JULY 1996

# CB Radio

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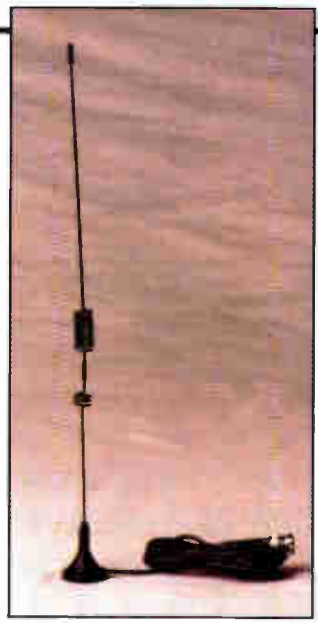

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CIRCLE 117 ON READER SERVICE CARD

*from the Publishers of* POPULAR COMMUNICATIONS

# CB Radio

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## FEATURES



## COLUMNS



## DEPARTMENTS



**This month's cover:** George Ambrose, "Handyman," current President of Emergency Assistance Radio Service, Inc. talks with local members on the radio.(Photo courtesy Larry Mulvehill, WB2ZPI.)

# CB Forum

## EDITORIAL

# Many Hobbies—One Goal

Shame on me. I should be put in solitary and fed old Army C-rations! Why? I'm a CBer, and to make matters worse, I'm also a ham operator—not a REAL ham though, I'm a Technician class ham! In recent months I've become more aware of a certain caste system that essentially lumps CBers at the bottom of the barrel, and places Technician Class hams just a thin hair above CBers. Strange, isn't it? It seems especially strange in this day and age of political-correctness and supposed return to old-fashioned values.

The next time I hear anything that even remotely sounds like, "CBers should study and get their ham license" or "Oh, Techs just have to master the code to be a *real* ham" be prepared for a long sit-down talk. While I don't really take these snide comments personally—and I don't think other CBers and Tech hams do either—it's certainly counterproductive and especially to outsiders listening in, it reflects negatively on all of us. Just ask a few non-hams who tune in from time to time.

Two important points must be made at the onset; first, many CBers are very content to be CBers. There's nothing wrong with that, is there? I also enjoy biking—not to the point where I get into spandex, and pedal faster than expressway traffic at rush hour—nope, I'm just a leisurely biker, and I like it that way. (Besides who would really want to see me in those clothes, anyway?) I have no burning desire to be a stunt person on one of those TV commercials where bikers go flying over rocks, waterfalls, cars and themselves. That's not me.

Same with watching science fiction on TV. Remember, our hobbies are supposed to be fun! I'm too cheap to have cable TV, so I settle for Voyager re-runs (and an occasional new episode). The Trek conventions aren't for me. Too many scary-looking people there. Just give me an hour a week for one program, that's all I ask. My family doesn't prod me about becoming a space shuttle pilot (especially with my sense of direction!) and I certainly have no desire to "upgrade" to a complete collection of Star Trek movies.

My second point is obvious, but must be said. Techs ARE real hams! You and I know the prevailing attitude from all too many people is the "I got mine, now you get yours" syndrome; unfortunately for all of us, too many are stuck in this mind set.

Isn't it interesting that it's also the CBer who gets help when traveling, meets new friends, stays in touch around town, and just plain has fun, too? Our two hobbies are too much alike—each with its own unique benefits—to be trashed by the other. The point is, whatever part of the radio hobby happens to be good enough for *you* shouldn't be judged by someone else, especially to the point of ridicule.

We've all heard the often-flagrant violations of the FCC's rules, including failure to identify and use of far more power than legal. Where? Both on CB AND the ham bands. Sure, some CBers are pretty unique characters, but so are some hams. Interestingly I've found through many hours of *listening* that it's the *new* hams who are very concerned about properly identifying their stations. It's the new hams who are being the most careful not to break the rules and protocol.

When I was a kid (oh boy, here he goes!), Sid, the first CBer I ever met, was so much into CB, I'm not sure what he did for a living; probably something to do with radios, I'm sure. One of the first things he told me was "you should get your ham license." What's wrong with this picture: he wasn't a ham, yet he was encouraging ME to get my ham ticket. Heck, I was having so much fun with CB, why bother? It took me 25 years to get a ham license, and you know what? I'm having a great time. I'm also having a great time on CB, too! And someday after I finish organizing our stuff in the attic and clean the basement, maybe I'll take the time to learn some dits and dahs so I too can become a "real" ham—unless of course the folks in charge completely eliminate the code!

Perhaps something a bit more appropriate for the '90s should be the basis for license upgrades. How about specialized tests? For example, for hams like myself who frequent packet radio, maybe there should be an "X" number of words typing requirement. Maybe there should be a verbal operating skills test for everyone. REACT groups have such classes for CBers who voluntarily assist thousands of us every year on Channel 9. Their ability to handle emergency calls is thereby enhanced. Maybe we hams should do something similar. In the meantime, maybe we can re-discover the common ground we all enjoy; the fun, excitement and challenges of our mutually-beneficial radio services.

## Come Join The Fun

One of the things that I enjoy most about CB radio is meeting people and making new friends. We'll all have a chance to do just that at National Scanning's National Communications Convention being held in Lancaster, Pennsylvania from July 12–14. Dozens of seminars on scanning, CB and ham radio are on tap. Best of all we'll be able to meet you in person and talk about CB radio.

Make a point of calling 610-273-7823 to register. It's only $10 in advance ($15 at the door). For room reservations contact the Lancaster Host Hotel and Conference Center on Route 30 in Lancaster at 1-800-233-0121.

See you in Lancaster!

Harold Ort




*A publication of*
CQ Communications, Inc.
76 North Broadway
Hicksville, NY 11801-USA.

Offices: 76 North Broadway, Hicksville, NY 11801. Telephone: (516) 681-2922. FAX: (516) 681-2926. CB Radio maazine (ISSN 1086-0991) is published monthly by CQ Communications, Inc. Second Class postage pending at Hicksville, NY and additional offices. Subscription prices (all in U.S. dollars) Domestic-one year $21.95, two years $39.95, three years $59.95; Canada/Mexico-one year $31.95, two years $59.95, three years $89.95; Foreign-one year $33.95, two years $63.95, three years $95.95; Foreign Air Mail-one year $81.95, two years $159.95, three years $239.95. Entire contents copyrighted 1996 by CQ Communications, Inc. CQ Communications, Inc., has extended its best efforts to create a useful and accurate CB Radio magazine. We recognize, however, that despite this, errors and omissions may occur. Should any be observed, please inform us so that we may correct them in the next edition. CQ Communications, Inc. disclaims any and all liability resulting from such errors or omissions.

Printed in the United States of America.
Postmaster: Please send change of address to CQ Communications, Inc., 76 North Broadway, Hicksville, NY 11801.

# Mail Call

## LETTERS TO THE EDITOR

## Helping Bill Get Through the Day

**Dear Editor:**

The first issue was a BIG disappointment! This magazine should have been named RadioShack/Cobra-Maxon magazine. . . . some of the articles were reprints from older issues of other magazines, some were even in two issues of different magazines at the same time!

Your reviews at best were wrong! You must have received the only decent 2010 GTL Maxon sent out. Your magazine did us NO favors, with your economically-based reporting. I was ecstatic when I first heard about your new title. I waited with baited breath for the release date. I pestered the WaldenBooks clerks everyday until the issues arrived, then I was supremely disappointed by the failure of the magazine to provide the national vehicle we had hoped so badly for.

If you want to make a success of this mag, then you have to start providing truthful, insightful info to us.

Bill, KB9KHF

**Bill:**

Sounds to me like you've taken one too many tumbles off the roof while fixin' your antennas! Maybe I can help set the record straight, though.

Let's think about this for a moment; Hmmm, maybe you're talking about a magazine I've never seen, because frankly none of the articles in either the *Popular Communications Guide*, *CB Buyer's Guide* or *CB Radio* magazine are repeats as you allege. Sure, we've run the "glossary" a couple of times, but that's something we're doing deliberately so folks can learn a few of the buzz words. That's based on the assumption that not everyone who picks up a particular issue has seen an earlier issue.

To be sure Bill, there WILL, from time to time, be variations on a theme; for example, as folks ask for more articles on antenna construction, safety, grounding, batteries, propagation, getting help on Channel 9, etc., we'll be running those articles and mentioning these things in columns. What may appear to be "repeats" to you, will probably be welcome information to other readers. Can we keep everyone happy all the time? I doubt it. But we'll certainly be trying real hard to present new ideas and information to a great bunch of readers who love CB Radio.

Our Product Spotlights are NOT done to satisfy anyone except the reader. When we look at a product we give it a pretty good check up. If we happen to get a good one to look at, fine. If it turns out to be a dog, we'll let the manufacturer know that, too. And in the process, with the goal of being true to our readers, we'll let them know of any *across-the-board* problems we find. We'll also talk about the good points, and quirks too. You should realize that any time anyone does a "review" they're opening themselves up for all kinds of criticism; I've heard most of the complaints, including, "I wouldn't buy brand XXX if it were half price," to "We got two truckloads of XXX antenna and it was missing parts," I say, oh baloney! We put the radios, antennas and accessories through the same rigors a typical user would—maybe even more so because we try not to leave any stone unturned, lest someone says, "But you didn't talk about the beautiful brushed aluminum cabinet." We do this without regard to advertising or any other outside influence. (OK, sometimes Nancy pushes me over the brink because she's curious about a particular mobile CB or antenna!)

You obviously encountered a problem that you should have (and hopefully did) get corrected with the manufacturer. I hope you contacted the right one! In the meantime, please understand that your findings, criticisms, likes/dislikes, etc. might not be the same as someone else—mine included!

We sincerely appreciate your persistence in getting your first *CB Radio* magazine and trust the folks at WaldenBooks now recognize you from across the parking lot! Thanks for your letter, Bill.

## To Use Or Not To Use

**Harold:**

Tom Kneitel says that 23 channel radios "can't legally be used any longer . . ," and elsewhere Bill Price says that Al Butler has a 23 channel transceiver in his pickup and Bill admits to using it to contact another CBer. Please, what's the story on this?

Don Craig, NY

**Well, Don** we contacted the FCC after reviewing Subpart D, Part 95 which states, "What equipment may I use at my CB station? (a) You must use an FCC type accepted CB transmitter at your CB station. You can identify an FCC type accepted by the type acceptance label placed on it by the manufacturer. You may examine a list of type-accepted equipment at any FCC Field Office or at FCC Headquarters. Use of a transmitter which is not FCC type-accepted voids your authority to operate the station." The rule goes on to explain that you can't legally use any equipment that has been internally modified.

The problem with many of the old 23 channel transceivers is that they have possibly been modified—in some cases by untrained "technicians". So questions of frequency stability, power, etc. naturally arise.

After calling Uncle Charlie (I finally reached a human voice!) in Buffalo, New York, Ed Kelly sent me a copy of Public Notice 96235 dated January 30, 1978 that reads in part, " . . .CBers may continue to operate their 23 channel equipment. However, no one may sell, ship for sale, or lease equipment failing to meet the new CB standards (those that became effective July 1976, ed.) . . . In an effort to provide guidance to the CB community and to the public in general, answers to some of the typical questions are repeated below: 1. May I still use my 23 channel set after January 1, 1978? Yes. 2. May I now sell my 23 channel set to—a dealer?,—a friend?—any other individual? No. CB sets failing to meet the new standards which includes all of the currently available 23 channel models, cannot be sold at any level, including wholesale, retail, or individual selling even on the used market."

For the first time in my life all I can add to that is "no comment."

**Dear Editor:**

Nice job on your new endeavor—*CB Radio*. I'm a ham operator (K2EAI) with a general class license and I find your articles very informative as "Pop-Comm" also is. I'm writing regarding your article on the PRO-2038 in April's magazine. I know it has a major unmanageable problem. I am an ardent listener of the Buffalo International Airport activities. The problem: you cannot lockout or squelch out frequencies which the scanner hits in this mode. You have to keep on pushing the scan button to keep it going for "your" airport's particular frequencies as it is PRE-PROGRAMMED at the factory and the microprocessor will stop at all the pre-programmed frequencies for airports all

*(Continued on page 82)*

# Emergency Assistance Radio Service, Inc.: CBers and Hams Working Together

## The story of a unique Florida group that helps their Florida community in emergencies . . .

**BY GEORGE AMBROSE, KD4INY, AKA HANDYMAN**

There is an organization based in Palmetto, Florida that takes advantage of CB and GMRS capabilities in addition to amateur radio to assist with disaster or emergency communications. The name of the organization is Emergency Assistance Radio Service, Inc. or E.A.R.S., Inc. for short. It's a not-for-profit organization that's there on a local or regional scale for any requesting governmental or relief agency.

E.A.R.S. was the brainchild of two individuals who will always be CBers at heart; Richard "Rick" Bouknight, KE4LFC, (aka Tin Bender) and me, George Ambrose (aka Handyman). We both became more determined to form such an organization after having an application turned down for a REACT charter locally in Manatee County, Florida because an existing REACT Team in the county known as West Central Gulf Coast REACT Team and 4,888 objections to the approval of another local charter.


(Photos by Harold Ort)

*E.A.R.S. members (left to right) Jim Traeger, George Ambrose, Craig Kirk, Jake Culbreath, Ginny Benjamin stand by the communications van parked at the Tampa Hamfest in November.*

### Overcoming the Odds

E.A.R.S. has had to overcome some astronomical odds to become the organization it is today. It has signed agreements with many of the surrounding ARES/RACES Emergency Coordinators and several amateur radio clubs to pool resources together in times of disaster or emergency. Fred Nassar, KD8AQ, Hillsborough County ARES/RACES Emergency Coordinator said, "It's sure a lot easier to contact one individual and have an entire organization respond, than make several phone calls." Fred also agrees that the potential offered by CBers during times of disaster or emergency should not be overlooked. Neil Lauritsen, KA3DBK, the Pinellas County ARES Emergency Coordinator is also pleased with the good working relationship shared with E.A.R.S. Mr. Lauritsen received a request to provide a team of communicators during the aftermath of Hurricane Opal—E.A.R.S. responded with six operators. Upon arriving at his home to pick up the necessary permits authorizing entrance into a devastated area, he informed us the request for communicators was canceled, but he was also very apologetic because of the cancellation, emphasizing that E.A.R.S. was ready, willing and able to respond on short notice.

On the other side of the coin, Charles Brooks, N8EHZ, the local emergency coordinator for Manatee County doesn't recognize E.A.R.S. as having any potential during times of emergency because we have CBers as full-fledged members. Mr. Brooks and Brian Sharkey, a local emergency operations center government employee, have stated that in order for any member of E.A.R.S. to provide any emergency assistance communications in Manatee County, members must join the Manatee County ARES/RACES organization. This is the main reason E.A.R.S. solicited other county officials, none of whom seem to have a problem that we have CB people as members, to assist them in times of need. When E.A.R.S. provides assistance to any organization they are subject to the emergency coordina-

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- **GM-550G**

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- **GM-550K**

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- **KW-220H**

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- **KW-330G**
- **KW-220G**

Carrier stay Type
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Covering: Freq: 3.5-150MHz

### EM-500

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Freq:
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*George Ambrose uses the E.A.R.S. Cobra 29 LTD Classic.*

tor of the specific geographical area where assistance is provided.

## Excellent NWS Relationship

The National Weather Service (NWS) located in Ruskin, Florida and E.A.R.S. share an excellent working relationship. The NWS sponsors a program called "Skywarn" which is a severe weather spotting and reporting program consisting mostly of amateur radio operators. Skywarn is open to amateur and non-amateur radio operators alike, provided the interested individuals have completed the training classes conducted by the NWS and by passing a 10-question open book test. This could be something REACT Teams all across America would like to take advantage of. REACT Teams located in Florida could provide valuable information to the NWS by becoming involved in the Skywarn program. I would recommend phoning your local NWS office and speaking with the Warning Coordination Meteorologist to schedule a Skywarn Spotter class. Using our 35-foot travel trailer as a base of operations, we have coordinated Skywarn classes for several of the local Crime Watch groups. Recently we added another 17 members to the Skywarn Spotters Program.

## The Base of Operations Trailer

E.A.R.S. utilizes a 35-foot travel trailer as a base of operations for doing extended setups. We have a Cobra 29 LTD Classic which is tuned to key 4 watts with 12 watts PEP fed into a Solarcon A-99 coupled to a 40-foot telescoping mast. The masts are held in place via quick-disconnecting hardware that's permanently mounted to the sides of the trailer. We also are GMRS capable with 40 watts, if needed.

In addition to our base of operations trailer, several members of the organization have set up their vans and pickups with telescoping masts for antennas, to assist with communications during emergencies. Terry Harlin's KD4JIP (aka Hot Dog) Ford has caused many heads to turn for a second take because of all the antennas mounted on the roof. Terry has his van set up with CB, VHF, UHF and amateur TV. He regularly transmits ATV for the organization. To the best of our knowledge E.A.R.S. is the only organization in the entire state of Florida that transmits a net in living color over cable TV (CATV) channel 59, which lies within the low portion of the 70 cm amateur band. A cable ready TV and an external antenna pointed in the direction of his van will receive the ATV transmissions. This has definitely helped spark the interest of many individuals.

## Providing Assistance

Most holidays we do a setup with our trailer to provide motorists assistance, passing on any reports of emergencies that come in via radio to the proper local authorities. We have set up in a local Wal-Mart parking lot during the Thanksgiving weekend, demonstrating the value of various radio services. We even sent several NTS messages via amateur radio and received emergency calls ranging from a child riding a bike getting struck by a car, to reporting vehicle accidents.

Cindy Rudolf (aka Lady Rabbit), a CBer and member of the Board of Directors of E.A.R.S. says it makes people feel good inside when they respond to a call for help that saves a life. Cindy regularly monitors Channel 9 on her base station. She is also treasurer for the organization.

Patti-Jo Tabor, KE4DIX (aka Baby Doe), has phoned in many reported accidents received via the CB. Patti-Jo is also the Net Control Operator for the E.A.R.S. YL (Young Ladies) Net, which is held each Sunday evening at 7:30 p.m. local time on the 147.045 repeater located at the Manatee Area Vocational-Technical Center in Bradenton. She has successfully completed the school's second year Electronics Repair Course.

Members like Jim Traeger, KE4YDJ and James (Jake) Culbreath, KE4MPS and Craig Kirk, KE4TSV are always willing to add whatever extra effort is needed to make any mission we undertake a complete success. Other members participate to the greatest extent possible whenever they can; and pay their dues to support the organization and help with the upkeep and maintenance of the organizational amateur band repeaters.

We closely monitor the newly-issued callsigns from the FCC for new hams. When we notice a local ham that has been issued a new callsign, we call to ask them if they are interested in learning what their new callsign is. As you'd expect, they're always anxious to learn it—and at the same time we tell them that they are legal to go on the air immediately! This service has resulted in several individuals joining our organization.

## CBers To The Rescue!

We have been labeled as "just a bunch of CBers" by some of the older hams that don't like change. Little did they know that I had attended several meetings of various radio clubs, so when we decided to form E.A.R.S. I patterned our organization after the Sarasota Amateur Radio Association (one of the best-run clubs in Florida. I have also had several people tell me that CB and amateur radio can't be mixed and expected to get along together, but in my opinion only a small, narrow-minded individual would make such a statement. One thing is for sure, when a disaster strikes, you utilize every Coke can and piece of string you can lay your hands on to accomplish the mission.

***Editor's note:*** *We know that there are many more volunteer groups like E.A.R.S. all over North America. Why not tell us your story?* ■

# Hurricanes—The Greatest Storms on Earth

## Don't let complacency or delayed action cost your life—be prepared and keep your CB and NOAA radio at your side . . .

**BY THE NATIONAL WEATHER SERVICE**

Ask coastal residents from Texas to North Carolina, and even Rhode Island about the power unleashed by hurricanes. With sustained winds from 75 to over 155 mph, these tropical cyclones generate violent seas, spawn tornadoes, produce torrential rains and floods, leaving a path of death and destruction in their wake.

Hurricane season is considered to begin on June 1 and continues through November; with most hurricanes occurring from August through October.

Hurricanes consist of high-velocity winds blowing circularly around a low-pressure center. Originating within a narrow equatorial band lying between the northwest and southeast trade winds, they occur when a low-pressure center develops when warm, saturated air is overrun by more dense, cooler air. They originate from tropical disturbances coming off the coast of Africa, and generally move in a path from east to west, and then curve upward on a northerly course once in the Caribbean Sea.

Today, radar, geosynchronous weather satellites and other devices supply valuable data to the National Hurricane Center in Florida which now follows each storm from the beginning. While accuracy of hurricane forecasting has improved greatly in recent years, these storms are still very difficult to predict with certainty. Therefore they must be watched carefully throughout their destructive courses.

Most damage occurs from the storm surges which inundate low-lying areas. Winds over 200 mph can occur; such as with Hurricane Gilbert, which devastated Jamaica and parts of Mexico in 1988 with wind gusts up to 218 mph. More recently, Hurricane Andrew slammed into south Florida as the most destructive storm in U.S. history with sustained winds of 145 mph and gusts over 175 mph. It annihilated homes and businesses along a 30-mile stretch through the Dade County towns of Homestead, Leisure City, Goulds, Princeton, Naranja, and Florida City. When it was over, more than 60,000 homes were destroyed and 200,000 people were left homeless.

Hurricanes are ranked on the five-point Saffir/Simpson hurricane Scale, an index relating hurricane intensity to their damage potential:

**Category 1:** Winds of 74–95 mph. Damage primarily to shrubbery, trees, foliage and unanchored mobile homes. No real damage to other structures. Some damage to poorly-constructed signs. Storm surges 4–5 feet above normal. Low-lying coastal roads inundated, minor pier damage and some small craft in exposed anchorages torn from moorings.

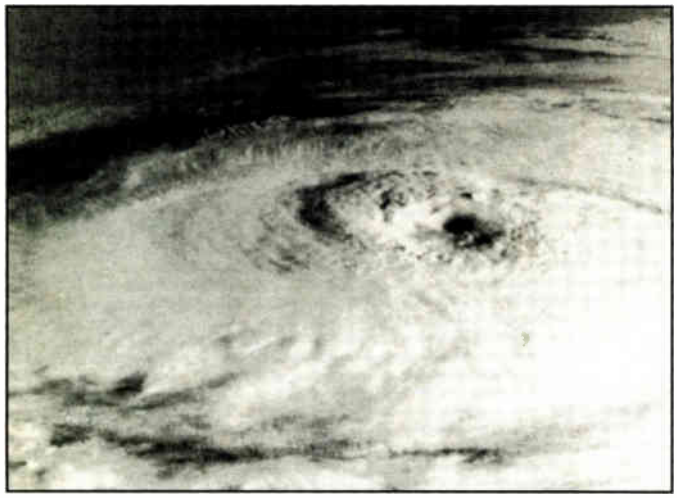
**Category 2:** Winds of 96–110 mph. Considerable damage to shrubbery and tree foliage, some trees blown down. Major damage to mobile homes and some to roofing materials, doors and windows of other buildings, but no major structural damage to buildings. Storm surges 6–8 feet above normal. Coastal roads and inland escape routes cut by rising water 2–4 hours before the arrival of storm center.

*Tornadoes are often spawned by hurricanes. Their destructive fury should never be underestimated. (La Place, LA/NOAA)*

**Category 3:** Winds of 111–130 mph. Foliage torn from trees, large trees blown down. Some structural damage to small buildings, mobile homes destroyed. Storm surge 9–12 feet above normal. Larger structures near the coast damaged by battering waves and floating debris. Coast and flat terrain five feet or less above sea level flooded inland for eight miles or more.

**Category 4:** Winds of 131–155 mph. Signs, shrubs and trees blown down. Extensive damage to roofing materials, windows and doors. Extensive and complete failure of roofs on many small structures. Storm surges 13-18 feet above normal. Flat terrain 10 feet or less above sea level flooded as far as six miles or more inland. Major beach erosion and massive evacuation of all residents on low ground within two miles of shore and all within 500 yards of shore probably required.

**Category 5:** Winds above 155 mph. Considerable damage to roofs of buildings, trees, shrubs and all signs blown down. Complete failure of roofs on many residences and industrial buildings. Extensive shattering of glass in windows and doors. Complete building failures, small buildings overturned or blown



*1988's Hurricane Gilbert and its well-defined "eye."*

away. Storm surges above 18 feet. Major damage to lower floors of all structures less than 15 feet above sea level within 500 feet of shore. Massive evacuation of residential areas on low ground within 5–10 miles of shore probably required.

## Being Prepared for the Worst—*Before* It Happens!

Each year on average, 10 tropical storms (of which six become hurricanes) develop over the Atlantic Ocean, Caribbean Sea or Gulf of Mexico. Many of these remain over the ocean, however about five hurricanes strike the United States coastline every three years. Of these five, two will be major hurricanes. While timely warnings have greatly diminished hurricane fatalities in the U.S., property damage continues to climb. There is little we can do about the hurricanes themselves. However, NOAA's National Hurricane Center and National Weather Service field offices team up with other federal, state, and local agencies; rescue and relief organizations; the private sector; and the news media in a huge warning and preparedness effort.

With hundreds of National Weather Service transmitters around the country, each with a typical range of more than 40 miles, nearly every community is within reach of the NOAA weather broadcasts. Your best investment—a true lifesaver—is a simple NOAA weather radio, handheld scanner, or NOAA-equipped CB radio (preferably a handheld). Your National Weather Service recommends purchasing a radio that has both a battery backup and tone-alert feature which automatically alerts you when a watch or warning is issued.

Here's what you should be listening for as severe weather approaches your area:

• **Tropical Storm Watch:** Tropical storm conditions are POSSIBLE in the specified area of the Watch, usually within 36 hours.

• **Tropical Storm Warning:** Tropical Storm conditions are EXPECTED in the specified area of the Warning, usually within 24 hours.

• **Hurricane Watch:** Hurricane conditions are POSSIBLE in the specified area of the Watch, usually within 36 hours. During a Hurricane Watch, prepare to take immediate action to protect your family and property in case a Hurricane Warning is issued.

• **Hurricane Warning:** Hurricane conditions are EXPECTED in the specified area of the Warning, usually within 24 hours. Complete all storm preparations and evacuate if directed by local officials.

• **Short Term Watches and Warnings:** These provide detailed information on specific hurricane threats, such as tornadoes, floods and high winds.

Get ready well before hurricane season by knowing the hurricane risks in your area, or the area you're visiting.

- Learn safe routes inland.
- Learn the location of official shelters.
- Review needs and working condition of emergency equipment; CBs, flashlights, battery-powered radios, etc.
- Ensure that enough non-perishable food and water supplies are on hand.
- Obtain and store materials, such as plywood, necessary to properly secure your home.
- Clear loose and clogged rain gutters and downspouts.
- Keep trees and shrubbery trimmed.
- Determine where to move your boat in an emergency.
- Review your insurance policy.

## During The Storm

If you're in a Watch Area, frequently listen to radio, TV or NOAA Weather Radio broadcasts for official bulletins of the storm's progress. Now is the time to fuel and service your vehicle and inspect and secure mobile home tie-downs.

Remember those materials you've stored for such an occasion? Now is the time to think about covering all window and door openings with shutters or other shielding material. Talk with your neighbors and check on the elderly/disabled to ensure their safety and well being during the storm.

Flying debris poses an especially dangerous threat during high winds, so prepare to bring inside lawn furniture and other loose, light-weight objects, such as garbage cans, garden tools, etc.

It's also important to have an extra supply of cash on hand; you'll probably need that money if you're evacuated to an official shelter should the Watch area develop into a Warning.

## When It Becomes a WARNING, Leave Immediately When Told To!

Don't *think* about evacuating when ordered to do so, ACT! Bring along a first-aid kit, baby food and diapers, cards, games, books, toiletries; battery-powered radios, flashlights (one per person); extra batteries, blankets or sleeping bags; identification, valuable papers (or keep them stored in a safe deposit box), and cash. Before going to a shelter, try to notify neighbors and a family member outside the warned area of your evacuation plans.

As much as you'd like to take your pet with you, public health regulations do not allow pets in public shelters, nor do most hotels/motels, so put food and water out for a pet if you cannot take it with you.

Remember, only stay in a home if you have NOT been ordered to leave. Stay inside a well constructed building. In structures such as a home, examine the building and plan in advance what you will do if winds become strong. Strong winds can produce deadly missiles and structural failure. Other things you should do are:

- Turn the refrigerator to maximum cold and open it only when absolutely necessary.
- Turn off utilities if told do so by authorities.

# HURRICANE TRACKING CHART

**REMEMBER,** hurricanes are large powerful storms that can suddenly change direction. Check frequently on the storm's progress until all Watches and Warnings for your area from the National Weather Service are canceled.

**HURRICANE WATCH:** hurricane may threaten within 36 hours

- Be prepared to take action if a warning is issued by the National Weather Service.
- Keep informed of the storm's progress

**HURRICANE WARNING:** hurricane expected to strike within 24 hours

- Leave beachfront and low-lying areas
- Leave mobile homes for more substantial shelter
- Stay in your home if it is sturdy, on high ground, and not near the beach, but if you are asked to leave by authorities, Go!
- Stay tuned to radio, NOAA Weather Radio, or television for hurricane advisories and safety information.

NOAA/PA 77020

**Plotting A Storm**

Hurricane center positions are given by latitude and longitude. For example: 'the storm's center is located near 41.5 degrees North and 63.0 degrees West.' On the chart, read North to 41.5 degrees and then West to 63.0 degrees as shown below.

63.0° W

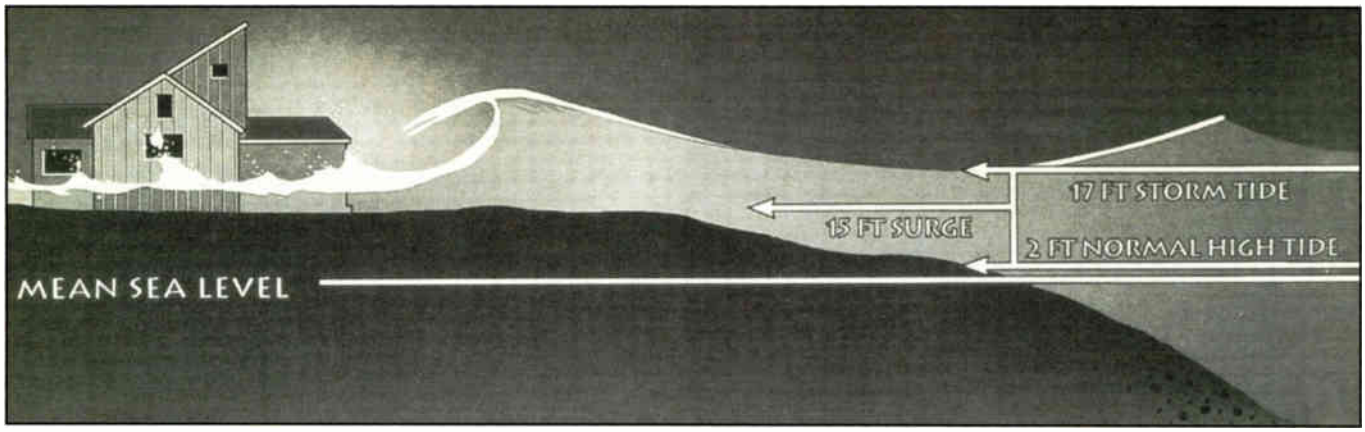
41.5° N

NEW BRUNSWICK
NOVA SCOTIA
Portland
Boston
New York
Block Island
Atlantic City
Washington
Norfolk
Cape Hatteras
Wilmington
Charleston
Savannah
Bermuda
Jacksonville
Mobile
Gulfport
Pensacola
Baton Rouge
Lake Charles
Galveston
New Orleans
Apalachicola
Tampa
Cape Canaveral
Corpus Christi
W. Palm Beach
Ft. Myers
Miami
Brownsville
Nassau
Key West
BAHAMA ISLANDS
Havana
MEXICO
Tampico
CUBA
Camaguey
Merida
Cozumel
Campeche
YUCATAN PENINSULA
Veracruz
Guantanamo
Grand Cayman
DOMINICAN REP.
Port-au-Prince
VIRGIN ISLANDS
San Juan
Anguilla
JAMAICA
HAITI
Kingston
Santo Domingo
PUERTO RICO
St. Christopher
Antigua
Acapulco
Belize City
Swan Island
BELIZE
Guadeloupe
Dominica
GUATEMALA
Puerto Cortés
Cape Gracias
HONDURAS
Martinique
St. Lucia
EL SALVADOR
St. Vincent
Barbados
NICARAGUA
San Andres
Curacao
Grenada
Trinidad
Tobago
COSTA RICA
VENEZUELA
PANAMA
Balboa
COLOMBIA

105° 100° 95° 90° 85° 80° 75° 70° 65° 60° 55° 50° 45°

45° 40° 35° 30° 25° 20° 15° 10°

*Photocopy this NOAA Hurricane Chart to track hurricanes as they make their way toward land. (Courtesy NOAA)*




*If the storm surge arrives at the same time as high tide, the water height will be even greater. The storm tide is the combination of the storm surge and the normal astronomical tide. As the hurricane moves ashore in the above example, a 15-foot surge added to the normal two-foot tide creates a storm tide of 17 feet. This mound of water, topped by battering waves, moves ashore along an area of the coastline as much as 100 miles wide. The combination of the storm surge, battering waves and high winds is deadly. Over 6,000 people were killed in the Galveston Hurricane of 1900—mostly by the storm tide! And Hurricane Camille in 1969 produced a 25-foot storm tide in Mississippi. (Courtesy NOAA)*

- Turn off propane tanks.
- Unplug small appliances
- Fill the bathtub and several large containers with water for sanitary purposes.

## If Winds Become Strong

Even if they are covered, stay away from windows and doors. Take refuge in a small interior room or hallway. And close all interior doors. You should also secure and brace external doors.

In a two-story house, go to an interior first-floor room, such as a bathroom or closet. In a multiple-story building and away from the water, go the first or second floors and take refuge in the halls or other interior rooms AWAY from windows, lying on the floor under a table or other sturdy object, if possible.

## Be ALERT for Tornadoes and the Storm's Eye

Deadly tornadoes are often spawned by the hurricane. Keep hour NOAA weather radio and handheld NOAA-equipped CB handy to communicate with neighbors and your family. Be alert for the calm "eye" of the storm; when it passes, the winds change direction and quickly return to hurricane force!

After the storm passes, keep listening to the radio. Wait until an area is declared safe before entering; there will be downed power lines, and numerous other dangerous conditions including flooded and washed out roads, weakened bridges, possible contaminated tap water and even broken gas lines. Avoid using candles or other open flames indoors. Use your flashlight to inspect for damage.

If you're able to get back into your home, check gas, water and electrical lines and appliances for damage. Stay on firm ground! Moving water only six inches deep can sweep you off your feet. Standing water may be electrically charged from underground or downed power lines.

Remember, listen to your local officials and NOAA weather radio for the most detailed storm related information—before, during and after the hurricane. Your ultimate survival, and that of your family and friends depends on your preparation and effective use of your battery operated radios, CB and NOAA radio; and your common sense! ■


*This Cobra 93 LTD WX base station is a compact NOAA-equipped (and includes NOAA alert tone!) CB that comes in handy during emergencies. Other CB transceivers, including handheld models also receive NOAA weather broadcasts. (Courtesy Cobra Electronics Corporation)*

### 1996 Atlantic Tropical Cyclone Names

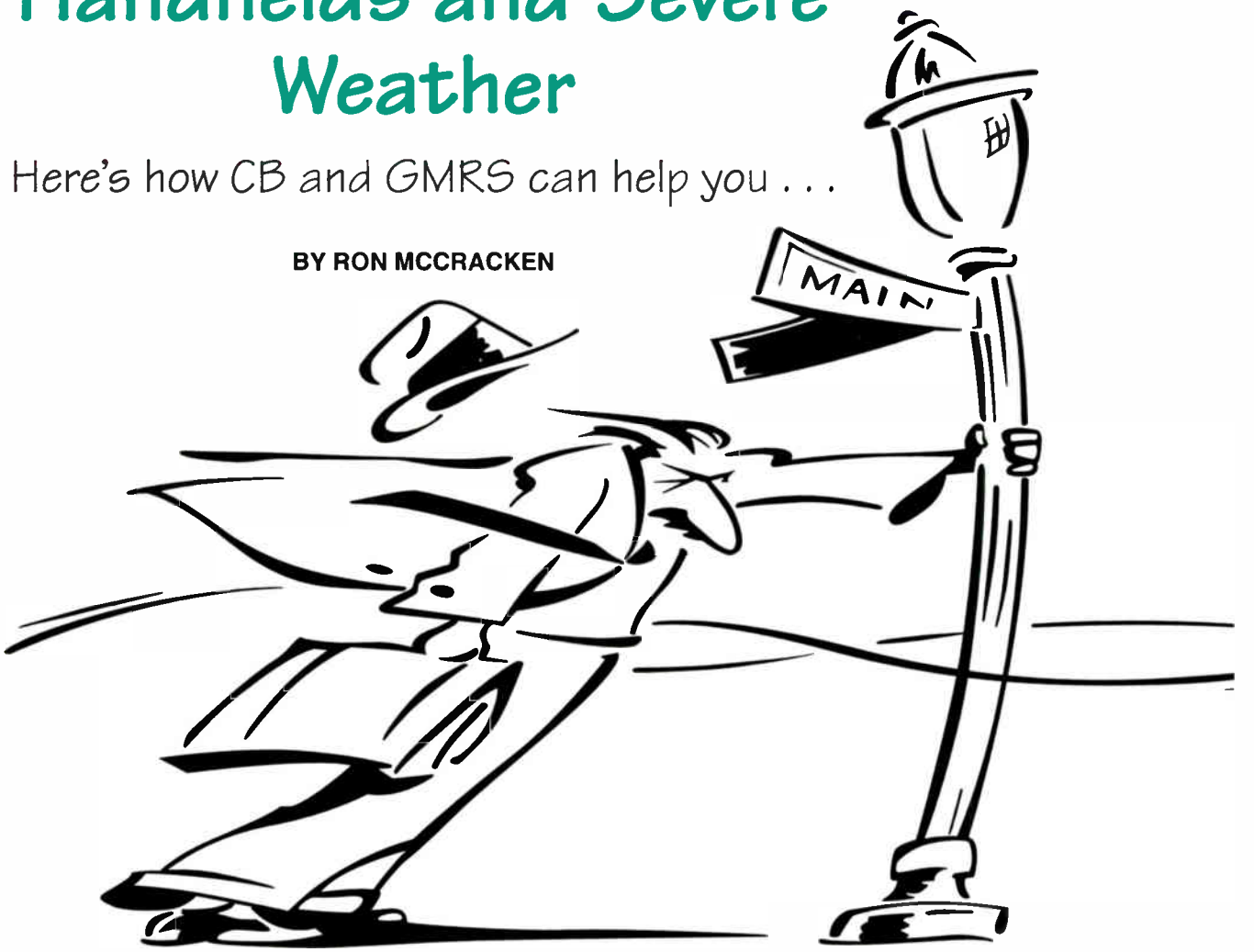
| | | | |
|---|---|---|---|
| Arthur | Gustav | Lili | Rene |
| Bertha | Hortense | Marco | Sally |
| Cesar | Isidore | Nana | Teddy |
| Dolly | Josephine | Omar | Vicky |
| Edouard | Kyxonle | Paloma | Wilfred |
| Fran | | | |

**Note:** The practice of naming hurricanes solely after women came to an end in 1978 when men's and women's names were included in the Eastern North Pacific storm lists. In 1979, male and female names were included in lists for the Atlantic and Gulf of Mexico.

