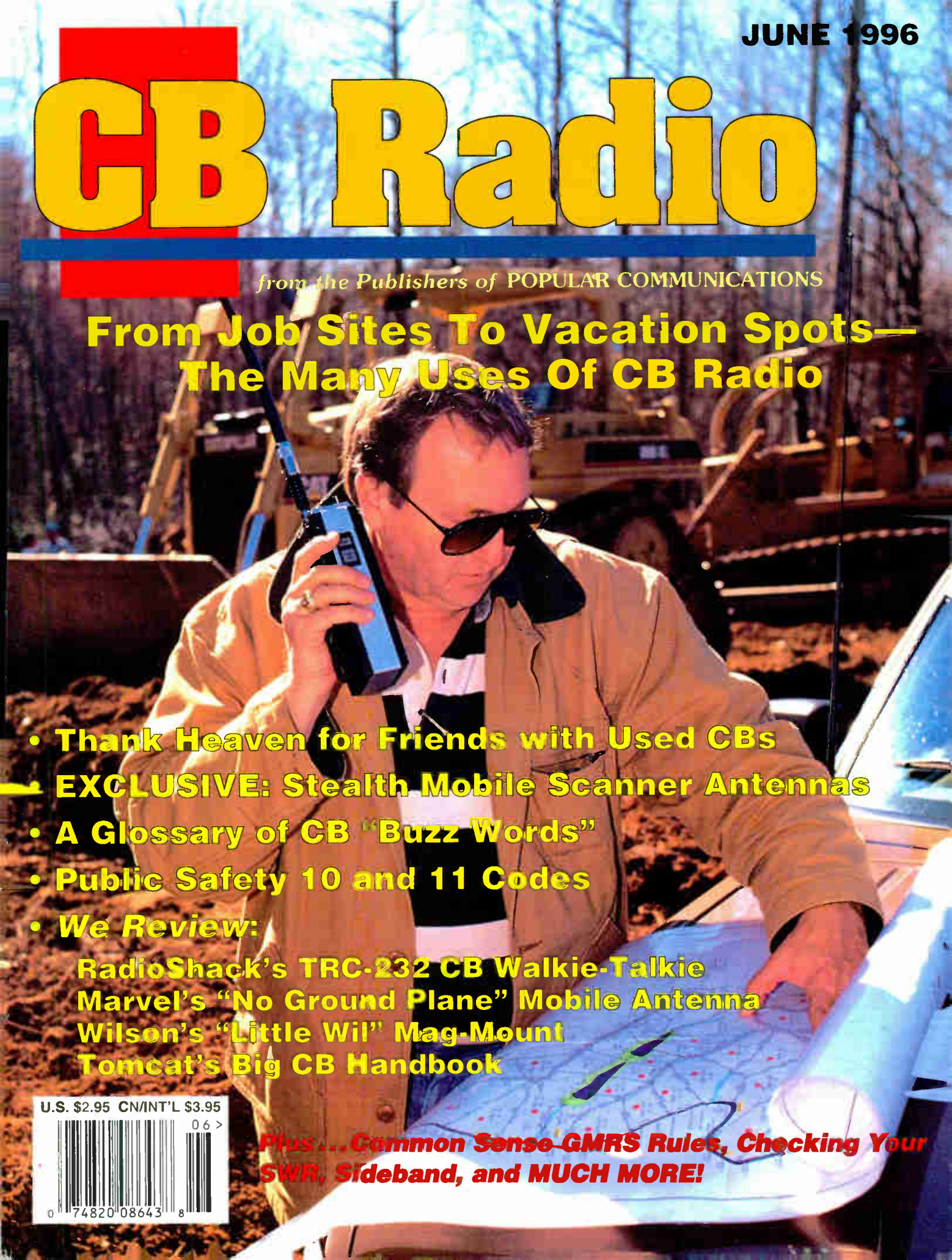
JUNE 1996

CB Radio

from the Publishers of POPULAR COMMUNICATIONS

From Job Sites To Vacation Spots— The Many Uses Of CB Radio



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CIRCLE 130 ON READER SERVICE CARD

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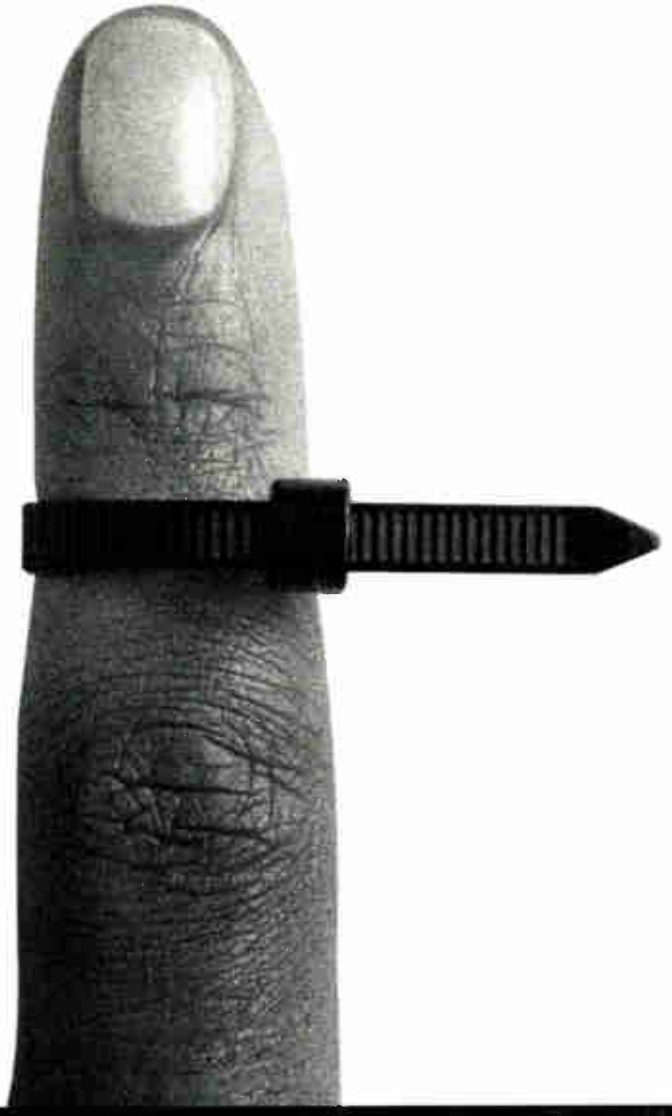

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CB Radio

JUNE 1996

VOLUME 1, NUMBER 4

Page 64

Page 67

Page 58

FEATURES

COLUMNS

DEPARTMENTS

This month's cover: Dave Myers (Land Man) talks with land clearing crews at his Rutherfordton, NC site.

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CIRCLE 126 ON READER SERVICE CARD

CB Forum

EDITORIAL

Last month we talked about the importance of spreading the word about CB radio, and moreover about cleaning up the on-air antics in an effort to encourage more people to get involved in CB.

Once you've told your neighbors (they probably already know, anyway!), your relatives and co-workers, you might think the job is done now, but it has just begun!

Think big. Your local/regional newspaper is always looking for good local-people features. Perhaps your paper has a community section or Sunday feature page. It's the perfect place for a story about CB and you. That's right, YOU! Here's how it works. Once you've cleaned up your car or radio room, it's time to re-introduce the media to CB radio.

Other than talking to your friends, what else have you used your CB for? Traveling, getting and giving roadside assistance, camping, hiking, and just having fun probably come to mind. Make a list of your CB activities, jotting down some of the times CB has helped you in a jam; avoiding traffic tie-ups, construction, and yes, smokeys! Reporters are human, (believe it or not!) and, like you and me, love those personal stories.

Next, read the newspaper. Become familiar with the local pages and look for the name of the feature page editor/reporter. It's usually on the editorial/Letters-To-The-Editor page. If you can't find it, call the newspaper office and ask for the editor's name.

A newspaper office is a very busy place. They don't have lots of free time to chat. So when you call, politely ask for a minute of the person's time, then get to the point quickly. Something like, "I'm Joe Smith calling from Peoria, and I've got an idea for a short feature." Try not to let them short-circuit you by having you send them your proposal in writing. Talk on, "One of the neatest things around these days is—CB—Citizens Band radio—I've got a great set-up and can be available anytime to talk about it with a reporter. What do you think?" You can give him or her a chance to respond, but be prepared to politely further sell the idea. YOU know CB is the most wonderful thing since TV remote controls, but the person on the other end might care less, or worse yet, might think CB is synonomous with amateur radio. Briefly explain the difference. Chances are if you've still got a conversation going, you'll be able to talk about the many aspects of the CB hobby and tell the editor that you're sure that all 10 trillion of their readers would like to learn more. Tell the reporter that it's fun and it's for everyone. No tests, no license. You get the idea.

It's important to remember that what you say is always "on the record." Don't ever be lured into a false sense of friendly security by believing what you say won't be in next Sunday's edition. And always be clear with what you're talking about; stay away from jargon and sounding like an over zealous skip-shooting cave dweller. Newspapers have been known to print stories about folks and their hobbies in an unusual or less-than-positive light. Tell the reporter you'll help him or her with anything they don't understand. Try not to over-explain, but offer your help in getting them over the rough spots.

Be prepared to talk about how you got involved in CB, your other radio activities, your job, your family and countless other you-oriented topics. Show them your radio shack. Hopefully you've told them all about CB; (you'd be surprised by the many popular myths circulating about CB and the radio hobby in general!), some of the basic rules, how Channel 9 is the ONLY nationwide emergency channel available to the general public, how CB is a great traveling companion, how CB and cellular phones work hand-in-hand (have you ever tried to get a smokey report from your cellular phone?).

If you are also a scanner user, show them how it works, without taking up their entire afternoon. Remember, they're busy people and the reporter has places to go and people to see.

I recently spent a couple of hours with a local reporter who had never seen a CB radio. We talked while the photographer shot a few photos. When the story came out it was superb, except for one thing; my reference to "skip-shooters" had somehow become "shoot-skippers" in his story. Still, the feature talked about CB in a positive light, gave a little history about the hobby, and, of course, talked about our new magazine. I'm sure it helped clear the air about CB radio and piqued others' interest as well.

If you're successful, send it along.

See You in Lancaster!

The National Communications Convention will be held the weekend of July 12–14 in Lancaster, PA. Come meet me and Larry Miller to talk CB and scanning and sit in on dozens of seminars. For further information, call 610-273-7823. ■

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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 magazine (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.

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Printed in the United States of America.

Postmaster: Please send change of address to CQ Communications, Inc., 76 North Broadway, Hicksville, NY 11801.

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LETTERS TO THE EDITOR

The Questions You Ask . . .

Dear Editor:

All the aerials I've ever seen are made out of metal. How can they make a CB aerial (antenna) out of Fiberglass? I thought Fiberglass was an insulator?

Mike, Hartford, Connecticut.

Dear Mike:

Metal does make a much better aerial. If you look real close you can see a spiral bump running along the antenna. They have just used a fiberglass road to hold a spiral-wound copper wire. The wire, which is the actual antenna, could have been wound on a piece of wood, or even plastic. They use fiberglass because it is much stronger and usually survives hitting a few trees. After the copper wire is in place, the entire antenna is dipped in plastic or covered with heat-shrink tubing.

Dear Editor:

Hey Harold, My wife bought me a brand new AM mobile CB radio for Christmas. She figured it would be a good radio for our car. Truthfully, the range I get is not what I expected to and from my base unit, an old Uniden Washington. I can't take the radio back because its been too many months now and besides, she'd lose her mind if I did.

L. Crazmire, Tucson, Arizona

Dear L:

Sounds like you're in a real bind. I have to assume that you've already checked your connections, SWR, etc. Since your Uniden Washington also has sideband capability, how about getting a new SSB radio; Uniden also makes the Grant mobile (AM and SSB!). Guaranteed you'll get double your range using SSB at both the base and mobile, unless of course there's something wrong with your base antenna or the radio itself.

The difficult part of your situation is getting rid of the AM-only radio without being banished to the tool shed. If you've kept the manual and box to the mobile, disconnect it from your car, dust it off, and wrap it up for your brother-in-law's birthday. He'll be happy just to get something from you other than a tie or golf balls. Besides, when your wife finally realizes you can both talk further, she'll love you for it.

Dear Editor:

Why do they always put that little steel ball on the tips of all the whip antennas?

"Lucky", Oklahoma

Dear "Lucky:"

There are a few electrical reasons for having anything except a sharp point at the tip of a whip. Static electricity concentrates on a sharp point. So if the humidity was about 10 percent, the static electricity built up by your rubber tires on the asphalt would discharge off the tip of your antenna. Every few seconds your speaker would go zap . . .zap . . .zap. But 99 percent of the reason for a blunt antenna tip is to keep people from poking their eyes out.

They Love Us After All!

Here's a portion of a recent "Newsline" (a ham radio news service) taken from America Online: "A few weeks ago we reported an unexpected and unprecedented resurgence in 11 meter Class D Citizens Band radio. Retailers say that more 11 meter CB sets were sold this past Christmas than in the past 10 holiday sales seasons combined. On a percentage scale, CB is again one of the fastest growing radio services. And for the first time in almost two decades, CB radio now has a magazine of its own . . . the first issue contains a myriad of information for anyone who owns a CB radio or who is planning on buying one. And if you think that *CB Radio* will be one of those short-lived publications, you might want to think again . . . (it) is the product of those same minds that bring you *CQ* magazine, *CQ VHF*, *CQ Contest* and *Popular Communications* to name only a few. And, as the radio industry knows, the people at the helm of CQ Communications usually produce winners each time out."

To the folks at "Newsline" a hearty "Thank-you" for the thumbs up! Seems the more we listen, the more we hear that CB is back in a big way, and what's more interesting is the FACT that many hams are into CB too. That's good for both groups, don't you agree? Ed.

Once A CBer, Always A CBer?

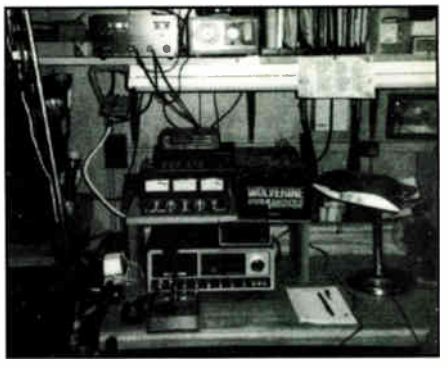
Dear Editor:

A few weeks ago I went into my favorite CB supply store; R&R Communications in Delaware to research what's available in scanners and accessories. Since the '70s I've never lost my thrill with CB, but for some reason I've been drawn to scanning. As I walked into the store I was thrilled to see your *CB Buyer's Guide*. I've read the guide over and over . . .

A few friends and I have been frustrated for the last few years with the availability of CB equipment and information. We would go to the hamfests, but the CB pickings were slim and some of the hams are pretty snotty to us adults who have the audacity to be satisfied with just CB. When we found out about R&R it was a godsend.

My wife and I ride out to R&R every few months to update and expand my aging CB equipment. Russ and his family and Doc are always very helpful and informative. So it was true to form when I found your magazine on the counter.

I have a few ideas: 1. you could have a Consumer Reports type of examination of some radios, antennas, and accessories, maybe even rating some brands against each other, 2. You could cover projects like construction of antennas, beams, towers and the like . . . 3. Allow local CB clubs to advertise for membership of events. I wasn't a big Coffee Break fan, but I loved the CB flea markets of the '70s.



I am enclosing a photo of my little setup. My President Washington is old, but R&R keeps it tuned up and cleans the cat hairs out of it from time to time. I'm running an Antron 99 and I'm going to install a tower with a PDL II as soon as the weather breaks. Besides the simple fun of late night sidebanding, I use the radio to keep in touch with my wife commuting to and from work. She is a dentist and no matter what the weather, if the throbbing-jawed patient can make it to the office, she will too! We both take comfort in knowing that if she has a problem on the road, I automatically will know and be on my way to assist her. I also feel we are both comforted by each other's voice when the roads are bad.

. . . I was surprised and pleased to learn

(Continued on page 82)

Vacation + CB = More Fun!

Take your kids, credit cards and the CB radio—Enjoy! . . .

BY TOM KNEITEL, K2AES/SSB-13

Talk about winters to remember. Was it ever! Blizzards, tornados, the federal government shutdown, Windows 95, Waterworld, Jacko fainting, and Mad About You scheduled opposite the Simpsons. Thank goodness these disasters are all behind us, and it's finally vacation time. Now, pile the family into the car, van or RV and head off towards the open road leading to vacation spots around the U.S. and Canada.

CB isn't merely a tool for sitting at home and getting your kicks jamming your neighbor's stereo, TV sets and telephones. CB was originally conceived as a mobile radio service, so one or more units should be included in with the items going along on your vacation. That includes an mobile and several portables.

I know its hard to imagine rolling along on a superslab without a CB radio on duty in your vehicle tuned to channel 19. The steady stream of other operators' chatter gives you the inside scoop on road conditions, accidents, speed traps, reckless drivers in the area, bad weather up ahead, and more. Besides, sometimes you can even pick up some great jokes and some completely erroneous gossip about celebrities.

While channel 19 is popularly considered the national in-transit channel, there are numerous local exceptions. If you find no activity on channel 19, you can inquire on several channels to find the information. Respect these local variations.

You don't have to transmit if you prefer to simply monitor. However, you are more than welcome to reach for the mic and add a few words to the wonderful superslab party line, or ask for information. CB radio is a great way to pass the time as you travel, and there are some terrific folks you'll hear or hook up with.

Use your CB to ask for local road directions or to obtain information about food or lodging. Many highway police vehicles monitor channel 19 and/or emergency Channel 9, so you can summon assistance in the event of an accident, vehicle problem, fire or illness while on the road.

As you travel, aid can be summoned from police, rescue teams, and service stations.

A vehicle with out-of-state plates is a magnet for petty thieves at tourist spots, flea markets, motels, etc. The CB antenna makes it so much easier to spot!

You meet the nicest CBers while you're on vacation. Swap a QSL, snap a photo and you have a memento!

Set up a temporary base using a portable rig in the vehicle.

Channel 9 is also monitored for calls by REACT emergency teams, as well as many independent groups, and some service stations.

Togetherness

Going on a vacation sometimes requires a family to use more than a single vehicle, or maybe several families are traveling together. CB comes in very handy acting as an intercom between the enroute vehicles in the mini-caravan. Here's how it's done.

The lead vehicle keeps its CB monitoring channel 19 (or other local in-transit channel). All other vehicles keep tuned to another channel of their own choice, and their regular CB mobile antennas are disconnected, being replaced with dummy loads. Dummy loads are fine short-range antennas, offering a half-mile to mile range. This makes them fine for close car-to-car use.

While traveling, the lead vehicle keeps track of the doings on channel 19, but can switch over to the alternate intercom channel to let the companion vehicles know any hot highway news. Meanwhile, the caravan's vehicles can freely chat with one another on the intercom channel without causing or receiving interference to other stations. They are still close enough to the lead vehicle to reach it on channel 19, if necessary.

The alternate channel intercom permits vehicles traveling together to coordinate fuel and pit stops, meals, tourist attractions, and other events without the need for any stops for roadside conferences.

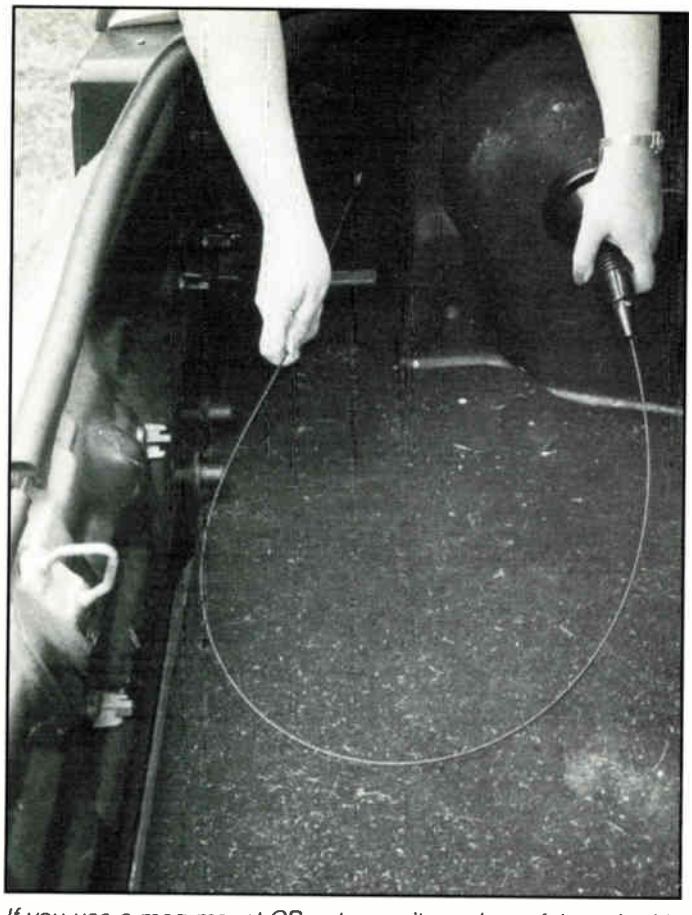
Minding Our Manners

Courtesy on busy channel 19 dictates that if the information or directions being sought require more than a rather brief reply, the stations should switch over to another channel. Channel 19 is one of the few places on CB where "short-shorts" are preferred, and ratchet-jaws are considered to be earaches.

For getting that information down correctly, have a pen and notebook or pad handy. If the driver is the only one who wants that job, then it should be done

CB is ideal for keeping in touch with members of your party who leave for hiking trips.

"How are they biting today?" Folks who fish in and along small lakes and rivers use CB to tell one another the best spots.



If you use a mag-mount CB antenna, it can be safely tucked in the trunk when you're away from your vehicle.

Respect designated-use channels that are locally established for operations by farmers, RVs, boaters and others.

while pulled over to the side of the road.

If you have your own QSL cards, take a stack along with you! You never know when you'll happen upon a kindred soul at a truck stop, diner or campground. Summer is also a time when you are likely to come upon CB coffee breaks and jamborees. During a driving trip I took two years ago, I exchanged cards for eyeball QSLs with CBers in several states. The dozens of cards I brought home from other CBers are great mementos of a wonderful vacation.

As you head into different areas, ask around on the air to find out the prevalent local CB chat channel. Check in and introduce yourself. So long as you don't walk all over someone's contact when you do this, they should welcome you as one of their own. You may find out where the local operators meet for coffee, or if there are any CB events coming up.

One more point of courtesy, and I hope I don't hurt your feelings. Everyone loves their own kids and thinks they're special and bright. This is good. What is not good is when people feel that every CBer in range will also think their kids are cute upon hearing their small children play with the CB radio. CB isn't suited to entertaining bored kids on a long road trip. There are already enough grown up doofuses out there asking for 10-36s and radio checks without adding 10-year-olds to the talk soup.

Some Advice

Keep in mind that tourists are always prime targets for crooks. It's not only your out-of-state license plate, it's also the CB whip that helps them pick your car out of a crowd at tourist attractions, flea markets, motels, and vacation spots. Most petty crooks know tourists don't want to hang around filling out police reports, or returning to testify. Therefore they steal small stuff that can be quickly converted to cash, like CB radios.

The answer is to either take your CB radio with you when you leave the vehicle temporarily, or lock it in the trunk. Maybe you have an antenna that can also be easily disconnected and stowed out of sight. A mag-mount is one possibility.

You've Arrived!

When you arrive at your final destination, your CB operation can continue. If you're camping, you can use a portable in your vehicle as a temporary base to allow you to communicate with other area CB operators. Sure, it isn't going to have the coverage of your home base, but you'll get local coverage.

If you decided to leave the mobile rig under the dash, use that as your campground base with the vehicle's antenna for even greater coverage. Simply sit in the vehicle and chat. Modern CB gear draws very little juice from the car battery; normal driving should keep it charged.

Having an extra mag-mount lets you use other metal objects, like fence posts, as antenna mounting platforms. You may still be able to power the rig from the vehicle's cigarette lighter.

A CB vacation base allows you to keep in touch with members of your family when they go off on hiking trips, or boating. Just hand them a portable and you're in business. Then, check in on the local chat channel to let you meet new friends and find out what's going on.

While CBs don't replace VHF-FM marine radios as safety equipment, the portables do a good job communicating with small boats for short distances on lakes and some inland waterways.

Don't like to get eaten alive at night by mosquitos while you sit outside and yak?

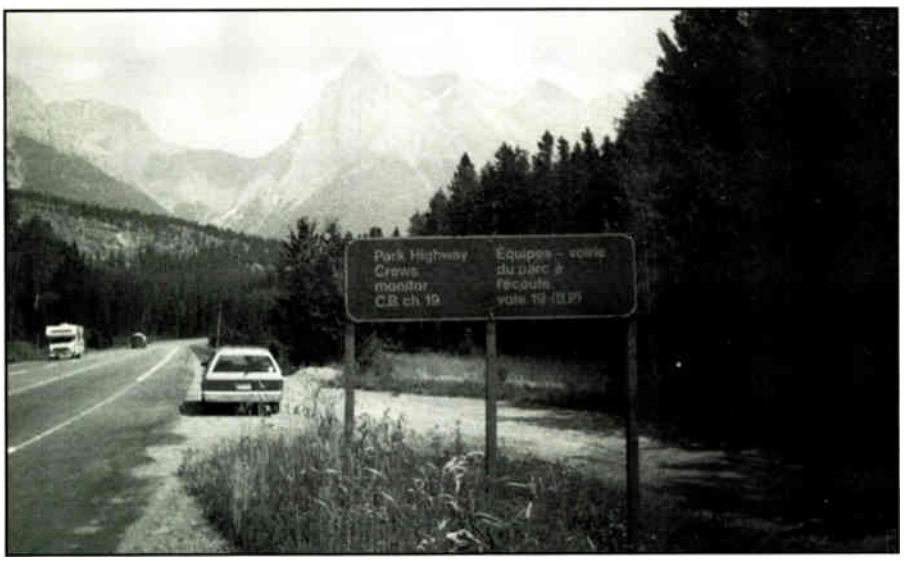
These happy campers are in the village of Northville, just off beautiful Route 30 in upstate New York. Maybe they're using a temporary base station to reach CB friends in Gloversville? (Photo Courtesy New York Department of Tourism)

Get 25 feet of RG-58/U coaxial cable with a male connector at one end and female connector at the other. Move the CB rig into your tent, cabin, or other living quarters, then simply run the extra coax cable between your CB rig and the vehicle's antenna. Power the rig either from batteries, a cord run from the vehicle, or a filtered 117 VAC/12 VDC converter. Remember to unhook the antenna before the vehicle is used!

Here's an idea if you're planning on staying in one area for at least a couple of weeks. It lets you put up a pretty good temporary base antenna for a camper or motor home using the vehicle itself as the antenna's anchor.

Get some light TV mast (RadioShack 15-844 or equivalent), some RG-58/U coax, and an inexpensive CB ground plane antenna. Also get a four-foot wooden plank with a ground support pipe collar attached to one end. The collar should be sufficient to accept the mast.

Pick a spot safely distant from any nearby power lines, so that the antenna could not possibly come into contact with the lines in the event it toppled while being erected or used. *Power lines are lethal.* Drive the vehicle up onto the plank, so that the collar end still shows. This becomes the mounting base. Mount the mast and the antenna, then attach guy wires from the upper mast to three points on the vehicle and the fourth on a sturdy tree or rock.



The Park Highway crews in this area clearly monitor CB channel 19.

Up & Running

Once you've established your temporary base, it would be nice to ask neighbors if your CB operations are wrecking their TV watching. If so, it might be in your best interests to keep your CB operations to a minimum between 8 and 11 p.m.

Also, heed locally-established channel usages. Some areas have channels heavily used by recreational boaters and RVers (often channel 12 or 13), and by farmers (frequently channel 8). There are plenty of channels left for you to use for meeting new friends and keeping in contact with members of your own party. It's easy to do it right.

All set to roll out on the open road? Before you go, disconnect all of your home base station antennas from CB, scanners, and other communications equipment. Do this even if you believe your antennas have adequate lightning protection. Ahh, now you can drive off and talk with the world having complete peace of mind!

But wait, did you remember to lock the back door, turn off the water, and check the appliances in the kitchen? ■

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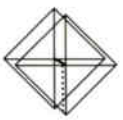

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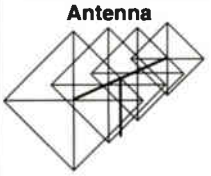

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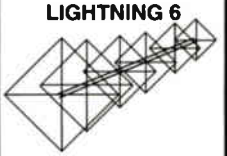

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Thank Heaven for Friends with Used CBs

Don Craig offers some praise and a quick story of his own.

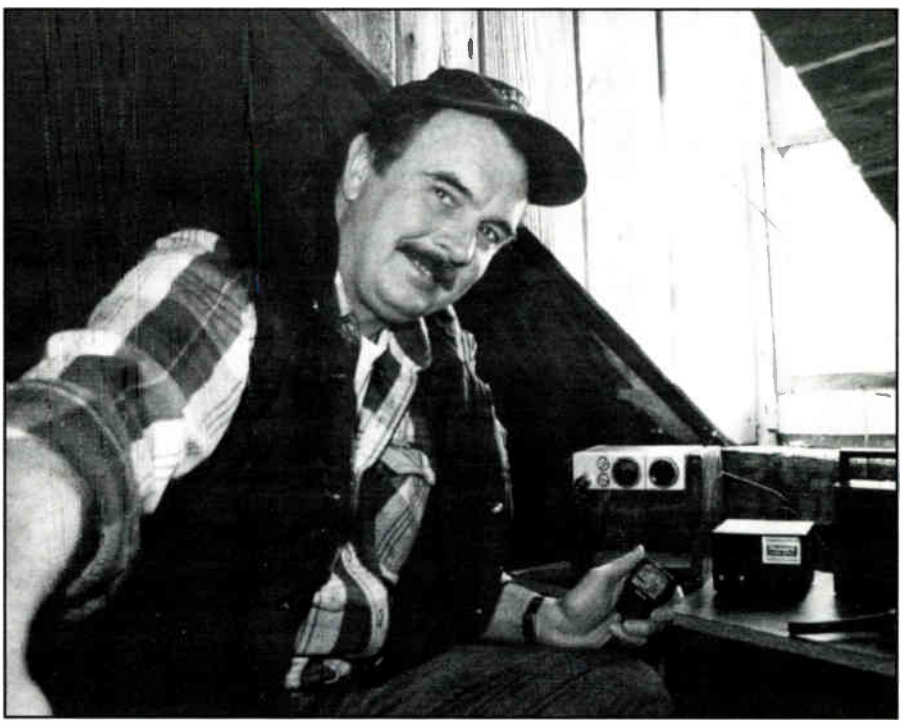
Editor's note: The following was submitted by Don Craig of Saranac Lake, New York.

I just picked up copies of *CB Radio* and *Popular Communications* for the first time and didn't realize they were by the same publisher until I got home. I'm impressed with both publications and think *CB Radio* is a great step towards upgrading this overlooked radio service.

I got interested in radio as a kid in the '50s and the only thing I'd heard of then was commercial AM radio and shortwave. One Christmas I was given a Hallicrafter SE-30, I believe—a tube radio with a horizontal analog dial the size of a small television screen—and a thing of beauty. All I had for an antenna was a loose wire strung around my room, but it worked. I spent many a night listening to whispers from far away countries. I had always planned to get a license, but lack of money for equipment, high school, girls, Army, girls, college, wife, and career always came first.

I was in the Army Signal Corps and spent 15 months in South Korea as a radioteletype operator/cryptographer with the 13th Signal Battalion, First Cavalry Division (before Vietnam). In 1978, I shifted gears from print journalism and took a job as morning news announcer for WKDR 1070, Plattsburgh, NY, a 500 watt AM daytimer with a country music format. Five years later, I went to work for WPTZ-TV, Plattsburgh, as an assignment editor. I used a base-to-mobile radio to tell young reporters where to go and what to do. That was fun.

Now, three of the four friends I have left are CBers, but they've been unsuccessful at getting me into the hobby, until last fall when the closest one down the road, "Ghost," gave me an old Craig 4102 23-channel rig that he said worked just fine—all I had to do was buy an antenna. I thought that was cool, so I blithely went down to Service Merchandise and bought a magnetic-mount rubber duck for $15, guaranteed for 30 days. I was determined not to get hooked into spending a lot of money on this. I de-wired the cigarette lighter in my Chevy S-10 and hooked up the Craig. I called up Ghost for a radio check and took off down the road. Everything was fine. We talked for about half an hour while I tooled around the hills. Everybody was happy that I had rejoined the human race.



In his attic, Don Craig grins at his good fortune in getting a free used Craig 4102 23-channel CB radio (center); a $20 used Numark CB-170 power converter; and an $8 used Realistic AM/FM/WX receiver. Outside the window is a new $15 Service Merchandise magnetic-mount rubber duck antenna. Inside the luxurious wood-toned cabinet (an upended storage drawer) are a set of technician's tools including RadioShack multimeter and soldering gun, a 20-ounce Stanley hammer, wire cutters, screwdrivers, etc. In Craig's left hand is a microphone recovering from surgery; in his right hand, the shutter cable for his camera. (Photo by Don Craig!)

My friends wanted me to take a handle like "Tweaker" or "Yoda", but I'm holding out for something with more heroic substance like "Conan the CBerian." The judging committee's still out on this one. Speaking of names, getting a Craig radio that shares my last name was no accident. This particular radio has been around town like a homeless dog and my friends with their oafish sense of humor thought I should have it. That's OK, I love it!

