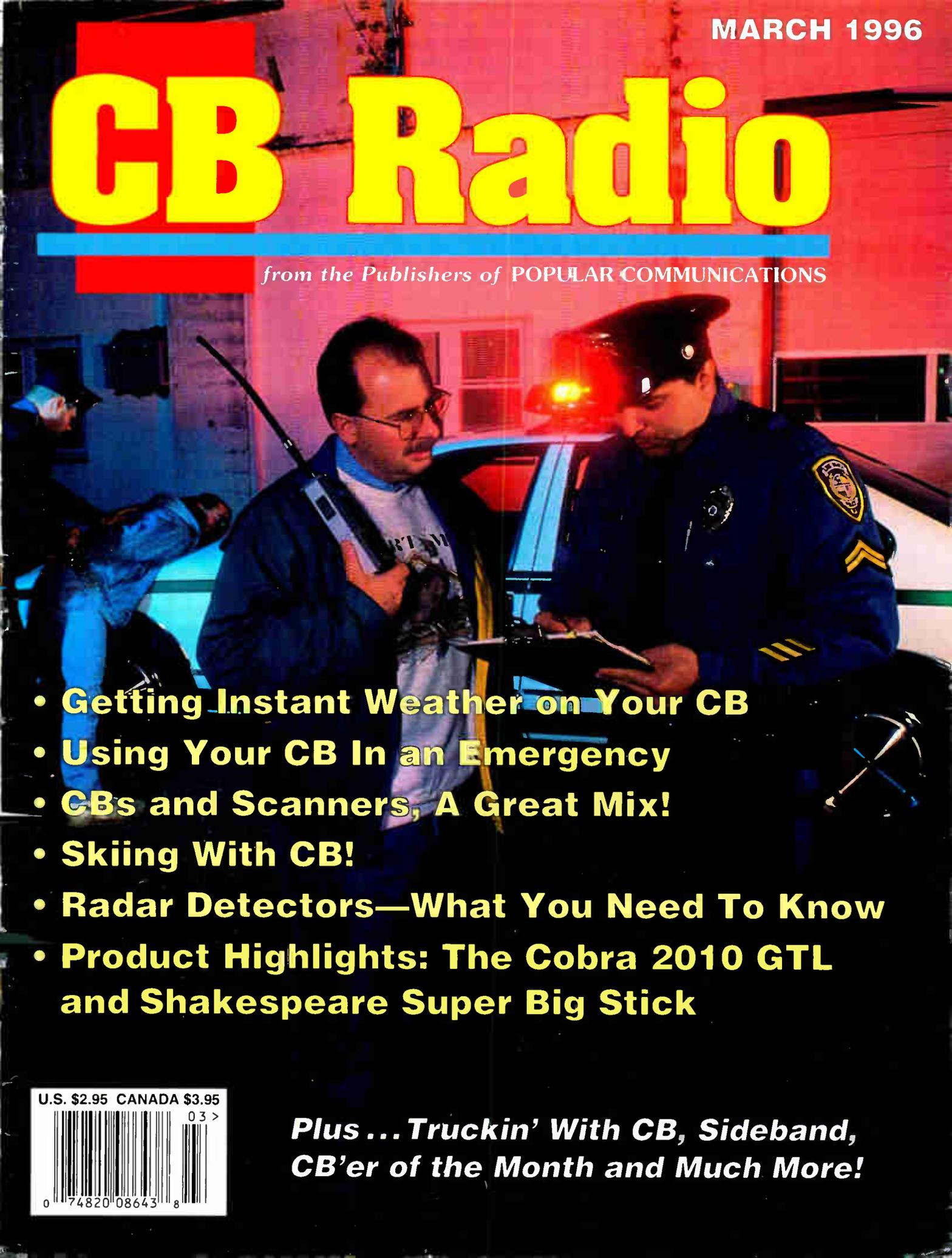


MARCH 1996

CB Radio

from the Publishers of POPULAR COMMUNICATIONS

- 
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 - **Using Your CB In an Emergency**
 - **CBs and Scanners, A Great Mix!**
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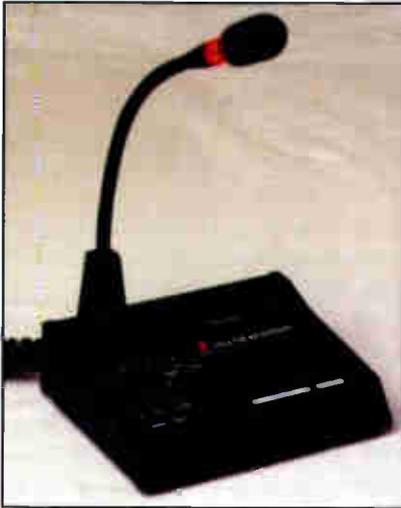
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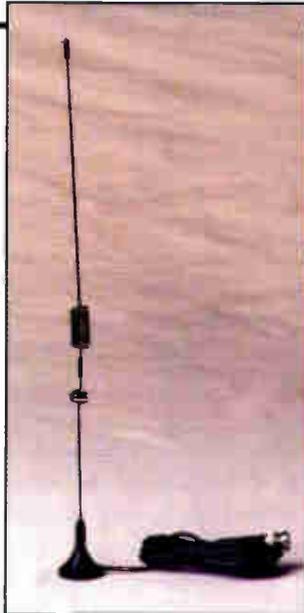
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CIRCLE 17 ON READER SERVICE CARD

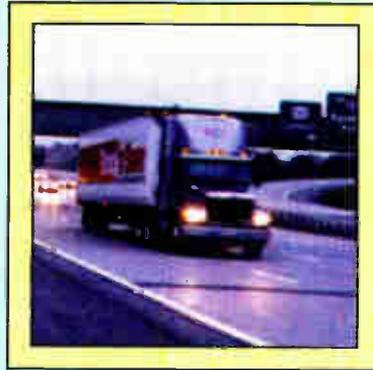
CB Radio

MARCH 1996

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Staying Safe Despite Winter's Wrath

Find out what to do when winter strikes.
By The National Weather Service

CB vs. Ham: There's Room for Both

When the chips are down, you can count on folks with radios to help out. CBers or hams, there *IS* room to work together.
By Bill Simpson, N9NMT

Instant Weather at the Flick of a Switch

Your NOAA weather-equipped CB is more than a weather report—it's a lifesaver!
By The National Weather Service

CB Clubs—Are They For You?

From membership certificates to attending meetings, CB clubs can be a lot of fun. Here, we present some information to help you decide if you should become a member or even start your own club.
By Bob Stanczyk, AIC-969-NY

Used CB Radios: Bargains or Baloney?

Thinking about buying a used CB? There are some things you should know before you go for your wallet—Tom Kneitel tells you what they are.
By Tom Kneitel, K2AES/SSB-13

The CB Frequency Counter— The Latest Readout

A neat accessory—or something you really need?—You decide.
By Bill Crosier

Antenna Rotor Installation—Doing It Right The First Time

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By Ed Hammond, WN1I

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6 For a few bucks and a few minutes, you can build a 27 MHz antenna. Here's how.
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This month's cover: Police take a statement from a Neighborhood Watch Patrol with his CB radio. Picture was made with the help of the Long Branch, NJ Police. Photo by Larry Mulvehill, WB2ZPI.



EDITORIAL

Welcome to the first issue of *CB Radio* magazine—YOUR CB magazine—the only one of its kind in North America. Your magazine is exclusively for the CB enthusiast; whether you're into using your CB for getting or giving help while traveling, talking across town or exploring the wonders of CB sideband. As an added bonus, we've included columns on the General Mobile and new Family Radio Service, and scanning. Both, we feel, go hand-in-hand with CB.

Notice that we said it's YOUR magazine. If there's something you like, please let us know. On the other hand, if we're doing something you don't like, let us know that, too. And since it's your magazine, we need your input; your shack photos, QSLs, articles and ideas. How do you use your CB? How has it helped you, a friend or a member of your family? Are you a volunteer channel 9 monitor? What are your personal CB experiences helping travelers?

What if you're just getting started in CB? A good CB transceiver can cost as little as \$50, to as much as several hundred dollars. You can get an AM-only rig or full-featured sideband (SSB) CB that often includes features like NOAA weather reception, instant weather alert and a multitude of other items to make your CBing more rewarding and fun. Have you shopped around for antennas and accessories? Why not also pick up a copy of our *CB Buyer's Guide*, available from our Hicksville, New York office. It's got write-ups on a multitude of antennas, accessories and of course, CB radios.

If you're one of the many folks who have re-discovered Citizens Band radio, you're in for a pleasant surprise. What began in 1958 and later became the unruly child of the airwaves, CB has become an inexpensive alternative to high cellular phone costs, and an especially reliable travelers aid, and a great way to simply have fun. There are no roaming charges, no air time charges, no license required; therefore there's no limit on the many uses of your CB. Certainly there are some basic federal rules that must be obeyed, but for the most part it all boils down to using common courtesy on the airwaves. And let's be honest, certainly there are those bad apples who ruin the day for everyone else with their on-air antics. (After all, it is the *citizens* band).

Your *CB Radio* magazine is focused on a variety of readers, from professional dri-

vers to folks who have discovered CB is a wonderful way to make new friends and stay in touch.

I've spent plenty of time over the past few months getting a superb army of columnists together. The names you see in the masthead are the best in the CB business. A sincere thanks and 'turn of the beam' to all of them for making our magazine a reality. A special thank you to John Barrett whose illustrations appear in this issue.

What's coming up in *CB Radio* magazine? Besides our regular columns, we'll have special features on subjects ranging from lightning protection to CB clubs. And each month we'll highlight a specific CB product, giving you the latest information available on it—with photos. We'll give it a healthy workout, reporting our findings directly to you.

Because we CBers like to hit the road with our radios, often taking the long way home, we'll also have special features on driving safety (we could ALL use a few pointers, don't you agree?) and crime watch features all designed to let you squeeze out a few more precious days to use your radios!

So whether you're a weekend CBer, a REACT or other volunteer monitor, or full-time CB hobbyist, it's time to join the millions of others who have discovered that CB is indeed everyone's radio.

Harold Ort has been an active CBer for 30 years, first being licensed as KCS-0447 in upstate New York. He worked as a radio broadcaster before joining the Army in 1971 where he served for 20 years in public affairs, his career culminating with a tour near the Kuwait border during Operation Desert Storm. (He took a handheld scanner along—no one said he couldn't!) His byline has appeared in numerous magazines and newspapers including *USA Today* International edition, *Stars & Stripes* and *Popular Communications* magazine. Harold is a member of the American International CB Club. He also enjoys monitoring international shortwave and all kinds of scanner communications, especially aircraft. Primarily active on SSB, Harold, SSB-596, frequently monitors channel 9 from home, and uses channel 19 when traveling. He is a licensed radio amateur (N2RLL).

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The Questions You Ask . . .

Dear Editor:

I was listening to channel 19 this weekend and was surprised to hear some really disgusting language from the truckers. Isn't there something we can do about this problem?

(M. Opperman, NY)

Dear M.:

You aren't the only one who is offended, and certainly won't be the last. But let's clear the air about just who uses words on CB they wouldn't use around their mother—far too many operators, AND they aren't all truckers! In fact I've heard some salty language from some women operators.

What it's all about is a phenomenon of hiding behind the mic and saying what comes to mind. It's a lot like the one-brick-short-of-a-full load folks who make obscene phone calls and other odd balls we must contend with. Our best advice is to ignore them, because like all bad apples, eventually they go away and no one misses them.

Dear Editor:

My CBing days stopped a few months ago when my new mobile was stolen from our car. The doors were locked, but the thief broke a window and took the CB and my radar detector. I read Bill Price's article in the *CB Buyer's Guide*, but it was too late for me. Please tell your readers how important it is to safeguard their valuable electronic equipment. Take it out of the car when you're away or put it in the trunk. By the way, I really enjoyed the *CB Guide* and have told my friends about it.

(R. Johnson, Milwaukee, WI)

Dear R.:

Sounds like you've learned a valuable lesson about basic vehicle security. And thanks for picking up a copy of the *Guide*.

Dear Editor:

I had to write to tell you how much I enjoyed the *CB Radio Buyer's Guide*. I have been looking for quite some time for a magazine devoted entirely (or mostly) to CB radio. . . . it seems like every type of hobby has its own magazine; I think CB

radio should too.

I also have interests in VHF and UHF scanning. I was glad to see your article on this in the *CB Buyer's Guide*. I have also monitored most of the ham bands and am not interested in getting my amateur radio license. Most of the conversations were very technical or boring, in my opinion. I am however getting more interested in single sideband. I have enclosed a large listing of CB terms that I've compiled over the years that you may like to publish in one of your magazines.

Curtis George a.k.a. "Rocky Raccoon",
Maryland

Dear Curtis,

Many thanks for your comments about our 1996 *CB Buyer's Guide*. We feel most CBers share your same interests; getting the most out of CB radio, whether it's helping others or simply having fun on the radio, and VHF/UHF scanning. We're glad to be part of your hobby!

Be sure to check out page 35 of this issue of *CB Radio* magazine for your CB Terms. Thanks again, Curtis.

Dear Editor:

I have owned and used CBs for the last 22 years. I have installed them in every vehicle I have owned since I was 19 years old, but my interest started back in my younger years. I have used CB as a trucker for years and have since "graduated" to operating heavy equipment. The company I am working for have CBs in all the machines . . . I have fabricated clip-on and boom microphones with remote switches on the machine controls and other small gadgets. This interest in radios led me to get my Tech amateur license (N3SDV) and I am in the process of upgrading. I just recently bought my first SSB CB, which is a Uniden PC 122XL. Beautiful little radio for the price. Now that you know where I am coming from, my reason for writing is to agree with you that there is enough interest in CBs for a "CB Radio" magazine. When my technical

interest grew, I would have loved to have found a CB magazine and still would. I have also been buying *Popular Communications* on a regular basis and enjoy it also.

Steven Felix, N3SDV, Pennsylvania

Dear Steven,

Sounds like you're into CB in a big way! And congratulations on getting your ham ticket. I'm finding that there are plenty of hams who are also CBers. Maybe we should say there are plenty of CBers who are also hams.

Dear Editor:

I have a problem with the article by Jock Elliott in your 1996 *CB Radio Buyer's Guide*. If all the activity above channel 40 and below channel 1 is illegal, why is it in your magazine?

J. Leonard, NJ

Dear J:

Well, J., It doesn't have anything to do with our encouraging or even agreeing with what some folks do. There will always be those wild and crazy ones just "dying" to get that 90 mph speeding ticket, without wearing seat belts; and there will always be those operators who decide the frequency spectrum is their own personal property. Of course both are selfish, reckless and foolish.

And as responsible media (remember, we didn't create the problem) newspapers, magazines and TV will be reporting on it. A fresh way to look at freebanding is that it's like listening to Howard Stern; there's no hard evidence—even from Uncle Charlie—saying it's harming anyone. It would, however, be to everyone's benefit for those desiring to operate "out of band" to pursue a ham ticket. Let's face it, between CB and amateur frequencies, if there isn't enough out there to keep an operator busy, there's something wrong with the operator!

We invite reader's letters and comments. Write to me at *CB Radio* magazine, ATTN: Mail Call, 76 North Broadway, Hicksville, NY 11801.

Staying Safe Despite Winter's Wrath

Winter brings with it a host of problems—it's important to know what to do when it strikes.

BY THE NATIONAL WEATHER SERVICE



Whether you're headed for the hills or an outing in the city, being prepared for the worst Mother Nature can dish out can be a life saver.

It's no secret that freezing temperatures can cause severe damage to crops, that pipes can freeze and burst and ice jams may form in rivers and streams causing serious flooding. But prolonged exposure to the cold can cause frostbite or hypothermia, and can become life-threatening.

Frostbite and Hypothermia

Frostbite is damage to body tissue when it becomes frozen. Symptoms

include loss of feeling and a white or pale appearance in extremities; fingers, toes, ear lobes or the tip of the nose. Once symptoms are detected, get medical help immediately! In the meantime, slowly rewarm affected areas. However, it's always a good idea to warm the body core before the extremities if the person is showing signs of hypothermia.

This extremely dangerous condition, resulting from prolonged exposure to cold, is characterized by uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness and apparent exhaustion. If you're able to, take the person's temperature. If it's below 95 degrees Fahrenheit, immediately seek medical care!

While waiting for medical help to arrive, begin warming the person slowly. Warm the body core first. If needed, use your own body heat to help. **DO NOT** warm the extremities first. Doing so drives cold blood toward the heart and can lead to heart failure. Get the person into dry clothing, and wrap them in a warm blanket covering the head and neck. **DO NOT** give the person alcohol, drugs, coffee or any hot beverage or food. *Warm broth is better.*

Using Common Sense BEFORE You're a Statistic

One of the best ways to stay safe in a winter storm is to be prepared. Listen to



NOAA weather broadcasts to hear news of developing storms, and equip your vehicle with a good quality mobile CB. If you're traveling, it's a good idea to buy one with NOAA weather channels built-in. This takes the guesswork out of wondering which radio station you've tuned and which weather forecast is for the area you're traveling through.

Watches, Warnings and Advisories

• A **Winter Storm Watch** means severe winter conditions, such as heavy snow and/or ice, are possible within the next day or two. NOW is the time to prepare.

• A **Winter Storm Warning** means severe winter conditions have begun or are about to begin in your area. Stay indoors! If you're outdoors, try to find shelter and stay dry, covering all exposed parts of your body. If there isn't any existing shelter, prepare a lean-to, wind-break or snow cave for protection from the wind. Also try to build a fire for heat and to attract attention. If possible, place rocks around the fire to absorb and reflect heat.

DO NOT eat snow. It will lower your body temperature. Melt it first!

• A **Blizzard Warning** means snow and strong winds will combine to produce a blinding snow with near zero visibility, deep drifts and life-threatening wind chill. Seek refuge immediately!

• A **Winter Weather Advisory** means winter weather conditions are expected to cause significant inconveniences and may be hazardous. If caution is exercised, these situations should not become life-threatening. The greatest hazard is often to motorists.

• **Frost/Freeze Warning** means below freezing temperatures are expected and may cause significant damage to plants, crops, or fruit trees. In areas unaccustomed to freezing temperatures, people who have homes without heat need to take added precautions.

In a Car or Truck

Stay put. Disorientation occurs quickly in wind-driven snow and cold. Open the window a little for fresh air to avoid carbon monoxide poisoning. Run the motor about 10 minutes every hour for heat. Make sure the exhaust pipe is not blocked by snow.

Use your CB! Every few minutes broadcast your name, exact location (highway number, direction of travel and even state/province) on channel 9. If you feel it's necessary, listen to other channels for local activity and break in with your emergency. Remember too, if you're using a

walkie-talkie, your battery power is vital during emergencies. Conserve power by keeping the volume low and transmitting for brief periods at a time. IF you don't hear an immediate response, turn the unit off for a few minutes.

Make yourself visible to rescuers; turn on the vehicle dome light at night when running the engine, and tie a cloth (preferably red) to your antenna or door. After snow stops falling you should raise the vehicle's hood, indicating trouble. Also, exercise from time to time by vigorously moving your arms, fingers and toes to keep blood circulating.

At Home or in a Building

If you're fortunate enough to be out of the driving wind and snow, close off unneeded rooms to conserve heat. Placing towels or rags in cracks under doors will also conserve precious heat.

When using alternative heat from a fireplace, wood stove or space heater, use it wisely and properly ventilate the area.

If possible eat and drink—but NOT alcohol. Food gives the body energy for producing its own heat and fluids will prevent dehydration.

Whether you're in an unheated building or cross-country skiing, wear layers of loose-fitting clothing. You can always remove layers to avoid overheating, perspiration and subsequent chill.

Power Lines and Ice

It's a deadly combination that results in extensive damage every winter—even in the South. Small accumulations of ice may cause extreme hazards to motorists and pedestrians. Limiting your exposure to areas where power lines can fall may seem like common sense, but each year many people are killed by high-voltage lines, either because they were in the wrong place at the wrong time, or they attempted to remove downed lines. ■

Being Storm-Ready at Home or on the Road

Have ready:

- Flashlights WITH fresh batteries
- Battery-powered NOAA radio and CB
- Extra food and water
- First-aid supplies
- Emergency heating source/heating fuel
- Fire extinguisher and smoke detector

AND . . .

- Keep your gas tank near full
- Try not to travel alone
- Let someone know your timetable and plan alternate routes

CB vs. Ham: There's Room for Both

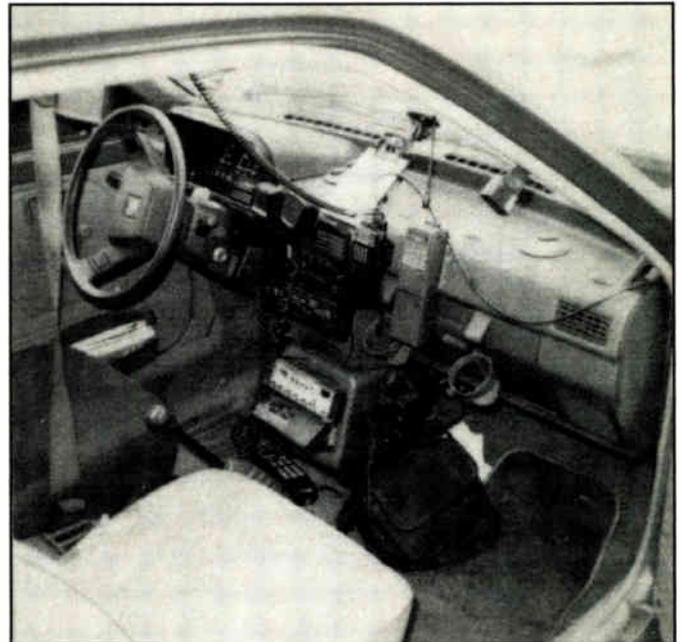
When the chips are down, you can count on folks with radios to help out. CBers or hams, there IS room to work together . . .

BY WILLIAM F. SIMPSON, N9NMT

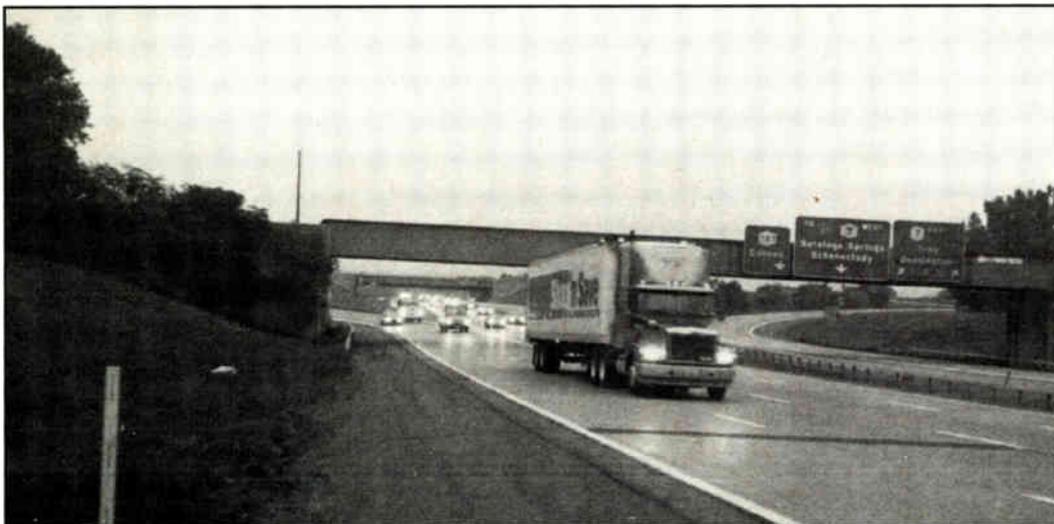
Ever notice that when a group of CBers and a group of hams are at a meeting or a hamfest, that there is normally a very distinct separation between the two groups? Ever notice that few people are welcome to join both? Ever wonder why?

The quick answer is that CBers tend to be overwhelmed by the extensive knowledge of the hams, but nothing could be further from the truth! Aside from learning the Morse Code, which MOST hams tend to forget within the first thirty days of completing the license test, many CBers have a knowledge of radio theory which often rivals that of Marconi himself. Emphasis is placed on antenna design and placement, power supplies and preamplifiers. Even hams could benefit from some of that knowledge.

The actual reason for the separation of the two groups is that the hams have forgotten the CB slang necessary to communicate with the CBers. The "smokey reports" and mile markers are not necessarily required to enter the group, but it certainly helps to be able to talk the language. Don't believe me? Pop over to channel 19, and try to decode exactly what the users are discussing . . . or, swing over to the local channel, and join in the conversation. We've come a long way from the 70's version of "Convoy," but CBers still have a language all their own, SOME of which is patterned after the hams' language. After all,



The author's Ford chock full of radio gear. Look closely and you'll see the Cobra 29 LTD WX CB, cell phone and even Icom amateur radio gear.



A crowded rain-slicked road is an accident waiting to happen. Bring your radio equipment along; that is, both your ham and CB transceiver. (Photo by Jock Elliott)

The Radio Shack TRC-493 with digital signal processing is a state-of-the art CB transceiver that sells for about \$150. Remember, each type of communications service is important . . . just ask the users.



Darren Leffler reports an accident using his mobile CB radio.

if we can add a "73" at the end of our conversation, maybe we can make the hams feel more comfortable, and get them to join in . . . won't all that expensive equipment designed for 10 meters slide down the scale to 11 meters?

And that brings up another point. We realize that while we can purchase a pretty decent radio capable of sideband, with several other bells and whistles for about \$250, the hams are spending twice that for a basic transceiver. Perhaps somebody should explain this concept is a matter of the law of supply and demand. Selling more units tends to drive the price per unit down. But, there must be a market for the units. We, as CBers, have already discovered that more people purchasing trans-

ceivers means that the CB manufacturers can operate on a smaller profit margin PER UNIT, since the companies can sell more units, at a lower cost, and sell more, and so on, etc. Perhaps, if the hams could find marketing procedures that would create more demand for the product . . . but then I don't have to explain this to you!

Another point: Many of us CB radio operators, get a kick out of making DX calls, just like hams do. Sure, there are more and more hams that use very low power rigs to work a distant station, but we all know the hams who fire up the rig, aim the fifteen element beam over the horizon, turn on the power and dim all the lights within three blocks. Now, admittedly, there are a number of CBers who do exactly the same thing, but I can remember my first DX QSO using a stock 4.5 watt Cobra 19, on a power supply, and mated with a mobile trunk lip-mount antenna, fastened to a gutter outside my apartment. With that simple rig in the Chicago suburbs, I talked to Ohio, Alabama, Texas, Canada, and Tennessee!

While we cannot compete with the hams for constant long-range contacts, we CBers can take pride in knowing that we too can assist our community with our communications. During a disaster, ALL forms of communication are overwhelmed. While the public service bands will communicate with each other, and the hams relay information outside the area, and to other stations, who will be trying to help those who are not hams; those without a cop or firefighter nearby, or those who might be trapped in a car after an accident? CBers will. Just those folks hanging on to that 27 meg two-way, and using it both as a toy and a tool.

