, SS 6075 Deutsche Welle, Germany 0430 various
3535 V of the Strait, China 1100 JJ 6090 R. Luxembou 2330 GG
3925 R. Tanpa, Japan 1030 JJ 6100 Observatorio Naval, Venezuela 0000 time signals/SS
3927 Capital R., Transkei, S. Af 2200 SS 6106 Panama,ni, Bolivia 1000 sign on, SS
3945 RRI Densapar, Indonesia 1200 II 6115 La Voz del LLano, Colombia 0500 SS
3955 BBC 0300 SS 6120 R. Japan 1100 SS
4300 BBC relay, Lesotho 0400 FF 6135 R. Univ. de Concepcion, Chile 0930 SS
4305 R. Politics, Canada 0100 SS 6150 Caracol. Colombia 0400 SS
4300v R. Cancao Nova, Brazil 0200 SS 6165 R. Netherlands 0030 various
4320 GBC, Ghana 0200 E/Moscow 6175 BBC 0000 various
4380 Malawi BC Corp 0255 SS/Indian 6185 R. Educacion, Mexico 0400 world service
4385 El Mundo, Brazil 0200 SS 6248 Vatican Radio 0600 various
4410 BBC relay, Lesotho 0400 SS 6250 R. Nacional, Eq. Guinea 0500 various
4485 Petropavlovsk, USSR 1130 relay Moscow 6305 Voz de la CID (clandestine) 0500 various
4635 Dushanbe, USSR 0100 III & Tadzhik 6500 PBS QMghin, China 1300 CC
4690v R. Nacional, Espelo, Ecuador 0200 SS 6691 R. Cuenca, Peru 0200 SS
4725 V of Myanmar, Myanmar (Burma) 1200 Burmes 6726 R. Satelite, Peru 0100 SS
4740 R. Kabul, Afghanistan 1200 via USSR 6840 CPBS, China 1200 CC
4765 Moscow Relay, Cuba 0000 various services 6900 Turkish Met. Radio 0500 SS
4770 R. Lusso, FKA 0430 sign on, SS/ver 6937 PBS Yunan, China 1200 CC
4770 R. Lusso, FKA 0000 sign on, E/ver 7105 R. Colombia, Colombia 0100 via Greece
4790 R. Atlantida, Peru 0300 SS 7115 RFE/RL 0400 various
4800 R. Lusso, FKA 0300 sign on, Escoto/EE 7130 R. Russia, Russian 0600 various
4825 R. Cancao Nova, Brazil 0900 PP 7135 R. Polonia, Poland 0000 various
4830 R. Bolivia 0255 sign on 7180 BBC 1100 Various
4830 R. Bolivia 0000 sign on, SS 7200 R. Mogadishu, Somalia 0300 Various
4830 R. Bolivia 0255 sign on, SS 7205 R. Australia 1100 SS
4855 Voz del Cinaruco, Colombia 0400 SS 7225 R. Yugoslavia 0300 SS
4875 Voice of Jinling, China 1200 GE 7255 R. Nigeria, Radan 0500 sign on, SS
4880 R. Five, South Africa 0300 sign on 7270 R. Polonia, Poland 0000 Various
4894 RN Tchad 0430 sign on, FF 7300 R. Trona, Albania 0300 Various
4915 R. Congo, Congo 0200 SS 7315 WHRI, Indiana 0100 Various
4920 ABC, Brisbane, Australia 1200 CE 7325 R. Bulgaria 0300 Various
4940 RTV, Irrevmente, Ir. Coast 0600 sign on, FF 7340 Voz del CID (clandestine) 0300 Various
4953 R. Nacional, Angola 0400 PP, irregular 40 / POPULAR COMMUNICATIONS / March 1991
4970 R. Rumbos, Venezuela 0330 SS 1450 THE MONITORING MAGAZINE
4975 Ondes del Orteguaza, Colombia 1000 SS
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<td>EE, others</td>
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<td>Spanish National R.</td>
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<td>V of Greece</td>
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<td>V of People of Cambodia</td>
<td>1200</td>
<td>various</td>
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<td>R. Moscow</td>
<td>1200</td>
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<td>12015</td>
<td>R. Ullan Bator, Mongolia</td>
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**THE MONITORING MAGAZINE**

March 1991 / POPULAR COMMUNICATIONS / 41
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.