My only problem was that the Craig was too big to mount comfortably into the delicate confines of my beloved S-10 and I didn't want to butcher up the dashboard. I could only place it loosely on the seat, which I didn't like because it stifled the speaker and sometimes the Craig went flying onto the floor when I braked. No problem, Ghost said, take the battery out of your garden tractor or get a power con-

verter and then you can take the radio into the house. Well, the tractor battery was dead so I hunted for a power converter and found one in a junk shop; a Numark CB-170 for $20—almost like new and cheaper than a battery.

So, I took the Craig, Numark and rubber duck into the walk-in attic of my antique farm house and hooked them up. The house has a tin roof, so I opened a dormer window and stuck the rubber duck up as high as I could reach on the fascia of the dormer. So it's mounted horizontally, so what I thought. I called up Ghost and we got on the air. Everything was loud and clear. I could see all the way to his house, a mile away.

My new problem is that I can't get out of the Saranac River Valley. Ghost had a 102-inch fiberglass whip that he said I could have to mount on my roof. When the ice goes away, I'm going to strap that to an unused chimney and everything should be fine.

Meanwhile, he handed me another project. He didn't think the microphone sounded too good, so he gave me another Craig mic with cord, but no plug on the end. No problem, he said—clip the plug off the old mic, de-solder the wires and solder on the other cord. OK, I thought. I have a multimeter, solder gun, wire cutters and a screwdriver, so I AM a qualified radio dismemberer. I cooly clipped the little five-pin plug, made a careful sketch of the location of the white, black, red, blue and ground wires, and stripped back the cord on the new mic. Surprise! It had only *four* wires instead of five, and the colors didn't match. Not to panic. I pulled the covers off the Craig and looked inside at the wires coming off the female connector. The colors didn't even match those of the original mic.

Next I opened up the two microphones for comparison. There wasn't any. There were different colored wires coming off the switch blocks in different positions and some of the wires were changing colors in midstream. One mic had a separate coil, the other didn't. I had to remind myself that I was new at this and getting newer every minute, and the minutes were becoming hours.

OK, what I had now were two castrated microphones. Matching wires by color was out. I calmly got a pencil and paper and made some elaborate (for me) schematic drawings. I traced every wire coming out of the switchblocks to the end of the cords. I traced the wires from the lonely female connector into the board. I logically studied these drawings for a long time, practiced some Zen meditation, checked my aura and started re-soldering the new mic to the plug.

The first time I re-energized my rig, the squelch static came out of the microphone. Reception sounded OK but I knew holding the mic to my ear that this was wrong. I de-soldered, tried several more wiring combinations and got a variety of beeps or whistles when I keyed the mic. The last time it made a kind of death rattle and I really thought I had killed my new used-but-free Craig radio. I figured that no matter how I tried, I could not make a four-wire mic cord mate up with a five-wire connector. The Ghost later said it could be done, but I don't believe him.

Finally I decided to put the old mic back together with the plug. My feeling is that a radio with an inferior microphone was better than a radio with no mic at all. I wiped off the guts inside the mic, screwed the cover back on, re-soldered the plug (carefully following my original sketch of colored wires) and—Zingo!—It worked.

The Ghost says my microphone sounds better now that I've mucked it over, but I've learned two things from this: one, I think he was perversely setting me up for a lesson in the frustrations of radio repair; and two, after re-soldering that five-pin plug about a dozen times, I believe I have the hands of a brain surgeon. Maybe I still have time to change careers, or at least take up a new hobby.

He knew I would be off the air while all this was going on, so that I might not get discouraged, he loaned me another radio to play with, a portable Uniden Pro 340 XL. AND, he says he has another 40-channel Craig, used and much abused, that he'll let me have on permanent loan. The Ghost has extra used radios—other people have empty beer cans. I'm saving my own bottles to buy an SSB rig someday but I think if I wait long enough he'll give me one.

Editor's note: You took the words right out of my speaker, Don! Send us Ghost's address—we sure could use some coax connectors. ■

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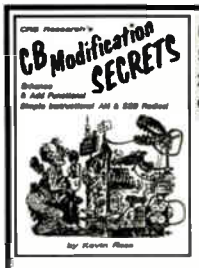


CB MODIFICATIONS SECRETS BOOK. $25.00
206 page book of mods including frequency expansion, roger beep clarifier and more.

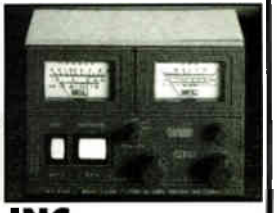
RMS A27 .....$54.00
26 db gain receive booster for 10/11 meter and CB radios.

RMS INTERNATIONAL

RMS MB-30 .....$55.00
500 watt antenna matchbox.

RMS MB-20 .....$30.00
100 watt antenna matchbox.

RMS HT-808 ..$129.00
CB Test Center Dual illuminated meters 500 watt matchbox 2 way antenna switch.



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Stealth Mobile Scanner Antennas

Want to be inconspicuous? Dave gives you plenty of ideas for mobile scanner antennas that don't attract attention.

BY DAVE MARSHALL, N8OAY

There are many reasons for not wanting to put an outside antenna on your car. Two of the most common are you simply don't want other people to know you have a scanner in the car, or don't want to mar the paint on your car. Whatever the reason, there's a variety of products available to help you reach your goal of an invisible, or only slightly visible, scanner antenna. This article will give you a brief overview of several such products.

First, the Trade Offs

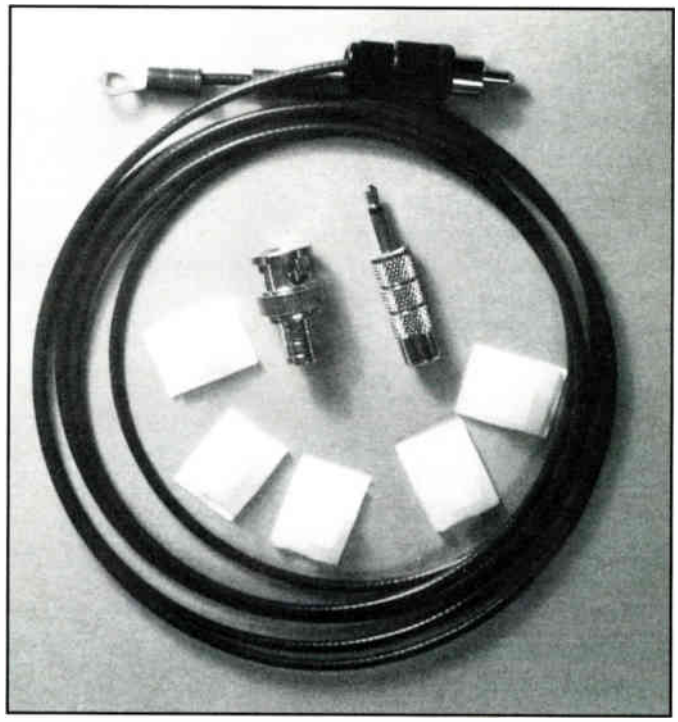
Before we get started, one point needs to be made quite clearly. Since these "stealthy" antennas are meant to be hidden or difficult to see, they will not perform as well as a top dollar magnet-mount or trunk lip-mount antenna. You'll be able to hear all the strong signals in your area, and some low power nearby signals, but you'll have to forget about those weak, distant signals.

To use a scanner in your car without an outside antenna, the easiest thing to do is to place the portable scanner on the seat beside you. There's no extra expense, and you don't have to remove the "rubber duckie" and connect an antenna wire—but it yields the poorest signal reception. Thankfully, there are several ways to improve reception.

Heard but Not Seen

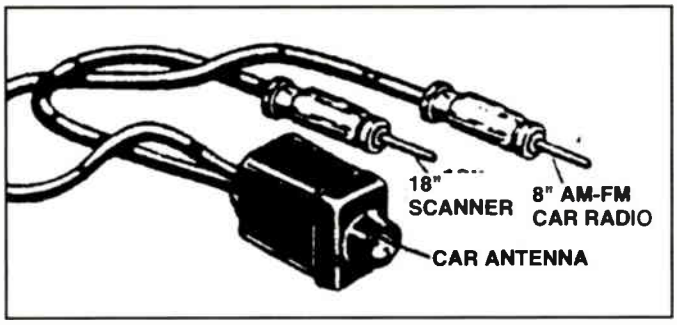
One way to improve scanner reception is with a product that's been around for a long time in various forms—the mobile antenna coupler. This device connects between your car's AM-FM radio and antenna and provides an extra coax for your scanner. The antenna coupler yields the best signal reception of all the devices we'll cover in this article. But, there are two problems you may encounter. The first is difficulty in getting to the back of your car's radio to connect the coupler. Today's small cars with center consoles can be awfully frustrating. The other problem is power antennas. If you have a power antenna that's activated by the power switch on the AM-FM radio, you'll have to disconnect the power lead and install a separate switch to raise and lower the antenna (which also means getting inside the dash on most cars).

But, for all your effort, the mobile antenna coupler will provide good signal reception, sometimes better than you'd get with some of the less-expensive mobile scanner antennas. Grove Enterprises, Inc., P.O. Box 98, Brasstown, NC 28902-0098, (800) 438-8155 offers a "Mobile Antenna Multi-Coupler" that's available with either "Motorola" ($14.95) or "BNC" ($16.95) connectors. (A "Motorola" antenna connector is the type found on most of the older table-top/ mobile scanners and is used for most AM/FM car radios.)



The Grove "No-Tenna" is a unique stealth antenna that uses the body of your car or other objects as the actual antenna. It performs surprisingly well.

Another "cloaking" method is with a new product called the "No-Tenna," a versatile and unique antenna. The No-Tenna uses a "slot" design, one that's been around for many years but has never been popular in the consumer sector. It's used most widely for undercover law enforcement, military, and government surveillance. The No-Tenna is simply a piece of RG-174 coax with a BNC connector at one end with a ferrite decoupling choke and a screw lug terminal on the other end.



The Grove Mobile Antenna Multi-Coupler is an inexpensive way to get good scanner signals on the road.

The Radio Shack BNC Clip-On Glass Mount allows you to get your rubber duck antenna out of the car for better reception.

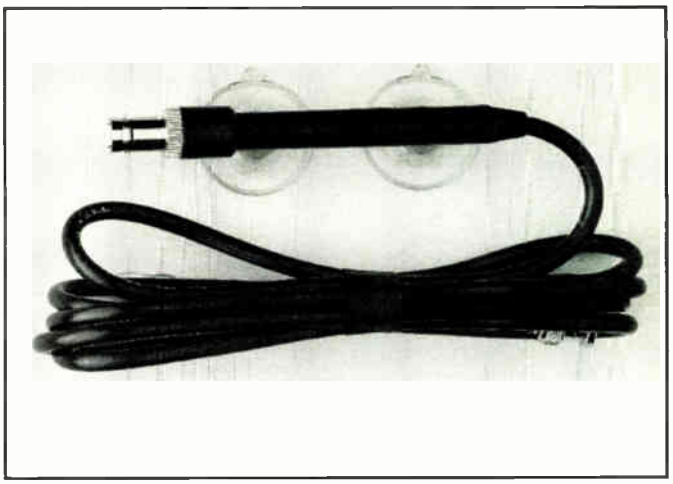
When connected according to instructions, the No-Tenna uses the body of your car, or other objects, as the actual antenna. You can also connect the No-Tenna to a metal window frame in your house or hotel room, to a metal bed frame, or even a metal picture frame. To install it in your car, the instructions recommend connecting the No-Tenna to a molding screw or sun visor mounting screw at the upper right corner of the windshield.

The No-Tenna performs across a surprisingly wide frequency range, making it useful for shortwave listening, too. It's also available from Grove Enterprises and costs $19.95.

The mobile antenna coupler and the No-Tenna are both completely invisible. Next we'll take a look at some "slightly visible" scanner antennas.

Barely Nothin'

A couple of less expensive products available from RadioShack allow you to make better use of the rubber duckie antenna that comes with your portable scanner. The "BNC Antenna Glass Mount" (no. 20-022) has two suction cups to stick the antenna to the inside of a car window. This allows you to get the antenna up off the car seat, yet keeps it inside the car where it is not totally obvious. Signal reception will be better than if you left the antenna on the scanner resting on the car seat, but not quite as good as with the two previous products. The BNC Antenna Glass Mount sells for $10.99 and can also be used at home, at work, in hotels, or anywhere you have a window that isn't obstructed by nearby metal structures.



Radio Shack's BNC Antenna Glass-Mount uses two suction cups to stick the antenna to the inside of your car window.

Also available from RadioShack is the "BNC Clip-On Glass Mount" (no. 20-023) which slips over the top edge of the side window, allowing you to put your rubber duckie antenna outside the car at almost roof level. Performance on marginal signals will be slightly better than with the suction cup mount. The BNC Clip-On Glass Mount sells for $11.99.

I Can't Believe It's an Antenna!

If you don't mind using a magnet-mount antenna, there are a couple "disguise" antennas. If you do most of your mobile scanning in an area where most of the radio activity is in the UHF and 800-MHz ranges, you can actually use a cellular phone antenna. Cellular phone antennas, such as RadioShack's new magnet-mount (no. 17-318), will receive 800 MHz, all but the weakest UHF signals, and most of the stronger VHF high band signals, but you can forget about the VHF low band. If you buy a cellular phone antenna with intentions of using it with a scanner, don't forget to buy a connector adapter (most cellular phone antennas will require RadioShack's no. 278-177).

Also usable as a "disguise" antenna for a scanner (again if you don't mind using a magnet-mount) are several amateur radio antennas. Numerous manufacturers sell inexpensive "dual-band" antennas, designed for 144 to 148-MHz and 440 to 450-MHz ham bands. These antennas look like cellular phone antennas, having the open coil in the middle. They'll perform well on the VHF high and UHF bands, with moderate to poor performance on the 800-MHz and VHF low bands. While at first glance the ham antennas look like cellular phone antennas, a closer look at their 19-inch length gives them away to the experienced eye. Of course, if you're a licensed amateur radio operator, you can also use this antenna to transmit. You can find these antennas at most ham radio stores in the $25.00 to $40.00 price range.

Finally, with a little bit of ingenuity, you might even be able to figure out some other "stealthy" antennas. Drop me a line and let me know your ideas! ■

Public Safety 10 and 11 Codes

If You're Listening—Here's What You May Be Hearing—and What It Means . . .

COURTESY OF *THE SCANNER CODE BOOK*
(Published by The Base Station, Inc. of Concord, CA)

10 Codes

10-1	Receiving poorly
10-2	Receiving okay
10-3	Change channel
10-4	Message received/acknowledged
10-5	Relay radio message
10-6	Stand-by/busy
10-7	Out of service
10-8	In service/available
10-9	Repeat
10-10	Out of service/end of shift/off duty
10-11	Identify this channel
10-12	Visitors present/use caution on message
10-13	Advise weather and road conditions at scene
10-14	Convoy or escort detail
10-15	Prisoner
10-16	Prisoner/pick up . . .
10-17	Pick up/relay papers, supplies
10-18	Finish present assignment quickly
10-19	Enroute to or return to station
10-20	Location
10-21	Telephone
10-22	Cancel/disregard
10-23	Stand by
10-24	Trouble at . . .
10-25	Respond as backup
10-26	No warrants or wants, clear
10-27	Subject wanted
10-27A	Subject wanted, possibly armed
10-27F	Subject wanted, felony charge
10-27M	Subject wanted, misdemeanor
10-27P	Subject wanted, parking charge
10-27T	Subject wanted, traffic charge
10-27V	Subject wanted, stolen vehicle
10-28	Request for wants, warrants, registration
10-29	Check to see if subject is wanted
10-30	Improper radio traffic
10-31	Has record, not wanted

10-31A	No record, no wants
10-31F	Felony record, no wants
10-31M	Misdemeanor record, no wants
10-32	Drowning
10-33	Burglar alarm
10-34	Open door
10-35	Time check
10-36	Confidential info/outstanding warrant/subject wanted/dangerous
10-36A	Outstanding warrant, subject wanted, possibly armed
10-36F	Felony warrant
10-36M	Misdemeanor warrant
10-36V	Warrant on vehicle
10-37	Identify operator/time check
10-39	What is your status?/Message delivered
10-40	Is . . . available for phone call?
10-41	Is ambulance needed
10-42	Dispatch ambulance
10-43	No ambulance needed
10-44	Doctor is needed
10-45	Ambulance needed for injured person
10-46	Ambulance needed for sick person
10-47	Ambulance transfer, police needed
10-49	Proceed to . . . /or proceeding to . . .
10-50	Investigate and report
10-51	Drunk
10-52	Resuscitation call
10-53	Person down
10-54	Possible dead body
10-55	Dead body, dispatch coroner
10-56	Suicide
10-57	Shots fired
10-58	Garbage complaint
10-59	Security check of property or building
10-62	Return to station and see person waiting
10-63	Prepare to copy (detail or info)
10-64	Advise status
10-65	Missing person
10-66	Suspicious person
10-67	Person calling for help
10-68	Tree down
10-69	Wire down
10-70	Prowler
10-70H	Hot prowler (there now)
10-71	Shooting
10-72	Stabbing
10-73	How do you copy?
10-74	Check road conditions
10-75	Check for hole in road
10-76	Check for open ditch
10-77	Check barricades
10-78	Check water conditions
10-79	Check sewer or drain
10-80	Explosion
10-81	Broken water main
10-82	Leaking hydrant
10-86	Any calls for me?
10-87	Meet the officer or unit at . . .
10-88	Telephone number-file with officer
10-89	Checking in
10-91	Stray animal
10-91A	Vicious animal
10-91B	Barking dog/disturbing peace
10-91C	Injured animal
10-91D	Dead animal
10-93	Estimated time of arrival
10-94	Drill
10-95	Test with talking
10-96	Leaving car to investigate
10-97	Arrived at scene
10-98	Completed last detail
10-99	Unable to copy/open door to garage

11 Codes

11-06	Discharge of firearms (shots fired)
11-07	Prowler
11-08	Person down
11-10	Take a report
11-11	Checking area
11-12	Loose livestock/rocks
11-13	Injured animal
11-14	Animal bite
11-17	Wires down
11-23	Traffic hazard
11-24	Abandoned vehicle/traffic hazard
11-25	Traffic hazard
11-26	Occupied stalled/disabled vehicle
11-27	Driver's license status/info.
11-28	Request for vehicle registration info.
11-29	Request wants/warrants on vehicle
11-30	911 hangup/incomplete phone call
11-31	Citizen calling for help
11-40	Is ambulance needed?
11-41	Ambulance needed. Dispatch Code 1, 2 or 3
11-42	Ambulance not needed
11-43	Doctor needed
11-44	Dispatch coroner/possible fatality
11-45	Suicide attempt
11-46	Report of death
11-47	Injured person
11-48	Provide transportation
11-49	Traffic stop
11-51	Field interview
11-52	Status check/Are you okay? Code word response required (see Roll Call)
11-54	Suspicious vehicle
11-66	Defective traffic signals
11-71	Fire
11-78	Paramedics dispatched
11-79	Paramedics sent, serious/fatal accident
11-80	Serious/fatal accident
11-81	Minor injury accident
11-82	Non-injury accident
11-83	No details accident
11-84	Direct traffic
11-85	Tow truck
11-86	Bomb threat/special detail
11-87	Bomb found
11-94	Pedestrian stop
11-95	Traffic stop
11-96	Investigating suspicious vehicle
11-98	Meet officer at . . .
11-99	Officer needs help! Emergency!
(X)	May be used to denote female
(A)	May be used to denote attempt(ed)

What Did He Say?

There are some very distinct differences between AM and SSB communications. Here's one sidebander's perspective.

BY JIM BARRY, SSB-930

If your travels have ever taken you through Bayou country, or if you've ever read an Ann Rice novel you probably know what Creole is. For those of you who don't, it is a curious language, a blending of English and French, that is spoken along the Mississippi down around New Orleans.

Up until the Louisiana purchase, that area was a French settlement, so French was the language of the people. As New Orleans grew as a commerce center, more and more traders came down the river speaking English and over time, a new language called Creole was born.

If the language spoken on AM CB can be compared to English and the language of ham radio compared to French, then the language of Sideband is Creole! A blending of CB and ham terms to form a whole new lingo.

Single sideband was first pioneered by ham radio operators much as Louisiana was first pioneered by the French. After time the SSB technology was applied to CB's, and like the boat men coming down the river to trade with the French, CBers brought their own influence to the language.

In most areas, although the language shares more with ham radio than it does with AM terminology, AM practices are basically accepted as long as you are considerate to other operators on the frequency. If two ham operators were talking on HF and you wanted to break into the discussion you would say "QSK" and your call sign and you would probably be acknowledged. You could break into an SSB discussion in much the same manner or by asking for a break, the AM method. If you are new to sideband, the best way to learn the terms is to *listen* for a while to hear the way people talk *before*

The Cobra 2010 GTL WX is a full-featured base AM/SSB transceiver. (Courtesy Cobra Electronics Corp.)

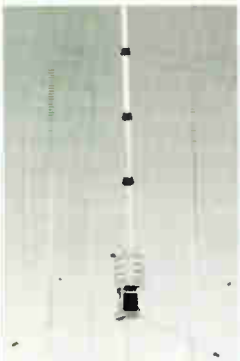
SIRIO

Truck 27 Log CB 27MHz Vehicular Twin Antenna

5/8 wave twin vehicular antennas with large band. The whips are made of glass fibre with logarithmic charge and supplied with steel mirror mount which makes the installation easy on the vehicle. Tuning can be made by adjusting the special sleeve placed at the bottom. They are particularly suitable for fitting on trucks and caravans.

HI-Power 3000 PL CB 27MHz Vehicular Antenna

7/8 wave vehicular antenna base loaded, specially conceived for hi-powers, from 1500 Watts continuous to 3000 Watts. The coil, made of big section copper wire, works as an impedance transformer and the conic whip is made of 17/7 PH stainless steel to get the best performance. Its strong mount is of black chromed brass supplied with a big washer for a perfect waterproofing. It's available in the 2000mm length version as HI-POWER 4000 and with "Clear Coil" also.

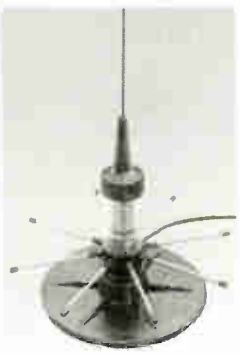


Tornado 27 5/8 CB 27MHz Base Station Antenna

5/8 wave antenna for base station made of anti-corrodal aluminum tubes and supplied with jointing sleeves of polythene to guarantee a perfect waterproofing. Strong and easy to install, it allows very good links.

MINI MAG 27 CB 27MHZ

1/4 wave magnetic antenna with central charge coil. It has been manufactured with first quality materials to keep its good technical characteristics unchanged for a long time. Its pleasant design coupled with its easy installation, make it suitable for fitting on every vehicle. It is recommended for installation on the centre car-roof.



Space Shuttle 27 PL CB 27MHz Vehicular Antenna

5/8 wave vehicular antenna specially conceived to support hi-powers. The coil, made of big section copper wire, is protected by a polycarbonate clear cover completely water-proof. New in design and technology, it is supplied with 8 ground plane radials to get the best resonance. The conic whip is of black chromed stainless steel and the base, made of chromed brass, is very strong and complete with a big rubber washer.

Cobra 27 Black Mini Cobra 27 Vehicular Antennas

The Cobra 27 Black is a 1/4 wave antenna based. The conic whip is made of black chromed stainless steel, and cab be tilted for 180° angles. Fine tuning can be made by acting on the special rings.

Magnetic Mounts

MAG 145 PL

MAG 160 PL

MAG 145 PL - Overall dimension of 6.3" and comes with 1/2' of coaxial cable.

MAG 160 PL - Ultra Flat. Overall dimension of 6.3" and comes with 11 1/2' of coaxial cable.

TheMini Cobra 27 is a 1/4 wave antenna as well with a reduced version of of the Cobra 27 whip of 530mm. This antenna is available complete with magnetic mount and rubber washer for a quick installation.

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you pick up the mic.

Identity Crisis

One of the major differences between AM and SSB is the way in which people identify themselves on the air. With ham radio you are given a call sign by the FCC. A call sign is a combination of letters and numbers that are the operators unique identifier. In the CB world there is no licensing required, so AM operators give themselves a nickname, or a "handle," such as Big John, Gearhead or RipTide. SSB operators however tend to seek out a local organization that will issue them a number and, then identify themselves using that number, in combination with a location. For example, I identify myself as "930 Westbury, NY." The number comes from my affiliation with a nationwide organization, The SSB Network, which is based on Long Island. If I were to try to use a handle on SSB, I would most likely be laughed right off the air.

Language is one of several differences between the AM and SSB populations. Another major difference is the operator's average age. SSB radios are considerably more expensive than regular AM radios which prevents, for the most part, the younger folk from getting their hands on a sideband radio.

Another distinction is the *type* of CB transceiver used for sideband. While there are plenty of base AM stations, the vast majority are mobiles. This is most likely due to the somewhat limited range of a 4 watt AM station. With the relatively limited effective range of the AM radio, it is much better suited to gathering local traffic information or directions, rather than meeting new people over longer distances. When it comes to SSB, however, mobile operation is limited. The far greater range makes these stations much more useful for more casual conversation with persons in other cities and states. Another reason why there seems to be many more base SSB stations than mobiles is that the SSB radios require fine tuning. At a base station this is no problem, but in a mobile it is, at best, difficult, and at worst, dangerous.

They are truly two separate worlds existing on the same tiny section of the CB spectrum. The both serve their purposes well. And they're both a lot of fun!

Associate Editor's Note: Thanks Jim for your insights on CB radio. For other readers out there, please send us your stories and anecdotes. We'd be happy to run them periodically. If you have a story to tell, send it along to me at 76 North Broadway, Hicksville, NY 11801.

Nancy Barry, SSB-931

Enough is Enough!

Just when you think you've seen everything, along comes a photo of, well, (and this is even difficult to type) a TV antenna mounted ON a vertical CB antenna. To make matters worse, the operator mounted the entire assembly in and around power lines!

We were going to go on and on about antenna safety, mounting techniques and SWR problems, but we're too choked up. Remember, if you have any questions about the right way to mount your CB antenna (or TV antenna, for that matter), just drop us a line. Got an unusual problem? Send along a photo or drawing and we'll try to help.

CBs Goodwill Ambassador (Not!)

He's described as "boisterous" and that, apparently, is an understatement. According to newspaper reports, little children who hear him run frightened from the room—some older people do, too. They say that he curses, tells people he's armed to the teeth and invites neighbors to "come, suck the mud from between my toes." He is a Mil-waukee, Wisconsin, CBer who calls himself "Black Jack" and it's doubtful he's going to win any contests as CBs poster child for community relations. (Or our own CBer of the Month!, ed.)

For a year, the broadcasts of Black Jack have invaded neighbors' homes, coming through loud and clear on just about every appliance except the toaster oven. Turn on the FM radio and you hear him. Turn on the television and there he is. Pick up the telephone and there's Black Jack. Beverly Echols, who lives nearby, says her seven and eight-year old kids run from the room in terror when they hear the man's voice coming out of the television. "They think he's a ghost," she says. Yeah. An obnoxious ghost.

City Council member Frederick Gordon has tried to intervene, but he says he was "cursed out by Black Jack and his landlord." Even Gordon has thrown up his hands in disgust. "I've done just about everything I can do," he says. Now the city says that it plans to declare Black Jack's home a nuisance. That way the landlord can be fined, heavily enough, it is hoped, that he will then evict the CBer. Next you get visions of a CB-style Waco stand-off, an American flag flapping in the breeze from atop a Big Stick.™

Of course, there are two sides to the story. To hear Black Jack tell it, he's a pussycat. He told a reporter that he doesn't mean any harm and tries to use the CB only late at night after people have gone to bed. I'm just a poor man paying taxes, going out in the cold every day to work," he says. Is Black Jack some sort of low-life creep who should be committed to a home for the terminally disgusting? Are his neighbors a neurotic bunch with an axe to grind against CBers? If my experiences with human nature is any indicator, the truth is probably somewhere between neurotic neighbors and deranged CBer.

The point is not to assess blame. The story of Black Jack and his feud was picked up by just about every newspaper in the country. When the story came out in the press, all CBers suffered a direct hit in the reputation.

Think about it. If non-CBer Jane Doe sits in her living room and talks trash, no one hears her but the cat and the plants. If Pig Stomper fires up the rig in a snit, he's going to be heard by dozens, even hundreds or thousands of people—from fellow CBers to neighbors inadvertently forced to tune in on their toaster ovens.

Always remember that everyone who keys up a microphone is an ambassador for the hobby. You never know who is going to be listening. And what you say and how you come across is going to stick in the listener's mind forever. Whenever someone says "CB," they'll remember what they heard. So next time you go on the air, think about how you come across. Make it a rule not to say anything on the air you wouldn't say in front of your mother; 'cause you never know—she could be monitoring your channel.

Teen Time

It was typical police radio traffic. Burglaries in progress. Domestic disputes. Fender-benders. Then it began. Teen-age voices. Voices that shouted obscenities, called the police "pigs" and imitated officers as they responded to calls. It didn't take the officials in Tampa, Florida long to realize that a police radio had been stolen.

"They were calling us pigs," said Deputy Tom Allen. "They were cursing us and saying, "Why don't you come find us?"

Admitting that the communications could not be traced, police endured the barrage of X-rated abuse for eight hours. Soon, though, a pattern emerged. Allen noticed that the teens kept making references to a certain area of town. Then they heard them mention the address 8306. When police knocked on the door of 8306 June Street, they knew they had hit pay dirt. The woman who answered the door said that yes, the voice on the radio sounded like her son. Allen asked the woman to call him when the son returned home. The woman never called, but the radio interruptions stopped. When police later returned to the house, one teen confessed. He and a friend were charged with interception of electronic communications, a third-degree felony. Police were unable to recover the radio. Then teens said it had been stolen from them a day earlier.

Dial 911

When a tractor trailer driver pulled out in front of him, a Clifton Oak, New York man did the only thing he could. He drove under the truck. According to police, the driver of the 1986 BMW "could not stop in time and the car was completely lodged under the trailer." The car was totally destroyed, but amazingly, the driver of the car was uninjured. How did the police learn about the accident? The driver of the car, while trapped under the trailer, used his radio to notify police. The driver of the truck was charged with failing to yield the right-of-way.

Radio Operators Stop Three

The Kansas City Star reports that two private citizens, Zachary Canright and Beryl Masters, used their radios to assist police in apprehending a trio of burglars. Canright became alarmed when he saw the three running down the street with a shopping cart piled high with boxes. When the group piled into a pick-up truck with no license plates, Canright tailed them to a WalMart store where they stopped to put the plates back on the vehicle. Canright used his radio to call Masters who telephoned Overland Park police. The trio were arrested and charged with felony theft.

Scholarships Available

CB radio operators who also hold a ham ticket are eligible for one of 57 scholarships being awarded by the Foundation for Amateur Radio. You may compete for the awards if you plan to pursue a full-time course of study beyond high school. The scholarships range from $500 to $2,000. For additional information write: FAR Scholarships, 6903 Rhode Island Avenue, College Park, MD 20740. Mention CB Report if you write.

Illegal Equipment Bust

A man who advertised illegal surveillance equipment and cloned cellular phones on the Internet has been charged with conspiracy, fraud and money laundering. The U.S. Secret Service and Drug Enforcement Administration arrested Bernhard Bowitz, his estranged wife and another man after receiving court approval to monitor "conversations" on the Internet. Why the DEA was involved was not explained.

A word of warning from CB Report: There are similar Internet sites devoted to illegal CB equipment. BEWARE!

CB Report Mailbox

Matthew Sadler of Chattanooga, Tennessee has finally thawed out from a very rough winter. At one time, ice storms had closed schools for six days. Sadler says that "Accidents were common. CBers, including myself, formed a vital link between the motoring public and law enforcement." Thanks to CBers like Matthew, you can rely on prompt, professional assistance on Channel 9 in Chatanooga. By the way, Matthew also reports that both the East Ridge and the Chatanooga police departments have once again equipped all of their cars with CBs.

Red Ranger in Sioux City, Iowa, says that he and some of his fellow CBers have begun 24-hour monitoring of Channel 9. "People are once again beginning to come home to CB," says Red Ranger. "They expect to find courteous, well-trained operators on the emergency channel and that's what we're providing. During the bad weather, we were able to help five different motorists, including a young mother whose car had slid into a snowdrift."

Pussycat and Mag Wheel are organizing "the first CB coffee break in Chester County, Pennsylvania since 1979." Mag is inviting area CBers to join him at the Denny's in Exton (Route 100) every first Tuesday of the month at 8 p.m. Meet in the parking lot next to the vehicle with the CB antenna. Bring a friend.

Another event worth mentioning is the National Communications convention put on by National Scanning magazine. It'll be held at the Lancaster Host Resort in Lancaster, Pennsylvania on July 12, 13, and 14. There are dozens of seminars on everything from emergency monitoring to tuning cellular phones. CB Radio magazine will also be represented at a table! Tickets are $10 in advance or $15 at the door. For more information, write to us at Box 360, Wagontown, PA 19376. And don't forget that you can be a member of CB Radio's CB Monitoring Team. Watch the local newspaper for items of interest to the CB community and send them in. We'll be looking to hear from you.

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CBer of the Month

OUR SALUTE TO TOP-NOTCH CBERS

By Bill Price, A/K/A The Chiseler

Hooray For Harry!

I found myself facing Harry Jamieson* across a U-shaped counter while my wife and I sat stranded at Exit 2 off Pennsylvania's I-78 in the now historic "Blizzard of '96." Like many professional drivers, Harry, of Wycliff, Ohio, and his long-time partner Al Farber* of Cleveland had decided on eating and sleeping rather than jackknifing. I had also given up trying to find my way around jackknifed trucks on untested secondary roads. I was a week behind schedule finding a "CBer of the Month" for the June issue, and since Harry was within easy speaking distance, I thought I'd see if he might make a good candidate, though in retrospect I should have introduced myself before I began to interrogate him. I raised my head in a sort-of greeting and asked, "Do you operate a CB radio?"