Hams will be using their multi-megabucks radios to send information to other areas, or to request more help during a disaster, too. Don't get me wrong, these efforts are important, but remember that CBers will be down in the trenches, working with each other and the public, with our little "unimportant, unsophisticated" equipment.

There IS room to work together. ■

Instant Weather at the Flick of a Switch

Your NOAA weather-equipped CB is more than a weather report—it's a lifesaver . . .

COURTESY PUBLIC AFFAIRS OFFICE, NATIONAL WEATHER SERVICE

A truck driver avoids hours of delays on the interstate after being alerted by a National Weather Service radio report of an area on the travel route blocked by flash flooding.

A boater on a weekend cruise is awakened in the early morning by a tone alert on his CB radio; the specially-equipped radio picks up a warning of rapidly changing weather—the weekend is cut short, but the boat is safely docked well before the storm hits.

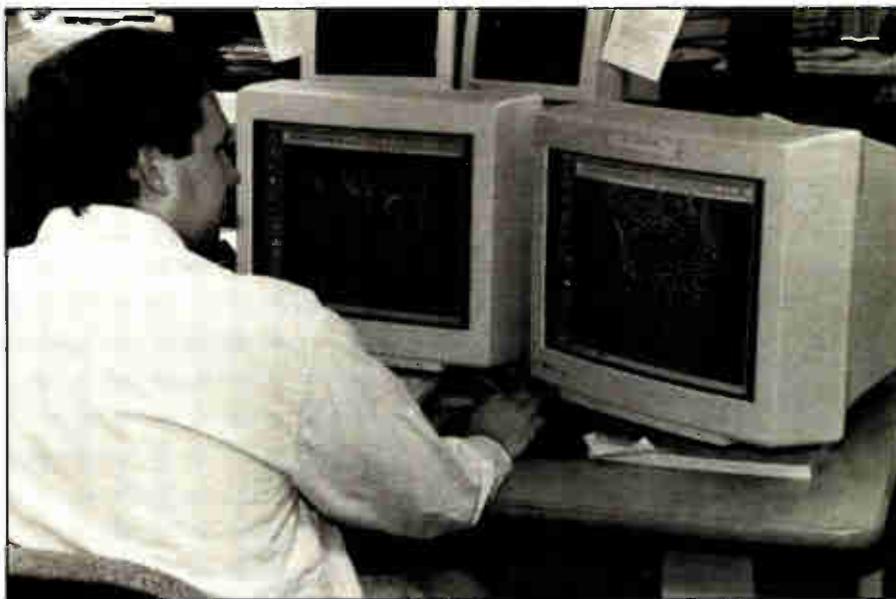
Weather reports and warnings like the ones mentioned above are broadcast by the National Oceanic and Atmospheric Administration's National Weather Service directly to home and mobile receivers around the clock. Some electronics equipment, including citizen band radios and scanners, have the capability to receive a weather radio tone alert signal, triggering a built-in alarm to warn listeners of severe weather announcements.

Get In On The Secret!

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

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

National Weather Service offices tailor their NOAA Weather Radio broadcasts to suit local needs and commercial interests. For example, Oklahoma broadcasts may provide people with alerts about high winds or tornadoes; broadcasts in north-



A meteorologist at the National Centers for Environmental Prediction in Camp Springs, Maryland, reviews a supercomputer model simulation used in preparing weather forecasts for the United States. (NOAA Photo)

ern states may give winter travelers important information about snow, ice and freezing rain; and boaters in coastal states will hear forecasts of marine weather conditions.

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

NOAA Weather Radio broadcasts began in the 1950s when the old Weather Bureau started broadcasting aviation weather over two stations. In the 1960s, stations were added for the marine community, and by the late 1970s, the system included more than 300 stations.

Now nearly 400 transmitters are within the listening range of most of the Nation's population. In 1975, NOAA Weather Radio became the only government-operated radio system for providing direct warnings to private homes for natural and technological hazards. It's also the primary source of information for activating the Nation's Emergency Broadcast System.

Currently the National Weather Service is modernizing, building a network of improved radars, satellites, data buoys, supercomputers and telecommunications capabilities aimed at saving lives, protecting property. But state-of-the-art technology and accurate warnings and forecasts are of little value if people who need the information don't get it in a timely manner. That's why the Weather Service also is modernizing NOAA Weather



A meteorologist with the National Centers for Environmental Prediction in Camp Springs, Maryland, prepares a short-range forecast for the United States. (NOAA Photo)



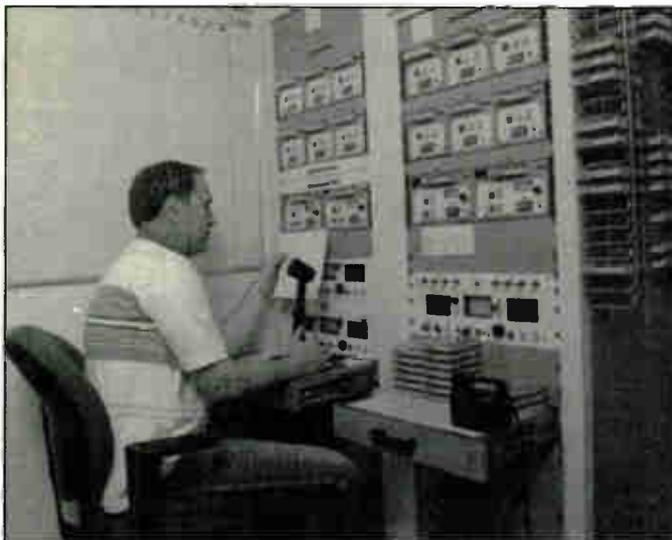
Service Hydrologist, George McKillop, with the NWS Forecast office in Brookhaven, New York prepares a NOAA weather radio broadcast. (NOAA Photo)

Radio. Efforts are underway to replace 1960s-era audio consoles with programmable, computer-based systems, said Johnson. The new technology will automatically convert weather messages directly from electronic text to speech and broadcasting at appropriate times. The automated system should help increase severe weather warning lead times by reducing delays that can occur when fore-

casters must break away from their forecast duties to go into the broadcast booth. Additional transmitters will expand the system's coverage to isolated areas.

A new system of digital coding will eventually replace the analog tone used to trigger receivers with tone alert features. A digital burst of coded signals will allow National Weather Service offices to tailor severe weather watches and warn-

ings for segments of their broadcast audience. Listeners will be able to program a new generation of weather radio receivers to alert them to warnings for spe-



National Weather Service offices throughout the country make regular broadcasts of weather forecasts and severe weather watches and warnings over NOAA Weather Radio transmitters using frequencies between 162.4 and 162.55 MHz. Many of today's CBs are specially-equipped to monitor such broadcasts.



A National Weather Service technician assembles a new generation of weather radio transmitters which will give the NWS offices new capabilities for broadcasting severe weather watches and warnings to very specific geographic areas, so listeners in other areas won't be bothered by warnings that don't apply to them. (NOAA Photo)

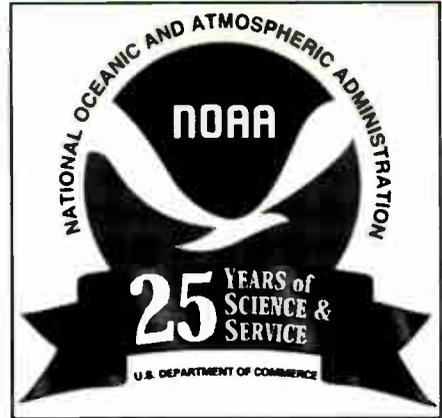
A WORD ABOUT NOAA . . .

The National Oceanic and Atmospheric Administration (NOAA) conducts research and gathers data about the global oceans, atmosphere, space, and sun, and applies this knowledge to science and service that touch the all our lives.

NOAA warns of dangerous weather, charts our seas and skies, guides our use and protection of ocean and coastal resources, and conducts research to improve our understanding and stewardship of the environment which sustains us all.

A Commerce Department agency, NOAA provides these services through five major organizations: the National Weather Service, the National Ocean Service, the National Marine Fisheries Service, the National Environmental Satellite, Data and Information Service, and Office of Oceanic and Atmospheric Research; and numerous special program units. In addition, NOAA research and operational activities are supported by the Nation's seventh uniformed service, the NOAA Corps, a commissioned officer corps of 400 men and women who operate NOAA ships and aircraft, and serve in scientific and administrative posts.

For further information: NOAA Office of Public Affairs, Room 6013, Herbert Clark Hoover Building, Washington, D.C. 20230. Phone: (202) 482-6090.



be used for communicating relief information after such disasters, said Edward Gross of the National Weather Service.

"Our goal is to someday have a NOAA Weather Radio in every home, just like a smoke detector, and in all schools, hospitals and other public gathering places," said Gross, who heads the Weather Service's Office of Industrial Meteorology. "It'll give people the kind of information they need to safeguard themselves and their homes during a disaster." ■

cific geographic areas, and screen out warnings for other counties in the same listening area.

New partnerships are developing between the National Weather Service, other federal agencies, private industry

and state and local governments to expand NOAA Weather Radio into an "all-hazards" network. All-hazards broadcasts would air warning information on earthquakes, volcano activity, and man-made hazardous conditions, and would

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CB Jamboree and Club News

A CB Events Calendar

This month a special thanks to Hazel Darrin "Buckeye Bear" and her husband, Donald for sending in this photo and letter about their Traveling Knights jamboree.

More than 70 people attended the "Traveling Knights" Jamboree, held in Florida last November. Proceeds of more than \$2,200 were used for food and toy baskets for needy area families.

Pictured here is "Buckeye Bear" and Donald Darrin, president of the Traveling Knights presenting the Clowns CB President "Doc" (center) a plaque.

The event also featured an appearance by the King of the Top 20 Jamboree for 1995, "Yogi Bear" from Michigan.

The National Top 20 is Coming in June!

For information about the gigantic National Top 20 Jamboree contact Larry "T-Bone" White at 11 Center Drive, Muncie, IN (phone: 317-288-6759). It's held from June 21-23 at the Tipton,

Indiana 4-H Building and benefits the Special Olympics.

There's plenty going on, too. On Friday night they have a king and queen contest. On Saturday join the group for a huge breakfast. In addition there's entertainment and a king and queen dance. A church service will also be held by "Popeye" and "Olive Oil." Grand prizes will be awarded.

On September 13, 14, and 15, the Clowns Incorrigible will hold a camporee in Ocala, Florida. Contact Donald Knerr at 325-854-9533. You can also call "Skip" at 325-629-3162.

Then in October, the Ding-A-Lings will hold a camporee at Green Acres Campgrounds, in Dover, Florida. For more info. on the Dover event call Cliff Collins "Johnny Reb" at 813-677-6956.

Remember, we can't possibly know about ALL the CB jamborees, so if you have an event coming up, please drop us a line at: *CB Radio* magazine, CB Jamborees, 76 North Broadway, Hicksville, NY 11801. While you're at it, why not take a few photos and send them to us with a short article. ■



CBer for Twenty Years—Ham For Nineteen



Doug Williams, ham and CBER demonstrates his GE rig. (The antenna on his trunk is his ham antenna). Note the plastic case where he stores the CB. (Photo by Harold Ort)

Doug Williams was a CBER when CB was at its peak. He still uses CB when traveling, especially on those trips between Florida and New York and on vacations. He said, "I use a portable GE with a small mag mount antenna . . . it's great. I plug it in and go."

Doug's talking about the rig he keeps in its plastic case that's used by so many travelers in an emergency. Most folks don't use the small mag mount antenna at highway speeds, but Doug's antenna is a small rubber duck that stays put. "It keeps me entertained on the road. Believe me, there's entertainment beyond belief, especially through the mountains of Tennessee where the truckers tell tall tales on the radio."

While Doug travels with his CB set to channel 19, he's also an active ham. "I became a ham about a year after discovering CB," he added. He continued, "I love them both—CBing really got me into ham radio, but unfortunately there are lots of people going overboard running lots of power. They don't need it, and besides it causes interference, ruining communications for everyone." Of course Doug's talking about those folks running excessive power on 11 meters, right?

CB Clubs—Are They For You?

They've been around since the dawn of CB. They come and they go, but most importantly they bring people together . . .

BY BOB STANCZYK, AIC-969-NY

The success of any CB club is not always measured by how many members it has, but how close knit an organization it becomes. A CB club needs leaders who are going to stay with it and not drop out of sight when needed. The leaders, just as in any organization, must keep everything under control and appoint people who are willing to use their own personal time for the good of the club.

Starting A Club

The easiest way to start a CB club is to first acquire a group of CBers together on a specific channel, either AM, sideband or both. Secondly, you must decide if you want the club to be local or if you would enjoy expanding it to other states and other countries.

Naming your club is the arduous part. Also deciding on a unit numbering system for members is important. For instance, I am AIC-969-NY, which are my unit numbers for the "American International Club" (the AIC standing for the name of the club, the 969 my membership number and NY for the state where I live). Each club has its very own system. AIC was first termed "The Queens Sideband Club" until we started receiving members from other states and countries. However, as long as you maintain a specific club strategy and keep it in order, it will not fail.

Membership Certificates, Cards and Newsletters

Others aspects to think about are whether or not you want to have membership certificates and cards, QSL cards, membership lists, newsletters, membership requirements, dues, etc. General membership certificates can be purchased at a stationery store or by mail. They can be used until you acquire enough funds (or get a volunteer) to draft a club certificate. Membership cards can be personally designed with logos and other graphics. They can be printed at



The membership certificate of the American International Club.

your local printer very inexpensively. QSL cards may also be ordered from the classified ads in the back of magazines such as *Popular Communications*.

Membership requirements and dues vary with every club. Some clubs just want you to fill out an application, whereas others require you send them a certain amount of QSL cards, verifying contacts from different countries. Dues range from a simple \$5 membership fee to dues of \$15 or more yearly.

Always rent a post office box for all your club's mail. This makes it easier for people to remember your address, especially when talking "skip" when your time may be very limited.

Emergency Monitoring and Nets

CB clubs can be very helpful with endless possibilities such as monitoring certain channels to help motorists and

police, having a certain channel and time each week or month to check into a net, having a channel set aside so members will be able to reach other CBers any time, and being able to contact friends who will help out in a personal emergency (downed antennas, etc.).

Meetings

Some clubs even have "in-person" local meetings. These can be held by chapters in different states or countries. As in all meetings, the minutes of the previous meeting would be read and sent to headquarters. Many clubs have jamborees or coffee breaks where members, families and friends meet for barbecues, dances, etc. Some clubs assist local charities by charging fees to these events, or with raffles; the proceeds then go to the designated charity.

I feel that one of the most significant



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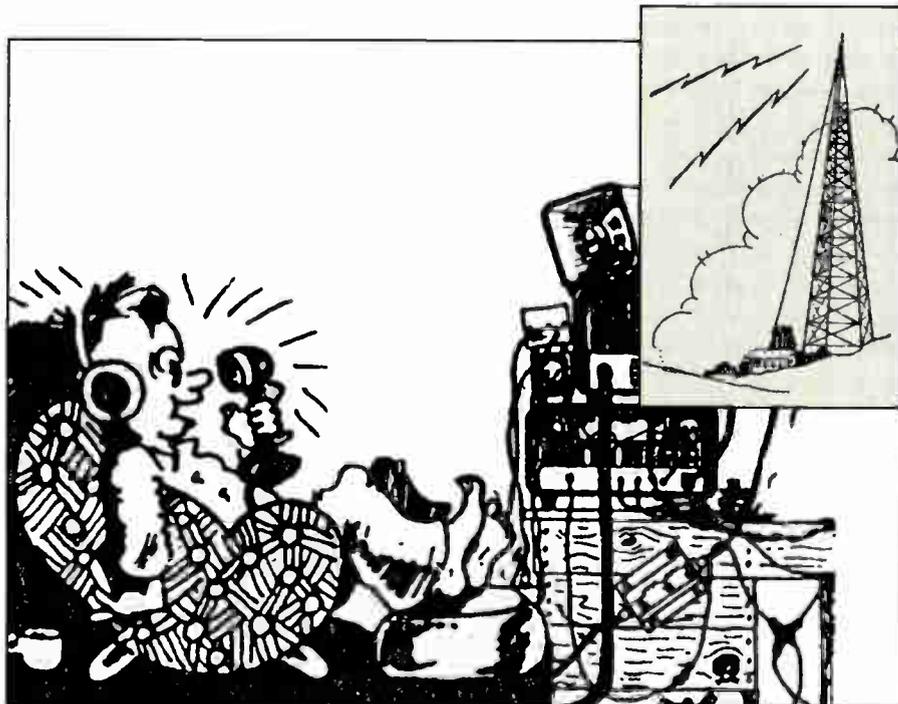
The official club card of AIC-969-NY. This club, like many others, offers its members special prices on QSL cards. In this case, \$14.75 gets you 100 cards

aspects of a CB club is the people you will contact from all over the world who share your interests.

Again, a CB club doesn't need a million members to be successful. Take for example the American International Club; it has less than 500 members. I regularly keep in touch with members in the U.S. and overseas! We have a monthly column for an international CB newsletter (CB News/Voice). So don't be concerned about the quantity of members, but rather the strong interaction on the part of qual-

ity members. Need I say more?

If you'd rather not start your own CB club, but would like to join one, try finding a local one in your area, or for starters, contact the American International Club. If you're interested, ask for an application by sending a self-addressed stamped envelope to: Bob, AIC-969-NY, Chief Executive Coordinator, American International Club, P.O. Box 720811, Queens, NY 11372-0811. If you start your own, or already have a CB club, drop us a short note telling us about your club ideas. ■



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Used CB Radios: Bargains or Baloney?

To buy or not to buy, that is the question . . .

BY TOM KNEITEL, K2AES/SSB-13

Ever think about buying a used CB radio? There's no shortage of them. They're offered at flea markets, coffee breaks, radio conventions and club meetings, at CB dealers, and from classified ads in hobby publications. My guess is that about 60 percent of all CB radios sold eventually are put up for resale. The most popular reasons are because the owner got a newer or better model, dropped out of CB, or the radio became almost or completely unusable.

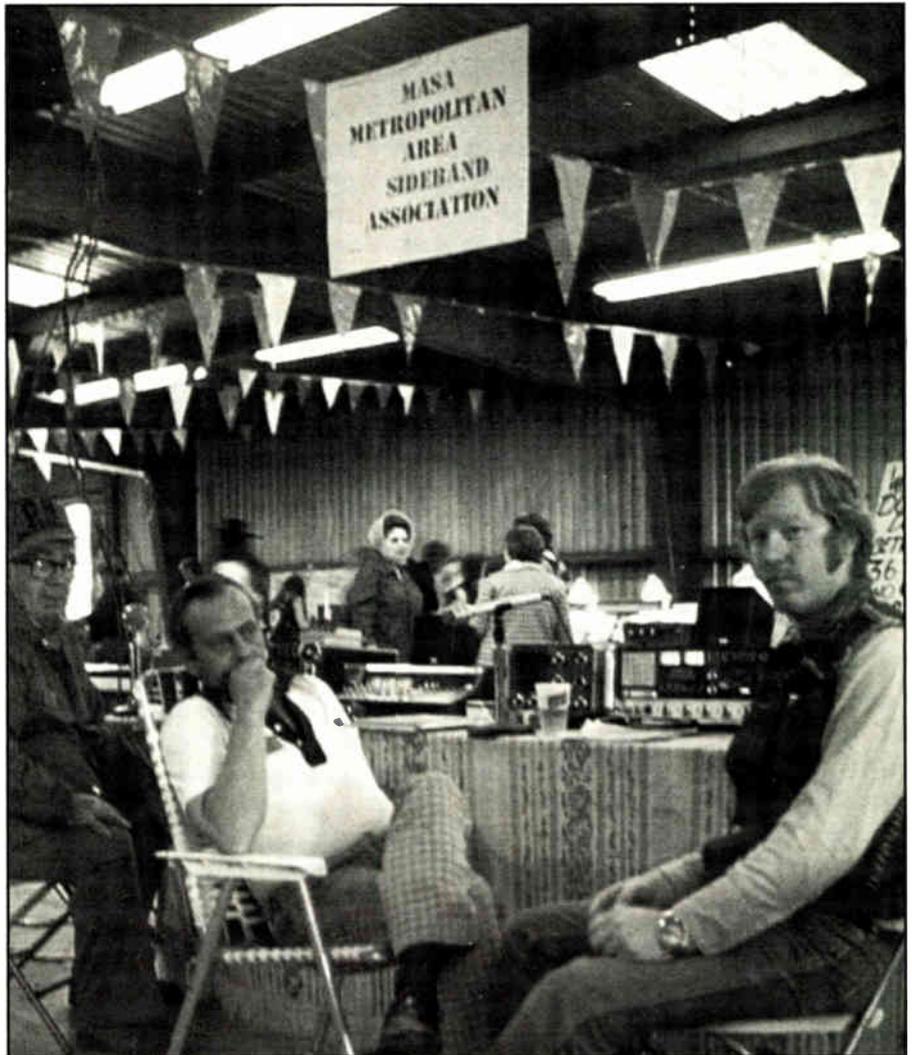
A sharp person who happens to be in the right place at the right time, can often pick up a fully functioning gem at a great price. On the other hand, someone who didn't know enough could end up poorer, but wiser, from the experience. The classic example is the CBer who went to a coffee break and was offered a deluxe \$500 sideband station at less than half price. The set was in its original carton. It had barely been used, he was told, when its owner lost his job. Now he needed cash and had to sell at a sacrifice. The radio was absolutely beautiful—brushed aluminum, black satin, and without a scratch. This was the deal of a lifetime.

When the fancy sideband radio was taken home and plugged in, it failed to work. When the set was opened up, it was discovered to have nothing inside, just a brick to give it heft. It was a worthless empty shell, probably a dummy intended to be used as a dealer's counter or window display. He learned the hard way two important things about buying used CB equipment: First, buying a used CB radio from a total stranger has inherent risks. Second, if it sounds too good to be true, it IS too good to be true.

Yet, CB horse trading is an old and honorable art. There are winners and losers, and it is definitely something you will want to master, knowing the traps and techniques.

Things to Keep in Mind

For starters, there are still some old 23-channel CB radios surfacing. They prob-



CB coffee breaks, club meetings and other gatherings are great places for locating used equipment offered for sale. This photo was taken at the Manassas Jamboree a few years ago.

ably have been gathering dust for more than 15 years. They can't legally be used any longer, so they are of value only to collectors. In fact, those 23 channel radios that date back into the 1960's could be worth a lot to avid collectors of

CB equipment. The bad news is that if you aren't a collector, you may not know which is the most desirable equipment. The good news is that most of the time, those selling the stuff aren't collectors and don't know its value either, and think it's trash.



A used CB rig is ideal for non-critical installation, like a beat-up old truck that doesn't stray far from home.

Unless a 23 channel set looks like it has been run over by a truck, it's got to be worth offering \$5 or \$10. Forget about whether or not it works.

When it comes to 40 channel CB radios, you are dealing with radios that could possibly be as much as 19 years old. In fact, an older better grade 40 channel CB radio may have already had several owners.

Less expensive CB radios that start developing problems may be more cost-

ly and bothersome to repair than owners feel it's worth. They simply opt to replace them with a newer or better model. That's one motivating factor for some sets arriving on the used market, so another operator ends up with the former owner's repair problem. By then the radio may have already a year or two's worth of use and its share of external scars, so it looks a bit worse for the wear.

My first recommendation would be to



Among the best bargains in used equipment are rare old CB radios highly prized by collectors. This choice collection is owned by Terry McNeill of North Carolina.

buy a new radio, if at all possible. Used radios are best suited to those on very limited budgets or who are only casually interested in CB radio. Alternatively, consider a used CB for non-critical installation in a small boat or beat up old truck. Or get one as a second set for stand-by use. It might be a way to upgrade to that dream deluxe SSB base station that would be too costly if purchased new.

The best place to buy a used CB set is from a reputable CB dealer. Many will take sets in trade, and sell the better ones. They hope that you'll continue to do business with them, so their used equipment will probably have been checked out by their service techs and certified to work. Any equipment offered in "as is" condition, however, should be avoided since they think it may not work, and don't claim that it will.

Dealers charge more for used equipment than people selling at flea markets, coffee breaks and club meetings. Be immediately suspicious of people wandering around trying to unload a single CB rig because they desperately need to raise money to pay for Granny's kidney (or pancreas) transplant. Chances are that radio was sitting under the dashboard of some stranger's parked car only an hour earlier.

You'll notice that such used radios never come with power cords. Some no longer have serial numbers. It's the tip-off of a rip-off. Sure, you can get a new power cord, but do you want a stolen radio?

Assuming that the radio looks legit, there are other considerations. Is it a current model, or one that was discontinued several years ago? Some radios have been manufactured using chips and other components designed specifically for them, but several years after the radio has gone out of production those components may no longer be available. The lack of those components to repair the equipment could be why someone is looking to unload a set.

In any event, you would hope that any piece of used equipment would come with its documentation, such as an owner's manual, and hopefully a schematic. At least it should still be available from the set's manufacturer. You say the manufacturer went out of business, or can no longer supply a schematic? Unless the set is very special, like a Browning or a Tram, keep on shopping.

There are books containing worthwhile information for modifying, peaking and enhancing the performance of CB radios. CBers who follow those instructions can end up with improved gear. Problems arise when operators who don't know what they're doing attempt to devise their own cockamamie "improvements." They can mess up their equipment so badly

that it becomes easier to sell the radio than try to repair. Like the guy who told me that his radio never worked right after he decided to randomly peak or tighten down all the "loose" screw adjustments he could locate.

Some used radios may be described as being *reconditioned*. Better find out exactly what that means. It implies that the CB has been put on a service bench and checked out by a qualified communications technician who certifies that everything has been done to make it operate to the manufacturer's specs. That means aligned, faulty parts replaced or repaired. In truth, it may mean no more than the set was externally cleaned up to improve the appearance of its cabinet. And don't be overwhelmed by the radio being in its original carton. I still have the original cartons from radios I bought years ago. What does the original carton prove that causes used equipment buyers to be impressed?

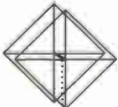
Here's the thing. You want to know that the radio works, and you want to test it in your home or car. If the radio doesn't work or has problems, you will be wasting your money. See if you can get the seller to let



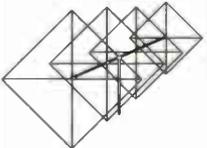
A small portion of the valuable Browning CB radio collection assembled by the "Browning Collector" of Pittsfield, Mass. Some of the rare CB equipment was located inexpensively at flea markets and coffee breaks.

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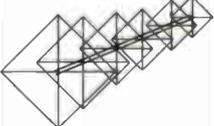
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When you get on the air, begin contacting stations known to you, asking how you sound and see what kind of range it has compared to your existing radio. Check AM and SSB modes, and try different channels across the band from the low end to the high end. Make certain the unit operates on every channel. Some dead channels could mean PLL problems or a bad channel selector.