# Handhelds and Severe Weather

## Here's how CB and GMRS can help you . . .

BY RON MCCRACKEN




Severe spring and summer weather means power and communications outages. For the wise CB or GMRS operator, it can be a different scenario, though.

The most terrifying element in any disaster is not knowing what's happening around you. That knowledge can help you protect your own family. Even a few moments of advance warning can let you take life-saving actions.

### Reality Check

Planning is the key. Prepare well ahead—NOW! Plenty of information is available from the Red Cross, Salvation Army, FEMA, your local emergency management office and other sources.

Power blackouts are a virtual certainty. Having a portable AM/FM radio is essential. Not only can it bring you important bulletins about the situation, but it lets you conserve vital battery power in your CB or GMRS radio. Choose that AM/FM portable carefully for maximum usefulness. I recently saw a Sony model that offered AM/FM, plus TV audio and even weather radio. Another useful possibility would be an AM/FM/SW radio to bring in reports from beyond your affected area. You know your own needs and preferences best, so check out the various configurations of portable radios carefully, but do it early.

A reminder: if your AM/FM radio has a 110 Vac power cord tucked in the back compartment use it during *non-emergencies*, but *always* have a fresh set of alkaline batteries in the battery compartment. While this may seem like common sense, all too often folks use the batteries for day-to-day radio listening, then when a weather emergency occurs, their batteries may only last about an hour or so! Think ahead!

### Space Problems

Safety officials warn us to find a small, secure, strong space in which to ride out a hurricane or severe weather situation. That means you will want SMALL pieces of radio equipment in that confined area. You will also want a good supply of fresh alkaline replacement batteries with you.

Battery requirements are a factor to consider as you buy radio equipment. You want only one (preferably) or two battery sizes involved. This simply means you'll only need to stock one or two sizes in your limited space. It also means that in a worst case scenario, you can switch batteries between various pieces of equipment to extend their usefulness. Needless to say, your stock of batteries should *always* be alkalines for this application.

### Handhelds Are Ideal!

Confined quarters dictate that CB or GMRS radios will need to be small. Handhelds are the logical choice. Many of the latest CB handhelds offer National Weather Service (NOAA) broadcasts, a highly desirable feature if you live in hurricane or tornado alleys.

Avoid the temptation to use your CB or


*Your handheld CB, such as this Cobra HH 35-WX can be a lifesaver during severe weather. It receives NOAA weather broadcasts and features a BNC antenna connector. (Courtesy Cobra Electronics)*

GMRS unless it is absolutely necessary. Discipline yourself to conserve that precious battery energy for critical situations that may develop later. Rely on your AM/FM radio as much as possible to keep you informed.

If your AM/FM unit fails and you must use CB or GMRS to receive information, ration yourself. Again, discipline yourself to MONITOR only, since that requires minimal battery drain. Allow yourself five minutes per hour maximum. Remember, the battery life you save now can save your life later. This is *serious* business.

## Antennas Count

Another important ingredient in your choice of a handheld is its antenna connection. Newer CB handhelds provide BNC or similar connections.

Why does this matter? It allows you to connect your handheld to your vehicle's CB antenna system. When the "all clear" has been given or you sense it is safe to leave shelter, you can utilize your vehicle's much more powerful antenna for greater range. The vehicle battery may be dead, but your handheld has its own power. Just remember to limit yourself to short bouts of monitoring.

If your vehicle has a magnetic-mount antenna, remove and store it inside the vehicle before the storm to protect it. Afterwards, it should be in good condition and ready to work for you.

Your base antenna, if it survives the storm, can be used in a similar fashion with your handheld until the utilities are restored. New handhelds like the Cobra HH-35 and others multiply your options in emergencies. When the chips are down, the more flexibility your CB and GMRS equipment gives you, the safer you are.

## Getting Help

All this advance planning and conserving pays off instantly if a personal emergency arises during the severe weather. If you do suddenly need help, you want that handheld to put out the strongest signal possible.

Conserving matters now more than ever. Planning can help gain. Write down a basic distress call in advance. Keep it with your handheld in your emergency kit. Teach family members to use it and the radio. You may be unavailable or even incapacitated.

Distress messages MUST state: WHO you are, WHERE exactly you are, and WHAT is wrong. Your pre-planned, written distress message can cover the first two (prepared while you are calm) to ensure their accuracy. Only the third need be added in the stress of an emergency. Simply read the prepared distress message and add WHAT is wrong. REACT, police or other monitors should hear something like this from you:

**"Emergency. Any station. This is (ID). We are at (street address) in (town AND state)." Describe WHAT is wrong (severe injury, heart attack, etc.) End with "Please notify police."**

Broadcast your distress message over and over several times on CB emergency

*The ideal CB walkie talkie will have a BNC antenna connector on top. This way, you can easily remove the rubber duck and by using a simply SO-239/BNC adapter, use your mobile antenna.*

*The power is out, but you're prepared with plenty of fresh alkaline batteries in your portable radios and flashlights, right? (Photo by Jennifer Ort)*

*Store your magnetic-mount antenna in your car during emergencies. It's safe and will be ready when the "all clear" is sounded. Remember, your big base antenna may be in pile of debris after a severe storm. Remember, your mag-mount CB antenna will work just fine attached to metal steps, or other metal object. (Courtesy RadioShack)*

Channel 9 or on GMRS 462.675 MHz, slowly and clearly. Realize that *you may be unable to hear monitors replying*, but your signal may be heard in states far away. They CAN relay it back to local authorities as long as it is clear, complete and correct. This is why writing it out is such a worthwhile safeguard.

Next, check for any local CB channel in use. At a break in the conversation, broadcast your entire distress message several times on that channel. Eventually return to Channel 9. Announce each channel change so monitors can follow you. THIS IS VERY IMPORTANT!

Discipline is the key in severe weather disasters. Lack of it can cost lives, needlessly. Handhelds offer distinct advantages in these situations, if you discipline yourself to use them effectively. Planning makes that discipline easier.

Plan NOW while you have the advantage over Mother Nature! ■

## Is Helping Others For YOU?

**BY RON McCRACKEN**

Do our reports make you want to get involved in REACT? Do safety communications fit your reasons for owning a CB radio? Would you like to help extend the REACT safety network a little further?

Talk to a few of your CB friends. Share with them the stories here that interest you the most. When you're ready, contact REACT HQ for more details on forming a Team. Help make travel safer for all!

Call 316-263-2100 or fax 316-263-2118. E-mail: react@wichita.fn.net, or mail your letter to Box 998, Wichita, KS 67201.

# Taking the Mystery Out of Antenna Tuners

## It's one accessory that will come in handy for many years . . .

**BY JOHN PHILLIPS**

An antenna tuner, also called a "matchbox" by many CB operators, is one of the most useful tools a radio enthusiast can have, yet it may be one of the least understood accessories available to the CBer. The following information will de-mystify and give a better understanding of this valuable communications accessory.

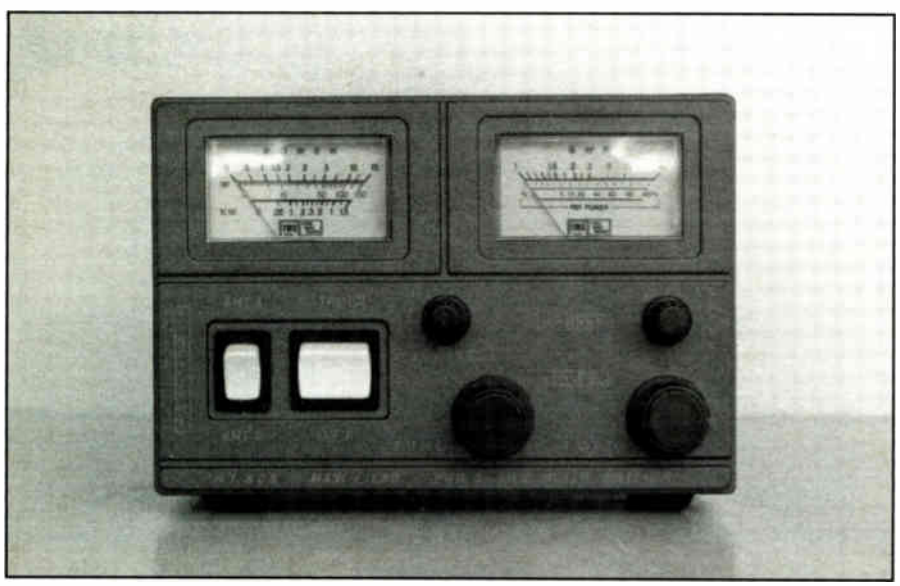
Proper use of an antenna tuner can allow your radio to last longer, reduce TVI, give a better SWR reading and allow wider frequency coverage with one antenna.

First, for those who may not be familiar with "matchboxes", a brief description is in order. An antenna tuner is a device that "tunes" your antenna system to be resonant at the frequencies your radio equipment operates on, which will give a low standing wave ratio (SWR) and allow the full power of the radio to flow forward and not reflect "back" into the transmitter. Reflected power, if severe enough, can cause damage to the radio equipment, produce a weak transmit signal and/or cause the radio to radiate harmonic signals that can cause TVI and other forms of interference. Your "antenna system" for the purpose of this article, means the entire system, including the coax cable.

Antenna tuners cannot correct severe mismatch situations that are due to broken or damaged cable or connectors and severely damaged or mismatched antennas. You should NOT use a matchbox if you can easily tune the actual antenna instead. Of course an SWR meter is needed to take a reading of the effectiveness of the antenna tuner, either one that is built into the radio or the tuner, or one placed between the radio and the tuner. Antenna tuners are usually not needed if your SWR readings are 1.5:1 or better on all of the frequencies and channels that you use. Buying a tuner to take your SWR from 1.4 or 1.5 down to 1.2 or 1.1 may be pleasing to your eyes, but it serves no useful purpose and no "real world" improvement will be noticed.

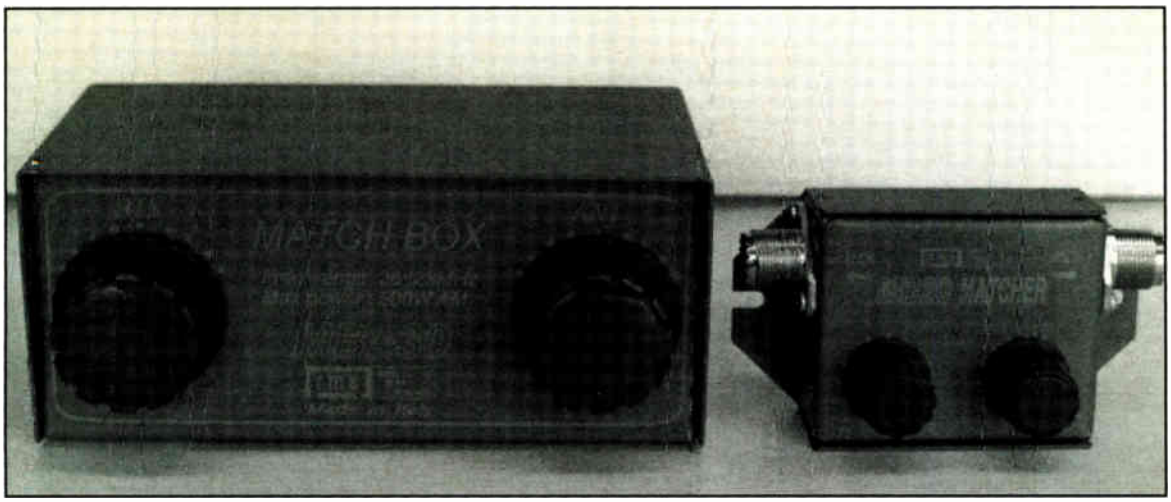
### Uses for An Antenna Tuner

When would the average CBer need an antenna tuner? In mobile situations where a compact antenna is used, for example,



*The RMS HT-808 CB Test Center features a built-in 500 watt tuner, dual-illuminated meters and a two-way antenna switch. (Photo courtesy of Advanced Specialties, Inc.)*

*This A-99 base antenna has a built-in tuner adjustment that allows it to be optimized by the user for lowest SWR over a range of frequencies. (Photo courtesy Solarcon Corp.)*



*These RMS matchboxes are for CB and 10 meter use. They can lower SWR readings allowing more efficient operation. (Photo courtesy Advanced Specialties, Inc.)*

many operators find that the SWR reading climbs to 2:1 or higher as you move away from the center of the band (channel 20). Many small antennas (1-3 feet tall) seem to keep a good low SWR reading only for a few channels. A matchbox inserted in line and used properly will assure that the radio "sees" a good low SWR reading on all 40 channels with these types of antennas, and would improve your output signal as opposed to having to "live with" a 2 or 3:1 reading.

Another situation which calls for the use of a matchbox is one that many truckers might encounter. Often the trucking company has "generic" non-tunable antennas factory-installed on their trucks. The drivers are not allowed to change or alter the pre-installed cable and antenna, and to make matters worse, they may also be assigned a different truck every day. If these antennas have a poor SWR ratio, as they often do, a small matchbox carried by the driver is usually the only remedy.

CBers that are also licensed to operated on the 10 meter amateur band will find that base and mobile CB (11 meter) antennas work great on 10 meters, but may need an antenna tuner to tweak them in if they are set up for CB use (and vice-versa). Also, in other countries and areas where "export" CB radios are used, it is often impractical to constantly re-tune your antenna for the hundreds of 10 and 11 meter frequencies available in these radios, so an antenna tuner can lower the SWR reading on the upper and lower channels that would otherwise have a high SWR when using a single antenna.

## How To Operate An Antenna Tuner

Let's look first at a matchbox that does NOT have a built-in SWR meter. A matchbox usually has two or three adjustment knobs for tuning purposes. Make sure you use a good quality tuner, one that has a shielded metal cabinet, not plastic, and one that has plastic, not metal, tuning knobs. I have personally received RF "shocks" while tuning a matchbox that had metal adjustment knobs. Install the matchbox between the antenna and CB using a short 50 ohm coaxial patch cable. If the radio does not have a built-in SWR meter, you will need to place one between the radio and matchbox using another short coax jumper.

The next step is to calibrate and take a reading of the SWR according to the instructions with your meter. You may notice that the reading may be higher or lower than that of the original reading before you installed the tuner. Now rotate each knob on the tuner—one at a time—to obtain the lowest SWR reading. Once you get the lowest reading, re-calibrate the SWR meter and re-tweak the knobs to see if you can go any lower. Often you can get a near-perfect reading on the SWR meter. At this point check and take SWR readings on a few of the higher and lower channels and frequencies that you use. You may find that with certain antenna set-ups, re-tuning of the matchbox may be needed at channel band edges.

Once you have tuned the antenna, more of your CB or ham radio's power will now "reach" the antenna and radiate out instead of backing up into the radio. If you're using an antenna tuner with a built-in SWR meter, such as the RMS Model HT-808 or the MFJ 941, operation is even simpler. Attach the tuner between the radio and cable by means of a short 50 ohm coax jumper. Take an SWR reading with the tuner switched "off". If the reading is too high, switch on the tuner and rotate the tuning controls for the lowest reading as outlined above. With most of these combo type tuners, the matcher can be bypassed at the flip of a switch making "before and after" comparisons easy.

## Do's and Don'ts

Remember, an antenna matchbox is NOT a substitute for tuning the actual antenna itself. When it is feasible you should always tune the antenna first to see if you can get a good SWR before using a matchbox. Although it always seems amazing when an antenna tuner takes a 3:1 or worse SWR down to 1:1, don't think a tuner can give anything a good SWR (broken coat hangers being fed by speaker wire, CB antennas that were cut in half to fit under a garage, etc.).

The best place to install a matchbox as a general rule, would be as close to the antenna as possible, although this is not always possible. Antennas that have tuning rings, screws or other adjustments at the base, in effect have antenna tuners "built-in". This is the best location for a tuner as it matches and transfers the power of the radio directly into the antenna. Most commercially available matchboxes are not waterproof, so unless you have an easily accessible indoor antenna, using a tuner at the radio end is just fine. In fact, many of the more expensive HF amateur radios have antenna tuners built right into the radio. Some are even automatic and do the tuning with the simple press of one button!

So if you have installed and tuned your antenna and still have a high SWR, give a matchbox a try. It will usually solve the problem. It's one accessory that will come in handy for base and mobile use for many years to come! ■

# Ask Bill

## ANSWERS TO YOUR MOST FREQUENTLY ASKED CB QUESTIONS

By Bill Price

**Bill: I'm embarrassed by my soldering—it never looks as smooth as the professional work I see pictured in magazines and inside radios—how about some secrets?**

J.P., Freeland, PA

The secrets are amazingly simple once you learn them. The first thing you'll want to do is get the proper equipment. A good iron for electronics work is a 30 watt iron. Bigger is not better, as a higher wattage can make too much heat and damage delicate electronic components, particularly transistors and ICs. You can buy AC (plugs into the wall) irons, DC (plugs into your car's cigarette lighter) irons, or butane-powered irons (refills with butane lighter fuel and requires no electricity) to use when you're far from AC or DC power.

You'll also need good solder, because bad solder (or the *wrong* solder for your job) will make your job impossible. Electronics work requires 60/40 (or 63/37 if you can find it) rosin-core (NEVER acid-core) solder. That's 60% lead and 40% tin, and it's hollow, filled with greasy-looking stuff called flux. Rosin flux is based on some natural tree rosins, but like the lead in the solder, it's toxic—more on that later. Remember, don't buy (or borrow) the less-expensive acid-core solder designed for sheet-metal and plumbing—it will corrode your connections.

Before you solder anything to anything, you must clean both pieces to get them free from corrosion. File them, sand them, scrape them, or even rub them really well with a rough ink-eraser—whatever it takes to get them bright and shiny, 'cause if they're not bright and shiny, you won't be able to get them to stick. There are cute little soldering-aid tools made for this purpose, and they're handy and cheap.

I always carry a little plastic tube of rosin flux, because some of the solder in my toolbox is so old that the flux has dried up. It helps to dab a little flux on both pieces that I'm joining, then flow some solder onto each piece *before* I join them. Doing this makes the final connection quick and easy. The process I've described here is called *tinning*.

You will also need to keep the tip of your soldering iron clean to make this whole process work. You might joke about washing it off, but in fact, that's how you do it. You keep a moist sponge nearby your working area and each time you're about to touch the iron to your work, you wipe it (it's hot, so don't hold it there long) across the damp sponge. Watch how shiny it gets when you do that.

The best joint results when you touch a clean, tinned iron to two clean, tinned pieces which have been wrapped or twisted together to form a solid mechanical joint before soldering. Solder itself is not very strong, so you need a physically-strong joint before you solder. The best advice is to bend, wrap, or twist your joint together as if you didn't have any solder—then solder it.

By the way—you can't solder aluminum or stainless steel—at least not using methods and materials described here.

*And Dr. Safety reminds us that lead is poison—far more dangerous than we used to think. Don't leave solder around (that includes the shiny little splatter-balls on the table and the floor) where kids or pets could eat them. Don't hold solder in your mouth, and don't bite a piece off. Wash well after handling it, and don't use it around food preparation areas.*

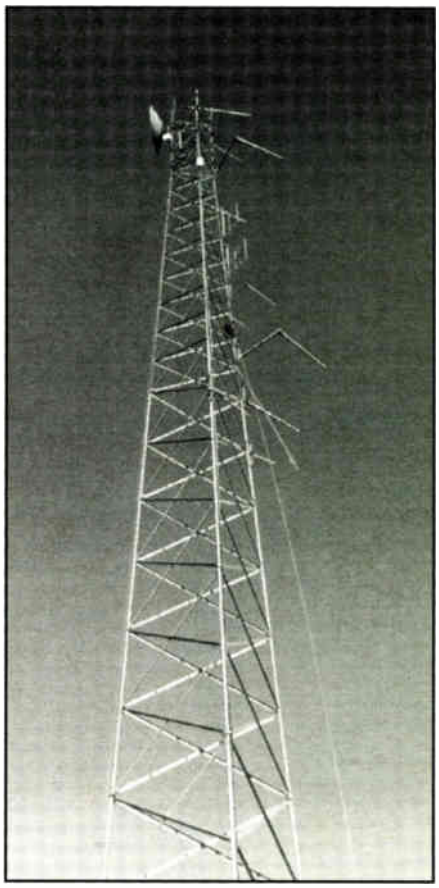
**Say, Willie: I'm going to put up a tower in the back yard. What's the best kind to buy, how tall can I build it, and what is the legal height for a CB antenna on a tower?**

J.B.F., Cape Hatteras, NC

You really know how to make a guy think. Let's start with legal height for a CB antenna, and that's *20 feet above an existing structure*, but I think if you build a special structure just for a CB antenna (a tower) they want to limit you to 60 feet overall to the tip of the antenna. I know it's a matter of semantics, but you should build an extra-strong tower to hold your television antenna, then perhaps a month or so later, you might want to add your CB antenna to your existing structure . . . get it? With that in mind, the overall height of your existing structure can be as high as you want, unless you're within five miles of an airport, or if your city, township, county, local, or state government has regulations (usually zoning regulations) restricting the height of such structures, or if your deed contains restrictive covenants (which you agreed to, tacitly, when you purchased the property). If you rent, your lease governs what you may do. The final determinant, though, in choosing a tower height will be your wallet.

Now for "what's the best kind to buy?" I could say a Rohn, or a Pi-Rod, or a Stainless or a dozen other good brands. They're all good. A used tower is fine, too, if it's inspected by an expert, and an expert is rarely your brother-in-law, unless he's a licensed professional engineer.

A new tower can come crashing down if it's not the right tower for what you're going to put on it, or for where you live, or if it's not installed properly. Your 10-20 happens to be Cape Hatteras, NC, most of which is in what the Electronic Industries Association calls "Windload Zone C" in their standard RS-222C, and that boils down to your needing a much stronger tower than people in the other 90% of the US. If you call a reputable (read "experienced and insured") tower installer, they'll ask what you're going to put on your tower and where you live, then they'll either design one for you or call a manufacturer who will design one for you. They'll specify exactly how deep a hole you'll have to dig for the base, how many (cubic) yards of concrete you'll need, what size and shape concrete forms you'll need, how many guy points, how far from the base of the tower and on what angles those guy points should be. Your local municipality will probably decree that



*A CBers dream tower! This tower, located in Somewhere, Virginia probably wouldn't be admired by your neighbors. (Photo by Bill Price)*

The Authority on Amateur Radio

CQ

# PRESENTS

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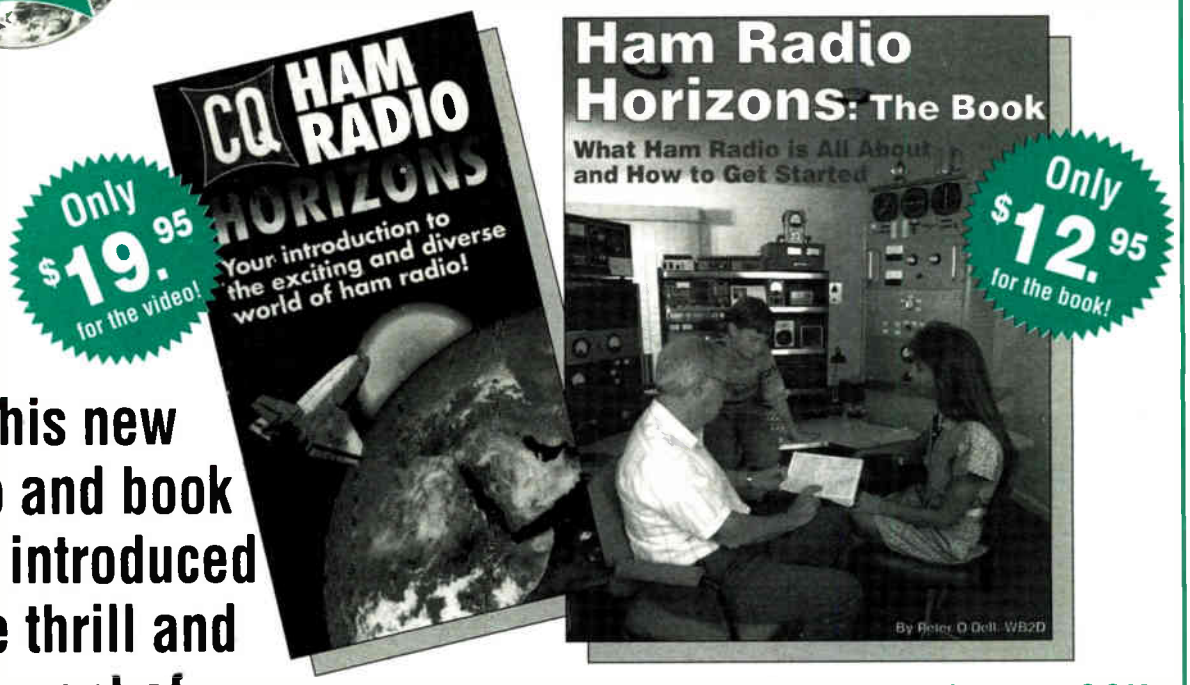


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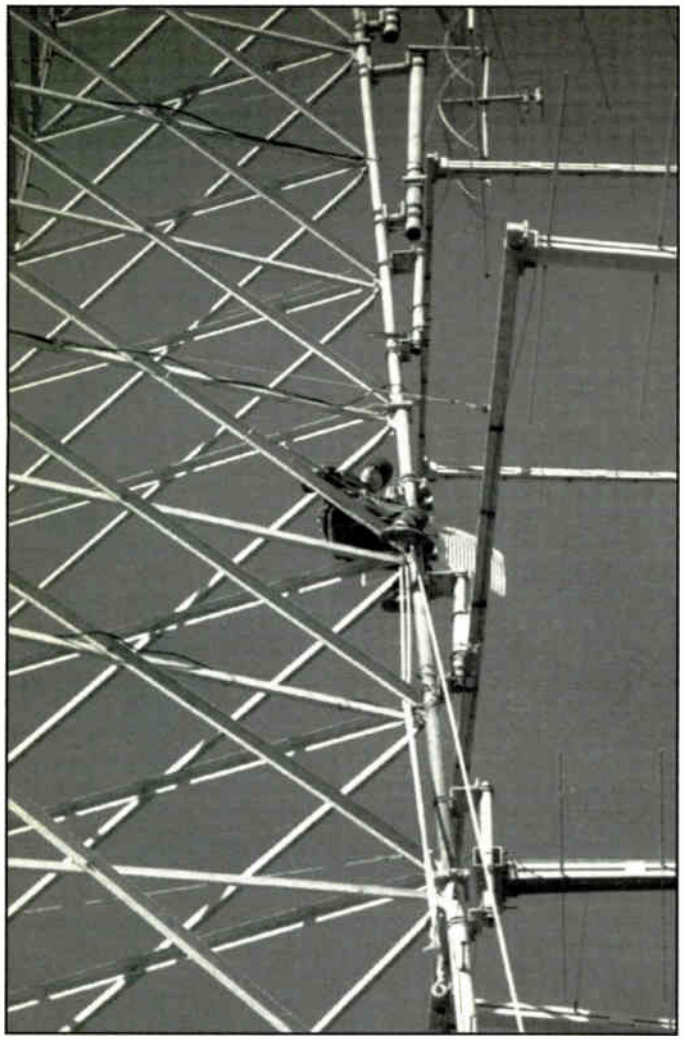
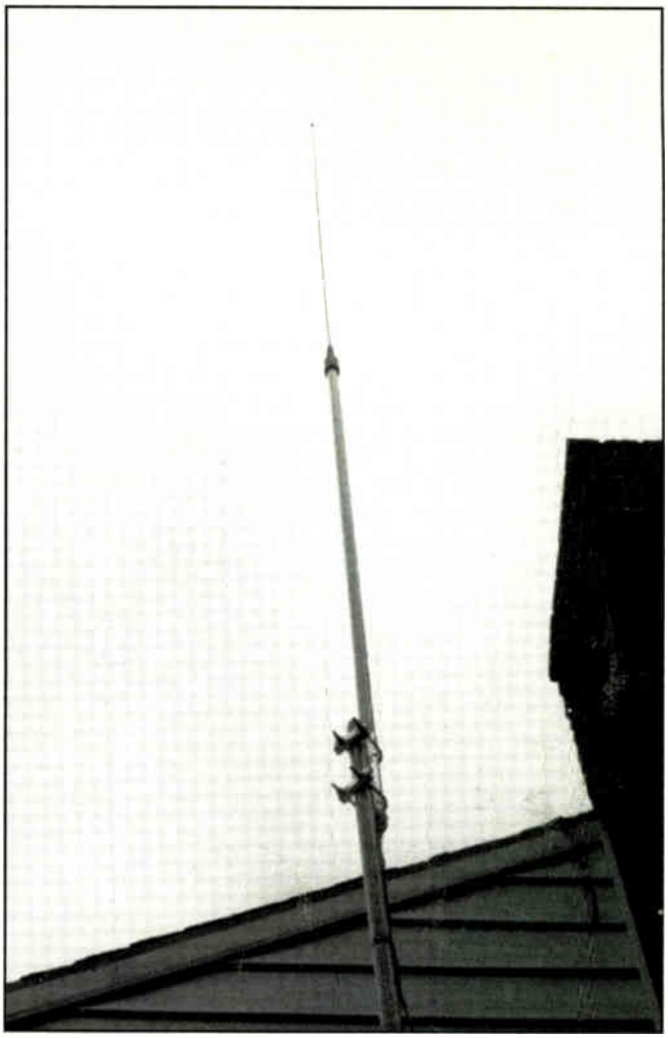


*Here I am performing maintenance on one of the many antennas. The truth is, it's really our photographer, Larry Mulvehill looking for "just that right shot." (Photo by Bill Price)*



*And then, there's reality. This Shakespeare Big Stick is mounted on a couple of RadioShack heavy-duty 10-foot poles. (Photo by Harold Ort)*

your tower must be placed so that if it falls, it will land entirely on your property.

The guy who writes your homeowner's policy will then have something to say about your tower, usually in the form of increased premiums. He (and/or your municipality) will probably require that you fence the base of the tower or obtain properly engineered "anti-climb" panels which lock to the base of the tower to prevent children, burglars, or substance-abusers from climbing your tower. Or for less than $30, your local radio store has about ten choices of roof, house, and chimney mounts.

**Dear Bill: Why do cheap radios sound cheap, while some of the nicer, more expensive ones sound so much better: are the speakers that much different?**

J.M., Tempe, AZ

The speaker certainly is part of the equation. Cheap—maybe I should say "inexpensive" speakers certainly produce cheap, "inexpensive" sound, but if you play the cheapest CB radio through the most expensive high-fidelity speaker (you could do this by connecting the speaker to the auxiliary speaker jack on the back of the set), something would be missing. That something would be power. Although good speakers are always quite compliant—that is—they don't require much power to move a lot of air—there's a limit to how much air they move (and how much sound they make) when they're driven by only a small amount of power. Thereby hangs a tale, because some sets have only 1/2 or even 1/4 watt audio power (which has nothing to do with the transmit power of the radio) to drive their speakers. It takes a good speaker and at least a watt—better three or four watts—to make "good sound." You can buy "amplified speakers" to hang on the headliner of your car or truck, or you could even play your CB through your vehicle's stereo system (sounds like a little overkill to me) but the best way is to remember to check the specs or ask about audio output power when you buy a set.

**Bill: I've raised my kids not to swear, and now my daughter has turned sixteen. She has a decent little car and she wants a CB in it, but I'm against it because of the language I've heard on my set. Am I right to tell her no?**

W.O., Ottumwa, IA.

What's a parent to do, W.O? I'd like to tell you she'll never hear bad language on the air, but it just ain't so. The air isn't loaded with bad language, but every once in a while it turns up. The answer's not in the radio, though—it's in what you've done for her. By now, you're pretty much finished raising her, though you'll probably try to keep at it 'til her kids are grown. You've taught her to fly; push her out of the nest and have some faith in what you've


*Good soldering is an acquired skill—it takes a bit of practice and some common sense. Remember to keep the tip of the gun and the item to be soldered, clean and shiny. (Courtesy RadioShack)*

done—besides—she'll hear worse language on cable TV. Go with her when she buys a radio or at least give her a copy of the 1996 *CB Radio Buyer's Guide*.

**Dear Bill: Can I build a decent CB antenna, or do I have to buy one to get good performance? I'm thinking of either a beam or a quad.**

M.Q.K., Toledo, OH

Holy Toledo, M.Q. (I just had to say that) you bet you can build an antenna! If you're willing to work at it, you can build one with many of the good qualities you'll find in the finest commercial antennas advertised in these pages. Remember—commercial manufacturers must take into account such things as shipping weight and packaging, and the materials they get must be readily available in large quantities. They can't spend hours and hours trimming and adjusting each individual antenna like you can, so in many ways, you have an advantage over a manufacturer. They do put tens of thousands of dollars into R&D and prototype design, though, so that they can mass-produce a quality product instead of building one antenna at a time from scratch. Our March '96 issue has plans for a very simple, but effective CB antenna, but if you buy any book that deals with 10M (ten meter) ham antennas, you'll find formulas that explain how frequency determines length and spacing of elements. A little math and you'll be on your way to building your own. We're going to see if we can get our antenna expert, Kent Britain, to address the subject of "homebrew" antenna design and construction. There's even some affordable design and modeling software that may be adaptable to CB frequencies—if it is, count on Kent to let you know.

**Bill: Is it safe to operate my CB during a lightning storm? I say it's not, but my husband calls me a chicken.**

F.P., St. George, UT

Sounds as if your husband want's fried chicken, F.P. My friend Dr. Safety would never operate during an electrical storm, so I doubt you should either. There are many ways you can help minimize and prevent damage from static discharge during electrical storms, but although lightning follows the strict laws of physics, none of us have figured out what all those laws are. We can tell you that you should disconnect your antenna from the back of your set and connect the plug to a grounded socket—one that is directly connected to a copper ground rod installed per applicable electrical codes (see how Dr. Safety defers to the experts?) Can you say litigation?

Seriously—lightning is unpredictable. Even the phone companies (all five bazillion of them) sort-of admit that it's dangerous to use a phone during an electrical storm. Ham's don't operate during electrical storms—you shouldn't either.

The most current electrical codes are almost always available at public libraries, and although they might be a bit technical for the average reader, there's a lot to be learned from them. You can get help from a radio shop, a ham, or an electrician. Your local electric company may have some public information handouts regarding lightning safety, and it's worth getting. What you don't know can hurt you. Say—has your husband recently bought you a large insurance policy which names him as the beneficiary?

**William: I know a fair amount about CB radio, and my friends tell me I'm not a half-bad writer. How can I get my stuff published in *CB Radio* magazine? What did you do to prepare?**

A.D., Derry, NH

A.D.: If you know your subject, you're halfway there. There are only 26 letters and a handful of punctuation marks, and all you need to do is arrange them in an interesting, informative manner. Tell what you have to say much the way you'd tell a friend in a letter. Use a conversational tone, assume your readers are at least as smart as you are and let 'em laugh once in a while. My training consisted in an "intro to composition" class in 1971 and some books. Oh, yes—if you want to be a good writer, write about a million words. By the time you're done, if you've been paying attention and trying to improve, you'll be good. My all time favorite book on writing is Fine Print, by James J. Kilpatrick.