"That's a damn fool question to ask at a truck stop, now isn't it?" he answered. He had me there, but then if you read "Over & Out" on the back page, you'll know that at least *one* person in that truck stop was not an active CBer that night.

Even amid his feigned grouchiness, I could see the guy had a sense of humor. "Yeah—I guess you're right," I said. "Is there anything special about you that sets you apart from everyone else?" I asked, still never thinking to tell him why I wanted to know.

"Sure. I'm the first serial-killer to qualify for the governor's new work-release program for long-haul drivers," he said. "Why, one night alone I blew away seven waitresses and one nosey guy who asked stupid questions while I was eatin'. Hung 'em up in my reefer trailer 'n headed west with 'em swingin' away back there—woulda never got caught if I hadn't opened the doors to check on 'em when I pulled in to the scales."

The guy sitting next to him was laughing into his napkin so hard his eyes were bulging. When he finally let loose, Jamieson sprayed some of his coffee, then tried to look serious and asked if I was just naturally nosey or was I "writin' a book?"

"CB magazine article," I told him. "Shoulda been working on it all last week, but I got snowed in north of here—now I've got a deadline comin' up and I got no CBer of the Month." I introduced myself, told them I was buying their supper and asked if they'd ever done anything worth writing about.

We had to "protect" the real identity of this month's honored CBers. Kind of makes you wonder, doesn't it?

"Well—if it's goin' in a magazine, you'll have to leave out the part about me bein' a serial killer," Harry said. "My sweetheart don't know about that part of my past." Al stopped laughing for a minute and they introduced themselves. Harry said if I'd pay for their breakfast in the morning, he & Al would be glad to go out right now and do something worth writin' about. I had a feeling that would implicate me when the police came, so I declined.

"Why don't you tell him about the time we built that range booster for John*?"

"Not if he's gonna take our pictures and print our names," Harry said. I thanked them for their willingness to share their experience, but told them I didn't want to write tales of illegal activity. They both assured me that there was (almost) nothing wrong with what they'd done, so in exchange for their story I assured them of anonymity, and Harry and Al took me into their confidence. "It's not as if we did anything really wrong," Al said, "It's just that John was probably just now gettin' over bein' mad about it and he'd likely come after us if we made a fool of him in a magazine." I agreed not to use John's real name either.

"Y'see," Al said, "John's not exactly the brightest bulb ever to drive a truck—there's always someone sending him lookin' for stuff like a left-handed Crescent wrench back at the terminal we used to haul out of. Guys made a lot of money off him back in the seventies selling him one CB rig after another—tellin' him the new one was better than the one he had. John was always lookin' for a set that'd go just a little bit farther, and they's always someone right there willing to sell it to him, if you know what I mean."

"Yeah," Harry added, "and we wasn't exactly the nicest guys in the world with our range booster either, but at least we didn't take his money."

Al nodded. "We was sittin' in a stop down on 81 in West Virginia when we got the idea to make a range booster to fool John with. We didn't make a real one—wouldn't know a transistor from your big sister—we just wanted John to think we had a real one—so he'd want it real bad and start actin' goofy—it give us a good laugh every time he started gettin' like that.

"We got a guy in the shop to make us a box out of sheet aluminum, put two UHF jacks on it—one marked 'in' and one marked 'out,' then we put a two-screw terminal strip on it with a four foot wire and a cigarette-lighter plug. We wired a 12V bulb socket in and epoxied half a brick in the corner of the box to give it some weight, then we riveted all the stuff—the switch, the terminals and the light-socket in place and got the guy to tack-braze

the box so it couldn't be opened. We run a piece of RG-8 between the input and output connectors, so what you really had was a one-foot jumper in a mysterious box with a light that came on when you give it twelve volts. It looked pretty impressive.

"Our friend Mitch knew a few words in Spanish and he could do a lot of different accents. Did 'em pretty good, too. We told him what to do and he waited in his rig while we went to see John, who was about ready to leave for Iowa. We told him we wanted to show him the neatest CB gadget he'd ever seen and got him to come over to our rig.

"First we had him call for a radio check on our old Johnson Messenger. Mitch came back to him—must have held the mic pretty far away from his face and made his signal sound really weak—told John he was barely gettin out, and gave his location as bein' about a mile down the road. Then we looked out both sides of the cab to make sure no one was around and pulled the box from behind the seat. We handed it to John.

"John looked at the box—looked at all six sides, examined the plugs, the screws, and the little red pilot light. We told him never to mention it to anyone—these were the days when everyone still used call signs and was afraid to death that the FCC was about to come jumpin' out of their sleeper cab and put the cuffs on them; John gave us his word. For effect, we even told him it'd "blow up" if we plugged it into the lighter before we had a CB and an antenna connected to it.

"We jumpered the box in between the radio and the antenna, then plugged it into the lighter socket. The light came on. Al keyed the mike two or three times and told John to 'try it now.' That was how we tipped Mitch off that we'd installed the range-booster.

"First Mitch came back as an Australian, then as a Bolivian, then as a French-Canadian and about three other nationalities before we disconnected the thing. John was absolutely hooked—we probably could have traded that box for his truck right then and there—he was holding on to the box with one hand while he held the mic with the other, and we weren't sure we were gonna get it away from him.

"We told him we had to give it back to the guy who made it, and we were getting the next one he made for two-hundred bucks. John immediately pulled out his trip money and stuffed two hundred bucks into my hand and told me to get one for him too. I tried to give him back his money about a dozen times, but he wouldn't hear of it. When he left, each of us held onto a hundred of John's money so as to split the responsibility for gettin' it back to him.

"Three days later, when John got back from Iowa, we met him and handed him his two-hundred dollars—told him that the guy who made them was in jail, and it'd be wise not to make contact with him just now. John was heartsick—you could see it on his face—but he sure did squeeze that money tight when we handed it to him.

"For weeks, that damn box was all he talked about until one day we were cleaning out our sleeper and Al tossed the range-booster out for me to get rid of. Neither of us had seen John walkin' up behind me.

"It took about four months 'til John had anything to say to either one of us, and by that time we'd begun to sneak a couple gallons of gas into his Volkswagen Beetle every time he left it parked at the terminal. We'd got so tired of his braggin' about gas mileage, we thought we'd help him along. Once he went for almost six weeks without ever puttin' gas in the thing, 'cause we kept adding it, but the best part was that no matter how he'd swear and carry on, no one would believe him—everybody was in on the trick—and what good's great gas mileage if you can't brag about it?"

Harry and Al were getting ready to leave the next morning after breakfast, and as you can see, they did allow limited photos to be taken of them.

They've both been on the air since the early 70's, and claim to be the longest-running partnership on the road today. They both love a good bowl of chili, hate driving anywhere between Boston and Washington, DC, and love good coffee—they've even wired a drip coffee-maker to run off 12V in the rig, though it has a tendency to spill on rough roads. "Works better when we're stopped," Al says.

Harry's divorced; Al said, "Rather than goin' out and gettin' married, then gettin' divorced like all the other drivers, I just looked around 'til I found a woman I hated real bad, then bought her a house and gave her all my money! Damn-site easier than goin' to court 'n payin' a lawyer too."

I asked if they had any messages for the CB public. Harry took this one and said, "Y'know—we're a pair of really uncouth slobs, but there's people out there with language that'd knock a buzzard off a garbage truck. It don't matter so much to us, but there's families drivin' up and down those roads with little girls with ribbons in their hair—they sure don't need to hear that stuff." Al agreed.

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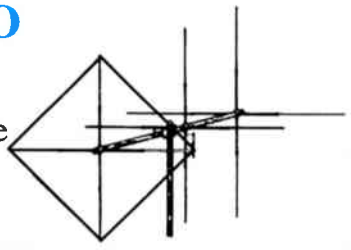

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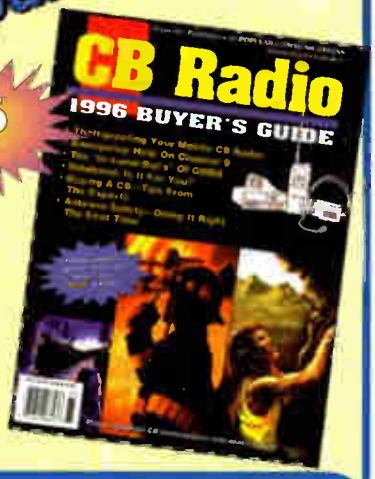

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"What would you like to see happen to CB radio over the next year or so?" I asked. The guys were quiet for a moment, then Al chimed in and said, "It'd be sorta nice to see all the jerks out there break their mic wires without knowin' it—they'd think no one wanted to talk to them, which is the truth anyway."

Pinky** and I wished Harry and Al a safe trip and we headed back to clear out of our motel room after they pulled out. When I looked at my notes, I realized I couldn't print Harry and Al's handles, either, since they're pretty unique, but if anyone out there whose name is not John recognizes the range-booster story and two guys who are not named Harry and Al—this wasn't them—honest!

* Not their real names.
** My wife's real nickname.

Harry and Al have already received a nourishing supper for their trouble, though the magazine's legal department tells me it's not a valid expense because it occurred after 8 p.m. in a state beginning with a "P," and because I'd have had to write their real names on the receipt instead of just "Harry" and "Al." They'll also each receive an 8 x10 photocopy of this article, suitable for framing, and our short-lived gratitude for spilling their guts without fear of retribution from John. ■

This being our fourth issue, the lead-time between typewriter and finished magazine is just beginning to allow readers to nominate themselves or someone they know for the coveted office of *CB Radio*'s "CBer of the Month." Information sent by readers should just now be finding its way into our offices, so let us know about yourself or someone you know.

If you know someone worthy of the honor, try to get a couple good clear B&W or color pictures (slides don't work too well) and tell us what makes you or your friend so special. Give us a whole shipload of information so we can maintain our high standards of journalistic craftsmanship as exemplified by this month's profile. If, like several of us here at the editorial offices, you are a student or graduate of the National CB Writer's Institute of the Air (heard Monday and Wednesday evenings at 7:00, channel 32 USB), you might like to interview your candidate and write a highly polished piece such as this, which would make you the envy of your peers. Remember—clear photos (no Polaroids), no split infinitives, and try to avoid referring to the readers as "Good Buddies".

Ask Bill

ANSWERS TO YOUR MOST FREQUENTLY ASKED CB QUESTIONS

By Bill Price

How about a tough one—tell me about antenna gain—what does "gain" really mean, and how does an antenna designer build gain into an antenna?
J.D.P, Marietta, GA

I'll start with the last part of your question first, and I hope you're not disappointed that I take the lazy way out. It would take several years of either intense experience or schooling to teach you how to design gain into an antenna, though there are lots of books which tell you how most existing designs work (I'll ask the editor to list some sources for those books at the end of this article).

And now the middle part—gain. Think of gain as "concentration of the signal." It's an antenna's ability to act like a funnel—to take a signal which would normally leave the antenna heading every which way and concentrate it.

If you've read my other articles, you probably know that I often say that rule #1 of antenna theory is that there are no free lunches. You will know far more about antennas than the average user if you remember the following axiom: You can have an antenna with absolutely no gain which transmits (and receives) equally well in all directions—up, down, north, south, east, west, and every point between. Actually, you can't have one, because such an antenna—called an isotrope—can only exist in theory. However, if you want your antenna to have gain in any direction, you must take gain away from some other direction.

On the other end of the scale, one of the highest gain antennas available is a "dish" type antenna, such as a satellite dish or a dish antenna used in terrestrial microwave systems. Those antennas concentrate their signals into the narrowest "beamwidth," and therefore have the highest gain—in one direction. Remember, though, that they have virtually no gain at all in any other direction. In case you're wondering, a dish antenna for CB frequencies would be enormous and impractical.

So how does a manufacturer offer an omni-directional antenna with gain? Easier than you think. Remember that our theoretical gainless antenna transmits evenly in all directions, 360 degrees by 360 degrees by 360 degrees. You can eliminate the two vertically oriented planes and transmit only in the horizontal plane (the one you can represent by envisioning a CD spinning on the tip of your finger) and end up with some really intense horizontal gain—that is—gain in only the horizontal plane—360 degrees around. This is your basic "vertical" antenna—like the one on your car, or a vertical omni-directional antenna on your house.

Just as a flashlight beam grows wider as it gets farther from the bulb, so does this omni-directional signal get wider as it gets farther from the antenna. On some antennas, it gets very wide close to the antenna—those antennas are said to have a wide vertical beamwidth. On others, it stays pretty narrow as you get far away from the antenna—those antennas are said to have narrow vertical beamwidth. I now invite your attention back to rule #1—the part about no free lunches.

At first, you might think the best omni-directional antenna would be the one with the narrowest vertical beamwidth, since that would be the one with the highest horizontal gain—but remember—nothing comes without a price, and the price of a theoretically "flat" omni-directional signal would be that it goes over everyone's heads—it would never get wide enough to reach downward to the very people you're trying to reach. If such an antenna were on a car, if you drove up a hill, your forward signal would only aim toward the sky, and the signal coming from the back of your car would be beamed downward into the ground. The bottom line is that you need some vertical beamwidth—obtained by having less than optimum gain—to have a functional omni-directional antenna. For me, when choosing a mobile antenna, it's the good old quarter-wave that gives me good horizontal gain with plenty of vertical beamwidth. For those of you who don't know what a quarter-wave CB antenna is, it's that butt-ugly Broderick Crawford memorial 102" fender-mounted ceiling-scraper whip—the one that could double the wind resistance on a sub-compact car. If you want performance, that's your choice—all the rest are compromises, though I would say they look a lot nicer on your car.

Hey, Bill—short of an illegal amplifier, what can I add to my rig to increase my transmitting range?
B.C., Bedford, NH

B.C., if there was such a gadget, someone would make an awful lot of money. An SSB (single sideband) radio has more effective range than an AM set, but only other sidebanders can hear you. You can increase your intelligibility—hence your useful range—by making sure your modulation is at or near the legal limit (most sets come adjusted pretty accurately)

and by using a good, high-quality microphone. An amplified mic—called a "power mic" will increase your useful range if:

A. It's properly adjusted (the level's set correctly), and

B. You speak at the right level (not too loud and not too soft) and keep the mike the proper distance from your mouth.

You can take your rig and the mic to a professional radio shop—someplace with a modulation meter—and the person there can adjust your modulation for peak performance and help you set up your mic and see just what the correct level setting and speaking-distance should be.

You'll also hear folks tell you things on the air— things like "back away from the mike," or "turn your mic down." Most of the time, people who tell you these things are doing so from experience—remember, they can hear your signal—you can't. CB is one place where it doesn't cost anything for a second opinion, and it's sometimes easy for people listening to you to help you set your mic level and determine the proper speaking distance from your mic.

Willie—How can I protect my coax and connectors from weather damage?
J.B., Harrisburg, PA

J.B., it's not easy, but you can do a good job of it. Like anything else you do well, it requires planning, the right materials, and a few minutes extra time spent during your installation.

Few CB antennas use them, but if you ever have the option of a "Type N" connector, spend the extra bucks and use it. If you ever make your own antenna, build a "Type N" connector into the base of it, and if you ever have the opportunity to change a connector on an existing antenna, try to determine if you can substitute

an "N" connector for the UHF connector that's on it. My bias toward type "N" connectors is that they're designed to withstand outdoor installations much better than UHF connectors (which in my humble but boisterous opinion, should never be used outdoors in the first place).

Whether you use a "Type N" connector or not, you need to seal it from the weather. There's a gooey black sealant that is packed in a roll, with a strip of white plastic to keep it from sticking together. RadioShack sells it, and so do ham radio stores. It's messy, it's hard to get off once you put it on, but it's good. It's like dipping your connections in tar, only not quite as sloppy. Another great invention is the latest "flooded" heat-shrink tubing. I know that commercial electronics supply shops sell it, as do some ham dealers. At first, it looks like any other heat-shrink tubing, but when you look inside, there's a layer of clear adhesive or epoxy which seals against the coax or connector which you're covering with the tubing. Be sure to specify this type of heat-shrink tubing (and be ready to pay a little more for it) and make sure you get the right size—the right diameter and shrink-ratio—for your job.

A third method is "RTV." That stands for room- temperature-vulcanizing," and it's a generic term for the silicone-based sealants sold by G.E. and others. You can buy four, six, or eight-ounce tubes of the stuff and pay top dollar, or buy it in caulking-gun tubes at the enormous building-supply stores and get a real bargain. Clean whatever you're going to seal with rubbing alcohol (before that finds its way onto a HazMat list), allow it to dry, then coat it carefully and generously with RTV, taking care not to allow air pockets to form. Disposable gloves are a good investment during this procedure. If you've ever worked in a darkroom, you'll note that RTV smells an awful lot like glacial acetic acid (stop bath). That's because it contains acetic acid. Funny how that works. For electronics use, look for non-acid cure RTV if you can find it, but it's ok to use the regular, burn-your-nose acid cure if you can't find it.

When you have two-part fiberglass antennas, any of these methods is okay for sealing the joint—in fact, all three of them (first the flooded heat-shrink tubing, then the black coax-sealant, then the RTV) wouldn't be overkill. It's also a good idea to get a can of clear lacquer, such as DuPont Krylon brand with an ultraviolet shield and spray the entire fiberglass antenna after assembly and before installation. Fiberglass isn't permanent, as many of you have found out. A good coat of Krylon (or equivalent) lacquer can double the life of some fiberglass when it's exposed to the elements.

Clear lacquer helps aluminum antenna parts too, but you've got to follow a couple rules there, too.

First, build and test the antenna. Then using rubbing alcohol or other friendly solvent, wipe all the oil (they use it during manufacturing) off the aluminum, and spray that with a good clear lacquer (or a battleship-grey lacquer if you're trying to make your antenna invisible). Sky-blue antennas may vanish against a blue sky, but they look really silly on a grey day. Battleship grey is about halfway between black and white, and is the best color for making your antenna as unobtrusive to the neighbors as possible. Never paint a fiberglass antenna with a metal-based paint (such as aluminum paint or lead-based paint)—you could prevent it from radiating—hardly a desired effect.

Bill—my CB gets into my neighbor's telephone, his cable TV, and opens his garage door. The guy is really big, and he's losing patience—any suggestions? Our houses are really close together.

C.M., Perth Amboy, NJ

We'll move your question to the top of the pile, C.M. There's plenty you can do. First, be sure you are running a legal set—no amplifiers. Illegal amplifiers don't have to meet any criteria, and believe me, they've got the sloppiest output you've ever seen.

Usually, a legal set won't put out enough harmonics to get into TVs and other devices, but assuming you have a clean set and not some maladjusted old tube rig, the problem may be near-field radiation—the tip off was that you said your houses are really close together.

Near-Field radiation is a technical term with a precise definition. Before you PhD EEs write to explain that to me, let me mention that I'm using the term loosely. I'd bet your antenna is mounted about a foot above your roof, and on the end of the house near your large neighbor. A quick fix would be to raise the antenna up nearer to the legal height limit, move it to the other end of your house, or both. If moving the antenna is not practical, you can buy some RF chokes from RadioShack (catalog no. 273-104 or 273-105) or from a nearby ham radio equipment dealer and put them on your neighbor's equipment. If he's getting testy, give them to him—they come with instructions and can be installed by large angry people as well as folks like you. The phone cord, power cord or TV cable either fits through them, or wraps around them; if this were medicine, they'd be called "non-intrusive," yet they offer a quick fix, and they're not expensive.

If none of this works, write back with more specifics. You can also ask the folks at your local radio store or seek out a neighborhood ham for help—if you don't mind getting a tour of the shack and maybe working some DX.

...and here's another kind of interference:

Big Willie—For the past three months, I've got a 60-cycle AC buzz on my base rig. It's worse on the AM broadcast band. I never used to have this problem. What gives?

J.J.McH., Houston, TX

Good news, J.J. Unless I miss my bet, it's a bad line transformer in your neighborhood. You can spot it by taking a bat-

tery-operated AM radio outside (no climbing the poles, mind you) and walk around near the poles and see where the sound gets loudest. Betcha it'll be the loudest when you're under a transformer (looks like a trash-can mounted up by the wires on a utility pole). I had the same problem years ago and called my power company (hats off to the Pennsylvania Power & Light Company) and they sent out a technician the next day with sophisticated RF sniffing equipment and found the noisy transformer in two minutes. The technician had the transformer replaced within a day or two and the problem was gone. Most power companies have a special interference department staffed with real experts who can find problems fast. It's usually in their best interest to fix the problems fast, because the interference is a sign of a problem—in my case, it was the crisp carcass of a squirrel who'd made an unfortunate choice when selecting a nesting area.

Bill: How important is antenna height in getting my signal around town—would an extra 10 feet make enough difference to justify the cost and effort of raising my antenna?

P.B., Shaker Heights, OH

Just like real estate people talk about location, antenna people talk about height. Height is your friend (though during lightning storms you'll sometimes wish your antenna was in the basement). Let me call on Mr. Math once again:

There is a formula for determining how far you can see over a perfectly smooth, level earth. Let's use an enormous lake for our example. You are sitting down in a boat, and your eye is exactly three feet above the water. You can see about 2.1 miles. Stand up on the seat of your boat (the Coast Guard will probably reprimand me for telling you this, so please don't do it), and your eye is exactly six feet above the water. Now you can see about 3 miles. Imagine if you were lost out there, 2.9 miles from land—think how important it would be to stand up and gain that extra three feet of elevation.

The formula for visual line-of-sight (in miles) is 1.22 times the square root of the height of your eye above the surface of the earth, e.g.,
Your eye is 3 feet above the earth.
The square root of 3 is 1.7321
1.22 x 1.7321 = 2.1131
You can see 2.1131 miles if your eye is 3 feet above the earth.

Now, some good news about a free lunch—radio waves travel farther than light waves. You get to use a different formula for radio line-of-sight. The formula for radio line-of-sight (in miles) is 1.41 times the square root of the height of your antenna above the surface of the earth. By the way, the signal doesn't come off the top of your antenna, nor does it come off the bottom—it comes from an electrically-determined point on your antenna called the center of radiation, and that point is determined by a bunch of factors. For approximation, lets assume that the center of the radiating part of your antenna is the center of radiation—you won't be far off most of the time.

The radiation center of your antenna is 3 feet above the earth. The square root of 3 is 1.7321; 1.41 x 1.7321 = 2.4422

Your ground wave will travel 2.4422 miles if the radiation center of your antenna is 3 feet above the earth except there are other factors, and they're involved and arguable. The good part is that you can now determine that if your antenna is now 10 feet above the earth and you raise it to 20 feet, you'll pick up an additional 1.9 miles in all directions, all other factors being equal. Raise it to 30 feet, you pick up 3.3 miles over your original 10 foot height. Move to a 300 foot mountain in the middle of a desert? Give yourself a 20 mile increase. You get the idea.

Remember, too—we're talking about an increase in all directions—an increase in the radius of your signal. Think how many more square feet in a 12.6 mile (diameter) pizza over an 8.8 mile (diameter) pizza— that's the increased coverage area you get when you raise your antenna from 10 feet to 20 feet.

There are other factors that make it a good idea to raise your transmitting antenna as high as practical (and legal): you clear surrounding buildings and trees; your antenna can "look" over nearby hills, and most importantly, you can (sometimes) lower your antenna's angle of radiation—a performance feature that's fairly complex to control but certainly desirable. Now a brief word from Dr. Safety:

Antennas can be struck by lightning. The rotund advisor here is no lightning expert, however your library has copies of electrical codes which spell out exactly how to protect yourself properly.

Neighborhood hams can help, and your local radio store has lightning protection information packed with almost everything they sell. If you're of a mind to spend a buck, your neighborhood electrician can look over your installation and make suggestions on how to bring it up to code—even do it for you if you'd like.

Antennas are also usually way up in the air. If you're going to fall, that's not a good place from which to do it, so be careful. If you have any doubt as to your ability to climb ladders, roofs, or trees, it's probably your common sense telling you to get competent help. Pay attention.

Roofs, trees and ladders have a habit of being near electrical wires. The closer you are, the more life insurance you need. This is an area where few people have sufficient common sense, so stay about three times as far from wires as you think you should, and if you think you should get close to them, hire a cheap lawyer and write a will. No kidding—there are very few second chances.

Our friendly editor will list a couple addresses at the end of this article where you can buy good books about antenna safety, lightning, and other neat stuff. ■

Great Sources for Radio Books—antennas, safety, grounding and more! This is by no means a complete listing of books on antennas, interference-tracking, and lightning protection, but it'll get you started.

Joe Carr's *Receiving Antenna Handbook*, published by High-Text Publications, Box 1489, Solana Beach, CA 92075.

Tomcat's Big CB Handbook, published by CRB Research, P.O. Box 56, Commack, NY 11725.

Interference Handbook by William R. Nelson, WA6FQG (Editor: William Orr, W6SAI), Radio Publications Inc. ISBN 0-933616-01-5.

Now You're Talking, published by the American Radio Relay League (ARRL), 225 Main Street, Newington, CT 06111; phone 203-666-1541.

You can get these books from a number of sources including:

CQ Communications Inc.
76 North Broadway
Hicksville, NY 11801
(800-853-9797)

Universal Radio
6830 Americana Parkway
Reynoldsburg, OH 43068
(614-866-4267)

Electronic Equipment Bank
323 Mill Street
Vienna, VA 22180
(800-368-3270)

CRB Research
P.O. Box 56
Commack, NY 11725

Tomcat's Time Warp

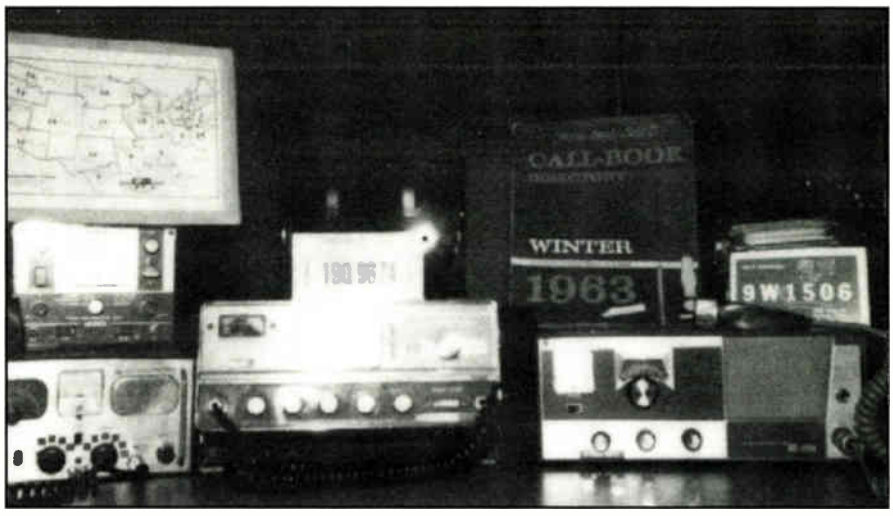
OUR COLUMN EXPLORING CB'S EARLY YEARS

By Tom Kneitel, K2AES, SSB-13

It Wasn't What Uncle Charlie Envisioned . . .

The popular conception of 27 MHz CB is that, when opened in 1958, it was a quiet little 23-channel chat-oasis for eggheads and Elmer Fudds. Like all other licensees, they dealt well with the FCC regulations (then called FCC Part 19). Folks think it chugged along that way until the big CB "boom" years of the mid-1970s. That's when 27 MHz quickly attracted regulation-ignoring skip shooters, linear amplifiers, freebanders and other operators considered by the FCC to be the beginning of a nightmare. These are misconceptions!

In fact, right from day one, in late 1958, the FCC began having problems attempting to establish its control and dominion over this uniquely unruly radio service.



This early CB shack proudly displays the operator's 1963 CB callbook directory. Operators quickly learned that CB call letters were both a blessing and a curse.

Some Reasons

The FCC did not want CB to be a kind of no-license ham radio service; that is a hobby in itself, where strangers would exchange "non-substantive" random comms. They wanted CB to be used only for small businesses, or for things like people calling home to say they would be late for dinner. Therefore, the original Part 19 CB rules were deliberately written with numerous limitations and restrictions to permissible communications. It was virtually impossible to say as much as "hello" to another CBer without violating several FCC regulations.

For one thing, Part 19 demanded that all CB transmissions be "substantive." CBers had to look it up in a dictionary to even find out what the word meant. Part 19 offered no definition, nor did it offer any explanation of what would comprise such a message. But if the FCC monitored a station transmitting a message that failed to meet their unrevealed standards, a violation notice was issued.

There were FCC restrictions against calling CQ, giving signal strength reports, talking too long, shooting skip, attempting to communicate with stations other than one's own mobile units, etc., plus tech taboos like the antenna being too high, being off frequency, running too much power, etc. What with the few CBers then on the air being monitored by a relatively large number of FCC personnel, it's easy to see that every press of the mic button meant a high probability that the Grim Reaper would be visiting soon.

The way Part 19 was written, it was inevitable that there would be a few unintentional, but unavoidable violations. On the other hand, a segment of CB users viewed Part 19 as being so absurd that the regs were regarded as a challenge to see how many sections could be ignored, defied, and violated.

Open Defiance

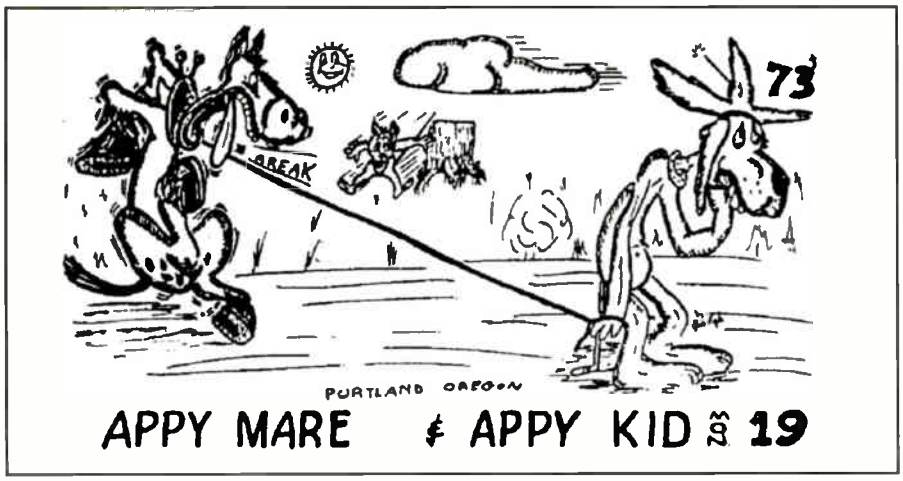
Linear amplifiers? High power? Sure! There were quite a few Globe Scout and Johnson Thunderbolt ham transmitters being fired up on CB as well as other similar gear. These transmitters ran more than legal 5 watts input, and many had VFOs. After a while, several CB manufacturers began openly offering 30 to 50 watt 27 MHz linear amplifiers and transceivers (marked "Illegal for use in The U.S.A."). Sonar, Polytronics, e.c.i. and the others found CB customers eager to buy these items.

As fate would have it, when the band was first opened for CB use, the 11-year sunspot cycle was at a point when stations from coast-to-coast came bombing in like locals for hours on end. Did the FCC actually think friendly CBers would pass up opportunities to chat with distant operators? It seemed as if most CBers enthusiastically worked as much DX as they could. And why not?

Illegal so-called Freeband hobby operations on frequencies below channel 1 and above channel 23 (then the high end of the band) began in the mid-1960s. These were a mix of CBers who went downstairs or upstairs, plus licensed hams "slumming" on unauthorized frequencies without using their call letters. Oddly, early Freebanders managed to casually exist for years without doing much more than showing up in FCC reports about out-of-band operations. They certainly had much less grief than the big influx of Freebanders who first showed up a decade later and convinced themselves they were the ones who had discovered or invented the idea. Serious FCC hassles began after several high-profile 1970s Freeband groups formed and began actually encouraging members to defy the rules by operating on unauthorized frequencies.

For Timid Souls

For CBers seeking a toned-down version of Freebanding, there were always channels 22A and 22B. These weren't real CB channels, they were frequencies designated for industrial licensees. Nevertheless, they were illegally loaded with CBers. So-called channel 22A was 27.235 MHz, while 22B was 27.245 MHz, between legal channels 22 and 23. Many early crystal-controlled CB rigs were manufactured with channels 22A and 22B marked on their channel selector switches, and the necessary crystals were readily available. Big time skip



Here's the first DX card I ever saw bearing only CB handles and no callsigns; protection against the FCC busting someone and confiscating their QSL collection to learn the names of other skip shooters. It showed up in my mailbox in 1967. That was before channel 19 was discovered by truckers!

This 30 watt five-channel 27 MHz AM transceiver was made by CB manufacturer e.c.i., supposedly for commercial two-way users. CBers bought all of them.

Polytronics was an early CB manufacturer that brought out this small linear amplifier.

shooters loved channels 22A and 22B.

Later, when crystal synthesizers became popular, many CB sets came factory-ready for operation on either or both "channels," or could easily be user-modified. When CB was expanded to 40 channels in 1977, the two bootleg channels had become so filled with CB activity that the FCC legitimized them. They are today's channels 24 and 25!

Early crystal controlled CB radios could easily be made to transmit on the off-limits radio-control channels lying between several CB channels, such as between channels 15 and 16. All you needed were transmit crystals for those frequencies. Sets having tunable receivers were all set on relatively private frequencies. These non-channels attracted a small CB following.

Switcheroo

In the early days, CB radios without tunable receivers used two crystals per channel (one for transmit, one for receiver). Some unknown radio hero wondered what would happen if CB receive crystals were plugged into the CB transmitter's crystal sockets. Behold, "going downstairs" was born!