As for price, it's negotiable, and haggling is obligatory. If the price is ridiculously low, don't buy. But if it's reasonable, no matter what the guy asks, it's at least 25 percent more than he expects to get. Offer him no more than half of his asking price, pointing out its many defects. Notice its scratches, dents, missing knobs, manuals, etc. Say that your friend at the company who made the radio told you it's a discontinued model that never sold well because of service problems. Say someone else is offering one in better condition than his and for less money. Act indifferent. Have your wife there to keep saying it's a total piece of junk and waste of money at any price. No matter how badly you are dying to own the radio, resist the temptation to giggle with delight at finally dis-

covering the set, or clinching the deal.

I watched one brave CB horse trader I know stoically walk away from negotiations for an expensive rare Stoner SSB base station he was aching to own. It was just strategy to get the stubborn seller to lower his price. It worked! The seller chased my friend down the aisle shouting, "OK, come back, it's a deal!"

No matter how many wonderful things the seller says about the radio, remember that some may either be exaggerations or white lies. Keep in mind that claims about a used CB radio aren't any more reliable than the person making them, so if the seller is unknown to you, risk is involved. This isn't the time for a leap of faith. Remember that you are being asked to take something off his hands that, for whatever reason, he no longer finds useful.

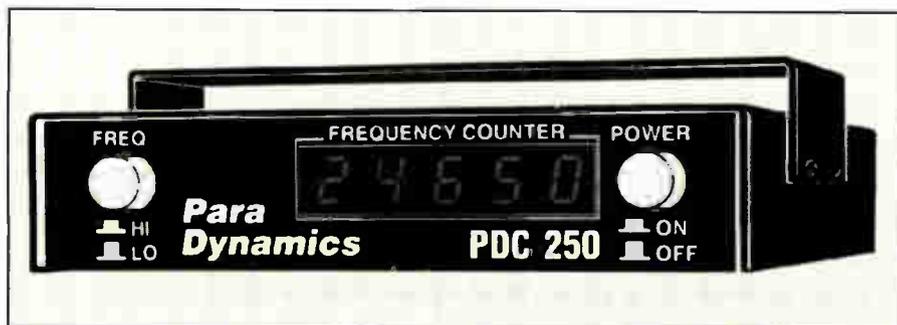
Just hold your ground, and hope he comes down to less than 75 percent of his original asking price. Be sure to demand a written bill of sale containing the seller's name, address, phone number as well as the serial number of the CB radio and price. If you get any guarantee, make certain it's also in writing.

There are gems and junk in the land of used CB radio equipment. Horse trading is serious business, and there are pitfalls for the naive. Pay attention, and you'll emerge a winner. ■

The CB Frequency Counter—The Latest Readout

A neat accessory—or something you really need?—
You decide . . .

BY BILL CROSIER



The ParaDynamics PDC 250 Frequency Counter. (Courtesy ParaDynamics Corp.)

One item you might consider adding to your CB radio station is a frequency counter. A frequency counter is a device that displays the frequency you are using, usually in MHz. There are many different types and options available, depending on the application and your needs.

Some of the new CBs on the market come with a frequency counter built-in. But, this is not new technology. Radios like the Cobra 2000 had the frequency counters built-in, and they haven't been manufactured in years. In fact, they're no longer available. However, radios selling today with frequency counters are usually a company's top-of-the-line models and are more expensive. Why? It's because of the frequency counter.

Why Have One?

What's so important about a frequency counter, anyway? Well, it depends on how you use one. A frequency counter used by some folks could be just a neat accessory that adds to the appearance of their station. To others, it is a precision piece of test equipment. So, it all depends

on which counter you buy, what you use it for and how it is used.

The simplest units are small, 12 Vdc powered external devices that are daisy chained in the antenna feedline. The ParaDynamics PDC 250 is one example. It has a five-digit LED readout that only displays the frequency when you key your transmitter. This means that if you were on channel 20 and you key the mic, your frequency display would read 27.205, and when you unkey the mic it would display 00.000. Its range is from 3.5–250 MHz. This type can be used for both mobile or base installations, if you provide the 12 Vdc power supply. These units are okay, but can only give you a basic reference due to the number of digits it displays.

For more accuracy, you might consider a six-digit unit such as the JB 1004 by Wawasee. It's a six digit, 12 Vdc unit that comes with a power pack, so it can go mobile or base. It has half-inch LED numbers and a frequency range of 100 Hz to 50 MHz. This is another one that will only display while the transmitter is keyed up. It is also connected via coax jumper, daisy-chained in the antenna feedline.

Another type is the ParaDynamics

model PDC 256 which is a six-digit continuous readout counter that allows the user to read an operating frequency without transmitting. It is not a true frequency counter. This type is actually displaying the PLL synthesizer of the CB, allowing the frequency to be displayed while in receive mode. It operates on 12 Vdc and has a five inch high green LED display. It is hard wired inside your radio and requires installation by a qualified person. This units' frequency range goes from 20.000 to 29.999 MHz and installs in most frequency synthesized SSB/CB radios.

Combination Frequency Counter/Multi-Function Meters

Then there are the combination frequency counter, multi-function meters. These can be five or six digit displays, and usually have RF power, SWR and modulation meters built-in. These meters are beneficial because everything is in one box and only requires one link in the antenna feedline. Otherwise you might have your CB hooked to your frequency counter which could be hooked to your watt meter which would be hooked to your antenna!

The more accessories you chain together increases the potential for possible problems. Problems with coax jumpers and proper placement of the devices in the antenna feedline must be overcome. However, if properly done, there is nothing wrong with installing a counter; some people prefer them. It all depends on your needs and preferences. So give some thought to your operating conditions BEFORE you put down your hard-earned money for features you may or may not want. Depending on your needs, you can expect to pay from \$50 to \$300 for a frequency counter suitable for use with CB radios. ■

Antenna Rotor Installation— Doing It Right The First Time

There's more to bolting the rotor to your antenna and turning the dial . . .

BY ED HAMMOND, WN1I

As more and more CB operators experience the ease and enjoyment of today's CB band, the desire to deliver a good signal to its destination via a rotary beam or quad is becoming quite popular.

Very simply: you need a quick and efficient means of rotating to your beam or quad into the proper direction.

In the old days we either had a hole in the roof with a steering wheel in our radio room (a.k.a. "The Armstrong Method") or we ran outside to turn the whole assembly—not a pleasant task in the winter, especially up North!

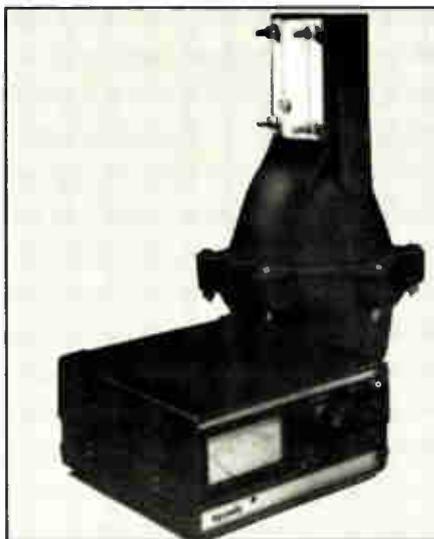
Today a wide assortment of compact and highly efficient rotors are available. From TV types in the \$50–\$60 range to quality commercial rotators that are able to handle 15–20 square feet of projected wind loading, such as a giant Moonraker CB antenna.

Proper selection and installation of a good antenna rotator requires you to know the Rules. Here goes:

Rule 1. You Must Know the Windload of Your Antenna It's already been calculated by the manufacturer's rating in foot-pounds. For example, a small 3-element yagi on CB might only be 4 foot-pounds, requiring a small TV-type rotor. On the other hand, a giant quad array rated at 14 foot-pounds might require a hefty high-rated amateur radio rotor, like the HyGain Tailtwister.

Rule 2. Always Use a Rotor-Bearing Above Your Rotor To Minimize Stress on The Rotor Itself This is especially important if you have a long mast. Example: Imagine trying to hold a 10-foot pole vertically with only one hand. It's pretty tough and very unstable. But with two outreached hands, three or more feet apart, you're like the Rock of Gibraltar!

Rule 3. Ground, Ground, Ground As in your antenna installation, if your rotor diagram shows an earth grounding point, DO IT. Also today's solid state controller requires that you use a high quality, fast-acting movistor surge protection, to pro-



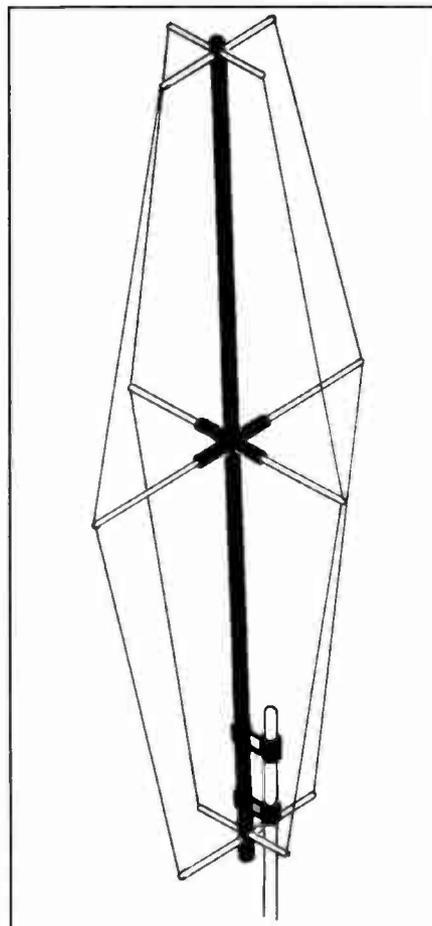
The Telex Hy-Gain Tailtwister antenna rotor is designed to turn the big ones. With a list of specifications, including LED control indicators on the control unit and a long-life machined steel drive gear system, it's great for large CB antennas. (Photo Courtesy Telex Hy-Gain)

tect your equipment from powerline spikes. Hooking up to a water pipe is a temporary safety link at best. Always use #10 gauge copper or larger wire and a minimum of 4 to 6 foot ground rod.

Rule 4. Properly Mount the Rotor for Long Service If you want it to stay put and last a few years, it must be put in its final position properly. It sounds simple enough, right? But you wouldn't believe the stories I heard from hams and CBers alike who ignored proper installation only to lose their total investment.

Always mount the rotor either inside your tower, and use a thrust bearing to minimize the bending moment, OR if you cannot use a tower, locate the beam just above the rotor on a very short mast.

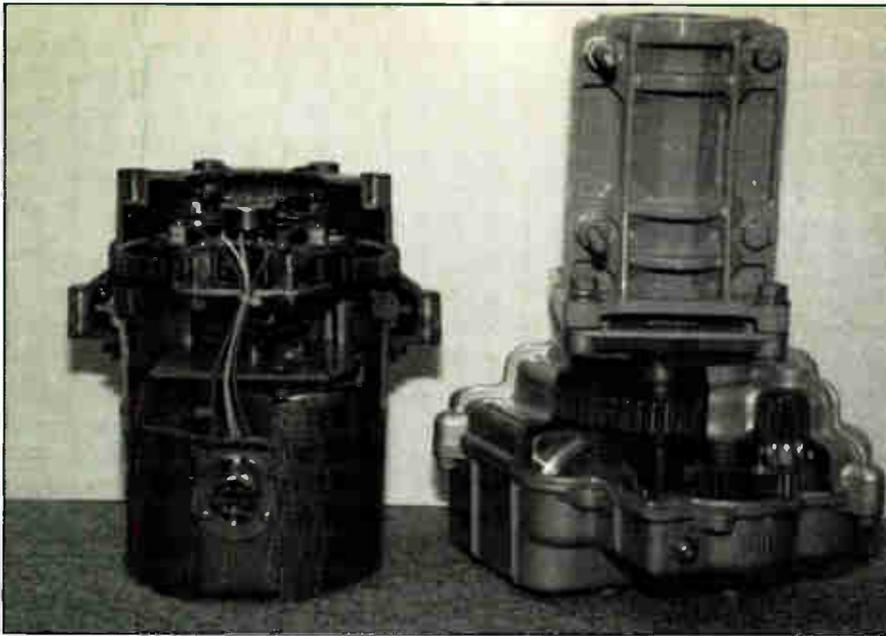
Here's an example: A typical 3-element vertical CB beam antenna creates a bending moment of 1,700 lb. ft.—a 12-



Don't want to use a rotor? Consider an antenna like the Signal Engineering Company's Thunder 8XB. It's nearly 15 feet high and includes a coax switch to change directions. It weighs about 11 pounds. (Photo courtesy Signal Engineering Company)

inch or less pipe to your rotor or a sleeve/thrust bearing on your tower top-section is a NECESSITY.

Having worked for a large ham antenna manufacturer, I know the Number One



Here's a rare look inside an Emoto 1105 rotor. All rotors are NOT created alike. Always talk to your dealer, being sure to tell them the size/type of antenna you're planning on using. (Photo courtesy EDCO)

cause of antenna mechanical failure was the use of large booms from rotator to antenna—we call it antenna suicide!

Rule 5. Use The Proper Wire Size It all depends on the length of cable needed between the control box and the rotor. While #22 gauge might be OK for a 40-50 foot run, a 200 foot length must be heavier (size 18 or 20 doubled together) to avoid damage to your rotor from voltage drop. Too long a run will cause your cable to heat up and will eventually burn up your expensive motor. Consult the Belden Wire Company or Columbia cable for more information.

Rule 6. Check the cables on the tower/mast top for proper length Rotate your beam through a 360 degree complete rotation. The cable loop should be long enough to avoid binding, but not droop into the tower below it. Be sure to secure the coax above and below the rotator with UV protected electrical cable and plastic wire ties.

Also, the rotor cable exiting the rotor box should be protected, making a short downward run prior to securing it to the tower or mast. This creates a "rain-drip" and avoids getting rain into your rotor and causing immediate damage!

Rule 7. Write Down Your Wire Connections Besides using the proper wire size to avoid motor burn up, it's equally important to write down all connections. Example: Red to #1 terminal, white to #2 terminal, etc. If I had five bucks for every rotor destroyed by CBers AND hams due to hasty hookups where "I assumed" means \$ lost, I would be retired in the



Unlike this operator, you should always remember to mount your rotor INSIDE the tower and use a thrust bearing to minimize bending movement.

Bahamas by now. Improper cable connection is the Number One cause of rotor problems.

Rule 8. Have a Regular Maintenance Schedule Test your rotator system on the bench PRIOR to making the big installation in the sky. Wouldn't it be easier to find a problem (if one indeed exists) in your garage, rather than if it's 50 feet in the air with that monster quad resting on it? (and your CB friends laughing!)

Good DX, and I'll be "seeing" you on the CB channels. ■

Helpful Tip

Always remember to observe safety precautions and common sense when putting up ANY antenna. Keep it away from power lines! ALWAYS do a basic site survey first to ensure, among other things, if the antenna falls, it won't touch power lines. While you're putting up that new antenna, keep your coax cable runs as short as possible to cut down on loss.

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This month: Skiing and CB—Having Fun and Staying Safe

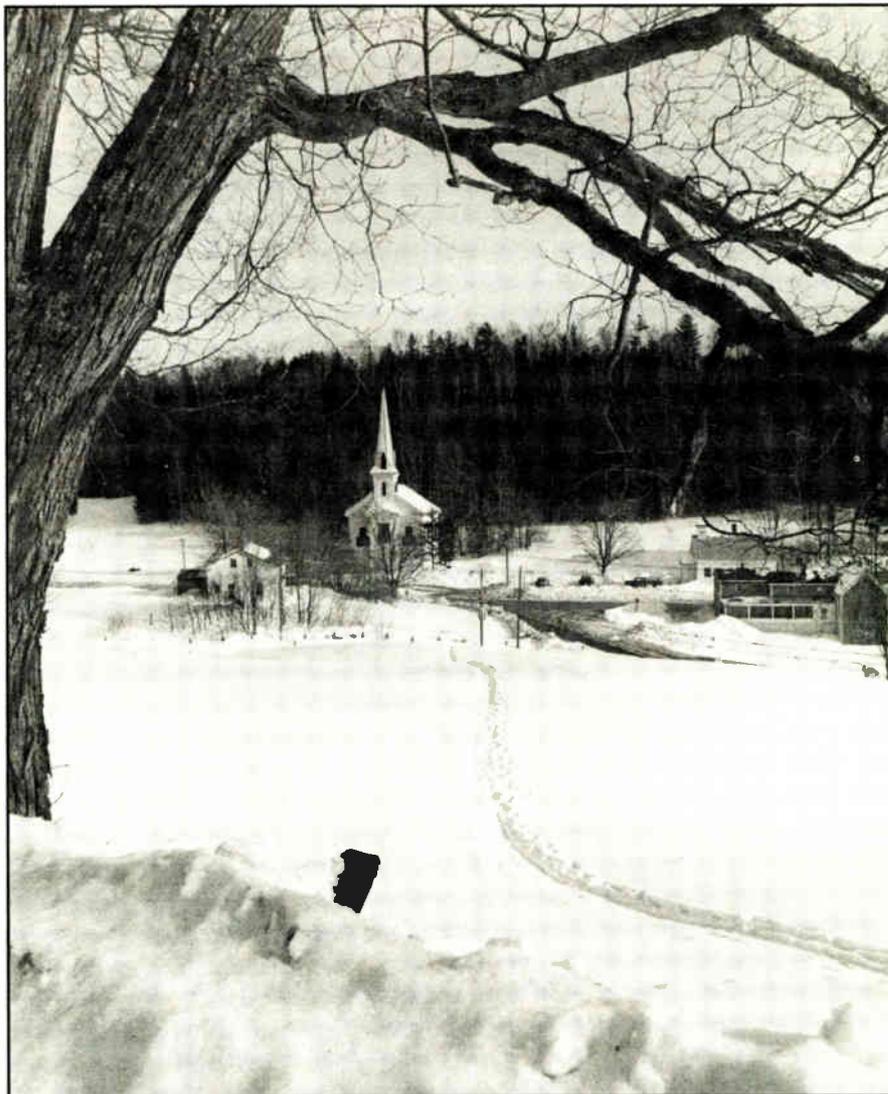
Welcome to the first column of CB Applications. We'll be talking exclusively about the many applications for CB as a viable communications medium. As a result, don't expect our column to talk about antenna radiation patterns (that's for Kent Britain!), transceiver modifications, or schematics for linears. Instead, expect columns on practical (and possibly a few not-so-practical) uses for Citizens Band radio, and activities that can be significantly aided or improved by using CB radio. For the most part our column will be almost anti-technical—just expect plenty of ideas and uses for CB radio.

Of course if you have any ideas or applications that you have tried or regularly use, please feel free to send them to me. CB radio has 1,001 uses (but I don't have the space to list them all here and I can't sing them in a song or recite them backwards), so the experiences of many will certainly help to provide more interesting applications. Also, photographs (preferably black and white) of these activities will be helpful to make this column more interesting. Besides, you might soon become tired of seeing the same CBers from southern Pennsylvania! I'm not sure whether I'll be able to return the photos that are sent in, so be sure to order double prints of anything you want to keep permanently.

To contact me and this column, just write to: CB Applications, *CB Radio Magazine*, 76 North Broadway, Hicksville, NY 11801-2953 USA. Or if you have an idea you would like to see covered in this column and you are on-line, you can send an e-mail to ayoder@delphi.com. This e-mail address might be changing in the upcoming months, so keep reading. I can't promise a response to all 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 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.

Andrew Who?

So, who am I? I became interested in CB radio and tried it for the first time in the mid-1970's (probably around 1975 or '76) while I was still rather young. The first radio magazine I bought was S9, with edi-



A quiet cross-country skiing trail leads to South Woodbury, Vermont. This tranquil scene can change quickly, so be sure to bring your handheld CB along for an added measure of safety. (Courtesy Vermont Travel Division)

tor Tom Kneitel of *Popular Communications* fame. By the early 1980's, the CB radio fad died down and the magazine featured columns on clandestine and pirate radio listening on the shortwave bands. This magazine set me off in search of those "elusive" shortwave signals. Being more of a writer and a listener than a talker, I've spent much of my free time over the past decade listening to, writing about, and DXing shortwave broadcasters. After writing hundreds of shortwave columns and newsletters and about a dozen books, it's refreshing to

write about and have an excuse to play with CB radio again.

Skiing and CBs: Ski-B'ing

The mountains of southwestern Pennsylvania aren't hotbeds of social activity. There aren't many people, the roads are bad, and the winter season seems to last for most of the year. Unless you have a four-wheel drive truck, chances are that you'll be stuck for a week or more out of the year, and sometimes even if you can

get out, it's not worth the risk or bother. In areas like this, you either learn to enjoy the snow, you find plenty of interesting indoor activities to occupy your time, or you go stark-raving mad. I opted for the first two, and later I moved out of the area!

While I was living there, I acquired an interest in cross-country skiing. That area is perfect for skiing—there is enough long term snow to develop a strong base and the region is etched with many old logging and coal roads, and state forest trails. I don't know the exact mileage, but it seems as though there are more miles of these unused trails and roads than actual state and interstate routes.

Unlike Nordic and Alpine countries of Europe, the people of the Allegheny Mountains of Pennsylvania don't rely on skiing or snowshoes for transportation. I guess that's because most of the region isn't besieged by snow for half of the year (only the school district I grew up in), because it wasn't settled (for the most part) until the early to mid-1800's, and because most of the settlers—mostly Irish and German—weren't from skiing backgrounds. Regardless, even if the popular culture doesn't dictate skiing for transportation purposes, the weather does encourage it for recreation.

Although there were a few downhill ski resorts in the area, this type of skiing seems like a good way to ruin a knee or break an ankle. Besides, the fees are hardly inexpensive, the drive is somewhat long, the amount of exercise is not that great, it's more of a solitary sport (difficult to talk with others while doing it), and the interesting sights are replaced by narrow man made slopes, packed with people. So, my Dad and I, plus a few uncles and cousins, opted for cross-country skiing.

Bring the Handheld CB

As mentioned, cross-country skiing is great exercise—hence the proliferation of the Nordic Track exercise machines. Also, there's plenty to see: great views, interesting wildlife, and some winter vegetation. CB radio perfectly interlaces with cross-country skiing because it's handy to be able to communicate while skiing, but if the distance between skiers is far, it might not be too easy.

Of course, it's best to use a *handheld* portable CB transceiver for communications. These sets are low-power (usually anywhere from about 100 milliwatts to one watt output), but they are still handy for communications up to about one mile or a bit less. To avoid interference from other hobbyists—at powers this low, you probably won't interfere with them—pick a quiet channel for communications.

When spotting animals in the woods,

it's best to be very quiet and whisper only if necessary. As a result, the typical CB might scare off most wildlife. Some handheld CBs have an output jack for headphones and an input jack for a microphone. If you have CBs of this type, you could plug in a pair of headphones to reduce noise.

Still, the headphones could be a hassle.

You would have to stop, put down your poles, pull out the CB, pull up the whip antenna and talk.

Better yet, some electronics companies, including some surplus dealers, sell headset microphones—a pair of headphones with a tiny microphone that extends on a wire toward your mouth. With this equipment, you can just put the



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handheld CB in a backpack (or even Velcro it to the back of your coat) and ski with the whip antenna extended, as long as there are now low overhanging branches. Then, whenever one of your skiing partners talks on the CB, you will automatically hear it without having to stop or make noise in the woods. And if your CB has a voice-activated (VOX) switch—if it doesn't, a number of companies sell tiny inexpensive VOX switch kits for two-way radios—you can talk quietly into the microphone without stopping, touching the CB, or making much noise.

Great for Emergency Communications, Too

In the world of ski-B'ing, the CB is also tremendously useful for emergency communications. Those criss-crossing roads and trails over Mt. Davis could easily bewilder all but the most knowledgeable of residents. At least one deer hunter has died from cold and exposure after becoming lost in the mountains. Even if you are skiing in areas that you even think you know



Cross country skiers gather near the Timberline Lodge in Oregon. Staying in touch with other members of your group is easy with a handheld CB radio. (Courtesy Oregon Tourism Division)

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Walkie-talkies allow you to have fun outdoors with your friends. Some handhelds, like this Maxon Systems HCB-30, provide NOAA weather reception at the flick of a switch. (Photo Courtesy Maxon Systems)

well, the CB could save your life if you become lost in the woods—especially on a very cold day. And even those familiar with the region could still require emergency assistance, in case of an injury or

medical problem that requires immediate attention. For example, during one ski trip, my uncle went speeding down a hill and suddenly a steel grid bridge, one with a surface made of a steel-grid pattern that allows snow to fall through the holes, yet is strong enough for vehicles to drive over, appeared in his path. He wiped out, scratched up his skis, and could have been seriously injured. A CB could have been useful to radio for help if he had been injured or to notify others who didn't know the bridge was ahead.

So, ski-B'ing can be both a fun hobby and a lifesaver. The only difficulties that you might encounter are buying the units, if you don't already have a handheld CB, and keeping the headsets in a comfortable position under a ski hat. A minor problem is that hard breathing might key the VOX unit on and annoy everyone in your ski group. After a while though, proper positioning of the microphone can cure that problem.

I hope you enjoyed our first installment of CB Applications. Remember, feel free to contact me with positive or negative feedback, ideas, stories and photographs. Until next month, I'll be looking forward to hearing from you. ■

Andrew Yoder was an active CBer in the mid-1970's. Currently he writes on communications topics, including shortwave broadcasters. Andy has just begun to use CB radio again. It's been a busy time for him; he's written hundreds of shortwave columns and newsletters and about a dozen books.

FCC CB Station Information

A large black question mark is centered within a light blue square. The square is set against a background of overlapping teal and light blue rectangular shapes.

Where Can I Get A Copy of the CB or R/C Rules?

Contact the U.S. Government Printing Office, Superintendent of Documents, Mail Stop SSOP, Washington, DC 20402-9328 (Phone 202-512-1800) for price and ordering information. The rules are published annually in the Code of Federal Regulations, Title 47, Telecommunications, Part 80 to End. While operating a CB or R/C station, you need to know the FCC's Rules for proper use. Violation of these rules can result in a fine and loss of your authority to use the CB or R/C Radio Services. Violation of the Communications Act, moreover, can result in a fine and imprisonment.

For What Purposes May I Use A CB or R/C Station?

You may use your CB station for two-way, short-distance voice communications for your personal or business activities. (CB Rule 1.) You may use your R/C station for one-way, short-distance non-voice communications to operate devices by remote control. (R/C Rule 1.) Expect to reach about one to five miles.

Can I Raise The Power Output of My CB?

Absolutely not. You may not attach a radio frequency power amplifier (linear or linear amplifier) to your CB transmitter. (CB Rule 11.) When your transmitter is modified internally, its type acceptance is canceled and you forfeit your authority to use it. (CB Rule 10 and R/C Rule 10.)

How High May I Put My Antenna?

The highest point of your CB or R/C station antenna must not be more than 20 feet above the highest point of the building or tree on which it is mounted, or 60 feet above the ground. There are lower height limits if your station is located within two miles of an airport. No height restrictions apply to an antenna mounted on a vehicle or a hand-held transmitter. (CB Rule 8 and R/C Rule 8.)