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, commentaries); 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.


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 information 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!

For 25 years, our people have endured long hours and tough working conditions for no pay.

And 9 out of 10 would do it again.

TO FIND OUT WHY call
(316) 263-2100
or write
REACT INTERNATIONAL, INC.
242 Cleveland
Wichita, KS 67214

CIRCLE 96 ON READER SERVICE CARD
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 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 at its Tinang site in the Philippines. KUSW, with its 7170 frequency and now operating us-

Wave ledger. RFO Numea, New Caledonia has left shortwave so New Caledonia can no longer be heard by SWL’s. The station clos-

ing 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.

Il Radiobras (Brazil) has dropped its 0200 English broadcast to North America and reinstated its 1100! Radio France International has discontinued its 0315 English broadcast, leaving just the morning ones at 1230 and 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’ers, has been 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 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. Provencer 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.

RADIO ROMANIA INTERNATIONAL

They stickers show Radio Romania International’s new name, but the QSL cards still say “Radio Buchar est.” (Thanks William Moser, PA)
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 recheck out: 0400-0500 on 7270 and 11900 on 15290. (Carson, OK) 2039. (Walbesser, NY)

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One of the world's top DX'ers is Danish person in Iraq and Kuwait. (Walbesser, NY) 17620 at /9790//9800//11705//11995 at 0315 in EE with AR

British broadcasting to British servicemen in the Gulf via BBC facilities - 0708. (Moser, PA) 11775 at 0120. (Bailey, AR) 15155 facilities. (Walbesser, NY)

Grams. (Perry, TX) 0155. (O'Leary, MA; Linonis, PA; Bailey, AR) Parallel 9675 at 0228 (Carson, OK) 15255 at 1255, 1220 sign off with ID and music. Weak and lost at 0107, though noted on another day to past 0042. (Walbesser, NY; Moser, PA) 15560 at 0050. (Carson, OK)

Home news. (Moser, PA) 21715 at 0008 with home news. (Moser, PA) 21700 (via Gabon, ed) at 2334; 15195 at 2323 and 21700 (via Gabon, ed) at 1516. (Walbesser, NY) 11865 at 1505. (Perry, TX) 0556. (Walbesser, NY)

Also at 1925 on 15375. (Walbesser, NY) 17815/17585 at 1703. (Zamora, ND)

Vatican: Vatican Radio, 6150 at 0050. (Bailey, AR)

Voice of Free China, 9680 (via WYFR, ed) at 0000. (Linonis, PA) 11800 at 0000. (Carson, OK)

Radio Peace and Progress, 11880 at 0005. (Moser, PA) 11880 at 0128. (Bailey, AR) 15110 at 1930 sign on at 0042. (Perry, TX) 0433. (Walbesser, NY)

Round-up of Events," Review of Soviet Press and UN program. (Miller, GA)

Latin America: Radio America, 6100 at 0500 in Spanish with news and commentary. Has this station every been noted? (Perry, TX)

Turkish: Voice of Turkey, 9445 at 2209. (Walbesser, NY) 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)

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

New Orleans, 9465 at 0433 to Latin America at 0000. (Linonis, PA) 11980 at 2000. (Carson, OK) 17815/17585 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)

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Remedial Radio

The latest wave of FCC crackdowns on illegal HF operations, last year’s DXpedition 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.

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 join the conversation. 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.

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. If 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!
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 it doesn't 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

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**Mailbag**

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

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**James Webb's Shuttle radio log.**

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

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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 downsized. 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 telecommunications 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—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.
EMERGENCY 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 pre-assigned 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.