Because of the way IF sections of CB receivers were designed, the receive crystals were cut for frequencies 455 kHz below the transmitting frequencies. A channel 17 receive crystal plugged into a transmitter, for instance, would provide comms on 26.710 MHz. Any CB receive crystal created an instant Freebander!

The FCC's View

The FCC tended to view such shenanigans with a jaundiced eye. They are not an agency noted for having a great sense of humor. Many CBers felt the agency's wrath for the folly of not taking FCC regs seriously. Not all went quietly, mind you. Several operators made a lot of noise before ultimately being silenced. Ernie Walker's rebellious "Friendship Station" in New Mexico gave the FCC fits back in the '60s. You'll learn Ernie's amazing story in an upcoming issue.

As I've mentioned previously, the use of FCC call letters made it convenient to exchange QSLs by finding other operators in CB call book directories published in the '60s. The trade-off was that call letters also made it convenient for the FCC to mail violation notices, or show up for station inspections. Many CBers then decided to stop announcing call letters, substituting alternative IDs such as CB handles and sideband numbers. CBers felt it helped operating without getting nailed by the FCC.

The FCC tried to keep a lid on CB. In the early days of CB, the agency issued pompous proclamations explaining to CBers that they were failing to comply with the rules, but were expected to do so. The FCC had rigid ideas regarding what they felt CB should be, but were getting the first messages that CB users were determined that it could and should be a vastly different service.

Nevertheless, the FCC determined that the problem of the massive number of rule violations came about because CBers just didn't understand what was expected of them. The FCC thought that CBers didn't realize that licensees in all other services hardly even dared intentionally violate FCC regulations. The FCC thought that if only it could be made clear to CBers what CB radio was all about, then everything would straighten out. CBers would act like other licensees.

The first of these "setting the record straight" documents was issued on December 9, 1959, when CB had been operating for just about a year. It was titled Public Notice No. 81482, and the FCC basically said it was issued in response to the many CBers who were having fun with a radio service determined by the FCC to be useful, but certainly not enjoyable. The things the FCC didn't like were explained in great detail, using simple child-like terminology, so that every big CB dummy could understand. It was quite hilarious.

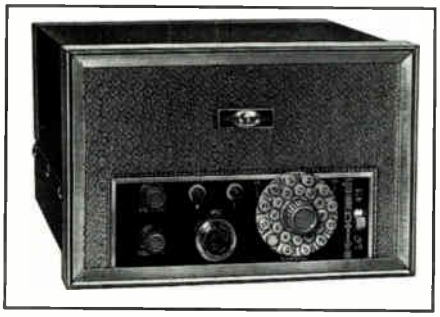
Its main cry of anguish was that CBers who violate the rules cause "interference." They suggested that CBers who wish to work distant stations should become licensed hams.

This document didn't generate an iota of compliance for any of those rule violations the FCC was indignant about. In retrospect, it's interesting to note that the worn-out FCC shriek of "interference" being caused by those who fail to follow their rules was first used against CBers in this proclamation. More than 35 years later, it still appears to be the agency's first line of attack in complaining about 27 MHz linears and Freebanders.

Sonar's 27 MHz linear amp sold under the transparent guise of being for business radio only, though only CBers were known to use the thing.

The ultimate early CB linear was this potent black beauty from e.c.i. It could blast every other local off a channel in seconds.

Many years ago, I spotted this neat little used linear waiting to be adopted.



The dial on this crystal-synthesized International Crystal Mfg. Co., Executive shows an unmarked position between channels 22 and 23. In actuality, that tuned to non-channel 22A.

By now, you would have thought the FCC would have realized the futility of attempting to get operators to follow FCC rules by waving some vague "interference" monster at them. This tactic has never worked.

When it became obvious that Notice No. 81482 was not going to work any miracles, the FCC embarked upon a series of "rule clarifications." In actuality, these consisted of many more and far tighter restrictions placed on operators, each spelling out very specific "do's" and "don'ts." All this succeeded in doing was bringing the FCC additional heartache.

That's because it inspired many CBers to no longer be content to merely ignore the rules. CBers found it exciting and amusing to try taunting the FCC by concocting highly elaborate schemes for operating illegally while still remaining within the FCC's tight new rules.

For instance, when the FCC specified that the majority of channels could be used only for comms between units of the same licensee, operators all ID'd as the "Unit 2" of every DX station they contacted.

One wise-guy went so far as to start The United CBers of America, a national "club," giving members coast-to-coast the right to be a "unit" of the one license issued to the club. Problem was that when the club's founder sent out his memberships authorizing those several thousand "units," he forgot to mention that the FCC had actually issued his club a license for only five units (the maximum allowable). The club's founder had added in his own "zeros" in order to expand the license. The FCC hooked the guy for issuing counterfeit licenses. He was convicted and given a lot of grief.

These were just a few of the antics of the early era. Who ever said the FCC's headaches began in the 1970s? By that time the FCC knew only too well that users did not care for the agency's original concept of the service. CBers, on the other hand, had come to understand very well that if one is to use common sense, follow reasonable communication practices, use decent equipment and have the maximum amount of fun from 27 MHz, then a couple of rules may get bent, dented, or broken along the way.

It was a unique situation in the history of our Nation. Millions of citizens engaged in open rebellion against the regulations set down by the major federal agency supposed to license and control them. These were average folks; students, blue collar, professionals, military, students, retirees, farmers, office workers, and others who would normally consider their own violation of federal regulations to be something that could never happen.

Aah, remember those early peaceful days on the CB channels. It's too bad they never really happened!

Please let this column hear from you about CB during the early days. Got any experiences, photos, QSLs or questions? Send them along. We'll catch ya' on the flip-flop.

Tomcat

Non-channels 22A and 22B came factory-ready in this e.c.i. Courier 23, which should have been more accurately called a Courier 25!

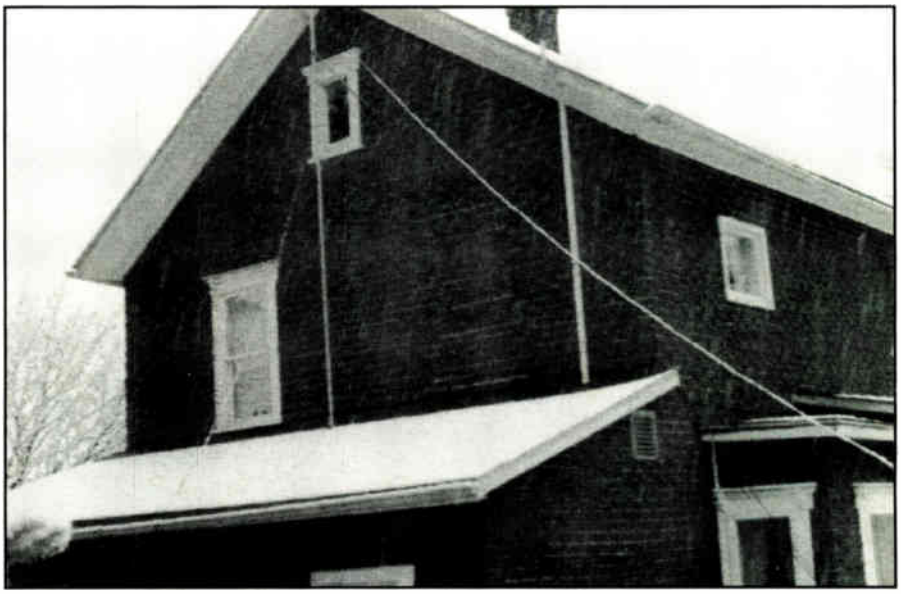
CB Applications

PRACTICAL USES FOR CB RADIO

By Andrew Yoder

CB DXpeditions

So, now I guess that you're back home after hiking the Appalachian Trail—in less than two months! Wow! You must have lost at least 50 pounds and gone without sleep for weeks. Hmm, well maybe you haven't hiked the Trail. I talked with Harold Ort, editor of *CB Radio* magazine, and he admits that he "hikes no further than the refrigerator." If you are like Harold, maybe this month's column on DXpeditions will be a bit more to your liking.



(Photos by Andy Yoder)

This dipole isn't strung in a DXpedition location, but it's one of the few times that its elements are visible.

What's a DXpedition?

A DXpedition is a merger between the words "DX" and "expedition." In amateur radio circles, a DXpedition means going to some tiny uninhabitable island and being one of the first operators to transmit from that "country." In shortwave and AM broadcast band listening circles, it means taking your listening equipment to some remote location so that you can set-up a massive antenna and hear tiny stations from distant lands. A CB DXpedition would entail traveling somewhere that you can reach a different crowd and experimenting with a number of antennas that would otherwise be unfeasible at your home base.

The CB hobby parallels amateur radio (it is a two-way hobby radio, after all), but there are a few distinct differences. First, the power on the CB bands is minimal: only four watts output. Next, there's only one CB band. Unlike amateur radio, whenever darkness falls, you can't move down to a low-frequency band (such as 80 or 160 meters) and catch some great international DX. The one high frequency-band drawback is quite evident during the bottom of the sunspot cycle (which is just starting to improve slightly right now) because long-skip transmissions are presently unreliable. At this point in the sunspot cycle, it is very difficult to cover any major distances without operating with a huge quad beam antenna and an illegal linear amplifier. The last difference between amateur radio and CB radio (as it would pertain to DXpeditioning) is another limitation; the United States is one of the few countries in the world that has an established, legal Citizen's Band. Chances are mighty slim that your call on a particular channel (no matter how excellent the antenna or location) will draw a comeback from Mauritania—an even better reason to get out of your shack or vehicle and try a DXpedition somewhere.

Location is Everything

The first concern is to abide by trespassing laws. Obtain permission from landowners or utilize state and national parks. Don't overlook land that you don't own, but that you have rights to, such as the back acres of a hunting club that you might belong to. I have tried all of these methods. The difference between a good and a bad setup depends more on the geographic location that you choose than whether it is private, commercial, or public land.

The next consideration in finding a location that will suit your needs is whether the site contains AC power. If the site does not have power, you need to operate from a battery system. Some, but not all, of the table-top base stations operate with DC or AC voltage input. If you are depending on an AC-only base station, such as a classic tube CB, and you are on a site without AC power, you might as well leave and catch a movie at a dollar theater.

Commercial sites include recreational areas and hunting clubs, but they are primarily private campgrounds. They are excellent sources of electrical power. If you're interested in this option and you only have an AC-powered transceiver, be sure to call the camp office before you go. Some campgrounds only have 220-V power outlets and a handful have no power at all. The curse of the commercial campgrounds is the flipside of their blessing; if a number of electrical appliances are being used nearby, your radio might receive as much local electrical noise as the radio signals.

Make sure that the owners or keepers of the land that you are using for a DXpedition are aware of what you are doing. Fortunately, most people, thanks to dozens of CB movies, understand the basics of CB radio. Still, setting up a really cool delta loop antenna might throw some folks for a . . . well . . . a loop. "I used to CB and I know you don't use an antenna like that," they might say. Tell them what you are doing, why you would want to transmit from that particular location, and why you will probably need to string peculiar-looking antennas. In most cases, the rangers or managers will be interested in what you are doing. They might even drop by to check out your listening post and listen in.

Another concern when DXpeditioning at commercial campgrounds is crowding. It is nearly impossible to have some radio fun in crowded campgrounds

Setting up an antenna in a campground.

A set up radio camp.

because there is virtually no direction that you can run the antenna wire. Another problem is audible noise; for example, at one beachfront campground that we stayed at in July, the hundreds of other campers were so loud that it was difficult to sleep until after midnight.

Antennas

The traditional antenna for shortwave DXpeditioning is some form of the long-wire or beverage antenna. Longwires aren't as effective for transmitting because they are typically strung near the ground for hundreds of feet. As a result, much of the signal will be dissipated into the ground. One simple antenna to experiment with is the half-wave dipole—a very popular amateur radio antenna. The dipole is fun to experiment with because it is simple, easy to work with, and inexpensive. Also, it is easy to raise the dipole high into the air, well above the ground.

Most of the standard CB DX antennas are too unwieldy to take out on a DXpedition. I've seen some major amateur radio field days where a club has taken a Winnebago out into the fields somewhere, set up a telephone pole (!) and installed a huge beam antenna on the top. Now, I like to experiment as much as the next guy, but the few returns don't seem to balance out the massive amount of work required.

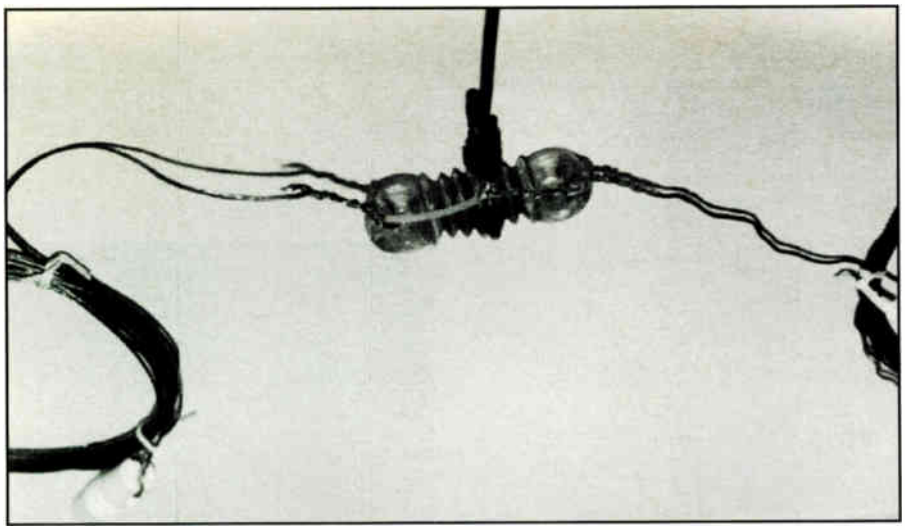
One fun antenna family to experiment with on CB DXpeditions is the loop. Delta loops and box loops are relatively easy to install, easy to get high in the air, and they're somewhat directional. I'll lay off the antenna theory for right now. If you want to catch some of that, read Kent Britain's "Antennas, Etc." column, or check out the books *Build Your Own Shortwave Antennas* by Andrew Yoder and *The Practical Antenna Handbook* (2nd Edition) by Joe Carr.

Of course, if you are placing your antenna up high, beware of climbing into trees, poles, etc. Of course, any time that you climb something, you are in danger of falling. Also, if you are staying at a campground, most of the owners or caretakers will get a bit nervous (to say the least) if they see anyone climbing in a tree on their land. The last safety precaution is the most important: never cross any wires while stringing antennas. Don't even run your antennas close to power wires. Not only will you probably pick up noise from the power lines, but you could place yourself in a deadly situation.

Supplies

Aside from your transceiver, antennas (or wire), and yourself, what else do you need? Of course, food or a local restaurant is a must. And, if you take food, you either need it to be ready-to-eat or you must take along everything necessary to prepare that food. I've had everything from excellent homemade chili to ready-to-eat junk food on DXpeditions. Depending on the number of people present, the amount of indoor space, and the weather conditions, either style can work well.

It's handy to have a number of tools available. Such things as straight and Phillips screwdrivers, reels of string or Nylon cord, a pocketknife, one or more sets of headphones, solder and a soldering iron, several extension cords and multi-outlet surge protectors, duct tape and electrical tape, a hammer, and extra antenna insulators are necessary. If you are in a remote location, or if you think you might catch some interesting conversa-



The center portion of a coiled-up dipole.

At the radio controls on a shortwave-listening DXpedition—the equipment is, of course different, but the idea is the same!

tions, you might want to take a cassette deck, blank tapes, and audio hookup cables for recording stations.

For comfort, take such things as sleeping bags, pillows, a folding table and chairs, desk lamps, a comfortable large tent, bug spray (for the summer), electric or kerosene heaters (for the winter), and extra weather-appropriate clothing.

As far as DXing supplies go, make sure that you take along a few recent copies of *CB Radio* for casual reading or reference.

Laptop computers can also be extremely useful tools on a DXpedition. Download information from a computer on-line service that covers radio (such as rec.radio.CB on the Internet), and be sure to bring this information with you.

Laptops are light enoughto bring along on a DXpedition. Even if you don't have access to AC power at your location, you can either run the laptop from it's built-in battery for a limited time, or you can run the computer off an external battery supply (my laptop computer requires 12 V, so it will operate from a standard 12-V gel cell). You can also operate the computer from your car's battery via a laptop supply or inverter. Unfortunately, a number of computers cause radio interference that will hamper your activities when you are listening. My laptop computer causes plenty of interference when it is plugged into 110-Vac, but it is clean when operating off of 12-V batteries.

Finally, pull out your handy-dandy radio logbook, and take along some ballpoint pens. Make sure that you use ballpoints and not felt tips; I had a few felt-tip logs that were entirely washed away by rain.

Then, sit back with the radio and have some fun. Relax for a while, have a few conversations, and maybe listen in on a few talks.

Conclusion

To contact me via this column, just write to "CB Applications, c/o *CB Radio* magazine, 76 North Broadway, Hicksville, NY 11801-2953 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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Frequency Fastrack

GENERAL MOBILE AND FAMILY RADIO SERVICE NEWS

By Judith Simpson, N9NSI, KAD-9669

Life Has Plenty of Rules, and So Does GMRS . . .

It looks like this will be *the* place to find the nuances and ins and outs of protocol, custom and accepted procedure in the General Mobile Radio Service (GMRS). Perhaps some of our ideas will be applicable to other radio services as well. Your questions and comments have helped in the past, and while this is not necessarily an "Ann Landers" type column, all letters will be received gratefully, and some may be used to create a column at a later date. In any case, *all* letters will receive an answer!

The concept of this column is to have everybody up to speed on Personal Radio, but since there are already several writers for the 27 MHz CB side of things, and their feelings would be hurt, that portion of the radio scene can be ignored, and our discussion will be limited to the frequencies above 11 meters, and will *exclude* the amateur bands. After all, this *is* about CB radio!

As the interest in Personal Radio grows, and more users and repeaters and repeater operators emerge—as the airwaves become more crowded, with more demands for airtime, it will become necessary for all users to adopt some basic rules, and to adhere to those rules. Without some form of operating procedure and protocol, the UHF bands will suddenly sound like channel 19 in the big cities, or channel 14 on a rainy day.

FM radio has what is known is a "capture effect," that is, the first signal reaching a repeater will capture the machine, effectively locking out others until the transmission is completed.

However, and this involves **Basic Rule No. 1,** what if two different repeaters are being used by separate operators? The result is an area, somewhere between the two, where the signals mix, and produce a sound remarkably similar to two cats fighting! Result? It's rather difficult for either party to hear a conversation or to answer a question.

Here, then, is **Basic Rule No. 1:** Monitor the frequency *before* you try to talk on the radio . . . listen before you key.

Not only is this an excellent operating practice for duplex (repeater) operation, it also applies to simplex. At times, even a simplex signal can be picked up by the repeater carrier, and a portion of your conversation could be heard by others, possibly leaving them with the impression that you could be deliberately trying to interfere with THEIR conversation. Incidentally, the "hang time" (No, not Michael Jordan! We're talking radios, here . . . not basketball!) of the repeater is also notorious for picking up signals from other repeaters, or, in some cases in big cities, picking up spurious emissions from repeaters in other radio services. There are methods of eliminating these spurious emissions, but it is a rather time consuming, labor intensive project.

Rule No. 2: Leave your transceiver in the *simplex* mode if you are not actively accessing a repeater.

Everyone involved with radio communications for any length of time has had the painful experience of listening to a carrier for LOOOONGG periods of time, because some careless operator tossed the mic on the car seat and then threw the groceries on top. Imagine if that happened to you, and you were transmitting your personal rendition of "Don't Be Cruel," through the repeater which has a 20-mile access radius. You're transmitting throughout a 1,200 square mile circle. Think your phone will be ringing later? You bet—many times, and most calls would probably express extreme displeasure at your attempts at radio karaoke. Avoid embarrassment and leave the radio on simplex! Yes, you would still be transmitting, but a least it would be a much smaller audience—within a 25-mile circle, and perhaps they would be more forgiving about your new talent, after they stopped laughing.

Rule No. 3: If you are using the simplex mode, and someone else uses the repeater, the repeater will override the simplex operation!

That's a fact of radio waves. Remember, a repeater is a higher-powered radio located in a high spot, using a really good antenna. A 40 watt repeater, with a six dB gain antenna acts like a 160 watt radio! OK, so there's some loss, but roughly each 3dB of gain effectively doubles the power. That much signal simply overwhelms the 5 watt HTs or the 15 watt mobiles. Unless you and the person you are talking to are really close, all you will suddenly hear is the other conversation, and the other parties will *not* be able to hear your conversation at all. They will not be deliberately interfering with you . . . they simply did not *hear* you.

The Family Radio Service may be affected by this phenomenon as well.

The new RadioShack 10-channel GMRS FM personal transceiver operates on the interstitial frequencies in the 462 MHz GMRS band. Output is two watts and includes one-touch access to GMRS emergency channel. The PRS-101 includes a NiCd battery pack, charger, belt clip and antenna. It retails for $219.99. (Courtesy RadioShack)

While there are no repeaters allowed in the service, and the frequencies are the "interstitials", the signals from the repeater or from the transceivers to the repeater *may* be wide enough to interfere. As this is written, some manufacturers have suggested more stringent bandwidths, but the official word has not yet been released.

Rule No. 4: If you are planning to use a repeater, accept your portion of the financial responsibility for its use.

According to the FCC rules, expenses for the purchase and operation of the repeater must be shared equally among the users, and all funds must be placed into an account which is dedicated to the repair, upkeep and upgrade of the repeater. In general, either an individual, or a group has purchased the machine, obtained the license, acquired the site, and is responsible for the operation of the repeater. They've done all the work, the least we can do is to pay for our use, and protect both our license AND their license by operating within the rules.

While we're discussing the rules, some interpretations of existing Part 95 of the FCC Rules provide for an agreement between the licensee and the users of a "Shared Use Community Repeater", that is, any repeater where there are multiple users, but only one repeater licensee. A simple explanation: unless *every* user is licensed for a repeater, it should be considered as "shared use." If this is the case in your area, read the agreement very carefully. If the agreement provides for the possibility of surrendering the license for cancellation if you should leave that particular repeater system, you probably should consider other options, or other repeaters. To change or reinstate the license will cost another fee . . . currently $60.

Rule No. 5: Only individuals may be licensed on the General Mobile Radio Service. No businesses may receive a license, although some businesses have continued to maintain an existing license, with no changes.

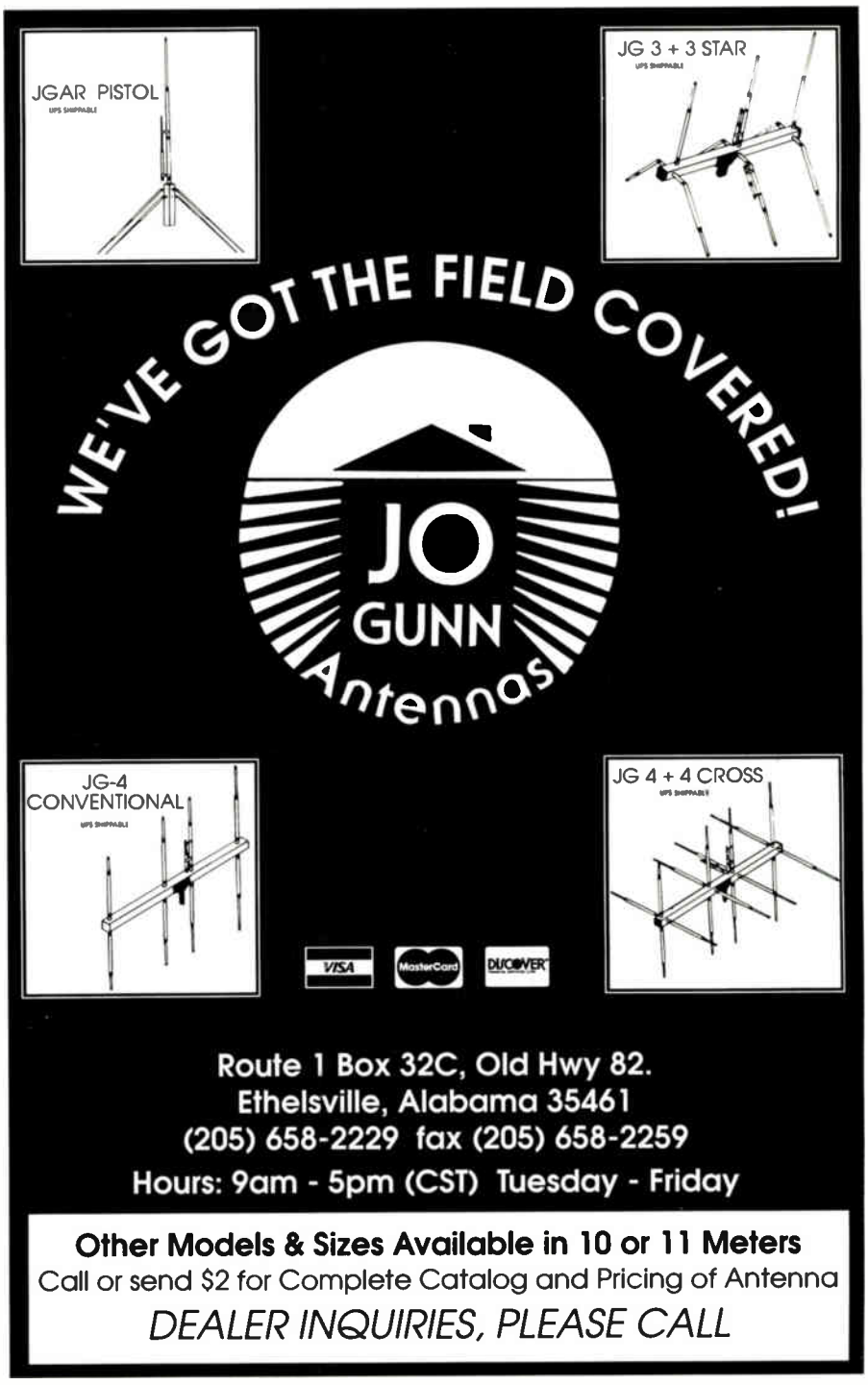
In 1987, the FCC changed the rules to allow more personal users, and less businesses in the GMRS. All businesses currently licensed on the service were allowed to continue to keep the license, but could make no major modifications. In 1992, a number of businesses and public service units were notified that the licenses were canceled because of modifications. Even today, businesses tend to appear on the frequencies with alarming regularity, due to a lack of knowledge or lack of ethics on the part of the radio technician or sales personnel.

Current personal users of other systems on the frequencies should identify and contact the business users, politely telling them that there is a problem, giving them the opportunity to change. The next step would be to contact them by mail, again very politely, with the specific FCC violations *by number and text!* At this point, send a copy to the FCC office having jurisdiction in your area. The rules specify that users should make every effort to work out disputes without involving the FCC. Usually the offending party will contact the radio technician to ask questions, and perhaps will contact you. Suggestions: don't at any time start acting like a radio cop, or develop an attitude. More can be accomplished with honey than vinegar, so be cool and just maybe the offenders will be more inclined to work with you. It's always easier to work out the differences without having to involve the bureaucracy.

The general rules listed here are simply based on common sense, consideration of others and more than two decades of experience using GMRS, CB and amateur services. Repeater operators will probably have more specific rules pertinent to the use of the individual machines across the country. If you have certain rules that you would like to share with others, please let us know.

For more information on GMRS or FRS, please contact me here at *CB Radio* or REACT International, P.O. Box 998, Wichita, KS 67201; Personal Radio Steering Group, P.O. Box 2851, Ann Arbor, MI 48186; or me directly at J.A. Simpson, 12766 Tyler Avenue, Waukegan, IL 60087.

Until next month . . .



Tech Talk With Gordo

EXPLORING THE TECHNICAL SIDE OF CITIZENS BAND

By Gordon West

Using Portable SWR Meters

Now that the rainy season has past, it's a good time to check out your base and mobile antenna systems for wet-weather damage. A simple multi-meter set to the Ohm's scale can help spot water-logged coax cable. An inexpensive SWR bridge can give you a double-check that both the antenna and feedline may be operating normally, but the portable SWR analyzer meter is one of the best ways to get "up close" to your base or mobile antenna system for extra fine tuning of the actual antenna elements.

Checking the Coax

Rain and snow can sometimes wipe out a good piece of coax cable run between your CB transceiver and your antenna system. Start your investigation with the following tools: needle-type multi-meter, pliers, sealing putty, alligator-clip lead, and a helper.

Your first step is to disconnect the coax cable from the base or mobile CB transceiver. You will attach one alligator-clip lead to the center pin of the PL-259 connector on the cable, and your helper will selectively touch the outside sleeve of the connector with the other end of the alligator-clip lead—a deliberate short-out of the connector that enables you to see the results with your test meter at the other end of the cable.

Now it is your turn to get to the far end of the coax cable run and disconnect the cable from the antenna system. For mobile antennas and base station vertical antennas, you should have no problem reaching the connection point. On big base station beam antennas mounted on a tower, you may have installed a coax cable barrel connection jumper that might let you isolate most of the coax cable going to your station down below. On major beam antennas with no access to the connection point, you may just have to do a visual check to see if your system is working properly.

Look at the antenna connection point coax cable hookup. Was it covered with putty or black tape? If so, the connection should look clean and corrosion-free once you get down to the actual wires or plug. However, if the coax cable plug or wires were exposed to the rain, there is a chance water has seeped into the coax and is robbing you of valuable output power and sensitive receive capabilities.

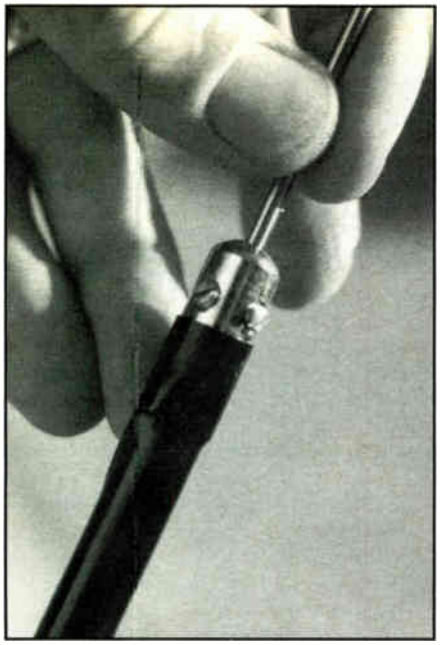
When a big base CB antenna gets water into it, you must remove it to drain out the water. WATCH FOR POWER LINES!

The test is simple. Turn your multi-meter to the Ohm's position. Now select the highest value Ohms it will read; such as R x 10,000. Putting your fingers on the red and black multi-meter leads, you should see a slight indication of continuity. Now put the red and black leads between the tip of the feedline connector and the outside connector ring. If the needle floats up to 1/3 or 1/2 scale, you probably have water in the line and will need to change the entire length of coax. Even if the needle slightly moves up, this indicates continuity between the center conductor and the outside braid that should be entirely insulated.

If the needle does not move, double-check that you re making a good connection by asking your helper down below to momentarily short and open the far-end connector. Your meter should go all the way to the right, then all the way to the left, and back and forth every time they open and close their connection.

Now double-check that the coax is absolutely dry by once again double-checking for infinite resistance—no needle movement—when you're between

The whip needs to be lengthened. It's best SWR is at 28 MHz, when it should be at 27 MHz.



LENGTHEN the mobile CB whip to LOWER the best SWR readings.

The MFJ SWR Analyzer is a fast way to check a mobile CB antenna's resonance.

center pin and the outside metal connector ring. If your coax is good, or you are replacing your coax with a new length of cable, be sure to seal up the antenna end of the connection as best you can to repel any water from seeping in. I recommend Coax Seal™, a commercial product available from two-way radio stores throughout the country, or direct from Universal Radio in Reynoldsburg, Ohio at 800-431-3939.

SWR Checks

Now it's time to check out the antenna for proper operation. We will be measuring the standing wave ratio (SWR) of the antenna which shows us the ratio of current or voltage delivered to the antenna by your transceiver, and an indication of reflected current or voltage back out of the antenna, called the reflection coefficient. P = SWR—1 divided by SWR + 1.

An elevated SWR above a perfect 1.0:1 results in reactive power that is not radiated by the antenna. An SWR reading of below 2.0:1 is considered good if it covers from channel 1 to channel 40 below this level. A 2.0:1 indicates 10 percent reflected power; this is NOT a problem.

However, 3:1 or higher means more than a quarter of your power output is reflected power, and this is NOT good.

For the most accurate SWR readings of the base or mobile antenna you are testing, the SWR bridge must be as close to the antenna as possible—not way down there by the transceiver. This is why the inexpensive in-line SWR meter, read down at the transceiver, may give you a lower reading of actual antenna mismatch than what you would get right up at the base of the antenna. And if you try to use these in-line meters at the base of the antenna, you'll get hoarse yelling back down for your helper to transmit, and then stop transmitting, as you make your antenna adjustments.

An easy way for testing SWR right at the antenna is with a battery-operated SWR meter that contains its own flea-powered transmitter and a dial readout or frequency counter to show you the actual MHz and kHz frequency you have dialed in. Two companies produce portable SWR analyzers priced relatively low for the communication hobbyist:

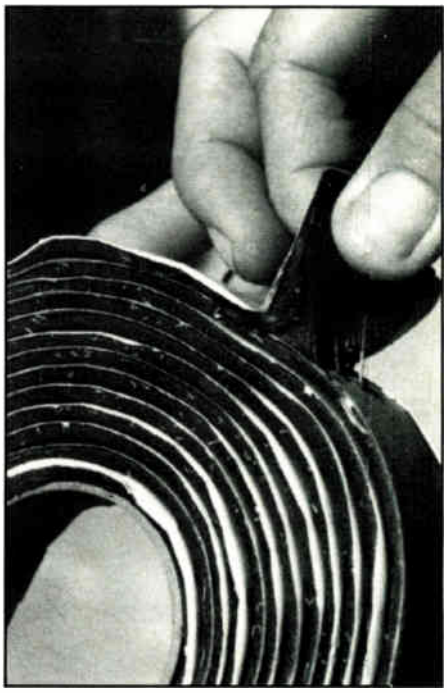
AEA (**Advanced Electronic Applications**) of Lynwood, WA 800-432-8873. Their product is the No. 121HF "Antenna Analyst", priced at $375.