On Which Channels May My CB Station Transmit?

Channel 9 may be used only for emergency communications or for traveler assistance. Your CB station is authorized to transmit on any of 39 CB channels when it is clear of on-going communications with which your station could interfere. CB channels must be shared by all CB stations. No CB or R/C channel is assigned

to any specific individual or organization. (CB Rule 7 and R/C Rule 7). These radio services depend upon all operators being cooperative. Keep your communications short. Never talk with another station for more than 5 minutes continuously. Wait at least one minute before starting another communication. (CB Rule 16).

Which CB Channel May I Use For Emergency Communications?

You may use any CB channel. A CB station transmitting messages concerning the immediate safety of life or the immediate protection of property must be given priority regardless of the channel. (CB Rule 7) However, because CB channel 9 is reserved for emergency communications and for traveler assistance, it may be your best choice.

Must I Identify My CB or R/C Station?

You are not required to identify your station. The FCC encourages you to identify your CB station while you are using it. If you once held a CB license, you can use that call sign. Otherwise, you can use the letter K followed by your initials and residence zip code or an organizational name and unit number. (CB Rule 17)

May I Use My CB or R/C Station in Canada?

Yes. When in Canada, however, you are subject to the rules of the Canadian Department of Communications, not those of the FCC.

Is There Another Personal Radio Service For Short Distance Two-Way Voice Communications?

Yes. The General Mobile Radio Service (GMRS) is available to individuals. You will need a license for a GMRS system comprised of one or more stations. GMRS systems are used to facilitate the activities of the licensees and their family members. See Part 95, Subpart A of the Commission's Rules, 47 C.F.R. Section 95.1-95.181.

The above are general answers to the questions most frequently asked about the Citizens Band (CB) and Radio Control (R/C) Radio Services. For complete information, see the Commission's Rules for the Citizens Band (CB) Radio Service, 47 C.F.R. Section 95.401-95.428, and the Commission's Rules for the Radio Control (R/C) Radio Service, located in 47 C.F.R. Section 95.201-95.225.

(Editor's note: The following information is reprinted from the FCC's Fact Sheet PR-5000, Number 200, dated April, 1993. We have not included in-depth information about R/C Rules.)

Can I get a CB or R/C (Radio Control) License?

No. The FCC ceased issuing licenses for CB and R/C in 1983 because licenses were no longer serving a useful purpose. CB Rule 3 authorizes you to operate your Citizens Band (CB) Radio Service Station, and R/C Rule 3 authorizes you to operate your Radio Control (R/C) Radio Service station, from places where the FCC regulates communications. There is no age or citizenship requirement. CB Rule 9 prohibits anyone from using a CB station, if the transmitter is not type accepted for that function. CB Rule 3 and R/C Rule 3 prohibit the following from operating a CB or R/C station: foreign governments; representatives of foreign governments, federal government agencies; or persons who have been issued a cease and desist order which is still in effect.



What Is Sideband Anyway?

Ever wonder what those strange sounds frequently heard on the higher channels of your CB are? Those distorted needle-pinning, growling, grumbly, buzzing noises that sound like a nearby station bleeding over from another channel, but really aren't? It is single sideband, often called sideband or just plain SSB. And if you want greater range, better operating conditions and more dependable performance from your CB, then SSB is for you!

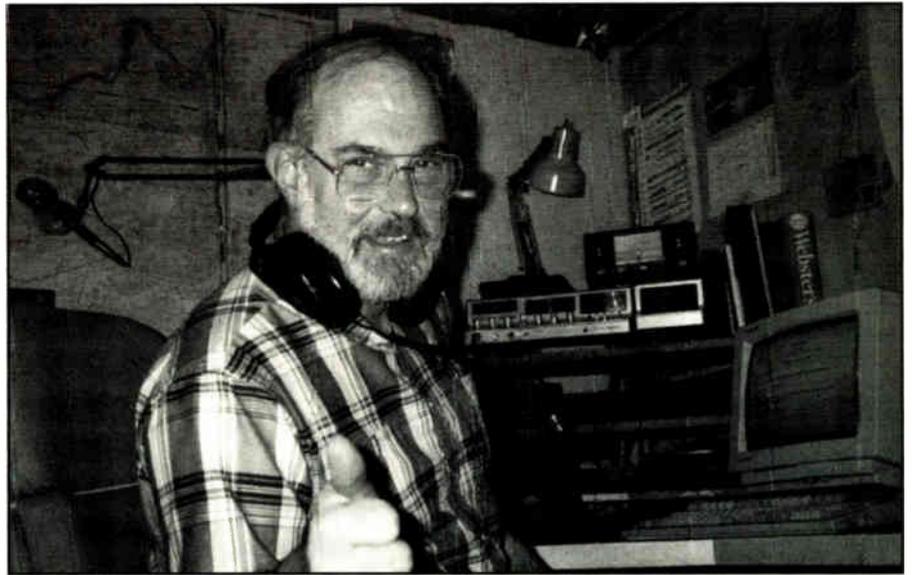
Just What Is Sideband?

If you are one of the people reading this and wondering just what the heck sideband is, don't feel bad. You are far from being alone. While anyone and everyone who is at all acquainted with CB is, knowingly or unknowingly, familiar with its AM (amplitude modulation) mode of transmission and reception, there is another side, actually two sides (or modes) called the sidebands.

Let's look at a conventional AM signal, which really consists of two sidebands and a carrier. Without getting terribly technical, you should remember that a carrier signal doesn't contain anything; no modulation (voice audio) or anything else. It's just there, taking up space. On either side of the carrier is a lower and upper sideband. It's these sidebands that contain the audio modulation—your voice. If the carrier is eliminated you're left with the two identical sidebands (USB and LSB), each of which contain the same audio information. What you're doing by using either USB or LSB is to effectively concentrate all the CB's legal power into that particular sideband; no wasted power and a full 12 watts (PEP) for your to really put out a signal!

One way to picture this is to go out in the yard (not recommended in sub-zero weather!) and play with the garden hose. Start with just the hose—no attachments. Connect one end to the faucet and turn it on. Voilà! Just about all the water entering the hose from the faucet is pouring out the other end of the hose. It doesn't squirt very far and even if you turn the faucet up full, the stream will still fall pretty close to the end of the hose. For the purpose of our demonstration, picture this "stream" as the signal sent out by an AM CB.

Now, turn the faucet off and attach a



Here's your trusty columnist giving thumbs up after another great CB SSB contact. He's using a Cobra 2000 GTL and his Webster's Dictionary.

good nozzle to the open end of the hose. Then turn the faucet back on to approximately where it was when we tested the open ended hose. By adjusting the nozzle, you can dramatically increase the distance that stream of water will fall from

the end of the hose. There may not be as much water coming out, but the "range" should be noticeably greater. The same holds true for your CB signal when you use sideband.

Technical efficiencies aren't the only



Another view of Ed's "Shack" shows a few scanners and console where he provides daily traffic report for the Capital District region of upstate New York. His CB, as you might guess, comes in especially handy for his live reports. The CB is essential for the traffic reports. It's the heart of the system.



Guess what radio is in this SSBer's vehicle and win something free from us. Notice the extension speaker below the Uniden PC244 rig for added volume and audio clarity.

This perfect-looking SSB shack is complete with auto-dialing mega-number telephone, flashlight and scanner. What more could anyone want?



benefits of SSB. Arguably, there is a more important one. That is the higher operating and social skills level of the average SSB operator. And that often plays a larger role in getting the job done than does the extra power. Sure, even SSB has its share of jerks. Do you know any sizable group of people that doesn't? But for reasons I can't fully explain, operator for operator, you'll find more congenial and considerate people on SSB than on any radio service I know—even amateur. It seems to have been that way on CB SSB from the start.

By the way, it never ceases to amaze me how many people there are—even long time CB owners—who are unaware that sideband CB even exists, let alone what it is or how it is used. That's a shame, because not only is a CB without sideband not a "full-feature, full power" radio, but if you are not using SSB you are probably missing out on some of the most exciting and interesting experiences that radio—any radio—has to offer.

I run a little club in upstate New York that encourages channel 9 use. As part of my duties, I get to register the new members and walk them through a simple questionnaire. Just the basics; name, address, phone number, handle, call signs, home channel and equipment. The process usually goes pretty well until we get to the part about their equipment.

"Sideband?" they ask when I query them about the capabilities of their rigs. "What's a sideband and how would I know if I had one?" Then the search begins. Slowly but surely we work through the knobs, dials and switches on their radios. Volume, squelch, RF and mic gain, roger beep, echo and even those funny little custom switches that get you the "extra" channels, but more often than not they are missing the telltale controls we were looking for; the AM/USB/LSB mode selector and clarifier controls.

On the occasions when I am able to determine that the radio in question is sideband-equipped, I know that this operator will be able to communicate over distances and under conditions far beyond the capacity of any standard AM-only CB. Practically speaking, for example, in emergency and assistance communications, this extra ability can make the difference between getting or not getting an important message through. On occasion this can mean the difference between life and death. On a lighter note, the additional range and dependability sideband offers can multiply their opportunities to enjoy our richly diverse hobby.

My First Exposure To SSB

I remember my first exposure to SSB.

It was during the "CB Boom" of the late 60's and early 70's. Sure, I had walkie-talkies as a kid. But now, at last, for the first time, I was in possession of a full-power, full-feature (or so I thought) mobile CB hooked up to a power supply and base antenna. In other words, after years of wannabein, I was finally "on the air" and raring to go.

Unfortunately, the locals it seems, weren't that anxious to let me. I was immediately taken back by the fact that, while there were what sounded like hundreds of people on every channel, it appeared that not one of them would give you the time of day or even let you know that your radio was working. In fact, the only thing they seemed willing to do was give you grief, or worse, if you asked. I was already suffering from a severe case of mic fright. Their rebukes and rebuffs weren't helping at all!

I had come too far, worked too hard and waited too long to stop now, so I kept trying. Eventually, joy of joys, I was able to make contact with someone who really seemed interested in sharing a few words. Immediately a new problem arose—where could we talk? There were already four breakers, two conversations and some fool with a noise maker on the channel we were using. Obviously we would have to find another one because this one was packed. The only quiet air

between channel 1 and 23 (that's all we had in those days) was on channel 9 and one other channel. "Take it to 16," I said, and off we went.

We were only a couple of passes into the chat when we drew our first breaker. We tried to ignore it, hoping he would go away. He didn't. "Uh, excuse me for breaking in, fellas," he said, "but you're on a sideband channel." "What's a sideband channel?" I asked. "They are channels that sideband operators have voluntarily confined their operations to," he explained. "This is so they don't disrupt AM communications," he continued. Then he showed us what he meant. Suddenly my radio roared and growled with a bleed type noise that shot the s-meter through the red zone so hard it violently bounced as it slammed repeatedly against the far end of the scale. Obviously whoever or whatever this sideband was could indeed disrupt radio communications at will. "So if you don't mind," he continued, "could you folks please take it to another channel?"

We did, and soon lost each other in the



The Radio Shack TRC-465 mobile AM/SSB CB is as versatile rig—it's compact and a great performer. (Photo courtesy Radio Shack)

confusion and congestion. I still didn't know what sideband was, but I was certainly impressed. I could tell by its obvious power and the gentlemanly demeanor of the operator that sideband was different from anything I had encountered in my brief time on the CB. It was different in ways that I wanted—indeed, needed—to know more about.

Over the weeks and months that followed, I learned that the sidebanders had voluntarily developed, and were following, a mostly unwritten "Gentleman's Agreement" of operating codes and practices. This "agreement" went above, beyond and occasionally contrary to the official FCC rules. Nationally sidebanders had adopted channel 16 and locally they also worked 17 and 23. They also dominated something called the "outband." The then forbidden illegal space above channel 23.

dismay of its supporters, it hasn't. Why? In part it is because the radios are more expensive and a little harder to use. But I can't help feeling that a lot of the reason is because most people just don't know what they're missing. Truth be known, sideband may even be losing ground. More and more SSB operators are migrating to the outbands. Others are becoming licensed amateurs and abandoning the band altogether. With the set-aside frequencies used for sideband in many areas under used and unprotected, AM is relentlessly and understandably creeping onto SSB frequencies. If the trend continues, it is conceivable that we could lose them all. And that would be a shame, not only for present day operators, but for those who have yet to arrive.

Coming Up

So, in the months ahead, God willing and with your help, we'll look at and think about what sideband is; where it is and where—if anywhere—it could or should be going. Are you thinking about becoming a sidebander? Great, do it and then let me know what you find. Are you an experienced sidebander? Well, that's even better because I need your tips, pointers and stories. If you are a member of a sideband club, be sure to pass along news of your organization, nets, meetings and events. Whatever your interest in SSB, I look forward to your questions, comments, suggestions, QSL cards and shack photos. Write me in care of the magazine or on the internet where my addresses are edbarnat@global1.net and TCA44@aol.com. Better yet, if you can, catch me on the radio! Until next month . . .

73's Ed

Getting On Sideband

It took a little time for me to save enough to get my first sideband rig. In fact, several years passed. By then CB had become legal on all 40 channels. Locally, channel 17 had fallen to the AMers and 23 was soon to follow. An active SSB community, however, still dominated channel 16 and 36 through 40. The outbanders had migrated to an area from just above channel 40 to just below the lower end of the 10 meter amateur band. All in all, it was well worth the wait. For in the end, becoming a sidebander opened the doors to some of the most interesting, enlightening and enjoyable times I have ever spent on the radio.

You would think that with all it has going for it that SSB would have long ago replaced AM as the standard mode of CB communication. Obviously, to the

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CIRCLE 57 ON READER SERVICE CARD

A Comparison of UHF Radio With CB Radio

UHF Frequency Modulated radio... featured in a CB magazine? Unbelievable! CB radio for the most part, is amplitude modulated, and is in the HF (high frequency) band. It sits right next door to the amateur radio 10 meter band. So how can UHF (Ultra High Frequency) radio be compared to, or considered to be CB radio? And what good is it to people using CB? Why should we even talk about other bands since we have the 40 channel, 11 meter CB radios, plus upper and lower sideband?

Easy Answers

Let's try to answer these questions very simply. The FCC divides the Personal Radio Service into three separate entities authorized by Part 95 of the FCC Rules, and a fourth will probably be created within the near future. The three current classes are RC (Radio Control, which we will NOT discuss), CB radio (Class D) and GMRS (Class A, General Mobile Radio Service). We anticipate that the Family Radio Service (FRS) will be added as a fourth class soon. While CB radio does operate on AM, the other two operate on FM in the 462 MHz frequency range. This column will attempt to concentrate on the GMRS and new FRS, although references to CB will inevitably creep in for comparison purposes.

General Mobile Radio Service (GMRS)

Although GMRS has been a part of the Personal Radio Service for many years, interest seemed limited to a few individuals and several public service organizations. While there was no requirement for knowledge of radio systems, such as those required by the amateur radio service, users were required to obtain a license for a relatively insignificant fee. Many commercial operations turned to GMRS in an attempt to save rather significant sums when compared to the cost of licensing and frequency coordination in the business bands. In 1989, in an attempt to return the service to individual use, the FCC prohibited businesses from licensing in the GMRS bands, although the current business users were allowed to continue their use of GMRS radio. GMRS radio use began to grow rather

Comparison:	GMRS	FRS
License required	Yes	No
Power limitation	50 watts	0.5 watts
Emission type	FM	FM
Antenna	Unspecified	Integral, no gain
Transceiver type	Unspecified	Hand held
Frequencies available	462.550/467.550 462.575/467.575 462.600/467.600 462.625/467.625 462.650/467.650 462.675/467.675 462.700/467.700 462.725/467.725 (Note: These are paired frequencies allowing simplex use of the 462.xxx half of the pair, and also use of the 462.yyy side of the FRS frequencies.	462.5625 462.5875 462.6125 462.6375 462.6625 462.6875 462.7125 467.5625 467.5875 467.6125 467.6375 467.6625 467.6875 467.7125

exponentially. Manufacturers soon realized the potential for sales.

Recently several manufacturers have petitioned the FCC to de-license the service, and to allow access to all eight GMRS frequencies. Licensed GMRS users, along with several public service organizations, pointed out that licensed and unlicensed users in the same portion of the radio spectrum had the potential for mutual interference. It would result in the same type of chaos existing on the 27 MHz bands. The request to the FCC has since been modified to create a new "Family Radio Service" operating within the GMRS bands, on frequencies near those of GMRS users, but with limited power. (See Frequency Charts)

The FCC envisions the Family Radio Service to be utilized by small groups at a mall, or perhaps a family outing to enable individuals to maintain contact over short ranges. Other potential uses would be for a child to maintain contact with home while playing or returning home from the bus stop, or for hunters, campers or hikers in the field.

The hand held radios would be 0.5 watts, and would have a no-gain, vertically-polarized antenna, which would be an integral part of the radio. Selective call-

ing was suggested by the FCC but was left as an option for the manufacturers.

The concept is still very new to the market, but we anticipate that these low power transceivers would be priced in the range of \$100-\$150 each, initially. As more manufacturers enter the market, it is conceivable that competition could drive the price down slightly. As of this writing, we have no information concerning the specs for the transceivers. Stay tuned... next month we'll have more information on the FRS. ■

For more information on the GMRS or FRS, contact:

REACT International
P.O. Box 998
Wichita, KS 67201

Personal Radio Steering Group
P.O. Box 2851
Ann Arbor, MI 48186

J.A. Simpson
12766 Tyler Avenue
Waukegan, IL 60087

ANSWERS TO YOUR MOST FREQUENTLY ASKED CB QUESTIONS

By Bill Price

Welcome to the first "Ask Bill" column. Since it's a question and answer column, let's start right off with a question.

How could the first issue of a magazine have a Question & Answer column? Where would the questions come from?

John Doe, 123 Maple St., Anytown, USA

How indeed, John. When I signed on to write this column I knew full well that I'd be faced with just that sort of tough question from astute readers. In keeping with my tradition of either giving honest answers or making something up, I'm going to go for the honest answer on this one—the questions in this month's column came from three sources:

- Some have been lying around the editorial offices just waiting for a place where we could answer them (that's one of the reasons our editor decided to run this column).
- Some are questions which I was asked over and over again—sometimes several times a day—during my tenure as a technical support manager for an antenna manufacturer.
- Some are made up. In lieu of shelling out the high six-figure income I had in mind, the editor has allowed me to invite my friend Dr. Safety and a few of my other imaginary playmates to join me here from time to time with their questions. He has also agreed that for each "Ask Bill" column I write, he will give me an undisclosed amount of RG-8 and a chicken.

So what's so special 'bout you? How come they picked you to write a CB Q&A column?

Mary Smith, Yourtown, OH.

My family asked that same question. I began life as a Coast Guard radio operator and have operated CB radio since Lafayette introduced the Comsat 25. I've been a licensed radio amateur since 1973, and I have worked in the commercial communication industry since 1979. I presently "tweak television stuff" for a large university near our nation's capital where they let me chip golf balls into a 30-foot satellite dish just to hear the clang. Also, I use the same size floppy disks as the editor.

Why do I hear a sort of electronic "whistling" when some people key their mike on AM CB?

H.P.M., Newington, CT

Sure—try to throw me off base with a serious question. There are several answers to that one. The first is that some people actually do whistle into their mikes. This helps them observe and measure the output of a single-sideband (SSB) radio. The question, though, deals with AM CB radios, which operates quite differently from SSB rigs. With AM, the whistling you hear is the result of a phenomenon called heterodyning, and it's one of the easier radio phenomena to understand. It happens when two AM radios are "keyed" (their mic buttons are pressed) at the same time, on the same channel—both within range of your receiver, and your receiver hears them both.

We'd like to think our radios are perfect, but it just ain't so. Each is slightly off frequency (but don't worry—they're well within the tolerance required by our friends in Washington and Ottawa). In a perfect world, if they were both tuned to channel 1, both radios would be transmitting on exactly 26.965 MHz. Here in our less perfect world though, one of the radios might be transmitting on 26.9655 MHz and the other on 26.9645 MHz—a

difference of .001 MHz or 1 kHz (Kilo-Hertz). That's a thousand Hertz (cycles per second) which is about a foot to the right of middle "C" on a piano keyboard. 1000 Hertz (Hz) is an audible tone, much like a musical note, and it's well within the range of human hearing. When your radio receives the two signals which are 1000 Hz apart, that 1000 Hz tone is reproduced right through your speaker along with the two people talking. The lower the note you hear, the closer the two transmitters' frequencies are to one another; the higher the note, the further apart they are. It is this principle of heterodyning on which most of today's radio receivers operate, using a long-proven design called superheterodyne or superhet.

Dear Bill: I just added 50 feet of RG-8 between my radio and my antenna (I moved the set to another location in my house). My Standing Wave Ratio—which used to be 1.6:1—is now 1.1:1—my needle doesn't budge. I've been trying to get it this low for years, and now it just happened. Any idea why?

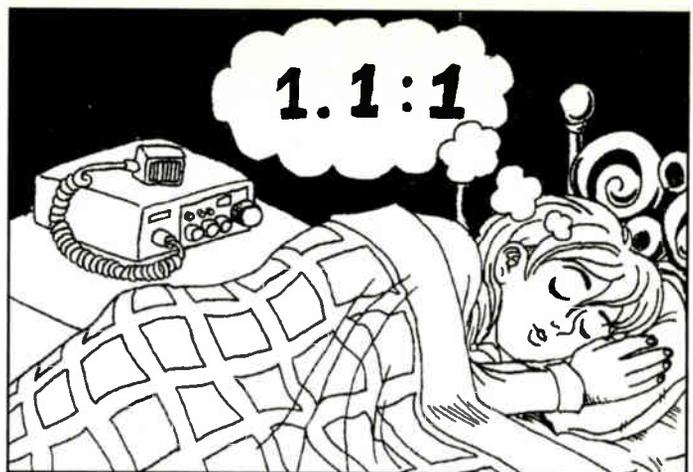
D.M.Q. Hazleton, PA

You've stumbled upon the secret of the universe, DQ—you have achieved low SWR without expending any effort. Some people tune and tweak their antennas until they wear out the setscrew and still can't get below 1.5:1 (which, by the way, is fine), while you have eliminated your SWR without so much as an adjustment. Here are two rules that will explain how you did it:

All transmission line (including your RG-8) has an inherent quality called *loss*. That means that some of the power you put into it turns into heat, and never makes it to the antenna.

Antennas are never perfect; they always reflect some of the power back down the transmission line toward your





radio. The relationship between your transmitted (forward) power and this reflected power is expressed as your *standing wave ratio* or *SWR*.

Here's the interesting part: The transmission line not only turns some of your power into heat on the way out to the antenna, it also turns some of the reflected power into heat on the way back from your antenna. Now that you know this, you can lower your SWR to 1.0:1, which is absolutely no reflected power by simply adding more transmission line (coaxial cable) between your set and your antenna. Although this would give you the appearance of the much sought-after SWR-free system, the loss imposed by the line would reduce your outbound power—the part that gets to your antenna—as well. The moral of the story is that an SWR of 1.5:1 or so is fine, and you should never have any more line than it takes to reach your antenna.

Hey Bill—Why are base-sets big, and mobile sets so small. Why can't someone make a base set as small as a mobile rig?

S.K., Queens, NY

Base sets are big because most people have plenty of room for them, so there's no pressure on the manufacturers to make them smaller. I also suspect that making a set big (and putting a little heft to it) makes the purchaser feel like he or she is getting more for their money. Mobile sets must be made small, because most cars are pretty small. Manufacturers can and do make mobile rigs with just as many features and just as much quality as their base stations, and the only thing they leave out is the AC power supply, which converts 117 Vac house current into the 12 Vdc that the radio needs to operate. (Even base station radios convert 117 Vac house current to low-voltage DC—it's what transistors and ICs are designed to use).

Your mobile rig—any mobile rig—can be used as a base station, so long as you can give it the 12 Vdc it wants. To do this, you could bring your car into your house (dangerous and inconvenient), run a wire from your car's cigarette lighter into your house (merely inconvenient), or buy what's known as a 12 Vdc power supply (convenient, safe, and your dealer will love you). I know that a battery, such as a car battery, is a power supply, but that's not what I'm talking about. Like so many things in the electronics industry, power supply is a misnomer. Only the sun is a power supply; all other gadgets are merely power converters, but alas, ours is not a perfect world. DC power supplies are gadgets that plug into your 117 Vac electrical wall outlet and have terminals which you can connect to your mobile rig, which wants 12 Vdc. The two parts of the equation I've left out so far are the power rating of the power supply, and whether it's regulated or unregulated. Regulated power supplies, whose output voltages remain constant at 12 Vdc even when you draw the maximum available current from them, are both more desirable and more expensive. Unregulated power supplies, whose output voltage drops as you ask them for more watts, are okay if they have enough excess rating ("headroom") and cost less (refer to rule #1, which reminds us that there are no free lunches).

Besides choosing between regulated or unregulated, you must choose one with a sufficient rating (in amps or watts) to power your rig properly. Even if you choose a regulated supply, you should consider getting a power supply that's capable of giving you about 20 per cent more power than your rig requires (that rating is either stamped on the back of the rig or listed in the owner's manual), because you don't want to push any device to or near its limit. If you go with an unregulated supply, consider headroom of about 50 per cent.

A word from Dr. Safety: "It is not wise

to use a car battery in your house. Doing so may cause toxic fumes, an explosion, and even cancellation of your homeowners insurance at a time when you might need it most."

Yo—Big guy—I've heard that antennas are reciprocal—that they have exactly as much gain for receiving as they do for transmitting. If that's true, how come I can hear some people but they can't hear me when I call them?

J.S.N., Benton Harbor, MI

You're right, J.S., one of the few absolute truths in this world is that all antennas do have exactly the same gain for transmitting as they do for receiving—and exactly the same directivity, too, so antennas will never contribute to the situation you describe. There are major and minor differences in the rest of transmit and receive systems, though, and those differences do contribute to the situation you mentioned.

Let's say you and station XYZ each have identical antennas. Let's also say that your transceivers each put out exactly the same power, and you each have exactly the same kind and length of transmission line, and even your coaxial connectors are the same. The only difference between your station and station XYZ is that your receiver is more sensitive than his. That can happen, you know, and it's one of the reasons you want a quality transceiver—so you get a good receiver—one that's both sensitive and selective—those are the two most desired qualities in a receiver. Often, though, the reason you can hear a station and that station can't hear you is that they have more output power than you do. Not everyone follows the rules, eh? There's also a situation in which both stations could be exactly equal right down to the color of your microphones, and station XYZ still can't hear your answer. That would be when he has a higher level of

noise—static and interfering signals—at his or her location than you do at yours—so when this happens, don't feel as if you're being ignored.

Dear Bill: I know that CB frequencies—around 27 MHz—are part of what's called the HF or High-Frequency spectrum. How come all the radios and antennas have "UHF" connectors. Isn't UHF above 300 MHz?