**Willie: Can I raise a wire antenna like the one described in your March '96 issue by hanging it from a large weather balloon filled with helium?**

H.H., Manitowoc, WI

Yes, H.H., you can, but Dr. Safety is tugging at my sleeve—he says it'd be really easy for the wind to blow your antenna into power lines, which could be the end of your operation—PERMANENTLY! There is also the matter of local regulations and FAA regulations regarding tethered balloons. I know it sounds like a good idea—it is a good idea, provided you can do it miles away from any hazards or airplanes—perhaps it's something you can try someday while working portable or mobile, some five miles or so beyond East Arbegast, where there are no wires or airplanes. ■

# CB Applications

PRACTICAL USES FOR CB RADIO

By Andrew Yoder

## What's more fun than jumping into a hot dumpster in August? Hamfests!!!

Yesterday I was at work and while shuffling through my stacks of files, a co-worker asked me if I was a packrat. "Nah," I replied. Somehow, her naivete overwhelmed the fact that I was leafing through thousands of mostly useless pages, surrounded by a desk covered with piles of junk, in a room with (literally) layers of pictures, sticky notes, clippings, stickers, and photocopies on the walls.

I've got thousands of copies of *CQ*, *Popular Communications*, *QST*, *73*, *Radio-Electronics*, *Radio-TV Experimenter*, *The ACE*, *NASWA* and a whole lot more. And, needless to say, I've got old radios, tubes, parts, and books everywhere. And I haven't even hit 30 yet. By the time I pass 40, I'll need a warehouse for all of this junk!

But I'm down-playing the usefulness of accumulating stuff. Because I write books and articles, and collect old shortwave radios, paper materials are of particular interest. And they really are useful. The first rule of those clowns with the self-help books about organizing your life is: if you can't use it right now, throw it out! That works if you've been saving used bubble gum for the past 30 years, but if you're into collectibles/antiques, history, etc., it could maim your hobby or livelihood. I've got numerous experiences where I had something for years and one day I really needed it.

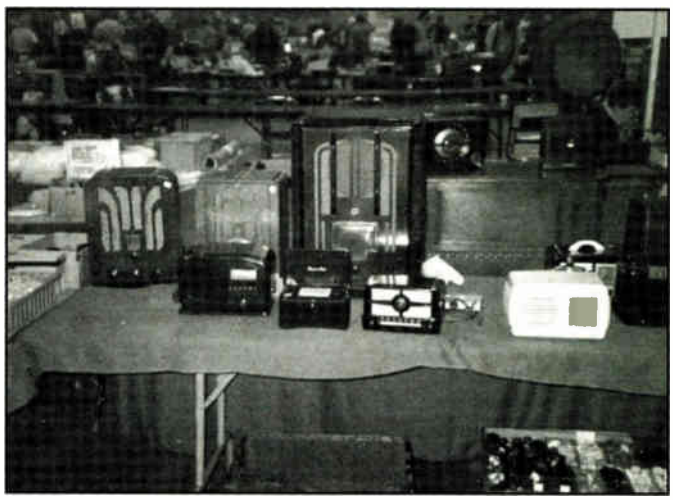
### Hamfests

So, where am I going with all of this? Radio hobbyists are some of the best (or worst, depending on your perspective) collectors of junk in the world. They just love it . . . so much so that they even get together to buy it, sell it, and trade it.

Hamfests vary greatly in size, average prices, types of equipment sold . . . just about everything. Some hamfests, such as the annual Dayton, Ohio hamfest, are huge (annual attendance over 30,000) with acres of flea market electronics, and an arena packed with new radio equipment and parts over three days. If the cool radios and junk aspect isn't enough, the Dayton hamfest also schedules lecturers, forums, and amateur radio licensing tests. It's an amazing weekend for radio nuts.

On the other extreme are tiny, local swap meets. These gatherings are usually set up by a local amateur radio group and held in firehalls, high school auditoriums, or maybe at the local fairgrounds (the fairground hamfests are usually larger, though). The purpose of these shows is to sell and trade some equipment, get together with old friends, and raise some money for the local amateur radio club. Few equipment manufacturers or radio amateur radio stores turn out for these events, but they can be a lot of fun if one is nearby.

These are hamfests, so why would a CB operator want to go? In addition to lots of amateur radio equipment, you can often find CB equipment. I have seen quite a bit of classic CBs and accessories, such as Browning Golden Eagle transceivers and Astatic D-104 chrome "lollipop" microphones. I just missed a great price on an almost-new handheld CB recently—a guy bought it just as I was getting to the table. At hamfests, you can also find some audio processing/music equipment, such as reverb and delay units (but most CBers that use this stuff are excessive and turn their audio into an unintelligible mess). And if you are into the fix-it-up thing, you can't beat hamfests for parts—both in selection and price.



*A nice selection of antique AM radios.*

Next month's column will cover some more aspects of CBing and hamfests—especially some CB applications.

### Some August/early September Hamfests

The following list contains contact information for a number of hamfests that will be occurring in August and early September. Here are some guidelines for using this list:

These are only *some* of the hamfests out there. Some of the radio club presidents that I talked with did not yet have a day scheduled as of this writing.

The hamfests do not actually occur at the addresses listed here. Do NOT find one of these addresses on the day of the hamfest and walk around the yard, looking for the flea market. Instead, call the phone number or write to the address listed and request hamfest information. The contact will probably either mail information to you or will give your directions over the phone.

These listings cover the whole gamut of hamfests from large to small. If that's a concern, ask how many people usually attend the hamfest (the range is typically between 300 and 12,000). Most two-day and state conventions are the largest.

There's no way to know how much CB equipment (or any type, really) will appear at a hamfest. The best deals on equipment usually appear in economically-depressed regions, but that also varies considerably.

### August

2–4 **Texas State Convention**
Joe Makeever, W5EBJ
8609 Tallwood Drive
Austin, TX 78759
512-345-0800

*A view of the many vendors and attendees at a large, indoor autumn hamfest.*

**Rocky Mountain Division Convention (WIMU 96)**
Duane Anderson, KJ7HO
443 East Brandt Ct. #30
Salt Lake City, UT 84107
801-288-1859

3 **High Point ARC**
Mark McMahan, KB4MFP
P.O. Box 1163
Jamestown, NC 27282
910-887-3039

**Missouri State Convention**
Karen Thorpe, N0TDW
2145 East Crestview
Springfield, MO 65804
417-889-6775

3–4 **Northern Florida Section Convention**
Vern Ferris, KB4VPU
356 Aries Drive
Orange Park, FL 32073
904-272-7250

4 **Hamfesters Radio Club**
David Brasel, NF9N
6933 West 110th Street
Worth, IL 60482
708-448-0580

**Livingston ARK**
Ray Melosh, N8CPO
4349 East Allen Road
Howell, MI 48843
517-546-9209

**Eastern Michigan ARC**
Frank Kemp, K8IOV
829 Prospect Pl.
Port Huron, MI 48060
810-987-5071

**Portage ARC**
Joanne Solak, KJ3O
9971 Diagonal Road
Mantua, OH 44255
216-274-8240

**Shenandoah Valley ARC**
Irvin Barb, KD4BHV
Rt. 3, Box 5385
Berryville, VA 22611
540-955-1745

**Plateau ARC**
Nicholas Smith, WA4GKM
108 Cardinal Loop
Crossville, TN 38555
615-484-8220

9–11 **Sky High Hamfest**
P.O. Box 1706
Vernon, BC V1T 8C3 Canada
604-542-9362

10 **Porter County Hamfest and Computer Expo**
P.O. Box 1782
Valparaiso, IN 46384
219-762-0484

11 **Cedar Valley ARC**
Wayne Kolosik, N0UGK
65 Samoa Drive
Hiawatha, IA 52233
319-393-4224

**Cascades ARS**
Terry Osborn, KD8B
508 Dalton Road
Jackson, MI 49201
517-784-4734

*Two beautiful Zenith Transoceanic shortwave receivers (back) for sale at a hamfest.*

*A table full of test equipment, receivers, tubes, etc. for lots of radio fun!*

17 **Lower Columbia ARA**
Bob Morehouse, KB7ADO
2437 Allen Street
Kelso, WA 98626
360-425-6076

17–18 **York ARC**
Louis Wawro, N3DYT
374 Greendale Road
York, PA 17403
717-843-1921

18 **DuPage ARC**
Ed Weinstein, WD9AYR
7511 Walnut Avenue
Woodbridge, IL 60517
708-985-9256

**MIT RS & Harvard Wireless Club**
Steve Finberg, W1GSL
P.O. Box 397082
Cambridge, MA 02139
617-253-3776

**Union County ARC Hamfest & Computer Show**
22461 Claibourne Road
Marysville, OH 43040
513-246-5943

**Warren ARA Hamfest**
P.O. Box 809
Warren, OH 44482
216-889-3378

23–25 **West Virginia State Convention**
L. Ann Rinehart, KA8ZGY
1256 Ridge Drive
S. Charleston, WV 25309
304-768-9534

24–25 **Eastern VHF/UHF Conference**
328 Mark Drive
Coventry, CT 06238
203-742-8650

25 **Vermilion County ARA**
Gary Denison, KA9SKS
14704 East 2750 N. Road
Danville, IL 61834
217-759-7389

**Michigan State Convention**
Jan LaBrenz, N8NSE
1214 McKinley Avenue
Bay City, MI 48708
517-893-3475

**Yonkers ARC**
John Costa, WB2AUL
195 Woodland Avenue
Yonkers, NY 10703
914-969-6548

**Radio Association of Erie**
Chris Robson, KB3A
5560 Bear Creek Road
Fairview, PA 16415
814-474-1211

7–8 **Kentucky State Convention**
Herbert Rowe, W4WQD
5612 Highway 160
Charlestown, IN 47111
812-294-4905

8 **Bolingbrook ARS**
Ed Weinstein, WD9AYR
7511 Walnut Avenue
Woodbridge, IL 60517
708-759-7005

## September

7 **Fort Wayne RC**
Cliff Shreve, N9MKB
3412 Parnell Avenue
Fort Wayne, IN 46805
219-483-2526

**Owen County ARA**
Kathryn Smith, KB9INU
Rt. 1, Box 368D
Poland, IN 47868
812-829-2140

## Have You Written Yet?

To contact me via this column, just write to "CB Applications," c/o *CB Radio* magazine, 76 North Broadway, Hicksville, NY 11801 USA. Or if you only have an idea that you would like to see covered in this column, and you are online, you can send an email to ayoder@delphi.com. I can't promise a response to any questions, but I will try. If you send questions via the U.S. Postal Service, please enclose an SASE or two International Reply Coupons (IRCs) so that I can write back. I also check into the alt.radio.CB Usenet group on the Internet from time to time, so I might see your ideas posted there as well. ■

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# Product Spotlight

THE STUFF THAT'S OUT THERE—AND HOW IT WORKS

## Maxon HCB-40WX Handheld CB/Weather Radio

ancy Barry, SSB-931




*3-40WX Handheld CB/ 'Photo courtesy Maxon erica, Inc.)*

loves my job—so first thing after work, I headed for the store to buy batteries. Luckily, they were on sale—these guys take *9* AA batteries each—but more on this later.

As soon as I got home, I took out the package filled with papers—the owner's manual, a NOAA Weather Radio Network Frequency chart (see sidebar); a copy of the FCC's rules (Part 95, Subpart "D") for CB radio; and a flyer about recharging batteries. Then I took out the "Rubber Duck" antenna and attached one to each radio; and last but not least, I took out the 12 VDC power cord with cigarette lighter plug. With everything together and both handsome radios sitting on my coffee table, I thought about Ralph Kramden and Ed Norton and Ralph's golf lesson. It was now time to address the radios—"Hello radios!"

I was almost ready to play!

### The Batteries

As I said earlier, these radios take nine, yes nine, AA batteries. When you open the compartment, you may or may not notice a small switch inside. This switch can be adjusted to "AL" or "NI." If you set the switch to the "AL" position, you can use alkalines; or if you set the switch to "NI," you can use NiCds. *Note: Proper switch setting protects from accidental charging of non-rechargeable batteries.* You can use rechargeable NiCd , standard carbon zinc, or alkaline batteries; just make sure you have the switch on the right setting.

I didn't notice the switch at first—I did however notice the warning sheet that came with the radio. That's when I opened the manual to page 4 that starts with "1. To install batteries . . . " That is also when I decided that reading the manual *first* is definitely the way to go. I didn't want to start out on the wrong foot—and exploding batteries is not my idea of fun.

So, I had to take a few of the batteries out to make sure the switch was set to "AL." The switch is a little difficult to adjust, but it's not something you'll have to mess with very often, plus I was trying not to break a nail. I recommend using a small paper clip to get at this switch—save your nails.

According to the battery information insert, batteries should last for about six to eight hours. I've used mine for about three hours now and the radios are still going strong. It is also possible to use the cigarette lighter adapter included with the radio. You can give the batteries a rest periodically. Remember though, you won't get great results in the car unless you attach a mobile antenna.

One quick note about adding nine batteries. The radio's weight comes from these batteries. The empty radio is as light as a feather (all right, it's a little bit heavier than a feather—but you knew what I meant).

### All This—and Good Looks Too!

The manual that comes with these handhelds is probably the most comprehensive manual I've ever received with a radio. It covers everything from soup to nuts and everything this radio is capable of by itself and with optional features. It even goes as far to include the 10-codes and a CB channel frequency chart.

The HCB-40WX offers a number of "performance features," as listed on page one of their manual. It receives current National Weather Service (NOAA) broadcasts and periodic marine weather information; it can be used in a boat or vehicle by using the included 12 VDC power cord; the radio can run on high or low power to conserve battery power; last channel memory recalls last channel displayed; and the channel 9 button allows

# NOAA Weather Radio Network

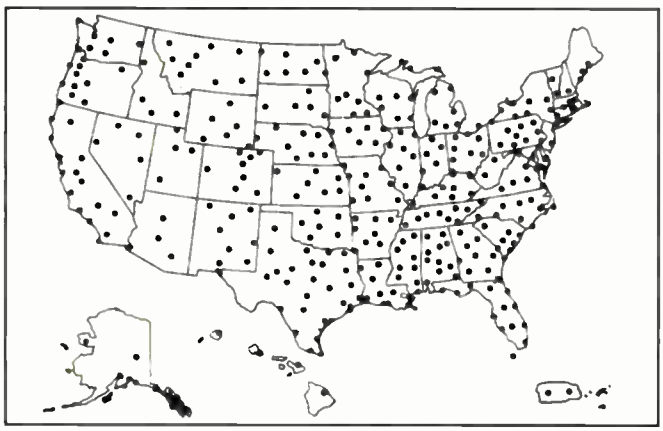
Legend—Frequencies are identified as follows:
(1)—162.550 MHz
(2)—162.400 MHz
(3)—162.475 MHz

| Location | Frequency |
|---|---|
| **Alabama** | |
| Anniston | 3 |
| Birmingham | 1 |
| Demopolis | 3 |
| Dozier | 1 |
| Florence | 3 |
| Huntsville | 2 |
| Louisville | 3 |
| Mobile | 1 |
| Montgomery | 2 |
| Tuscaloosa | 2 |
| **Alaska** | |
| Anchorage | 1 |
| Cordova | 1 |
| Fairbanks | 1 |
| Homer | 2 |
| Juneau | 1 |
| Ketchikan | 1 |
| Kodiak | 1 |
| Nome | 1 |
| Petersburg | 1 |
| Seward | 1 |
| Sitka | 2 |
| Valdez | 1 |
| Wrangell | 2 |
| Yakutat | 1 |
| **Arizona** | |
| Flagstaff | 2 |
| Phoenix | 1 |
| Tucson | 2 |
| Yuma | 1 |
| **Arkansas** | |
| Mountain View | 2 |
| Fayetteville | 3 |
| Fort Smith | 2 |
| Gurdon | 3 |
| Jonesboro | 1 |
| Little Rock | 1 |
| Star City | 2 |
| Texarkana | 1 |
| **California** | |
| Bakersfield | 1 |
| Coachella | 2 |
| Eureka | 2 |
| Fresno | 2 |
| Los Angeles | 1 |
| Merced | 1 |
| Monterey | 2 |
| Point Arena | 2 |
| Redding | 1 |
| Sacramento | 2 |
| San Diego | 2 |
| San Francisco | 1 |
| San Luis Obispo | 1 |
| Santa Barbara | 2 |
| **Colorado** | |
| Alamosa | 3 |
| Colorado Springs | 3 |
| Denver | 1 |
| Grand Junction | 1 |
| Greeley | 2 |
| Longmont | 1 |
| Pueblo | 2 |
| Sterling | 2 |
| **Connecticut** | |
| Hartford | 3 |
| Meriden | 2 |
| New London | 1 |
| **Delaware** | |
| Lewes | 1 |
| **District of Columbia** | |
| Washington, D.C. | 1 |
| **Florida** | |
| Clewiston | 2 |
| Daytona Beach | 2 |
| Fort Myers | 3 |
| Gainesville | 3 |
| Jacksonville | 1 |
| Key West | 2 |
| Melbourne | 1 |
| Miami | 1 |
| Orlando | 3 |
| Panama City | 1 |
| Pensacola | 2 |
| Tallahassee | 2 |
| Tampa | 1 |
| West Palm Beach | 3 |
| **Georgia** | |
| Athens | 2 |
| Atlanta | 1 |
| Augusta | 1 |
| Chatsworth | 2 |
| Columbus | 2 |
| Macon | 3 |
| Pelham | 1 |
| Savannah | 2 |
| Waycross | 3 |
| **Hawaii** | |
| Hilo | 1 |
| Honolulu | 1 |
| Kokee | 2 |
| Mt. Haleakala | 2 |
| Waimanalo | 2 |
| **Idaho** | |
| Boise | 1 |
| Lewiston | 1 |
| Pocatello | 1 |
| Twin Falls | 2 |
| **Illinois** | |
| Champaign | 1 |
| Chicago | 1 |
| Moline | 1 |
| Peoria | 3 |
| Rockford | 3 |
| Springfield | 2 |
| **Indiana** | |
| Evansville | 1 |
| Fort Wayne | 1 |
| Indianapolis | 1 |
| Lafayette | 3 |
| South Bend | 2 |
| Terre Haute | 2 |
| **Iowa** | |
| Cedar Rapids | 3 |
| Des Moines | 1 |
| Dubuque | 2 |
| Sioux City | 3 |
| Waterloo | 1 |
| **Kansas** | |
| Chanute | 2 |
| Colby | 3 |
| Concordia | 1 |
| Dodge City | 3 |
| Ellsworth | 2 |
| Topeka | 3 |
| Wichita | 1 |
| **Kentucky** | |
| Ashland | 1 |
| Bowling Green | 2 |
| Covington | 1 |
| Elizabethtown | 2 |
| Hazard | 3 |
| Lexington | 2 |
| Louisville | 3 |
| Mayfield | 3 |
| Pikeville | 2 |
| Somerset | 1 |
| **Louisiana** | |
| Alexandria | 3 |
| Baton Rouge | 2 |
| Buras | 3 |
| Lafayette | 1 |
| Lake Charles | 2 |
| Monroe | 1 |
| Morgan City | 3 |
| New Orleans | 1 |
| Shreveport | 2 |
| **Maine** | |
| Dresden | 3 |
| Ellsworth | 2 |
| Portland | 1 |
| **Maryland** | |
| Baltimore | 2 |
| Hagerstown | 3 |
| Salisbury | 3 |
| **Massachusetts** | |
| Boston | 3 |
| Hyannis | 1 |
| Worcester | 1 |
| **Michigan** | |
| Alpena | 1 |
| Detroit | 1 |
| Flint | 2 |
| Grand Rapids | 1 |
| Houghton | 2 |
| Marquette | 1 |
| Onondaga | 2 |
| Sault Sainte Marie | 1 |
| Traverse City | 2 |
| **Minnesota** | |
| Detroit Lakes | 3 |
| Duluth | 1 |
| International Falls | 1 |
| Mankato | 2 |
| Minneapolis | 1 |
| Rochester | 3 |
| Saint Cloud | 3 |
| Thief River Falls | 1 |
| Wilmar | 2 |
| **Mississippi** | |
| Ackerman | 3 |
| Booneville | 1 |
| Bude | 1 |
| Columbia | 2 |
| Gulfport | 2 |
| Hattiesburg | 3 |
| Inverness | 1 |
| Jackson | 2 |
| Meridian | 1 |
| Oxford | 2 |
| **Missouri** | |
| Columbia | 2 |
| Camdenton | 1 |
| Hannibal | 3 |
| Joplin/Carthage | 1 |
| Kansas City | 1 |
| St. Joseph | 2 |
| St. Louis | 1 |
| Sikeston | 2 |
| Springfield | 2 |

direct access to Emergency Channel 9.

The radio fits comfortably in either hand—I happen to be left-handed and some things are made with what seems to be an assumption that the entire world is right-handed; so this type of versatility is very welcome. The controls and buttons are easy to use and can be controlled with one hand. The power on/off-volume control is a small knob on top of the radio alongside the squelch control and rubber duck antenna connection. The display is a multi-functional LCD that identifies CB or weather channel number selections, TX for transmit, WX for weather, EMG when the radio is on Channel 9, LOCK when the keypad is locked, BATT when the battery is low, LOW when you push the HI/LOW button, and it displays the signal/power strength meter when the radios are in use. The channel up/down, Channel 9, lock, weather, light, and HI/LOW buttons are located just under the LCD and are easy to use as well. The speaker takes up most of the center of the radio and the mic is just below the speaker.

The radio also comes with a belt clip



*Taken from the NOAA pamphlet (Maxon Part No. 943469) found in the information packet with the HCB-40WX. (Courtesy Maxon America, Inc.)*

| | |
|---|---|
| **Montana** | |
| Billings | 1 |
| Butte | 1 |
| Glasgow | 1 |
| Great Falls | 1 |
| Havre | 2 |
| Helena | 2 |
| Kalispell | 1 |
| Miles City | 2 |
| Missoula | 2 |
| **Nebraska** | |
| Bassett | 3 |
| Grand Island | 2 |
| Holdrege | 3 |
| Lincoln | 3 |
| Merriman | 2 |
| Norfolk | 1 |
| North Platte | 1 |
| Omaha | 2 |
| Scottsbluff | 1 |
| **Nevada** | |
| Elko | 1 |
| Ely | 2 |
| Las Vegas | 1 |
| Reno | 1 |
| Winnemucca | 2 |
| **New Hampshire** | |
| Concord | 2 |
| **New Jersey** | |
| Atlantic City | 2 |
| **New Mexico** | |
| Albuquerque | 2 |
| Clovis | 3 |
| Des Moines | 1 |
| Farmington | 3 |
| Hobbs | 2 |
| Las Cruces | 2 |
| Ruidoso | 1 |
| Santa Fe | 1 |
| **New York** | |
| Albany | 1 |
| Binghamton | 3 |
| Buffalo | 1 |
| Elmira | 1 |
| Kingston | 3 |
| New York City | 1 |
| Rochester | 2 |
| Syracuse | 1 |
| **North Carolina** | |
| Asheville | 2 |
| Cape Hatteras | 3 |
| Charlotte | 3 |
| Fayetteville | 3 |
| New Bern | 2 |
| Raleigh/Durham | 1 |
| Rocky Mount | 3 |
| Wilmington | 1 |
| Winston-Salem | 2 |
| **North Dakota** | |
| Bismark | 2 |
| Dickinson | 2 |
| Fargo | 2 |
| Jamestown | 2 |
| Minot | 2 |
| Petersburg | 2 |
| Williston | 2 |
| **Ohio** | |
| Akron | 2 |
| Cladwell | 3 |
| Cleveland | 1 |
| Columbus | 1 |
| Dayton | 3 |
| Lima | 2 |
| Sandusky | 2 |
| Toledo | 1 |
| **Oklahoma** | |
| Clinton | 3 |
| Enid | 3 |
| Lawton | 1 |
| McAlester | 3 |
| Oklahoma City | 2 |
| Tulsa | 1 |
| **Oregon** | |
| Astoria | 2 |
| Brookings | 1 |
| Coos Bay | 2 |
| Eugene | 2 |
| Klamath Falls | 1 |
| Medford | 2 |
| Newport | 1 |
| Pendleton | 1 |
| Portland | 1 |
| Roseburg | 3 |
| Salem | 3 |
| **Pennsylvania** | |
| Allentown | 2 |
| Clearfield | 1 |
| Erie | 2 |
| Harrisburg | 1 |
| Johnstown | 2 |
| Philadelphia | 3 |
| Pittsburgh | 1 |
| State College | 3 |
| Wilkes-Barre | 1 |
| Williamsport | 2 |
| **Puerto Rico** | |
| Maricao | 1 |
| San Juan | 2 |
| **Rhode Island** | |
| Providence | 2 |
| **South Carolina** | |
| Beaufort | 3 |
| Charleston | 1 |
| Columbia | 2 |
| Florence | 1 |
| Greenville | 1 |
| Myrtle Beach | 2 |
| Sumter | 3 |
| **South Dakota** | |
| Aberdeen | 3 |
| Huron | 1 |
| Pierre | 2 |
| Rapid City | 1 |
| Sioux Falls | 2 |
| **Tennessee** | |
| Bristol | 1 |
| Chattanooga | 1 |
| Cookeville | 2 |
| Jackson | 1 |
| Knoxville | 3 |
| Memphis | 3 |
| Nashville | 1 |
| Shelbyville | 3 |
| Waverly | 2 |
| **Texas** | |
| Abilene | 2 |
| Amarillo | 1 |
| Austin | 2 |
| Beaumont | 3 |
| Big Spring | 3 |
| Brownsville | 1 |
| Bryan | 1 |
| Corpus Christi | 1 |
| Dallas | 2 |
| Del Rio | 2 |
| El Paso | 3 |
| Fort Worth | 1 |
| Galveston | 1 |
| Houston | 2 |
| Laredo | 3 |
| Lubbock | 2 |
| Lufkin | 1 |
| Midland | 2 |
| Paris | 1 |
| Pharr | 2 |
| San Angelo | 1 |
| San Antionio | 1 |
| Sherman | 3 |
| Tyler | 3 |
| Victoria | 2 |
| Waco | 3 |
| Wichita Falls | 3 |
| **Utah** | |
| Logan | 2 |
| Cedar City | 2 |
| Vernal | 2 |
| Salt Lake City | 1 |
| **Vermont** | |
| Burlington | 2 |
| Windsor | 3 |
| **Virginia** | |
| Heathsville | 2 |
| Lynchburg | 2 |
| Norfolk | 1 |
| Richmond | 3 |
| Roanoke | 3 |
| **Washington** | |
| Neah Bay | 1 |
| Olympia | 3 |
| Seattle | 1 |
| Spokane | 2 |
| Wenatchee | 3 |
| Yakima | 1 |
| **West Virginia** | |
| Charleston | 2 |
| Clarksburg | 1 |
| **Wisconsin** | |
| La Crosse | 1 |
| Green Bay | 1 |
| Madison | 1 |
| Menomonie | 2 |
| Milwaukee | 2 |
| Wausau | 3 |
| **Wyoming** | |
| Casper | 1 |
| Cheyenne | 3 |
| Lander | 3 |
| Sheridan | 3 |

and a wrist strap. Everything about this radio looks and feels great. It's the right size, the right shape and the right weight.

## What About Performance?

I know. I've told you all about how this handheld looks and now you're saying "looks aren't everything, Nanc—but how did it *work*?"

The most memorable feature of the HCB-40WX is the audio. The quality of the audio on both AM and weather channels is excellent. The clarity was better than either my base station or my mobile radio. Even while holding the radio inside the house, the audio was far better than I would have expected. The NOAA broadcasts were loud and clear. (As it turns out, I was able to test this feature while awaiting what will hopefully be our last snowfall; so I heard plenty of information.)

My first test of the radio started the day I brought them home. I took one of the radios out to my front porch and listened for my husband who was on his way home

with my son. Mobile to handheld, we were able to talk at a distance of about 3/4 of a mile. I was also able to hear a number of truckers on channel 19. They were about 1–2 miles away. While out on the porch, the sun began to set, and I found out that the light button is a handy feature. It illuminates the display for six to eight seconds with a bright orange light—great for checking the channel and for checking the signal strength in the dark.

Walkie-talkie to walkie-talkie we were able to get a maximum range of about 3/4 of a mile to 1 1/2 miles depending on weather and interference. (The owner's manual says: "For greater range and clarity, we recommend a vertically polarized telescopic antenna . . ." "The 'Rubber Duck' antenna that is included with this radio is suited for those applications where maximum range is not needed.") I have a feeling a new antenna may be my next purchase.

The Maxon HCB-40WX is a lot of fun. My son (a wonderful two-year-old who already holds a mic and says "breaker breaker" and "how 'bout it Nanc?"—a topic for another time) enjoys talking on them as well. That's how easy they are to use. We haven't taught him the 10-codes yet, but he gets his point across.

## Very Versatile

I've already mentioned using different antennas for different circumstances, but this handheld doesn't stop there. Maxon has made sure that these little dynamos can be used in a variety of ways. The HCB-40WX has accessory jacks for "hands-free" operation used with an optional ear speaker/microphone with remote PTT button, or with an optional headset with boom microphone and mini-VOX unit.

Maxon has also included an Antenna/Adapter Application Guide on page 7 of the manual. The guide shows all the Maxon optional antennas and the adapters that are required for use with Maxon CB Radios.

Their versatility is also found in the many ways they can be incorporated into every day stuff. I would absolutely recommend these to any mom or dad who has a teen that they shop with. Everyone knows that most teenagers don't want to be seen with their parents. It's OK if you have to drive them back and forth to the malls, but *please* go shop in a different store, preferably the one furthest from where they are. What better time to have a couple of handhelds. You can keep in touch so you know when they've found their $90 pair of jeans and now need *you* to go pay for them!

I like them for hiking or other activities when the family is *technically* together, but off doing their own things. I'm looking forward to using them at the beach. Usually when we go to the beach, I sit with my son, while my husband goes walking along the water. Before we got these radios, we had no way of keeping in touch; now we can. I'd imagine that they'd be great for camping as well—especially if you're with a group. Those who are back at the campsite can stay in touch with those out looking for fire wood; or if someone encounters say, a bear or a snake or something; they can either warn the others or call for help.

My husband and I are already planning on taking them to his family reunion. It's an annual affair, with games and activities going on all weekend long. Our HCB-40WXs will enable us to stay organized (a popular thing with me, if you remember) and will also provide us with weather reports in advance of planning our outdoor activities. We can also avoid a conversation that goes something like this: "How's the baby?"

"You mean our baby?"

"Yes."

"I thought he was with you."

"No. I thought he was with you."

"Oh oh!"

*The HCB-40WX fits comfortably in either hand and can be tuned with ease. (Photo Courtesy Maxon America, Inc.)*

As you see, there are many uses for this great handheld. My husband and I have fallen in love with them and we're almost certain if you give them a try, you will too.

## Call Now!

If you're in the market for a great little handheld radio with NOAA weather capabilities, The HCB-40WX is available from Maxon America, Inc. for a suggested retail price of $149.95 each. For further information, contact Maxon America, Inc., Consumer Products Division, Customer Service Department, P.O. Box 20570, Kansas City, MO 64195-0570; phone 1-800-922-9083; in Missouri, phone: 816-891-6320.

## Special Thanks

Special thanks to the folks at Maxon, both for a great handheld with exceptional audio; and for all of their help in putting this review together. Thank you.

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# Uniden Washington Base CB

**By Harold Ort, N2RLL, SSB-596**

**SPECIFICATIONS**: 40-channel AM/SSB CB base station operates on 117 Vac (also can be used as mobile with provided power cord and bracket) with instant Channel 9, mod/S/RF, and NB/ANL push-button controls. The round analog meter shows relative signal strength, RF/MOD. **SENSITIVITY SSB**: less than 0.25 µV for 10dB (S+N)/N at greater than 1/2 watt audio output; AM: less than 0.5 µV for 10dB (S+N)/N at greater than 1/2 watt audio output. Selectivity SSB and AM: 6dB @ 4.2 kHz, 60dB @ 7.9 kHz. Audio output 4.0 watts into 8 ohms. Features include handheld mic, built-in AC power cord, headphone jack, external PA and speaker jacks and instruction manual. Dimensions: Approx. (HWD) 5" x 13 1/2" x 12". Weight: 13.3 lbs.

Uniden's Washington base (and its mobile partner the Grant XL) have been around for a number of years, attesting to their rock-steady performance with CBers from coast to coast. These gems are large; the Washington is more than a foot long and deep. It's nearly as large as a dot-matrix printer at the opposite end of my desk! In this age of miniaturization, the folks at Uniden have held their ground in keeping both these CBs in their lineup without any changes for many years!

Like most CBers, the urge to plug it in, connect the antenna and key the mic overcame me, so I did. You can do that with this radio; the controls are straightforward, well-labeled and logically placed on the front panel of the radio. The rotary knob channel selector on the right side of the unit has a positive old-fashioned feel to it; moving from channel 19 to 25 can be done blindfolded by counting off the six clicks. The bright red LED channel display is about a half-inch high making for easy viewing, and the mode of operation is shown by a large red dot under AM, USB or LSB, directly under the channel display.

*The Uniden Washington has been around a long time, and is still a great performer. (Courtesy Uniden America Corporation)*

## The Washington on the Air

I've got to admit it, I was pretty excited to use the Washington. After all, it *is* a top-of-the-line AM/SSB rig, and SSB operation is my preferred mode of operation. But first, I tried a couple of nearby operators on channel 19. They reported my modulation to be crisp and clean, somewhat louder than normal. (I'm constantly using different radios, including walkie-talkies connected to the base antenna). Moving closer to the handheld mic "Birdman" told me to back off the mic gain! Previously the mic gain had been set at about 2 O'clock, but I adjusted it straight up and spoke in a normal voice a couple of inches from the mic. "Better audio," he reported, and "the signal is great!" as the Washington's TX/RX green LED light changed to red upon transmitting.

Sometimes listening is more important than talking, so I moved to channel 20; I found the overall selectivity of the Washington on both AM and SSB to be very good, indeed. Very little splash was noticed from the drivers on channel 19. Had I wanted to I could have carried on a conversation with no trouble. You can't say that for all radios! The squelch worked very well. Little, if any adjustment was needed over the entire CB band.

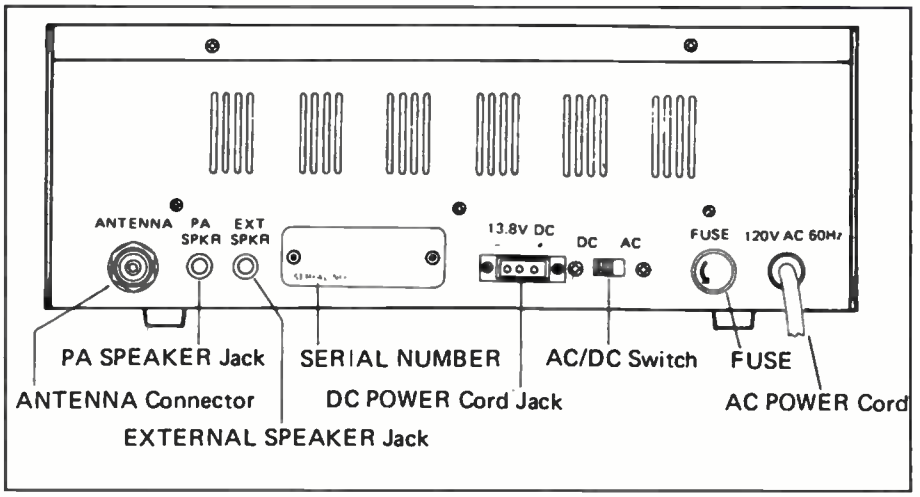
On sideband, I first checked out the sensitivity on LSB 38 where a few relatively distant operators congregate One is in Freehold, the other on Staten Island. Switching between a Cobra base station, a RadioShack mobile and the Washington produced surprising results. With the noise blankers off, the Washington and Cobra sounded nearly identical. The Shack mobile was only slightly less sensitive. Sideband operators "335" and "256-A" reported nothing unusual about my signals, and good audio. These are a couple of picky operators who (I hope they forgive me!) seldom miss an opportunity to tell an operator they're off-frequency or sound "different." Speaking of checking for off-frequency operation, I used my handy OptoElectronics M1, and found that the Washington I tested was right on the money! Channel 40 registered as 27.405 MHz and channel 1 as 26.965 MHz.

The clarifier (fine tuning) control was easy to use, however at the 12 O'clock position there's no notch to indicate straight up. Each control has a small raised dot to let you know the direction its pointing, but the clarifier would be better served with a notch.

While I had my radio goodies box open, I decided to use a digital SWR/Power meter (the RadioShack unit, that we'll talk about in an upcoming issue) to check the SWR into my Shakespeare antenna, and the RF power of the Washington. The SWR at channel 1 was 1.0:1, at channel 40, 1.40:1—both very good readings! The RF power measured 3.86 watts at channel 20, 4.05 at channel 40, and 3.50 at channel 1.