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...
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 hotline 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.
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.

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.

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.
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 about $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, POPCOMM 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, 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 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 interference.

(Continued on page 76)
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


John E. Rahtes, Engineer-in-Charge, using mobile direction-finding equipment traced the signals to the Norristown, PA residence of amateur operator Ernest Wood (KA5WHZ). 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 proceeding 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 GMDSS will bring to international shipping, a unified satellite technology, automated reception of maritime safety information and rapidly 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 radio beacon to provide a distress alerting function and the location of a ship's 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 Certificates 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," 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 is 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 Trelxler. 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.

Trelxler 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 rule-making 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.

Defying 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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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 scanner: get yourself a copy of the FCC rules and regulations for two-way radio users. The FCC rules book will be of the FCC rules and regulations for two-way radio services. For instance, if you look under the FCC 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 or the radio. If you sold 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 might be a scanner group in your area that is using business band or general mobile radio service (462.500 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 is using business band or general mobile radio service (462.500 to 462.725 MHz) repeaters to communicate about scanner-related information.
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 incident were to happen in your town, would you be left wasting valuable time digging up frequencies that should be monitored? If you had a list of 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 enhancements that can be used to improve your performance. A list of frequencies will be included at the end of your scanner tapes!

Here’s the well-equipped mobile station of Thane A. Huffman, KB9ECI, of Goshen, Indiana. Thane’s equipment includes handhelds on the 220 and 440 MHz bands as well as a Bearcat 200XL T 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?

THE MONITORING MAGAZINE

March 1991 / POPULAR COMMUNICATIONS / 61
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.”

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 it 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 Mosсад “VLB2” transmission heard on 14750 kHz AM at 1247. The callup was repeated
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 scv instead of the Hallicrafters S-38 receiver I originally used.” 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; PPFN Frotamala; PPF A Frotasantos; PPFG Frotage; PPMT Frot第一百; PPML Frotachile; PPUW Frotavento; PPNP Frotadurban; PPEJ Frotario; PPGJ Frotairius; PPUX Frotauruguay; PPMK Frotamerica; PPFT Frotacost. 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 activated 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 us 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 | “IB” (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 NNNOCCF.

---

Dave Sabo, CA shares hi PFC returned by a USCG Loran station.
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 NRDR 515, ICOM IC R71A, Sony ICF 2010 and Sony ICF PRO80 and a Regency HW 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 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.