Also, **MFJ Enterprises, Inc.**, in Mississippi State, MS at 800-647-1800 has product No. 207 at $75; product No. 209 at $100 and No. 249 at $200.

If you are extremely technical, you will enjoy the expensive AEA portable SWR Antenna Analyst. A built-in LCD screen shows you where your antenna is resonant. If you are looking for a husky "do all" SWR antenna analyzer, the more expensive MFJ SWR analyzer features a built-in frequency counter to precisely spot exactly where your SWR is at a minimum.

But if you're just looking for a good handy device that reads out 27 MHz on the dial, the under $99 MFJ models work quite nicely with their built-in SWR meter and transmit capabilities.

Each of these devices puts out less than a miliwatt of signal that you would adjust to 27.205, CB channel 20, in the



Sticky Coax Seal™ is easy to work with and protects your coax connectors from the elements.

Here's a look at a feedpoint connection sealed with Coax Seal™.

None of the coaxial cable plugs seen here are waterproof. They MUST be sealed.

center of the band. The portable SWR Antenna Analyzer is then connected with a three-foot jumper cable to your base or mobile CB antenna. You undo the long coax that goes to your transceiver, and substitute this portable unit and the short jumper in its place.

As soon as the antenna connection is made, move away from the antenna with your SWR analyzer so as not to influence its natural resonance from the capacity of your body being nearby. At 27 MHz, a couple of feet away from the antenna won't influence its operation. Tune slightly up and down from 27.205 MHz and watch the self-calibrated SWR scale. Try broad-tuning from 26 to 28 MHz, and you should see an extremely sharp dip of SWR at around 27.2. Things are looking good—especially if the SWR takes a sharp nosedive to below 2.0:1!

If the SWR is taking a nosedive down at 26.965 MHz, CB channel 1, and begins to soar at 27.405 MHz, channel 40, your antenna is about an inch too long for best operation in the middle of the band. If the SWR is extremely low at 27.405 MHz, but begins to soar below 27.005 MHz, your antenna is physically an inch or so too short for mid-band operation.

To LOWER the best frequency response of your antenna system, slightly LENGTHEN a portion of the radiating element. On base antennas, you may need to move the elements out by as much as an inch or two. On small mobile antennas, just a fraction of an inch longer will make all the difference in the world!

If you need to raise the low SWR performance frequency of your antenna, slightly shorten the antenna by loosening the whip or radiating element adjustment screw, and slightly telescope the radiating element into the next element down. On short mobile antennas, just a fraction of an inch is all it takes to go up several hundred hertz.

If you sweep the antenna from 26 to 28 MHz, and see no DIP in the SWR meter, you may have big antenna problems. Double-check that your three-foot coax jumper cable has properly soldered connectors. Test it with your ohmmeter.

If your CB antenna performance has been whacko, and the portable SWR analyzer shows no sharp dip, chances are you have water inside the radiating element or in the mount. Time to take things apart and see what the problem is. I have poured more than a cup of water out of some vertical CB antennas, and as soon as things dried out, the SWR then began to look normal on the SWR analyzers.

The best thing about these new accessory measuring devices is their portability to do your own SWR checks from the roof, without having to yell down to someone to transmit at your CB station. It also keeps CB signals out of your face and off your hands when you're doing adjustments. The below one milliwatt output of these devices is considered extremely safe by American National Standards Institute for RF safety precautions.

Rainwater got into this open coax connector and SWR went off the scale!

Once you've completed your SWR checks and precisely tuned the radiating element of your CB antenna system, remove the analyzer, reconnect your coax, and SEAL THE OUTSIDE CONNECTION, and then get set for improved CB radio antenna efficiency. ■

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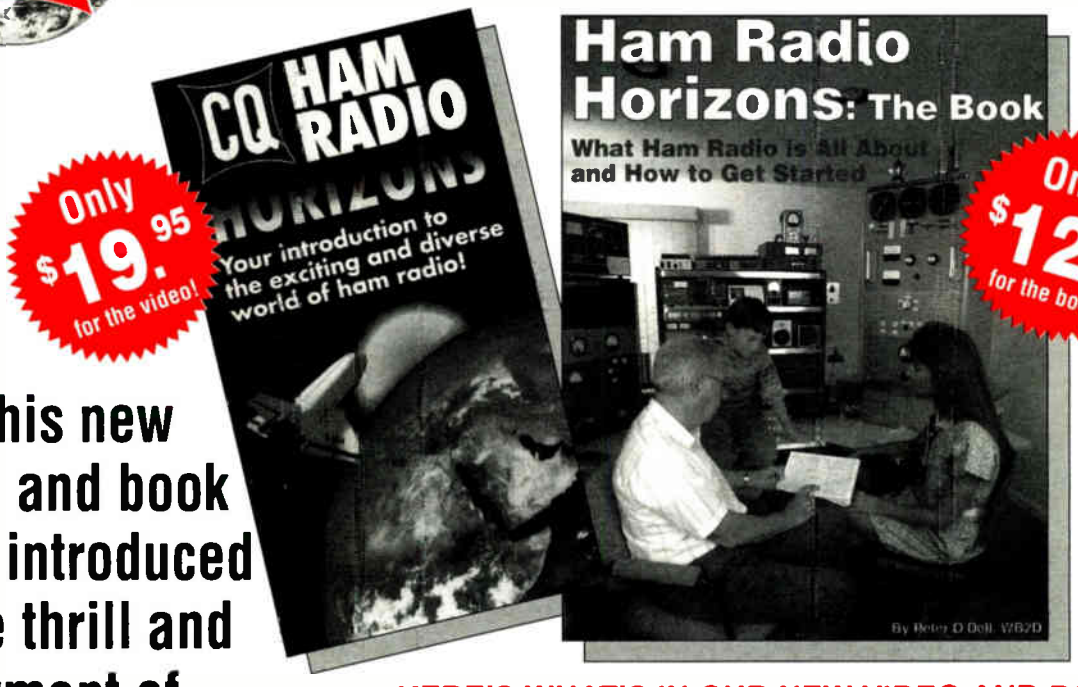

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WHAT'S HAPPENING ON THOSE CB SIDEBAND CHANNELS

By Ed Barnat, TCA44

You Meet the Nicest People

Shiny buttons, glowing lights and bouncing meters alone do not make good radio. At least not in the true sense of the word. No matter how skillfully designed or expertly assembled a radio is, even an SSB radio, it remains just a box of electronic gadgets, until you turn it on. Even then, all you really have is a box of electronic gadgets that make odd noises. It isn't until you add another element, a very essential element, that makes this box of gadgets more than an interesting collection of technical wizardry. That element is people. For after all the noise, after all the toys, it is people, after all, that makes a radio a radio. People are radio's heart, indeed; people are radio's soul. This is especially true for SSB. For it is the people you find on sideband, more than anything else, that makes SSB truly enjoyable and unique.

While I have had the distinct pleasure of getting to know many fine radio operators, two of the most enjoyable and exemplary operators I have ever met are Ken and Florence Hopkins of Clifton Park, New York. They are a pair, they are partners in life as well as on the air, and not surprisingly, they are sidebanders!

Long-Time Radio Operators

Ken and Florence have been on the radio longer than they have been together—more than 20 years. It was CB that brought them together. Comfortable and competent on both AM and SSB, they are a true life radio romance story. Bachelor Ken and widow Florence met at a CB club meeting. Before long, they fell in love and were married. Since then, they have developed into extremely competent and versatile radio operators, acquiring a technique and style that is open, friendly and efficient. Florence can often be heard early mornings chatting with long-time friends like "Fireball" on the local AM home channels. Ken is an award-winning mobile operator in the local Channel 9 assistance network. Obviously the Hopkins are not your "average" CB radio operators. They are the kind of people that you would like others to think of when you mention the word CB.

Using Stock Equipment, Too

Neither Ken nor Florence are technojocks. They have achieved their on-air success by using strictly stock equipment—no modifications at all. It's all straight out of the box. Even their SSB clarifiers remain unclipped. For a base station, the Hopkins run a RadioShack Realistic TRC-459. It's an oldie but a goodie. Microprocessor-controlled, it is capable of scanning channels, a feature sorely missing from some more modern CBs. Their base antenna is an Antron 99, with the optional ground plane attachment mounted about 10 feet above the roof line. The overall height is about 40 feet from ground level to the tip of the antenna. For mobiles, they run a pair of TRC-450s attached to K40 antennas. One in their car and the other, picked up for five dollars at a garage sale, in their RV motor home. The latter is most often used on AM while on vacation in order to keep in touch with the operators of their favorite campground.

Despite their low-key approach to CB, Ken and Florence are living the dream; the dream that CB manufacturers allude to as they try to sell us their wares—the dream most of us never achieve. It's the dream of dependably keeping in touch with our loved ones while they are on the road. It is a dream that the Hopkins readily admit they could not have achieved without the use of SSB. To communicate

(Photos by Ed Barnat)

The Hopkins' Antron 99 with ground plane kit.

Here's Florence Hopkins at their TRC-459 base station.

Using the RadioShack TRC-450 mobile radio, Ken gives Florence a call on LSB 39.

from their Southern Saratoga County home to the Pepsi Cola bottling plant in Colonie (Northern Albany County) is no easy feat. To do it they have to cover about 10 air miles. "It just wouldn't work on AM," observed Ken. "AM just doesn't have the range. We like to chat on my way to and from work. We tried using AM for a while. When local conditions were very good there were times when we could actually talk all the way. But even when we could, it was hard to hold any kind of conversation. It seemed that we were always being interrupted. Radio checks, carrier chuckers, folks jumping in and talking over us without even asking for a break—you know what it's like. If the skip came in or there was any kind of noise level, forget it. We couldn't make it more than half way," he continued.

Enter SSB

"Then we started using sideband," Florence added as she switched on their Realistic TRC-459 base station for a quick demonstration. "Since then there has hardly been a day that I haven't been able to talk to Ken all the way to work in the morning and then back home again in the afternoon. Sure, there are times when it's tough to get through. Bleed, by far is the worst problem. We've got our share of overpowered stations in the neighborhood. When they are on the air the bleed is horrendous. So far, though, the extra range of SSB has been able to keep us in touch day in and day out, good conditions or bad. That extra range, however, can post some peculiar problems particularly when it comes to keeping operations strictly legal," she said.

"Sometimes the range is a little too good," said Ken with a grin. "When the skip is in, it's not at all unusual to have some 'out of towners' join the conversation. Sometimes they are from out west, like Texas. Most often they are from somewhere down South; Georgia or Florida. One afternoon, however, we even had a gentleman from South Africa join the conversation for a few minutes."

Both Ken and Florence acknowledge that there are more advantages to SSB than just greater range. "The people are usually a lot easier to work with," they say. "Sure we still get interrupted for the occasional radio check and the like. But it doesn't happen nearly as often on SSB as it does on AM. Besides, sidebanders usually wait until there is a lull in our conversation before cutting in. Rarely will they key up and talk over us. That makes it nicer. You don't mind taking the time to tell folks like that how their radio is working. When they show you that much

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The Hopkins' club pins and badges.

respect, you don't even mind letting them join in the conversation. In fact, it is usually a pleasure, especially when it is a new voice. We need new operators, you know," she added.

Both agree that the general level of operator skill on SSB is higher than on AM. Although they also admit that they both have trouble "pausing" on the key. "I just hate it," Florence protests, "when somebody yells at me for not leaving that three second pause. That long of a pause is OK when you're just yakking to take up channel space. Sure, we leave a short pause between keys, you know, so somebody can jump in and say hello or call a party to move to another frequency. But, when Ken and I are on, we are usually engaged in an active conversation. We are not particularly looking to have other people join it. They are welcome to if they like, but that is not why we are there," she said.

Yes, you can always count on being able to get a break or quick radio check when Ken and Florence are on the air. But you better not try to take over 'their channel'; at least not during 'their time.' That happened not too long ago. A couple of operators began showing up on 39 LSB with long conversations just before the Hopkins' usual rendezvous time. For the first couple of days Ken and Florence would get a break, make contact and move to another channel. "I didn't know what to make of it at first," admitted Florence. "After a few days it became apparent that they were going to do this every day. Now I don't mind sharing the channel, but I wasn't going to be forced to move to another one on a permanent basis. After all, Ken and I had been running the same schedule on the same channel for a number of years. If anybody was going to move, it would have to be them," she said. And them it was. One afternoon, Florence—she is the spunky one—engaged the interlopers in conversation and explained the situation to them. They had no idea that they had been interrupting a long-standing schedule. They agreed that they should be the ones to move, and did. "Folks like that are a real tribute to sideband," Ken said. "More people in 'real life', should be as considerate and cooperative as SSBers. We once had a neighbor who claimed that we were bleeding his TV. He got real upset about it. I don't even think it was us. There were several other stations in the neighborhood at the time. Even so, we offered to buy him some filters, but he would have no part of it. He wanted us off the air and that was all there was to it. He even went as far as to cut our coax," Ken added.

A Sad Note

One postscript, Florence Hopkins recently passed away. She'll be missed by all of us. ■

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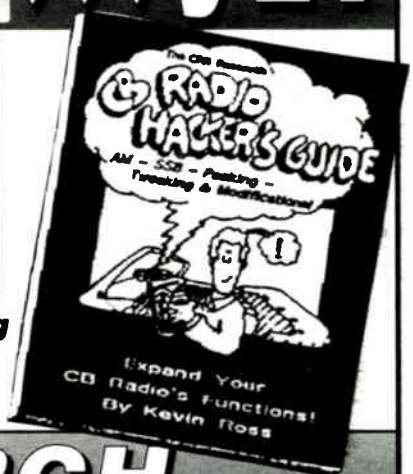

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CB Codes and Jargon

The following list of CB codes and jargon was sent to us from Curtis George of Maryland. Thanks, Curtis. While we haven't included your entire list, Curtis, we're running the more important items . . .

10-4	Affirmative (ok)
10-5	Relay message to _____
10-9	Say again
10-10	Negative (no)
10-12	Stand by (stop)
10-16	Reply to message
10-33	Accident
10-36	Correct time
10-43	Information
10-55	Intoxicated driver
10-77	Estimated time of arrival (ETA)
Advertising	Police with lights on
Back door	Anything behind you
Back-em-down	Slow down
Bean store	Truck stop
Bear bait	Speeder
Beat the bushes	First vehicle in convoy
Bear cave	Police station
Bear in the air	Police helicopter
Bedbug mover	Moving van
Big 10-4	I agree with you 100 percent
Big Apple	New York, NY
Big R	Roadway
Big road	Interstate highway
Big Windy	Chicago
Blow your doors off	Passing very fast
Bobcat	Truck cab (not pulling a trailer)
Bone box	Ambulance
Bring it on back	I'm listening for your reply
Buster Brown	UPS
Cash box	Toll booth
Chicken coop	Truck scales
Clean	Nothing going on
Coal bucket	Coal truck
Container	Tanker truck
Cornflakes	Consolidated Freight Lines
County Mountie	Sheriff
Crystal clear	Your signal sounds good
Disco lights	Lights on top of emergency vehicles
Double nickel	Speed limit 55 mph
Do-it-to-it	Nothing going on
Evil Knieval	Motorcycle
Feed the bears	Getting a ticket
Forty-two	Affirmative (ok)
Four wheeler	Passenger car
Got your ears on	If you heard me, please reply
Granny lane	Right (slow) lane on a highway
Green	Nothing going on
Green stamps	Money (also speeding fines)
Grip on me	Receiving my signal
Hammer	Accelerator
Hammer lane	Left (passing) lane of highway
Handle	Name you use on CB
Home 20	Home location
How about it	If you heard me, please reply
How about you	If you heard me, please reply
Kiddie Stage Coach	School bus
Landline	Telephone
Local information	Information about an area (directions)
Local Yokle	Local police
Mo Town	Detroit, MI
On the side	I'm listening but not talking
Parking lot	Car carrier
Pickle park	Truck stop
Pick-'em-up	Pick-up truck
Picture taker	Police with radar gun
Piggy bank	Toll plaza
Plain wrapper	Unmarked police car
Pony express	Mail truck
Pregnant rollerskate	Volkswagen Bug
Queen City	Cincinnati, OH
Ratchet jaw	Someone who talks all the time
Reading the mail	Listening but not talking
Rig	The CB radio
Right Back at Ya	Same to you
Rocking horse	Safe place in convoy
Roger	I agree
Roger-D	I agree with you 100 percent
Sandbox	Six-wheel dump truck hauling sand
Sandwich lane	Center lane of multi-lane highway
Shake the trees	First vehicle in convoy
Shakey Town	Los Angeles, CA
Smokey	State trooper
Smoke with ears	Police listening
Stage coach	Over road busses
Steel City	Pittsburgh, PA
Super slab	Interstate highway
Spy in the Sky	Police helicopter
Thermos bottle	Tanker truck
Threes & Eights on You	Hugs & kisses, see ya later
Thunder chicken	Ford Thunderbird
Tiajuana Taxi	Market state police car
Walk it on back	I'm listening for your reply
What am I hitting you with?	Give me an S-meter reading
What's your 20?	Where are you located?
Willy Weaver	A person all over the road (possible drunk)

Product Spotlight

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

By Harold Ort, N2RLL, SSB-596

RadioShack TRC-232 CB Walkie-Talkie

Specifications: CB walkie-talkie features 40 channel operation, Channel 9 priority, lighted (with simple push button control) LCD display window, rotary top-mounted volume and squelch controls. Side-mounted dual watch, channel scan, high/low power, last channel recall (LCR), up/down channel selector and push-to-talk (PTT) buttons.
Power requirement: 13.8 Vdc with supplied cigarette lighter adapter assembly, 6 "AA" alkaline batteries or nine "AA" NiCd batteries (not included). Also includes rubber duck flexible antenna (BNC connector), separate battery cases for alkalines or NiCds, carrying strap and instruction manual.
Dimensions: (HWD) approx. 7" x 2 1/2" x 1 1/2".

Good grief, the box is over a foot long and 4 1/2" wide, so I was pleasantly surprised when I finally got to this walkie-talkie and found it was shirt-pocket size. Looking a lot like a brand new state-of-the-art ham HT, this is one of the most professional, smart-looking CB walkie-talkies I've seen in a long time. Sure, there are lots of different styles out there, but this top-of-the-line RadioShack handheld really looks great!

Several years ago, one of RadioShack's best—in my opinion—walkie-talkies was the TRC-216. Plenty of them are still in the hands of CBers all around the country. It was an excellent performer, but since then, they've come out with many more 40 channel models that are worthy of a peek. The TRC-232 is no exception. It's twice as small as my old 216, much lighter and user-friendly. Let's take a look.

It's easy to see that this is no "toy" CB walkie-talkie, unless of course you want to plunk down the $169.99 for each unit and let the kids have the fun that's meant for YOU. Designed primarily for people who want pocket-sized quality CB communications, the TRC-232 has a lot going for it.

The first thing that caught my attention is the sturdy combination cigarette lighter power cord/mobile antenna cable assembly. What will they think of next? This handy device easily slides onto the bottom of the radio (with the battery pack removed) and allows the user to power the radio, now only slightly larger than a typical mobile CB microphone, and connect it to an external antenna! It works as well as it looks, too.

The RadioShack TRC-232 CB walkie-talkie comes complete with a handy vehicle power/antenna adapter. Simply remove the battery pack from the bottom of the radio, slide on the power adapter, plug in the cigarette lighter cord, connect your antenna, and you're on the air from your vehicle. In this configuration, the radio is only a bit larger than a standard mobile CB mic. The power cord isn't a flimsy cord either, and the plug is even fused.

I connected the SO-239 to my base antenna and the cigarette lighter plug to a regulated power supply. "Country Boy" was on channel 25, so I gave him a shout. Just to see if he noticed a difference between the TRC-232 and my base radio, I didn't mention that I was checking out a walkie-talkie. We talked for quite a while; he apparently didn't notice a difference.

Hopping down to channel 19, one driver couldn't believe it was a walkie-talkie. He reported "clean, great audio and you know what?—it sounds better than half the radios out here . . ." Needless to say, that's enough to make anyone feel great! On the receive end, this radio isn't as sensitive as it might be, but believe me, it's fine for its intended purpose: one walkie-talkie to another walkie-talkie CB communications and for use as a great-sounding mobile rig when you want the punch of a full 5 watt rig, and the convenience of being able to super-easily remove the CB from the vehicle every time you're away. Simply push up the sliding switch on the left of the radio and the adapter comes off. You take the walkie-talkie with you, and while away from your car you have the added versatility of using either of the two battery packs!

(Photos by Harold Ort, N2RLL/SSB-596)

Unlike the RadioShack amateur HTs, the battery pack on the TRC-232 slides off from right to left. It's a bit awkward, requiring a good grip on the radio portion of the unit.

Curiously, on RadioShack's ham HT's, tne HTX-202/404 models, the battery pack slides off the bottom of the radio from *left to right*; after all, the release button is on the left and sliding the battery to the right seems to have a "natural" feel. But on the TRC-232, while the release button is in the same place, the battery pack slides off to the left, toward the release button. It's slightly awkward and not as easy to remove the battery as you'd expect. Nonetheless, it's still a vast improvement over some simple slide-off battery compartment holders. I find they make less than perfect contact, causing intermittent operation of portable radios.

Walkie-Talkie to Walkie-Talkie Talking Distance

Listen to most prospective walkie-talkie buyers and they typically want to know how far they'll be able to talk. It's a lot like asking how far you'll go in that new car between fill-ups. Lots of factors come into play; terrain between units, condition of the batteries, and type of antenna being used to name a few. Too many users just don't understand that while a 5 watt CB is a 5 watt CB, once you put those 5 watts in your hand, attach a rubber duck antenna to the radio and go down to street

Here's a look at the 6 "AA" alkalines in the battery pack. Always use alkalines or (in the other supplied battery case) NiCds, and NEVER mix types of batteries! We found the battery cases somewhat difficult to open; for this reason we suggest buying NiCds and a charger right away. This way you open the NiCd case once and you're set for a long time.

level or out in the woods, you simply aren't going to "get the range" you did with the radio hooked up to your base antenna.

That's not to say walkie-talkie to walkie-talkie distance can't be impressive and very useful, because it can, as these two professional units proved.

It's been my experience that initially people will buy two CB walkie-talkies, and put brand new alkaline batteries in them, opting for the more expensive NiCd batteries in a few days when the alkalines die. So that's how we tested the TRC-232's. Besides, popping six "AA" RadioShack alkaline batteries in each unit was a lot easier and quicker than charging the NiCds overnight!

Probably the best thing about checking out walkie-talkies is getting exercise; not a lot, but it's my kind of exercise—just a little bit! Walking around the block there were no "dead spots" in transmission and reception between the 232's, just lots of crystal-clear communications. And that was on low power! Using the high power setting in situations like this is a waste of precious battery power and, if you think about it, there just might be times when you only want to be heard in your immediate area.

Slipping the unit in my coat pocket, I headed for downtown. Remember, the range I got between these units may not be the range *you* get. With the unit on the high power setting (full 5 watts), the walk through residential streets—terrain made up of two story homes, trees, and overhead power lines—was a lot more fun with the CB in hand. There were no hills or high-rise buildings between the two ground-level units. I was able to talk nearly all the way downtown, about 1 1/2 miles, using the two identical TRC-232s. The best part was that I was using the supplied rubber duck antenna; using a special order (RadioShack CMC 21-003) telescoping center-loaded whip antenna would have certainly allowed me to reach considerably further. The audio was crisp and clean.

While stopping on my walk (at a nearby bagel shop!), I asked my wife to hook up her TRC-232 walkie-talkie to the base antenna and to call me in a minute. It wasn't long before her call came through. No doubt about it, it sounded just like a base unit to me! She reported my signal to be "like you're in the backyard."

While conducting these simple tests, walking through the neighborhood and near downtown, I couldn't help thinking that using these RadioShack walkie-talkies was indeed a great way to stay in touch. If you see something unusual, your base operator can report it to the authorities. Forget to put something on the shopping list? No problem, you've got the radio for an instant reminder!

Special Features

Here's a CB walkie-talkie that's loaded with those "extras" that really make the difference between an ordinary CB walkie-talkie and a user-friendly transceiver. Take for example the easily-read LCD display window. I tested it in several different lighting situations; at night, a simple push of the side-mounted "LGT" button lights the display from both sides of the window. Don't forget to push the button a second time to turn off the light—it really eats up your batteries. It's best to use the light only when you really need to.

Using the TRC-232 is straight forward. Put in the batteries, adjust the squelch and if you wish, the power setting, and you're in business. Push the "LCR" (Last Channel Recall) button to return to the last channel that you used for more than three seconds. Push the "SCAN" button to scan through all 40 CB channels. It'll stop scanning for five seconds on each channel where there is a transmission. Push "SCAN" again to stop the automatic scanning.

You can also use the handy "Dual-Watch" function. This feature allows you to alternate between two channels. Simply select one channel, press "DW", then using either the up or down buttons, select another channel you wish to monitor. And of course there's instant Channel 9 ("09" flashes in the display window when you've pushed the Instant Channel 9 button) for those emergency transmissions. Sure, you can also access Channel 9 by using the up/down keys, but sometimes you need to get there pronto! A Key Lock feature allows you to lock the walkie-talkie's functions (except the PTT, LGT and High/low power controls) to prevent accidental program changes.

A handy bargraph signal strength meter gives you a relative idea of received signal strength and an indication of your outgoing signal, too. I rarely used it, relying instead on my ears to give me the best signal report.

A look at the TRC-232 walkie-talkie with the alkaline battery pack attached. Using the supplied rubber duck antenna it puts out a potent signal, easily giving about 1 1/2 miles unit-to-unit range in a residential area. The professional appearance of the unit is matched by its performance!

A Great Performer!

Since range is what most CB walkie-talkie users are concerned about, let's talk about the TRC-232's range. It's absolutely superb! And that's using the supplied flexible rubber duck antenna. Those small rubber antennas are, very

honestly, a major compromise in radio communications. Replace one or both of them with a telescoping whip antenna and your range will dramatically increase. It's a simple fact. But even with the included rubber duck antenna, I was able to easily communicate in a fairly dense suburban neighborhood, about 1 1/2 miles. Frankly, I could probably have kept walking; my wife's signal, from that identical TRC-232 would, of course, grow weaker as I continued my walk, but the point is, the signal was fully readable—and she was inside the house!

During the test we deliberately used channel 21; close enough to 19 to receive possible adjacent channel interference. There was none. A couple of times I quickly checked out the activity there, and there was plenty, but the good news was that it wasn't bleeding over onto channel 21. The receive audio was outstanding—very powerful, indeed. A couple of times we both had to *lower* the volume—something that doesn't happen that often with other CB walkie-talkies.

A word about the battery packs: forget opening them if you have long fingernails (it's impossible!) or if you do exactly as the owner's manual says, " . . . using your thumb, press down on one of the arrow marks on top of the battery case and pull it open." What they meant to say was, "Using your thumb, near the arrow, press down *really hard* on the + (Positive) side of the battery case and carefully pull it open." It's for this reason, I'd recommend getting the NiCd batteries and using a RadioShack wall charger. Once you've opened the case and inserted the NiCds, you'll be set for a long, long time.

Aside from the awkwardness of getting the battery packs off the radio and opening the pack to insert the batteries, the RadioShack TRC-232 is a fine CB walkie-talkie. It puts out a potent signal, is professionally-equipped and has loud, clear receive audio.

The TRC-232 walkie-talkie accepts the RadioShack 19-310 Speaker/mic and the Headset mic with VOX. These handy accessories, plus the added benefit of having a nearby RadioShack store for in-warranty service makes the TRC-232 an outstanding value! It's $169.99. Ask for catalog number 21-1672 and tell them you read about it in *CB Radio* magazine.

The Wilson "Little Wil" CB & Amateur Antenna

BY NANCY BARRY, SSB-931

The "Little Wil" CB & Amateur Antenna is a small, base-loaded, magnetic-mount mobile antenna for use on both CB and amateur rigs. The "Little Wil" offers 300 watt power handling capability; a heavy-duty coil that uses 14 gauge copper wire; and a frequency range of 26–30 MHz. The whip is 36 inches high and is constructed of stainless steel. It has a large, 10 oz. magnet and the total antenna height is 38 inches. The "Little Wil" comes complete with coil, magnet mount, 36 inch antenna whip, coax cable AND a one-year guarantee.

Quite the Misnomer!

There's nothing "Little" about this antenna (except its size, of course). I had been working with a typical "I've got a CB—I need an antenna to put on it" situation—basically a run-o-the-mill "cheapo" antenna—a no name, no reception kind of thing. I could talk with someone only if it was the second Tuesday of the tenth month . . .Well, you get the picture.

Then I connected the "Little Wil." Wow! What a difference. Suddenly, there were people out there—people I could talk to.

Actually, I spend more time listening than talking. I generally check out what's happening on Channel 9, and then I change over to channel 19 to listen to what the truckers have to say, and then check-in with the hubby on a previously determined channel.

When I first started using the "Little Wil," the clarity of the signals I was receiving was amazing. I really was surprised that I was able to hear people talking on the Long Island Expressway as I got further and further away, with more and more buildings, etc. between us. I decided to try calling my husband. We were able to communicate a distance of about five miles on AM. To ensure that the antenna was working up to peak efficiency, I checked the SWR at channel 20. It was 1.5:1 and slightly higher at channel 40. All this without any adjustments.

I get the best overall reception and transmission with the antenna located at the center of the roof of my car.

New Rigs

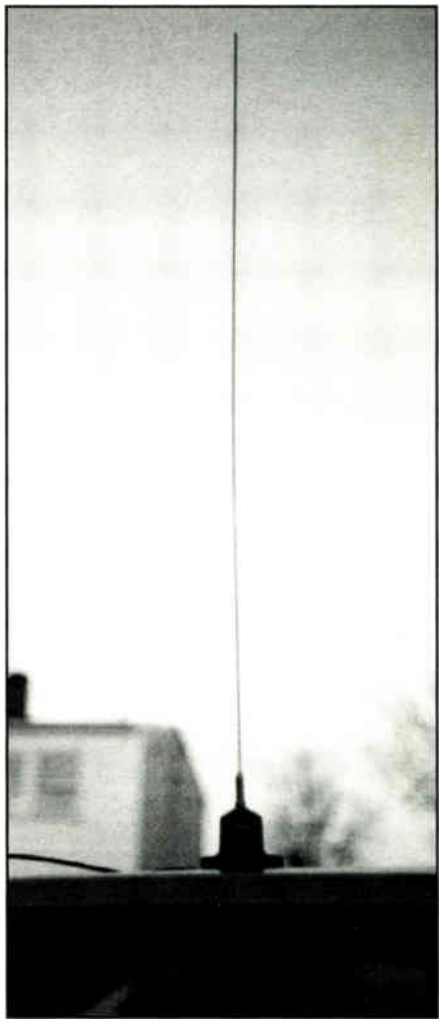
Well, once my husband and I realized the potential of our CBing, of course it was time to move up to SSB. We bought two new mobile rigs to go with the "Little Wil." It just didn't seem right, having a great antenna and a CB that limited us to using only AM. You know how it is, the grass is always greener . . .

The truth is, our matching CBs were my husband's Valentine's Day gift to me. That's what happens when you work on a CB magazine. FINALLY! A job "hazard" I like! Boy now we can talk all over the place; and if he forgets the list for the supermarket, it's not a problem!

Now with the "Little Wil" and my new CB, I can hear people from New Jersey on lower sideband. Not bad for a little car driving around on Long Island!

Not Just for Fun

Now that I have a quality antenna and 40 channels upper and lower, I'm able to contact people all over Long Island. It provides a sense of security. Many of you will understand where I'm coming from. A woman in a car, driving to and from work with a baby in a carseat. I've always been



The Little Wil antenna. Remember, always check your cable, especially if it is closed into a hatchback. (Photo by Jim Barry, SSB-930.)

concerned about what I would do if my car broke down on the parkway. With a baby in the car, it's not as easy to just leave the car and seek help.

This past weekend, my husband was out on the road, running errands, etc. After a while, I turned on our base CB in the house, to find out when he'd be back. It turns out, he was stopped on the side of the road changing a flat after hitting one of our "small" potholes left over from one of our most recent snow storms. I was able to find out that everything was under control and that he would be back soon. I'm usually the type that worries, so this whole CB thing is really great.

Thanks, Wilson!

Thanks a bunch to Wilson Antenna, Inc. for a fabulous little antenna that really packs a punch! If they keep this up, I can't imagine what my next rig will be!

If you're interested in getting a great little antenna for a great price (suggested retail $30), contact Wilson Antenna, Inc., 1181 Grier Drive, Suite A, Las Vegas, NV 89119; or phone 800-541-6116; or contact your local Wilson Antenna dealer.

CIRCLE 100 ON READER SERVICE CARD

Tomcat's Big CB Handbook by Tom Kneitel, SSB-13, K2AES

A REVIEW BY NANCY BARRY, SSB-931

If you're new to CB or if you've been operating for years but want to learn more about your hobby, this is the book to read. *Tomcat's Big CB Handbook* by Tom Kneitel is 222 pages packed with everything from FCC regulations to accessories to getting maximum range from your CB. It's 19 chapters filled with everything a CBer needs to know (plus some!), all with photos, drawings, diagrams and some of the funniest cartoons I've seen in a while. Three of my favorite cartoons are on pages 44, 45 and 79; take a look.