## Instant Channel 9

One of the important features of the Washington is the operator's ability to get to Emergency Channel 9 instantly. A simple push of the CH 9 button on the lower right corner of the radio illuminates the red CH 9 light. A second push returns the radio to the previously selected channel. Wouldn't it be easy to also have "9" blinking in the channel display window? Instead, the window is left blank during




*A look at the rear panel of the Washington shows connections for the CB antenna, PA and external speaker.*

it drastically cut the noise level without degrading the incoming CB signals.

No two operating manuals are the same. The Washington's is very descriptive and allows use of the radio by newcomers. Besides a detailed specifications section, it includes a basic preventive maintenance and troubleshooting section in an effort to keep the radio out of the service department.

Importantly, right up front the manual talks about the "Elimination of Licensing", saying . . ."elimination of individual (CB) station licenses results in no lessening of the operating privileges or responsibilities of CB users . . ." Well put, Uniden!

A *two year warranty* on all components of the Washington CB is included at the suggested retail price of $350. ■

CIRCLE 101 ON CARD FOR MORE INFORMATION

the instant Channel 9 operation with only the small LED light lighted. A minor criticism on my part, but nonetheless, I always prefer to see something going on in the channel display window.

## A Look (Squint!) at the Meter

OK, as I get older, my arms aren't nearly long enough to read the TV Guide in dim light. So I reluctantly get out the reading glasses. Honestly though, even with the glasses (no, these aren't Coke bottles, folks!) reading the circular analog meter on the Washington was a bit of a task. It's well lighted and logically placed on the front of the CB, but there's something about the way the meter scale is placed inside the radio that makes it somewhat difficult to get a good view. A better meter would be made by simply moving the scale a half inch forward toward the plastic view piece. It isn't the end of the world, though. As I've said before, I rarely rely on a radio's internal meter for much of anything! Regardless, the meter also doubles as a MOD (modulation) and RF meter. A simple push of a button allows the user to check on relative modulation when speaking into the microphone, and when dead-keying the radio, gives a relative reading of RF output power. The RF portion reads a bit high in comparison to the more accurate outboard SWR/RF power meter readings.

Overall, the Washington is an easy-to-use CB base (a bit huge for a mobile!) with an excellent, punchy signal and great audio. The front-mounted speaker provides room-filling CB audio, lessening the need for an external speaker.

The NB/ANL (noise blanker and ANL) circuit works very well. I didn't install the Washington in my car, but as a base CB taking a beating from the various power line noises and other neighborhood hash,


# CB Fun

The names and location have changed, but the story is pretty much the same as the story we ran last issue. This month's CB operator in the spotlight is Jon Loveless. Loveless, a self-employed 34-year old janitor, took to the CB airwaves when he moved to Vancouver in 1994. Immediately complaints of interference began. "Brander"—Loveless' CB handle—reportedly began coming through loud and clear on phones, stereos, computers and TVs. When neighbors reported Loveless to police, he allegedly retaliated with profanities, goading the neighbors. Once, Brander started singing the old party song, "999 Bottles of Beer on the Wall." By the time he got to verse 340, the neighbors had enough. A judge who heard the resulting court case said that the broadcasts "have the mark of someone who's seriously disturbed." Loveless was sentenced to pay a $200 fine, spend two days in jail and eight days on a work crew. Brander is appealing the conviction.

# On the Move

CB is, admittedly, a low priority with the FCC these days. There's too much money to be made auctioning off frequencies for the so-called emerging technologies. So it takes some doing to get Old Uncle Charlie hot under the collar. Somehow, Danny Lee Coffield managed to do it.

What makes Coffield's run-in with the feds interesting is that he was nailed, not for high-powered operation, but for out-of-band operation.

Agents of the FCC's Los Angeles office discovered Danny Lee operating a modified Cobra on 27.744 MHz in September of 1993. How he was nailed is also interesting: the FCC said that modification of a CB to transmit out-of-band voids the radio's type acceptance (that silver sticker on the radio's back) and thus invalidates anyone's authority to use the radio. Coffield was fined $2,000. So far, the CBer has managed to avoid paying the fine by filing a petition for reconsideration. Among other things, said Coffield, FCC agents failed to produce proper identification. Even though the FCC denied Coffield's petition, he could have filed an Application for Review, delaying the action further. In fact, many, including industry-watcher Fred Maia, sees no indication that the FCC is eager to collect CB fines. Says Maia, "despite the claim of Commissioner Susan Ness that " . . . the Commission is no paper tiger; FCC rules must be obeyed, and noncompliance will draw meaningful sanctions . . . we are skeptical that most CB . . . violators will be forced to pay anything in the end."

# Some Fun, Eh?

Another mayday rang out from the frigid Atlantic waters off the coast of Massachusetts. As always, the Coast Guard responded, launching rescuers from Boston, Gloucester and Air Station Cape Cod. The problem was that the mayday was a fake. Everyone headed home. Not too long afterwards, police heard a man bragging on his CB about making a false distress call. The man, an 18-year-old living at home with his parents, was not arrested, but Coast Guard officials say that sending false distress signals is a violation of federal law and that charges are possible.

# Near Freebie

Each issue we try to find something interesting an low-cost that you can send away for. This month, we direct your attention to the Firestik Antenna Company. They've put together a nice 22-page booklet titled, "Measuring SWR and Things Every CBer Should Know." It covers SWR, adjusting antennas, mounting dual antennas, testing continuity and more. Send $1 to Firestik Antenna, 2614 East Adams Street, Phoenix, AZ 85034. Tell them that CB Report sent you.

# Making the Mods

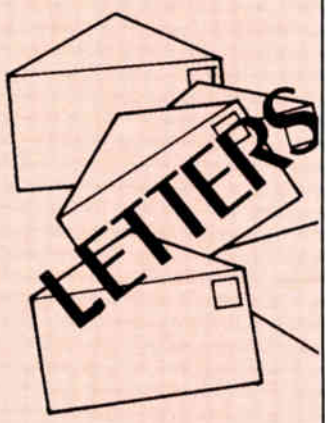
Don't forget to check out Kevin Ross' new book, CB Modification Secrets. In 206 knock-out pages, Ross tells you how to expand, enhance, and add to your CB. There are instructions on frequency expansion, SSB clarifier and voice lock mods, adding VOX, A VFO, anti-theft transmitter disabler, IF gain control, mic sensitivity control, add Roger Beep, and more than I could possibly fit in this small space.

Get a copy for yourself. You won't regret it. The price is $21.95 plus $4 shipping from CRB Research, Box 56, Commack, NY 11725. Their phone number is 516-543-0560. Be sure to say "hi" to CB Judy when you call!

# Convention Update

Don't forget to check in at the National Scanning's 2nd annual National Communications Convention. It's July 12, 13 and 14 at the Lancaster Host Resort and Conference Center (Holiday Inn) on Route 30 in Lancaster, PA. Tickets are $10 in advance from 610-273-7823 (check or money order to Box 360, Wagontown, PA 19376) or $15 at the door.

There are about a hundred exhibitors scheduled to appear, including RadioShack, Uniden, Yaesu, Electronic Equipment Bank, and more, plus dozens of seminars on scanning and CB radio. You'll also be able to meet some of your favorite CB Radio magazine columnists, so plan to attend. The National Communications convention is co-sponsored by *CB Radio* magazine.




Thanks to Cowpuncher, Denver, Colorado; Owl Man, Victor, New York; Susie Q, Peabody, Massachusetts; Tom, Philadelphia, Pennsylvania; Mr. Big, Jackson Hole, Wyoming and Whipper in Vancouver, Washington. Welcome to the CB Report Monitoring Team! You can be a member of the team by watching for radio-related stories in your local newspaper, clipping them out and sending them in to Larry Miller, CB Report, Box 360, Wagontown, PA 19376.

# Scanner Heroes

A high school scanner listener from Hartford, Connecticut, was on the receiving end of a $1,000 reward nomination for a civic award and lots of publicity. Sixteen-year-old Liam O'Rourke overheard a police radio transmission describing a vehicle sought in the robbery of a local bank. When the suspect drove by a few minutes later, O'Rourke followed and got a description of the suspect and his license plate number. He even pulled up next to the vehicle at an exit ramp to get a better look at the suspect's face. As a result of O'Rourke's action, Alvin Robertson, a seven-time bank robber out of prison only eight months, was arrested. "I don't really feel I did anything that big," said O'Rourke, "I didn't want anyone doing anything wrong in my town."

In Topeka, Kansas, two citizens in a truck heard a report on their scanner of a robbery. When they saw a car matching the description given out by police, they used their cell phone to call police who stopped the car. Four people were arrested. Police think the suspects may have had a hand in as many as 15 recent robberies in the area.

# CBer of the Month

## OUR SALUTE TO TOP-NOTCH CBERS

By Bill Price, A/K/A The Chiseler

## Say Hello To Carey "Taz" Bandler

This month's victim is Carey Bandler, of Frederick, Maryland. Carey happened in front of my camera while he and his co-worker Mike, were performing some routine antenna maintenance several hundred feet above ground. I thought about climbing the tower to interview them, but no one likes to have their work interrupted, so I waited on the ground.

"Companies hire us to do all kinds of work—maintenance, installation, whatever. Sometimes we work on rooftops, sometimes on towers. It's just a day's work. Nice view from up there, though—a lot of times I take a small camera in my bag—I've got some great shots from the roof of the Smithsonian, where we installed some ham antennas," Carey said. While Carey's employer, United States Tower, is based in Frederick, MD, the company is well known and it's not uncommon for him to be sent hundreds or even thousands of miles to a job.

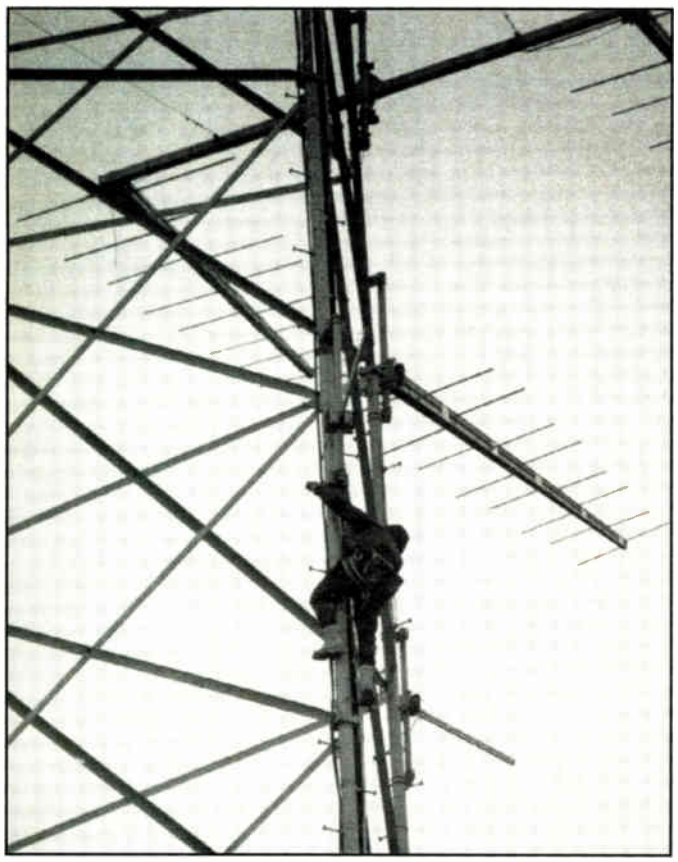
"Don't they have tower companies in these other places?" I asked.

"Sure—but there are very few with our reputation." It was refreshing to see someone who held his workmanship—and his company—in high regard. Carey and Mike had spent the past couple days traveling to various sites around Maryland and Northern Virginia performing inspection and routine maintenance of an educational microwave television network, so I followed them around through a couple of job sites and grabbed what photos I could. We had lunch at Rocco's in Fairfax where our "all you can eat" buffet was cut short by a cellular phone call from their client's chief engineer. He was anxiously waiting for them at the next site. Carey and Mike took the interruption in stride. (They also took some pizza in their pockets.)

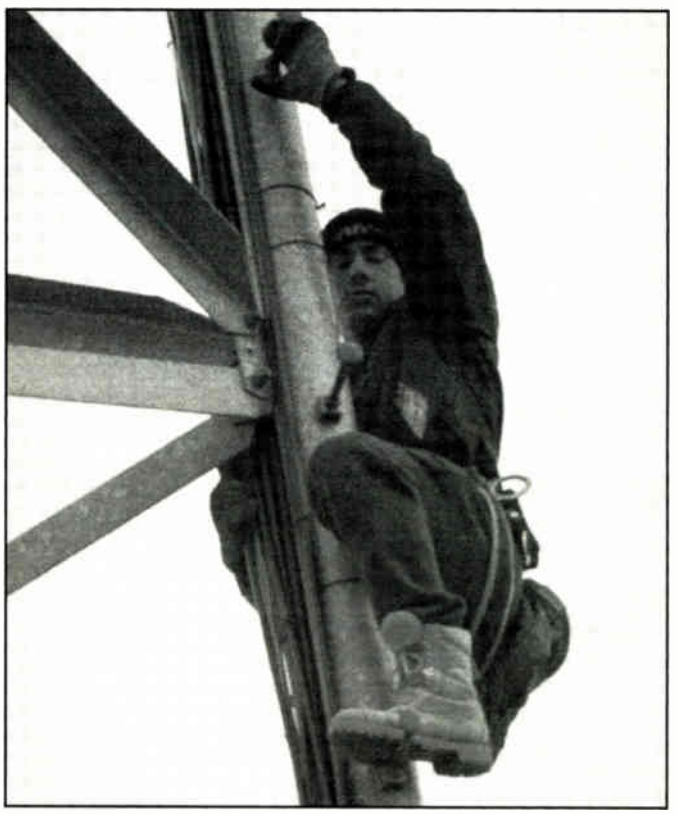
Carey often operates mobile CB in and around Frederick, and anywhere around the country where his work takes him. He'll use a handheld with a rubber duck when traveling, but prefers the Cobra 25LTD in his Bronco (which is also equipped with a cell phone and VHF busi-

(Photos by Bill Price)

*Carey Bandler, our CBer of the Month sporting his "Taz" hat.*



*Here's Carey climbing a tower in northern Virginia .*



*It's straight up—no 20 degree angle. Carey urges CBers (and ALL other radio folks) to climb safely, or "stay on the ground." Dr. Safety agrees!*

ness-band radio). Base operation is not too easy for Carey right now, as his home is governed by restrictive covenants which forbid external antennas.

"When I use a handle, it's 'Taz,' as in Tazmanian Devil," Carey pointed to the cartoon character on his cap. "Most of the time, I'm just Carey."

I watched Carey and Mike climb to 300 feet in a few minutes, stopping only once to rest on their belts (a scary sight for the uninitiated observer). To gain some perspective, that's like 30 flights of stairs, without landings, and the worst part is that it's straight up! It's not like climbing a ladder which leans on a nice 10 to 20 degree angle against your house—when you climb a purely vertical ladder or tower, you don't lean into the climb, you hang on and lean back, with far more weight on your arms than you might imagine.

Carey recognizes most flexible and rigid transmission line and waveguide at a glance, and can usually tell all you'd need to know about most antennas and feed systems because he is surrounded by them every day.

"Sometimes we work near live antennas—antennas that are radiating," Carey told me. "There are strict guidelines to avoid dangerous radiation—for instance, this one tower near the beltway has what we call a "six-minute area," where we must limit the time we spend near a certain area to six minutes." You don't stay seven minutes just to get a job done—you let the next guy go in, or you go back later. We take safety very seriously."

There was plenty of time for joking and banter on the ground, though, and riding between sites. Mike had offered to tell me some really interesting secrets about Carey, but when I finally got a chance to grill him, it seemed that Carey had either threatened to reveal Mike's most intimate secrets to Rikki Lake, or had paid for his lunch, 'cause Mike was no longer talking. Too bad. I mentioned several categories of scandalous information, hoping that one would trigger a reaction, but all the topics I mentioned—greed, lust, avarice, covetousness, gluttony—were met with deadpan—all except recurring dreams about llamas, which caused some stifled laughter on both their parts. I'll have to look into that.

Carey's got a base-loaded Cushcraft 10 meter mag-mount on the Bronco. He says he easily tuned the antenna to give low SWR across 40 CB channels—1.5:1 at the ends and flat in the middle. The 48" height and strong magnet make it a good choice for driving under branches and things that would normally knock other antennas off. A ham friend had given the antenna to him some time ago, and "it works just fine!"

His message to you is: "If you don't know how to climb safely—stay on the ground. Falling is no joke—life is not a cartoon and you're not Wile E. Coyote. When you get flattened, it's for keeps—it'll take EMTs and then some to get you up—not Warner Brothers."

I should also mention that Mike, Carey's friend and climbing partner, could not be nominated as "CBer of the Month," since he has no CB radio. He does, however, have a brand-new son—about 10 days old as of this writing—who looks to have the strong arms and legs of a future tower climber. Maybe we could run a "New Dad of the Month." Our thanks to Carey and Mike for an interesting couple days. ■

PETE'S HANDS-ON-RADIO PRIMER

By Peter J. Bertini

# Build Your Own Power Supply

When CB Radio's editor, Harold, asked me to write a basic electronics column for this magazine, I was at first somewhat skeptical. i didn't want to do a column that was boring; having to read textbook-styled prose interlaced with bunches of formulas dealing with Ohm's Law and power is indeed boring! Our goal is to make this column both educational and informative, and at the same time easily understood by the beginner. I also want to cover radio related theory from a hands-on practical aspect. At the same time, I don't want to talk down to you, or insult your intelligence! You will find that I will follow what appears to be an unstructured course. In other words, I will stray from the topic on hand to cover other related materials. I want some variety in my future column topics to hold your interest.

## You're The Star Student!

I am going to take the approach that you are my star student, and guide you through various topics and construction projects. The column, as you have seen, will be called, "Radio Basics" to keep us in line with the concepts of communications electronics. If I can show you something useful to build, I can also intermix a minimal amount of math and theory and show you how variations of Ohm's law are put to use in the real world. One of the worst things an instructor can do is ask students to memorize countless formulas. you will be able to complete any project without having to learn the formulas, which I will keep simple and to the point—but they will be presented for those who want to learn them. "Working" through the math may help make many concepts clearer in your mind, however! Besides, there are many tidbits of knowledge that are interesting and fun to learn. Let's get started.

## A 13.8 Volt DC Power Supply Project

Let's plan on eventually "designing" and building a 13.8 Vdc power supply for the workbench or to allow using your mobile CB radio for fixed base station use. Later on we can add refinements, such as digital metering, and making the voltage variable! This isn't a project that will be covered in the next few issues.

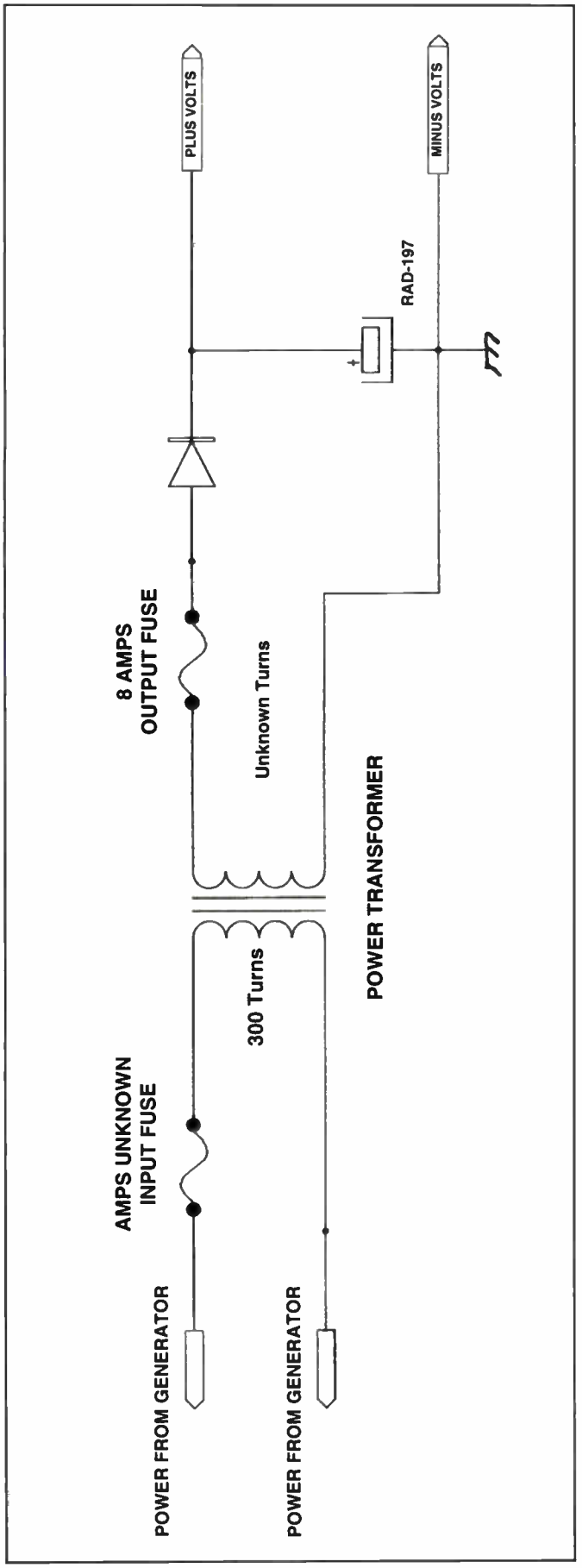

*This Realistic mobile CB operates from 13.8 Vdc. Lots of CBers have discovered that their mobile CB can double as a base rig simply by connecting it to a power supply.(Courtesy RadioShack)*

The heart of the power supply is the power transformer. it serves two functions. First, for safety reasons, it isolates our radio equipment from the AC line voltage. This is done by the insulating materials that separate the primary winding (where the AC from the power line goes) and the secondary winding. The other function that the power transformer performs is implied by its name; "transformer." Its job is to *transform* one voltage level to another. Transformers will only work with AC (or pulsating DC) applied to the primary. The AC voltage causes the generation of a magnetic field in the iron transformer core. In the United States, most power companies now supply 60 cycle AC. This means the voltage coming into our homes reverses polarity 60 times each second! This field changes magnetic polarity (reversal of the magnetic "north" and "south" poles) 60 times a second, depending upon the polarity of the AC line voltage applied to the transformer primary. This varying magnetic field induces the generation of a voltage in the secondary winding. I should also mention that "cycle" is now passé; Hertz is now used to describe the frequency of a signal.

## A Quick Demonstration

Let's catch our breath! There is a classic textbook demonstration of this principle I can use here. In this demonstration, 50 or more turns of wire are wound on a large iron bolt, and a magnet is passed quickly back and forth near the bolt head. A sensitive meter connected across the winding will show that a voltage is generated with each pass of the magnet. If you connect a battery to the winding, you will find that the device becomes an electromagnet—a magnet pole will either be attracted or repulsed from the bolt head. This is the principle that makes loudspeakers, motors and generators work. If you were to take a motor from a battery-operated child's toy, and connect its leads to your VOM (Volt-Ohm meter) you will find that spinning the motor shaft would generate a small DC voltage. The faster you spin it, the more voltage you will generate! Reversing the direction of spin will change the polarity of the voltage. The wire windings on the rotating motor armature pass through the magnetic fields supplied by small permanent magnets and generate electricity. In our transformer, the same principle is used. But instead of spinning the transformer around a magnet to generate the varying magnetic field, we use the AC voltage on the primary winding.

Now think about this—When the motor armature is turning, it generates a voltage. What about when we have a battery connected to the motor, its armature spins, but does it still generate electricity? The answer is YES! In fact, what happens is the motor tries to reach a speed where the voltage it generates is equal to the voltage being supplied by the battery. As that point is reached, and the voltage difference becomes smaller, the current drawn by the motor becomes less. In real life, this never happens, since there is friction to be overcome, and "work" that the motor must perform. The more friction, the slower the motor tends to turn and the more current it draws making the magnetic fields stronger, making the motor try to turn faster. Hey, I warned you I would wander off the path, but there are so many things to talk about and learn of . . . so let me stray afield a bit further. Back in the tube days of radio in World War II, the military needed a reliable means of powering high-voltage tube




*Left is the schematic drawing for this month's brain teaser challenge. Don't let the extra components fool you. This is a working schematic of a very simple DC power supply. We haven't discussed what those strange looking parts all do yet, but that shouldn't stop you from working out the answer to my questions. Remember, we need to find out the value of the missing input fuse, and how many turns of wire are needed to rewind the secondary so it will deliver 16 volts AC. You know the input voltage is 120 Vac. Other clues are given in the text and on the schematic! Good luck!*

radios from storage batteries. Lugging around a few hundred six-volt car batteries was a bit impractical, so someone dreamed up a device called a dynamotor. What they did was take a large-sized DC motor and added separate windings containing many turns of wire on the motor armatures. Connected to a battery, the motor would spin, and the "secondary windings" would produce the high DC voltage needed by tube radios! Some of these dynamotors were as small as Coca Cola cans, some were as big as car generators. Sometimes geared generators with hand-cranks wee used to power small radio sets. These were affectionately named "Gibson Girls" by military radiomen.

Back to our mysterious transformer! We know that our transformer is going to operate from a power source of about 120 Vac (our AC line voltage). To build a 13.8 Vdc power supply, we need a secondary winding that will produce about 16 or 18 volts. I will explain my reasoning for this in a future column. Let me give you some challenges to mull over until my next column.

You're a weather observer stranded on a deserted Pacific island, after grounding your vessel in a tropical storm. A damaged CB radio base rig and finicky 120 volt generator are your only chance of rescue. You have two big problems! First, rodents have destroyed the secondary winding of the power transformer. Hungry little buggers! You have a spool of wire and can repair it, but don't know how many turns are needed for the job. You need 16 volts for the radio to work. You were able to figure out that there are 300 turns in the primary winding. How many turns on the secondary winding do you have to wind? A clue? Well, if the secondary winding had 900 turns, it will produce 360 volts. If the secondary had one turn, you would see 0.4 volts. Folks, have your answers in hand next month, please! Since I gave you a hint, tell me the turns ratio of the secondary to primary windings. A "schematic" drawing of the transformer and power supply circuit is shown in Fig. 1. Don't let all those confusing symbols throw you off track. We will discuss their function in future columns.

## Another Challenge

Here's another problem for you to figure out. The primary fuse is missing, and with a finicky generator that occasionally goes berserk you need to protect the primary from severe over-voltages. You know the supply uses an eight amp fuse in the output. Give me your best reasonable guess for a good value for the primary circuit fuse. Need more hints? Well, remember that power (energy) can neither be created or destroyed. If a power supply transformer secondary winding is delivering 80 watts to its load, the primary winding is using 80 watts of energy from the power line.

## Here are some formulas you found scribbled on the ship's radio shack wall . . .

$P = I \times E$ $E = I \times R$

E is voltage. I is current in amps. P power in watts. R is resistance in Ohms. Hope to see ya on dry land next month, maties! And, please, let us know if you feel we are on "course" with "Radio Basics." ■

# Sidebander's Shack

**WHAT'S HAPPENING ON THOSE CB SIDEBAND CHANNELS** By Ed Barnat

## One Morning on Channel 40

It was early Saturday morning, just around dawn. I was working at my desk, in the shack and listening to the local "Geritol" group on the lower side of channel 40. Suddenly, but not surprisingly, there was a rogue signal on the channel. It was apparently oblivious to the ongoing communication. It was easy to see that whoever it was, they were not one of the group. Easy, because what they were saying was totally unrelated to, and frequently transmitted over, the present conversation. Further, they demonstrated no interest in joining in. Most notably of all, of course, was the tell-tale whistle of an AM carrier. I say not surprisingly because just about this time, just about every day, this stalwart group of regulars has their congenial confab thwarted. Usually it is by a group of ratchet-jawed truck drivers from the local UPS terminal. I guess they figured that's who it was because within a few minutes they all had given up and shut down for the day.

*Usually a courteous AM operator will relinquish a "set-aside" SSB channel (36-40) if asked politely. You might also gain a friend, AND potential Sidebander! (Courtesy RadioShack)*

### I Decided Not To Join In

As I said, I was busy working. I seldom, if ever, key up. I just like to listen to them. Besides, while I hate to admit it, they are a little too sharp for me. I probably couldn't keep up with them. Gosh, why can't these AMers leave this frequency alone? There are plenty of open channels below 36 around here. When you get right down to it, they have one hell of a nerve. Why do the regulars put up with this? Why are they letting these jerks drive them off the air? *Why am I getting so upset?* I don't know. I just am and I am *not* just going to sit here and take it. Why should I? If they aren't going to do something about it then, damn it; I am! Hey, I've nothing to lose! Just who do these bozos think they are, anyway? Well, as you can tell, I was getting steamed. Down right ticked off is what I was.

Then I noticed the coffee sloshing in the cup on the desk, as I bounced up and down in the chair, muttering invectives. I realized that I was going over the edge. This is not good. Seldom, if ever, is one problem solved by causing another. That was, however, just where I was headed. Slowly, as I listened to the whine and howl of the AM interloper, sanity began to return. As it did, it became apparent that I wasn't listening to the usual group of gear-jamming yahoos. It wasn't hard working Suzy, the occasional seven-day-a-week driver. Nor was it any of the religious folks—you know—the ones who frequently include rough references to at least two personages of the Trinity in their discussions. No, this was a single operator who was happily talking to himself. Well, at least I couldn't hear who he was talking to. They must have been out of my range, somewhere north of here.

"Yeah Gray Ghost," I heard him say, "I've still got a copy on ya. Turn the beam a little more my way. I'm just approaching exit 15." Wow, exit 15 is a good fifteen miles north of here. He must be running something heavy to have been interfering with the locals from north of there. "Boy," he soon continued, "I've still got you at exit 13." As he got closer, I got calmer. Soon I was calm enough to recall that I was a Sidebander. Sidebanders are gentlemen. Therefore, I must be a gentleman also—if only for the sake of SSB. Besides, you can't overcome evil with evil, that only makes things worse. Still, something had to be done, but what?

He kept getting closer, chatting with someone who I still could not hear. He kept calling out the exits as he passed them; 13, 12, 11. Now he was close, close enough that, if I keyed up on SSB, he was sure to hear me. He was also close enough that, if I keyed up, I would most likely cause him to lose contact with whoever it was that he was talking with. Now was my chance to destroy his communications, just like he had done to the regulars a few minutes ago. I really wanted to. At first, I thought I would. I had even placed my hand on the key in eager anticipation. Then I caught myself. I moved my hand away from the mic, settled back in the chair and drew a few deep breaths. While keying down might make me feel good, it probably would only aggravate the situation. I was already aggravated enough for both of us, so obviously, that was not the answer. Then came the dawn. I knew exactly what I would do. I would treat him as I would like to be treated. I would treat him like a Sidebander.

I timed my transmissions carefully. I wanted to come in just as he let go of the key. If they had actually been Sidebanders, there would be a pause and I wouldn't be stepping on anyone. "Break," I said. No response. I was hoping one of the regulars would come back and talk to me, but no go. They were long gone. I waited another pass or two. "Break 40 Lower side." Still no response. I waited another pass or two and broke again.

"USS 2641 listening lower side 40." This time I got a response, from the AMer. "Hey Gray Ghost," he said, "I am starting to lose you and it sounds like there is Sideband on channel down here." I made a couple of more calls. Suddenly, to my surprise, our AMer was on LSB. He was replying to my call. He was a Sidebander. Amazing!

"Hey," he asked, "you're not running a net or anything are you?" "No," I replied, "just looking for a little chatter—there's usually a group on here in the morning. It looks like you may have chased them off." Over the next 20 minutes we found ourselves engaged in an enjoyable and enlightening conversation. His name was Jim. He lived in Warrensburg and commuted daily to Troy, where he worked for a courier service. The Ranger, under the dash, was putting out 50 Watts (that he would "admit to") and got quite a bit of use. As a courier, he drives about 300 miles a day. Jim really enjoys CB and has contacts all over the region. He used Sideband, mostly for "talking distance." Yes, he knew about the SSB set-aside. He just didn't think folks cared about it any more. Eventually we got into a discussion of roger beeps and echoes. We both agreed they were hard to listen to, good ways to ruin good signals and a great waste of money. By the time Jim reached his destination and signed off, we had both had a nice time and were looking forward to our next SSB contact. In the end, friends were made, good conversation was had and, all things being equal, there will be a little less AM traffic on the SSB channels around here. Way to go!

*Most professional drivers will be using the in-transit channel 19 in the AM mode. Once in a while though, you'll find one on an SSB channel, but they're usually pretty good about changing channels if they know they're disrupting your comms. (Photo by Bill Simpson)*

## It's Not Always Ignorance

OK, I can't guarantee that Jim will never run AM on the SSB set-aside again. He will, however, think about it a little more carefully before he does. Someday . . . well, you never know. What is certain is that he is more likely to respect the set-aside than he would have been if I had followed my initial urges; to jump down his throat and tell him what a blithering idiot he was. Obviously he was not. The point is this: not all AM traffic on the SSB set-aside is necessarily hostile, or even intentional. Often, it is a simple case of ignorance—Not in the derogatory sense—they simply don't know. Other times, the cause may be apathy. They know, but don't care. It's not that they wouldn't care—if they knew how important it was. The value of maintaining the separation may have never been made clear to them. They have never acquired a sincere appreciation of how important the SSB set-aside is to them, personally. Either way, ignorance or apathy, the root of the problem is ours, not theirs.

We, the SSB community, must be firm in our resolve to maintain the integrity of the set-aside. If we don't care, why should they? That means that first of all, we must use it. When interlopers appear, engage—not attack—them in conversation. if they aren't SSB capable, accompany them to an AM channel and talk with them there—Sidebander to potential Sidebander. Talk, don't preach or reprimand. Along the way, however, drop in those little nuggets of friendly advice and encouragement. Sure, it's easy to get mad and blow off. Makes you feel good, makes them feel bad. They may go away, but they'll be taking feelings of rejection and resentment with them. Keep it friendly. Bring them in—don't chase them away. Make allies, not enemies. Make sure they know that they are a part of it, that they ARE Sidebanders, even if their radios aren't—yet! Show them how working together can further our goals and enhance the enjoyment of our hobby for Sidebanders, present and future. ■

# Tomcat's Time Warp

**OUR COLUMN EXPLORING CB'S EARLY YEARS**

By Tom Kneitel, K2AES, SSB-13

## "The Friendship Station" Was the FCC's Worst CB Nightmare Come True!

The media promotes the myth that radical protest is the exclusive domain of the so-called "younger generation." Not so! Here's the true story of a CBer who dared to protest the FCC's CB rules, to stand up and be the first to adamantly do battle with them. He was not young in years, merely in spirit, though confined to his wheelchair by a stroke some 20 years before he embarked on his crusade.

He was Ernest L. Walker—Ernie, as he was known to CBers of his era—but his name is probably unknown to you. Ernie's name still brings warm thoughts and heated discussions by many old timers. Chances are it can still cause a pained look to anyone who was connected with the FCC in Washington while Ernie was in high gear.

### Who Is This Guy, Anyway?

Walker was a licensed CBer from Espanola, New Mexico. He valued his Constitutional rights to the freedoms of choice, expression, and (most of all) speech. He was one of the first CBers in New Mexico; his five-year CB license having been issued to him on April 30, 1960. Ernie's status as a licensed operator ended two years prematurely at 3 a.m. on January 7, 1963.

A third of a century has now passed since that event, so it seems appropriate to mark the occasion by passing along Ernie's story. Regardless of whether you agree with his philosophy, approach, or tactics, Ernie appears to have been the first casualty in what was to become a hobby-wide struggle for better operating rules that lasted for more than 15 years. That makes Ernie's plight one thread of the fabric from which today's CB service has been created.

Why Ernie lost his license, and of greater importance, *what* he did in an effort to retain his authority to operate CB station 15W1670, forms one of the most in tribute-filled stories since CB began in 1958. Here's Ernie's story.

### Incident In New Mexico

Ernie did business as Walker's Electronics in the quaint town of Espanola. Espanola is a mountain community originally settled in the 16th Century by Spanish adventurers and priests long before the first English-speaking person ever set foot west of what is today called the Mississippi River. Today you can drive to Espanola from Santa Fe on a divided highway, but not that many decades ago, a visit to Espanola meant a trek on foot, and later a drive along a small winding mountain road.

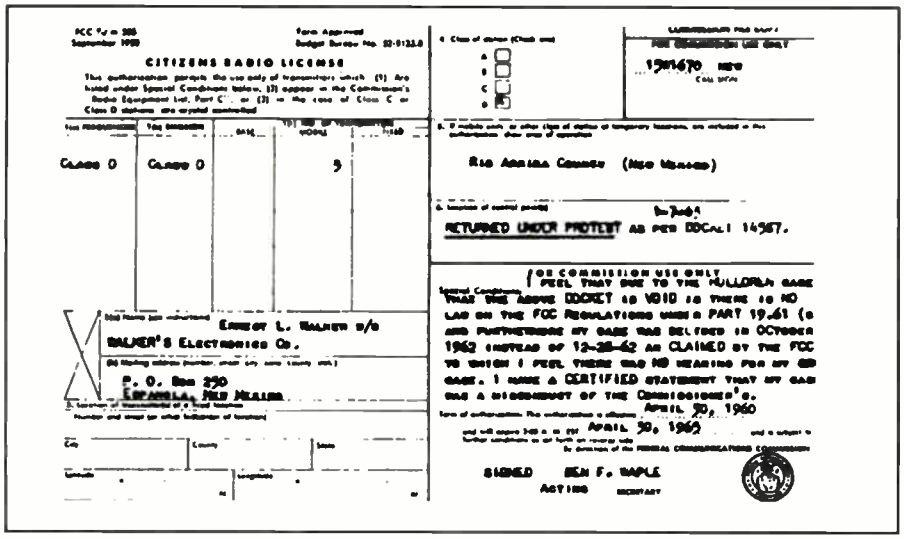
Walker's CB license was issued at a time when the FCC's CB rules were at the peak of their ambiguity and operators didn't know for certain what was "legal" and what wasn't. FCC regs Sec. 19.61(a) said vague things like all transmissions had to be "substantive," but didn't provide any further explanation or examples. More often than not, things CBers found to be "substantive" did not come up to the FCC's expectations, whatever they might be. This was learned only after receiving one or more FCC violation notices. For instance, the rules didn't forbid operators to call CQ, but when a CBers was monitored doing that they were given a violation notice. Same with shooting skip.