17: UMS, Moscow, USSR at 1500 w/mlr in CW. (Mueller, France)
119: IDQ, Italian Navy, Rome in CW at 1006 w/mlr. (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 244. (Vaage, CA)
350: Beacon NUC, San Clemente IS, CA at 1851. (Vaage, CA)
370.5: Beacon GW, Gatow/ Berlin, Germany at 2155. (Mueller, France)
383: Beacon CNNP, 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 0210. (Mueller, France)
400: Beacon HU, Sacramento, CA at 0936. (Vaage, CA)
426: Beacon MIQ, Mike (Ingolstadt), GFR at 0200. (Mueller, France)
432: Beacon LOS, Losini, Yugoslavia at 0210. (Mueller, France)
473: Beacon FHA, Friedsfriedhafen, GFR at 0205. (Mueller, France)
2302: CW signal at 2319 sends TAE0319ARAR-ARAR, two mins later sends TAE0321ARAR-ARAR. Continued this every 2 mins. (Tubbs, FRG)
2716: NNK, USSR Wabs A305 clg Long Beach Combat 2 at 1030. (Gordon, CT)
2899: Gander wkg Clipper 467 for company msg in USB w/0355. (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 pipps from 2030-40. Then YL/RB w/729 callup until 2045. Then 55, 55 and into 5F grps. AM mode. (Mason, England)
4090: Stn has sked every Thursday. YL rptng sdm diventa tronfa presto zero 725/00 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/GC w/Achtung x2 and into 5F grps (29 grps msg). This is a repeat of a best sent here on 20 Sept 1988. Over 2 years ago! (Mason, England)
5047: YL/EE at 2300 w/981 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/tunes. 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)
5492: CG 6592 wkg Detroit Air for wx in USB at 2355. (Hill, MI)
5696: COMSTA Boston wkg USCGC Resuces (Helo) 1943 and a/c 2101 and Canadian P3 -Rescue 116, vwd Great Lakes. (Grote, IL)
6068: IDQ, Italian Navy, Rome in CW at 0530 w/mkr. (McAtee, WV)
6708: YL/GC rptng 462 x3, 73976, 60 between 13-05. Then into 5F grps. Heard here every Monday. (Mason, England)
6753: Station VXN, Edmonton Military, Alberta, Canada in USB at 0200 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 frequen-
cy call." No answer. USB at 2103. (Hill, MI) Eyetooth w/SK/KING best in USB at 2359. (Grote, IL)
6785: WK4649 wkg WK4642 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 0239 w/4844 and 2245. Off at 0240. (Mason, England)
6895: KK50, Dept of State, Washington, DC in CW at 0250 w/mkr. (McAtee, WV)
7421: 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: NRID, USS Kidd DDG993 wkg SESEF Charleston at 1630 for emitter tests. (Gordon, CT)
7535: NTNR, USN Tautiner T-AGS-40 (Ocean Surveying ship) wkd Norfolk SESEF at 1630, USS Cow- pens CG63 and USS Chosin CG65 tested emitters w/USCG SESEF at 1500 and 1400 respectively. (Shane, DE)
7600: FDI (Aix-les-Milles Air) and FDX (Paris Air) wkg simplex on CW at 0829. (Tubbs, FRG)
7786: RYD2, Sablekhard, USSR at RCY71, Minsk in CW at 2530. (Tubbs, FRG)
7858: YL/EE rptng 05145 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)
8991:1: WYP-9173, tug Gauldet in USB at 1753 wkg WPE, Jacksonville, FL. (O'Connor, NH)
8867: WJNW35, Siedell, LA in CW at 0430 w/mkr. (McAtee, WV)
SRON-6 contacted Falklands w/MAYDAY-water in 0555 re why PSR was 25 hours old? Honolulu wx hrd in AlA or J2A radiotelegraphy. Use of these frequencies is effective 1 July 1991. (Mueller, France)

11267: Papa 5 Lima w/coded msg in USB at 1217. (Hill, MI)
12315: NEX5, USS Emony S. Land AS39 wkg Norfolk SEF at 1500. Shifted from 7535kHz, no joy. (Stuart, DE)
12320: YL/EE rptng 724 at 1900. Then 695 x2 and into 5F gps. In Jan 90 724 was sent but with 00000 and no text. (Mass, England)
12695: DE KFS, Polo Alto, CA in CW at 0444. (Mueller, France)
12535: USS 210, Sebastopol USSR w/mkr at 0207. At 0208 went into high speed CW tcf, looked like shipping tcf. (Scalo, PQ, Canada)

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

Table 1

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

<table>
<thead>
<tr>
<th>Carrier Frequency</th>
<th>Frequency</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12835.3</td>
<td>DE GKB3</td>
<td>Portishead, England in CW at 12835.3</td>
</tr>
</tbody>
</table>
| 13306 | TAP 304 | calls Sta. Maria Aeradio, AZR at 1057; TWA 917 calls Sta. Maria Aeradio, AZR at 1100. (Mueller, France)
| 13330 | TWA 525 | wkg NYC for position & movement of tropical depression #12.USB at 1738. (Hill, MI)
| 13335 | American Airway 918 in trouble, losing oil. Fi Whort and Tulsa being consulted. A/c wanted to know how much oil they can lose before damage to engine. After consultation w/maintenance Tulsa, Pilot decided return Grand Cayman. (Ed.) |
| 13333 | A siren sound, then net call-up. Calls incl ZWG, ZQY, 400G, QC0, BCUE & GOAI. Some tcf but sigs distorted. Lasted about ten mins. USB at 0059. WHOHIT?? (Hill, MI) |
| 13360 | GPA5 | Portishead, England w/mkr phsed w/ARQ sig which id'd as BRLLY. Hdr at 0022. (Scalo, PQ, Canada) |
| 13390 | YL w/Lima Alfa from 1100-05 w/tokens. Then 5F GF gps for 363 and 355. Same text rptd 1130 on 12314 kHz. (Mass, England) |