As Mr. Kneitel states in his Introduction, this is "a frank, blunt, and candid look at contemporary CB . . ." that serves both as an introduction to the world of 27 MHz communications, and as an encyclopedia of CB terms, codes, practices, and lesser-known facts.

Why Read About CB?

Some people assume that because CB doesn't require licensing or exams, that it's as simple as buying a rig, hooking it up, and talking. Not so! There are FCC rules and regulations, unspoken rules, differences between AM and SSB, and CB lingo and 10-codes that operators should at least be *familiar* with *before* they pick up the mic. It's also good to know about protecting your equipment, what channels to tune to hear highway information and some troubleshooting tips that could save you money. All of these topics are covered from Alpha to Zulu.

It is important for operators to understand each other. There are certain nuances to CB radio that have been a part of the hobby since the first mic was keyed. Tom Kneitel knows about *all* of them, and explains them with an honesty and humor that just can't be found in other CB books. He'll tell you about certain courtesies operators allow each other and about the things you just shouldn't do.

Another reason to read this book before you start operating, is to familiarize yourself with the way operators conduct themselves over the air. If you get on the air and sound like you don't know what you're doing—look out! Nobody will talk to you, they might even razz you for being a "newbie." Many of the operators that you'll hear have long-time frequency-friendships. That is, they have been communicating with each other on the same channel for years. It can become a sort of fraternity. If you want to join their group, you're going to have to prove yourself. After reading *Tomcat's Big CB Handbook*, you'll be able to speak the "lingo," and keep up with the folks who've been doing it forever.

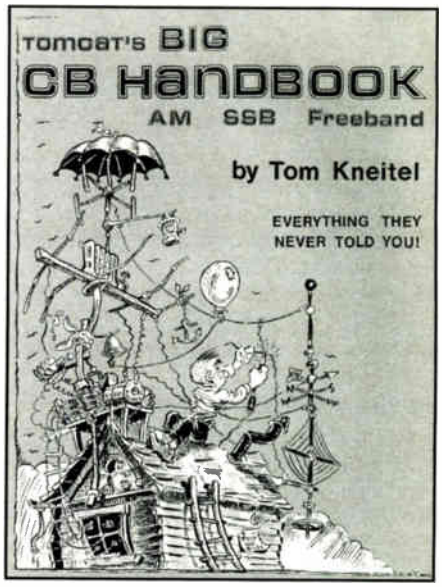
Where Do I Start?

This is the kind of book you've got to read at least once from cover to cover. It follows a very logical course. The author gives a brief introduction where he explains the necessity of writing this book. The introduction begins "There have always been scores of CB books, both technical and otherwise, over the years. Although many have been excellent, none have filled a gap I've always noticed in the information contained in CB books." It continues to explain that because of the resurgence of CB radio in the '80s and '90s a "no-holds-barred"-type book was necessary now more than ever.

The author starts at the logical beginning for any book about CB. "CB: The Long Road From Then To Now" is the title of Chapter 1. In it you'll find the history of CB, how it got started, and the role of the FCC in the birth of CB. The chapter also covers neat stuff about CB licensing in the early days and the first CB radios and the frequencies they used.

The All-Important "Handle"

If you're like me, you've had a hard time trying to pick an appropriate "handle."



Here's a copy of the cover of *Tomcat's Big CB Handbook* by Tom Kneitel. Maybe some of you know this guy. I wonder if the artist knows my husband?!

Problem solved! Tom Kneitel must have known how hard it is to pick one that would best describe an individual without being embarrassing or projecting the wrong image. In Chapter 2, he offers a list of possible "handles" for those of us who just can't come up with a "good one."

This is the chapter where you will first get a feel for Mr. Kneitel's humor as well. While explaining the importance of "handles," and how to choose one that's right for you, he explains: "My guess is that you can probably tell more about a person by his or her CB handle than from a dozen Freudian shrinks aided by a convention of astrologers and crystal ball gazers." He's probably right!

Most Important of All

Don't worry, I'm not planning on giving

an outline of every chapter. It's just that all of the chapters in this book contain some amount of very important information that not knowing could either make or break your experience in CB radio.

If you only read one chapter in this book (highly unlikely), it HAS to be the third.

Chapter 3 is titled "Talking On CB." This is probably one of the most important chapters to read whether you're a "newbie" or an old-timer. Like everything else in life, it's good to brush-up on what you think you already know. Chapter 3 discusses not just how to talk on the CB, but also covers 10-codes, CB jargon, and instructions on how to be a popular operator (very important stuff if you're planning on using that contraption you just spent a walletful on). For you more experienced operators, the chapter offers a reminder that Channel 9 is intended for emergency use only. One of my favorite parts in this chapter was the listing of 13-codes (I didn't even know they existed). The author claims that these codes "seemed to sum up so many things not covered by the 10-codes." For example, did you know that a 13-21 means "my god, are you getting paid by the word?" Yes, this is the lesser of the code lists, but boy is it funny—it's also appropriate for some folks out there. Talking incessantly or rachetjawing is annoying to your fellow CBers. The 13-codes cover many of the annoying quirks of some CBers.

While we're discussing the importance of knowing what to say or how to talk on CB, better check out Chapter 7 too, especially if you're at all interested in talking on sideband. The rules (those unwritten ones again) are somewhat different when you switch over from AM to SSB—Tom will tell you what to expect here and how to keep from being laughed off the air. (A little hint: don't use your handle—it'll get you nowhere FAST!). While you're at it, take a while to read through Chapter 18. It covers FCC rules and regulations. You should familiarize yourself with them.

But Wait, There's More!

I have to admit it—my favorite chapter in this book was chapter 19. This is where the author gets down and dirty to discuss some of his "Pet Peeves." F-U-N-N-Y! Also very true and easy to agree with. The best part of this chapter is that Mr. Kneitel offers humorous ways of dealing with otherwise harrowing misuse of CB rigs. One of his complaints is the use of 10-36's. He says: "People come on the air and ask for a 10-36—that means that they want you to tell them the correct time. This is super dumb." That's where I first laughed. Then he continues: "Is it that they can't tell time, or have they spent so much money on their CB equipment that they couldn't afford a wristwatch?" More laughing. When you read what Mr. Kneitel suggests to remedy the problem, you'll laugh a lot more. I'm telling you this is *THE* book. It's fun to read, it's informative . . .

While I was reading *Tomcat's Big CB Handbook* so I could review it here, I kept having to search around the house for it. No, I don't have any gremlins in the house (as far as I know), my husband kept taking it to read for himself! It has been a learning experience for both of us. Thank you Mr. Kneitel!

Still Not Convinced?

You're kidding? Well, If my descriptions haven't convinced you yet to pick up a copy of *Tomcat's Big CB Handbook*, Mr. Kneitel's credentials alone should. He *is* Mr. CB. Tom "Tomcat" Kneitel was one of the earliest CB licensees back in the 1950's and he has been using the CB service as well as writing about it ever since. He started back in 1959, in *Popular Electronics* magazine, writing the first monthly CB column in a national publication. He's the one who coined the term "CBer" to refer to a 27 MHz radio operator. He started the first CB magazine titled *CB Horizons*, and then started up *S9* magazine. *S9* was the leading national 27 MHz periodical for 20 years. He has written articles for such popular trade magazines as *Electronics Illustrated*, *CQ* magazine, *TV Guide* and *Communications World*. Mr. Kneitel is also Senior Editor of *Popular Communications* magazine and is considered an authority on CB radio.

OK, now I *know* you want to get your hands on a copy of this fabulous book by the CB man himself. The book is available from CRB Research Books, P.O. Box 56, Commack, NY 11725. Visa and MasterCard accepted. Phone orders call 1-800-656-0056. It is priced at $15.95 plus $5 shipping and handling ($6 to Canada). New York State residents please add $1.73 tax.

CIRCLE 101 ON READER SERVICE CARD

The Marvel NGP-1 Mobile CB Weatherband Antenna

BY NANCY BARRY, SSB-931

The new NGP-1 Mobile CB Weatherband Antenna from Marvel Communications Co., Inc. is a 48 inch No-Ground CB antenna made specifically for use on fiberglass vehicles. The NGP-1 is pre-tuned to about channel 19 and can be fine-tuned if necessary. The antenna comes complete with 3-way mounting brackets and 18 feet of tuned cable and is made in the United States.

No-Ground? Huh?

Yeah, I know. I didn't understand it right away either.

Harold asked me to review the NGP-1 and said "it's great, just mount it on a fiberglass vehicle. It's a no-ground plane just for RVs, vans, etc."

I said "a no what?!" And "great! now I have to find a fiberglass vehicle too! Next you'll have me standing on the roof of my apartment holding an antenna to see how well it works!"

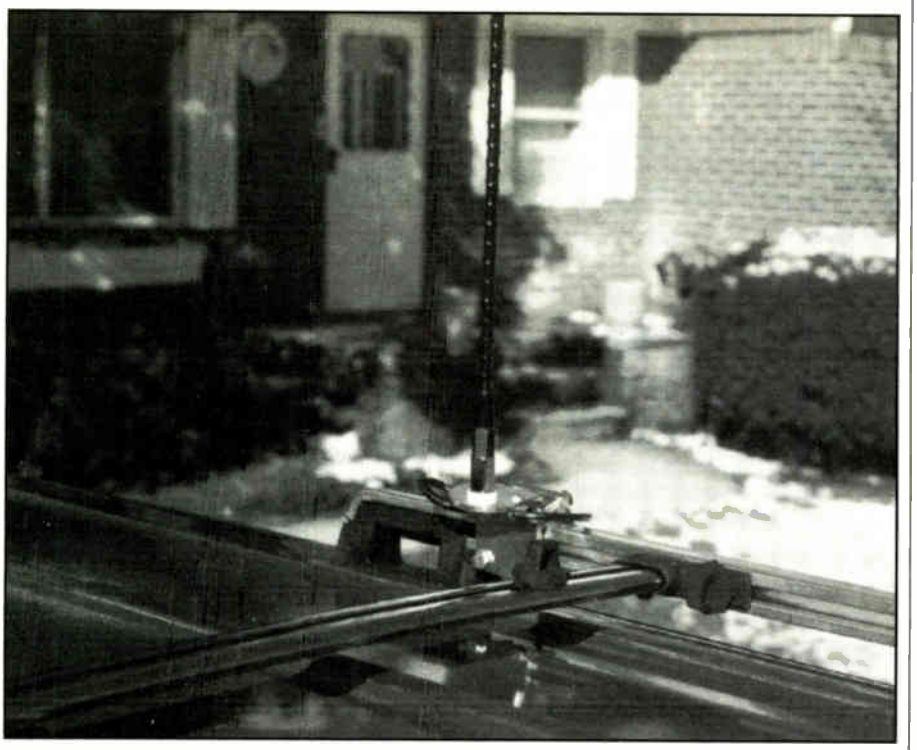
He said "well actually, with this antenna, you could!"

To explain further, the folks at Marvel have a brochure that says "with all the fiberglass now being employed on cars, mini vans, motorhomes, light and heavy trucks, it has become necessary for CB systems to create their own electrical 'ground plane' in order to work efficiently. When traditional type antennas are used on vehicles with little or no metal to serve as a radiating ground plane, the performance is extremely poor. SWR is usually so high that 'final transistors' in the radio are blown. 'No ground' is 'no problem' with Everhardt's new generation of 'No Ground' antenna systems—redesigned for more gain and introducing our exclusive 'Super Tuner' matching system which actually matches the antenna so well it will function properly 'even if you hold it in your hand!'"

"Ugh!" I thought, "he really wants me to stand on the roof!"

Well, I phoned Harold early the next morning from the office. We "talked," and decided that it might be safer if I just borrowed my mother-in-law's mini-van to do the review. But at least now I had an idea of what this antenna was made for.

By the way, you *can* really use a CB with this antenna in your hand, but the SWR isn't what you'd like it to be. Also, a quick note: please don't stand on your roof with antenna in hand—it's just not good to play



The Marvel NGP-1 mounted to a fiberglass mini-van. Notice the easy-to-use mounting bracket. (Photo by Jim Barry, SSB-930)

Benjamin Franklin—besides, it's already been done!

How'd It Do?

Quite well, really.

No, I didn't try it out while standing on the roof. However, I did mount the antenna on the luggage rack on the top of my mother-in-law's mini-van. My husband helped. (He's taller, and really likes to try new CB equipment.) It went on easily. Just put each bracket on either side of the bar and pop the bolts through.

I checked the SWR at channels 1, 19, and 40. The readings remained 1.5:1 on all three. The antenna provided clear reception up to about 5 miles, and the transmit was equally good according to my radio checks. The same held true for SSB. Quality, clear receive and transmit.

The antenna is also equipped to receive NOAA weather reports. So naturally, we gave it a try. To be quite honest. I didn't notice any marked clarity compared to the antenna on my car. It worked as well as Wilson's Little Wil which is a mag-mount antenna. It was *much* clearer than when I was using a "cheapo" antenna though.

The NGP-1 is a quality antenna. If you have a fiberglass vehicle, and you're looking for a good antenna that mounts easily and provides clear communications, the Marvel NGP-1 is definitely a good bet. As an added bonus, you get NOAA reception (especially useful for you RVers out there on the move!) You wouldn't want to drive into a tornado or through a hurricane!

Want One?

Great!

The NGP-1 from Marvel is available at a retail price of $40.56, and can be ordered direct from dealers throughout North America.

If you would like more information about this nifty no-ground antenna, contact Marvel Communications Co., Inc., (Everhardt Antennas), 6000-D Old Hemphill Road, Fort Worth, TX 76134; phone 817-568-0177. Tell them you saw this review in *CB Radio* magazine.

CIRCLE 102 ON READER SERVICE CARD

Note: For folks who would like a more permanent installation, check out Marvel's SNGP-4-SM 4-foot base-loaded, side-mount stainless steel antenna. If visible holes are a concern, not to worry—the SNGP-4-SM antenna features a protective mounting cover that hides the holes. ■

ANNOUNCING: National Scanning's National Communications Convention

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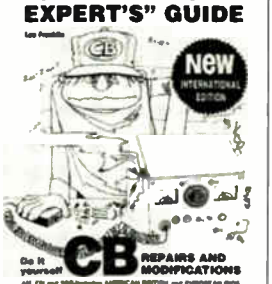

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CIRCLE 60 ON READER SERVICE CARD

Scanners: User Friendly

HOW TO GET THE MOST OUT OF SCANNING VHF/UHF

By Steve Adams

What a bizarre thing it would be to have to tell our descendants about a time when children actually used to play in parks and on sidewalks, that women could actually walk to the store, that people used to go out to restaurants and shows at night, a time when there was no gunfire in the neighborhood. Does that thought bother you?

New York State Police Scuba divers and uniformed personnel examine the wreckage of a tractor trailer which fell into the rain-swollen Schoharie Creek when a bridge on the New York State Thruway collapsed in 1987. Instances like this one, which required painstaking coordination with other state, local and regional agencies was improved by inter-operability between public safety agencies. (Courtesy New York State Police)

Public Safety Communications, Part 1

One characteristic of scanner enthusiasts and CBers is an intense interest in what's going on around them. We're the type of people that get involved, help others in distress, think and plan ahead with opinions about everything. We want to leave things better than we found them. We want to discuss issues. This is my little forum for discussing issues.

Since most scanning involves listening to police calls, it doesn't take long to appreciate what police do on our behalf. From listening, we scanner enthusiasts may have the best understanding of what police do outside of the police. This understanding leads me at least to be pro-police and believe that we should do everything reasonable to support, equip and train them to do an increasingly difficult job.

In discussing communications, let's go deeper than charts and tables of codes and acronyms. Let's talk about how and why public safety communications got the way they are, how they relate to society and how problems (or perceived problems) with communications can spill over to other areas and issues of society. More importantly, let's offer possible solutions to problems (or perceived problems), because without offering solutions or alternatives, this is just another useless and negative commentary.

How Did Things Get The Way They Are?

In early rural America, the county sheriff was the highest authority for law enforcement. The sheriff was directly accountable to the people through the ballot box and knew many constituents personally. The sheriff's agenda was simple. They were reactive in identifying and capturing criminals for prosecution. They incarcerated convicted criminals or those awaiting trial. When manpower allowed, they were pro-active by trying to prevent crime with a physical presence, by identifying potential problems and by educating the public in crime prevention.

Urbanization changed things. City police chiefs soon drove the agendas of law enforcement. Police chiefs had the population base, the money and the power. Things worked because police chiefs were accountable to the people through city councils, mayors, city managers, etc.

Social changes, mobility and the computer age have changed this dramatically. It is now *state* and *federal* agencies that drive agendas, have the money and power. This is perceived by some as a threat to constitutional rights, but more importantly, it is perceived as an erosion of control and accountability over these agencies which only take orders from bosses far away with seemingly different agendas. It is perceived that local police

These military aircraft are poised to deliver a poignant message, if necessary. The 225–400 MHz military airband offers some of the most exciting communications in the entire spectrum! (Photo Courtesy DoD)

Fire fighters use radios to direct water drops. (Photo by Steve Adams)

and sheriffs have been reduced in some cases to irrelevance. Remember, perceptions are very real to those who hold them. They must be addressed.

Additionally, much of America's current infrastructure was designed and built in the 50's and 60's. Police communications, once state-of-the art, are deteriorating, failing or just plain becoming obsolete. Departments can't communicate with each other, data bases aren't compatible and there is a perception that criminals escape identification, capture and prosecution because of these shortcomings. Naturally, this bothers people.

Yesterday's Police Departments

Evolving police departments were autocratic, stand-alone agencies with little regard to matters outside their jurisdictions. Departments developed their own unique jargon, procedures and systems with little regard for the future or for neighboring systems. Policies and decisions on communications and computer systems have been made by senior police officers who have risen through the ranks to command positions. They may be eminently qualified for command, however, they may lack the technical depth to make informed communications and computer system decisions. Departments still spend millions upgrading obsolete incompatible systems, perpetuating problems. It doesn't have to be this way. Careful consideration should be given to getting the biggest bang for the limited dollars available. Every upgrade or new system should promote compatibility with other systems and agencies.

New Training For Police Officers

Criminals don't respect jurisdictions. Lawmakers understand this fact. Most, if not all states, have reciprocal agreements giving a sworn police officer arrest powers throughout the state and portions of neighboring states as well. Why doesn't it work? We're back to communications and procedures, codes and jargon. Many states, like California, have standardized police training requirements throughout the state. Police officers are interchangeable as far as training is concerned.

If all law enforcement computers could interface, and all law enforcement personnel spoke the same jargon, used the same codes, local police and sheriffs wouldn't be irrelevant. If their training and department's basic infrastructure was compatible, police could and would be the local authorities once again—accountable to the people through the ballot box. It is reassuring to me that I could call the police chief or sheriff and actually talk to them, expressing my views or concerns. Who could I call in Washington? Would anyone take my call?

What Can or Should Be Done?

If law enforcement were a private business, trying to provide a service with maximum efficiency, all repetitive and labor-intensive administrative tasks would have been computerized long ago, freeing up valuable personnel. They would be free for duty on the street, for investigation, for interaction with citizens, and for prevention. Information flow would be state-of-the-art with instant access to every data bank and every scrap of information on everything and everyone within the scope of the law.

Traditionally, we've given the best technology and training to our military because of national security concerns. We have prestigious military war colleges to train future generals and admirals in the arts of war, strategic thinking and planning, tactics and deployment. Is public safety any less of a national security threat? Ask crime victims. Let's use these same resources to train and equip police, our other warriors. Let's train them in the art of maintaining law and order, tactics, deployment, planning, designing and buying systems, etc.

An analogy to all of this is the way our military once operated. Each service developed their own airplanes, weapon systems, computer systems, procedures, etc. using different companies and contracts, all having different spare parts and training requirements. Each service was autocratic, oblivious to what anyone else was doing. Nothing was standardized and there was much duplication of effort. Navy

A public safety dispatcher checks the status of a police vehicle. (Photo by Steve Adams)

and Air Force pilots couldn't conduct operations together. It was a mess.

Our successes in the Gulf War show how far we've come. We can now operate as if we're one military and we can operate with our allies as well. The same thoughtful approach needs to be used in law enforcement; our war on crime!

As war became more technical and as the military went to ever-increasing sophisticated weapons, unified command became necessary. Our warriors became technicians. The warriors on our streets need to develop unified command between agencies and they need to become technicians to effectively deploy the increasingly sophisticated equipment they will inevitably receive and use. It's a matter of training. Our military has shown that warriors can and MUST become technicians. So must police.

Some Thoughts For Consideration

*Use surplus military data systems equipment that is currently being scrapped as the military down-sizes. These data systems are compatible with each other. A vast law enforcement communications network and data base could be developed. Former defense contractors could gear towards designing and manufacturing law enforcement technology. Contracts for equipment could be paid for by many jurisdictions, keeping prices down. There is a glut of ex-military technicians in society with extensive training and experience with these systems. These are good men and women who would certainly fit in any police department.

*A national standard for communications and computers could be developed by the FCC in conjunction with law enforcement. The FCC has done a pretty good job of regulating the airwaves. Developing national standards is a role for federal government.

*There are forward-thinking, senior police officers who share the view that standardization of communications and computer data bases is essential to effective law enforcement. Many of these command officers have brilliant ideas and plans that have been implemented on a small scale within their own jurisdictions. These officers should be gathered in state or national forums to discuss their views with those in decision-making positions.,

How *Could* Things Be?

Envision this: a patrol car leaves the lot and goes into service. A GPS (Global Positioning System) updates the vehicle's position constantly on an electronic map in the communications center. The Watch Commander sits in a command and control chair with telephones, microphones, computer-aided dispatch screens, while watching this wall-mounted electronic map of the city or district. This electronic map is the primary command and control feature of the law enforcement tactical data system (LETDS). The scale of this map can be changed as necessary to provide more or less detail. It includes neighboring jurisdictions for mutual aid situations, pursuits, etc. Each police vehicle's position and status is shown by a numbered symbol in real time.

Other emergency vehicles, such as fire trucks, paramedics and ambulances are also shown when responding Code 3 (lights and sirens). As 911 calls come in, the address and type of incident of each call is automatically plotted on the electronic map. Units are automatically assigned to incidents based on their position, status and threat level of the incident. The dispatcher and Watch Commander can let the system automatically assign units, or they can manually override and add, delete, or change as necessary.

Pursuits and perimeters can be safely and efficiently handled by assigning and positioning helicopters and ground units from the electronic display and from field supervisors and patrol officers who can get the same information from their vehicle computer terminals. Live, closed-circuit television, forward-looking, infra-red imaging (FLIR) or broadcast television can be accessed by the Watch Commander, field supervisors and patrol officers to aid in locating suspects, missing persons, etc.

Optical character readers built into spotlight-type mounts can instantly scan license plates for wants and warrants. Laser fingerprint readers can assist in identifying suspects in the field.

Closed circuit televisions mounted strategically throughout the district or city can identify traffic problems, monitor high-risk parking lots, parks, etc.

It Could Be Done!

The technology for much of this has existed for 30 years or more in some cases. It's not out there on the streets yet. Just go on a ride-along and see for yourself.

We have the resources and technology. Perhaps soon the national will of the people will mandate that we start training and equipping police with the best. It will take citizen involvement to cure society's ills. The best way is at the ballot box. Public safety should be the number one function of any government.

Your Comments, Photos and Stories Are Welcome

We'd like your photos (no Polaroids) and comments, questions, suggestions and anecdotes on anything connected to scanning. Send them to: Scanners: User Friendly, CB Radio magazine, 76 North Broadway, Hicksville, NY 11801-2953.

There is a three to four month delay between receipt of your letters and photos, and publication. Please be patient. In coming months, we will have your letters and photos, discussions about scanning and the law, more disaster preparedness, more on police communications, product reviews, inside tips from my scanner dealer and much more.

While you're waiting, don't forget to send in your subscription form for CB Radio magazine so you don't miss a single information-packed issue. See you next month. ■

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CIRCLE 62 ON READER SERVICE CARD

REACTing With Radio

NEWS AND INFORMATION ABOUT PUBLIC SERVICE VOLUNTEERS

By Ron McCracken

Never a Better Time

Have you been thinking about joining or forming a REACT Team to serve travelers and your community? Take the plunge! Never have there been more varied opportunities to put your communications skills to interesting, exciting use. From parades to major disasters, every community can benefit from well-disciplined radio operators keen to augment police and other official communications when requested.

Now is the time to put your Team in place, while things are quiet. When disaster strikes, it's too late. Whether in sports or communications, good teams need time to develop into cohesive units that can function reliably when called upon.

REACT Teams are able to do just that. Every event for which they provide safety communications throughout the year exercises the radio skills required in time of disaster.

The international reputation REACT has earned over three decades in public service will give your Team a degree of instant credibility with authorities. Of course, the Team must then prove itself worthy. It must measure up to the REACT reputation to earn its stripes locally. No one else can do that for you. Your Team will also bear a responsibility to further enhance the reputation other REACT Teams have built.

CB, GMRS, VHF, amateur, and other bands are utilized by REACT Teams in their work. Each serves a specific purpose particularly well. Sometimes two or more are used in combination to get the job done.

Much of the time REACTers gain a great deal of enjoyment from their public service work. When disasters hit, enjoyment turns to satisfaction as their efforts help individuals and the community. You always go home feeling rewarded.

Hopefully the accounts on these pages will do more than just interest and entertain you. I hope they will encourage some readers to get involved. Read and enjoy the articles. Then, take steps to join their number. Add your radio to their safety net. I firmly believe you'll be glad you did—for the rest of your life!

Radios to benefit Mexicans are loaded into a Red Cross van. Iowa REACT Teams and REACT San Antonio, Texas combined efforts to make the donations happen.

Older But Better

No grass is growing under REACT Travis County, Texas. They have added four new members recently. What's more, 70 percent of the Team monitors now hold amateur qualifications.

Their events schedule has doubled in five years! They are being asked to do more for their community, they note, as budgets shrink and volunteers increase in value. More members are active than in the past 15 years. What more could a Team ask?

Out of Puff?

Members of REACT of the Golden Gate, California can be forgiven if they are a little breathless. They've provided safety communications for three run-a-thons in as many months lately. Fortunately, their latest event gave them a chance to slow down a little. It was a walk-a-thon for Juvenile Diabetes.

Mexico Bound

More radio equipment has been made available to Mexican Red Cross officials by REACT.

This project involved Teams of the Iowa REACT Council. They gathered equip-

REACT Kettle Moraine, Wisconsin member assists March of Dimes walkers across the highway. Their vehicle impersonated a porcupine as the Team used CB, VHF and cellular comms for the event.

ment donations in their state and shipped the gifts to REACT San Antonio, Texas.

San Antonio secured additional radio donations in its area. American Red Cross officials contacted their Mexican counterparts who traveled to San Antonio to receive the welcome gifts. Can you imagine how critical that radio equipment was in the recent disastrous earthquakes Mexico experienced?

Thank You

In the aftermath of the deadly Oklahoma City bombing, the community has begun to honor the volunteers and staff who contributed so much to the recovery.

REACT Oklahoma County members were among those to be decorated for their tireless efforts by state officials at the Capitol in a special ceremony. REACT volunteers, with other Teams who rushed to assist Oklahoma County will also receive decorations for their involvement. Fine cooperation, folks!

Still Helping

Many REACTers just keep on serving. REACT Ohio Valley, Ohio lost a dedicated monitor in a move to another state. However, the Team learned that it would receive an array of his radio equipment that he had chosen not to move. What the Team can not use it will sell, with proceeds available to help it continue to serve the Cincinnati area. Such acts speak well of both the individual and the Team.

Pulling All the Stops

March of Dimes officials labeled it "the most successful" walk-a-thon to date. REACT Kettle Moraine, Wisconsin volunteers were there to help make it that way.

Over 200 walkers participated and raised $12,000, using a five- and 10-mile course. REACTers used a combination of CB, VHF, and cellular communications to get the job done.

Kettle Moraine is authorized to use the VHF frequency as a result of its close cooperation with the Red Cross in the area. The big winner in all of this is the community which benefits from the services of all three volunteer agencies.

Work Never Ends

When you go to convention, you expect to be able to relax and forget about duties. Not so. REACT Bell County, Texas members were drafted to help REACT Douglas County and REACT Dodge County with parade communications in Fremont, Nebraska during the last REACT convention in Omaha, Nebraska.

Emergency Management authorities loan a van and other equipment that makes Safety Breaks possible. REACT Moreno Valley, California served over 800 visitors at a rest area near Banning, California, sending folks on their way more alert. Note the antenna array on the van. They were needed, too. REACTers summoned aid for an asthma attack victim.

REACT Douglas County was the host Team for the convention. Many of its members were already committed to duties there. REACT Bell County jumped in to take up the slack for a successful event. Then, it was back to convention activities for everyone.

What Goes Around . . .

When REACT Teams serve their communities well, those communities often return the favor. REACT Moreno Valley, California enjoys that kind of a relationship with its emergency services authorities.

When the Team hosts Safety Breaks near Banning, California, it can count on loaned of equipment it could not afford to buy. Recently the Team served coffee and goodies to over 800 guests at its Safety Break. Visitors donated $150 which the Team will use to add to its GMRS radio equipment.

Team members in Banning were able to put their radio skills to work at the Safety Break. They needed to summon medical aid for a traveler who suffered a severe asthma attack.

Good REACT Teams consider every event a training exercise. Sometimes they turn into the real thing right on the spot.

Seeing Is Believing

Sometimes REACTers can help people without ever keying a mic. REACT Antelope Valley, California volunteers who responded to the Northridge earthquake found it true.

"Just seeing a radio gave a sense of security to many people," it was reported while REACT members moved about. One lady followed the REACT volunteer around "in case of an after-shock." She knew the radio could summon help.

The Team provided 500 hours of communications over three weeks following the disaster. They used VHF, cellular and the new "Nextel" Red Cross system. What a blessing!

Help from Friends

What do McDonald's and a tire store share in common? They both helped out REACT St. Thomas, Ontario recently. The Team was called out to assist in two separate searches, one for a missing teen and the other for a missing hospital patient.

Tunes on Tires loaned a cellular phone to the Team and McDonald's provided refreshments when the assignments were completed. Another local business, St. Thomas Steel, donated material for a new axle on the Team's communications trailer.

The Team gained a new member from REACT Sarnia, Ontario when she moved last year. Recently she was selected as the Team's "REACTer of the Month". Sarnia must miss her!

They Mean Business

Still doubt the value of CB radio? Talk with REACT Prince William, Virginia.

Its members monitored CB Emergency Channel 9 for 16,180 hours over the past

nine months. In that time they handled 2,004 incidents. Of those, 107 involved injuries. Another 257 were reports of reckless drivers, many likely impaired.

No one knows how many lives the Prince William Team helped to save in relaying those calls for help to authorities. A reasonable guess would be quite a few. That's what it's all about.

Making Life Easier

Soon GMRS will be come more useful to REACT Waukesha, Wisconsin. Northridge Shopping Mall had been "grandfathered" by the FCC when it introduced the GMRS band. Consequently, its security operations have been on the Team's primary GMRS frequency for several years.

Recently, Northridge's security chief advised the Team that the mall will be vacating the frequency when it updates its radio service. It will be a welcome relief to the Team.

Although the mall was cooperative in avoiding the channel during events, by pre-arrangement, disasters can't be pre-arranged. The area is subject to sudden severe weather in the summer.

Team officers hope the transition will be completed before they have to cope with this season's storms. All's well that ends well.

Forest of People

It required three REACT Teams to handle the sixth annual "Festival of Trees" event. RELI, Bronx and South Shore REACT Teams were up to the challenge.

United Cerebral Palsy hosted the fund raiser that attracted over 25,000 visitors. The Teams worked together to handle logistics necessary for that many people.

The three REACT Teams have cooperated to handle the huge event since it first began. This one was the grand daddy of them all. Of course, there is always next year! ■

REACTer of the Month

OUR SALUTE TO THOSE WHO VOLUNTEER By Ron McCracken

Roy Allen—Respected and Admired

Like many, Roy Allen was a CBer long before he became a REACTer. He purchased his first CB in 1971. The more he used it, the more he realized its potential for doing a lot of good.

By 1974, Roy had become familiar with an organization named REACT International, Inc. that had the same objectives he saw for CB. Along with some other enthusiastic CB friends, Roy contacted REACT about establishing a Team in his area. Before the year was out, REACT Oklahoma County was a reality.

Roy's initiative in organizing the Team resulted in his being elected its first president. He served two terms in that office before passing it on to others.

REACT Teams were forming in large numbers across Oklahoma. Councils had now been authorized by Headquarters and Roy could see the value in one for his state. He went to work.

Convincing

Roy traveled the length and breadth of Oklahoma. He spoke to Teams about the benefits of a Council. He consulted with public safety agencies and elected officials, explaining to them what a tremendous resource for emergency communications all these REACT Teams were.

He was an effective spokesman. Before long, the Oklahoma REACT Council was formed. Member Teams honored Roy by electing him the Council's first president.

In the early '80s, Roy again served two more terms as his Team's president. In 1985, he was elected to its Board of Directors. He continues to serve in that capacity. For seven of the past 10 years his fellow directors have elected him to chair the Board, another honor.

Networking

Roy knows that it's wise to maintain good relationships with all CBers. Thus he has been active with several CB radio groups. While REACT has been his primary interest in two-way radio, he has also served two terms as president of the Okie CB Club. Sharing his skills and abilities in these ways has earned REACT the respect and admiration of other CB groups in the community.

Roy probably learned many of his people skills from his varied work experience.