R. Van H., Jarrettown, PA

Right you are, Van—the PL-259 (male plug) and SO-239 (female socket) used in virtually all CB radios are called UHF connectors—even by their manufacturers. I don't know of anyone who would use a UHF connector at UHF frequencies. In fact, most radio pros would not even use them at VHF frequencies—from 30 to 300 MHz, though they're fine for CB use, so don't worry about them.

We could start a radio campaign to call them "HF Connectors," but I don't think it'll catch on until all the world's other ills are cured.

Dear Bill: Is it okay to use "crimp-on" connectors with my SSB rig, or should I use solder-on connectors?

J.D., Basalt, CO

Crimp-on connectors are fine. So is my Oldsmobile—but it's not a Ferrari. Solder-on connectors are always better than crimp-on, but for many applications, crimp-on connectors are fine. You would never notice the difference between them and solder-on connectors—if they're put on properly. I'd never use a crimp-on connector for VHF or UHF applications, but a properly-assembled crimp-on connector is fine for CB operations in the HF spectrum. Want to make crimp-ons even better? Sweat a drop of

solder down into the tip. You can even flow some around the braid-crimp on some UHF connectors—it's trickier than at the tip, but not impossible.

Bill—are there some laws of physics that apply differently to CB radio than to the rest of the world?

Dr. Safety, Bealeton, VA

Dr. Safety! What a surprise—I thought you were vacationing at the OSHA conference. There are several areas we'll deal with where the laws of physics will at least be bent a bit. The one that comes to mind right now is a strange one that I personally discovered somewhere around my 30th birthday. It's the one in which the pitch of your roof increases in direct proportion to your age. When I was in my twenties, I helped my brother put a roof on the family homestead. I tap-danced my way through several squares of shingles without a care. On my 30th birthday, I had occasion to climb my own roof, which my brother swears has the same pitch as the roof we replaced. I was barely able to fasten the bracket to the chimney and find my way back to the ground.

Shortly after my 40th birthday I was helping a friend paint his house and had occasion to go onto his roof. Again, the pitch was a 6-in-12 or 22.5 degree pitch, but this time I had to decline completely. At the rate I'm going, by the time I'm 60, I'll have to use rock-climbing gear just to scale a sidewalk.

(Bill, But I'll bet you a New York pas-trami-on-rye that if someone put a free multi-band radio on that same roof, we'd both nearly kill each other to get there first!—Editor)

Dear Bill, My New York accent (cuppa cawfee) keeps truckers from answering me

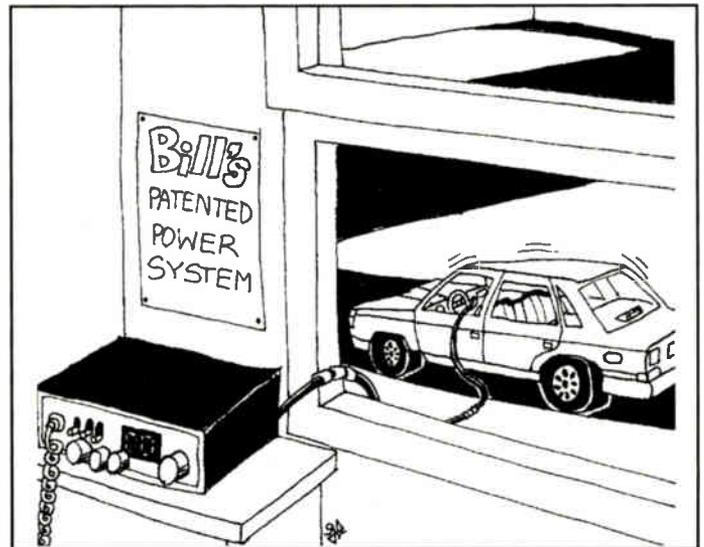
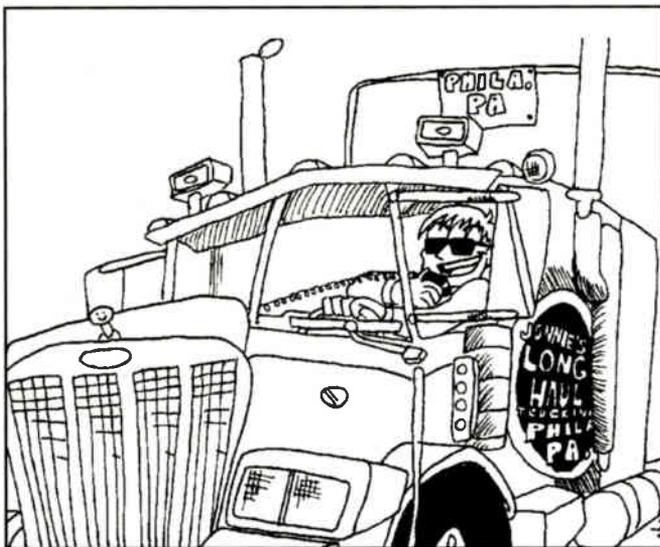
when traveling cross country. Does anyone make a "voice disguiser?"

J.S., Long Island

Hey, J.S. never fear. There are such things, but no one would talk to you if you used one, because most of them raise or lower the pitch of your voice. None of them change the quality of your speech, though. Do you ever wonder if there are truck drivers from Long Island? Count on it—there are thousands of them. Have you ever wondered how many of them talk with a drawl, though? Yep—all of them. It's so easy to do that you'll notice that British rock groups quickly learned to put on a U.S. Country & Western sound when needed. Practice into a cheap tape recorder, and listen to yourself before you try it on the air. Don't worry if you fail the first two or three times, though—remember, unless you practice from your base station at home—no one will know it's you!

Remember too, that if you have something important to say, the world will beat a path to answer you. Imagine if you announced that you knew what mile marker the hundred-dollar-bill shipment bounced from the armored car. Make sure you have something to say that someone else wants to hear.

Dr. Safety reminds you that solder contains lead, which is toxic. You should never leave it where children can get at it, never put it in your mouth, and always wash your hands when you're finished handling it. You should also dispose of it in a proper manner, and remember that a curious pet might be tempted to eat scraps and splatters which remain after you're finished. If you don't know how to solder, it's easy to learn. Most of us have a friend who knows how, but if you're either really mean or live in the desert, you can pick up a good soldering guide with some simple safety rules at your favorite radio store. ■



Trucker of the Month

OUR SPECIAL RECOGNITION OF PROFESSIONAL DRIVERS

By Bill Simpson, "Highlander"

We Salute "Boss Lady" Kathy



"Boss Lady" Kathy using the CB. (Photo by Bill Simpson)

In this fast-paced world, every occupation has pressures. Yeah, guys and gals, even dispatchers have pressure! (I'm not sure exactly what their pressure could be). Except for being a football coach in the Big 10 or SEC, few jobs are as pressured as the courier business.

For a fee, courier companies contract to pick up a package, envelope, skid or truckload at one point, and deliver it to another within minutes through traffic. All this despite snow, rain, the Columbus Day Parade or some demonstration in the downtown area. While we can acknowledge (very begrudgingly) that dispatchers in this field have a great deal of pressure, we also tip the hat to a few of those in management.

Pictured is "Boss Lady" Kathy, Operations manager for one of the more prestigious courier services located in metro Chicago.

Boss Lady has absolutely no qualms about jumping in a truck or car to take care of business, if needed. "The customers have priority, no matter what. I can't promise that I'll always make the delivery, but if that's what it takes..." she said. She continued, "I started as an order taker years ago, then got some insight into the problems our customers face... their problems become our problems, until the problem is solved. If we can find a way to satisfy the delivery point, we'll do it. Many of our drivers have 10 or more years experience and take late deliveries personally. I don't have many hours in the trucks, but I'll take one out if necessary! I've made deliveries myself in the past, and I'm sure that I'll do it again."

On a more personal note, Boss Lady

enjoys playing with her new niece, and in her spare time breeds, raises and trains rather large dogs; rides horseback and also target shoots. "Between work, the house, the dogs, and the drive to my sister's house," she laughs, "I really don't have time to chat on the radio, even though I would love to spend more time

meeting new people. CB is something I really enjoy."

Do YOU know a driver that should be nominated for "Trucker of the Month"? Send us a couple of pictures along with as much information as possible. Who knows, maybe the next "T.O.T.M." could be you! We're watching...

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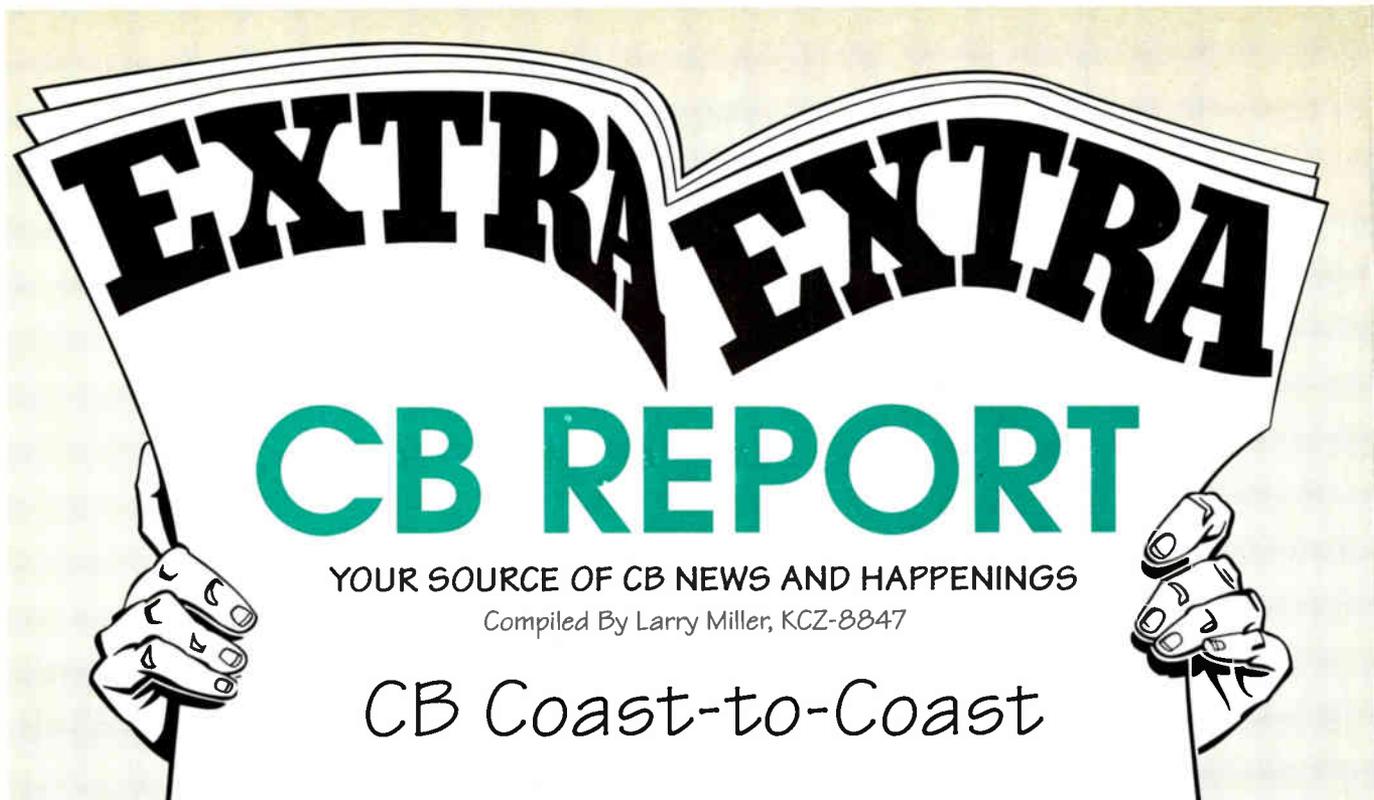
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A CB Story

If highways carry the lifeblood of this country, then Interstate 75 in Georgia is a major artery. Pulsing with traffic from the time it leaves Tennessee in Chattanooga, the road gathers speed in six lanes, connecting metropolitan Atlanta with Macon and Valdosta before finally dumping its load at the Florida border.

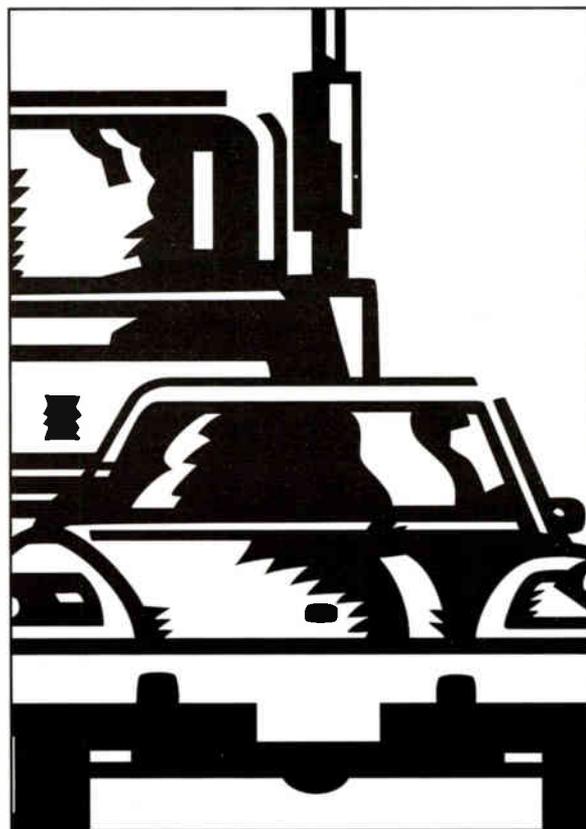
CB plays a major role in the lives of the people who ride the road here. Even if the rest of the country said that CB died in the mid 1970's, no one here went to any funeral. CB is as much a part of their day as pulling on their jeans and going to work. It has saved lives, been that helping hand along the way and for many, been a way of killing off those long hours on the road. On June 8, 1994, however, CBs light went dim, if only for a moment. The story comes from Doug Monroe, a writer at the Atlanta Constitution.

Debra Carey took her usual position on I-75, heading north out of Atlanta. The speed was high, a little more than most drivers would be comfortable with, and traffic was heavy. Up ahead, Carey noticed two trucks playing games with a red pickup. She couldn't tell what was going on, but she did notice that one of the trucks had the letters "CTI" on it.

Writer Doug Monroe takes over at this point. "Up the road, Mitch Dutto of Cartersville said he heard a voice on the CB radio say, "CTI, we've got a red pickup wanting to play games with us. Why don't you come up here and see what you can do with him?"

The big rigs forced the pickup to change lanes, Carey said. "Then, I saw a jolt." Dutto said he heard the CB voice say, "That's it! You got him!"

Carey continued to watch in her mirror. What she saw horri-



Send Lawyers, Guns and Money

Most of your neighbors don't care if you have a CB antenna on your roof. They realize that CBers perform valuable public service in time of emergency. But there are always some warped busybodies that enjoy causing trouble. Antennas, they feel, are an "eyesore" and God sent them to earth specifically for the purpose of clearing rooftops of America. If you are unfortunate enough to live near one of these insufferable do-gooders,

you may even hear from a lawyer.

Don Stoner of Clearwater, Florida, has been fighting with his condominium association for five years over the antenna on his roof. The condo association says that the antenna must come down; Don says that the demand is an unconstitutional violation of civil rights. He is fighting back. In fact, you can read the entire story—including Don's on-line book called, "Condo Wars"—on the

Internet. If you use a computer, be sure to check out <http://www.hamweb.com/~sjl/STONER/ANTENNA.html>.

A word of warning: If you are considering the purchase of a new home, check to see if the home comes with any restrictive covenants. Your real estate agent should be able to tell you, but be sure to get the answer in writing! It may make the difference between carefree CBing and years of untold hassles and expenses.

A CB Story (continued)

fied her. "I saw the red pickup truck complete a 45-degree angle and go over the median. I saw fragments of car flying." The CB voice returned to the air. "CTI, you just put the pace car into the wall." A third voice came on the channel. "CTI," it said, "You just caused that wreck. You need to pull over." No one slept well that night. The next day, Dutto read in the paper that Sal Camacho of Woodstock had been killed on I-75 when his pickup truck crossed the median and entered oncoming traffic. The CBER picked up the phone and called Georgia State Police. He was later called on to testify in court about the accident.

It took over two years, but last month Royce Simmons, the driver of the "CTI" truck, was convicted of first-degree vehicular homicide. He faces 17 years in prison. Joshua Condon, the second trucker, was not charged, but has been named in a civil suit filed on behalf of Camacho's children for "procuring" Simmons to "help him clear the lane."

Other than waiting for Simmons to actually be sentenced or for the results of the civil action against Condon, the story is over. And like many stories, it has both its bright and dark side. CB, it is true, was the instrument through which the deadly road game was coordinated. But it was also the means by which the perpetrator was brought to justice.

Today, things aren't very different on I-75. Traffic is still heavy and perhaps a little too fast. Big rigs jockey for position with their smaller passenger car cousins on the long strip of asphalt that divides the state in two. And people use their CBs, just like any other day. A little good, a little bad, and a lot that falls somewhere in between.

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NIGHT EAGLE**

The ASTATIC SILVER EAGLE features the original D104 Super Talk-Power microphone with a rugged transistor amplifier. The D104 uses a metal sealed crystal, combined with an extra large diaphragm that gives the D104 a distinctive sound that has been the standard which all others have been compared for many years. The Silver Eagle is solidly constructed of brass and die cast zinc, and features an American Eagle embossed on the back of the D104 head. The mic is then polished to mirror finish and bright chrome plated.

The ASTATIC NIGHT EAGLE has all of the features of the SILVER EAGLE with a unique new finish. The main mic body is done in a luxurious black, while the press bars, locking clamp, and grille screen are polished and bright brass plated. The NIGHT EAGLE also features and American Eagle embossed on the back of the D104 head.

1104C

Dependable Base Station

The ASTATIC 1104C is an amplified high gain ceramic desk microphone. It features easily accessible tone and volume controls to help customize the sound of your voice for best results on any radio. The 1104C uses a standard 9 volt battery and has a rugged die cast zinc base and ABS upper housing. The 1104C amplifier and 6 wire cable make it compatible with all modern radio transceivers.

**SILVER K EAGLE
NIGHT K EAGLE**

Equipped With ETS Circuitry

The Silver K Eagle and the Night K Eagle are new versions of the amplified D104 microphone. These microphones feature a unique End of Transmission Signal (ETS) with two different and distinctive sounds. The first sound is a Morse code "K" which is the universal telegraph abbreviation for "over". The second switch selectable sound is a multi-tone burst. The unique ETS circuitry has the following features:

DUAL RELAYS: Eliminates the annoying receiver pop that other "roger beep" microphones cause on electronics switching radios.

LONG BATTERY LIFE: The ETS circuit is only engaged when the microphone is un-keyed.

FAIL SAFE DESIGN: When battery power becomes low, the microphone automatically reverts to normal non-ETS operation to allow time to replace the battery.

SWITCHABLE 20 dB PAD: Useful to prevent over modulation and feedback on "hot" radios.

**SILVER
SIDE BANDER**

Specially designed for single side band but capable of excellent performance on all communication equipment. The base is attractive high polished chrome finish with grip-to-talk and push-to-talk operation. The 10DAL head is capable of a 90 degree head tilt with adjustable tension.



Astatic

**341 Harbor St., Conneaut, OH 44030
(216) 593-1111 FAX (216) 593-5395**

CB Hero

The story of CBer Al Kinney is "all good." When the Los Angeles resident stepped out of his car after work last month, he received a standing ovation—literally—from his neighbors. Kinney got the applause after neighbors found out that he was responsible for the arrest of a burglar who had been plaguing the area for over a year.

According to reports, the 34-year old assembly line worker was returning home from his job when he noticed a suspicious man standing at the back

door of his neighbor's house. Kinney used his CB to contact a base unit who in turn notified the police. When arrested, the suspect's car was loaded with stolen goods.

Kinney's neighbor's didn't always appreciate his radio hobby. "There were a lot of times when I got funny looks or complaints about TV interference. I told them that some day they'd be glad they had a neighbor with two-way capabilities. Now several of them have gone out and bought their own CBs."

FCC Budget Cuts

According to reports coming out of Washington, the FCC has taken a major shellacking from Congress. Budget reductions are so severe that FCC head Reed Hundt characterizes them not as cuts "but amputations." Already the FCC has laid off 10 percent of its staff. Continue this way, he says, and there will be "hundreds and hundreds of immediate terminations here at the Commission. The Agency would be paralyzed."

So what does that mean for CBers? Freedom from Uncle Charlie and even anarchy of the airwaves? Or a leaner, meaner FCC looking for even more revenue from fines? It's hard to tell, but Hundt does give us a hint. He's aware of the FCC's legendary ability to raise cash and calls the FCC "the biggest cash cow" in the entire history of government.

For now, however, the big cow is crying the blues. Moooo.

Father of CB Wins Award

Al Gross, the man who many call the "Father of CB" has been presented with a special award at the headquarters of the International Telecommunications Union in Geneva, Switzerland. Dr. Pekka J. Tarjanne, Secretary General of the ITU, presented Gross with a special medallion in recognition of his "pioneering contributions to mobile, personal, wireless telecommunications now in use worldwide." Gross was also given an honorary, permanent membership in the ITU.

In 1948, Gross was given the FCC's go-ahead to merchandise the first citizens band radio in the United States. In March of that same year, Gross was awarded the country's first CB license—19W0001.

Lookie-Loo Gets Clipped

A Jacksonville, Florida man who repeatedly showed up at the scene of police calls was arrested and charged with illegally monitoring police radio traffic. Forty-one year old David Randall Boyd, a self-employed window washer, violated a city ordinance that prohibits monitoring police from either a motor vehicle or a business. Monitoring from a home is still permitted. Police responding to a burglar alarm spotted Boyd's scanner mounted in his car. They also saw a five-inch TV screen mounted on the dash, which is a traffic violation. Boyd was released upon posting bail.

A Welcome Donation

K-40 Electronics recently donated 50 CB radios and antennas to the REACT program. "We're strong believers in REACT activities, and wanted to show our continued support through this donation," said K-40's president Peggy Finley.

The K-40 CBs and antennas were given to the groups that had the most hours monitored in the past year. REACT's office manager, Deanne Earwood said that "some radios will be used for communications in the Kansas Special Olympics."

Getting Together

We're beginning to hear from CB groups across the country. Be sure to drop us a note and let us know what's going on with your group. You can also be a part of our Media Monitoring Team by watching your local newspapers for articles involving CB radio or CB radio operators. When you see something about CB in your local newspaper, send it in. Our address is Box 360, Wagontown, PA 19376. Be sure to include your name and address if you want your name to appear in this column.

A Great Offer—At *CB Radio* magazine, we know that many of you are involved in working with local law enforcement agencies, whether it's in traffic control, Town Watch or just keeping an eagle-eye on the community. We also know that the two worlds—CB and police—often talk in two entirely different languages. CB's jargon is not always the same as the police. That's why we've put together a wallet-size card listing of the official APCO 10-codes. APCO is the Association of Police Communications Officers. This is the complete list—not just some of them—printed on a rugged laminated credit-card size ready for instant access. We've got a couple hundred of these ready and printed up for you. All you need to do to get your copy is to send \$3.00 to Larry Miller, Box 360, Wagontown, PA 19376. We'll get it out to you right away.

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



Digital Signal Processing Cuts the Squeals

Digital signal processing is a fabulous new technology that may change the way you listen to weak signals on CB radio single sideband. Imagine pulling in another SSB signal loud and clear and having your radio automatically lock onto and notch-out an offending AM heterodyne carrier? And on those rare days that the band is not open for skywave contacts, imagine the benefits of turning on a DSP filter and watching the background noise drop from S7 down to S3, with scarcely a rumble coming out of your speaker until an actual signal comes on the air!

The Big Switch

The world of electronics and radio communications is switching from analog to digital, maybe without your even realizing it. Remember the old days of an automobile radio volume control that you would twist by hand? That rheostat, technically called a potentiometer, is now replaced by a tiny switch and digital chip that will increase or decrease the volume every time you push the button once. The light

dimmers in your shack—they too have switched from a bulky rheostat to a new digital dimmer. That new CD player is all digital, leaving the term “analog” in the history books.

Think of analog as the big polished wood banister at your grandparent’s house. When you were kids, you would take the analog way down from the second floor to the first floor. Think of digital as steps leading from the second floor to the first floor. Analog is smooth, and the digital steps are in tiny increments—but the results are the same as going from one stage to another stage, ultimately arriving at the same place.

CB radio waves travel through the air at 300 million meters per second. They are analog. If you could look at the waves on an oscilloscope or spectrum analyzer, you’d see they have peaks and valleys that represent frequency in cycles per second—abbreviated Hz—and there are also amplitude modulated waves that are an analog wave form resulting from your modulation into a microphone. Your FM stereo receiver tunes into an analog signal, frequency modulated in stereo by a nearby FM transmitting station.

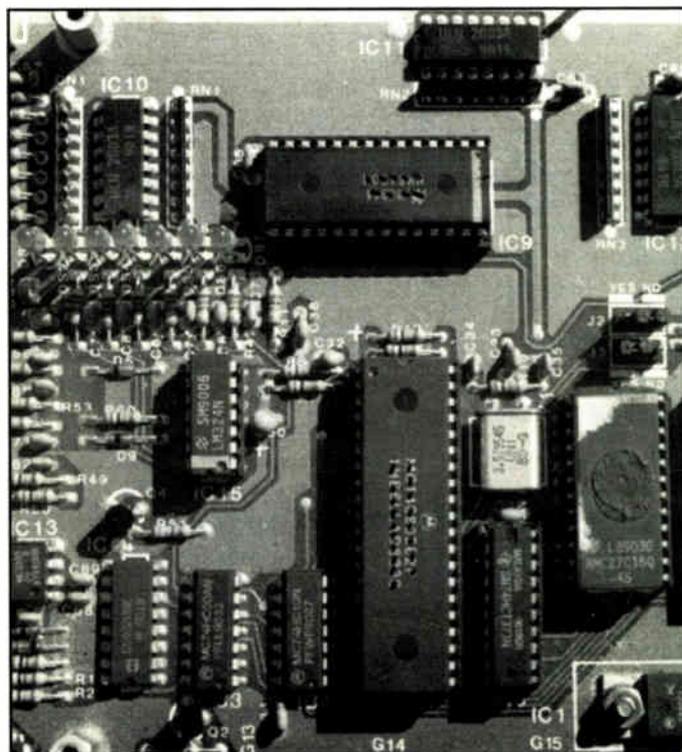
CB radio amplitude modulated signals may be either double sideband or single sideband, but both types of emissions are plagued by noise that rides along with these waves and into your receiver. It’s tough to cancel out the noise because most noise is amplitude modulation, just like the human voice.

A CB transceiver fitted with an external or internal digital signal processing filter will take the incoming analog signals and apply them to sampling circuits that generate a staircase-type wave form illustrated in Figure 1. Digital signal processes may take a rough incoming signal and create a digital format that could cut down on noise by as much as 3dB, or half the noise level. Any noise that might be present on the analog signal between the sampling periods is simply bypassed.