Aside from Ernie's use of CB, personal two-way radio in Espanola was an oddity. For quite some time, he was the only CBer in town and, for that matter, for many miles around.

In those solar-active years, skip stations came rolling in from New York, Florida, North Carolina, and everywhere. When Ernie heard these operators who shared his love of CB, he somehow ended up in their conversations. Isolated as he was, he said, "it was the only neighborly thing to do," and it also seemed like that to the friends he made via skip.

Unfortunately, the FCC didn't agree that being neighborly was good to do. The agency began clamping down on people calling CQ and working beyond the ground wave coverage area of their stations, announcing that such operations weren't allowed on CB. At least for a while, Ernie backed off, but then he got to thinking about all of those friends he had made from Bangor to San Diego. Then he thought about the position the FCC had placed itself in by stipulating that a CBer couldn't communicate outside his "groundwave coverage area."

*One day's mail often consisted of several dozen, sometimes 100, letters. Ernie replied to each and every card and letter. One of his pet projects was donating a CB radio to a shut-in every year.*



CITIZENS RADIO LICENSE

RETURNED UNDER PROTEST AS PER DOCKET 14567.

*A copy of Ernie's CB license, which he finally returned to the FCC marked "under protest." In the lower right he wrote, " . . . there is NO law on FCC regulations . . . and furthermore my case was decided in October 1962 instead of 12-28-62 as CLAIMED . . ."*

Walker, above all else, was aware of what he felt were his rights as a citizen. He began to wonder if perhaps . . . just perhaps those rights were slipping away from him and every other American who had a CB radio, especially with the FCC going so far as to "censor" his transmissions by telling him what he was allowed to say over his personal radio, and who he could and couldn't communicate with.

## A Question To Ponder

The more he thought about this situation, the more concerned Ernie became. So he evolved a plan to test in court "once and for all" the Constitutionality of the provisions of FCC Part 19 (now known as Part 95).

The first part of the plan was to provoke as much interest as possible in the "case." He knew he had an excellent tool at hand to do this; his CB radio. That's when he started working skip again. Not just a little skip, but *a lot* of skip. Enough skip in approximately three years as a CBer to receive 18,000 QSL cards. So many QSLs and letters that he was receiving 50 percent as much mail as all of the town of Espanola did. There were some days when Ernie received over 100 DX cards!

To each of his DX contacts (when skip conditions were good, there could be as many as 300 on a "busy" day), he carried a theme. "Visit Espanola . . . it's some of the most beautiful country in the world," he would begin. He would get around to, "working skip isn't illegal. It's FCC censorship that is illegal."

It wasn't that Ernie was out to deliberately bend, twist and break every FCC rule. He didn't run high power, operate beyond the edges of the band or have an antenna that was higher than the rules permitted. He followed most regulations to the letter, including using his callsign, and keeping transmissions within the FCC specified time limits.

Ernie understood and agreed that the FCC had a job to do, and that it was necessary for guidelines to be set out to establish every radio service. He followed those guidelines, except that he honestly believed that the agency abridged his Constitutional rights by censoring him by means of skip restrictions. Or, as Ernie put it, "talking to only who they tell me I can talk to."

## What Price Glory?

Ernie's signal, voice and cause were well known to CBers of the early 1960s. From coast-to-coast and border-to-border, virtually every active operator had either worked or knew about "15W1670, the Friendship Station." Ernie was trying his best to make certain as many CBers as possible knew of his "mission."

Soon enough even the FCC knew of him. They would have been trying very hard NOT to hear him in order to have passed him by. One fateful day, the FCC finally decided to take official notice that Ernie's station was apparently reaching out way beyond its groundwave coverage area.

The first official FCC recognition of Ernie's mission came on November 4, 1961. The monitoring station in Ft. Lauderdale, Florida observed 15W1670 in apparent contact with a station in Florida. A Notice of Violation was quickly fired off to Ernie notifying him that he was in direct violation of the FCC's groundwave coverage rules.

Ernie responded with a note saying, "Yes, I was talking with a station in Florida. It would be difficult for me to tell the people in Florida that we don't want to talk to them." And, he added, "If we had done wrong by answering these fine folks, we are sorry and we didn't not feel any violations were being done."

Curiously, the FCC accepted this blunt response and took no further action. They filed it and forgot it. What they didn't realize was that they would eventually fill an entire filing cabinet before Ernie Walker felt he had made his point.

A month after the Ft. Lauderdale violation notice, more FCC mail arrived. On December 11, the FCC station in Canandaigua, New York reported monitoring 15W1670 contacting a station in North Carolina. Another Notice of Violation citing groundwave coverage range. Walker responded," . . . my station is located in a freak area and I derive considerable business from such calls. These calls attract considerable business to the Espanola, New Mexico area. I do not intend to violate any law of the FCC, but I just can't deny any calling station."

## The FCC Responds

On January 8, 1962, the FCC in Washington wrote to Walker. Basically, they told Ernie that their field monitoring stations advised them that he "did not understand or wish to abide by the regulations which prohibit CB contacts via skywave, Section 19.61 (g)." Walker was not impressed, bluntly responding, "I certainly do not intend to ignore any station that contacts me regardless of where they may be."

Late in January, the FCC in Ft. Lauderdale again monitored Walker. They taped his contact with a CBer in Port Orange, Florida. Again, they mailed a Notice of Violation citing the groundwave rule. Walker defiantly added to their information, stating in reply, "I cannot ignore calls to my station regardless of where they originate. As a matter of fact on the date the Ft. Lauderdale station monitored me, I had received 31 calls in Florida. I find such long distance calls helpful to my business of selling radio apparatus. I will continue to use my station in this manner until orders to the contrary are received from a Federal Court."

## The FCC Sends in the Troops

Upon receipt of Walker's belligerent response, the FCC's Washington office

dispatched a task force of two FCC engineers from the Denver Field Office to head to Espanola. Their job was to catch Ernie in the act of working skip, which was odd inasmuch as Walker never denied doing so and, in fact, had freely admitted it in writing!

On February 18, 1962, the FCC monitoring van parked down the street from Walker's station noted that 15W1670 had made 35 separate transmissions between 3:15 and 3:50 p.m. on that date. While one FCC engineer monitored, the other noted that Walker's two vehicles were parked in front of his station. The FCC said Walker's calls were directed to Mobile Units 1, 2, or 3.

The following day, FCC personnel came to Walker's front door. Confronting him with their tapes and the fact that his vehicles were parked in front of his station. Walker listened to the tapes, then readily admitted making the calls to Mobile Units 1, 2, and 3. On the spot, Walker was issued a Notice of Violation, to which he immediately responded that he had, indeed, done just as the Notice had charged.

The FCC people went back to Denver, advising Washington of their encounter with Walker. On March 27, Washington issued an "Order to Show Cause" demanding that Ernie come forth and offer any good arguments as to why the FCC shouldn't revoke his CB license. Walker waived his right to an oral hearing, electing to submit a written statement of his defense.

## Walker Responds

Ernie responded that, " . . . none of the communications cited were in violation of Section 19.61(a) since all were for business and personal reasons."

The FCC noted in regard to that part of Walker's defense (at a later date) that, "Walker's reference here to Section 19.61(a) was overruled by 19.61(g) since (g) was a specific exception to (a)." They subsequently ruled Walker's argument to be invalid because it was not relevant.

Relying upon data furnished by the Denver task force, the FCC ruled, "The evidence clearly establishes that the transmissions to Units 1, 2 and 3 . . . were, and were intended to be, thinly veiled solicitations for replies from random unknown stations."

Then, on November 28, the FCC issued a "Memorandum Opinion and Order," stating (in part) . . . "Accordingly, it is found, on the basis of available evidence . . . including considerable correspondence from Walker both before and after the Show Cause Order and the admissions made by him to the Commission's inspecting engineers . . . that he has repeatedly violated Section 19.61(g) of our rules. It is further found that, in view of respondent's reiterated intent to continue the unlawful conduct in question, there has been shown no basis for any action less than imposition of the sanction of revocation."

## Adios, 15W1670?

That was NOT the end of the story. The heart of the story was Ernie's determination to have Section 19.61(g), restricting skip working, brought into a Federal Court where it could be decided by a real judge, not an FCC civil service "administrative law judge." He wanted a ruling on the Constitutionality of such a restriction. Walker remained convinced that if the matter was pressed beyond the halls of the FCC and into the judicial system, the FCC would no longer be able to limit Constitutional rights via its cumbersome administrative regulations.

The first step was forcing the FCC to revoke his license for violation of Section 19.61(g). He was successful at doing this. He then sought help from individual CBers, attorneys, judges and politicians.

CBers were actively distributing "Help Ernie Walker" handbills at CB jamborees and coffee breaks. There was a move to flood Congress with 70,000 pieces of mail protesting the regulations and the decision in the Walker case. The idea was to have the mail arrive in Washington shortly after Congress opened its session on January 9, 1963. Walker was demanding a Senatorial investigation of the FCC.

In his long fight with the FCC, Walker had collected plenty of material to use in his court fight. His files bulged with hundreds of letters from operators who had received Notices of Violation, all asking, "Can the FCC do this to me?"

## Sure of His Goal

Not all of Walker's supporters were as certain of the eventual good outcome of this battle as was Walker himself, but that didn't dampen anyone's enthusiasm. Walker's battle cry was loud and unchanging, "Telling us that we, as CBers, cannot converse with other licensed CBers, simply because of some imaginary electronic boundary is in violation of the Constitutional right to freedom of speech. It has always been the democratic way that when we find one of our basic freedoms violated, an aroused public has come to the rescue to preserve that freedom."

Walker added, "I am not a judge nor an articulate student of the law, just a citizen, like every other CBer. But I know that something is wrong here and I feel motivated to at least do my part to protect my small investment in CB radio and my large investment in the future of my country."

## The Cause Picked Up

Walker's cause was eventually taken up by an opportunistic early-1960's would-be "national" CB club of questionable integrity. Nonetheless, Walker was happy to accept its support, taking it at face value. Naive Walker was "used" by the group for no good purpose to the point where his cause became derailed. Whether it was caused by the group's own failings or Walker's disgust and disappointment with its dishonesty isn't fully understood. He distanced himself from the organization before it fell apart on its own, but even that didn't help.

Ernie never could regain his CB license, nor bring his case into Federal Court, nor spur a Senate investigation, nor cause the FCC to allow skip working for CB operators. He did inspire CBers to continue pressuring the FCC for relaxed CB regulations. Although this never produced legalized skip, more than a dozen years later, virtually all other anti-hobby restrictions calling for "substantive" communications were eventually dropped from the FCC's CB regulations.

Somewhere in Ernie's story is a message; read into it what you will: obey the law. Don't fight city hall. Stand up for what you believe at any cost. Regardless of how you view Ernie Walker, mark that he maintained his dignity and faith in what he believed to be just and fair. When a person can do that, you can't think of him as a loser. Any things that Ernie did lose were not his loss alone, but a loss to all who felt (and still believe) that he fought the good fight.

In the late 1970s, I went to Espanola and visited Ernie. After the FCC decreed that CBers no longer needed licenses, Ernie went back on the air. He had become mellow, held no bitterness, and was shooting skip as vigorously as ever. Ernie passed away a few years ago, leaving many friends. I think about Ernie and his "Friendship Station" from time to time. You would have like him, too.

We're always looking for input to this column. Please write in and let me know your memories of pre-1980 CB radio, equipment, coffee breaks, jamborees, CBers and clubs. Got any photos or QSLs from the old days? Send originals or decent copies. Got any questions about early CB? Don't be bashful. By the way, my e-mail address is K2AES@aol.com. Catch you on the flip flop . . .

**Tomcat!**

# The NOAA Weather Radio: A Lifesaver for the Price of a Pair of Shoes

A family is awakened in the middle of the night by an alarm on their weather radio. The special receiver carries a tornado warning advising them to seek cover. They retreat from their mobile home to a nearby shelter moments before a twister tears through the community, scattering lives and mangled aluminum in its wake.

A recreational vehicle owner in a campground picks up a flash flood alert on his weather radio and moves his RV to higher ground. Minutes later a wall of water sweeps through his former campsite.

In both cases, lives are saved by a small radio receiver costing *less* than a new pair of shoes.

## Around the Clock Broadcasts

Weather reports and warnings like the ones mentioned above are broadcast by the National Oceanic and Atmospheric Administration directly to home receivers around the clock. Some weather radios have the capability to receive a tone alert signal, triggering a built—in alarm to warn listeners of severe weather announcements. Many new CB radios also include NOAA weather reception and the tone alert signal.

But despite hundreds of real-life stories like those mentioned above, NOAA remains one of the best kept secrets in the United States. And it's a costly secret, according to Stanley Johnson, NOAA Weather Radio program manager.

"In many instances, NOAA Weather Radios advise people of severe weather alerts and warnings ahead of the mass media, buying extra time for people to react before dangerous storms hit their areas," said Johnson. "When you're in the path of something like a funnel cloud, minutes and seconds can mean the difference between life and death."

## Tailored Messages

Weather service offices tailor their NOAA Weather Radio broadcasts to suit local needs and commercial interests. (Oklahoma broadcasts may offer more agricultural information and provide people with alerts about high winds or tornadoes. Broadcasts in New England may focus on marine weather conditions for recreational boaters and fishing and shipping vessels.)

Routine information is updated every one to three hours, and the broadcasts repeat every five minutes or so. Weather stations immediately interrupt regular reports when a severe weather situation requires a live alert or warning. Reports air on one of seven VHF frequencies between 162.400 and 162.550 MHz.

## Early Beginnings

NOAA Weather Radio broadcasts began in the 1950's when the old Weather Bureau started broadcasting aviation weather over two stations. In the 1960's, stations were added for the marine community, and by the late 1970's, the system included more than 300 stations. Now more than 400 transmitters are within the listening range of most of the Nation's population. In 1975, NOAA Weather Radio became the only government—operated radio system for providing direct warnings to private homes for natural and technological hazards. It's also the primary source of information for activating the Nation's Emergency Broadcast System.

Currently the NWS is modernizing, building a network of improved radars, satellites, data buoys, supercomputers and telecommunications capabilities aimed at saving lives and preserving property. NOAA is working with FEMA and other agencies to provide post-disaster information to its listeners such as food, shelter, water and other public service related bulletins.

But state-of-the-art technology and accurate warnings and forecasts are of little value if people who need the information don't get it in a timely manner. That's why the Weather Service is also modernizing NOAA Weather Radio. Efforts are underway to replace older consoles with programmable, computer—based systems, said Johnson. The new technology will automatically convert weather messages directly from electronic text to speech and broadcasting at appropriate times. Additional transmitters will expand the system's coverage to isolated areas.

Advocates of NOAA Weather Radio foresee a future for specially—tailored "narrowcasts." Such messages, for example, would automatically warn mariners about extremely high tides by sending a special message to receivers equipped to recognize a special broadcast signal.

"Our goal is to have a NOAA Weather Radio in every home, just like a smoke detector, and in all schools, hospitals and other public gathering places," said Edward Gross who heads the Service's Office of Industrial Meteorology. ■

# Tech Talk With Gordo

EXPLORING THE TECHNICAL SIDE OF CITIZENS BAND

By Gordon West

## Get More From Your NiCd Batteries

Portable CB walkie-talkies and other battery operated equipment like GPS position finders and self-contained spot lamps may run off either alkaline cells or nickel cadmium (NiCd) batteries. Alkaline cells are normally discarded after initial use or a few "renews", whereas NiCds are specifically designed to be deeply discharged, and then fully recharged, up to 600 recharge cycles.

Both the alkaline cell as well as the rechargeable NiCd each have specific strong points when you consider which type of battery system to use in your 27 MHz, 49 MHz, or GMRS handheld. Knowing which type of batteries to support your portable communications and navigation equipment will make a big difference on how long you can stay out and away from a recharger or a new set of cells.

### Alkalines

The alkaline battery most popular in CB radio handheld transceivers is the common "AA" battery. The alkaline cell was a major improvement over older carbon-zinc batteries that you may remember putting in your old flashlight, and then having them leak their internal fluids, ruining everything. The new alkaline rarely leaks after use, and the alkaline offers an energy density rating of 45, 4 watt-hours per pound over older carbon-zinc batteries that had only half the staying power for the same sized cell. In other words, long-life alkalines dramatically outlast older zinc cells. And the alkaline is only 2/10 ounce heavier than older carbon-zinc cells; alkalines weigh in at 0.8 ounces each. This is the same exact weight as a rechargeable "AA" cell, too.

If you plan to run your CB handheld or GPS navigation receiver away from a convenient charging voltage source, you would want to select alkaline batteries which will offer as much as a *three times* increase in usable life under normal discharge conditions as comparable sized "AA" rechargeable NiCd batteries.

"Our new Midland 75-800 radio runs on 9 "AA" batteries, and we always recommend using alkaline batteries to ensure longer and more powerful transmission times," commented one Midland radio engineer. "To conserve batteries, users may select a one-watt, battery-saving, output power setting, allowing this radio to perform an entire day on an 80 percent receive/20 percent transmit duty cycle," adds Midland.

Nine "AA" cells means 9 x 1.5 volts = 13.5 Vdc. The Midland 75-810 offers full output power performance down to 12 Vdc external source input, allowing the nine individual "AA" cells, hooked in series, to successfully operate the equipment at full performance to approximately 75 percent of their energy density. The remaining 25 percent will still continue to run the CB radio, but the voltage will be dropping relatively quickly on high-power transmit output; less voltage means less power out.

Long-life alkaline cells continue to offer more punch for the buck, with energy density increasing by as much as 25 percent or more every couple of years.

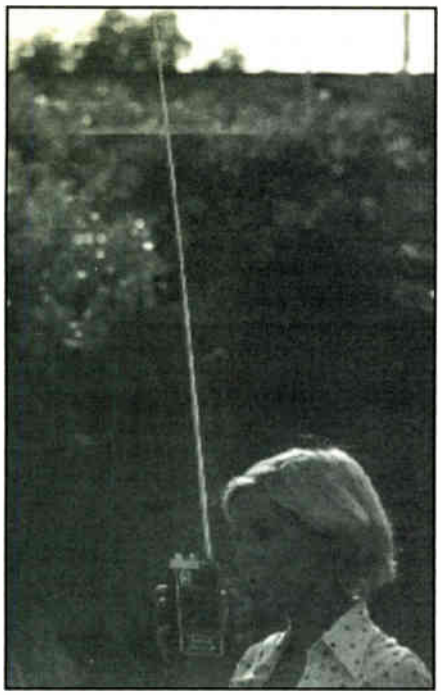
The ampere-hour capacity of "AA" cells can be computed as a relationship between amp-hours, voltage, energy density, BATTERY WEIGHT, and volume:

Amp-hours x voltage divided by battery volume = energy density

Amp-hours x voltage divided by battery weight = energy density/pound


*The small wall adapter charger will take up to 12 hours to charge a low battery pack.*


*Double-check your springs to make sure they aren't getting rusty.*



*CB handhelds will work all day on fresh alkaline "AA" cells.*

Most alkaline "AA" cells do not have an ampere-hour rating listed on the side of the cell like NiCds. The way to tell longer life "AA" alkaline cells is by their weight. When you go to the swap meet and find "AA" imported batteries that sell for a quarter each, they will feel extremely light when you pick them up. Now go into a professional radio store and feel the weight of individual "AA" cells, and then look at their price for a one, two, four, or eight pack. The heavier the battery, the longer it is going to work for your CB radio or GPS navigation receiver, or portable penlight, and the more it is going to cost.

And if you find a good buy on name-brand "AA" cells, you can buy a bunch and store them in a cool spot with a shelf life exceeding 10 years! Alkaline cells are perfect for storing away to handle emergency communication purposes with your handheld CB radio. (Editor's note: Gordon, The Consumer Electronics Manufacturers Association (CEMA) says " . . . sales of so-called 'primary' batteries—AAA, AA and related sizes—totaled a staggering $2.6 billion at the factory level last year." They predict sales will rise eight percent this year to more than $2.8 billion. That's LOTS of alkalines!)

## New "Renewal" Batteries

The new "renewal" alkaline batteries may also be replenished several times with special charging circuits. This is relatively new technology, and most emergency CB radio communicators would rather rely on a fresh set of new alkalines than try to depend on "refreshed" alkalines that may give out in half the time as new ones. When you need to communicate on a CB radio in an emergency, or away from any local power source, a new set of "AA" alkaline cells is the way to go.

## A Few Important Tips

It's important to look inside your portable CB radio or GPS receiver to see how the cells are combined in series. Alkaline cells are rarely soldered in series, but rather held in place by a battery holder and springs. The springs will rust in no time if you don't spray them with a protective anti-rust coating. Keep those springs polished, and you will have uninterrupted battery power. Most handheld CB radios use the spring for the negative contact on the battery, and a little button-tab as the positive contact post. Be sure to observe correct polarity.

If you're running your handheld CB radio off an external 12-volt source, MAKE ABSOLUTELY SURE YOU OBSERVE POLARITY on that little 12-volt input jack. Some jacks have the inside pin as negative, as opposed to the inside pin as positive. Look very carefully before adding an external 12-volt source if you're using a 12-volt plug other than what was supplied with the handheld CB or GPS receiver.

One final note on alkaline battery trays. Some equipment may feature "jumper cells" that are not actual batteries, but a zero ohm series connection to take the place of one or two "AA" cells. These *must* be left in place when running the equipment off alkaline batteries. Each one of these "jumper cells" reduces the voltage by 1.5 volts, and this prevents a 10-cell holder from running your CB handheld or GPS receiver at a voltage higher than what is recommended. If you replace the jumper cells with actual batteries, you could raise the voltage beyond FCC limits for no more than 4 watts output. You could also damage your equipment, too!

## Rechargeable Nickel Cadmium Batteries

The nickel cadmium battery, or NiCd, looks just like an alkaline "AA" cell and it is commonly available in "AA", "C", "D" and button configurations. All CB radio handhelds and GPS navigation receivers will work very well off the lower voltage NiCd. A fully-charged NiCd will have a terminal voltage of 1.2-1.3 volts, two-tenths of a volt less than an alkaline equivalent at 1.5 volts. The rechargeable battery pack is usually sold as an option for 27

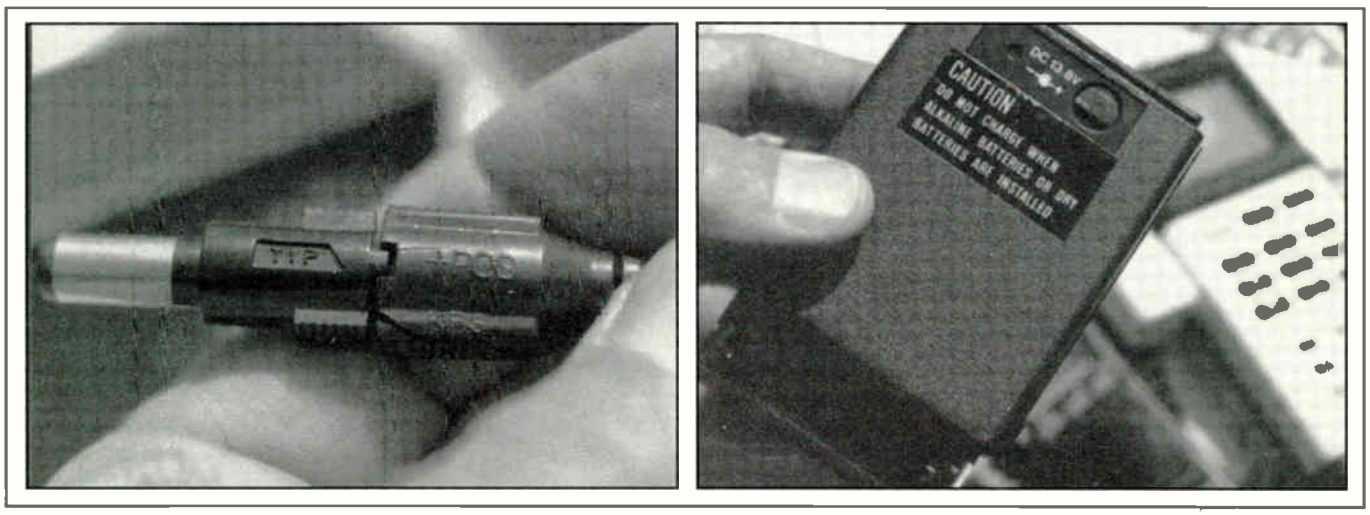

*The rechargeable cell (left) will only give half the life as the alkaline cell on the right.*


*Here's a variety of rechargeable NiCd batteries; the smaller diameter "AA" cells are the most common ones used in CB electronic portable sets.*

MHz CB handhelds, portable scanners and 49 MHz handhelds. But some GMRS transceivers, along with most GPS navigation receivers, include the rechargeable battery pack and recharge circuit as a standard feature when purchased new. If you plan to run off rechargeable batteries, find out if your portable transceiver or scanner/navigation receiver can charge these battery packs within the unit. It's a major hassle to remove the rechargeable cells every time you need to give them a recharge!

"Our Maxon 27-KC handheld may take rechargeable batteries, and a charger jack for input from an optionally-purchased charger is built into the circuit to recharge nickel cadmium batteries," commented Jack Hansen, a sales representative for Maxon. The Cobra HH-40, as well as Midland 75-805 and Radio-Shack TRC-231 handheld CB transceivers can all run off rechargeable batteries with a built-in charging jack provided by the manufacturer. Keep in mind that you must obtain the rechargeable batteries yourself in the right configuration for the particular transceiver. On GPS navigation receivers, rechargeable batteries and the little wall charger are normally part of the package.

The "AA" rechargeable nickel cadmium batteries are about three times as expensive per cell as alkaline batteries, and offer a relatively high power density from 600mA to 900mA per cell, with a terminal voltage that remains relatively constant for 97 percent of battery life. But the characteristic of the rechargeable NiCd battery is only about 1/2 "staying power" under load as comparable sized alkalines, and little capability of running a piece of portable communications and navigation equipment when it begins to enter the "dead zone." The NiCd goes from a relatively constant 1.20 volts immediately down to 0.1 volts in a matter of a couple of seconds. You have little advanced warning that your battery pack is going dead. While the "AA" cells will slowly fade out, the "AA" alkaline *re-*




*ALWAYS check the jack/plug polarity before you plug in an external 12 volt source.*


*Portable GPS navigation receivers work off "AA" alkaline cells. Remember: alkalines are your best bet if you're going to be away from a power source used to recharge NiCds.*


*Here's the Cobra HH-35 WX, portable 40 channel CB transceiver.*

*chargeable* cells instantly die out.

But they can be revived! Some manufacturers claim 1,000 recharge cycles on properly maintained NiCds. This could let you run your radio every day for about eight hours of monitoring and then let you recharge the batteries for up to 3 1/2 years!

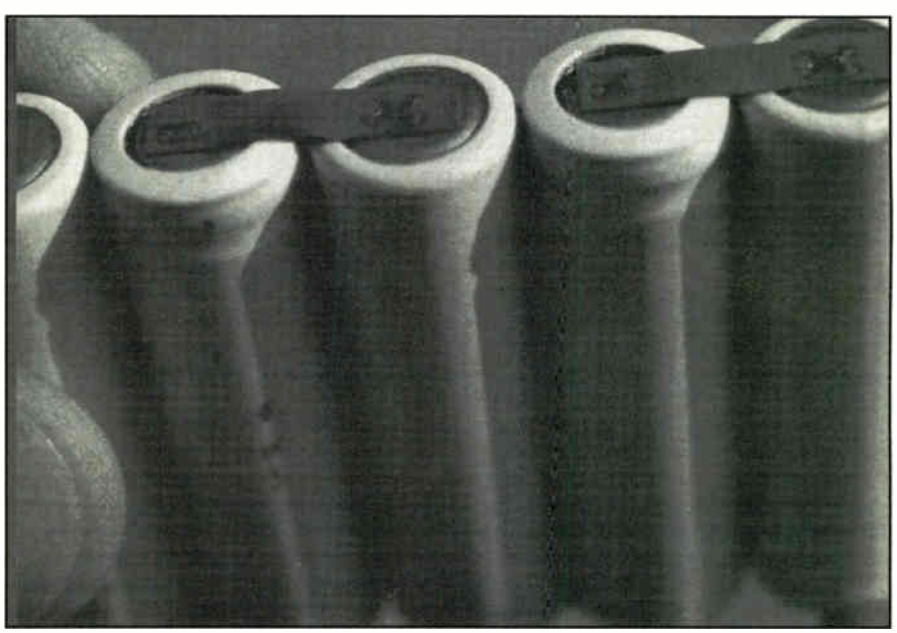
But another down side of rechargeable NiCds as opposed to alkalines is their short shelf life. Charge a set of nickel cadmium batteries, put them in a cool place and they will be dead in about two months. Nickel cadmium cells and battery packs self-discharge 10 percent per week.

So just leave them plugged in, right? Wrong! Continuously recharge a NiCd pack may destroy the cell within three months. Overcharging with something as little as a tiny trickle charge creates internal crystals to grow within the cell, forming spike-like dendrites, which grow and slowly puncture the separating materials within the cell, creating a leakage that can be seen as white snow coming out from the positive and negative terminals of the battery. This illustrates a cooked NiCd; the cell and probably the entire battery pack is now ruined.

Nickel cadmium batteries are best recharged at 10 percent of their amp-hour rating from 10 to 16 hours, or to the point that the pack begins to get warm to the touch. They should be taken off the charger and put into use. A regular use/charge cycle keeps the battery performing at maximum power density, and decreases the amount of "memory effect" which is half fable and half truth. If you regularly recharge NiCds and seldom exercise them down to below one volt, they might not perform near as long when you really need them in an emergency communications situation.

Optional charger/conditioner $95 systems are available to professionally exercise them; if you are associated with a REACT team that regularly uses different CB handheld radios, this may be a good equipment purchase. However, if you only run your handhelds every now and then, I would suggest you not go with nickel cadmium rechargeable batteries, but rather buy the very best, heaviest, and most expensive "AA" alkaline cells because they'll keep going, and going, and going, and going.

Nickel cadmium batteries must be regularly managed for a charge and discharge program; if you regularly exercise them, they could pay for themselves in the first five months of radio operation—and benefit you for up to 1,000 recharges. ■



*These "AA" NiCd cells are soldered end-to-end in a "sealed" battery pack. Any cell could be replaced.*

# Frequency Fastrack

GENERAL MOBILE AND FAMILY RADIO SERVICE NEWS By Judith Simpson, N9NSI, KAD-9669

## Keep the Hammer on the Empty Chamber

One of the first things a young police officer or a private in the service learns about firearms is to keep the hammer on an empty cylinder; or NOT to have a live bullet under the hammer! In many cases it has the tendency to protect the young recruit from creating problems. A stray round into one's own leg, or into . . . or even near one's partner . . . has the makings of a *very* bad day for the recruit! Any attempt to explain to one very angry (and inevitably) very large individual that the bullet that just whizzed by the ear was NOT an attempt to move up the seniority ladder is very likely to be received with some doubt, as well as some rather significant instructions on future conduct.

Tossing the CB microphone on the car seat, and then proceeding to stack objects on top . . . lunches, a briefcase, handbag, or the groceries may not have the potential for physical disaster, but it sure will create animosity in the neighborhood, making the offender about as popular as a toothache. That "dead carrier" on the local frequency will be as desired as two flat tires on the expressway!

I know we talked about it in Rule No. 2 last month, but we've received a couple of calls and letters about this touchy topic, so let's help clarify a couple of points.

### Let's Substitute GMRS for CB

Now imagine that same scenario with the substitution of a GMRS radio for the CB; with the channel selector on the local repeater! Instead of a four mile circle around the offender, we now have a 30 mile circle around the repeater. The **capture effect** of FM communications allows the first (or strongest) signal to block other signals and prevents access by other transmitters. Suddenly there's a carrier on the air, usually with the typical background noise associated with mobile operation; a newscast or ZZ Top, perhaps. If the driver is having a *really* bad day, he or she starts singing with the music, and *everyone* realizes the identity of the unlucky individual. You can bet the phone will light up and references will be made, usually on the air, for several days, about training and competency!

### Preventing Unauthorized Use Is Easy

Most modern transceivers are designed and programmed to operate on

either a **priority** channel or the frequency used when the radio was last turned off. In order to prevent unauthorized or perhaps inadvertent access to the repeater, consider programming a simplex frequency as the priority channel, and leaving the radio on that frequency until actually ready for use. Remember, that the repeater "hears" on one frequency and transmits on another. Setting your radio on the GMRS simplex frequency allows you to hear the repeater and the radio traffic without allowing access to the repeater.

Sound complicated? Actually it's simple. For instance, a repeater is set for the accepted emergency channel: 462.675 MHz. The repeater will accept signals from radios transmitting on 467.675 MHz and rebroadcast (or repeat) the signals on 462.675 MHz. By operating on simplex, we bypass the repeater in order to transmit *and* receive on 462.675 MHz. The eight GMRS frequencies are normally referred to as "pairs" or by the simplex frequency, i.e. the "600 pair," or simply "650" and the repeater as a "675 machine" or the "700 repeater."

## Try Simplex, Folks!

By operating on simplex as much as possible, we allow the repeater to be used more efficiently and do not block traffic which could have a higher priority than ours. We give up the greater distance allowed by repeater operation, and decrease the chance of interference. Don't be surprised by the distances allowed by simplex operation; with roof-mounted gain antennas for a 15 watt mobile, consistent communications over five or six miles are not uncommon. Level terrain or water allows a much greater distance. Handheld, five watt radios should maintain two-way communications for about one mile, although realistically, 3/4 of a mile is more the norm.

Typical uses for simplex operation, from mobiles while traveling in a group, or simply driving to the store, or contacting the base station to check on the kids, are common. The HTs can be used to maintain control or locate the family in a shopping center, where Dad heads for the tool works, Mom for another store, one kid to a sports shop and the other to the music store. Parents try to watch the kids closely, but, unfortunately, in our society, there's always the couple of minutes when the back is turned and suddenly the kid has vanished. He or she may have simply skipped over the neighbor's yard to pet the dog, but let's face reality, there are some twisted individuals who could have abducted the child. Have you ever thought about providing a radio to help stay in contact? Even a four-year old can be taught to operate the basics; after all, how many four-year olds are computer literate? Simply being able to say, on SIMPLEX, "Johnnie, where are you?" and get a quick answer is well worth the money spent on the radio. (Note: the proposed Family Radio Service may open the doors for much less expensive radios to be manufactured). In the event of a major problem, Johnnie could easily call for Mom or Dad!

## Community Service Projects

Many public service radio oriented volunteer groups use CB, UHF, VHF, or even 49 MHz transceivers for the community service projects. In many cases, the entire operation can be conducted on simplex on the UHF bands, rather than having to resort to repeater access. Parking lot details, community watches, some easy security projects, or even ticket operations yield themselves nicely to simplex operations. We know of at least two organizations who use UHF radio on simplex to coordinate safety on motorsport racetracks, and a major motorsport racing organization uses VHF to coordinate all racing activities.

Remember you must secure the appropriate licenses before operating on the UHF or VHF bands. Group licenses are available for certain VHF frequencies, and for frequencies in the business band portion of the UHF spectrum. In most cases, these licenses should be submitted for frequency coordination, especially if there is the potential for repeater use. The GMRS frequencies require that *each* person be individually licensed and specify that NO business or group licenses are allowed.

So, by using simplex, and by leaving the transceiver in the **simplex** mode, we are able to leave the repeater available for operation by those who are really in need of the machine, as well as lessen the chance that we could access the repeater inadvertently, and embarrass ourselves. (Notice that the quality of the sing-a-long was not mentioned?) In most cases, by using simplex, we can operate nicely in the local area, or in most projects without requiring the local repeater. By leaving the radio transceiver in the simplex mode, we are hearing the words of The Duke, John Wayne . . ."Keep your powder dry, and keep the hammer on an empty cylinder!"

73's,

**J.A. Simpson, KAD-9669, N9NSI**

# Trucker of the Month

OUR SPECIAL RECOGNITION OF PROFESSIONAL DRIVERS

By Bill Simpson, "Highlander"

## A Round of Applause for "Shaggy" and "Princess"— Our Trucker Couple of the Month!

"It's not just a job, it's a lifestyle!" That's the declaration of 'Shaggy' (Eric) about truckin' in general and his company in particular. "I want *my* truck clean . . . it's a good advertisement for my boss, and keeps the customers calling us!" Shaggy has only been with TCT (Totally Committed Transport) for a few months, and readily admits that his boss took a chance by hiring him. "I didn't have the experience that he really wanted . . . I think he felt that I wanted the job very badly, and decided to give me a chance, hoping that I wouldn't tear up his $90,000 truck. I'm doing my best to prove him right."