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15470</td>
<td>MARS pp's NNNCNX, USS Portland wkg NNNNK Mayport at 2250; NNNNXK, USS Iwo Jima wkg NNNNCL, Camp Lejune at 2045; NNNDCY, USS San Jacinto wkg NNNQXP at 2241; NNNCNX, NNNNCX, USS Portland wkg NNNQXP at 2225; NNNCCX, USS Manotowoc wkg NNNQXP at 2302; NNNCMX, USSS Henry Kaiser wkg NNNBEQ at 0025. (Symington, OH)</td>
</tr>
<tr>
<td>15477</td>
<td>MARS pp's NNNCNCP, USS Bainbridge wkg NNNQLP at 2142; NNNCMU, USS Seattle wkg NNNQLP at 2136; NNNNCOW, USS Trenton wkg NNNQLP at 2105. (Symington, OH)</td>
</tr>
<tr>
<td>15483</td>
<td>MARS pp's NNNCNW, USS Elmer Montgomery wkg NNNKQR at 2113; NNNDCUS, USS Inchon wkg NNNKQR at 2120; NNNNCUS, USS Inchon wkg NNNPGN, Pasaacola at 0010. (Symington, OH)</td>
</tr>
<tr>
<td>15485</td>
<td>V's K V's K V's K. Then sent UCNQ, u/i DE KKN50, US Dept of State, Wash DC in CW at 1712. (Mueller, France)</td>
</tr>
<tr>
<td>15488</td>
<td>Army 270 in USB at 1820 w/pp thru Al -made Fall. (Hill, MI)</td>
</tr>
<tr>
<td>15498</td>
<td>9400.0 clg in blind for Exault 40. Patchwork to Liberate at 0223. At 0230 w/pp thru Al -made Fall. (Hill, MI)</td>
</tr>
<tr>
<td>15501</td>
<td>clg Atlas in USB at 2030. At 2042 910 clg 901. (Thomas, BC, Canada)</td>
</tr>
<tr>
<td>15535</td>
<td>Peek 270 in USB at 2110 w/pp thru Al -made Fall. (Hill, MI)</td>
</tr>
<tr>
<td>15538</td>
<td>USSR in USB at 2130. (Hill, MI)</td>
</tr>
<tr>
<td>15563</td>
<td>ALA in USB at 2100. (Scalo, PQ, Canada)</td>
</tr>
<tr>
<td>15582</td>
<td>12835.3: DE GKB3, Portishead, England in CW at 12835.3</td>
</tr>
<tr>
<td>15589</td>
<td>12913.5: GKB2,3,4,5,6 Portishead, England in CW at 12913.5</td>
</tr>
<tr>
<td>15649</td>
<td>22080: YL/GG w/Lima Alfa from 1100-05 w/tokens. USB at 0022. (Scalo, PQ, Canada)</td>
</tr>
<tr>
<td>15683</td>
<td>22599: YL w/Lima Alfa from 1100-05 w/tokens. Then 5F GF gps for 363 and 355. Same text rptd 1130 on 12314 kHz. (Mass, England)</td>
</tr>
<tr>
<td>15695</td>
<td>23402: 901 dg Atlas in USB at 2030. At 2042 910 clg 901. (Thomas, BC, Canada)</td>
</tr>
<tr>
<td>15704</td>
<td>J2A in USB at 2112 w/pp thru Al -made Fall. (Hill, MI)</td>
</tr>
<tr>
<td>15720</td>
<td>1600. (Stuart, DE)</td>
</tr>
</tbody>
</table>
| 15735 | 16069: Software Systems Consulting (714)-498-5784 Call or write for product information. DSP Software Tutorial Cassette \text{NOW EVEN BETTER!} \text{A complete facsimile reception system for the IBM PC and compatibles. Receives in 10 intensity levels for full gray scale images. Includes:} \text{Demodulator} \text{DSP Software} \text{Worldwide FAX Directory Interpretation Guide} \text{Features: Printer output, Disk Storage, Automatic operation, Programmable line rates, IOC, LCD support, Integrated file management and more.}
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 radiotelegraph 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. Ittoqqortoormit by the International Telecommunications Union, Ittoqqortoormit (for T’s instead of five) in Greenlandic, and Ittoggortoormit by the National Geographic Society. (Caution: Don’t try to pronounce Ittoggortoormit 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 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 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 call signs. All appeared to be of European origin. The call signs were formed into several different combinations. There were those of the two number, two letter, two number variety, such as 01PG63, 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 call signs seem to be of French origin. 01PG63 was observed, however, sending a "propagation" report in Spanish, including data on the "flujo solar" (solar flux).