The term “sampling” simply refers to the digital process of creating numbers out of an analog wave form, sampling at regular intervals to break up the incoming analog wave form into hundreds and thousands of time-discrete points. A CB transceiver with a built-in digital signal processing filter, such as the new Radio Shack TRC-493, contains an analog-to-



DSP logic may soon allow you to run your radio entirely by computer.



DSP chips are a powerful new way to reduce interference.

CQ Books

McCoy on Antennas, by Lew McCoy, W1ICP

This is truly a unique antenna book that's a must for every amateur. Unlike many technical publications, Lew presents his invaluable information in a casual, non-intimidating way for anyone! **Order No. MCCOY.....\$15.95**

Building and Using Baluns and Ununs, by Jerry Sevick, W2FMI

This volume is the definitive source for the latest information and designs on transmission line transformer theory. Discover new applications for dipoles, yagis, log periodics, beverages, antenna tuners, and countless other examples. **Order No. BALUN.....\$19.95**

The NEW Shortwave Propagation Handbook, by W3ASK, N4XX & K6GKU

The most comprehensive source of information on HF propagation is available from CQ! Read about propagation principles, sunspots, ionospheric predictions with photography, charts and tables galore—it's all in this unique reference volume! **Order No. SWP....\$19.95**

The Packet Radio Operator's Manual, by Buck Rogers, K4ABT

CQ has published an excellent introduction and guide to packet operation. It's the perfect single source, whether you're an advanced user or just starting out. **Order No. PROM..... \$15.95**

1996 Amateur Radio Almanac, 3rd Edition, by Doug Grant, K1DG

This volume is filled with over 500 pages of ham radio facts, figures and information. CQ's almanac is a resource you'll refer to over and over again. If it's ham radio, it's in The Source! **Order No. BALM96.....\$19.95**

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ARRL Operating Manual (New Ed.)	ARRLOM	\$22
ARRL Repeater Directory ('95-'96)	ARRLRD	\$7
ARRL Antenna Compendium Vol. 1	ARRANT1	\$10
ARRL Antenna Compendium Vol. 2	ARRANT2	\$12
ARRL Antenna Compendium Vol. 3	ARRANT3	\$14
ARRL Antenna Compendium Vol. 4	ARRANT4	\$20
ARRL Weather Satellite Handbook	ARSAT	\$20
ARRL FCC Rule Book (new)	ARFCC	\$12
ARRL World Map	ARMAP	\$12
ON4UN Antennas and Techniques for Low Band DXing	LOWDX	\$20
1996 NA Callbook	NACB	\$35
1996 Int'l Callbook	INTCB	\$35
1996 Callbook Pair	NAICB	\$65
1996 Callbook on CD-ROM (New)	CBCD	\$49
Gordon West No-Code Technician Plus License Manual	GWTM	\$10

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CQ Books

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This is the authoritative book on the design, construction, characteristics and applications of quad antennas. **Order No. QUAD..... \$15.95**

Keys, Keys, Keys, by Dave Ingram, K4TWS

Enjoy nostalgia with this visual celebration of amateur radio's favorite accessory. **Order No. KEYS.....\$9.95**

The VHF "How-To" Book, by Joe Lynch, N6CL

This book is the perfect operating guide for the new and experienced VHF enthusiast. **Order No. BVHF.....\$15.95**

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Learn basic theory and practice of the vertical antenna. Discover easy-to-build construction projects for anyone! **Order No. VAH..... \$9.95**

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This is an excellent video introduction to ham radio. CQ's experts show how to select equipment and antennas, which bands to use, how to use repeater stations, the importance of grounding and the basics of soldering. **Order No. VHR\$19.95**

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For the newcomer to contesting or experienced veteran, this video is for you! You'll get advice and operating tips from contesting's most successful competitors, including Ken Wolff, K1EA, and CQ's own contest columnist, John Dorr, K1AR. **Order No. VCON\$19.95**

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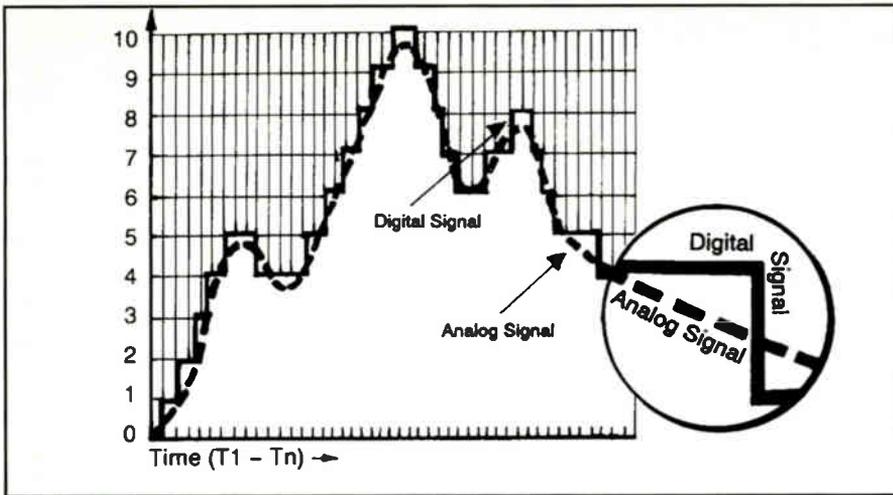
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The digital signal is rounded off to the closest step voltage each time the analog signal is sampled, called DSP "quantization." (Courtesy Craig Clark, KR6T)

digital converter which yields a binary number representing a sampling of the amplitude values. An 8-bit A/D converter would give one of 256 values from the incoming analog wave form.

The modern DSP receiver would also contain a programmable digital filter that would allow the operator to select the desired audio pass band. This programmable enhancement to digital signal processing could allow the radio operator to specifically select band pass filtering to eliminate low, mid, or high heterodyne tones to cope with changing interference conditions on the 40 channels. Several shortwave radio manufacturers offer mul-

tipole notch capabilities within the audio frequency pass band that automatically seeks out annoying heterodyne whistles and cancels them completely from the audio output stage. You don't even know there is an AM heterodyne carrier nearby!

For AM double sideband CB radio use, we found that the Radio Shack advanced digital signal processing in their TRC-493 offered some advantage in pulling out weak AM signals that would otherwise be covered up by random power line noise and an occasional heterodyne whistle. In the Radio Shack CB transceiver with "advanced DSP", you either switch it in or out without any additional capability to

tailor the DSP response for specifically canceling an annoying interfering signal or heterodyne.

The BIG improvement in CB reception is when you add an external tunable digital signal processing filter to your existing CB transceiver, and work the transceiver on either upper or lower sideband. Here is where DSP for CB radio really begins to shine.

The external digital signal processing filter network works at the audio output stage of your CB transceiver, and does not require you to do a thing on the inside. While audio filtering is not near as effective as the VERY expensive intermediate frequency DSP demodulation and processing, audio DSP filters are readily available and can bring you relief from random noise and heterodyne within seconds after a simple hookup.

Skilled Adjustment Needed

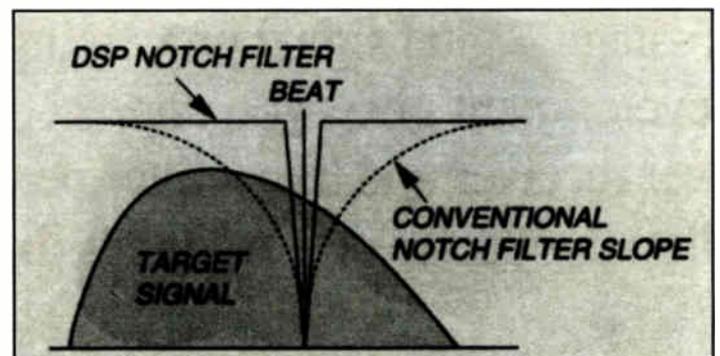
But these filters don't magically and automatically clean up the channel you're listening to. While the relatively inexpensive Radio Shack DSP AM mobile radio can be clicked into a slightly lower noise floor and a slight reduction in whistles and whines, it may truly take your skilled adjustment on an external DSP noise filter to do the job.

Example: If you're on channel 38 and there are some low adjacent channel rumblings slopping over from the next channel up or down, cut out the low tones with your DSP filter and enjoy relief. If you're on SSB and someone comes up



Author West adjusts an audio digital signal processor system for SSB CB base stations.

DSP notch filter capabilities can cut SSB interference from a steady interfering AM heterodyne.



with a big carrier on AM, a DSP filter can notch out the annoying tone. Filters with two notch capabilities offer twin tone annihilation.

"Noise reduction function examines a characteristic of signal and noise called *correlation*, and dramatically filters out the undesired noise," commented a technician at Timewave Technology. "Random noise such as white noise or static gets a slight improvement with DSP. Speech is moderately correlated and may be dramatically improved and separated from background noise. Pure tones like CB heterodynes are highly correlated, and they can be eliminated almost completely with notching capabilities of a well-designed DSP filter system," the technician continued.

That same DSP filter could also work on your shortwave receiver to narrow band signals like CW and digital modes. The filter simply connects between the radio and speaker, and 12 volts run the inside

Sources of Audio DSP Filters

HAL Communications Corp.

1201 W. Kenyon Road
P.O. Box 365
Urbana, IL 61801-7373
Phone: 217-367-7373

JPS Communications

5720 Capital Blvd.
Raleigh, NC 27604
Phone: 919-790-1048

Kantronics, Inc.

1202 E. 23rd Street
Lawrence, KS 66046
Phone: 913-842-7745

MFJ Enterprises

P.O. Box 494
Mississippi State, MS 39762
Phone: 800-647-8324

Radio Shack

(local addresses and phone numbers)

Ramsey Electronics, Inc.

793 Canning Parkway
Victor, NY 14564
Phone: 716-924-4560

Timewave Technology

2401 Pilot Knob Road
St. Paul, MN 55120
Phone: 612-452-5939

And there are others, but these seven companies are well known for their \$100-300 programmable DSP audio filters which have proven themselves as popular additions to CB/SSB transceivers.



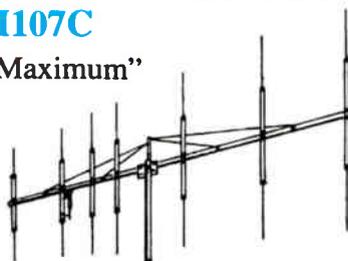
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CIRCLE 56 ON READER SERVICE CARD



This JPS Communications, Inc. unit, the ANC-4, cancels locally-generated noise from power lines, computers, TV and electrical equipment. When used with a transceiver, it must be installed at the lower RF level of the transceiver. (Courtesy JPS Communications, Inc.)

chips which actively make up the digital signal processor system.

Down the Road With DSP

In the future, you'll see more and more CB transceivers going to some stages of digital signal processing. As analog electronic stages are modernized to digital stages, the addition of DSP filtering may be as simple as adding just one more chip to the entire motherboard. And for those of us with older SSB CB transceiver base stations and mobile units, the add-on

audio DSP filter is a great way to go if you will take the time to play with the knobs to cancel out the offending noise, pumping up the familiar voice you are looking for over the airwaves.

No, DSP won't open up the band where the ionosphere is not cooperating, but it will sure help you sort through all of the signals that are on single sideband when conditions get crowded. And even that simple on or off DSP system in the new Radio Shack set can make a difference to quiet the clatter of your mobile CB installation. Digital signal processing—a good way to hear more and to tune out annoying interference!

Coming Months

In the next few months we'll be exploring some technical topics such as SWR, coax transmission lines and lots more, so stay tuned. If you have a technical topic you'd like discussed, send me a letter or postcard, c/o "Tech Talk With Gordo."

Gordon West, WB6NOA has been an amateur operator about 40 years. Gordon has been conducting seminars and radio classes for more than 25 years. He is president of Gordon West Radio School, Inc. He and his family reside in southern California. Gordon is a marine electronics specialist and consultant.

The Cobra 2010 CB Base Station

ITEM: Cobra 2010 GTL WX AM/SSB CB Base Station With Weather Alert

SPECIFICATIONS: Full-featured, 40-channel base CB radio with frequency counter, weather channel reception (with alert mode), instant channel 9, dynamic front-mounted base station mic with coiled cord (battery included), two separate lighted meters; one for signal strength and RF power, another for SWR/MOD; ANL, noise blanker, channel indicator with mode, rotary volume, squelch, RF gain, mic gain, voicelock (clarifier control) and SWR calibrate controls. (Unit also operates from 12 Vdc with provided power cable).

DIMENSIONS: (HWD) approx. 4 1/2" x 13" x 9 1/2". Weight approx. 10 lbs.

Out of the box the 2010 comes ready to operate. All you need is a good antenna and a few minutes to learn the radio's basics and install the provided 9 volt battery into the microphone. It's that easy.

Let's get back to the box for a moment. A quick way to tell how much a company cares about its finished radio product is to look at the packaging; how well protected is it from the inevitable bumps and bruises that occur in normal shipping and handling? In the case of the Cobra 2010, it could probably have survived an elephant stampede! The radio itself was packaged in a clear plastic bag, the protruding front controls were uniquely protected from the rigors of the mail room by cardboard and bubble wrap. Even the gooseneck microphone was securely wrapped in cardboard (in its separate box) and the manual/warranty paperwork was neatly enclosed in a plastic envelope.

Why mention the quality of packaging? It's simple—you've plunked down your hard-earned bucks for a CB radio that, when it arrives on your doorstep, or it's unwrapped and checked at your local dealer, shouldn't be scratched, dented or crunched. (It's our job as user to give it the "used" appearance a few months down the pike!) Our Cobra 2010, needless to say, arrived in perfect condition.

The Manual

The manual is 21 pages long and includes everything you'd need to know to get started in CB. It includes a little bit about NOAA (National Oceanic and Atmospheric Administration) Weather Radio and plenty on learning the ins-and-outs of the 2010 itself.



The Cobra 2010 GTL WX is a full-featured AM/SSB CB. Here's the 2010, also showing the professional-looking and feeling Cobra desk microphone. The instruction manual includes wiring instructions for users interested in using a different mic with the 2010. (Courtesy Cobra Electronics Corp.)

You know how some electronic equipment manuals never really make any sense? I'm talking about the gibberish that often results when Japanese is translated into English. This easy-to-understand manual had none of that "baloney." You won't need a quick foreign language course this time, folks.

Let's face it, most CB radios, and the 2010 is no exception, aren't difficult to figure out, even without a manual. Connect a good outdoor antenna, (I'm currently using a Shakespeare—see our Highlight), put the battery in the mic, plug it in and you're on the air. But there's always that one easily missed piece of information that can make your CBing more pleasurable. Take for example learning that the noise blanker and ANL push-button functions are inoperative when in the "weather" mode. It's in the manual on page seven. It sure saves time and frustration by reading about it BEFORE firing up the radio.

What if you see "ANT" in the lower left of display window? No, it doesn't mean your antenna is connected, it's an indication of a serious SWR problem with your antenna system. Those little, often-overlooked differences between CBs are usually explained in the manual. The Cobra

2010 instructions explain EVERYTHING, so there's no guesswork about what control does what.

The 2010 Basics

It didn't take long to realize the 2010 is a professional CB. Every so often a CB comes along with the controls and front panel thoughtfully organized—this is one of those radios. Each control is labeled with large enough letters so it can be read in dim light. The controls themselves have a good, positive feel and are easily turned or pushed—even if you have monstrous fingers—without inadvertently resetting another nearby control.

Some CBs—and even amateur radios I've had—just don't "feel" right. Maybe the designer had an urge to see how many knobs and buttons could be put on a pint-sized radio cabinet. Maybe they had 20-20 vision and assume the rest of the world does, too. But Cobra's approach is clear: They thought of the radio-using world outside the lab and beyond the draftsman's table.

The 2010 is housed in a black metal case with a top-mounted speaker with plenty of good clean, loud, crisp audio.

You can have the best radio in the world, but without good audio, it's worthless. Some folks would opt for using an external speaker regardless of the quality of the audio, but most of us, I believe, would rather not be bothered with an external speaker unless the radio will be used in a noisy environment. Believe me, the volume on the 2010 is outstanding! There is an external speaker connection on the rear of the unit.

Looking at the front of the transceiver, the first thing that catches your attention is the large 3/4-inch channel display. You don't have to squint or get out a magnifying glass to read the channel you've selected. It's brightly lit, too. There is no bright/dim switch; it's something that some users might like, but that's a minor, if not downright picky observation, anyway.

Adjacent to the channel number is the nearly 1/2-inch frequency display. The display window also shows the mode (AM/LSB/USB); receive/transmit indicator; and at the push of a button, a four-digit clock. When in the "WX" (weather) mode the clock is displayed. In the CB mode (either AM or sideband) toggling between the clock and frequency display is simply accomplished with the push of a button.

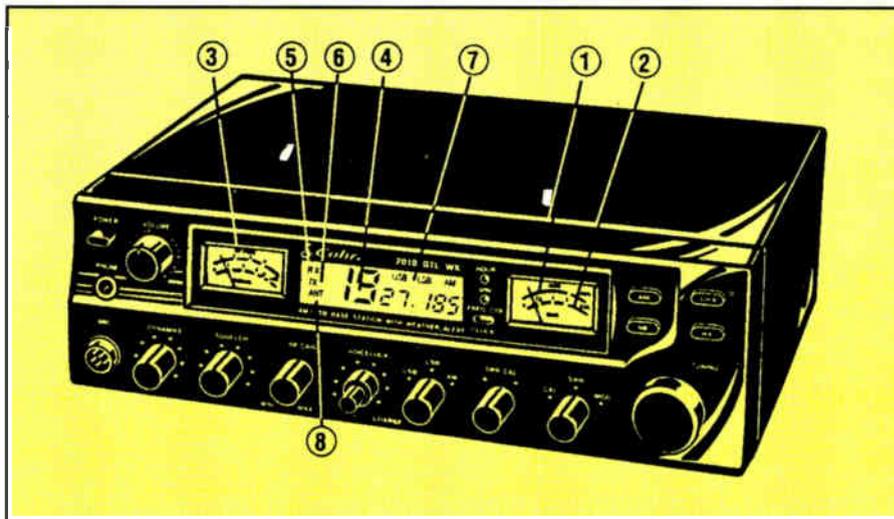
The two meters, one for signal strength and power, the other for SWR and MOD are well-lighted and highly visible, even at arms length. Rounding out the front panel controls are push buttons for instant channel 9 access, weather reception and a headphone jack and of course the larger rotary tuning and volume controls.

On the Air With the 2010

When first plugging in the radio, a momentary loud alert-sounding tone is heard. This power-on-self-test of the weather alert circuitry is normal; it's the same 10-second tone you'll hear when the Weather Service transmits their warning tone. This is one aspect of the radio that isn't mentioned in the manual. Anyway, how often do you plug and subsequently unplug a radio?

With the provided 9 volt battery installed in the base of the great-looking microphone and using a good outdoor antenna, it was time to check out the Cobra 2010.

Back a few years ago I used a Cobra 142 GTL; it's a super CB; sideband, SWR/MOD meter and all. But for me, there's no comparison between the new 2010 and either it or the older Cobra 2000 GTL. Each predecessor had its own unique quirks. The 142 GTL's controls were awkwardly mounted and unusually peculiar to use. The 2000 GTL, while a superb CB, was similar. Clearly, though,



The layout of controls on the 2010's front panel is impressive. At number "7" notice the frequency display. This drawing, taken from the instruction manual, is typical of the detail throughout the instructions. (Courtesy Cobra Electronics Corp.)

the 2010 is considered to be the Cobra replacement for the aging 2000 GTL.

Upon power-up the display shows the current channel number, frequency, and mode. If last used to tune the NOAA weather, it will display the WX mode and current time. A quick push button away is instant access to channel 9.

Like most areas of the country, there are always a few wahoos with linears who inevitably misbehave on channel 10 or 11, usually completely obliterating incoming communications on 9. There are a couple of these "operators" within a few miles of my location. Sure enough, by early evening they were at it on channel 11. On either side of 11, both channels 10 and 12, their signals would have nearly rendered any meaningful communication very difficult to conduct. However, on channel 9, two channels away, while still noticeable, their higher-powered signals were only a slight problem. If I had needed to render assistance to a caller from the nearby Garden State Parkway, it would have been possible. This attests to the good selectivity of the Cobra 2010.

I jumped up to channel 19, a hotbed of drivers with CB radios—some probably running excessive power. "Wolverine" and I talked for a couple of minutes, giving way to mobiles passing along smokey reports. With the Dynamike (mic gain) and Dynamike Ultra (on-mic gain) at the midway point, he reported my audio and modulation was "sounding great." There was no need to ask him for a signal report; several other mobiles repeatedly called me, one even wanted to know my high-way mile marker!

The gooseneck-type microphone's base is black, matching the radio cabi-

net. The flexible mic stem stays where you put it, unlike some I've seen that seem to have a mind of their own. The push-button controls on the base of the unit work equally well; the left is for a brief transmission, and right one locks for longer transmissions. The locking button unlocks with a second downward push.

Typically, I rarely trust built-in SWR meters. So, I connected my own separate meter between the 2010 and antenna. Surprisingly the readings were nearly the same on both meters! By simple repeated on-air use and comparison with other CBs I've owned, my feeling is the S-meter on the 2010 gives an accurate indication of incoming signal strength—at least as good as any other S-meter indicator, whether it's bargraphs or an analog meter such as this one. (An old fellow once told me that S-meter readings "don't matter anyhow, cause the most important thing is, can you hear 'em?") He was probably right. Regardless, the 2010's meter is easy to read and "feels" right. The same held true for the SWR calibrate and actual SWR meter-reading. My independent meter gave the same reading on lower channels and only an insignificantly higher reading on channel 40.

On Sideband

Without changing the mic and gain controls, I switched over to channel 38, LSB. There's a lot of sideband activity in many areas of the country, my New Jersey QTH is no exception.

A quick call to a couple of operators, one some 20 miles distant, was met with a response from one of them. Like on AM,

the audio report on the 2010 was superb. With three small knobs on its left, and three on the right (not including the large tuning knob), the clarifier (voicelock) controls are positioned perfectly. Using the center-positioned fine tuning control brought Steven in crystal clear. I noticed an intermittent raspy buzzing sound mixed with his signal, so I pushed the ANL button in, and the interference virtually disappeared. The incoming signal wasn't affected—still clean and crisp.

The 2010 has dual voicelock clarifier controls, one set inside the other. One is for "coarse" adjustment, the other for "fine." They each operate independently and work on AM signals, too. The frequency display changes slightly when either control is adjusted.

Weatherband Reception

NOAA weather transmissions abound all over the U.S.A. They're a lifesaver—

only if more people would get NOAA-equipped in their homes and cars.

The Cobra 2010 GTL WX not only tunes all seven NOAA weather frequencies—so there's sure to be a station in your area—it also features the NOAA alert tone. When the National Weather Service broadcasts a 10-second alert tone, the 2010 will sound the alert tone, EVEN IF THE CB IS TURNED OFF, signaling the user to turn on the NOAA weather to hear the emergency broadcast. It's a great combination; an outstanding CB transceiver coupled with NOAA weather reception—sort of like having two lifesavers in one package! It's important to also know that, according to Cobra's chief engineer, Jeff Feldman, Cobra radios that include the weather alert tone feature will only sound the tone for the typical 10-second duration transmitted by NOAA. Some receivers may sound the tone continually (imagine being away all weekend). Also, remember that NOAA transmits a test of the system on a weekly basis. (If

threatening or severe weather is in the area, they'll postpone the test).

The Bottom Line

The Cobra 2010 GTL WX is a worthy successor to the 2000 GTL. It puts out a solid 3.9 watts on AM and an SSB signal that reached all the way to, well, let's just say it works very, very well.

Both the CB and weather audio was loud enough to be heard and understood in an adjacent room.

The squelch, typically an often-annoying control that, on many radios, needs to be continually re-adjusted, is responsive and can usually be set once and forgotten.

All-in-all, the 2010 is a superbly designed, solidly built CB that should be around a long, long time. The unit retails for \$660 and is available from a number of CB dealers. Cobra's toll-free number is 1-800-262-7222.

The Shakespeare Super Big Stick Base Antenna

ITEM: The Shakespeare Super Big Stick/Gold Band Series 176 GBSU Base CB Antenna

SPECIFICATIONS: Two-section fiberglass 16-foot vertical omni-directional CB antenna. Pre-tuned to CB frequencies and handles 1,000 watts.

A super-sturdy mailing tube protected the Big Stick during the transit from the factory in North Carolina. It weighs about seven pounds and is easily assembled.

Here's the ideal antenna from a company that's been around since 1965—the Big Stick line is nothing new, just tried and proven. Let's take a look:

Assembly

The white fiberglass antenna comes unassembled in two sections. Detailed instructions are included, as are all necessary hardware, including mounting brackets for attachment to up to a 1 1/2" pipe. It's recommended that the antenna be assembled outdoors; 16 feet is longer than you might initially visualize. Simply place the 3/8" lock-washer between the two sections and screw them tightly together. Slip the black rubber boot down over the assembly and it's ready to be mounted. The entire process took less than a half-hour. You'll only need a small adjustable wrench to tighten the top section to the bottom.

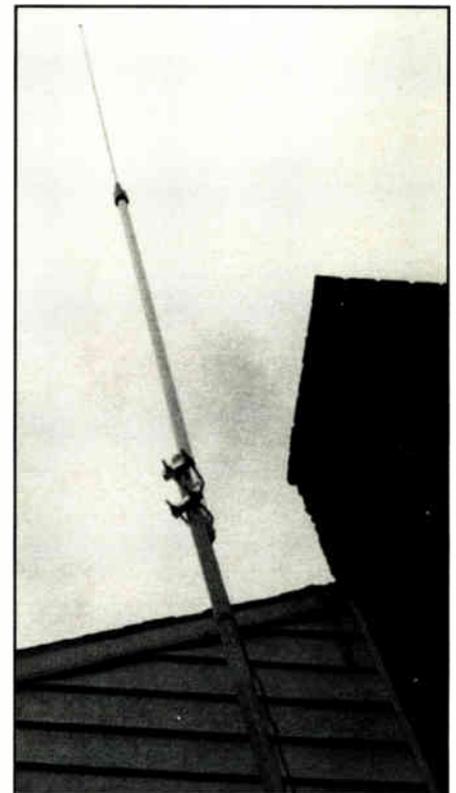
The rubber boot is designed to provide limited protection from electrical shock. As the instructions note, "no pro-

TECTIVE device can protect against all hazards . . ." BEFORE erecting this or any other antenna, always do a simple site survey. While this may seem meaningless to many of you, remember this fact: Every year would-be CBers (and hams, too!) are killed because they didn't take proper precautions. If the antenna falls and comes in contact with power lines, you can be killed. Just because the antenna is made of fiberglass doesn't GUARANTEE you'll be spared.

I mounted the Big Stick on two 10-foot poles obtained from Radio Shack. You can also visit your local TV antenna folks or hardware store for similar poles. ALWAYS use heavy-duty poles for mounting ANY antenna. Why erect a permanent antenna and use inferior grade lightweight poles? It doesn't make sense.