The YL in the picture is 'Princess' (Melissa) who accompanies Shaggy whenever possible, and is working on her own CDL, so that they can team drive. Princess loves the road, and looks forward to taking command of the big blue Volvo, and sending Shaggy to the sleeper for his off duty time. "People make comments about my size (5'1") and ask if I can handle a truck. I have to point out that the seat moves forward and up!" Her other main complaint is that many of the truckstops don't carry items for the lady drivers. "They don't seem to think that we exist, yet there are more ladies behind the wheel every day!" Princess was especially critical of some truck stop personnel who snub the female drivers who take seats in the PROFESSIONAL DRIVERS section of the dining room. "I really haven't had any trouble at the Petro's, but some of the others . . . WOW, we just won't go back!

During the time Shaggy was at home, he used his experience and earlier training as an auto tech to help rebuild an old 'Cuda for the strip. "That thing has an absolutely violent engine. I'm not really ready to open it up on the strip . . . don't know what's going to happen next," he laughs. "It is ready to *run, run, run*, as they say in the commercials!"

Their least favorite city? Miami, Florida—got caught in a gang war, simply by being there.

Their most favorite? Minneapolis/St. Paul—clean, easy to maneuver the truck. Friendly people. Close behind as a favorite is Orlando, a big city with a home town atmosphere, *and* Mickey!

Shaggy's biggest thrill was finding a company with an owner that is concerned with the drivers and will pitch in to complete the job, even if it means driving, and will listen to the drivers if they have a complaint, or if they decide to shut down because of the weather. The company has only seven trucks, and is actually looking for another driver. Shaggy probably won't be the junior guy much longer.

Shaggy and Princess met via the radio, during a CB Tag project, and were later formally introduced during a local CB group's coffee break. They've been together almost since that point, and Princess now runs with Shaggy as often as possible. Shaggy installed a "Super Star 3900 Gold" CB in the truck and they both enjoy using it as they travel and see new places and meet new people.

A click of the mic to our TRUCKER COUPLE OF THE MONTH. ■

*Here's "Shaggy" and "Princess", our Trucker Couple of the Month.*

# Truckin' With CB

THE PROFESSIONAL DRIVER'S CB RADIO PLACE TO BE

By Bill Simpson, "Highlander"

## The Places Truckers Most Like to Visit—And The Radios They Use To Get There—A Brief Survey

According to the weather reports, the robins outside and the Farmers' Almanac, we probably have been fortunate enough to outlast the winter again. Yeah, probably there's some lucky driver reading this as the frost collects on the windshield in the truckstop parking lot, saying, "That Highlander idiot simply *does not* understand!" 'Scuse me, guys and gals, but I've been there. Some pretty fair snowstorms have arrived in early May in the upper Midwest, and I still am not excited about visiting the in-laws in the northern Land'O Lakes, even in mid-May. By this time of the year, though, most of the cold is long gone, having disappeared completely in most places!

I spent all last month trying to learn a new confuser, AND talking to truckers as we collectively tried to terrorize the motorists along the interstates of the Midwest. The questions I asked were deigned to regain the feel for trucking in today's world, since I normally run local now, and am not exposed to some of the rigors of the true OTR (over-the-road) driver. The results surprised and delighted me, since they proved my personal theory that the "Knights of the Road" are alive and criss-crossing the roads of the North American continent. Despite all the negative publicity that appeared several months ago on one of the more famous "expose" prime-time TV shows, the average driver is simply a guy or gal who 1. loves trucking, 2. loves to be away from a desk, 3. misses the family, and 4. wouldn't change a thing. As one driver stated, "If it weren't for the mortgage, the light and phone bill, and the kids teeth, I'd be out here for nothing!" That's a *strong* statement in favor of the life of a trucker!

*This Vulcraft driver makes his way through northeast Illinois.*

### Questions and Answers

My first question concerned the GPS, or Global Positioning System, and how it affects the lives of the drivers. According to my unofficial and unscientific survey, most drivers are enthusiastic about the installation of the system in the tractor. "We're able to contact dispatch at any time, without the hassle of looking for a pay phone along the road, or bothering the customers at a pick-up or delivery point in order to use their phone. We can receive messages about an in-transit pick-up immediately, instead of waiting until the next meal stop to call in and maybe having to retrace the route for 50 miles!" said one driver. Another driver, 'Cottonpicker', said, "I run mostly in the upper Midwest and the Rockies, and feel comfortable knowing that I can contact dispatch for assistance if something should happen to the truck. In my world, winters are deadly!" Driver 'Dandy Don' didn't hesitate to relay the story of the medical emergency which involved one of his sons, and the speed with which his dispatchers notified him; *and* sent another driver to intercept him, pick up his load, and allow him to catch a plane to the house. "In two hours, I was at the hospital, with my wife and kids. Without GPS, I wouldn't have known a thing until the crisis was over. I was there, with my family when they needed me, thanks to GPS and my dispatchers," he said.

We should say thanks to all dispatchers . . . we criticize and malign them . . . scream and yell at them . . . abuse and discredit them . . . but where would we be without them? They pick our loads, listen to our complaints, understand that we need to be home yesterday, placate the customers because we're late, *and* take flack from the high muck-mucks in our company if we screw up! We joke about running with a load of dispatchers brains or sailboat fuel (running empty), but we'd look silly if we had to find our own loads all the time. I'm not saying that we need to give a dispatcher a big fat sloppy kiss . . . that's going a little *too* far, but we should remember their birthdays, or the Christmas/Chanukah holiday, or *something*.

### What's *Your* Brand of Radio?

Another question I asked the drivers was, "What brand and model of radio are you using and are you happy with it?" By far, the majority (almost six to one!) of the drivers I have contacted prefer Cobra, with the model 21 and 29 being most popular. Next was the Galaxy models 88 and 99, and all models of Uniden. There was a scattering of RadioShack, Maxon, Colts, and some older sets. A number of the drivers using the older radios expressed a desire to upgrade, with the emphasis directed toward the manufacturers providing radios with weather channels available. While there are several radio manufacturers which provide CB transceivers which include the several available weather channels, I must admit some prejudice in this area, since I have used Cobra radios exclusively for 20 years and was delighted when the new line provided weather information as well as CB. The next radio purchase


*Does our editor have a side job, and is that* really *his handle? If this is your truck, drop us a line. We'll give you a free one-year subscription to* CB Radio. *(Ed. note: Bill, did you notice how the driver's window is conveniently blacked out. Hmmm, I wonder—just who is that driver, anyway?)*

*Rollover ahead at the 33 mile marker I-94, just north of Chicago.*

for me will be the Cobra 2010, to replace my current base station.

I will concede in a heartbeat, that the Galaxys, both 88 and 99, have a truly distinctive sound, kinda like the old Browning Golden Eagle, without the 'piiinnnnnnnnnggggg!' They are rich and full, and simply sound nice. The Cobras are consistent with nice tone quality, crisp receive and transmit. I really did not hear enough of the other brands to be able to form any opinion as to their capabilities.

During the course of this inadequate survey, drivers were asked about their choice in antennas, but the answers were so varied and so inconsistent, that an adequate opinion simply was unavailable. The antennas most noticed were those from Wilson, K40, Hustler and Solarcon, along with about 50 million different homebrews!

Do you ever wonder why some drivers tend to position the mirror-mount antennas pointing forward? Three different drivers claimed it was simply for looks . . . only one pointed out that the tankers and flatbeds often went to areas with low clearance, and that pointing the antennas forward, until they were below the height of the cab, allowed for the lower clearance, without breaking the antennas. Why didn't *I* think of that?

## What Towns Do You Most Dislike?

My next to last question during my silly survey got a lot of varied responses, but


*This Laidlaw's 1779 drivers' got a super-clean truck!*

*This straight truck was a victim of a brutal Chicago winter.*

not surprisingly, most drivers immediately picked the "Big Apple—New York City—because of the congestion and apparent lack of any plan to organize the street numbering system. One driver was even more specific in naming the Bronx, but I couldn't hear the reasons for his choice. Just as well, maybe.

The second most quickly named city was Chicago, because, "if you get off the expressway, you immediately find a 12' 6" bridge with a 13' 6" trailer. There is simply *no way* to get to anything in the city. The suburbs are easy to travel in a big truck, but the city is one humongous trailer killer! Admittedly, there were several drivers who claimed that they enjoyed working the Chicago area, and had no trouble getting around. The sanity report of these drivers is still pending!

Miami was close behind Chicago, for two reasons; the copious quantities of suicidal drivers on the streets, and the lack of individuals who were multilingual, with English not listed among their primary languages. (Is this politically correct?) In other words, the drivers encountered several individuals who spoke either very little or no English!!!

The next three cities were a virtual tie: Philadelphia, Atlanta and Houston, because they experience huge amounts of congestion, and are simply hard to negotiate. (My personal favorite would be Pittsburgh, since there is no way to get from point A to point B without returning to the Beltline.)

One of the more humorous answers was "The City of Ohio". When pressed for further clarification, the driver was able to clarify his statement further to include Columbus, Toledo, Cincinnati and everything in-between Indiana, Michigan, West Virginia, and Pennsylvania. Perhaps this particular driver had some rather unfortunate experiences in Ohio?

## And Enjoyed?

When asked the last question, "Which towns do you enjoy?" there were four towns named, normally after a long period of silence: Dallas and Phoenix for two! Having been in Dallas, In can understand this choice, but I don't understand Phoenix. The third was Couer de Alene, Idaho, which I *can* understand, if for no other reason than the scenery; it's one of the most beautiful places on earth. The fourth, and final choice from drivers I chatted with . . . the one town of all the cities most enjoyed by drivers was stated very simply just before this column was submitted . . . one which every active and every retired, or inactive driver will agree is their choice . . ."My hometown!" Need I say more? ■

*Author's note; I promised "Old Budweiser Brother", a Schneider driver, that I'd say a special "thanks!" for his efforts in not pushing me into the south 40 as I was entering the expressway. He was blocked from moving over by an idiot four-wheeler . . . we cooperated . . . I ran the shoulder . . . he moved over as he could. Thanks!*

# Scanners: User Friendly

## HOW TO GET THE MOST OUT OF SCANNING VHF/UHF

By Steve Adams

## Getting Folks Interested in Scanning

I was reading some previous columns for continuity and direction. Looking back, the only constant, I realized, is that scanning is an attitude that permeates all of life for those who practice it. From thinking and planning ahead for emergencies to mulling over social issues and where America is headed, scanning and the attitudes associated with it are renewing, refreshing, positive and upbeat. If some of the social issues are not positive or upbeat, the willingness, the wanting and the needing to address and correct them is.

### Not Just Switching the Radio On

Scanning is not just turning on the radio receiver, it's the motives behind that action. It is about wanting to know what is going on around you. It is about what is happening in or to your community. It is about having more control of your life. It is about accountability and responsibility of those you are monitoring. It is about closing the loop in a free society.

### Motivations

Scanning for some is their first link with technology. It may be their first attempt at a hobby, a diversion from television or other boredom or it might be the result of something that happened close to them and left an indelible mark of some kind.

For others, scanning is just a continuation of a probing and inquisitive mind, an extension of their thirst to learn about their fellow man. They can experience the hours of boredom punctuated by moments of sheer terror that their community's police officers and fire fighters live on a daily basis. They delight in knowing what the lead story on the evening news is going to be, having heard the television mini-cam crews being dispatched. They know how the traffic is, what the real weather will be like.

For others still, scanning is another accumulation of "toys." Their contributions are just as important, for they are the ones demanding newer and better technology, prompting manufacturers to spend their precious research and development dollars needed to keep up with emerging technologies. Without this vital consumer demand, this niche (scanners) of the very competitive technology market would become stagnant.

### Why Aren't You A Scanner Enthusiast Yet?

Are you afraid of technology? Don't want to feel ignorant or have to ask somebody for help? Do you think scanners are too expensive or complicated? Too many accessories to buy and understand? If you've put off buying a scanner for any of these reasons, think again. If you can use a touch tone phone or a television remote control, you can use a scanner as well as any expert! Your reasons for putting it off lose conviction, with the abundance of quality scanner manuals and frequency guides available.

As an example, a family friend became curious as I listened to my handheld one day. I explained and showed her what it did, pointing out all the police and fire agencies I could monitor. I showed her aircraft and airports, railroads, ships and businesses. She was fascinated, and made a perfect analogy of what scanning is all about: She said it's like watching "Cops" or "Real Stories of the Highway Patrol," but in the real world and in places we know and recognize. We can do it on our own terms, picking and choosing what and when we want to listen.

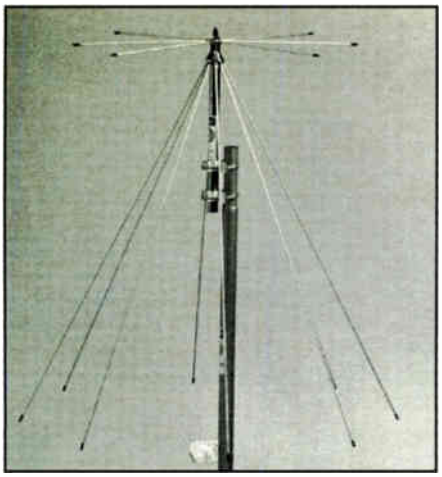
Several weeks later she asked me about getting a scanner. I had an old 100 channel handheld (no 800 MHz) that I'd outgrown. I loaned it to her along with several frequency guides. Within a day or two she was calling and telling me there was a pursuit in progress on such and such frequency. She was hooked!

She now has a nice, full-featured handheld which she takes with her in the car and to work. She listens to the live feeds from traffic helicopters while driving, to the NOAA weather reports, and of course all local police and fire agencies. She feels comfortable knowing she will hear about drunk or wrong-way drivers coming towards her, burglars or fleeing felons in her neighborhood and all the other things we enthusiasts know. She hears and appreciates what police and fire fighters do every day on our behalf. She listens to where the television mini-cam crews are being dispatched and knows just about everything that's going to be on the evening news. She feels more in control of her life and believes she is a better citizen because of it.

*The RadioShack PRO-26 handheld scanner is a full-featured radio that covers VHF, UHF and 800 MHz frequencies; public safety, aircraft, government and more in 200 channels. It retails for $450. (Courtesy RadioShack)*

### Getting Started

Getting started is easy. New and used scanners are available for as little as $100. Add a scanner guide and you're in business. For a first scanner, I'd recommend a handheld with 800 MHz capability and at least 100 channels. It will come with a "rubber ducky" antenna which will work fine for nearby and strong repeater signals. Most public safety agencies are on repeaters (amplifiers on mountains or tall buildings). Your full service scanner dealer will recommend several choices and demonstrate them for you. You can buy bigger and better antennas later as you progress. One simple rule: If you



*A discone scanner antenna (so named because of the top disc and cone appearance) is a broad band antenna. Remember, most scanner users want to hear the action from 30 to 800+ MHz; that's an extremely wide swath of the radio spectrum. The discone does a good job, but it's important to realize its tuned for broad signal reception, not a specific narrow band of frequencies. (Courtesy RadioShack)*

can't see it work, don't buy it—period.

When you find a good scanner dealer, give *them* all your business.

## Enhancing Your Scanning Skills

There are simple things that can enhance your enjoyment of scanning. The key is to go step-by-step using a plan that is challenging, yet realistic. Each step should show improvement. You will have a baseline to fall back on should it not work.

## Equipment Enhancements

**1.** Antennas are the best means of improving performance. Tuned antennas for specific frequencies used with selector switches would be best. Wide band antennas are a compromise for the large spectrum of frequencies we monitor. Higher is better for all antennas.

**2.** Use high quality cable to prevent signal loss.

**3.** Amplifiers are iffy. Some work, some don't. More amplification is not necessarily better. You wind up amplifying atmospheric noise and static or locking up your scanner with distant channels and open carriers.

**4.** Other popular accessories can increase your enjoyment of scanning. Earphones and extension or lapel speakers bring the action to you without annoying others. Some scanners have a resistor in the earphone circuit that cuts the signal down significant.y. If possible, it's a good idea to try such devices on your scanner before purchasing.

## Your Administrative Skills

It's important to organize your scanner notes into a loose-leaf binder. Use three-ring pouches to hold operating manuals and maps. While you're at it, develop a plan for programming your scanner. There are many methods of setting up banks: by agency, by city or area, by event, etc. Develop a method based on your needs and then stick with it.

Learn codes, jargon and frequencies from memory so when there is an incident you are following between jurisdictions, you can easily keep up and know what they are talking about.

Map reading skills are often overlooked by scanner enthusiasts. Visit a large book retailer or better yet, a map store. Try to get the same maps you hear public safety agencies using. Try calling a dispatch center to find out what they use. During pursuits, house-to-house searches and perimeters, explosions, natural disasters, etc., a detailed street map will allow you to follow the action.

## Other Timely Tips

Your dealer will recommend how many channels you need, whether a handheld, base or mobile is appropriate and whether 800 MHz is used in your area. Listen carefully and ask plenty of questions. You can learn from a bona-fide expert. Some dealers take trade-ins and have a stock of good, used scanners. Others sell only new. New scanners can be purchased at very good prices. A discontinued model or last year's model may be an excellent value. Who really needs a scanner with a new cosmetic look?

Scanners last forever, as long as you don't drop them great distances or get them wet, so you really don't need to worry about parts or repairs. You may have to replace the rechargeable batteries every couple of years when they fail to take a charge. Batteries are available everywhere. Shop around, ask questions, find a dealer who will spend some time helping you.

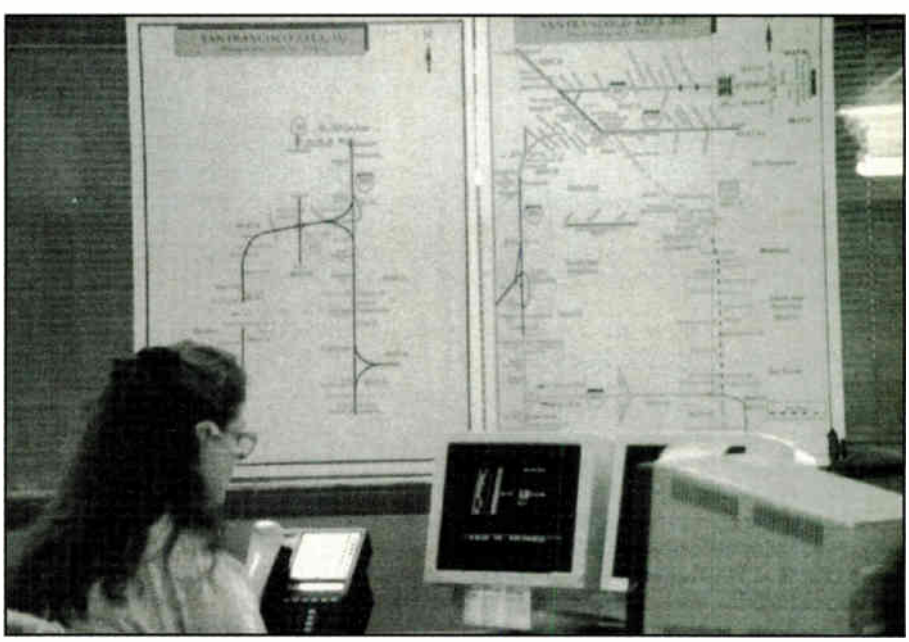
Again, when you find a good dealer, stick with them and give them all of your business. Tell your friends about the good service you received. Small businesses depend on good will and repeat customers. That's the American way!

## Scanning and the Law

Controversial monitoring laws are on the books. I'll show arguments for either side to stimulate thought. Then I'll give my personal opinion, vigorously arguing for obeying the laws later in the column.

**Reasons against monitoring laws:**

- They are usually difficult or impossible to enforce.
- Unenforceable laws breed contempt for other laws.
- The airwaves belong to everybody, like the air we breathe.



*Dispatchers at the California Highway Patrol Golden Gate Communications Center use the CAD (Computer Aided Dispatch) system as well as beat maps of their assigned areas. (Photo by Steve Adams)*

*There's plenty to hear and it's not all police and fire action. Tuning the Army's Golden Knights parachute team and other high-flying action is easy if you have the right scanner and know where and when to listen! (Courtesy U.S. Army)*

- Americans don't like government telling them what to do.
- Criminal activity can be facilitated by monitoring laws.
- Citizens and police can't keep an eye on the airwaves if it is against the law.
- Scanner enthusiasts could report criminal activities to police.
- There are prices we pay to live in a free society.
- There is entertainment value (900 sex line calls and more!)
- Cellular and cordless phone users should be aware their "private" conversations can be monitored and should act accordingly.
- If the neighbor's blinds are open and you can see from across the street, is it fair game?

**Reasons to have monitoring laws:**

- Privacy is one of our most cherished Constitutional rights.
- Americans reasonably expect their rights to privacy to be inviolate.
- Regulations and laws keep the air waves disciplined and make advanced technology possible.
- This has important implications for other electronic communications such as the Internet, email, chat lines, satellite technology, interactive business and shopping.
- Criminals use landline telephones with relative impunity and citizens can't monitor them.
- We pay to live in a free society.
- Sensitive business or personal information can be easily intercepted and used creating more crime.
- There are people out there who don't know their conversations are being monitored, who don't realize that baby and room monitors transmit conversations too. Whose fault is it?
- Will cellular and cordless technology be impeded without monitoring laws?
- Is illegal telephone monitoring different than being a peeping tom? How?
- Are monitoring laws any different from scrambling video signals? How are they different?
- The laws can be enforced by restricting manufacture of scanners with cellular/cordless capability.

## My Personal Thoughts on Scanner Laws

We'd like your thoughts as well, to stimulate lively discussion and awareness of the issues.

In order for our society to function, elected representatives, community leaders, parents, teachers and clergy make laws, rules, customs and standards of appropriate behavior for citizens to adhere to. These rules, laws and customs define and determine what is and is not acceptable or appropriate behavior. These laws, rules and customs theoretically balance personal rights and freedoms with responsibility and accountability. Citizens must voluntarily accept and conform to these laws, rules and customs in order for society to achieve harmony, prosperity, morality and progress.

Theoretically, our society has evolved through voluntary acceptance of and conformity to laws, rules and customs which allow people to live in harmony while maintaining individuality, personal freedoms, dignity and the opportunity to pursue happiness as individuals define it. A few sometimes have to give up a little for the overall good of many as in "eminent domain" where society can appropriate private property for roads or other improvements that benefit many. We choose to voluntarily follow these laws, rules and customs; the alternative being anarchy and "third world" living conditions. The lawless and anti-social are corrected by, punished by or removed from this society they choose to reject. It's certainly not perfect, but it beats anarchy and all other alternatives to civilized forms of living.

As Winston Churchill once said, "Democracy is absolutely the worst form of government . . . except for any other kind!" Democracy is dynamic, changing

daily as succeeding generations try to improve what they've inherited. With all that said, my point is, if you don't like the laws, rally to get them changed, but don't violate them. Willful violations to any degree erode society. We few (scanner enthusiasts) have to give up a little for the benefit of many. We have to give up eavesdropping on cellular and cordless phone calls as technology can progress ...etter and eas- ...and ensuring ...ur most cher- ...points of view ...ly discussion, ...either accept ...get the laws ...pros and cons ...ive us others ...ng I'm sure of: ...d laws—if we ...we must get ...ot break them ...'t like them. ...is that we are ...ectronics and ...ar phones, ...the Internet, ...opping are all ...ese technolo- ...15 years ago. ...tries will need ...eir services or



...arily a solitary ...njoyed pitting ...ne. There are ...ut I've never and talk about ..., I would like to ...hat they offer, ...ones are avail- ... If there is ade- ...e can list all the ...ents and other information pertinent to scanning.

As always, we want to hear your comments, questions, suggestions and anecdotes on anything even remotely connected to scanning or the issues discussed here. Send in photos (no Polaroids, please) as well. Mail you letters to: "Scanners: User Friendly," *CB Radio*, 76 North Broadway, Hicksville, NY 11801-2953.

There is a three to four month delay between receipt of your letters and photos and their publication. Please be patient. While you are waiting for your letters to show up here, don't forget to send in your subscription form for *CB Radio* magazine so you won't miss a single, action-packed issue. See you next month.

*Buying a used scanner can be a risky deal, especially if you're an inexperienced shopper. Remember: if you can't see it work, don't buy it! (Photo by Harold Ort)*

WHAT YOU NEED TO KNOW TO PUT OUT A GREAT SIGNAL

By Kent Britain

# Coax Basics

Since Marconi first started putting up antennas nearly 100 years ago, he needed a way of getting the radio waves from the transmitter to the antenna. A long wire worked, but it radiated almost as much as the antenna did. As antenna designs improved, any signal radiated by the feedline was wasted. Parallel lines, like the twin lead used with many TV antennas, worked, but had limits.

In the 1930's the first commercial coaxial cables were introduced. By shielding the center conductor, all the electric and magnetic fields were trapped inside the cable. Now the radio waves couldn't get out until they reached the antenna.

## 50 Ohm, 75 Ohm

There is a lot of mathematics in the design of coax cable, but it comes down to a ratio of the diameter of the inside wire to the diameter of the outside shield. There is also a little fudge factor for the kind of plastic they use.

If this ratio is high, it is high impedance coax, however, if the ratio is lower, it is low impedance coax. I have seen commercial coax everywhere from 30 ohms to 400 ohms impedance.

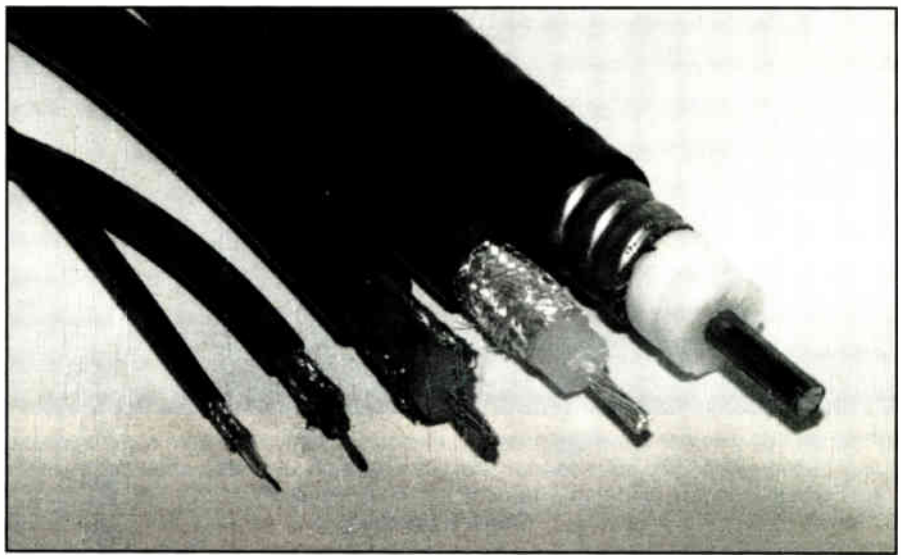
When the center conductor is small, the coax can't pass much power before that small wire melts. That thin wire also has a lot of inductance and resistance, so you also lose a lot of signal *before* it gets to the antenna. When the center conductor is large, the coax can handle a lot of power, but all that metal makes a good capacitor. The high capacitance of the coax again makes it lose much of the signal.

OK, we don't want the center conductor to be too big, and we don't want it to be too small, where do we end up?

If you take a standard one-inch diameter standard-size coax, then the lowest loss balances out at 75 ohms. Isn't it amazing! The TV cable companies have put up miles and miles of the lowest loss coax because of its size. Someone did their homework!

For maximum power handling, 30 ohm coax will handle more power than any other coax for its size. But 30 ohm coax is rarely used. So why, then do we have 50 ohm coax?

The idea was to split the difference between best loss and best power, 30 and 75 ohms, and make 52 ohm coax. Most companies now are just calling it 50 ohm coax.



*Here are five kinds/sizes of 50 ohm coax. Note the second from the left that's dirty and contaminated.*

## Making Coax

There are several ways to make coax. The shield can be a solid metal tube or woven braid of wire. And the center conductor can be a solid wire, or made from dozens of smaller wires. The woven braid shield is the most commonly seen coax. The woven braid is flexible, easy to manufacture, and easy to use. But some signal does leak out between the wires in the braid. Not much; we're talking –80dB to –100dB or .00000001 percent, but in critical applications, this is too much leakage. In cable TV, commercial broadcasters and cellular systems, solid shield coax is normally used.

Some companies build the center conductor into an aluminum tube, others wrap the center with a thin copper foil then weld the seam. In either case, a 100 percent solid metal shield is formed. It's great coax, until you try to run it through a window, around the rain gutter and twisted around an antenna rotator.

The center conductor can also be solid or stranded. Solid centers are stronger and can be used as the center pin in a coax connector. With RG-59, the stiff center conductor of the coax is used as center pin in Type "F" connectors. The stranded centers such as RG-58 and RG-8 make the coax more flexible, but the center conductor has to be soldered or crimped into a connector.

## Low Loss Coax

A coaxial cable is a pair of wires carrying electric currents. Copper and aluminum are good electrical conductors, so there is not much loss in the resistance of the wires. But all the energy of a signal is traveling between the center conductor and the shield as electric and magnetic fields. So all the signal is passing through the plastic insulator. The fancy name for this plastic is the dielectric. Dielectrics have loss, so less plastic means less loss. Here's where the manufacturing tricks come in. Air or nitrogen often is mixed in with plastic, making something like whipped cream. This foamed plastic has less plastic in it. More air, more foams, less plastic, and better coax, (bet you see me coming on this one again) to a point. You've got to keep that center conductor in the center of the coax. Too much and the soft foam won't hold the center conductor in place. Many people have had trouble with the inexpensive RG-8X foam. Try running it around a tight corner where the sun can hit it, and you'll see what I

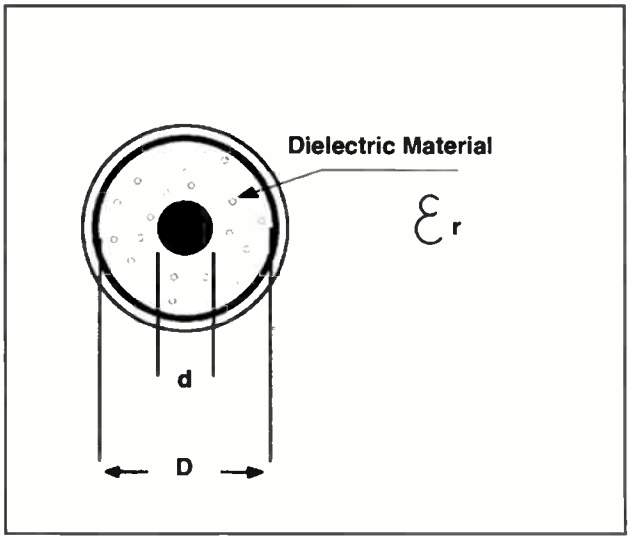
Impedance = 138 log D/d/Sq root Er

Let's look at that calculation closer. First, we'll do the calculations for coax just using air as the dielectric. The outer shield will be .5 inches and a .21 inch inter conductor. The dielectric constant, Er of air is 1, so we can just leave Er out of the equation.

Impedance = 138 log (.5/.21) = 138 log(2.4) = 138 (.380) = 52 ohms.

Now, for the typical RG-8 coax with a Polypropylene insulator, the Er of Polypropylene is 2.2, so if we just use plastic instead of air in our first coax, the equation would be:

Impedance = 138 log(2.4)/sq root 2.2 = 35 ohms, which means the diameter of the center conductor must be carefully matched to the type of plastic separator used in the coax. Water has an Er of 80! That's why it only takes a small amount of water getting into your coax to make the cable look like s short circuit to radio waves.

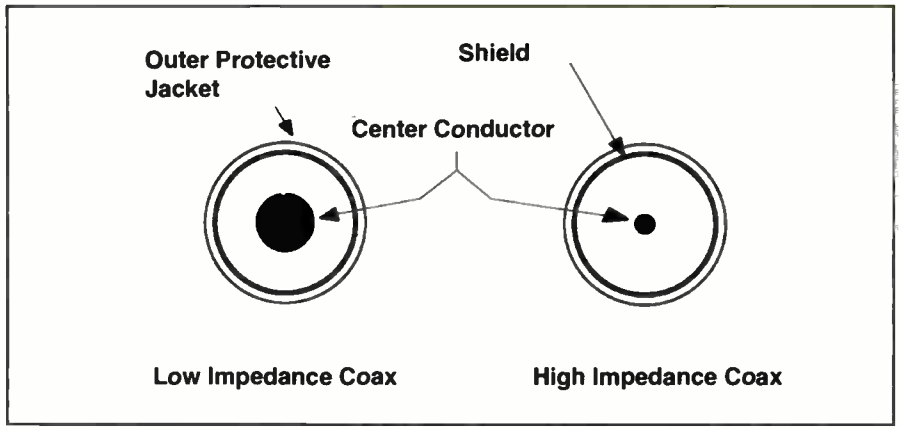



mean. The sun's heat turns the soft plastic into a gooey mess and the center of the coax moves.

If you're lucky, the SWRs just went up a bit, but often the center of the coax will move far enough for the coax to short out. Now the SWRs really go up and you could blow a final.

Another big problem with RG-8 "Type" and RG-58 "Type" is that black plastic outer coating. In some of the cheaper coax, chemicals will leak out of the jacket and seep into the center insulator. That center foam plastic should look pearly white. If it has changed to a dirty gray color, it's time to trash that run of coax. The dielectric characteristics of the coax have changed, and you don't have 50 ohm coax anymore. SWR goes up and the coax gets very, very lossy. I've personally measured several old pieces of RG-8 "Type" coax and gotten loss numbers four and five times as high as the original manufacturer's specifications.

Look for **RG-213** when it's available. The black jacked does not contain the plasticisers that contaminate the center




*In this cutaway view of coax, notice the difference between a high and low impedance coax.*

insulator, it's slightly larger giving it less loss, and regular RG-8 PL-259 connectors still fit it. If you're really lucky and find some RG-214, it's great stuff! RG-214 has not one, but two layers of shielding and all the wires are silver plated for best conductivity. I recently measured the loss in some runs of RG-213 and 214 that were old when I got them 15 years ago. They STILL tested within a few tenths of a dB of factory specs at 500 MHz. One run of "RG-8 Type" coax had a factory spec of 3.5dB for that length at 500 MHz. I measured 17dB of loss!

So, what did I do with the lossy coax? I stripped out the shield layer and used the copper braid to ground a tower.

Enough on coax for this month. Next time, we'll cover PL-259, N, BNC, TNC, and all those other funny letters for your coax connectors.

## Two is Better Than One?

**Hey Kent:**

My buddy is running two whips on the same mount. Does it really get out twice as good?

Jim, New Orleans

**Jim:**

Two tuned verticals on the same mount or coax is a trick going back to the 1920's. The trick is to tune one to the longer radio waves at channel 1, and the other to the shorter radio waves at channel 40. This gives tne antenna an extremely low SWR on all channels. But efficiency wise, it only picks up 2 to 5 percent more output, costs a lot more, and has a lot of wind drag.

## Blowing Out Finals

**Kent:**

I guess I don't understand how leaving off the antenna can blow out my final—the last transistor in the transmitter?

Jim, Chicago

**Well Jim:**

It's all a matter of voltage. There are three sources of voltage on the transistor that actually drives the antenna; 12 volts from the car battery, about five volts of RF voltage and the voltage from the AM modulator. So during a carrier or dead key, you've got about 12 + 5, or 17 volts on the final transistor. During modulation peaks (when speaking into the mic) there is another 10 volts or so of audio and RF voltage jumps to 10 volts. Now you've got 12 + 10 + 10 or just over 30 volts on the final transistor.

When the RF voltage doesn't have anywhere to go (no load) the voltage builds up to about twice the normal level. Leave off the antenna and now there's over 40 volts on that transistor.

OK, you can't figure out why you're not getting out. So you rev up the engine and the car voltage rises to 13.8 volts. You crank up the power mic and whistle. The poor little transistor now has 50-60 volts on it. Did the manufacturer use 75 volt transistors? Then no problem. Did they save a few pennies and use 45 volt transistors? Then the transistors fail internally and you get to send the rig to the shop.

***Editor's note to Armando in Miami:***

*Some scanner antennas can be used with a CB radio. Look for one of the discone type scanner antennas. Many companies also offer a 25-50 MHz option or adapter for their discone antennas. This adapter turns the antenna into a base-loaded ground plane antenna at 27 MHz. When you have the SWR tweaked, it won't work quite as well as a full-size 1/4 wave ground plane, but it's small and you can still use it with your scanner (of course NOT at the same time).* ■

# REACTing With Radio

NEWS AND INFORMATION ABOUT PUBLIC SERVICE VOLUNTEERS

By Ron McCracken

## CB at Sea

CB can be as life-saving a safety tool aboard your boat as it is in your vehicle. Set sail without it at your peril.

"But I have a marine band radio aboard," you protest. "What would I want with a CB?" In a word, insurance.

Maybe you've noticed experienced mariners who have a small, low-powered outboard motor mounted on the stern of their craft. Below deck may be a high-powered, high-performance engine, but they are wise enough to have that outboard along just in case.