Another call sign 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, FC02MG, and GU03AA. 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; IN0001, "Red Fire," Marion, IN; CO0035, "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 calls signs 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 cutey 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 it’s 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 è sempre steta la pup 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 circulars. A bunch of Z’s are strewn in 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 Leicester-shire 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)
Hier sendung fuer mittelamerika
informationsfunk der bundesregierung

Bonn, den 03. oktober 1990

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. Hochpunkt der feierlichkeiten in Berlin war die Zahl der zwischenfaelle bald li.<br>

In einem staatsakt in der philharmonie rief bpr v. weizsaecker die deutschen zu gegenseitiger solidaritaet auf: "sBsich zu vereinen, um wieder teilen zu lernen." In di. auffuehrung des stasi-vergangenheit forderte weizsaecker im zdf "gerechtigkeit, die nicht auf versorgung abzielt, sondern auf inneren frieden". Bundestagspraesident weizsaecker sprach sich in der philharmonie fuer ein solidarisches, europaerisches und "partnerschaftliches deutschland, mit weitblick und verantwortung in der welt" aus (vgl. auch den suessmuth-deitrag in der welt unter der ueberschrift "blau" im glanze dieses glueckes.").


Abbreviations Used In The RTTY Column

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>AA</td>
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<tr>
<td>BC</td>
<td>Broadcast</td>
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<tr>
<td>DE</td>
<td>English</td>
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<td>FEC</td>
<td>Forward Error Connection mode</td>
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<td>FF</td>
<td>French</td>
</tr>
<tr>
<td>faxes</td>
<td>&quot;quick brown fox ...&quot;, test tape</td>
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<tr>
<td>GG</td>
<td>German</td>
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<tr>
<td>ID</td>
<td>Identification/Send</td>
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<td>Ministry of Foreign Affairs</td>
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<td>News</td>
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<td>Portuguese</td>
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<td>&quot;RRYY&quot;, &quot;test tape&quot;</td>
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<td>With</td>
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<td>wx</td>
<td>Weather</td>
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Figure 4: Events occurring 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)
A/192 at 1306 (Kuroda, Japan).
18033: PTT, Lubumbashi, Zaire, w/tcf in FF to Kinshasa, FDM 50 baud at 1336 (Ed.).
18033.S: French Consulate, Fort de France, Martinique, w/unsclas msg & 5L tfc to Bogota, Colombia & Port-au-Prince, Haiti, at 1626, ARQ-90/200 (Ed.).
18040.5: HGX21, MFA, Budapest, Hungary, w/tc in Hungarian and alphanumeric encoded msgs in grps of 5, DUL-ARQ, 1625-1655. Returned 1835.5 to 1655 w/tc 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.).
18061: WIAS, ARL, Holling, CT, w/a propagation report in FEC at 1527-1530 (Ed.).
18111: FDY, French Air Force, Orleans, France, w/"test de FDY," 50 baud at 1547 (Ed.).
18170: & 18196.9: HGX21, MFA, Budapest, Hungary, w/telexes in Hungarian to HGX52, Washington, DC, DUP-ARQ at 1540 (Ed.).
18190: FSB59, Interpol, Paris, France, w/mgs 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 9MY63 9643 kHz 9MY63 18355 kHz" at 1936, 50 baud (Kuroda, Japan).
18387: PPA24, Interpol, Tokyo, Japan, w/"MGW" or "MG 2424." Was ARQ6-90/200 at 2119, 75 baud (Ed.).