What I particularly like about the Shakespeare Big Stick is that there are no protruding radials. Truthfully, I've always liked the Big Sticks. They usually give a near-perfect SWR and are easy to assemble. Plus, they give you a whopper-of-a-signal and hear equally well!

Remember, this is a 16-foot long antenna. What looks easy to handle while laying on a picnic table or patio during assembly, is downright squirrely when mounting to the pipes. I suppose it's possible to mount the antenna first, then attach your coax to the antenna. This way you're not dragging 50 feet of coax around your yard during final assembly to the mast. I decided to attach the coax the night before, inside the house.



*The Shakespeare Big Stick antenna.
(Photo by Harold Ort)*

(Sometimes it's more interesting to watch your family observe you going through the motions than it is to actually work on the antenna!)

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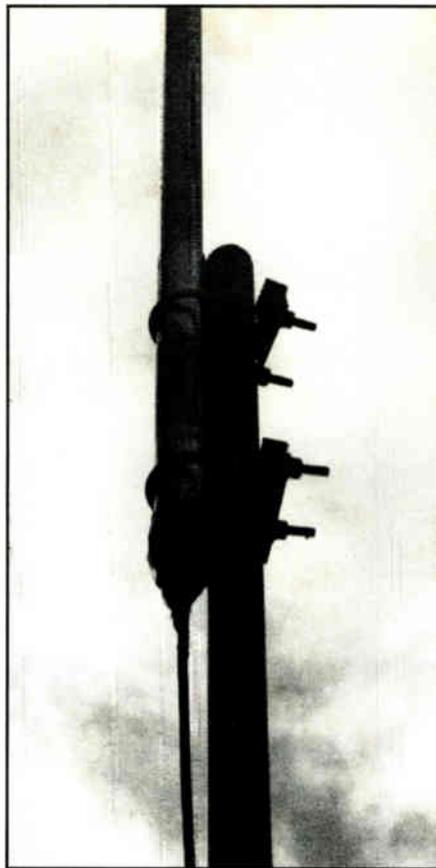
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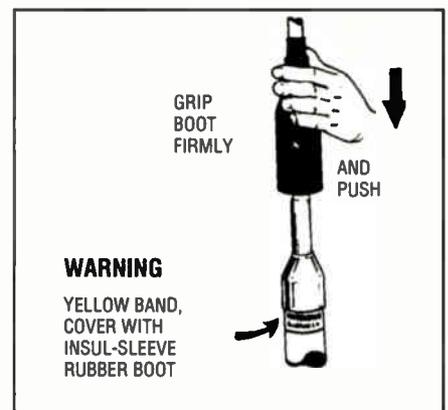
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A look at the base of the completed assembly. The antenna mounts to a pole/mast using the provided hardware. (Photo by Harold Ort)

Once the Big Stick is in place outside, it's nearly impossible to properly weatherproof the coax connection. So in the comfort of a garage or living room where the temperature is pleasant, attach the coax and finger-tighten. Then with a good pair of pliers, tighten it some more. Be careful not to do a macho-tightening-job on the coax. Time now to get out some goop. I prefer using Coax Seal, available at your favorite electronics retailer or through many of our advertisers. Now is the time to work a few minutes to ensure a professional installation. Coax Seal is great stuff for keeping out moisture, but, it, like everything else in life has a couple of rules that must be followed. What your wrapping or sealing must be clean, dry and free of grease. And, it should, for your own sanity, be used in temperatures above 65 degrees or so. Carefully mold it around the PL-259 connector at the base of the Big Stick and then check your handy work to make sure it's completely covered. Then (this is my personal preference, because moisture is an SWR killer) get some silicone-type goop at your hardware store. Wearing those disposable plastic gloves, smear a good help-



Getting "the boot" to slide down the fiberglass antenna requires a couple of minutes and some patience. Otherwise, the antenna is as easy as 1-2-3 to set up. (Courtesy Shakespeare Electronics, Inc.)

ing of the silicone stuff over the Coax Seal. Here's the hard part: Let it dry overnight and install your antenna the next day.

Once mounted to your mast or poles, check the installation carefully. In the wind the antenna will sway back and forth. Does it come in contact with your house? Make sure you've properly guyed the antenna installation just below the base of the Big Stick. If you can't install guy wires, lower the antenna or consider a different mounting method. KEEP IT AWAY FROM POWER LINES, AND ENSURE THAT IF IT FALLS, THAT IT WON'T COME IN CONTACT WITH POWER LINES!

The Big Stick Test

Somehow I knew it would work well, and it certainly did. In fact it was used with the Cobra 2010 GTL WX (see our Product Highlight on the 2010). The SWR is the lowest I've seen in a long time; 1.2:1 across all 40 channels! It rained the day after installation, so I checked the SWR again. It was only slightly higher, especially on the channel 40. Of course your SWR depends on lots of factors, including the condition of your coax, the connection and proximity of other metal objects to the antenna, including rain gutters and other antennas.

Signal reports from distant stations were great! One mobile on the parkway even asked my mile marker. All-in-all, the Shakespeare Big Stick 176 GBSU is an outstanding omni-directional CB antenna; the signal is potent and it pulls in those distant stations with ease. The suggested retail price is \$85; an 18-foot version costs \$100. Shakespeare sells the Big Stick through dealers nationwide. For more information you can call Shakespeare Company in Newberry, SC at 803-276-5504. Tell them the folks at CB Radio magazine sent you.

The Solarcon Thru-Glass CB Mobile Antenna

NEW ITEM!

ITEM: Solarcon Antenna Research Thru-Glass CB Antenna (CB-TG)

SPECIFICATIONS: Half-wave voltage fed CB antenna requires no ground plane. Works on 10 and 11 meters and is tunable for lowest SWR. Features 16 feet of RG-58/U coax with soldered PL-259 connector. The 24-inch removable whip is composite wound.

Solarcon Antenna Research makes many fine CB antennas, including the famed A-99 and A-3000 Series antennas. With the introduction of their latest antenna, the Thru-Glass antenna they've got another winner!

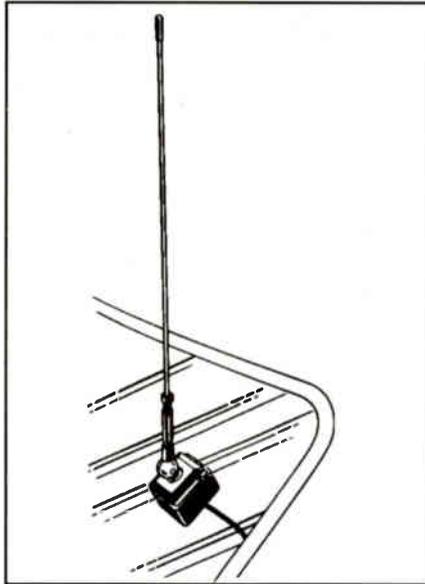
The antenna is packaged in a bright red and white molded plastic-on-cardboard container. All parts of the antenna and cable are visible for a quick inspection before you decide to buy. What looks like a quality antenna also proved to be one.

I installed the antenna on the front windshield of our car. As with any thru-glass antenna, never install it over electrical defroster wires or metallic tinted glass. The instructions are on the back of the box. Simply clean the outside mounting area with the provided alcohol pad and then dry. Peel the paper backing off the foot of the antenna, then push and hold the mount firmly for a few seconds to the outside windshield. Inside the car, the matching coupler box attaches in the same way. Be careful, though. Where you first touch the antenna or coupler box to the glass is where it will remain. The material Solarcon has used to hold antenna to your windshield is superb. Don't worry about it flying off at highway speeds!

There's also a simple screw/nut adjustment that allows you to adjust the vertical angle of the antenna. It tightens firmly and doesn't move in the wind at highway speeds. A word of caution about hitting low-hanging branches, etc. with this antenna. It's a minor drawback, but in having such a sturdy whip (and unlike stainless steel trunk-lip or magnetic-mount assemblies) there is no flexibility. Striking a branch or inadvertently whacking the antenna at the carwash could damage the antenna.

How Does It Work?

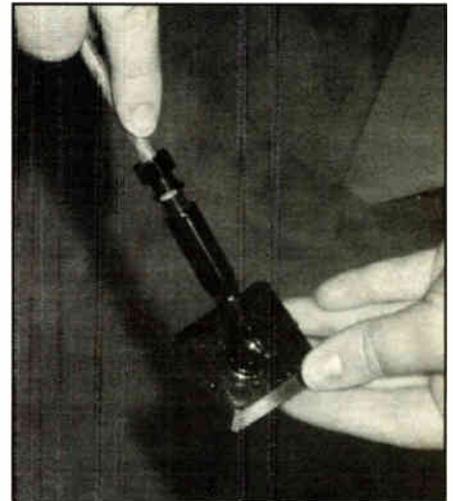
Exceptionally well, it turns out. There's a small nut used for up and down adjustment of the whip. (Instructions for testing and setting the SWR are also included). Simply turn the whip assembly about one complete turn one way or the other for the best SWR., then tighten a lower hex-type



The Solarcon Antenna Research Thru-Glass (CB-TG) antenna.

nut to ensure the whip stays put. On our test vehicle using a Radio Shack CB transceiver we achieved an SWR of about 1.5:1 on the high channels and slightly lower on channel 1. That's pretty darn good considering the affect my nearby AM/FM car antenna probably has on the SWR.

Remember, any antenna that's less than 102" is always a compromise when it comes to both receiving and transmitting—rubber ducks included—regardless of the quality of the CB. But how many of us want to drive around with a 102" whip sticking off the rear bumper? (Well,



A simple turn of the whip adjusts for best SWR. (Photo by Harold Ort)

maybe we want to, but garaging the vehicle dictates otherwise).

As we drove to north Jersey on the Garden State Parkway, signal reports from other drivers on channel 19 were as good as with a large magnetic-mount CB antenna I've previously used. Incoming signals were strong, too.

I'd recommend the Solarcon Thru-Glass mobile CB antenna for a couple of good reasons: First, it's easy to mount AND attain a good SWR across the band. Secondly, it's a rugged, well-constructed American made product that will give you years of reliable service. It retails for \$66 from Solarcon Antenna Research, P.O. Box 176, Holland, OH 43528. ■



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How We Got Here From There—A CB History Lesson

Can you guess within three years when CB was first proposed? Hard to believe it was more than 50 years ago! Yes, CB was formally filed with the FCC on January 15, 1945 under the title Docket 6651. It was discussed in July of 1945 by FCC Commissioner E.K. "Jack" Jett in his Saturday Evening Post article, "Phone Me By Air."

Commissioner Jett described the FCC's original concept of CB radio as a UHF service with "possible uses . . . as broad as the imagination of the public . . . can devise." He saw minimal rules and regulations in the hopes of encouraging "ingenuity in design and utilization." In this respect, Jett felt that only a few minimum traffic rules would be established, and that restrictive rules would be used only if an imperative need was shown. He saw CB as a radio service where there would be no channels designated, and where rural stations would be allowed to run high power.

Fact is, a trial of UHF CB did happen in the early 1950's. "Class A" stations were more along the lines of commercial two-way radio. "Class B" was the poor-man's walkie-talkie version intended for the general public. I promptly obtained a Class B radio license, receiving the strange callsign, 2A0305.

A few Class B radios were eventually marketed for use on 465 MHz. Vocaline



FCC Commissioner Ewell K. "Jack" Jett, who is generally credited with being the first to suggest the creation of a CB service. That was in 1945.

had several models, so did Stewart Warner. They had regenerative receivers and flea power transmitters. You could shout further than you could communicate on Class B. Poorly performing equipment, limited marketing, and a service that the public never heard of finally

brought the FCC to the conclusion that they needed another approach on a different band.

Enter, Class D Radio

That is when Class B was dumped and



The appearance of CB callbooks, beginning in 1959, was heralded by CBers, but taken as a bad omen by the FCC.

International Crystal's Class D radio was famous because it was one of the first sets sold. CBers nicknamed it "The Tombstone." It had a single-channel transmitter and tunable single conversion receiver.



SIRIO

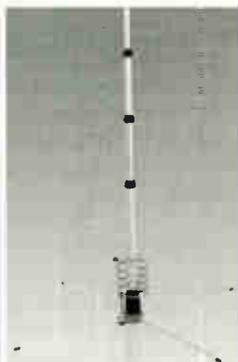


Truck 27 Log CB 27MHz Vehicular Twin Antenna

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 acting on the special sleeve placed at the bottom. They are particular suitable for fitting on trucks and caravans.

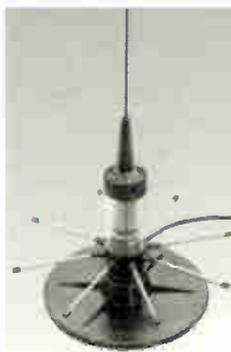
Tornado 27 5/8 CB 27MHz Base Station Antenna

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.

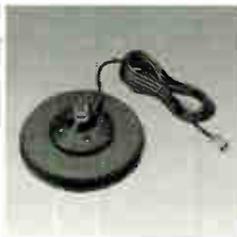


Space Shuttle 27 PL CB 27MHz Vehicular Antenna

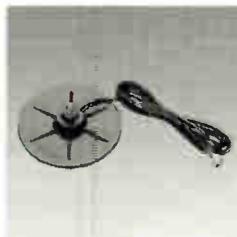
5/8 wave vehicular antenna specially conceived to support hi-powers. The coil, made of big section copper wire, is protected by a polycarbonate clear cover completely water-proof. New in design and technology, it is supplied with 8 ground plane radials to get the best resonance. The conic whip is of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



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.

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E.F. Johnson's Messenger was a popular early CB radio sold nationally.

the FCC set about creating Class D CB radio on 27 MHz. The Class D band was outlined in FCC Docket 11994, released in 1957. The proposal was a far cry from free-wheeling Docket 6651, establishing 23 specified operating channels, and specifying that the Class D radios were intended only for short range "business or personal use."

Stations were limited to 5 watts input, with tight antenna height restrictions. Class D stations would operate only with strict limitations on the length and nature of the communications to be permitted. Class D was not intended to be a hobby radio service, nor used for what the FCC considered non-substantive messages. Stations could contact only their own mobile units. After protests from the amateur radio service, which objected strenuously to the FCC's plan for replacing their 11 meter band with Class D CB, the new band was opened in October, 1958.



These CB club members proudly display a wonderful e.c.i. Courier transceiver. This radio wasn't pretty, but it was a band blaster, and had a triple conversion receiver.

It was a slow start, and not many applications came in. But by January, they had increased to 600 per month and word was spreading that people were having fun with CB radio. I dashed right out and got a Class D license, receiving the 1959 call-sign 2W1965. I was on the air the very next day. As May rolled around, the FCC was receiving 6,900 requests for licenses per month.

CBers began exchanging QSL cards. Soon enough, one company brought out a CB callbook. It continued in annual publication until 1965.

Manufacturers viewed Class D with enthusiasm. Early CB radios included models from Vocaline, E.F. Johnson, General Radiotelephone, Polytronics, Gonset, International Crystal, Heathkit, Globe, Hall crafters, Raytheon, Lafayette, and e.c.i. Courier. In those days, sets were clumsy, bulky, vacuum tube models.

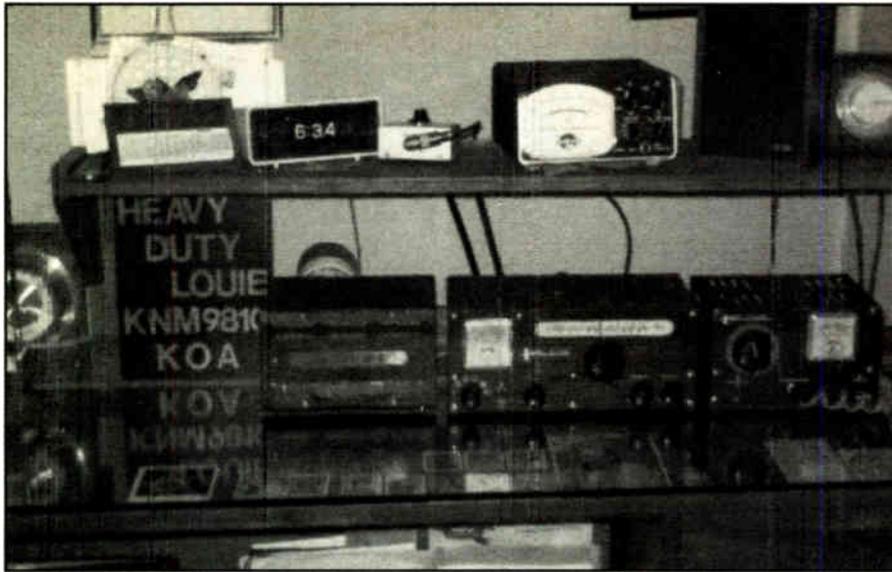
Hey, Wait!

It didn't take long for the FCC to realize that their locating the CB band on 27 MHz during a high-point in the DX cycle was an invitation to their regulations being ignored. Four months after the band opened, in December 1959, the FCC issued a somber Public Notice No. 81482. This stated the agency's surprise, shock and dismay that CB operators were shooting skip, calling CQ, sending non-substantive messages, exchanging signal strength reports, and engaging in hobby-type communications in violation of FCC regulations. The FCC must have felt that would end the problem. Not so. There would be no way of stuffing the genie back into the bottle.

Modern CBers aren't the original ratchet jaws. Just like today's CBers, operators more than 35 years ago also enjoyed making new friends on the air. Moreover, they participated in their hobby while under the FCC's gun. During CB's early era, the FCC's monitors cranked out tens of thousands of dollars worth of fines every month to CBers caught working skip, talking more than five minutes, and



This early CB shack features several early CB rigs, including units from Globe and Lafayette. The CB radio at the upper right is a Heathkit "Lunchbox," which had a regenerative receiver.



How about these Buddy modular units? In the center is a Buddy RC-11B tunable receiver. At the right, there's a Buddy TX-11B, which operated on six channels. These were sold primarily in southern California during the early years of Class D.

communicating with stations other than their own units.

Clearly, CB had become the only FCC radio service ever to invent its own unauthorized rules and regulations, then hap-

pily exist without paying any attention to that agency. This turn of events brought about several FCC modification attempts to tighten the CB regulations in efforts to seize control of the runaway service. This

proved to no avail, as the service continued to expand. Even so, after 15 years, CB radio's members remained a core group of communications insiders in the U.S. and Canada (where it was known as the General Radio Service). The general public still had never heard of CB.

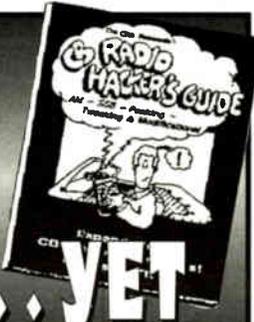
The mid-1970's truckers' strike, national speed limit, and apparent fuel shortage were a simultaneous series of events that brought CB wide public attention. Suddenly, EVERYONE wanted to be a CB operator. CB instantly became the focal point of songs, magazines, movies, TV sitcoms, board games and books.

There were countless CB clubs, coffee breaks, and jamborees. CBers jammed the channels and were drawn from every facet of society. Everybody had a CB "handle" and understood CB trucker's lingo. Every car on the highway seemed to be sporting a CB whip and looking for a smokey report. Every home had a beam or ground plane perched on its roof. CB radio had become an unqualified success.

FCC's Woes

Manufacturers and importers of CB radios seemed to spring up almost

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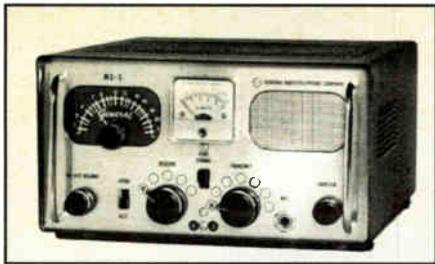




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General Radiotelephone's MC-5 was a popular early multi-channel transceiver with a tunable receiver and large S-meter.

instantly as license applications flooded the FCC to the tune of nearly 500,000 per month. The FCC found itself understaffed, under-financed, and with a history of being unable to adequately control the freewheeling CBers. The agency decided to put teeth into their regulations by announcing that CBers who violated them would be henceforth be considered "criminals." The agency would seek "criminal sanctions" against them via the offices of the United States Attorney. This heralded a series of high-profile FCC monitoring blitzes in major cities and was covered in the news media. The intention was to scare CBers. It didn't. What's worse, the U.S. Attorney was indifferent to pressing criminal charges against operators working skip, using VFOs or linears, and those fleeing the chaos of the 23 crowded channels by taking their chatter "upstairs" to illegal non-existent channels above channel 23.

If You Can't Beat 'em . . .

The FCC license computer couldn't keep up with the huge influx of CB applications. Several times it issued thousands of duplicated callsigns, or crashed completely. It had been an exercise in bureaucratic futility, anyway. That's because CBers had stopped using callsigns in favor of CB handles and side-band numbers.

By 1977, when there were about 20 million American CBers, the FCC gave up on requiring individual licenses for CBers. They announced that the band was being expanded from 23 to 40 channels. Moreover, the rules were liberalized to permit local hobby communications, although they stopped short of allowing skip-shooting. Enforcement efforts were reduced to the point where only the most blatant offenders were hassled, particularly those operators running very high power, causing interference and those who strayed off the 40 authorized channels.

The beleaguered FCC ended up



An bulky vacuum tube CB radio under the dashboard took up much more room than a modern solid state rig.

legalizing most of the practices it had spent nearly 20 years fighting. Many felt this marked the FCC's acknowledgment of the loss of ability to control CB radio. The agency decided to conveniently look away and simply pretend there wasn't a happy, wild, rowdy and uncontrollable party taking place out there in radioland. This talking festival continued unabated until about 1979, when the novelty of CB began wearing thin on millions of operators as suddenly as it had started.

Manufacturers thought the glory days would never end, but by 1979 they found themselves sitting on stacks of CB equipment that they couldn't sell. A lot of them went out of business, as did many CB shops. CB's ranks again began to slim down to a core group. By the end of 1981, the once-chaotic CB channels had returned to the point where you could actually get a shout across town on the AM channel of your choice.

Between late 1958 and 1981, CB had gone from nothing to becoming the most amazing cultural phenomenon of the 1970's decade. Then it became abandoned by the public, the media and man-

ufacturers. But it slowly rebuilt itself throughout the 1980's. It continues to evolve into something new, a lot more fun, and more useful than ever.

Over the coming months, our column will give you an inside look at those wild and woolly early years, including the crazy antics and operators that drove the FCC crazy. We'll examine obscure and amazing transceivers you'll hardly believe existed, and the hidden origins of channel 9's emergency status. You'll learn about the controversies centered on CB channel numbering, on the meanings of 10-codes. We will visit long-forgotten clubs and jamborees, and share with you bizarre CB novelty items that were marketed during CB's past.

There isn't enough space here to mention everything to be covered in the months ahead. If you enjoy CB now, you'll get all the more from your hobby when you have a broader understanding of how we got to where we are now. You are invited to send me photos, questions, QSLs, or memories of CB between 1958 and 1982. See you next time.

Tomcat!

REACTer of the Month

OUR SALUTE TO THOSE WHO VOLUNTEER

By Ron McCracken



Congratulations Bill!

REACTer Bill Riley, N3SNU, has been monitoring CB emergency channel 9 with a series of REACT Teams for over two decades.

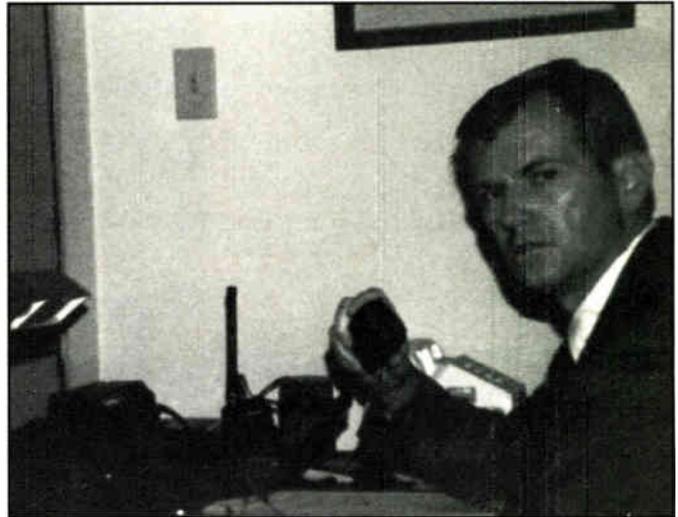
That's right! Bill's lengthy REACT career began at Norfolk, Virginia in 1973. He was stationed there with the U.S. Coast Guard. Bill later became a charter member of Tidewater REACT, a Team that is well-respected in REACT circles. Tidewater and Bill are still proudly serving REACT and the public with their safety communications.

When Uncle Sam shipped Bill to Cleveland for a stint in 1976, he served with two Teams: Cuyahoga County REACT and later Hillcrest REACT. Eventually Bill was posted to USCG Headquarters in Washington, D.C. It didn't take him long to search out Prince George County REACT in Maryland, getting active once again with his fourth Team. This fellow is a serious REACTer!

Next, Bill was off to New Orleans for a while. After four years, however, he returned to D.C., and to Prince George REACT, where he continues to serve.

Bill's new amateur radio qualifications make him particularly valuable to his Team. He is able to operate in the amateur bands to benefit both the public and his Team. That capability is invaluable, particularly in disaster situations. Many REACT volunteers are joining Bill as they acquire ham tickets.

One of his most memorable emergency CB calls is one he made rather than received. Driving home from the base in 1974 on busy multi-lane Military Highway, Bill was startled to see a group of kids roller-skating toward him in heavy traffic. He



Here's Bill at the controls of his CB from the Riley's home in Maryland.

grabbed the mic and alerted one of his fellow REACT monitors to the dangerous "fun" going on. Needless to say, police were not at all amused. Bill believes he may have saved several lives that day.

Another call he is proud to have assisted with came from a trucker on the D.C. Beltway a couple of years ago. He was reporting a possible heart attack involving another motorist. Bill passed the call to authorities and hopes that CB helped save another life that day.

Impaired drivers endanger us all. Bill and other REACTers appreciate reports concerning this situation. However, Bill cautions us not to chase an impaired or reckless driver.

Recently a caller did, regularly reporting the high speeds involved and the streets they were crossing. The caller became as great a menace to public safety as the drunk he was pursuing.

His reports to Bill gave the plate number, but not the state. He could not hear Bill requesting the information for police, so his dangerous chase was wasted. In the D.C. area, a state is as vital as the plate number. It's wise to always include it in your reports.

"Concentrate on airing complete, correct information repeatedly over channel 9 in any emergency," Bill urges. He continued, "Leave chases to the proper authorities." That's sound advice from a seasoned REACT veteran that can save you a lot of heartache.

Retiring from the USCG in 1992, Bill is now a professional ventriloquist. With his wife, a professional clown, they entertain at children's parties and community events. If you visit USCG Headquarters in D.C., you may see one of Bill's puppets, a buzzard. It's the Headquarters mascot created by Bill, and it continues to serve.

Congratulations on being our first "REACTer of the Month," Bill Riley. Best wishes for many more years of helpful service to the public through CB and amateur radio. You are a credit to your organization, both locally and internationally.