*CB can be a life-saving tool for boaters. Sure, use your VHF marine radio, but always have a CB radio handy. (Photo by Tom Kneitel)*

### Same Rationale Applies

Now, apply that same good sense to your communications. You may have a top-of-the-line marine radio aboard. Nevertheless, you may save your life by also carrying a CB as a back-up.

If you can afford the boat, and the marine radio, you can certainly afford a back-up CB. A national retailer recently had a name brand CB on sale for $29. You can't afford to be without the insurance CB offers when the cost is that low.

For a little more, you can purchase a CB that also offers NOAA weather reports. Even many CB handhelds now offer the NOAA broadcasts, as well as the convenience of being portable.

Portability can be a real advantage when afloat. On larger craft, a couple of CB handhelds can provide an ideal intercom system, so they are really multi-purpose. If you sail with others, your CB radios can give you ship-to-ship communications as well. Using a quiet CB channel for chit-chat will free VHF frequencies for more pressing radio messages.

### Life and Death

More important, that inexpensive back-up CB radio can save your skin. There are some sport fishermen in the Massachusetts area who were mighty glad they had a CB along on one trip.

Their engine conked out 10 or 15 miles out in rough seas. They radioed the USCG on VHF distress channel 16. Nothing. A check of the radio told the skipper it wasn't going to bring them any help.

As the weather deteriorated, he recalled that he had his old CB unit tucked away in a locker. He rooted it out and cobbled some connections together. After some tense moments, the CB sprang to life.

Fortunately, he remembered his VHF training and applied it. He began calling USCG on CB Emergency Channel 9. He aired full details about his ship, their position and their plight. Nothing.

It was now well after dark. His wife alerted local USCG officials by phone that he was overdue. They reported no distress call had been received, and she knew all was not well. The USCG would monitor the situation closely.

### Miracles Do Happen

Meanwhile, a continent away in Oregon, a REACTer stricken with polio was monitoring Channel 9 from his bed. He heard a distress message repeated over and over. He acknowledged it, but the caller couldn't hear him.

He wrote down the details and called another Team member to explain what was happening. He said he knew the call was real because he had once lived in the little town where the boat was berthed. His colleague told him to notify the USCG in Portland.

The USCG was not easy to convince. First they thought the ship was in the Pacific. When he said it was in the Atlantic, they thought it was a hoax. Quickly they sorted out the confusion and a rescue mission was underway. By midnight, the USCG had located the ship and took it in tow. By the wee hours, it arrived safely back in harbor.

It's not likely those fishermen know to this day who helped them or how many thousands of miles away he was. The skipper really saved all their lives by having a CB aboard and by knowing how to use it correctly.

Had he not broadcast repeatedly the vital information monitors need, that Oregon REACTer could only have listened helplessly to the calls. Instead, thousands of miles distant, he was able to initiate the search and rescue mission that delivered the three fishermen safely back to their families.

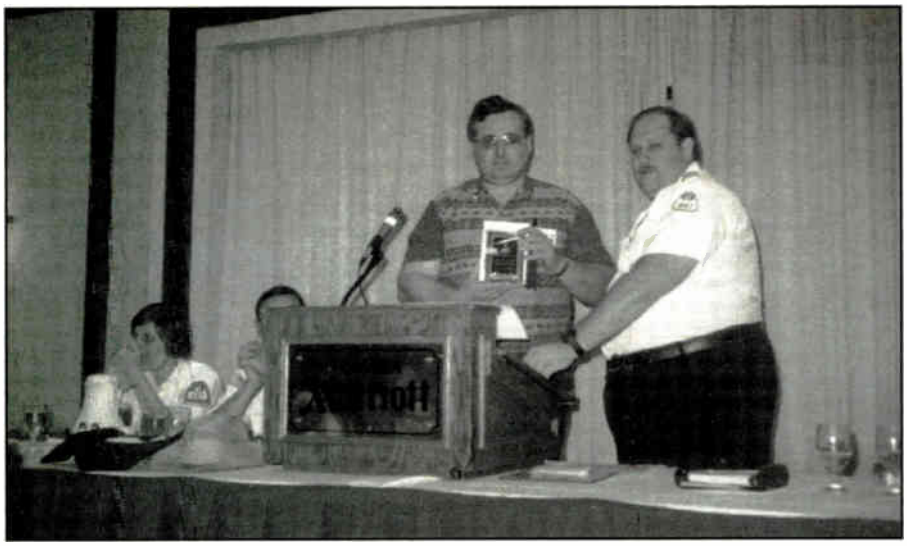
Do yourself and your passengers a favor. Carry a CB aboard every time you set sail. Learn correct emergency radio procedure. CB is an amazing radio service. Just ask those fishermen.

### In the Spirit

Here's help to think cool. What a great time was had by all at Christmas when REACT Ohio River hosted a Team fundraiser in Portsmouth, Ohio's Tracy Park. While folks enjoyed refreshments in return for donations, a DJ serenaded them with seasonal tunes. The kids were excited to have a chance to visit with Santa, who just happened to be in the area. Team members shared the proceeds of their venture with the local corps of the Salvation Army. There was no shortage of Christmas spirit there!

### One Way or Another

More Christmas in July. REACT Don Valley and REACT Lake Simcoe, Ontario provided safety communications for



*Awards are a highlight of REACT conventions. REACT San Antonio's Lee Besing receives a first prize plaque for the Teams' newsletter from Ken Green, president of REACT International.*

two Santa Claus parades in their area on the same day. A third had its own communications.

What did the Teams do? Undaunted, they entered some of their vehicles in that parade. When it was over, they learned that they had placed third among entries in their class. And, another community learned more about REACT. "Where there's a will. . . "

## Onions, Anyone?

Garden State REACT Council, New Jersey, has a problem many REACT groups would relish. It is deciding how to spend some of its hard-earned funds.

One proposal is to purchase a portable repeater. What an asset that would be to its own Teams in emergencies. How valuable it would make NJ to neighboring REACT Councils in a disaster. Teams and Councils are wisely adding unique pieces of equipment that will be indispensable in mutual aid situations. Good moves!

## Safety to Go

REACT Nassau County, New York reports that it has hosted three Safety Breaks on major holiday weekends so far this year. The Team is already gearing up for its Labor Day weekend effort.

Location is everything and Nassau County's couldn't be better. It sets up shop at the Long Island Tourism Chalet on the Southern State Parkway. Lots of visitors, lots of opportunities to issue CB safety information along with a hot coffee to go.

## Coming Home

What cooperation REACT Teams enjoy from other organizations! When REACT Westchester County, New York had to move out of the local Red Cross offices to allow major building renovations, Ciba-Geigy quickly offered space. The Team operated out of their facilities for three years thanks to Ciba-Geigy's generosity and support.

Recently, the Red Cross welcomed REACT Westchester back to its vastly improved, modernized offices. The Team's communications center there includes its own GMRS station, Red Cross radio, ham radio, a computer-aided dispatch system, multiple phone lines, etc. REACT and Red Cross have been working together there for 22 years. It sounds like they plan to be partners well into the future.

## Enviable Record

Emergency Channel 9 monitoring is obviously a priority for Ada County National REACT. The Team nearly doubled its monitor hours in 1995! The total soared from 7,380 hours in 1994 to 12,212 in 1995.


*The plane that clipped the 18-wheeler landed unscathed on I-44. REACT Mark Twain, Missouri caught its undignified departure to the nearest airport for refueling.*

Monitors handled only 45 more calls last year than the 958 in 1994. That may not seem worth the extra time invested—unless you were one of those 45 callers. Being there, ready to react, is every Team's mandate. Ada County takes its responsibility to the public very seriously, as do the hundreds of REACT Teams worldwide. Travelers can be more relaxed on their journey, thanks to that dedicated monitoring.

## Friends in High Places

They are nice to have, especially in the radio world. REACT Waukesha, Wisconsin needed a site for its GMRS repeater. The local cable company, TV26, has invited the Team to consider locating the repeater on its tower. Tney have also expressed interest in filming a program about the Team and its safety contributions to Waukesha.

## Touch of Class

News reached REACT Oklahoma City that their city's Easter Seal Society executive director was retiring. The Team has enjoyed assisting with Easter Seals Telethons for a number of years.

Down to his office went the Team president to offer congratulations and best wishes to their friend. While there, he had the opportunity to meet the new executive director.

What a kind and professional gesture! Can you imagine how much the new CEO is looking forward to working with a Team of this caliber?

## Face to Face

Southern California REACT Teams had the opportunity to meet the newest traffic reporter in their area when he spoke at their last Council meeting. The station, KIIS, has an 800 number REACTers can dial to alert retired CHP officer Monty Keifer to any new traffic nightmares in the station's broadcast area. Face-to-face meetings like this benefit both REACT personnel and their counterparts in related fields. It enables them to work together more effectively in the public interest.

## Convention is Coming!

July is to REACTers what May is to the public. May, you will recall is REACT Month, the time when REACT Teams around the country focus on sharing safety information with CB operators through a wide variety of means.

When July arrives, REACTers from across the U.S., Canada and around the world pack their bags for the trip to convention. Delegates have attended over the years from South Africa, Puerto Rico, Trinidad-Tobago, the U.K. and other spots throughout the world where REACT Teams serve their communities.

## Amazing Advances

Last convention in Omaha, Nebraska, attendees sat spellbound as a former police officer outlined how her specially-trained dogs pinpoint the locations of missing persons, even in water. REACTers learned the precautions they must take when working with search dogs, otherwise their movements could contaminate the area with scents, confusing the dogs. It's important knowledge to have when a Team is assisting in such an operation.

At another seminar, REACTers watched a volunteer scuba diving group demonstrate their sophisticated underwater radio communications equipment. With it, a member in the dive boat can direct the searcher to precisely the spot on the bottom that he wants checked. The radios save time and money, as well as add to the diver's safety.

Smart delegates always split up to attend as many of the workshops and seminars as possible. If that's not possible, you will see delegates swapping copies of their notes and handouts with friends made at earlier conventions. Whatever their techniques, delegates stand to learn a lot from authorities in related fields that can help their Teams do a better job back home.

Ideas that work (or don't) and solutions to problems are also available for the asking from REACTers whose Teams have been on those routes. Information gained in this way, can save other REACT Teams time, money and effort that they can't afford to waste.

## Good Times Too

It's often hard to convince someone to attend that first convention. You couldn't keep them away though, from their second, third or fourth.

Strangers quickly become friends though they may be from opposite ends of the country or beyond. Many "experienced" delegates arrive a day or two early just to visit with other early arrivals, before the actual meetings and seminars ever begin. Some remain an extra day or two for the same purpose.

Conventions cycle through the eastern, central and western regions of the continent to ensure that all REACTers have opportunities to attend. Shortly they will begin the trek to Silverdale, Washington which is convenient for all the west coast Teams. It's a safe bet that other regions will be well represented too, especially by those who have become addicted to convention!

Have a great time, everyone. You deserve it!

## A What?!

"Break 9, a plane just hit my 18-wheeler out here on I-44." Can you imagine how startled REACT Mark Twain, Missouri was to get that call? Can you imagine trying to convince the Missouri State Patrol that your report was for real?

The Cessna landed safely on the highway after clipping him, the trucker report-


*Nary an alligator in sight at REACT Broward County's Safety Break on Alligator Alley near Ft. Lauderdale, Florida. Other thirsty creatures downed over 6,000 drinks during the event.*

ed. REACTers and an MHP officer directed traffic around the downed aircraft, parked on the shoulder of the interstate.

What do you do with a disabled plane parked on a busy highway? Call a wrecker. They did, and the ill-fated bird was unceremoniously hauled away to an airport. REACTers *definitely* get some unusual calls!

## Interesting Work

REACT Oklahoma City, Oklahoma is looking for more volunteers to beef up its numbers. Its experience last year no doubt drove home the need for more REACTers to share the load.

Every REACT Team welcomes new members. If you can spare even a few hours weekly to help monitor Emergency Channel 9, contact a nearby Team. If none exists, consider forming one with a few CB operators in your community. Contact REACT HQ if you need assistance with this.

The pay is not great, but using your CB radio in the service of others certainly offers huge rewards in satisfaction.

## Need a Loan?

Where do you go when you need a loan? If you're REACT Houston, Texas, and you've established a solid record for service to your community, you go to a major Houston radio supplier.

REACT can usually count on the help of Brown & Root there when it needs extra radios for a big event. For the Texas Special Olympics, Brown & Root loaned the Team 25 radios recently. They have helped REACT on other occasions, too. Such support from the business sector is not uncommon, and REACT Teams greatly appreciate it. It is just one of the benefits they derive from their affiliation with the REACT name.

## Truckers' Delight

Would you stop for a coffee on Alligator Alley? How about if it was free?

Over 6,000 folks did during the REACT Broward County, Florida Memorial Day weekend Safety Break. They munched their way through 50 dozen donuts and pastries, too. Again, area businesses made the Safety Break hospitality possible with their contributions.

Professional drivers enjoy the Safety Breaks right along with holiday travelers. The extra traffic adds to the strain of their work, so the Breaks are a welcome sight to them.

REACT is indebted to the American Trucking Association for working with it to initiate the Safety Break Program. In the two decades since it began, the program has benefited millions of drivers and helped make our roads safer for all.

## Friends Indeed

The best way to have friends is to be one. REACT St. Thomas, Ontario knows the truth in that saying.

Local Scout leaders recently trained the Team in map and compass reading for its search readiness. A construction company loaned the Team a trailer for its float in the town's Christmas parade. A car wash operator towed the trailer in the parade for the Team. One radio shop repaired the Team's radios, and another supplied magnetic-mount antennas to the Team at a discount.

Later, the REACT St. Thomas Team traveled to help REACT Stratford, Ontario with communications for its town's Christmas parade. What goes around, comes around.

Meanwhile, the Team befriended six callers on Emergency Channel 9 in need of assistance. Monitors invested over 400 hours in order to be there for those six callers. No doubt they have won six new friends for REACT.

## Prevention Pays

Impaired driver reports account for too many of the calls REACT Teams receive.

REACT Waukesha, Wisconsin reports that of 69 calls received, eight concerned possible impaired drivers. In the next quarter, the Team handled only 41 calls, but 11 of those again related to impaired drivers; considerably more!

During each quarter, REACTers monitored over 4,000 hours. In the same period the Team relayed 19 accident reports to police, four of them involving injuries. Another 49 calls reported disabled vehicles.

Each call enabled authorities to prevent a possible mishap or prevent greater injury to accident victims. CB radios in capable hands are amazing tools for increased safety.

## Lots of Noise

Life has been anything but too quiet for REACT Hamilton-Mercer, New Jersey lately. The Team recently provided communications for an historical military reenactment. Then it was off to do the same thing for a festival, complete with a fireworks display.

Apparently the REACTers can still hear. They have since held a Safety Break, worked a Project Freedom bike tour, a cancer Race for the Cure, and street fairs with popcorn. Like most REACT Teams, their radio skills are in frequent demand, making community events safer.

## Role Reversal

CB Emergency Channel 9 can be as useful to REACTers as anyone else. REACT San Antonio, Texas members returning home late at night discovered an accident on I-35. One checked for injuries while the other radioed their Team to summon emergency services.

Fortunately, there were no injuries since the car driver had abandoned his disabled vehicle before a tractor-trailer demolished it. One REACTer set out traffic cones near the car and emergency flares at a safe distance to direct oncoming traffic onto the shoulder around the collision. The other used kitty litter to soak up the car's spilled fuel, a technique that won the admiration of fire fighters when they arrived.

Earlier that night, the two had helped a lady get back into her house after she had locked herself outside. They had also stopped to assist a lady motorist on I-35. She spoke only Spanish, so they drove her and her children to the next exit where she called her husband. What an evening! They do say things happen by threes, right?

## A Reader Writes

Horace Hinkle, of Riverside, California says his son recently bought his own big rig. Horace's grandson was with his dad on one run on the outskirts of Phoenix, Arizona when his dad suffered a heart attack at the wheel.

Grandson George, just learning to drive, took over and got his dad to a hospital. After his release, he helped his dad drive back to L.A.

Dad is fine now, and driving again. The Grandson now drives big rigs. Two other grandsons do likewise.

"None of us knew about REACT then," Horace writes. They do now, he says. Horace even supports REACT by subscribing to its publication, the REACTer. Thanks for writing, Horace. Spread the word about REACT to others who may not know about them.

## And You?

Has a REACT Team helped you out of a particularly bad spot at some time? Would you like us to acknowledge their work here? Send us the details and we'll do our best. Write to: REACTing with Radio, P.O. Box 998, Wichita, KS 67201. ■

# REACTer of the Month

**OUR SALUTE TO THOSE WHO VOLUNTEER**

By Ron McCracken

## REACT Bangor: Looking For a Few Good Men and Women

**WANTED:** A few good men and women keen to monitor CB Emergency Channel 9. If you live in the Bangor, Maine area, REACTer Jim Koritzky probably has you in his sights. You may as well turn yourself in to Jim and start monitoring.

Jim Koritzky wants to re-activate REACT Penobscot County and its service to the Bangor region. He joined the Team in 1988 after reading about its contributions to the community in a local newspaper. The Team later merged with REACT Aroostook County. Jim continues to serve the public as a member of that Team.

Bicycle races are a popular fund-raiser in that hilly section of the northeast. REACT there provides safety communications for such events to support the March of Dimes and Cerebral Palsy.

Maine has a REACT Council, and Jim Koritsky is its current president. He also serves his Team as its vice-president. He is one of about 400 Life Members of REACT International, Inc.

### Hard Working For Us All

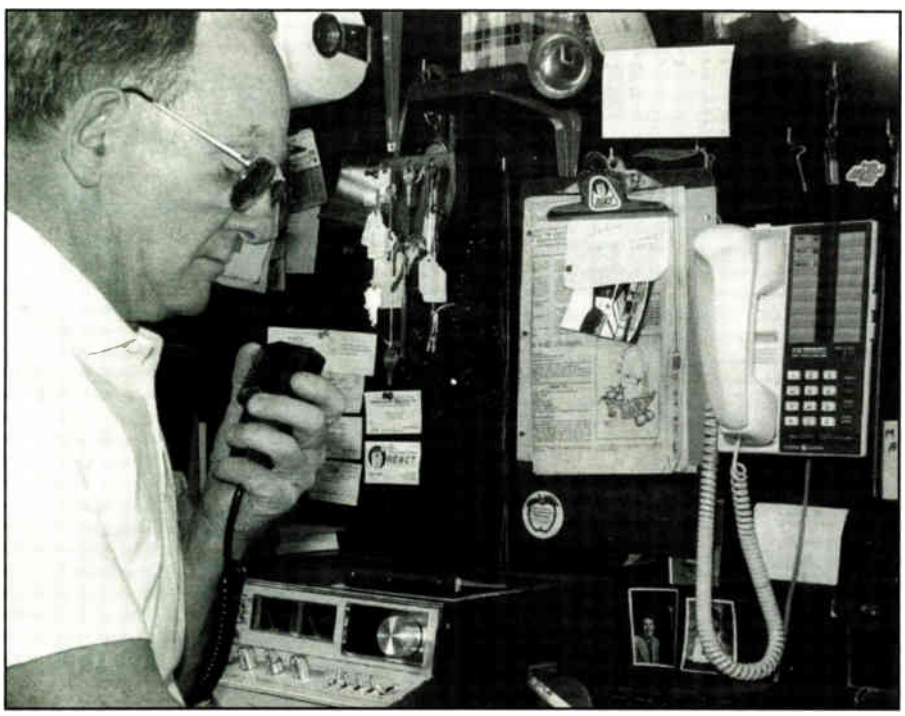
Like many REACTers who attend their first International convention, Jim has become somewhat of a convention addict. He attended his initial convention in 1989. Since 1992, he has been at the last four conventions, traveling to sites from New Jersey to California.

In that time, Jim has served first on the CB Committee and now the Public Relations Committee. He is particularly interested in REACT's Safety Break program and works hard to coordinate data on Safety Breaks nationwide for use by the media. When his wife died several years ago, Jim made a gift of $1,000 to advance the Safety Break program of REACT International, Inc. in her memory.

Another project Jim is working on for the Public Relations Committee involves gathering copies of commendations and awards received by REACT Teams and Councils throughout the world. These documents provide a valuable record of REACT achievements. They also aid in preparation of grant submissions to further the work of REACT, so they are doubly valuable.

### Send The Jaws

Not surprisingly, Jim had no difficulty recalling his most memorable call on CB Emergency Channel 9. Most REACTers have a call or two indelibly engraved on their memories. Many of those calls emphasize over and over the vital need to use your CB radio correctly in an emergency. Jim's is no exception.



*Jim Koritzky, our REACTer of the month.*

While monitoring Channel 9 a couple of years ago, Jim suddenly heard a very faint call for help. Fortunately, the caller was airing a complete distress message. He couldn't hear Jim's replies, but it didn't really matter. He was broadcasting repeatedly the vital details Jim needed (WHO; WHERE exactly; and WHAT).

After piecing the data together, Jim was able to go to work to get help for his caller. The call concerned a collision on an interstate highway 700 miles away near Nashville, Tennessee. The caller was appealing for the "jaws of life" and an ambulance. The situation was serious.

Jim checked the area code map at the front of his telephone directory for the Nashville area code. With the help of an alert telephone operator there, emergency vehicles were quickly on their way to the accident scene. As often happens, Jim never learned the outcome of his actions. Nevertheless, he feels the satisfaction of knowing that he, the caller and their CB radios performed admirably.

Notice that Jim was not able to speak with the caller. However, his caller knew how to make a CB radio get results. He aired key information that any monitor, near or far, could use to send help. He did it over and over. Make Jim Koritzky and thousands of other REACT volunteers happy. Remember to do the same when an emergency arises.

And you Bangor area readers, give Jim a hand to restore REACT Penobscot County. We will all be better for it. ■

# State of the Month

## OUR SALUTE TO THE STATE WHERE SERVICE IS TOPS

By Ron McCracken

## REACT Washington—Keeping Busy

*Washington REACT Council officers enjoy a lighter moment at an early Council meeting over a decade ago.*

REACTers in the state of Washington are a busy lot this month. You see, they are hosting their second REACT International, Inc. convention of the decade.

Spokane was the site of the 1990 REACT convention. On that occasion, participating Teams did such a fine job of welcoming delegates from across the nation and from Canada that many look forward to their return visit.

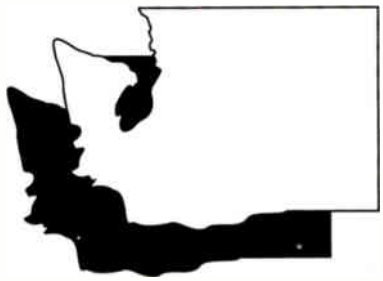
Silverdale, Washington, right on the Pacific coast at Seattle is where REACTers from near and far will gather this month. It will thrill delegates with the beauty of its corner of this vast landscape.

### Another Time

Veteran Washington REACTers can recall the days when the state had no REACT Council. Those we've talked with value the benefits their Council has brought to member Teams.

Even before a Council existed, REACT Teams served their communities and the traveling public well. In those days, at the peak of CB interest, two Washington REACT Teams, King County and Snohomish County, with their combined 100 members could boast continuous Emergency Channel 9 monitoring across a 1,200 square-mile area.

Soon REACT Teams were organized and monitoring along the length of I-5 from the Canadian border to the Oregon



state line. Travelers on I-90 enjoyed similar REACT safety communications from the Pacific to the Idaho boundary.

### Moving Ahead

When REACT Headquarters authorized the formation of Councils, Washington was quick to take advantage. Most of the REACT Teams within the state participated actively in various aspects of Council life. After all, it was to their benefit to learn all they could. Council meetings were ideal opportunities to do just that. Teams could share ideas and experiences. Guest speakers brought new knowledge and provided new contacts.

REACT Washington numbered at least 22 Teams with memberships that ranged from five to a reported 200. Those were the days! For a time, the Council experi-

*Evergreen REACT members unpack items for their display at the 1994 Washington REACT Spring Conference.*

mented with a system of four regions, but the statewide meetings proved more popular with member Teams, so regions faded into the past.

Richard T. Gamble, REACT Life Member Committee chairman and past REACT Field Director credits, "adhering to REACT principles and purposes" with helping Washington Teams to "maintain their strength" through good times and lean times. The beneficiaries, he says, have been the members of the public those Teams have survived to assist.

## Fine Track Record

Over the years the advantages of a Council have become clear. Ten Teams undertook a major fund raising project at the Gold Cup hydroplane races where they provided safety communications. The funds raised enabled the Council to coordinate a statewide GMRS repeater system for all REACT Teams in Washington. When Mount St. Helens erupted, the REACT GMRS repeater network made a very favorable impression on state disaster response authorities.

When a major winter storm toppled telephone lines, REACT Washington was again able to support Red Cross shelters with emergency communications using CB and GMRS. To their credit, Washington REACT Teams have formed a good working relationship with amateur operators in the state. In disaster situations petty turf wars have no place.

In happier moments, member Teams have cooperated to provide safety communications for Special Olympics at Fort Lewis, for Maple Valley Days and for marathon races. Events which would strain or break the capabilities of a single Team pose no problem when other Teams in the Council mobilize their manpower and resources to help out. Working together on these various events is invaluable practice for the next emergency when the Teams will need to work together under far less than ideal conditions.

Recently the Council welcomed an Oregon REACT Team into its organization. The experience gained from involvement in the Washington REACT Council will hopefully result in the formation of an Oregon Council at a later date. What a great opportunity to learn!

Right now, REACT Washington is hoping Mother Nature will keep her cool at least until the Silverdale convention is over. Its REACTers have their hands full with all kinds of last minute details.

Go easy on them, Mom. Best wishes to all for a very enjoyable and successful Convention '96! ■

*Washington REACTers plow through mountains of details as they prepare to host the 1996 REACT International, Inc. convention. It takes place in mid-July at Silverdale.*

# International CB

DX INFORMATION FROM AROUND THE WORLD

By Alex McPherson

## Some Thoughts for Summer

Although I'm writing this at the end of winter, it's always nice to think about what's going to happen a few months ahead, especially if you're thinking of a nice warm spring and the following hotter season of summer. Actually, I like winter; propagation on 27 MHz seems to me one of the best, since when I take a look at my logbook over the past few years, I notice that most of my very long distance 11 meter contacts have been made during the cold months of the year. And yes, there is a reason for this, and a long scientific explanation.

Summer also has its own forms of propagation, including the typical ionospheric type, which occurs more often than any other form of propagation, especially on 11 meters. One can imagine that 27 MHz is neither HF (High Frequency), nor VHF (Very High Frequency). It's the end of the first spectrum, and the beginning of the latter. Therefore, we encounter several forms of propagation which may be typical in one or another spectrum. Still following? OK, let's continue.

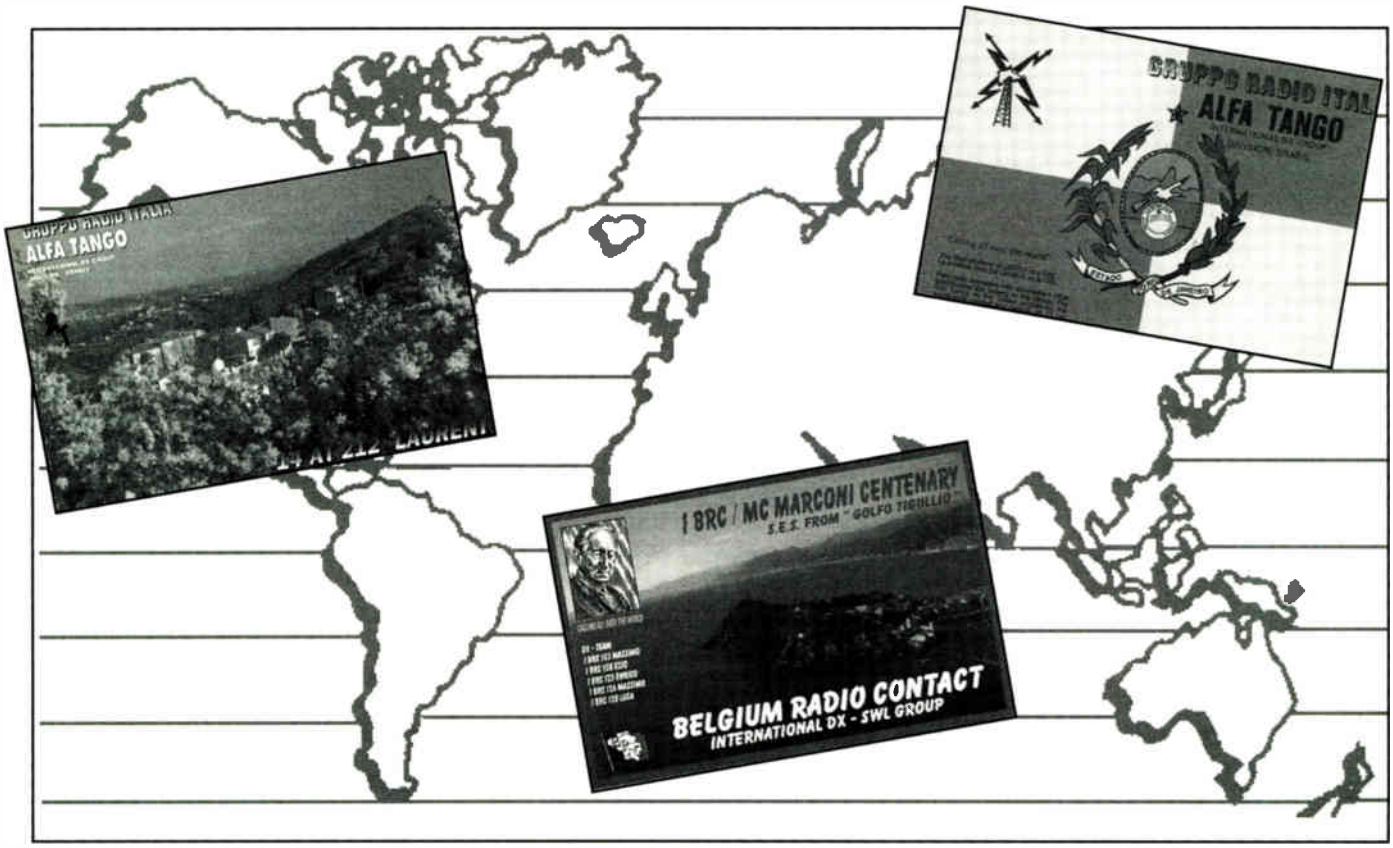
One of the most interesting forms of VHF propagation is Sporadic-E. Why is that? Well, I'm not going to get into the details, because I'm sure you won't appreciate my column any longer! Just let me explain that Sporadic-E results from a collection of ions that form in thick, bulky patches (or clouds), about 70 miles or more above ground and obviously in the E-layer of the ionosphere. Shut up, Alex! OK. That's all for now.

This form of propagation occurs in the northern latitudes, mainly in May, June and July. It can also appear later. In the southern latitudes, it appears in their summer season, from November to January. So, this means that you'll never contact the southern latitudes (if you're living in the north) via Sporadic-E, although you will manage to do so at some rare occasion.

Now why am I writing this in my column? Hey, I haven't finished! I'll be short . . . Sporadic-E gives us a nice occasion to do some "short distance" contacts. When I say short distance, I don't mean contacting "Bill from down the street." I mean hearing stations from 1,000 miles away. It's an excellent form of propagation to catch other states and if you're lucky enough, some not too far away countries. And that's why it's easier for us to get in touch with the other side of the country in summer than it is in winter. Mobile contacts using SSB are also made somewhat easier with Sporadic-E, although you do get some heavy signal fading (QSB). And if you're using a beam, you may find the thing useless from time to time. Just do some observation during some of the hottest days of the month and listen for those rare states/provinces. If the signal received is coming in like a puzzle (that's the QSB effect), if its origin is too far away to be a local station or too close to be a DX station, then it's Sporadic-E. Fantastic, isn't it?

### Nordstrand Friendship Celebrates 10 Years

On May 17, 1986, Norwegian National Day, the Nordstrand Friendship DX and QSL Club was founded by the club president Marius, in Oslo, Norway. This year is therefore the 10th anniversary of the club. It has a large number of members



in many different countries, but as Marius says, "It's not the quantity that counts, but the quality of the members." As he explains in a recent press release, "The main thing is that Nordstrand Friendship is not only a DX club, it's a big family."

This special year for the NF group will continue to see some nice activities. For example, every NF member is using a special callsign during the anniversary year, such as /TEN (stroke Tango Echo November). Even if you're not a member of the club, you can get an award for contacting 10 TEN stations. If you contact 25 of them, you receive a glass trophy, free of charge! And if you're lucky enough, you may be the one in the world who contacts the most possible amount of special /TEN stations. If so, you receive a big, nice looking trophy, still free of charge.

For more information about the contest, get in touch with Bernt, **1NF151**, P.O. Box 8796, 0028 Youngstorvet, Oslo, Norway.

## News From America

Martinique Island (French) will be on the air starting from next September until 3,000 contacts have been put in t he log. The callsign used is supposed to be 136EDO. QSL is certain via: Stefan, 14ED001, P.O. Box 19, 80800 Corbie, France. Don't forget your contribution for this one.

## European DX

**171AT/DX** (Svalbard) is supposed to be stopping his activity this month. As a reminder, the QSL address is: 161AT065 Adam, P.O. Box 79, Wladyslawowo 84 120, Poland.

From Estonia, **304SDO** is still around and should be on the air until December next year. QSL is via: John, **30SD014,** P.O. Box 136, 12080 Castellon, Spain.

The French Alfa Golf group informs me that **310AB0** will be on the air until December 31 transmitting from Latvia. The QSL card can be obtained via: Niko, P.O. Box 12, 86463 Weldenn, Germany.

The Belgian BRC group will be operating from the beautiful Balearic Islands in the Mediterranean Sea starting on November 15. QSL cards are available via the BRC QSL Buro, P.O. Box 33, 3271 Zichem, Belgium.

## DX From Asia

You may try to listen for **48CT0** transmitting from Saudi Arabia until November. The QSL manager is Franz, P.O. Box 36, 3250 Wieselburg, Austria.

Hong Kong may be one of your "most wanted" countries. If so, try **60SD0** beginning in November. But be quick, only 600 QSOs will be made during the operation. QSL via: Max, 1SD005, P.O. Box 124, 21051 Arcistate, Italy.


An important rare one is to appear on the air starting September 15 through October 31: Nepal! The callsign is **86AT/DX.** QSL card is via: Tom, **161AT415,** P.O. Box 61, Gliwice 2, 44 102, Poland. It may seem incredible, but contribution is voluntary!

## Africa

A long term expedition is to take place from November 1996 to April 1997 from Kenya. The callsign used will be **187BC/DX** or **187BC00.** QSLs must be sent with two IRCs to: Breaker Club, P.O. Box 123, 22321 Hamburg, Germany.

Ghana, Zimbabwe and Chad Republic are also supposed to be on the air from November onwards and only until 1,000 contacts are made. The Sugar Delta Club is responsible for these three expeditions, which will respectively be signed 77, 85 and **175SD0.** QSL via: Dino, **1SD001,** P.O. Box 1, 22050, Verderio, Italy. Contribution is necessary.

## And Elsewhere . . .

Queensland, Australia has been on the air since February and will be until December, thanks to 43TR000. The QSL card is OK via: Brian, 43TR001, P.O. Box 977, Ipswich, QLD 4305, Australia.

That's all for now. I've been rather short this time, but I'm preparing some nice DX news and some good DX related topics for the upcoming issues of this, your favorite magazine. Don't forget to send in your questions, photos (good ones, please!) comments, and other bits and pieces to the editor. Remember, his must be YOUR forum.

By the way, I've got a new antenna system up for Cycle 23; a big four-element Yagi beam, that's working very well. I can now appreciate the difference between it and the 5/8 vertical!

Take care,

**Alex**

# Northern CB

## CB NEWS AND VIEWS FROM CANADA

By Brynly Roberts

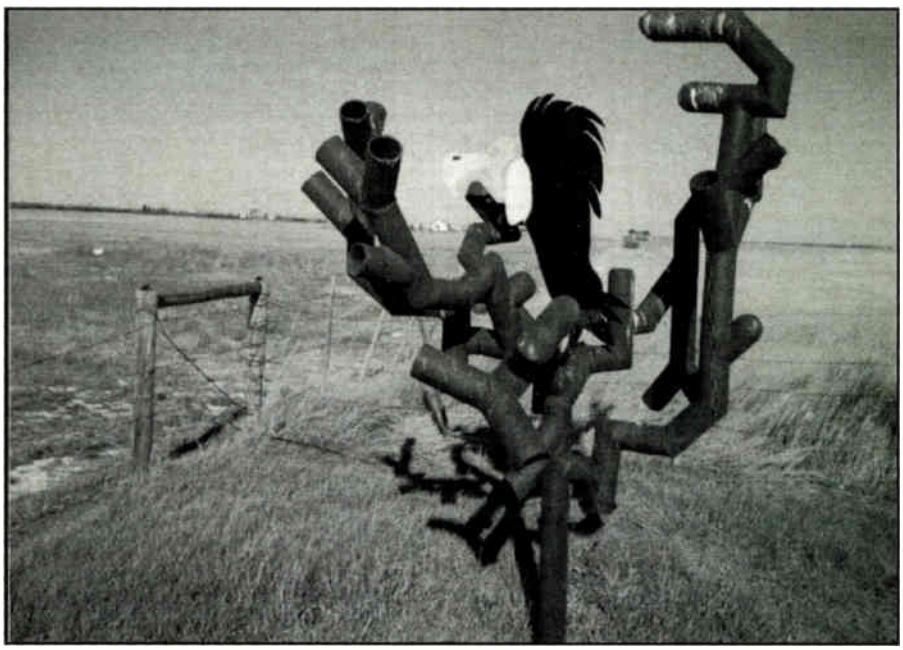
# A Game of Russian Roulette

Back in the days of tube jobs such as the Johnson Messenger, the local agriculture sector was one of the first user groups to make CB part of their operations. A number of local farmers are still into CBs in an effort to offset some of the risk inherent in the business. According to one foremost, Alberta grain farmer, Phillip Kultgen, "Farming is like playing Russian Roulette."