Monitoring CB Emergency Channel 9 is still the priority for Roy Allen. After 20 years in REACT, and terms in his Team's and Council's highest offices, he rates this his most important job.

He has been a professional radio disc jockey both for various radio stations and at private functions. He was maintenance supervisor for the Oklahoma City Housing Authority's many projects. He had similar responsibility with the Oklahoma Transportation Bus Lines. Now retired, Roy also owned and operated a transport delivery service for a time. That background has served his Team and his Council well over the years.

"Pete," Roy's wife of 53 years, is also a charter member of REACT Oklahoma County and his biggest booster. They have a daughter, Patti, and a granddaughter, Mary.

Proud Reflections

Can you imagine the pride Roy must feel these days as he recalls the vents of last spring in Oklahoma City? Years of hard work at the Team and Council levels was suddenly put to the test.

What a test, and what an outstanding performance! The REACTers that Roy Allen has worked with and for, over the years, distinguished themselves when disaster struck. ■

State of the Month

OUR SALUTE TO THE STATE WHERE SERVICE IS TOPS

By Ron McCracken

OK Oklahoma!

What state could be more deserving of our REACT salute than Oklahoma? Their firsthand experience with disaster last year, their professionalism in responding to support authorities, and the way their Teams pulled together over an extended period make them worthy honorees indeed.

The REACT Council of Oklahoma traces its origins back to 1977. Oklahoma Teams realized that they needed to get to know one another better. Forty-plus Teams served Oklahoma at that time, and their leaders saw the advantages a Council could offer.

Planning began. On October 1, 1977, Teams met to create their new Council and elect their first officers. Every Team in the state was a member automatically, as with all REACT Councils, and was entitled to cast one vote on all matters before the Council.

Oklahoma REACT Council met quarterly to discuss matters of mutual interest, to train together, and to become comfortable with one another. If the need ever arose, REACT Oklahoma wanted to be ready to work together shoulder to shoulder.

Payback in Spades

Never in their wildest dreams could those early leaders even imagine April, 1995. Yet, on that lovely spring day the foundation they had laid years before stood firm. When all around them began to shake and crumble that day, Oklahoma's REACT Teams sprang into action. The years of cooperation and fellowship that the Council had fostered paid off in a moment.

Oklahoma REACTers handled themselves, and the situation thrust upon them, with distinction. REACT Teams from neighboring Kansas and Texas contacted them to offer backup support.

The tragic events of last spring are history now. Yet, Oklahoma REACT Teams will always remember with pride how well they served in their state's darkest hour. They are days no REACTer would want to re-live. However, they are days that provide the Teams' capabilities beyond any shadow of a doubt.

New Life?

Ironically, the Oklahoma REACT Council suspended its formal meetings in 1994. Teams continue to work together informally on a regular basis. Fortunately, the groundwork that the Council had laid over 17 years saw Teams successfully move through this worst case scenario.

Photo of the Federal Building in Oklahoma City that no one will ever forget, especially those who worked closely with authorities.

Oklahoma REACT Council elected these officers to lead the fledgling body. Last spring, years of labor by these and others since, proved their worth. Oklahoma REACT Teams served admirably in the face of disaster.

Reports from Oklahoma indicate considerable interest in forming new REACT Teams since the disaster. Perhaps renewed need for the Council will be one of the many good things that are sure to come out of this tragedy.

Meanwhile, member Teams of the Oklahoma REACT Council have a long record of other achievements to their credit. They participate in SkyWarn with the National Weather Service. Their personnel have assisted authorities both before and after major tornadoes in Lawton, Oklahoma; Wichita Falls, Texas; and Andover, Kansas.

The U.S. Air Force has benefited from their help on several occasions. Teams helped at a three-day building fire on Tinker AFB, and on another occasion at a crash site north of the base. REACT Teams also assisted in the search for a missing private aircraft carrying Oklahoma Congressman Bill Brewster's son and daughter.

Fun Too

The good news is that Oklahoma REACTers provide safety communications for a host of fun things, too. In fact, a look at their schedule of events is enough to tire you out! They are one busy bunch of people, helping with parades, walk-a-thons, fairs and a wide variety of other special events in the various communities they serve. Usually, more than one Team is involved at any given event as they continue to work hand-in-hand to help one another.

Keep up the excellent work, REACT Oklahoma. Your accomplishments reflect well on all REACTers everywhere. ■

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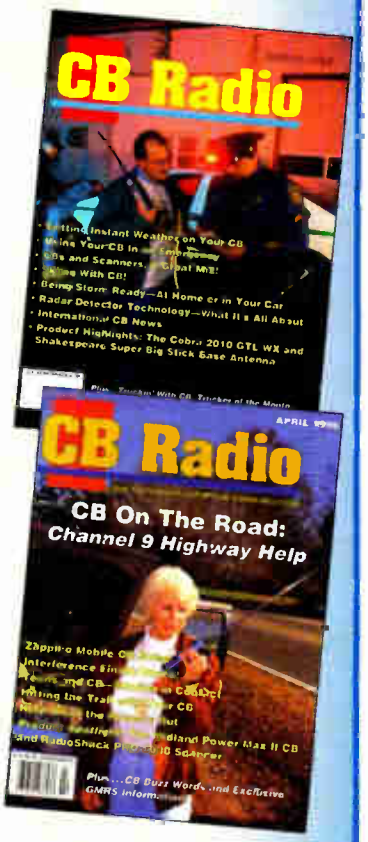

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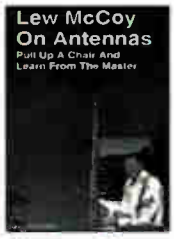

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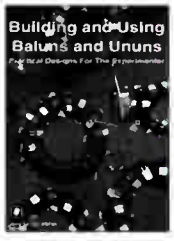

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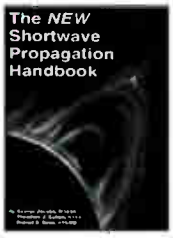

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CB NEWS AND VIEWS FROM CANADA

By Brynly Roberts

Gossip—The Second Oldest Profession

Canadians, while believing themselves to be the strong, silent type, love to gossip. That's why CBs are so popular around here. Even with all the alternate communications available today, when it comes to finding someone to talk to, we still grab the mic and flip through the channels for a "Breaker, Breaker, Do 'ya copy?".

After responding to a "Breaker 19" the other day I guided a fellow to where he wanted to go into the industrial section of town, and then had a good visit over a cup of coffee until his next load was ready. A family man, like myself, I discovered we had a lot in common, and although we disagreed when it come to how well the Toronto Blue Jays played when the won the World Series a few years back, he turned out to be an alright guy. He's done the Alaska to Mexico runs more times than he can remember, seen a lot of country I've never been in, and shared a truckload of his favorite stories with me concerning life on the highway. As we finished our refills, and parted to go our separate ways, I was feeling pretty good about having the CB on 19 that day.

Most of us like to gossip with strangers once in a while, which is probably one of the reasons the communications industry in North America is on an ever-increasing high. Canada certainly continues playing a significant role in communications, possibly due to the vastness of the country in relation to its population. After all, with only seven people per square mile, we do get lonely sometimes. A gossipy bunch, we put real meaning into the word communication—we're the World's top telephone users; 98 percent of Canadian homes have telephones.

Telephone operator, Susan Street, just prior to the exchange being shut down in 1966 in Foremost, Alberta. Telephone operators were the fountain of gossip before CBs arrived on the scene.

In fact, March 10 should be declared a National holiday in Canada. It was that day back in 1876 when it became possible for us to do our gossiping beyond the back fence, when Alexander Graham Bell spilled some acid while experimenting at his father's home in Brantford, Ontario, and uttered the famous words, "Mr. Watson, come here I want you." Although Bell returned to the United States to continue a life of experimentation and discovery, Canadians still found comfort in the fact his discovery was made while he was in Canada. As a result, we've had a long-lasting love affair with the telephone, and before the introduction of CBs, it was our main source of latching onto any juicy gossip floating through the community.

Pot of Gold on the northern outskirts of Lethbridge, Alberta.

The Days of Party Lines

However, in the early days of party lines, with several subscribers using the same phone lines, new wars were created between parents and kids. When kids let something slip they had picked up on the phone, mom or dad would turn on them with a sharp, "Where'd you hear that?" Of course the culprit couldn't wriggle off the hot seat. Everyone knew they hadn't been off the farm all week, but had been listening in on the party line telephone. Adults always frowned on the practice, unless they were doing it themselves. They always made all kinds of threats of what might happen if they caught somebody doing it. (Come to think of it, they had the same attitude toward sex!)

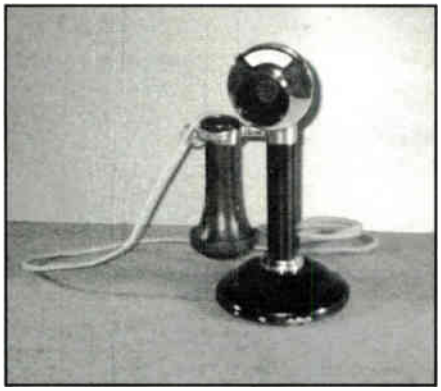
In spite of the threats, however, country kids continued listening in on the party lines every chance they could in order to relieve the monotony of country life. Along the way, they discovered juicy bits of gossip, and even a few facts of life. The gossip on party lines was sort of like an Ann Landers column, or maybe Ophra, without the commercials.

Old-time phones had other side benefits; such as when you were ticked-off at your neighbor or the lousy service from the local store, you could stride over the that brown box on the wall, grab the crank, and give it a few vicious whirls to get hold of the operator. Man, that felt good!

Of course, telephone operators were the backbone of the nation in those days. The Aunt Maudes of the telephone world had their finger on the pulse of the community. They knew everybody's business

Typical "gossip machine" dating back to 1882, first used in the area of Lethbridge, Alberta in 1893, made by Northern Electric & MFG Co., Montreal. (Photo courtesy of Galt Museum, Lethbridge, Alberta)

Typical "gossip machine" from the 1910-1915 era. (Photo courtesy of Galt Museum, Lethbridge, Alberta)



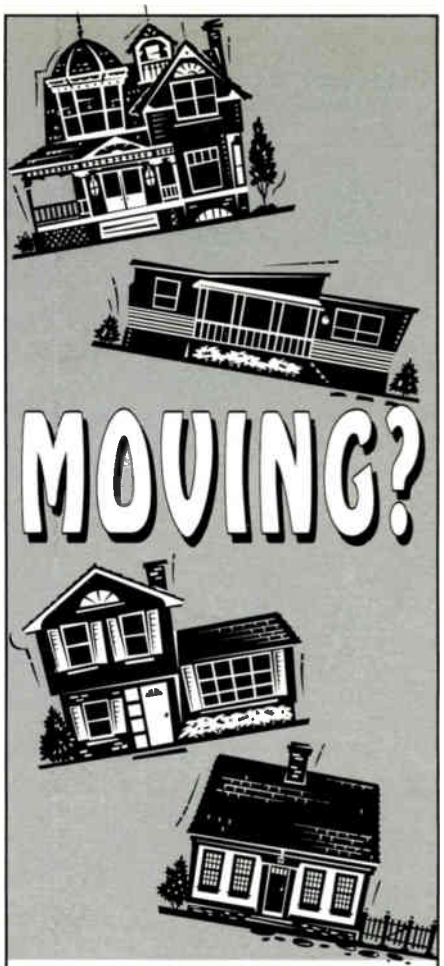
Desk phone dating back to 1910. (Photo courtesy of Galt Museum, Lethbridge, Alberta)

and wielded a fair amount of power since they had the first-hand knowledge concerning any hanky-panky taking place in the community. You also tended to live by any schedule of service they set. One sweet soul who ran a small-town switchboard, had the townsfolk in the palm of her hand; they never used the phone between one o'clock and two o'clock in the afternoon. That's when Aunt Maude took her daily nap.

One-finger tapping those little buttons on today's phones, while trying to remember up to 11 digits, just doesn't cut it when it comes to relieving tension like the old crank did. And trying to recall as many as 11 numbers while your soul-mate coaches from the sidelines doesn't do a lot for your peace-of-mind either. However, we still love the little beasts, the phone and the soul-mate, and pay homage to Mr. Bell on a monthly basis.

As you probably know, Bell's original invention was improved on by Thomas Alva Edison, thus making long distance phone calls possible—so we offer homage to Edison as well when we make those more expensive calls. When we think of Edison, we usually think of the incandescent light bulb. What most people are not aware of, however, is that Edison would have perfected the light bulb much sooner if he hadn't kept standing over it shouting, "Hello? Hello?". Several years passed by before he saw the light.

Fortunately, more of us are seeing the light ourselves these days, and get on our CBs for everything from business deals to babysitting. And why not. There's no better way of keeping in touch, while at home or on the road than with our CB. With "our ears on" we know just about everything that's going on around us, catching up on the latest gossip, who's hauling what, to who's meeting whom. There's a couple of CBers here in town that seem to forget that these little CBs are really just party lines on-the-air. Nearly every day you can hear them arranging their next rendezvous.



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When we have a CB, we know almost as much gossip about what's going on in our community as those old-time telephone operators did.

Depending on who you talk to these days, CBs are a gift, a nuisance, a toy or a necessity, but we should also remember there are no monthly rates to pay, hard-to-reach operators, and we don't get put on hold. Maybe the distance they cover isn't' quite enough sometimes—we usually get our message passed along with a little help from other CBers.

People I've talked to around here still get kind of carried away when they tell tales of using the CB in the back country, on the highway or the lake. Even the younger crowd find their CBs come in pretty handy for doing their braggin' while tooling their muscle and show cars along the local strip on weekends. Whether you're talking across town, or relaying messages along the highway, the CB has a certain attraction about it that just keeps the chatter coming. As a means of doing business, bragging or just getting in on some juicy gossip, your little CB can be just as valuable as the telephone, and a lot more fun! ■

Any readers able to identify this gem?

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CIRCLE 59 ON READER SERVICE CARD

International CB

DX INFORMATION FROM AROUND THE WORLD

By Alex McPherson

Let's Go Portable!

Citizens Band radio can be used in many different ways. Mobile stations are the most popular of all. Base stations at your home are obviously the best for DX. But if you're one of those folks who like going places, why not try some portable operations?

When I say "portable," I don't mean using handheld CB radios. I'm thinking of taking your base station with you—at least a part of it. This means filling the trunk of your car with the transceiver, antennas and other useful accessories and leaving your sweet home to go somewhere on a high spot in the countryside. Of course, you'll have to think about the power supply. The best way may be a generator which can be rented for a weekend at a rather moderate price. But if you're using the 12 watts P.E.P. on SSB, a couple of extra batteries will do the job if you don't intend to operate for a full 48 hour period.

Getting Away From It All With Your Friends

Portable operation is also a nice opportunity to get away from town with a few friends. Don't be afraid to organize your trip ahead of time. Make a list of what you need, including all the radios, food (you'll need some fresh water if you intend to stay in a place where there's nothing around) and clothing. Even if it's summertime, think about taking some warm pullovers with you. You never know what's going to happen up on the mountain!

If you intend to catch some far away countries, you should include your logbook in your list. This will be helpful to keep track of your contacts, just as you would do at home.

Antennas may be of any kind. I guess if you read our technical columns, you may find some ideas for mast installation. Don't forget security guidelines! So many CB operators get electrocuted when erecting antennas. Be sure you won't be one of them. The simplest way to get started during your first attempt at portable operation is with a vertical antenna. These are very easy to erect and to adjust. (Don't forget your SWR meter). But if you're really after some serious DX, why not consider using a simple three or four element Yagi beam? These antennas, when used on top of a clear hill, will do a good job even with low power. Think about GAIN!

I'm not getting into details, since this is not the subject of my column. But all this should give you some ideas for the fast approaching summer. Just a reminder: if you're doing some special event DXing, don't forget to send me all useful information about your "expedition." Afterwards, send me a couple of nice pictures.

French Minister of Cooperation, Jacques Godfrain is a zealous supporter of CB radio.

Here's "Uncle 12," Chairman of the French CB Federation (FFCBL).

A DXpedition setup somewhere in Europe.

Scanning in France

Scanners in France are now *illegal*. To sell or use a scanner, the French must be authorized to do so by the government. Listeners all over the country have been asking for such permits, but most, if not all, have so far been refused. Those who have scanners at home, if they're ever caught, can be fined up to $120,000!

French listeners are complaining very loudly about this prohibition since scanners are often the only receivers covering the VHF, UHF and SHF amateur bands. Back in 1990, amateur SWLs had their callsigns made obsolete by the French government. Since then, SWLs in the country no longer have any official identity. As the small French SWL community is saying: "first our callsigns, now they're taking our receivers away!"

European DX

Ricardo, 30AT751, is going island hopping at various dates during the year, with emphasis on the summer months. But his big activity of the year will be from Segovia, where he will sign 30AT751/SG. A QSL card is OK directly to Ricardo, P.O. Box 10, 41080 Valladolid, Spain.

The German Bravo Charley group is

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Remember the unfortunate situation of our Belgian CBer who was arrested by Belgian police? I just received this photo of the vehicles outside his home.

transmitting from various historical sites in Germany. Callsigns being used are 13BC/NRW0/DX from Nordzheinwestfalen, 13BC/MVO/DX from Mecklenberg Vorp., and 13BC/BB0/DX from Brandenburg. QSL for all three stations is to be sent to: Peter, 13BC001, P.O. Box 123, 22321, Hamburg, Germany.

The Worldwide Echo Delta group annual meeting will also be on the air this month. The station will be signing 14ED/WM1 from France. QSL is via Emma, 14ED123, P.O. Box 19, 80800 Corbie, France. Don't bother with any sort of contribution for this one.

From Belgium this month you should be able to listen for 16BRC/Balloon. The card may be sent to the BRC QSL Bureau, P.O. Box 33, 3271 Zichem, Belgium. I still haven't managed to find out if these guys were going to transmit from a hot air balloon or not!

They're asking for a $1 contribution.

Finally, right until the end of the year, you may hear 108AT/RB200 (Robert Burns), another special historical activity

Don't forget accessories when you go on a DXpedition. This RadioShack 63-729 clock with large digits can be seen from across the tent! The RadioShack 21-524 SWR/Power Tester is an absolute must when away from home. (Courtesy RadioShack)

from beautiful Scotland. There are supposed to be two stations on the air, one signing /A from county Ayrshire, the other one signing /D from Dumfries. If you catch both of them, a certificate will be awarded to you. QSL and awards are via: Graham, 108AT125, P.O. Box 51, Darvell KA17 ONW, Scotland, United Kingdom.

Until next month . . . I've been receiving quite a few letters these days. Most of you are asking me if I have a callsign. Well, I have plenty of those things. I've been very active on the air in Europe and elsewhere, signing with AS, AT, BCA, DF, and PW callsigns. But most of my radio friends call me "Double Dot." I'm still wondering why . . .

Next month I hope that my good friend 14AT212 will have sent in a report on his Asian Island expedition. I've talked to him on the phone lately, and everything sounds great!

73/51,

Alex

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CIRCLE 57 ON READER SERVICE CARD

Truckin' With CB

THE PROFESSIONAL DRIVER'S CB RADIO PLACE TO BE

By Bill Simpson, "Highlander"

That Truckin' CB Lingo . . . and More

As we zig-zag across the country, dodging scales and the usual idiot four-wheelers who cannot seem to operate without a cell phone short-circuiting their eyes, ears and brain, it seems like we have been forced to acquire a new personality . . . and a new language! The average CBer perhaps has a hard time talking to us, simply because we change the language. Imagine . . . "I left Shakey Town with 47 bushels for Mile High, did a drop and hook for the Twins, found out it was a floor stack, so I had to really bust my butt to unload, dropped that trailer and ended up with a flat headed for Cigar City!" Say whaaaat, driver?

The Translation

You and I know that we left LA with 47,000 pounds on the trailer, although we could have also said 80,000 pounds gross weight, the legal limit in most states, destined for Denver, where we dropped the trailer, picked up another trailer and headed toward Minneapolis/St. Paul. The load turned out to be stacked on the floor, although it should have been on pallets, so we had to stack the entire load on pallets to satisfy the receiving customer. We then ended up with a flat-bed trailer headed for Tampa!

See what I mean? There's an entirely new language among the drivers, and without some serious listening, the average CBer simply won't understand *anything* we are trying to say. Since we really don't care what the four-wheelers think, why should we care if they can talk to us or not?

Well, perhaps we want some company across some lonely miles at 2 a.m., or we would really rather not discuss our speed with one of (insert your favorite state here)'s finest law enforcement officials, and the four-wheeler that just passed you might sing out if he or she spots a cop! That might be a sufficient reason to chat along the miles!

After being in the truck for the better part of two weeks, any friendly voice would be acceptable at 2 a.m., but I've noticed that *every* driver tends to modify speech habits if a feminine voice is heard asking for information or assistance. It just seems to be an unwritten rule that females attract a LOT of attention. I suppose that this is a manifestation of the "Knights of the Road" syndrome. Maybe it is simply pure loneliness?

(Photos by Bill Simpson)

Rollin' with the four-wheelers is always fun!

A Quick Look Back

A friend of mine, knowing that I'm writing this column, dropped a pamphlet on me, dated (Oh my word) 20 years ago, from "RadioShack" and copyrighted 1976. It lists several expressions which are still in use today. We all hear and use "back door", "bear in the air", "chicken coop", "front door", "mile marker", "seat-covers", "smokey", and "10-4", but it's been a while since I've heard "bean store", "cotton picker", "fluff stuff", "loose board walk", "nap trap", "Tijuana taxi", or "willy weaver". If you remember others we used 20 years ago, drop me a line!

I am continually amazed at the appropriate names given to towns and cities across our wonderful country. We all know "Shakey Town" (LA), and "The Golden Gate" (San Francisco), "The Big Apple" (New York City), and "The Windy"

Where are we here? Answer is at the end of the article.

Sometimes every driver has trouble backing. This Martin Line driver is giving it a try.

(Chicago). It's been years since I ran full time on the BIG ROAD, but I still remember "Monkey Town" (Montgomery, Alabama), and "The Circle" (Indianapolis, indiana) and "The Twins" (Minneapolis/St. Paul).

I spent a wonderful three days in "Big D" (Dallas,Texas), and several weekends in "A-Town" (Atlanta, Georgia) once! Went to school in "The Music" (Nashville, Tennessee), but I'd rather root for the BIG ORANGE of "K-Town" (Knoxville, Tennessee), GO VOLS! Than the Commodores of Vandy.

"The Derby" (Louisville, Kentucky) and "E-Town" (Elizabethtown, Kentucky) seem to have an agreement about construction . . . along with the entire state of Pennsylvania: "if there is no snow, we will create a traffic jam!" I cannot understand any reason for taking 10 years to REBUILD an existing roadway. Drivers scream about the Windy . . . we went a full year without major construction on one of the major roadways. (1979 comes to mind!) Pennsylvania must be the construction capital of the entire universe . . . three years to resurface a road? But back to the names . . . I'm only about 350 miles from the "Gateway" (St. Louis, Missouri), or the "Queen City" (Cincinnati, Ohio). I got lost in the "Motor City" (Detroit, Michigan) and "The Steel City" (Pittsburgh, Pennsylvania) with no help from dispatchers, amazingly enough.

I know that I've missed many cities, so invite you to send in your ideas on the others. I've heard of "Possum City" but simply can't remember the town. I've driven through Evergreen, Alabama, but I can't remember what it is called, and have never been to "Tinsel Town", but . . .I'll

This is no picnic; 1/8 mile visibility in fog just north of Chicago on 41.

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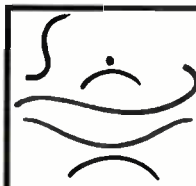

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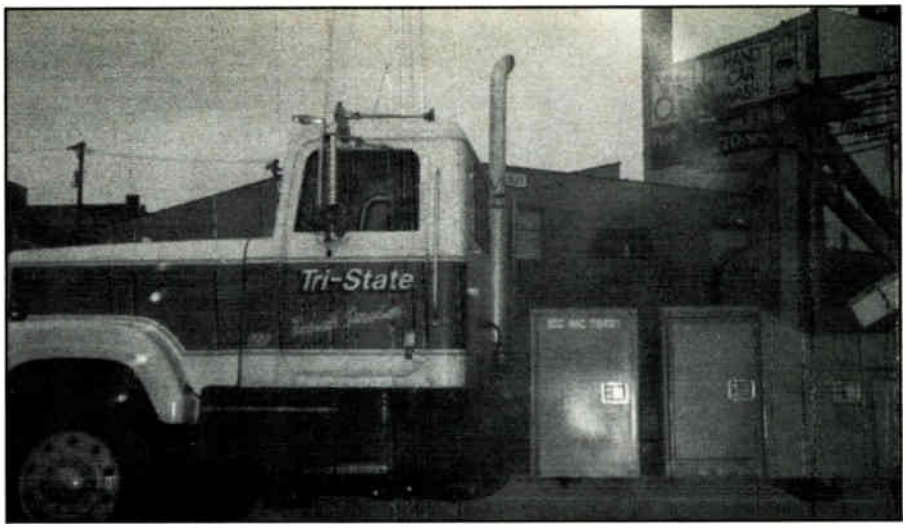
CIRCLE 54 ON READER SERVICE CARD

send a subscription to the person sending me the most unique name for a town. No, "glass table top" will not be acceptable for any town in Iraq, nor will "Atlantis II" be appropriate for any city on the coast of California! Daytona Beach, Titusville, Orlando and Jacksonville, Florida had unique names, but I have lost them in the fog—HELP ME! Okie City would seem to be Oklahoma City, but what is Kansas City? The two cities in Nevada can't both be "Sin City" or can they? If so, then what is Phoenix City, Alabama, just outside the gates of the Army base? See what a problem I have? The age is getting to me.

But I digress—we were talking about language and the changes over the past 20 odd years. The basic concept, using the radio to ascertain information or to stay awake, or to simply help the miles disappear, has been a constant, never changing idea for all of us. In many cases, we have created a friendship which lasted for minutes . . . hours . . . days or even longer. We were both "there" . . . in a traffic jam, snowstorm or perhaps simply between the Derby and the Circle on Labor Day, with all the four-wheelers and their screwups. Perhaps we were coming off the California Rockies, and the brakes were beginning to smoke, or we were doing the backstroke through one of the afternoon Florida monsoons. We were THERE and in touch with each other via radio! As a result of this camaraderie, we felt it necessary to exclude anyone NOT in our fraternity, and used our language to create that exclusion. Over the past 20 years, we have been able to refine the phrases, accents and structure to the point where we can rapidly pinpoint anyone who is not a professional. In many cases, we are able to determine a new driver, or perhaps the portion of the country where someone grew up.



Note the twin fiberglass whips on Tri-State's rig.

We'll reluctantly admit anyone into our in-crowd, based solely on the way they sound on the radio . . . feminine voices seem to be immune to the "system." If you can talk our CB language, we'll let you chat . . . if not, see ya! There will nearly always be someone chatting when you want directions.

Grandma is Listening, and It Ain't Always Good Listening!

I know that I'm being redundant, that I've said the same thing in every column I've written, but I *must* say it again . . . we are simply forgetting that everything we say travels at least five miles, so let's try to remember that people other than truckers are probably listening to us; perhaps a mother with several kids in the car trying to get directions to a clinic, or perhaps a grandmother who normally monitors channel 19 and tries to give us directions. I know, someone is yelling about free speech, and someone else is trying to explain that the FCC doesn't have the money or personnel to police the frequencies. Yep, you are both right, but can't we police ourselves? Very simply, can't we ask if WE would enjoy trying to explain to our young kids the meaning of some of the words we hear?

Yes, truckin' is a *very* tough profession. A doctor spends years learning how to operate, a lawyer goes to school an additional four years, an RN has extra schooling too. Here we are, with perhaps six *weeks* of training, and a couple of weeks with another driver, and we have the responsibility for not only the cargo, but our own life, and that of every person around us! We hear, "It's not brain surgery!" and remember that the brain surgeon is not betting his OWN life on the outcome of these decisions, each of which are based on experience, and must be made in tenths of seconds!

Sure, we have our own language—we've been there and paid our dues and survived the worst that Mother Nature and the motorists have been able to throw at us. We've dodged traffic in the Big Apple, the Windy, and the Shakey. We've fallen off the mountains of the Mile High, run into Big D, and dodged the scales in the Gateway. We don't take orders from anybody (except dispatchers). We just want to run! No interference from coops or cops—leave the left lane open and wave when we pass! Maybe we'll wave back—Keep 'em rollin' . . .

73's

Highlander

Hello Condon Transport of Ripon, Wisconsin! Is this your truck? Let us know who you are and we'll give you a one year subscription to CB Radio.

Answer: In the photo on the first page, we were westbound on I-94 near Madison, Wisconsin at the intersection of Route 90.

Trucker of the Month

OUR SPECIAL RECOGNITION OF PROFESSIONAL DRIVERS

By Bill Simpson, "Highlander"

Schneider Drivers . . . "Farmer" (Ron) and "Tombstone" (Ed)

As we all know, the Schneider drivers take a HUGE amount of harassment from other drivers, due primarily to the "slow trucks." Our TWO truckers really don't care about the static, since they both enjoy their job. Here's "Farmer" (Ron) on the left, and "Tombstone" (Ed), next to Farmer's truck just before they popped into Denny's for a quick breakfast.

Both have been with Schneider exclusively for more than five years, and both think that the "Punkin" is a top trucking company. They both sort of chuckle when asked about the hassle from other drivers. "We realize that a majority of the stuff we hear is simply jealousy. Many of the drivers would love to work for a company like Schneider or Roadway . . . great company to work for . . . lots of miles, or even dedicated runs!"

These guys have a lot in common since they are both from the Indianapolis area, both are dedicated drivers for a major medical research company from the Lake County, Illinois area and both started with "Punkin" originally. Both drivers are highly in favor of the GPS (Global Positioning System) which Schneider installed almost as soon as it became available. "Dispatch can send us an order, and we can confirm their instructions almost instantly. If we have ANY trouble, we can request assistance, ask directions, or even report truck problems. In case of an emergency at home, we can be notified and be on the way home within minutes," Tombstone said.

Our two Truckers of the Month are "Farmer" (left) and "Tombstone" who drive for Schneider. (Photo by Bill Simpson)

Both drivers use Cobra 29 radios and firmly believe in the Cobra quality and value. The next radio? A Cobra 29 LTD Classic WX!! "It would be nice to be able to listen to weather reports any time. I've hit some nasty stuff over the years—with no warning!"

The bugcatching antenna on Farmer's tractor is by Solarcon—the stick is for a company radio. ■

Antennas, Etc.

WHAT YOU NEED TO KNOW TO PUT OUT A GREAT SIGNAL

By Kent Britain

Fuses and Loading Coils

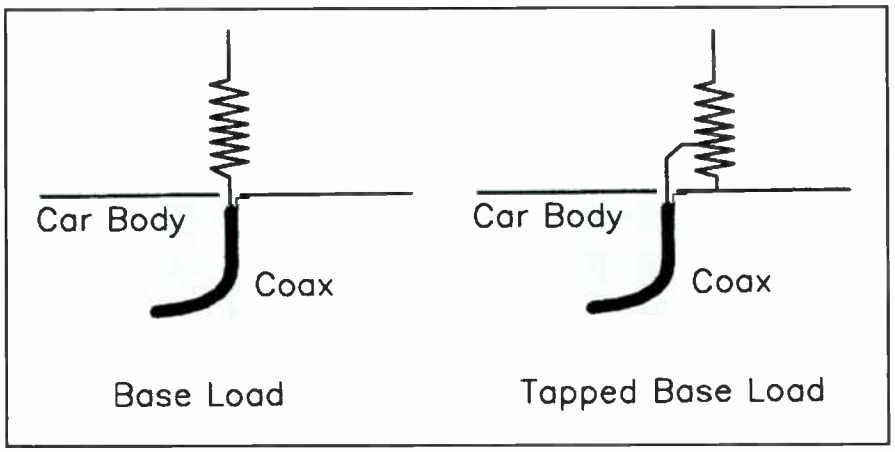
Your CB radio thinks its antenna out there is a quarter of a wavelength long. For the 27 MHz 11 meter band, the antenna length is 11 quarters or 2.75 meters; about 108 inches. In special cases, the antenna can be designed in multiples of .25 wave, such as a 1/2 wave, 3/4 wave, or sometimes longer. But it's always related to a quarter wave.

OK, so your radio thinks all those vertical antennas are 1/4 wave long, or at 11 meters, 108 inches. So how do they make a vertical antenna any shorter? (Hey, if it's 108 inches, why did I buy a 102 inch whip? They allowed six of those inches for the spring!) Well, some of the 108 inches is wound into a coil. The turns of wire interact with each other, so there won't be exactly 108 inches of wire in the antenna.

This coil can be located anywhere along the antenna; at the top, the middle, or the bottom of a vertical antenna. There are advantages and disadvantages to putting the coil in different spots as we talked about a couple of months ago. The big problem is that coils have loss. You lose some of your four watts in the loading coil. The longer the antenna, the more coil, the higher the coil loss. The shorter the antenna, the more coil, the higher the coil loss. So you always want to install the *longest* antenna, (smallest coil) you can live with.

A six-foot center-loaded antenna in the center of the car roof works great, but doesn't last long in the car wash! Making the coil out of a heavier wire, or making it several inches in diameter will have less loss. Great for coils, but you've got a bigger and heavier antenna, then. But no matter how they build them, all coils and loads have *some* loss.