18447.5: 50 baud w msg in FF, ARQ-M2/200 at 1628 (Ed.).
18533.7: "RFLU," French Navy, Fort de France, Martinique, w/"controle de voire," ARQ-E3/100 at 1330 (Ed.).
18600: RWNTZ, PI, Moscow, USSR, w/nx in PP, 50 baud at 1437 (Ed.).
18602: LOL., Buenos Aires Navrad, Argentina, w/unsclas 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: SSG580, PAP, Warsaw, Poland, w/nx in Polish, FEC at ?? (Kuroda, Japan).
18755: JPA24, Interpol, Tokyo, Japan, w/"mgw" 9MW, Kuala Lumpur, Malaysia, FEC at 0115 (Kuroda, Japan).
18768: W1AW, ARRL HQ, Newington, CT, w/a telex to "G7M," poss Bangkok, Thailand, FEC at 2001 (Ed.).
19022: Pakistani Embassy, Kuwait City, w/a "most urgent message" in EE, ARQ at 1452 (Kuroda, Japan). Jett 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/RYYR, SOSG & 10 count to CXT at 2110, 75 baud (Ed.).
19184: Un-ID idling at 1903, ARQ-90/200, then s/off at 1150 w "9 919 926 SSSSS K" (Ed.).
19531.5: AAAUS6A, U.S. Army MARS, Fort Sam Huston, TX, w/MARSgrams to AAAUS06A, 300-baud packet system at 2213 (Ed.).
19582: RFFA, Min. of Def., Paris, France, w/a msg in FF to "RB3" at 1210, 50 baud. Nx in AA began 1215 (Ed.).
19823: PAP, Warsaw, Poland, w/nx in Polish, FEC at 1320.5 (Ed.).
19850.2: GYA, Royal Navy, London, England, w/a test tape at 1453, 75 baud (Ed.).
19851.1: W1-UP w badly garbled ARQ tfc, due to QRN, 1256 to past 1413 (Ed.).
19873.5: HGX21, MFA, Budapest, Hungary, w/nx in Hungarian to HGX52, Washington, DC, at 1409, DUP-ARQ (Ed.).
20022.4: DUFU03, PIAB, Bonn, Germany, w/RYYR 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.).
20095: SX200, ANSA, Rome, Italy, w/nx in FF, 50 baud at 1403 (Ed.).
20091: Former GDR Emb., Havana, Cuba, w/5L mgs, 1318-1327, 75 baud. This xmsn occurred 5 days before German unification (Ed.).
20093: MFA, Warsaw, Poland, w/5F msg to "Trypolis" (Tripoli, Libya), POL-ARQ at 1318 (Ed.).
20123: French embassy? "Entry Tokyo Seoul" foll by 5F grps. Was ARQ-90/200 at 1217 (Ed.).
20179.7: "RFFA," Min. of Def., Paris, France, w/"controle de voire." ARQ-E3/100 at 1210, 50 baud (Ed.).
20190: USAF MARS sta AFA2X0 relaying MARSgrams from AFARM, Rhein Main AB, Germany, 75 baud at 1734. MARSgrams to written by those involved in Operation Desert Shield in Saudi Arabia (Ed.).
20195: USAF MARS sta AFA2X0 w/9570 kHz. Was ARQ-E3/100 at 1435, Packet 300 baud (Ed.).
20181: Un-ID w tfc in PP, ARQ-E/96 at 1622 (Ed.).
20184:5: German Embassy, Managua, Nicaragua, w/encryption to Bonn at 1111, ARQ-E3/96 (Ed.).
22858: "RFHL," French Navy, Noumea, New Caledonia, w/"controle de voire." 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/DKR ID + RYYR (Ed.).
20475.5: Un-ID w/foxes & 10 count. Foxes ended w/"lazy dog's back instead of "lazy dog's back." Was 75 baud at 1633 (Ed.).
20518: Un-ID w encryption, ARQ-90/200 at 1522 (Ed.).
20556.5: "RGFW," MFA, Paris, France, w/5L msg & a telex to "G7M," poss Bangokji, Thailand, FEC-A/96 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: HBO20, MFA, Berne, Switzerland, w/tfc to Mexico w/telexes at 1916, SWED-ARQ (Ed.).
18000: Un-ID USMC MARS sta relaying MARSgrams from USMC MARS sta in Japan, 2033-2100, 75 baud (Ed.).
19012: OST, Oostenende, Belgium, w/telexes, ARQ at 0600 (Kuroda, Japan).
19013.5: OST87, Oostenende, Belgium, w/tf at 1244 (Ed.).
19002: Pakistan Embassy, Kuwait City, Kuwait, w/a very urgent message in EE, ARQ at 1452 (Kuroda, Japan). Jett 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.
Midnight Radio confirms that P.O. Box 109, Blue Ridge Summit, 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 Wierken 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 7351.2 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 Eliza-beth, and that he was Hitler's son, plus similar brilliant things. Off abruptly with no QSL'ing info given.