Variables making farming a gamble include frost, hail, drought, insects, disease, the rise and fall of prices, and of course, just plain luck; sometimes all bad. Then there's the all-powerful, Canadian Wheat Board, which has a monopoly on marketing grain in this country. With all those odds stacked against a farm family just trying to make a few bucks, pointing a loaded gun to your head starts to look appealing! Kultgen takes it all in stride however, latching onto any opportunity to improve his bottom line; which includes installing Midland CBs in all his combines and trucks. "I've used CBs for years," says Kultgen. "Dad even had the old style tube radios. 'Matter of fact, I just threw a bunch of them into the dump last year."

Relatively flat grain fields in southern Alberta allow for good reception, and there's little problem with skip, according to Kultgen. These days his radios are used almost exclusively while he's in the fields, but in the '60s, there were quite a few local farmers who took advantage of the skip phenomena to idle a few minutes away and collect postcards from distant contacts. "Dad had a pile of cards from all over the place from people he talked to back then," Kultgen says with a laugh.

Ron Davis, who owns a grain and cattle operation 30 miles to the northeast of Kultgen, was one of the first CB users in the area. "I bought my first CB thirty-three years ago in 1963 for the school bus I was driving," the friendly Davis says, adding with a chuckle, "And I'm still at it." He's upgraded from his old Johnson Challengers, and points out that he never did any gossiping even back then; the radios were for peace of mind while on his hour-and-a-half bus route over gravel roads that sometimes weren't too passable. Long cold spells last winter not only added to his worries while on the road hauling kids to school, but increased his work-load of feeding cattle extra rations so they wouldn't lose weight from the cold weather, but he's typically non-committal when it comes to staying with the grind of bus driving. It has become so much a part of his routine, he says he's not sure when he'll be parking the school bus for the last time. One thing he knows for sure, he's *not* parting with his CB rigs.



*This vulture guarding a ranch gate near Claresholm, Alberta, has a genuine cast-iron stomach!*

Another local farmer, Tim Karl, with five sections of land (five square miles) under cultivation, considers himself a small operator compared to the average landowner in the area. Tim has equipped everything from fuel truck to combine with Midland CB radios while trying to remain competitive in the farming business, but with a shake of his head he says, "I need to get bigger if I expect to make money at this, but everybody wants to sell five or 10 sections at a time right now."

Farming is a family affair with the Karls, as his wife Sandy bundles up the kids in the pickup to take meals out to the field. "That's our quiet time," Sandy says with a smile. "Otherwise, in the busy season, Tim just wouldn't have time to see the kids." She's one busy person herself, as owner/operator of the local clothing store; in addition to running her home-based hair styling business three days a week. Of course, the Karls aren't alone when it comes to farmers and ranchers looking for ways to diversify.

Such is the case with Gordon and Carolyn Wilson, who ranch in the ruggedly picturesque southern Alberta foothills. While Gordon remains fully occupied with their 400 Angus/Limousin-cross, Carolyn has become involved in the newly developed Boer Goat business. Bringing in 80 frozen embryos from New Zealand to implant in a recipient is a costly, risky venture, but it's evident the personable Carolyn is up to the task. In the last few years she's worked off the ranch doing everything from pen checker at a 4,000 head feedlot, to working in a day care facility in town.

Recounting a recent run-in with a cow, Carolyn says, "I was trapped in the corral by a young heifer with her first calf. When she took after me I thought I was a goner. If it hadn't been for the dog she'd of finished me." That's why Carolyn is so taken with her goat business. "They're so manageable for me. It's something I can do by myself, and goats are nice and lovable."

Raising a family in the back country 25 miles from the nearest town doesn't faze Carolyn one bit. "We keep in touch," she

*Ed Banstra of Lethbridge, Alberta, keeps his rig busy hauling grain for the southern Alberta feedlot industry.*

says with a nod toward the CB sitting on the cupboard. "We can always get help if we need it." Ranch life holds a special appeal for Carolyn, and with their comfortable home, she says she feels no need to compete with anybody—a new rug, new car, or whatever. "It's a pretty peachy life," she says with obvious satisfaction.

Spin-offs from the cattle ranching business include feedlot operations, and there are more than 500,000 head on Lethbridge area feedlots on any given day. Brad Mead is one of those involved in the business of fattening up cattle for market, and specializes in buying Holstein cattle for meat packers in Wisconsin. Working out of a feedlot 10 miles north of the city of Lethbridge, Mead is no stranger to CBs. He's a partner in two cattle-liners, and says the radios are

*CB-equipped tractors ready and waiting for a rain shower to pass over one of southern Alberta's large, dryland farming operations.*

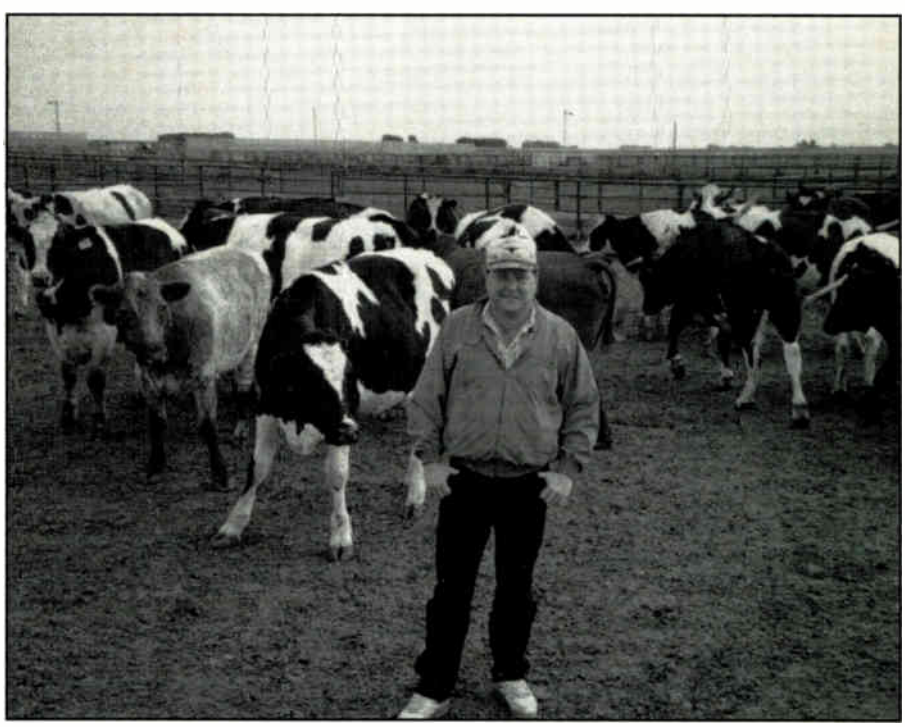
*It's chow time for six-year-old Corbin Karl of Foremost, Alberta. Corbin has his own idea of what comes first in his dad's farming operations.*

*Carolyn Wilson loves cuddling her precious and expensive Boer Goat babies, one of the first births from 80 New Zealand embryos transplanted into standard goat recipients on the Gordon cattle ranch 25 miles west of Nanton, Alberta.*

indispensable to his overall operations. Of his daily work schedule, which includes buying, shipping, and feeding cattle, Mead says, "It keeps me hopping." But that doesn't stop him from running another project that's close to his heart—Ganster Stables, near Edmonton, in northern Alberta. Mead's seven racing thoroughbreds are tended by full-time trainer, Leanne Mclean, who "takes care of everything," even selecting races for the horses which generally run on type "A" tracks. An ardent race enthusiast, Mead attends as many events as his tough schedule permits, his travels taking him to major races all over western Canada; and now he's toying with the idea of venturing into the U.S. racing scene. Does he make money racing the thoroughbreds? His wife Shari just grins and says, "Last year we made enough to buy a $30,000 truck; but this year it's more like a hobby!"

Transportation, another spin-off from agriculture, and vital to the industry, takes on some curious twists. I recently came across local trucker Ed Banstra off-loading a rail car of barley that had just arrived from Manitoba, some 700 miles to the east. The barley was destined for local feedlots in spite of the fact that 5.5 million acres of barley are grown in the province of Alberta every year. With almost $170,000 tied up in his rig and double trailers, Banstra appreciates the business, and says he makes frequent trips into Saskatchewan for loads of barley.

Whether it's ranching, feedlots, dryland farming that requires immense acreage to be profitable, or the intensely irrigated crops of grain and vegetables grown in the heavily irrigated areas of southern Alberta, there's no questioning the significant role of agriculture in our society. There's also no questioning the role of CBs in farming, ranching, and spin-off industries. They give a smart operator the edge in an industry that sometimes appears to offer the same odds as playing a game of Russian Roulette. ■



*Cattle-buyer, Brad Mead, specializes in buying Holstein cattle destined for a packing plant in Wisconsin. He's also a partner in two cattle-liners, which helps him pocket a little more profit.*

# Mobile Electronics News

## A LOOK AT TECHNOLOGY FOR THE ROAD

## Safety Warning System—Virginia's Unlikely Detector Advocate

Does technology like the Safety Warning System (SWS) have the potential to prevent accidents? Former Cape Charles, Virginia Police Chief Bill Lewis knows it does.

Lewis was on duty about 1:30 a.m. last year when he received a call about a traffic accident on Route 13 near the southern tip of the Delmarva Peninsula. It had been raining most of the day and into the night. When Lewis arrived, he found the single-vehicle accident—along with one to two feet of water standing across the highway. He parked his cruiser in a median crossover, about 15 or 20 yards behind the other car, making sure his emergency lights were flashing. The driver was OK, but Lewis had a couple of close calls with other vehicles traveling too fast for the wet conditions as he was walking to the wrecked car. He told the man that they had to get back to the police car where it was safer.

Soon another car came by, hydroplaned and struck the first car, resulting in minor injuries to the woman driver. Then the same thing happened to a third car. "Now I've got three accidents," Lewis thought, realizing he had better get everybody out of the area because it was just too hazardous to be there.

But just then Lewis could hear trouble approaching—a tractor-trailer. Oddly enough, what he heard was the truck slowing down, even though it wasn't yet in sight of the emergency lights. By the time the truck approached Lewis' car, it was creeping along at 10-15 mph, with a line of cars backed up behind it. The truck stopped and the driver hollered down, "Hey, what can I do for you?" Lewis asked the what he meant. "I've got 'Road Hazard' up here on my display, and I'm not sure what you want me to do," the trucker replied. "I thought you wanted me to stop right here." The perplexed police chief climbed up on the truck's step to see what the driver was talking about. Sure enough, there was a safety-radar-capable detector displaying "Road Hazard."

Then it all made sense. Lewis had been testing a safety radar unit, one that transmitted automatically when his siren or emergency lights were activated. Though he had demonstrated the system a number of times, he had never actually seen what it could do in a real-life situation. Lewis told the trucker to stay put, keeping traffic stopped until the state police arrived and the mess could be cleared up.

*Cobra's new INTENNA™ cordless phones. Note that the antenna is built in the phone.*

"Here this guy slows down. . . he's got about a dozen cars behind him. The System did exactly what it was supposed to do. I don't know if he saved my life, but I do know that he protected everybody else from having another accident," Lewis recalls.

The unit Lewis was using was capable of transmitting two messages—"Emergency Vehicle" when his siren and lights were on, and "Road Hazard" when only the emergency lights were in use. He is excited about the far greater safety potential of the Safety Warning System, with its 64 fixed-text messages and unlimited possibilities for variable text messages. "What RADAR is doing with the Safety Warning System is going to far exceed that system," he predicts. "Ten years from now, the SWS is going to be as common on emergency vehicles as lights and sirens."

In fact, Lewis is so enthusiastic about safety radar's future that he left his post with Cape Charles to concentrate solely on repealing Virginia's radar detector ban. Times have changed, Lewis argues, and now it's time for Virginia's outdated law to change as well. For one thing, he doesn't see drivers using radar detectors to speed flagrantly.

"I have to say that in 15 years of law enforcement, of all the vehicles I've stopped that were really speeding, only one or two ever had a radar detector," he asserts. "Most everybody I've talked to who uses a radar detector are law-abiding citizens who may occasionally go 60 mph in a 55-mph zone. but they use them to be aware. That's the reality."

He contends that before long, the Safety Warning System will become a standard for emergency vehicles, and he predicts that inexpensive Safety Warning receivers will be offered as original equipment by passenger venicle makers.

But to bring these benefits to Virginia, the law must first be changed. The history of repeal attempts there has had just one small success: passage of a law prohibiting the state motor vehicle department from assessing points for detector violations. Otherwise, the record shows that in the last 10 years, six bills have been introduced and six bills have failed. Lewis and RADAR are encouraged by the fact


*A full line of mobile CBs from Cobra Electronics Corporation feature the Chevy blue "Bow-Tie" logo and General Motors "Mark of Excellence" logos.*

that while no one agreed to introduce a repealer last year, this time there are two bills, one that ends the ban outright and another that allows only safety-radar-capable detectors. During lobbying for repeal of the detector ban, Lewis has done a lot of educating of his fellow law enforcement officials. At this point, though, he says about as many police officers favor repeal as oppose it. Ironically, those who want to see the ban continue aren't concerned about detectors possibly harming highway safety, they are worried about losing revenue.

"It's money in police departments' pockets," he says of the ban. "It's easy to go out there with that VG-2 radar-detector detector and write that ticket. It's good money. I know of some departments that have actually paid the salaries of their personnel by writing those tickets."

Lewis says ticket revenue is a weak argument in favor of the ban, particularly when that sort of predatory enforcement hurts a state that's heavily dependent on tourism. "Anybody going against this bill is going against highway safety," he emphasizes. "There was a time for the radar detector ban, and that time has passed. There is a time for Safety Warning Systems, and that time is now. If we can save one life by dropping this law, then it will have been worth it for Virginia."

## The '96 Legislative Outlook

With the exception of the possible repeal of Virginia's radar detector ban, this year looks as though the status quo will be maintained. That means *no new bans*, and that's good news.

Most of the anti-detector bills in state legislatures were introduced in 1995 and have since been languishing. Such left-over ban bills can be found in Hawaii, New York, Vermont and Wisconsin. An unsuccessful attempt was made to attach a detector ban to a speed limit bill in Michigan early this year, and a couple of ban bills were introduced in Missouri, but nave gone nowhere.

The most prolific state when it comes to proposing bills restricting a driver's right to use a detector is New York. Despite already outlawing detectors in large trucks, a few New York lawmakers each year attempt to broaden the ban to passenger vehicles as well. There are now six pieces of legislation in the Empire State that would restrict detectors in one way or another. One New York bill of interest would authorize the use of photo radar to enforce work zone speed limits, while another photo-radar-authorization bill looked as though it was headed for passage in Washington. Stay tuned!

## Cobra Electronics Announces Safety Alert™ Transmitter

Cobra Electronics Corporation and Code 3, the leading worldwide producer and distributor of emergency vehicle warning equipment, have announced an agreement to market Cobra's Safety Alert™ transmitter to police, fire, emergency services, road construction and public utility organizations nationwide. The new safety device will carry both the Cobra and Code 3 names.

The transmitter is designed to send signals from police and other official vehicles involved in emergency or road hazard situations. A signal is then picked up by all radar detectors currently on the market—and more detailed alert information is picked up by the more sophisticated safety receivers.

"More policemen are killed in the line of duty in auto pursuits than by gunfire. This new device can change that situation and make a very real difference," said John Pohl, Vice President of Marketing, Cobra Electronics Corporation. "With the Safety Alert system, the lives of police officers, fire fighters, ambulance and road crews—as well as the general public—will be much safer. We see our mission as moving ahead to put this important tool where it belongs—in the hands of emergency and roadside utility personnel. We're working closely with Code 3 to reach these markets," he continued.

The Safety Alert transmitter will be built by Alpha Industries, Inc. Alpha Industries is a manufacturer involved with commercial wireless semiconductors, Gallium Arsenide Monolithic Microwave Integrated circuits (GaAsMMIC) and ceramic components in radio, microwave and millimeterwave frequencies.

The Cobra Safety Alert transmitter triggers every radar detector up to 3/4 mile away, warning drivers of a nearby emergency vehicle moving at high speed. It works in fog, snow and even around curves—road conditions where a vehicle cannot be easily seen or heard.

Once the emergency vehicle reaches its destination—and if the vehicle is parked in such a way that it represents a roadside hazard—the transmitter then emits a different signal to warn drivers that a "road hazard" exists. This signal will also be transmitted by stationary or slow moving public utility and road construction vehicles.

According to Cobra, independent tests indicate that drivers with detectors are actually safer drivers. When their detectors sound a warning signal, drivers slow down and look for potential hazards.

"In addition to improving highway safety, it will lead to dramatic reductions in vehicular repair expense and liability insurance," said Fred Twichell, Vice President of Sales for Code 3.

## Cobra and General Motors Announce Licensing Agreement

Cobra Electronics Corporation and General Motors have announced a long-term licensing agreement that will showcase GM and Chevy trademark logos on certain Cobra CBs. Under the terms of the deal, a full line of new Cobra CB models will now carry the GM "Mark of Excellence" emblem and Chevy blue "Bow-Tie" trademarks.

*Got ya! This smokey zeroes in on a traffic. A new Safety Warning System will alert drivers in vehicles equipped with radar detectors of road hazards and other highway emergency situations. (Photo by Craig Peterson)*

"These new models are designed to appeal both to loyal GM and Chevy owners and a wide range of auto enthusiasts," according to John Pohl, Vice President of Marketing, Cobra Electronics. "Our consumer research shows that the combination of the GM logo and the Cobra logo sends a powerful message of quality and high-performance. With CB radio sales growing at an annual rate of approximately 20 percent, we continue to provide products which enhance the lifestyle of all types of drivers."

A variety of Cobra CB radio models and accessories will now carry the GM and Chevy logos, ranging from entry level units geared to new CB users to full-featured models favored by professional truckers. These include:

• **SOS Kit** (model GM-10 and C-10)—An emergency kit that combines a one-touch tuning CB radio with roadside aids to provide motorists with instant communications and other needs in an emergency situation. It comes with a complete 40 channel CB radio system, antenna and blaze orange "Help" flag to attract roadside assistance and is packaged in durable storage cartons which fit under a seat or in the trunk, until needed. Installation takes minutes.

• **Mobile CB** (model GM-70 and C-70): Full-featured, compact mobile CB radio fits in the palm of your hand and is detachable to allow unit to be transferred between vehicles, or safely stored away for security. An illuminated LCD display makes operation easy.

• **WeatherBand Mobile CB Radio** (model C-18 Ultra): This 40 channel mobile CB with built-in weatherband receiver will keep the user informed of the latest weather information 24-hours a day. An instant emergency Channel 9 button makes it easy to call for assistance.

• **Classic CB With Weather Alert** (model C-25WX): High-performance mobile CB radio for professional users is designed to receive 24-hour emergency weather broadcasts. In the event of an emergency bulletin issued by the National Weather Service (NWS), the unit activates automatically (even if it is turned off) and transmits a special alert tone.

• **Cellular-Style CB Antenna** (model C-AT55): A glass-mount CB antenna. It has full 40 channel performance.

With the new line of GM licensed products, Cobra plans to expand the traditional sales channels of its CB radios to include GM dealers, including Chevy dealers, truck specialty shops, RV con-



CIRCLE 59 ON READER SERVICE CARD

version sites and mail-order auto enthusiast catalogs. Retail outlets that will continue to carry Cobra CBs include auto parts stores and mass merchandisers.

The new models will carry suggested retail prices ranging from $94.95 for basic models to $184.95 for higher-end models equipped with weather alert capability.

Cobra Electronics Corporation with headquarters in Chicago, designs and markets consumer electronics, including telecommunications products, CB radios, and radar/safety detectors around the world.

## Cobra Introduces 25-channel INTENNA™ Cordless Phones

To enhance the sound quality of cordless communications, Cobra Electronics has introduced a line of 25-channel cordless phones and answering machines that combine the advantages of INTENNA™ and Clear Call™ PLUS circuitry which minimizes transmission noise.

All of the new models feature Cobra's exclusive INTENNA™ built-in handset and base antennas which provide additional convenience and mobility.

"Our innovative INTENNA technology means that the antenna is in the phone, not in your way," according to John Pohl, Vice President of Marketing, Cobra Electronics. He continued, " . . .now, consumers in densely populated areas, apartment buildings and other high-interference areas will enjoy dramatic increases in sound clarity."

Each of the new models has a unique 25-channel scanning system designed to deliver optimum sound clarity. Called "non-paired scanning," the system provides up to 235 frequency combinations—rather than the industry standard of 25 frequency combinations—to ensure the clearest possible communications.

The INTENNA model CP-2505 offers Private Call™ automatic voice scrambling for security, 14-day battery saver circuitry, hearing aid compatibility and last number redial as well as 10-number memory for speed dialing. A Power Protector™ base battery backup keeps the phone working in case of power outages. It retails for $89.95.

The model CP-2506 also offers Cobra's Private Call automatic voice scrambling system. With a slightly larger base than the CP-2505, its full range of additional benefits includes Clear Call PLUS with Compander, 14-day battery saver circuitry, 25-channel scanning, a high-visibility keypad and a page/find button for paging someone at the handset from the base or finding a misplaced handset. Up to 10 speed dialing numbers can be stored in memory. It retails for $99.95.■

CB HUMOR

By Bill Price

# A Pizza With Extra Cheese . . . And Stop Snoring, Please!

I used to eat lunch at Norm's apartment almost every day—it was only five minutes from the office where we worked. It saved me a bundle; and with his being single, it was often the only meal of the day where he had company. Every day I ate oriental noodle soup and some of Norm's bread and butter; he had some healthy, flavorless canned soup, and we shared a tea bag. In exchange for his hospitality, his kitchen and his bread, I "cooked" while he took Chump out for a walk. When he and his spaniel returned, we copied the mail on the local CB channel while we ate, fiddled with electronic gadgets, and usually left for work about five minutes after we should have been back at our desks.

Norm began to look worse and worse at work each morning. When I mentioned it to him, he told me how he now had been getting up at 4 a.m. even though we started work at eight, because of a less-than-thoughtful neighbor in the adjoining apartment whose clock radio went off each morning at that time. The radio would then blast *full-volume* on a hard rock station until Norm's neighbor was showered, fed, and out the door at a few minutes to 5 a.m.—*if* he even remembered to turn it off at all. I suggested that Norm find out if his neighbor listened to AM or FM, then perhaps avail himself to one of the many little transmitters available from some of the more unusual mail-order houses.

Meanwhile, Norm learned—thanks to the more vocal late night guests—that his neighbor's name was Glen. He also knew when Glen slept, because Glen snored very loudly. I suggested that Norm could best quiet a snorer by waking him; and I couldn't think of a better way than to wait until he heard the snoring begin, then call Glen and try to order a pizza. Norm did this every night for over a month, and it got so Glen would lift the phone off the hook and lay the receiver next to his bed. It didn't take us long to make a recording of that annoying loud BEEP BEEP BEEP BEEP tone the phone company plays for you when your phone is off the hook and play it nice and loud through a tweeter Norm placed against the wall. Glen would put the phone back on the hook, and Norm would order a pizza, commenting on how good business must be, since it took him so long to get through. Glen could never understand why his ranting and raving each night couldn't convince


people he wasn't a pizzeria, but at least Norm had a handle on Glen's snoring. Over the next few weeks, Glen must have changed his number five times, but each time he did, he called his friends to tell them his new number, and all Norm had to do was write it down when he heard it through the wall.

It was a big day for us when the package came from Devious Dan's Electronics—we quickly tried out the FM transmitter and found that if the transmitter's antenna was within about a foot of a receiver, its signal would override the received broadcast signal. Norm knew the precise spot where Glen's radio sat on the other side of the wall, and Glen was kind enough to leave the radio playing that day so we could experiment freely. Norm taped the antenna in place and tuned the transmitter until it overrode the receiver's input and the receiver went quiet. We tapped the transmitter's mic with a fingernail and heard a nice tapping in the room next-door.

In lieu of soup that day, I made us peanut-butter and jelly sandwiches which we ate while wiring a mono amplifier into the input of the transmitter. We searched Norm's tape collection for an appropriate selection and settled on the soundtrack from *76 Trombones*. For an alternate, in case Glen changed stations, we chose a lovely opera number for the standby position in which a rather high-voiced lady was apparently startled several times by someone in the studio whose actions we could only imagine.

That night, I stayed at Norm's, sharing the couch with Chump, who took more than his share of the room—which wouldn't have been so bad if he hadn't sat up to scratch every fifteen minutes. The results of Norm's "clandestine station," though, were truly heartwarming and worth the discomfort. Not only did Norm use at least nine different voices to order pizza from his noisy neighbor; but we had the transmitter already humming along with an endless-loop cassette from Norm's answering machine repeating the last 30 seconds of our glorious march, which is by far some of the most "awakening" music we could have chosen.

When four o'clock came, the lively march caused Glen to immediately shut off the clock radio and go about his morning regimen while Norm and I slept soundly 'til almost eight o'clock.

Between Norm's consistent anti-snoring campaign and his new instant wake-up call, Norm wasn't surprised when he overheard Glen tell his friend that he'd had his schedule switched to the night shift, 'cause he just couldn't seem to sleep at nights anymore. Norm was tempted to leave for work each day at 7:55 a.m. with his clock radio blasting, but he'd been getting a good night's sleep, and besides he wasn't really the type of person to do something like that. ■

# Mail Call (from page 3)

over the nation. . . I traded it in for the PRO-2026 which is a 100-channel scanner. BEWARE of the pre-programming.

L. Borkowski, Tonawanda, NY

**Dear Louis:**

Thanks for your comments on the magazine. Interestingly I absolutely loved the PRO-2038, and our test unit (even in the pre-programmed air band) zipped through the frequencies—not super fast, mind you, but for a pre-programmed scanner it was adequate. I only had to make minor adjustments in the squelch from band to band. There were, however, several "birdies" in the air band; annoying, but not a show-stopper. You're right, Louis when you say "beware of the pre-programming." While it's a great feature when traveling through an unfamiliar area or on the highway, if you're close to the airport (even if you're not!) and a large city, you really NEED the extra channels the 2026 offers.

Best of luck with the new scanner!

**Dear Editor:**

I've just finished reading your premiere issue and am quite pleased with it. At long last there is a periodical devoted entirely to 11 meter radio presented in a tasteful format. Now that there is a viable forum, I would like an issue addressed in print that has been avoided and largely ignored. Specifically "big radios."

The . . . radios in wide use by CBers . . . Galaxy . . . Emperor, etc. What I would like to see addressed about these radios is that if they are strictly 10 meter units, why then do you see very little of them in ham rags? . . . very few hams even acknowledge their existence?

Are you bold enough to tackle this topic? A discussion . . . concerning these rigs would touch a variety of other subtopics left without adequate coverage: outbanding/freebanding, power output, whether or not allotted frequencies should be expanded, and all of the pros and cons involved.

Whether or not you acknowledge it, this activity and usage of equipment occurs. Further, I can think of no one that I know of who has been fined or apprehended for such activity. It is time to reexamine what Citizens Band was established for and as, compared to what it evolved into. Example: When "skip" starts rolling, ever notice how much more discernable activity takes place on sideband between 27.415 and 27.995 MHz? Or how much AM activity takes place in . . . 26.000 to 26.955 area? Who does it hurt? As long as transmissions from such radios does not interfere with other types of routine communications, exactly what harm is being done?

I ask that my letter be published or at least the topics contained herein be brought to light. Thank you.

"Spider", CT

**OK, Spider**, since you've asked, let's talk about it. I can't address why you hardly ever see anything written in the ham magazines about these radios. We could speculate that it's because those radios are used by renegade CBers—freebanders,if you wish. We could speculate that maybe it's because folks might be thinking "if we show folks these radios, they'll use 'em illegally." Regardless, I tend to believe that people will be people, and will use them and find them whether or not they're covered in an article.

That doesn't mean we won't tackle the issue. I'm not going to be *showing* folks the ins-and-outs of fiddling with their CBs to get an extra watt or two out to the antenna, nor are we going to be Product Spotlighting non-CB transceivers. Once we as a magazine start in that direction, there's no turning back. But there's nothing wrong with reporting on their use and how freebanders routinely talk from here to the end of the world. Of course that involves talking about the radios themselves. No problem—look for it in an upcoming issue.

Interestingly when I read your letter, especially where you said, "who does it hurt?" I was moved to reflect back on all the years of CB and its growing pains. There have been plenty of ups and downs, both for the FCC and CBers themselves. And truthfully, it really doesn't hurt anyone; most folks are on cable TV today (except me!) and the FCC enforcement staff has been cut to the point of no return. But the real harm, in my opinion, is that in succumbing to pressure to give the green light to use 10 or 15 watts and making it OK for folks to slide all over the band; blatantly "pushing" these types of radios to non-hams, opens up the box for 100 and 1,000 watts, and all kinds of modes of operation until the point where the entire band becomes a mumble jumble of FM, AM, SSB, packet, etc. with no reasonable expectation of anyone ever being able to have a conversation.

Want to guarantee your car will pass inspection? Like many drivers, you know where to go. Want to eliminate speed limits on the interstates or raise them to the point where folks are flying? Go ahead, and surely people will still take that extra inch. I love to have fun, and radio "fun" is no exception, but think sometimes it's probably better to have folks "in check" than to openly declare a free for all on the nation's airwaves.

**Dear Editor:**

Kudos on a well done first issue! I don't know how you ever got Mr. West to concede to the idea of being called "Gordo." Being more knowledgeable and curious about the more technical aspects of CB radio, I was excited to learn that Mr. West was on your staff.

I have a suggestion about an article. I personally have had to spend many hours researching and trying to figure out what a "good" ground is. Both for my antennas, RF ground and lightning protection, and how to make low impedance grounds for equipment in my shack. Many technical books and other articles I have read state that a "good" ground is required, but none tell how to accomplish this.

I look forward to your next issue.

Travis C.R.S. 646 (Coolie Region Sidebanders), Rushford, MN

P.S. Page 25 (March issue) upper left picture is a Uniden PC244 just above the extension speaker. What do I get?

**Dear Travis:**

Thanks for writing. We've taken your suggestion and turned it over to Peter Bertini who will be doing an article on grounding in an upcoming issue.

Gordon West is too young to be called Mr. West and too old to be called "G", so we settled for "Gordo."

You're right, it's a PC244 (even though you correctly pointed out that we GAVE you the answer!). Travis, please keep a close watch on your mail—we've sent you a little something as a prize.

**Dear Editor:**

I am a new "breaker" in the world of CB radio. My first rig is a Cobra 25 LTD WX, a four-foot Firestik, and powered through the fuse box. A simple set-up with my thanks going to my father-in-law.

Some other thanks go to The Latinos Internacionales CB Club. Their President, Will Velez, helped me tune my rig day in and day out until I reached it's maximum potential. Other members are willing to give me the time of day any time I may ask for it. A real nice group of people that you don't see very much any more.

I "read the mail" at home, but the locals (many are hams) are a hard group to be a green-gilled amateur. I'll keep paying my dues! and keep breaking channel 19!

With a good visit to R&R Communications, Inc., I had my best luck in buying your magazine, the first issue. Keep up the great work and best wishes to you all!

M.J. Rauth "Cap't Noah," Valley Forge, USA

**Dear Cap't Noah:**

Thanks for your letter, and we're always glad to hear that there are CB clubs and organizations out there where everyday folks can have a good time. Remember, if you know of any clubs, jamborees or organizations that specialize in CB, send us the information or photos. ■

# ADVERTISER'S INDEX





CB Radio

## CB Shop—Your CB Radio Classified Center

**Welcome to *CB Radio* magazine.**
As you know, we are just getting started as your monthly magazine for all your CB needs. So that we may better meet the needs of our readers and subscribers, we are now accepting classified advertising for future issues.
Our **Advertising Rates** are as follows:
**Non-commercial ads** are 30 cents per word, including abbreviations and addresses; minimum charge $6.00 per issue.
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**Boldface** words are $1.20 each (specify which words.)
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A 5% discount is offered for prepaid 6 time insertions.
ALL ADS MUST BE TYPEWRITTEN AND DOUBLE SPACED.
**Approval**: All ad copy is subject to Publisher's approval and may be modified to eliminate references to equipment and practices which are either illegal or otherwise not within the spirit or coverage scope of the magazine.
**Closing Dates**: The 5th day in the third month preceding date of publication. (for example: March 5th for the June issue). Any ads received *after* that date will be published in the following issue.
Because the advertisers and equipment contained in CB Shop have not been investigated, the Publisher of *CB Radio* cannot vouch for the merchandise that is listed there.
Please direct all correspondence and ad copy to: *CB Radio* magazine CB Shop, 76 North Broadway, Hicksville, NY 11801.

**TOMCAT'S BIG CB HANDBOOK**, by Tom Kneitel. Giant 222 page guide to AM, SSB & Freeband. Operating, FCC regs, accessories, QSLing, DX antennas, getting maximum range, codes, lots more! Plenty of photos. Biggest CB operators' book published! $15.95, plus $5 s/h ($6 to Canada). NYS res. add $1.73 tax. From CRB Research Books, P.O. Box 56, Commack, NY 11725. VISA/MC OK. Phone orders: 1-800-656-0056.

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40 CH + CB RADIOS 40 AM/40 LSB/40 USB, microphones, antennas, meters, books, all CB accessories. Catalog $3. MAXTECH, Box 8086, New York, NY 10150; (718) 547-8244.

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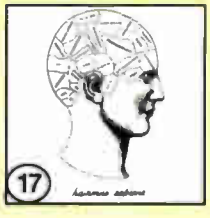
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### Summer WX is Coming...Get ready!!

**Now your own weather station is affordable, more sophisticated, accurate, and easier to use than ever before.**

**The Davis Wizard III is our biggest seller and here are a few reasons.**

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**SALE $154**

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The Ultimate AM, SSB base with weather Alert!

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ALL Controls in Mic, Secure Install, No unit visible, 40ch., 4Watts Out. The Hottest Selling CB on the Market!

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# World's Most Powerful CB and Amateur Mobile Antenna*

## Lockheed Corp. Test Shows Wilson 1000 CB Antenna Has 58% More Gain Than The K40 Antenna (on channel 40)

In tests conducted by Lockheed Corporation, one of the world's largest Aerospace Companies, at their Rye Canyon Laboratory and Antenna Test Range, the Wilson 1000 was found to have 58% more power gain than the K40 Electronics Company, K40 CB Antenna. This means that the Wilson 1000 gives you 58% more gain on both transmit and receive. Now you can instantly increase your operating range by using a Wilson 1000.

***Lockheed** - California Company*
A Division of Lockheed Corporation
Burbank, California 91520

Wilson Antenna Company Inc.
3 Sunset Way Unit A-10
Green Valley Commerce Center
Henderson, Nevada 89015

Subject: Comparative Gain Testing of Citizen's Band Antennas
Ref: Rye Canyon Antenna Lab File #870529

We have completed relative gain measurements of your model 1000 antenna using the K-40 antenna as the reference. The test was conducted with the antennas mounted on a 16' ground plane with a separation of greater than 300' between the transmit and test antennas. The antennas were tuned by the standard VSWR method. The results of the test are tabulated below.

| FREQUENCY (MHZ) | RELATIVE GAIN (dB) | RELATIVE POWER GAIN (%) |
|---|---|---|
| 26.965 | 1.30 | 35 |
| 27.015 | 1.30 | 35 |
| 27.065 | 1.45 | 40 |
| 27.115 | 1.60 | 45 |
| 27.165 | 1.50 | 41 |
| 27.215 | 1.60 | 45 |
| 27.265 | 1.75 | 50 |
| 27.315 | 1.95 | 57 |
| 27.365 | 2.00 | 58 |
| 27.405 | 2.00 | 58 |

**58% MORE POWER GAIN THAN THE K40**

Individual test results may vary upon acutual use.

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

### *New Design*

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

### *Why Wilson 1000 Performs Better*

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

We have designed a new coil form which suspends the coil in air and still retains the rigidity needed for support. This new design eliminates 95% of the dielectric losses. We feel that this new design is so unique that we have filed a patent application on it.

In addition, we use 10 Ga. silver plated wire to reduce resistive losses to a minimum.

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

### *The Best You Can Buy*

So far you have read about why the Wilson 1000 performs better, but it is also one of the most rugged antennas you can buy. It is made from high impact thermoplastics with ultraviolet protection. The threaded body mount and coil threads are stainless steel; the whip is tapered 17-7 ph. stainless steel. All of these reasons are why it is the best CB antenna on the market today, and we guarantee to you that it will out perform any CB antenna (K40, Formula 1, you name it) or your money back!

*Inductively base loaded antennas
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