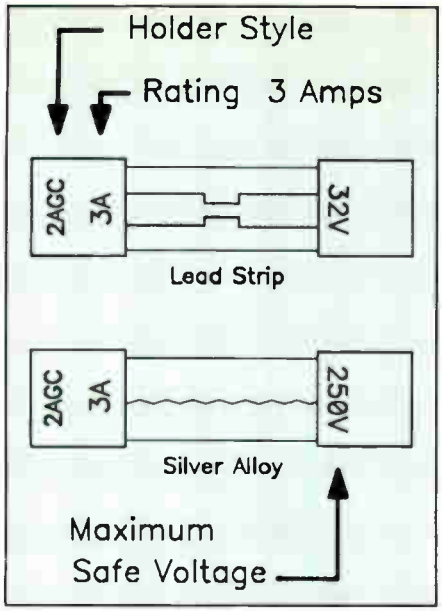
Most coils are made out of copper wire. Electronically, any metal could be used; aluminum, stainless steel, or better yet, silver. But copper works almost as well as silver, is a heck of a lot cheaper and easy to solder. All kinds of problems can develop if the manufacturer is not careful about dissimilar metals. Back in the early 70's, Hustler came out with a new set of dual antennas for truckers. The coil was copper wire, but the copper didn't want to solder to the end supports. Someone found that an acid-core solder flowed nicely, and then thousands of antennas were built. Well, the acid slowly ate away at the copper and after a year or so the SWR would suddenly soar on the antennas. I cut open several of the loads and could see where most of the copper had been eaten away by the acid. Just think of all the water, dirt, and road salt that antennas are exposed to. Have you ever tried using a flashlight with corroded connections? A corroded antenna works just about as good as a corroded flashlight. So when shopping around, look for antennas with stainless steel or plated hardware. If you've noticed corrosion on your antenna, it's time to get a new one.



In the photo you can see where one of the loads has been tapped. Base-loaded antennas have a very low radiation resistance; by tapping the coil and making a transformer out of the coil, the antenna can be greatly improved.

Look at the other photo that shows a RadioShack cellular look-alike CB antenna. It takes a lot of loading to make a two-foot long whip work on 27 MHz. The four turns in the middle of the antenna simulates the phasing section of a cellular antenna, but provides very little loading on CB frequencies. The base insulator hides 30 close-spaced turns, which makes the *real* loading coil for the anten-

Here's a tapped base-load (left) and center-load on the right.



The author's lab.

na. Enough about antennas for this month—next month we'll talk about coax cable, but since a lot of people might be confused about **fuses**, here's some help:

The Fuse—Keeping Your Radio From Melting Down!

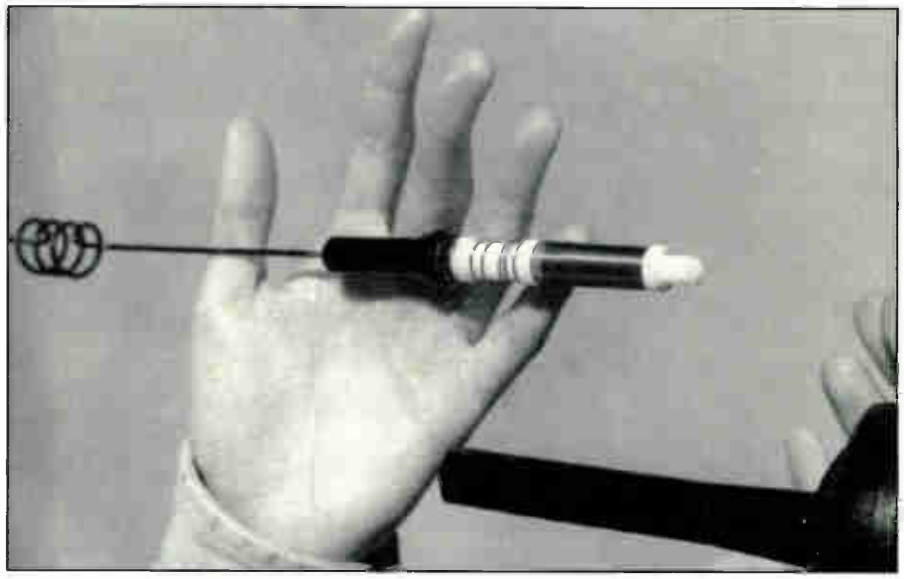
Let's face it, the fuse has only one purpose—to keep your radio from doing an imitation of the Chernobyl Nuclear Reactor Meltdown.

The fuse is simply a small piece of wire that will melt when it gets hot, breaking the electrical connection. By carefully controlling the resistance of the wire, and the melting point of the metal, the manufacturer can design the fuse to melt at a very specific current.

Two Basic Designs

There are two basic designs for a fuse; low voltage and high voltage. The low voltage variety is typically a 32 volt model. The fuse element is a short piece of lead wire. This style is very inexpensive to manufacture and is most commonly used in car electrical systems.

The high voltage type is the 250 Vac version where the fuse element is replaced with a thin silver alloy wire. Silver is more expensive than a lead strip. But when the lead melts in a 120 Vac circuit, there is enough voltage to arc in the lead vapors. Perhaps you have noticed a blown fuse with the insides completely coated in a black powder. Perhaps you've had a fuse explode into a pile of broken glass. This is what happens when a 32 volt fuse is used beyond its rating. It has simply tried to break a 120 Vac circuit.



The inside view of a base-loaded cellular-look-alike antenna.

Automotive fuses, slow blow fuses and 250 Vac fuses.

There are many ways to package a fuse; bakelite, varnished paper, plastic, glass or ceramic. The plastic fuses are limited to low-voltage use, usually automotive applications. Glass packaging is good for low and high-voltage applications—best of all it's easy to look through and see if it's been blown. But glass is just not strong enough for high voltage, high current fuses. Far stronger fuses are those made with ceramic bodies. The ceramic is strong enough to hold that cloud of metal vapors formed from breaking 10 or 15 amp 250 volt circuits. Ceramic does have one big drawback; you have to use a VOM or continuity tester to find out if the fuse is blown. But ceramic is the best material for fuses in demanding service.

Slow Blow Fuses

It acts just as the name describes. Pull 2.5 amps through a 2 amp fuse and it breaks the circuit in a fraction of a second. Pull 2.5 amps through a 2 amp Slow Blow fuse and it can take four or five seconds for the circuit to break.

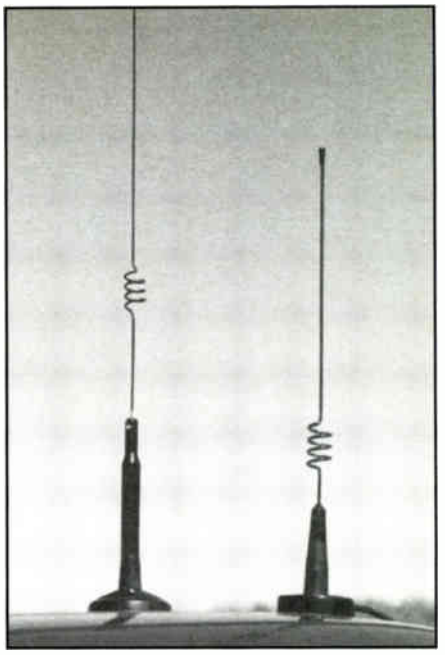
Electric motors, solenoids, and certain kinds of power supplies pull a surge of current as they start up. The slow blow fuse passes this start up surge of current, yet still protects against really bad overloads. You can usually pick out a slow blow fuse by the small spring holding the fuse link with slight tension. A tip: transistors pop pretty fast when hit with a high current. So *never* use a slow blow fuse with transistor circuits unless the manufacturer specifies a slow blow fuse. Do you really want that expensive transistor to pop and protect the cheap fuse?

I wish I had a quarter for every 20 amp fuse I've seen in a CB radio or tape deck. The wire going to the radio burns somewhere between five and 10 amps. The radio will burn and char long before a 20 amp fuse blows out. *The correct size fuse will save you a lot of money and grief.* If the radio keeps blowing out the correct rating fuse, you need to fix the radio. Don't put in a 10 amp fuse!

OK, you need a fuse. You run down to the local electronics store. Here's what to look for:

Cars—12 volt systems use 32 volt rated fuses. Use the correct amperage rating and package style for the holder. Remember,5 amp fuses are NOT a good substitute for a 2 amp fuse. There's nothing wrong with 250 volt fuses, they just cost more!

Home—120 volt systems use 250 volt rated fuses. Always buy the more expensive slow blow fuses ONLY if the manufacturer recommends slow blow types. *Never* use 32 volt fuses in a 120 volt system. The 32 volt rated fuse will arc, and it doesn't protect your equipment. Remember: *fuses are cheaper than transistors.* ■



On the right is an actual cellular phone mobile mag-mount antenna. The antenna on the left is a mag-mount CB cellular-look-alike.

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GLOSSARY

A

AC: Alternating current.
ACARS: Aircraft Communications Addressing and Reporting System. VHF radioteletype used to transmit data and messages between commercial aircraft and ground stations.
AFC: Automatic frequency control.
AGC: Automatic gain control. Used to lessen strong signals while a user attempts to hear a weaker station.
AM: Amplitude (envelope) modulation.
AVC: Automatic volume control.

B

Back door: In CB terminology, typically the last vehicle in a long line of vehicles. This CBer/driver keeps a lookout for "smokies" (state troopers/police).
Bandpass filter: A filter that allows only a select band of frequencies to pass.
Bandwidth: Frequency space occupied by a signal.
Bank: A specific grouping of channels/frequencies in a receiver/scanner. Many scanner users will place like frequencies/services into specific banks. For example, bank 1 (channels 1–100) could be local fire or police frequencies. Bank 2 (channels 101–200) could be aircraft frequencies, etc.
Bleedover: Interference to user's operating channel by an operator on another channel. Very often caused by high power operation or misaligned CB transmitter. Often called "splash" or "splashover."
Broadcast communications: Communications intended to be received by the general public with no restrictions.

C

CATVI: Cable television interference.
CB: Citizens Band radio. By FCC definition it's a short distance voice communications service for personal or business activities. Use requires no license, registration or call letters.
Channel 9: The only emergency frequency (27.065 MHz) in the United States available to the general public for emergency and traveler's assistance. In many areas of the country it is actively monitored by REACT teams and other nonprofit volunteer groups. Many CB radios manufactured today have an "instant channel 9" control that allows the user to quickly get to the emergency channel.
Clarifier: Tuning control that fine tunes sideband signals to give the most normal sounding pitch. Does not change the transmitter's frequency.
Coaxial cable: Commonly referred to as "coax." A feedline with one conductor completely surrounding the other.
Copy: In CB terminology, means to listen for/to another CBer. As in "How do you copy (my signal)?"
CTCSS: Continuous tone-coded squelch system; sometimes called a sub-audible tone (commonly known by Motorola's trademark Private Line or PL).

D

D-layer: Lowest layer of the ionosphere that has little effect on shortwave radio propagation.
DC: Direct current. Power supplies used at base stations are DC power supplies; they convert standard household AC to DC to allow use of mobile/portable radios from the home.
Dipole: Antenna often used as a standard for calculating gain. A half-wavelength wire cut to a specific band of frequencies.
Direct wave: Often referred to as line-of-sight propagation, these signals travel from antenna to antenna in a straight line.
Discone: A type of antenna used for receiving and transmitting that is shaped in the form of an inverted cone, with a top disk element. A discone antenna exhibits no "gain", but offers scanner users wideband receiving ability.
DTMF: Dual-tone multi-frequency; telephone-type keypad signaling system that uses 2-of-7 or 2-of-8 tones; often referred to by Bell's trademark Touchtone.
Dummy load: A device that connects to a transceiver that allows a user to test a radio without actually transmitting a signal.
Duplex: In radio communications, to receive on one frequency and transmit on another.
DX: Distant and/or rare station.
DXer: A person who actively specializes in tuning distant stations.

E

ECPA: Electronic Communications Privacy Act of 1986; Public law 99–508 that forbids listening to certain communications, including cellular phone communications, scrambled signals, voice paging, remote broadcast links and paid subsidiary carrier authorization (SCA).
E-layer: Layer of the ionosphere that is present only during the day.
EMF: Electromotive force; voltage.
EMS: Emergency Medical Service.

F

F-layer: There are two F layers in the ionosphere; the F1 and F2. The F layer is responsible for reflecting radio waves to earth. Amount of reflection depends upon several factors including time of day, year, and amount of sunspot activity.
FCC: Federal Communications Commission. The regulatory federal agency that governs our nation's airwaves. Often referred to as Charlie or Uncle Charlie.
Feedline: Typically a lead-in wire or cable connecting an antenna and receiver/transceiver.
FEMA: Federal Emergency Management Agency. Agency charged with writing and implementing emergency preparedness and recovery plans for disasters.
Flat Side: Term used by CB sidebanders that means a horizontally-polarized signal vs. the standard vertically-polarized signal used on CB.
FM: Frequency modulation.
Freeband: Portions of the 26–27 MHz band that is above and below authorized CB frequencies. Freeband operation, although illegal, has gained popularity in recent years.
Frequency counter: A device that reads out the exact frequency (not channel) the radio is operating on.
Front door: In CB terminology, typically the first vehicle in a long line of other vehicles; not necessarily an organized group of vehicles traveling down the interstate. Typically the "front door" driver will report "smokey" or "bear" (state trooper/police) sightings.

G

Gain: The measure of an antennas directivity.
GMRS: General Mobile Radio Service; organized public safety teams using frequencies in the 462.55–462.725 MHz spectrum.
GMT: See UTC.
Gray line: Often called the "terminator", this is the area around the earth which separates the areas of daylight and dark-

ness. "Gray line propagation" is an excellent method of DXing on the shortwave bands.
Ground: Common zero-voltage reference point; e.g. chassis ground or earth ground.
Ground wave: Radio waves that follow the curvature of the earth. Lower frequencies, such as the lower end of the standard AM broadcast band can be heard at greater distances than even those at the upper end of the AM broadcast band during daylight hours.

H

Handle: Used on AM CB channels, an operator's nickname that typically reflects the CBers job, hobby interests or some other facet of their life.
Harmonics: Signals from a transmitter occurring at multiples of the basic frequency.
Hertz (Hz): Basic unit of frequency measurement equal to 1 complete cycle in one second.
HF: High-frequency (3–30 MHz). Also known as shortwave.
High-pass filter: A filter that attenuates signals below a certain cutoff frequency. Signals above the cutoff frequency pass through.

I

ID: Identification, as in station ID.
Ionosphere: Layers of charged particles above the earth's atmosphere that are responsible for reflecting (refracting) radio waves back to earth.
IRC: International Reply Coupon. Available at U.S. post offices and typically sent with a reception report to overseas radio stations when writing for a QSL.
Itinerant businesses: Businesses that typically move from one location to another, never remaining in one location for more than a year. Such businesses can be licensed on: 27.49, 35.04, 151.625, 464.500, 464.550, 469.500 and 469.550 MHz.
ITU: International Telecommunications Union; worldwide organization affiliated with the UN that deals with telecommunications matters.

J

Jamboree: A large organized gathering of CB operators, often in the form of a picnic or weekend convention.
Jamming: Deliberate transmission of radio signals with the intent of rendering another signal ineffective.

K

kHz: Kilohertz (1000 Hz). 1,000 kilohertz is the same is 1 megahertz.
kW: Kilowatt (1000 W).

L

LCD: Liquid crystal display.
LED: Light-emitting diode.
Lid: Poor radio operator. A term typically used by sidebanders meaning rude.
Linear: Short for linear amplifier. An illegal RF power booster.
Low-pass filter: A filter that attenuates signals above a certain cutoff frequency. Signals below the cutoff frequency pass through. Common cure for TV interference (TVI) problems. Unwanted signals above about 30 MHz are filtered out, often eliminating unwanted harmonics, especially on TV channel 2.
LSB: Lower sideband.
LSB/USB switch: Allows CB user to select either the upper or lower sideband.

M

Ma: Milliampere (1/1000 A).
Mag-Mount: Short for magnetic-mount antenna. Today many CBers, scanner users and hams use magnetic-mount antennas simply because the user doesn't have to drill holes in their vehicle, and because the mag-mount antenna is easily removable to prevent theft.
MF: Medium frequency (300–3000 KHz).
MHz: Megahertz (1,000,000 Hz or 1000 kHz). Scanner frequencies are usually expressed in MHz, such as 162.550 MHz.
Mic gain: A control on some CB radios that varies the amount of audio sent to the radio's transmitter.
MUF: Maximum usable frequency; highest frequency at which the ionosphere supports propagation at any given time; usually best DX openings occur just below the MUF.
mV: Millivolt (1/1000 V).
mW: Milliwatt (1/1000 W).

N

Net: An organized gathering of radio operators on a specific frequency. Typically, nets are organized to deliver information or messages.
NiCd: Nickel cadmium; refers to rechargeable battery packs.
NOAA: National Oceanic and Atmospheric Administration.

O

Ohm: A unit of resistance.
OM: Commonly refers to a husband or male radio operator.
Omnidirectional: When referring to an antenna, one that radiates (or receives) equally in all directions. A discone antenna is omnidirectional. A vertically polarized CB base antenna is omnidirectional.

P

PA: Public address. A function on most CB radios that allows for the hookup of an external PA speaker. Used primarily by emergency teams and volunteers active in public safety.
Packet communications: High-speed data communications.
PEP: Peak envelope power.
Picture taker: In CB terminology, a police radar set-up.
Pirate station: Illegal broadcasting stations usually operated by radio hobbyists. They are also operated by well-financed corporate organizations that ignore international broadcasting regulations.
PLL: Phase-lock loop; used as one section of a digital frequency oscillator.
PL-259: Male connector that typically terminates the end of radio coaxial cable. It mates with the SO-239 connector on the radio.
PTT: Push-to-talk; a switch on the microphone that activates the station transmitter.

Q

QSL: A verification of a listener's reception report. A card sent from one radio operator to another to confirm contact.
QRM: Interference on the channel, usually refers to interference caused by other stations. Usually used by sideband operators.
QRN: Interference on the channel, refers to electrical type noise, such as static or power line interference. Usually used by sideband operators.
QRP: Low power operation, usually 5 W or less.
QRZ: Literally means "Who is calling?" Usually used by sideband operators.
QSK: In CB sideband use its meaning is similar to "break" that's used on the AM channels. On SSB it typically means "Would anyone like to talk with me?"

QTH: Means location. Usually an operators city and state.

R

Radio check: Frequently-heard CB transmission that typically means, "Hey, is anyone out there? I'm here and just turned my CB on for a moment and have this burning need to know if it works."
REACT International, Inc.: Radio Emergency Associated Communications Teams; non-profit public service organization with headquarters in Wichita, KS, whose many volunteer teams of radio operators provide assistance/information to the public. REACT teams are typically found on CB Channel 9.
Reception report: Information, usually in the form of a letter or cassette tape recording sent to a radio station in an attempt to obtain a QSL. The report contains some pertinent information such as date, time and frequency of reception, along with other items to prove reception.
Repeater: Automatic relay station.
RF gain control: Variable control found on some CB radios that allows the user to adjust (maximum to minimum) the amount of received signals. Most users keep it set to maximum.
RFI: Radio Frequency Interference. Can be caused to or by communications equipment.
Rig: A radio/CB transceiver. Sometimes referred to as a unit, whether base or mobile.
RIT: Receiver Incremental Tuning—on a transceiver, a control sometimes called a clarifier, that gives the operator the ability to slightly change the receiver frequency. The transmitter frequency is not affected.
RTTY: Radioteletype.

S

SASE: Self-addressed stamped envelope. Sent as a courtesy to radio stations, other hobbyists, clubs, publications when requesting information.
S-meter: An indicator on communications equipment that shows the relative strength of a received signal. From S1 to S9 the meter is calibrated in S-units. From S9 and above it is calibrated in decibels.
Search mode: On a receiver/scanner, a control that allows the user to program an upper and lower frequency limit and command the radio to detect signals within that limit.
Selectivity: Ability of a receiver to reject signals adjacent to the tuned signal. The higher this number, the better the receiver's selectivity.
Sensitivity: A receivers ability to receive weak signals. Expressed in microvolts (μV). A lower number means greater sensitivity.
Seventy three: Typically means best regards, used when terminating a contact.
Sidebander: In CB terminology, an operator who uses SSB communications, typically on CB channels 36 to 40. The FCC has traditionally not officially set aside any CB channels for sideband use, however most users adhere to the unofficial channels 36–40 plan.
Simplex: In radio communications, transmitting and receiving on the same frequency.
Sky wave: Radio waves that use the ionosphere's refraction capabilities (skip).
Squawk: A transponder setting used to inform controllers on the ground of an aircraft situation. Information is translated to give information on the controller's radar display indicating the aircraft, its type, altitude and speed.
Squawk 7700: Announcement indicating a declared emergency on-board an aircraft.
SSB: Single sideband; efficient form of voice transmission with one sideband and carrier frequency removed before transmission. SSB radios are more expensive than AM-only CBs, however, the increased legal power and range is considered by many users to be worth the extra cost.
SSB Network: An organization that issues special unique callsigns for sideband CB users. An inscribed membership certificate is also sent to members. Open to anyone interested in CB SSB use. Located at P.O. Box 908, Smithtown, NY 11787.
SWR: Standing wave ratio; figure of merit indicating degree of match for antenna and feedline at some particular frequency.

T

Traffic: Radio communications passed from one transmitting station to another. Usually heard in amateur (ham) communications.
Trunk-mount: Term for an antenna that mounts on a trunk or hatchback using small set screws. It is a permanent antenna installation.
TVI: Television interference.
Twenty: Term used on CB meaning an operator's location. Also said as "10-20." Common usage is often, "What's your twenty?"

U

UHF: Ultra-High frequency (300 MHz–3 GHz).
UHF Band: Typically frequencies from 406–520 MHz. Technically can mean all frequencies from 300 to 3,000 MHz.
USB: Upper sideband.
UTC: Universal coordinated time; formerly Greenwich Mean Time; world time. Also Coordinated Universal Time.
Utility stations: Stations other than broadcast, amateur or CB stations; these stations are not intended to be heard by the public. They include aircraft communications, radiotelephone, marine, embassy and military communications.

V

V: Volt (unit of electrical force).
VFO: Variable frequency oscillator.
VHF: Very-high frequency (30–300 MHz).
VHF High: A specific band of frequencies, typically 137–174 MHz.
VHF Low: A specific band of frequencies, typically 30–50 MHz.
VLF: Very-low frequency (3–30 kHz).
VOX: Voice-operated switch.

W

W: Watt (unit of electrical power).
WARC: World Administrative Radio Conference; international ITU meeting that apportions radio spectrum and determines usage.

X

XCVR: Transceiver. A transmitter/receiver in one unit.
XYL: Wife.

Y

Yagi antenna: A directional beam antenna used by radio operators (rhymes with foggy).

AND . .

800 MHz: Frequencies between 800 and 900 MHz, typically the 851 to 869 MHz business and public safety channels and the 869 to 894 MHz cellular band.
900 MHz: Frequencies between 900 and 1,000 MHz (or 1 gigahertz), but typically the 902 to 928 MHz amateur band, the 929 to 930 and 931 to 932 MHz paging, and 935 to 940 MHz business band.

Over and Out

CB HUMOR

By Bill Price

Just Tell Him My CB's Broken

When you read these words, it will be late April. Birds are singing, daffodils are popping up around you and thoughts of the beach are nudging your brain. You are warm.

As I write these words, it is not late April; it is January—January 9th, to be specific, in the Frystown Motel* at exit 2 off I-78 in Pennsylvania. Can you say blizzard?

Many of you** have written and told me how you dream of giving up your regular jobs to pursue an exciting career in consumer-electronics journalism, so I thought it might be a good time to pass along some insight into the creation of a column such as this:

A person might think that anyone who writes three columns a month for a CB publication might actually *have* a CB radio in his car (that's a direct quote from my wife, who has finally stopped shivering and is snoring rhythmically as I write these words). Well, you are both wrong. I *had* one in the car until just before we packed and left home on New Year's Day, forsaking parades, football games and temperate weather to spend time with our families, proving that you can indeed go home again, though it becomes increasingly difficult with age.

The blizzard, which even our Hawaiian readers have seen in all the papers, began with its epicenter directly over our home in stylish northern Virginia, then moved northeast and became elongated so as to remain over our home in Virginia while also lingering directly over the family homestead in northeastern Pennsylvania and all major highways in between.

Pennsylvania's Governor closed all the roads where we were for 32 hours; a good time, I thought, to ponder subject matter for my columns. I had plenty of material for "Ask Bill," and I've been narrowing the field for "CBer of the Month," but frankly the back page—the one you're reading now—had me stumped. I still have a lifetime supply of stories about my friend Norm (you met him in the February and March issues) but I like to vary my material to show my multi-fauceted nature—besides, I don't want you to think I only have one friend.

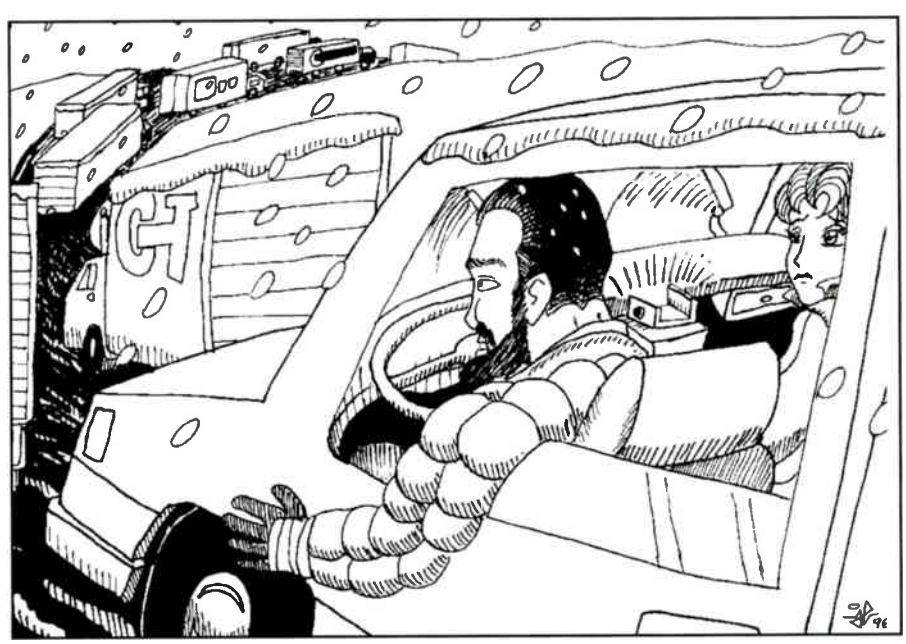
When the travel ban was lifted at 6 o'clock this morning, I still didn't have a clue what this page would hold, so I rolled over and contemplated packing the car.

A few errands and last minute visits put us on the road home at the crack of sunset—about 4 p.m.

As we neared Harrisburg on I-81, snow began to fall—trivial flurries at first, then some serious flakes. Driving conditions quickly changed from "not-too-bad" to "If I get out of this spin alive I'll spend the rest of my life working for Mother Theresa."

When I finally did pull out of the spin, my wife asked, "Where's the CB? Why don't you turn it on and get an idea what's happening up ahead?"

"Fizprazada," I mumbled. "Fendervert hamblecker." I hoped she took this as an answer and didn't ask me to repeat myself. I wanted to avoid telling her I had taken the set out of the car because it had



become encrusted with food, beverage, and road-dirt and I thought I should clean it before our trip north. We had left home and been gone some 20 miles before I noticed the empty mounting brackets, and after our typically late start I thought it was just too far to go back for it. If I really needed one, I thought, I could borrow one from my brother, or even buy a bare-bones AM rig with a cigarette-lighter plug—my mag-mount antenna was still firmly attached to the roof.

"You left the CB home—didn't you?," she asked.

"Geflabbada. Brizzen digglesnert."

"I thought so."

We eventually came to a full stop in a sea of trucks. Our stretch of I-81 looked like the fuel island line at the 76 Truckstop, and we were the only vehicle with fewer than 18 wheels. After we had sat still for 20 minutes, I thought it prudent to send my bride back to the rig behind us to bang on the door and ask if the driver knew what was going on. "Just tell him my CB's broken, honey, okay?"

"No," she said, "I'm going to tell him that a highly-paid *moron* of a CB columnist is sitting here tuning around the AM band and can't find a station closer than Scranton to tell him what's going on."

I couldn't see the driver laughing back there, but I know my wife—when she stuck her head in the passenger door of his cab to ask him what was going on up ahead, she told him every bad thing I'd ever done in my life.

What was worse, was that she told him he should get on channel 19 and tell all the other drivers about the moron CB writer with no rig, but as she got back into the car, the rig in front of us started to move, and I don't imagine the driver behind us had time to take my name in vain, since the sheet of ice we were on was at least a two-handed driving job. The holdup had been caused by a jackknife a few miles ahead, and everyone was getting off at the next exit, searching for food, fuel, and lodging.

I have learned my lesson, spent the price of a low-end radio on a motel room, and decided to admit the error of my ways. Next time, not only will I have a working CB in the car, I'll also get that pesky *heater* fixed before we head north.

* A really nice place—quiet, reasonable rates, and run by a nice lady who had no idea I'd mention her in my column. If you stop in, tell her she's famous.

** Two actually. However one turned out to be a prank. ■

Listening is only half the fun.

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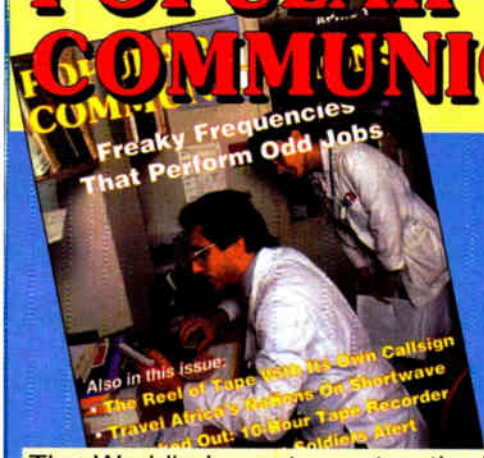

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that my desire to go to scanners was a natural progression. Yet I never see myself going to ham—too expensive and too many antennas! . . . One more thing—is there any way we can appeal to the trucker to use less profanity on the air? My wife and I love the security and convenience the CB and channel 19 provide, but most of the time the truckers' language forces us to turn it off.

Wilmac & Tooth Fairy, Maryland

Dear Wilmac & Tooth Fairy:

We're certainly glad to see you enjoy scanning and the CB, too. You make some excellent points. While we won't be doing many downright brand-by-band comparisons of radios/accessories, we will be giving readers in-depth looks at various products; CB radios, antennas, accessories, scanners, etc. every month. We're looking at the equipment like you and so many others do—how well does it perform, does it meet or exceed the average operator's expectations, what could be done to improve the radio, what are some of its quirks, etc. And yes, we'll be covering troubleshooting basics, preventative maintenance, antenna construction and much more as time goes on.

If our readers know of any Coffee Breaks, CB Clubs, Jamborees or other CB get togethers, please send us the details. Of course the larger groups are encouraged to advertise their event, but we'll be sure to mention these events. Remember, our lead time is about three months. As this is typed for the June issue of *CB Radio*, it's still only 40 degrees and early March!

And, yes, you're right on the money about the profanity—but it isn't just the truckers who have a vocabulary problem, it's a few other folks, too. Speaking of a few other folks, yes, some hams can be snotty, have an attitude and generally look down on us CBers with disdain. I have a difficult time understanding peoples' attitudes sometimes. During my Army days when I couldn't quite understand why the bureaucracy did things a certain bassackwards way, I could laugh out loud and quip, "It's me, I'm wrong" knowing quite the opposite was true. Today, when I hear hams chuckle at CBers or make blatant comments about CB radio in general, I take comfort in knowing that there are growing numbers of hams who really enjoy CB radio, too, and that those folks who are "down on CB" for whatever reason, are probably the same folks who would pay $2,500 for a toilet seat and think they got a good deal.

R.E.L.I. Readers Like Us Too

Dear Editor:

I'm just writing a short note to say thanks for bringing back a magazine just for CB radio. I've been involved with CB radio since the early '70s and remember a CB magazine that was out at that time, and if I find any of these old magazines, I'll send a cover copy in to you. I'm also a member of Radio Emergency Long Island (R.E.L.I.) REACT since '87, one of four REACT teams here on Long Island, New York.

Our Team (RELI-REACT, Team no. 4552) uses CB9, GMRS, cellular, and also have licensed amateur operators on 2 meters. REACT Teams are always looking for volunteers who enjoy helping others and their communities, and anyone interested in a Team in their local area can contact REACT International, in Wichita, Kansas for more information.

I have enclosed my information for a one year subscription.

Sincerely,

Mike Dumagan, RELI REACT no. 44, SSB-29G

Mike:

Thanks for your letter. We're always glad to hear from readers who enjoy our magazine. It's especially rewarding when people like yourself, who are involved in public service, tell us that we're right on the mark.

Keep up the good work with RELI-REACT.

Mail Received from CompuServe . . .

Hey, I liked the first issue of *CB Radio*. Just keep running stories in there about scanners (the way they're mentioned in the current issue).

Jeff

Dear Jeff:

Thanks for your comments. Our "Scanners: User Friendly" columnist, Steve Adams, Mr. Scanner Enthusiast himself, and certainly the most avid scanner user I've ever seen, will be bringing you lots of different scanner-related material over the coming months; fresh ideas, frequencies, photos, product highlights and much more. Stay tuned.

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 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:

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 and your comments. We've taken your suggestion and turned it over to Peter Bertini who will be doing an in-depth 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."

We've convened a staff meeting for the July 4th weekend to decide what we're sending you for correctly identifying the Uniden PC244 (even though you correctly pointed out that we GAVE you the answer!). You're right, it was a bonafide eye test. Watch your mailbox, Travis!

ADVERTISER'S INDEX

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27.015	1.30	35
27.065	1.45	40
27.115	1.60	45
27.165	1.50	41
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27.265	1.75	50
27.315	1.95	57
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