Hope Radio International was logged by Cronkright on 7390 at 0223. And by Foster on 7392 at 0158-0258 with Phil Music 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 Polio. 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 sapper 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 '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 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 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 Malcolm X, Angela Davis, and other past and present black activists.

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 freepowered WUNS on the air for the first time in order to bring Proctorville, OH area residents emergency information on Ohio River flood conditions. WUNS 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 shortwave broadcaster in order to stay in 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.

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 station on 103.1 MHz at Bay Shore, NY using an antenna far more powerful 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 hop- ping their low power signals 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 pos¬ sible 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
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 "mis-guided, 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, non-commercial, 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 law-breakers 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 call signs 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 sloppy 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 some 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 menacing "naughty kids." Give me a break! 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 FCC has felt it necessary to go to extreme lengths to 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 reasonably barred from becoming licensed.

The time has come to let all - the rich and the poor, the powerful and the powerless - have a say in the management of the public's airwaves. It's time for the FCC to listen to the people and to put the public back in "public broadcasting.

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CIRCLE 83 ON READER SERVICE CARD

RTTY (from page 70)

Baghdad, Iraq, ARQ at 1749 (Ed.).
20669.5: Possibly HBD20, MFA, Berne, Switzerland, w/encryption, ARQ, 1652-1656 (Ed.).
20663.7: "RFV", French Mil., Le Port, Reunion, w/"controle de voix," ARQ-EY at 1009 (Ed.).
20750: 412, UN, Geneva, Switzerland, w/nx in EE, ARQ at 1809 (Ed.).
20754.5: HBC5R, Intl Red Cross HQ, Versoix, Switzerland, w/telex in FP from HNC89A, Geneva, Switzerland, to HRH88, Port-au-Prince, Haiti, for request to select post offices will redeem IRC's, and each. Moreover, they're not that convenient for the station. Local postal offices 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 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, 11066-8 Camino Ruie #174, San Diego, CA 92126.

CB Scene (from page 53)

Erroll Umbels, 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 to 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 operation. 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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