Bill Riley, our first REACTer of the Month is pictured with his wife Pamela, a professional clown. Bill is a professional ventriloquist and a member of the Fellowship of Christian Magicians.

Using Your Radio Skills To Benefit Others

Like excitement? Want variety? Think you'd enjoy putting your radio to work in the service of your community?

REACTing may well be the answer for you. Civic-minded volunteers work together as Teams to make their communities safer. Young and old, male and female, healthy and physically challenged, they pool their radio skills to benefit others. In the process they have fellowship and more fun than you can shake a stick at.

This column will report on REACT contributions to safety wherever they may occur. It will give you a snapshot of the many and varied ways REACT Teams serve. Hopefully it will inspire you to join their ranks and create a team to serve your community.

Volunteers are becoming more essential by the day. Governments are just now realizing that tax dollars can't buy everything. REACT volunteers have been serving communities everywhere for nearly 35 years. Let's look at some of the ways they help make a difference.

Oklahoma City

Did mention of that name send shivers up your spine?

REACTers from three nearby Oklahoma Teams were activated by Emergency Management authorities moments after the disaster occurred. Those closest



REACTers from four Ontario Teams cooperated to work a fire fighter "muster" that attracted large crowds. Here they gather at the new REACT St. Thomas mobile comms center to de-brief after the event.

to the disaster site knew before the call came that something was terribly wrong. The shock wave made it plain as it shook their homes.

Initially REACT assignments were naturally limited until the professionals got a

handle on the situation. They didn't need more casualties on their hands.

Day two, however, as fatigue and limited manpower took their toll among police, the uniformed REACTers were assigned. They would provide traffic control at four major intersections on the disaster perimeter.

Their radio capability enabled them to maintain communications with one another and with the Emergency Management Command Post. They could quickly check a vehicle's authorization to proceed into the actual disaster area.

REACT relieved police on April 20, 1995. They worked their assignments on 16-hour shifts until they were authorized to stand down on May 5. A fourth Oklahoma REACT team and a Kansas team assisted in maintaining this grueling schedule.

Sometimes when a REACT team responds to an alert it gets a lot more than it was expecting. We mentioned fellowship and fun. Did we mention that sometimes it can involve a lot of hard work?



Emergency vehicles of all types were at the St. Thomas, Ontario fire muster. This "ambulance" just looks like one. It's actually chock full of extra trauma equipment and supplies for use in major emergencies.

K-40 Rewards REACT Efforts

REACTers volunteer millions of hours monitoring CB emergency channel 9.

They do it for our safety. Sometimes it seems thankless.

K-40 Electronics surprised 50 dedicated REACT Teams with new radios and antennas. The 50 REACT Teams that had tallied the highest number of channel 9 monitoring hours each received a K-40 CB radio complete with the famous K-40 antenna. Teams qualified in three standard categories used by REACT International, Inc. for various competitions. This allows small and large Teams to compete on an equal footing.

Usually Teams know in advance about rewards, etc., but this gift from K-40 was a complete surprise to the deserving Teams. Recipients were scattered across the U.S., Puerto Rico and Canada.

Nice gesture, K-40. And great monitoring, Teams.

Drop-In Emergency

Emergencies crop up even in the middle of Team meetings. REACT Kettle River (WA) heard a commotion outside its meeting place and went to investigate.

Two local ladies had found an elderly man sitting in his pick-up truck in the middle of the road. He was suffering muscle spasms. They brought him to the REACT meeting to receive emergency first aid. He was a Canadian. REACTers stabilized him and decided to escort him to a Canadian hospital across the nearby border in British Columbia.

Kettle River contacted his wife by phone. She felt it would save time if her son met his dad at the border, so the Team used CB radio to alert its personnel, already enroute to the border, to change its plans.

Happily, only driving fatigue seems to have been the cause of the spasms. The elderly man recovered after some rest. Kettle River resumed its meeting after its medical mission was accomplished. We did mention excitement and variety?

GMRS Radios To The Rescue

REACT Teams use a variety of radios in their work.

Two Canadian Teams recently opted to add GMRS* radios to increase their communications capabilities. No sooner had they done so than a call came requesting help with a search for an elderly Alzheimer victim.

REACT Don Valley, Ontario and REACT Lake Simcoe members were spread all over the map that weekend. One Team was hosting a mall safety display. The other team was scouting the route for a

*Canadian Teams use a UHF business band that parallels the U.S. GMRS service.



Oklahoma Highway Patrol

TROOP B HEADQUARTERS
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TULSA, OKLAHOMA 74129

June 7, 1995

Mr. Keith Fronko
Skiatook REACT
1013 East 131st Street North
Skiatook, OK 74070

Dear Keith:

I would like to express my sincere appreciation and gratitude for your organization's Safety Break. The travelers on U.S. 75 had a refreshing opportunity to stop at 126th Street North and "take-a-break".

We will never know how many injuries or lives were saved. However, your determination to brave the sun, rain, and wind was truly a noble and effective effort. The members of the Skiatook REACT Club can rest assured someone had a safe holiday journey because of this generous program.

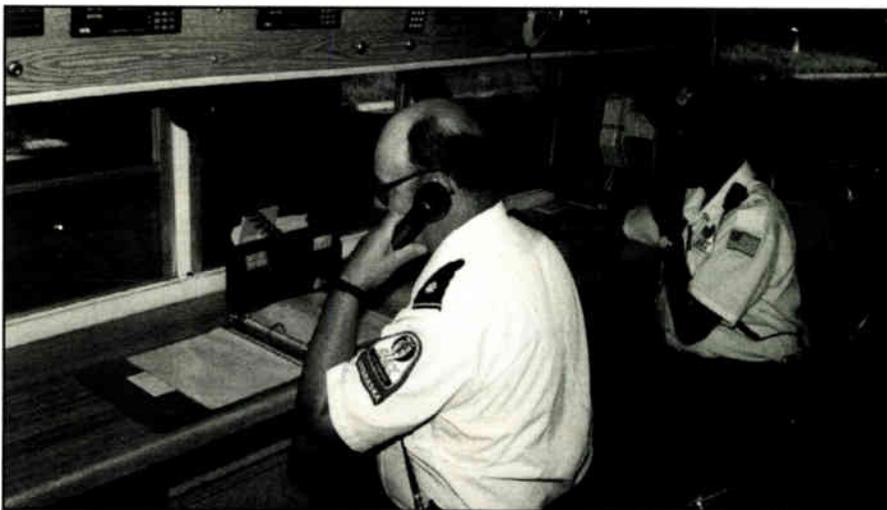
If I can ever assist you in anyway, please call upon me.

Sincerely,

21 T Larry Jackson #74
Supervisor
Troop B

LJ:jm

Commendations like this letter to REACT Skiatook, Oklahoma from the Oklahoma Highway Patrol are great morale boosters.



First-rate REACT Grand Island mobile comms center attracted lots of visitors at the recent REACT Convention in Omaha, Nebraska. Teams share how-to tips on funding and equipping projects like this one that benefits the public.



On-the-job training pairs junior and adult Dodge County, Nebraska REACTers for "Victory 95" parade duty. The Junior REACT program enables youth to contribute to safety and learn communications skills.



REACT Grand Island, Nebraska displayed its emergency comms unit for visitors. An idea exchange is a valuable part of any REACT convention.

Red Cross car rally. They quickly altered their schedules.

GMRS radios enabled the Teams to communicate by repeater over distances that would have been impossible for CB. The initial alert came at 1 p.m. The 83 year-old man had been missing for three days. He was lost somewhere in Toronto, a city of three million.

Members of both Teams headed for Toronto enjoying clear radio communications although they were widely separated. The two REACTers nearest the area where he was thought to be were dispatched directly to two neighborhoods where the man had once lived. Both had detailed descriptions.

Two possible sightings were ruled out immediately by radio without approaching the individuals or alarming them. At 3:30 p.m. word came across the radio, "I have the gentleman in my car."

Police and the family were amazed. REACT had located the man in about two hours in a city of that size! Soon he was safely home and spared another cold night outdoors. The two TEAMS were amazed too, and proud of those new GMRS radios that made it all possible.

Virtual United Nations

REACT Metro-Dade, Florida was born in the aftermath of Hurricane Andrew. Many REACT Teams can trace their origins to some catastrophic disaster or to a lesser emergency in their communities.

Since Andrew, REACT Metro-Dade has worked over 100 assignments in cooperation with local public safety authorities and other volunteer agencies. Regular exercises increase their readiness for the real thing.

Serving the Miami area brings the additional challenge of language. To meet that challenge, the Team has recruited members who speak Spanish, French, Russian and Italian in addition to English. Foreign languages can make you a real asset to a REACT Team in your area, too.

REACT in Cyberspace

Communications is the name of the game. REACT Teams are using every means at their disposal.

Using the internet is the latest addition. Teams can communicate over vast distances using this new facility. You can keep current, too. The address is: "react@wichita.fn.net".

REACT Rose City, Ontario has a Home Page you can also check out for information. That address is "http://www.wincom.net/REACT/". We'll keep you posted on new Internet developments in REACT, so stay tuned.

Cooperation is REACT By-Word

Often REACT Teams get requests to work events that are beyond their manpower to handle. That is when cooperation kicks in at REACT.

REACT St. Thomas, Ontario needed help recently when their fire fighters hosted a "muster." Quick to respond to the request were REACT Stratford, Don Valley and Lake Simcoe.

Major events give Teams opportunities to establish bonds and develop skills they will need in future disaster situations.

REACT Safety Breaks

Prevention is a key element in the REACT program. Teams host hundreds of Safety Breaks at rest areas along highways every holiday weekend. Free coffee lures tired drivers off the roads for a short break in their journeys.

Local businesses help by donating the goodies REACTers serve to travelers. Highway departments in many states help by erecting signs to alert drivers to the Breaks. Truckers spread the word on channel 19 so no one will miss out.

REACT Skiatook, Oklahoma is typical of the REACT Teams that engage in this important safety project. The Team received a warm letter of appreciation from the Oklahoma Highway Patrol for its safety efforts. Assisting police is one of the biggest satisfactions you gain as a REACT volunteer.

It Can Get Hectic

REACT Teams occasionally get requests to help at two events the same

day. You can count on it happening.

REACT Douglas County, Nebraska assisted by Dodge County, got a surprise while handling communications for a large "Victory 95" parade celebrating the end of World War II. The National Weather Service placed the Teams on alert for a severe thunderstorm watch in the midst of the parade.

Only a few high wind gusts materialized, but nerves were a little tense. While a nuisance, surprises like this are exactly what occur in disasters, too. Having an opportunity to deal with one before a disaster is actually ideal practice for Teams. You just don't want too much practice of that kind, though.

Having Fun Learning

Annual international conventions bring together REACT volunteers from around the world. Folks who attend can make lifelong friends and learn much from speakers or other Teams' experiences.

REACTers gathered in Omaha, Nebraska for the latest convention. As you read this, planners are hard at work in Silverdale, Washington getting ready for this year's event.

Ontario REACT Teams began planning in October for the 1997 convention they will host. Travel to interesting places to meet interesting colleagues and learn interesting things is just one facet of being a REACT volunteer.



For More Information about forming a REACT Team, you can connect with REACT several ways:

Telephone 316-263-2100

Fax 316-263-2118

Internet "react@wichita.fn.net"

Mail: REACT International, Inc., Box 998, Wichita, KS 67201

Ron McCracken is past president of REACT International, Inc. He has been a REACT volunteer since 1978 and served on the Board of Directors from 1981 to 1993. He is a freelance journalist whose writing has appeared in a number of publications. Family Motor Coaching will carry his latest article in a forthcoming issue.

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State of the Month



OUR SALUTE TO THE STATE WHERE SERVICE IS TOPS By Ron McCracken

Way To Go Wisconsin!

Wisconsin REACT Council certainly merits the honor of being our first "State of the Month." After all, Wisconsin is the latest recipient of the "K-40 Council of the Year Award." It's not Wisconsin's first K-40 Award either.

Back in 1978, when Wisconsin REACT Teams were weighing the pros and cons of forming a Council, who would have imagined their decision could lead to this? After two planning sessions, Teams met for their first official REACT Council meeting in October. They have never looked back!

It speaks volumes about this REACT Council that its first treasurer, George MacDonald, is still treasurer after 17 years. Wisconsin has modified its governing structure over the years to meet Teams' changing needs. Its flexibility is likely one key to its success.

Lance Luedtke, Wisconsin's first council president, was later elected one of the first Field Directors to serve on the Board of REACT International. Numerous other Wisconsin REACTers have also served the parent organization in various capacities over the years.

The Council launched a newsletter in 1980 to keep Teams informed between quarterly meetings. That newsletter has since brought honors to Wisconsin for its high quality. It began as a mimeograph publication, but now utilizes the latest computer graphics with color.

At the ripe old age of eight, Wisconsin decided it was about ready to tackle hosting a REACT International convention. In 1989 it did, and in fine style. Afterwards, Teams were repaid the funds they had generously advanced to the Council to finance the convention, a gift was made to REACT International, and a small surplus remained for the Council.

Wisconsin held annual one-day state conferences for several years. In 1987, Council substituted a weekend camp-out for the conference. It continues, and now attracts REACTers from neighboring jurisdictions each year.

The Council has produced a Starter Kit for prospective Teams, a Welcome Kit for newly-formed Teams, a State Patrol directory and Generic By-laws to help Teams with governance. It has also issued publicity materials to assist Teams and the public. To its credit, all of these Wisconsin gladly shares with other REACT Councils and Teams.

Wisconsin has had delegates at every



The sign says it all. Billboards advise motorists of REACT's presence on CB emergency channel 9, and invite them to get involved, too.



Safety and visibility are paramount for Wisconsin REACTers on duty. Here, bright orange jackets help motorists and the general public to identify them easily.

REACT International convention since 1979. Its REACTers have served on most committees at the international level. Another former Wisconsin Council president, Jacki MacDonald, retired from the REACT International Board in 1994 after serving for two terms.

The first Eugene Goebel Award recip-

ients honored by REACT International were Jacki and George MacDonald back in 1985. Their untiring service to REACT continues a decade later.

Numerous K-40 Awards have been earned by the Wisconsin Council, its Teams and REACTers over the years. Kettle Moraine REACT, REACT Services



Safety Breaks endear Wisconsin REACT Teams to travelers and police alike. Brief stops, fresh air and a stretch make drivers more alert to continue their holiday trips.



The cranberry harvest in Wisconsin. (Courtesy State of Wisconsin Division of Tourism)



Kayaking at Wisconsin's Apostle Islands. (Courtesy State of Wisconsin Division of Tourism)

Diversified and Waukesha REACT have distinguished themselves in the program. Larry Fry and George MacDonald were K-40 Award winners in successive 1992 quarters; another first.

Already the Wisconsin Council has its eye on hosting the 1998 REACT International convention once again. What a great 20th birthday party that would be! Wisconsin will also be celebrating its sesquicentennial that year.

Meanwhile, Wisconsin REACTers take time to relax at their Council meetings as they tell channel 9 "war stories." They have their share. Imagine getting reports of a missing manhole cover or a child joyriding on an earthmover, or a disoriented man rolling down I-294 in his wheelchair. All were actual calls!

Besides humor, cooperation is what makes Wisconsin REACT Council go. Cooperation and idea-sharing among member Teams translate into similar cooperation with authorities.

State Patrol Sergeant Charles Warren commented, "They've been very helpful in just about every facet of what we do." Fred Dasher, State Patrol Senior Dispatcher added, "REACT has been extremely helpful to law enforcement over the years - no doubt about it."

What more can be said? Fine work, indeed, Wisconsin REACT Council. ■

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CIRCLE 139 ON READER SERVICE CARD



Let Me Introduce Myself . . .

As an ex-road driver and current local driver, perhaps I'm really reaching to try to discuss CB with the current OTR guys and gals, but I don't think that trucking has changed much over the years, and besides, we're NOT going to get technical. This column will be simply designed to have fun, share experiences, talk about the good,—and bad,—times we've had. If the high mucky-mucks will let us, maybe we can have a couple of contests along the way. BUT . . . this will only work IF YOU get involved with me, meaning SEND LETTERS AND COMMENTS!!

First of all, let me introduce myself. A Tennessee native, I was born and raised in the South, transferred to the Chicago area 20 odd years ago; that's six years and 1.5 million miles OTR, and 14 years and nearly a million miles driving locally. I was using a CB in 1964 when there were only six channel rigs and we could talk for 20 miles on four watts. In 1968, when I went over the road for a private carrier, I installed my first CB using it as we all do, to merely chit-chat across the miles. I really didn't think of it as a tool, valuable in many different ways. Oh sure, I listened to and gave smokey reports, and tried to help other drivers find the Woolworth to unload, or the next truck stop, or to get around the scales at the state lines. I really did not, and I don't think other drivers had realized the full potential of the CB. We simply talked on the radio and thought we were hot shots because we could holler, "Breaker 19, for a north bound I-

65!" Very few drivers had licenses at that time even though licenses were required until the mid-1970's. We simply installed the radio, hung an antenna off the mirrors, and drove away, hoping we could find someone to talk to and trying to find the next stop.

And then "The President" lowered the speed limit, and the price of fuel went sky high . . . if you could find any! With the oil crisis the CB really became important overnight. We HAD to make delivery times, and we HAD to find fuel . . . and then the Teamsters struck! (I'm not going to get into the right or wrong of that situation; we ALL did what we felt we had to do at the time!) I was driving down South. We really didn't have the problems that were being experienced in the North. I think that we all began to realize the potential of the CB, and became more dependent on it, too. After all, being able to find fuel, or bypassing a potentially nasty situation, made a driver reach over and pat that "radio" fondly.

In 1973 I was offered the chance to move to Chicago and open a new distribution point to better service our customers. Remember, this was a private carrier, with only certain specified stops. I drove a truck to Chicago, unloaded my furniture and reloaded two days later for the customers. I knew the towns I had to visit . . . but had only a very slim idea of the locations of the customers. I had an address, but no clue as to the best way to get to my stop!

As I approached each town in the upper

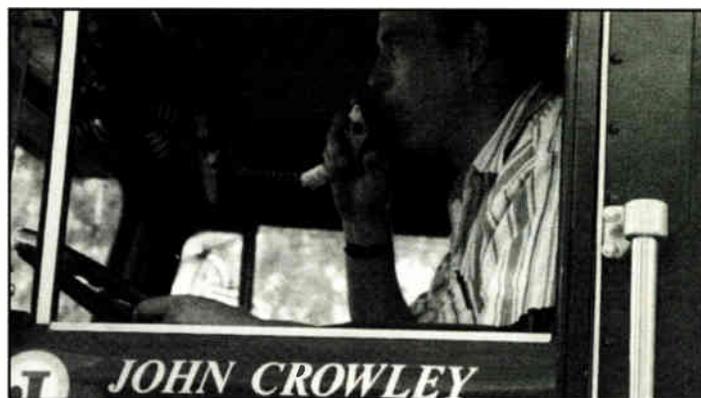
Midwest, I simply grabbed my trusty ole' Cobra and asked for directions to the location. Many times I used channel 9 while others required channel 19 or some other channel. The point is, I was able to get directions to every stop within minutes, rather than having to wait while someone "checks a map," as I've heard on some of the other bands. To a road driver who is— a. doing 60 MPH and b. is on a tight schedule—three minutes wait while someone looks at a road map COULD mean that the exit is suddenly two miles behind you and the next exit is eight miles ahead. That's a quick waste of half an hour on the logbook, AND the clock!

I suppose that I was rather lucky since the stops I wanted were rather high profile and not in a huge town. I've heard drivers come into the Chicago area and ask, "Does anybody know how to find the XXY company? I don't have an address!!" Wow! Chicago itself only covers 120 square miles, and the suburbs are only about 5000 square miles. Unless the company is VERY well known, the next words on the radio are almost always, "What's the address?"

But back to my move to the Midwest. Remember, I was a Southern boy, not used to ice, snow, cold, fuel gelling, or chill factors. My first experience was a trip to the Michigan snow belt. I spent nearly eight hours driving from South Bend to Grand Rapids and back to Chicago in a (in my opinion) heavy snowstorm, listening to the other drivers comment on my speed (about that of a riding lawn

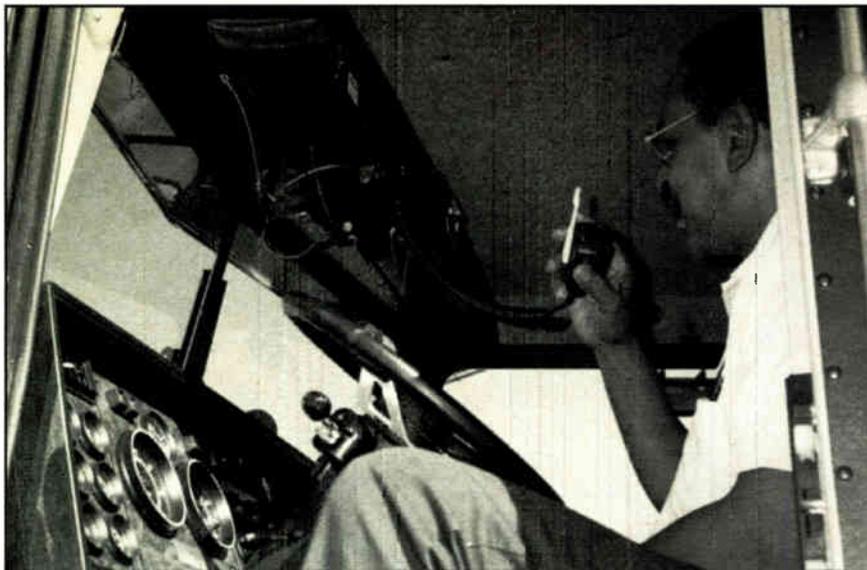


"Stonehart", a Southland driver's Cobra radio.



Jevik driver John Crowley "Organ Donor" on I-94 in the Chicago suburbs.

Photos by Bill Simpson



Shown using a President rig, here's the "Deacon" of Ryan IV of Prince, George.



Here's the "Sheik", a Regens driver using his Midland CB.



From the road a view of sunrise over lake Michigan.

mower), my driving technique (my knuckles were white for three days), and my overall stupidity (why the heck is this idiot out here, anyway?), and discovered that there was no snow west of the Indiana/Michigan line! No longer a hot-shot ROAD DRIVER, I slunk back to my terminal very chastened.

My overall point, I suppose, is that we have learned to use the radio over the years for many different things; smokies, weather, chit-chat, fuel stops, scales, solving many of the problems of the world (our politicians should spend at least two weeks every six months on the road . . . we could solve all their problems), directions, accidents, dates, insults, tall tales, personal problems, and "pleasehelpmes-tayawake" problems. Have we exhausted all the possibilities of CB radio?

During the next months, we will be asking for your input; questions, comments, snide remarks, true (and perhaps not-so-true) anecdotes (for some of the drivers, such as Wally and Freddie, that's the same as "stories"). While we can't always promise to print every story, we sure will examine them closely, and do our best. My theory is, the more stories I can use from you road drivers, both guys and gals, the less I will have to do—since I'm basically very lazy . . .

Seriously, with the approval of the magazine management, for each letter we use concerning truckin' and the way YOU use (or have used) CB, we will send you a subscription to our *CB Radio* magazine. Simply send your ideas, suggestions, thoughts, nastygrams, or letters to: "Highlander", c/o *CB Radio* magazine, 76 North Broadway, Hicksville, NY 11801.

Fellow roadrunners, I bid you adieu, until next month . . .

73s, Highlander

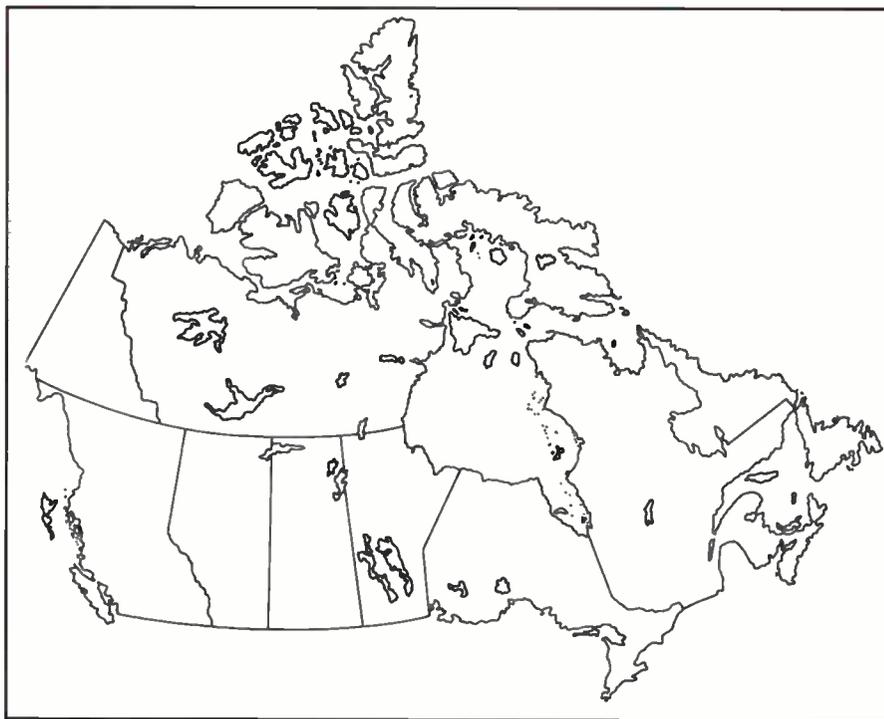
W.F. (Bill) Simpson is a native of Tennessee. He was first introduced to CB radio in 1964 and has used two-way communications of some sort ever since. He got his first ham call (WN4ATE) in 1965, CB call KCF-7177, and GMRS call KAD-7146. Bill joined REACT in 1982 after being saved by a REACT member while in Minnesota. He has written for *The REACTer*. Bill presently serves as President of Wisconsin Council of REACT Teams. Bill, N9NMT and his wife Judy, N9NSI have five kids . . . er . . . young adults, all out on their own leaving plenty of time to travel and meet friends interested in communications, CB and REACT. He loves camping, flags and communications for motorsports events.

Talkin' Dirty

Guglielmo Marconi, an Irish-Italian, transmitted the world's first radio signal across his dad's backyard near Bologna, Italy 100 years ago this October. Another first for Marconi took place at Glace Bay, Nova Scotia with the successful reception of a radio signal from Britain, and in 1920 the Canadian Marconi Company made the first transatlantic radio broadcast from Signal Hill, Newfoundland to the SS Victoria.

From this fortuitous beginning in Canada, Canadians quickly became hooked on wireless communication to cover the vast open spaces which makes up most of Canada. With a population density of less than seven people per square mile, compared to 73 in the U.S., and with 98 per cent of Canadian homes with telephones, Canada is one of the world's foremost users of electronic communications. Also, with 90 per cent of its population within 200 miles of the U.S. border, Canada remains economically, and some will say even culturally, influenced by the United States.

That's why Canadians embraced Citizens Band radios in such numbers during the 60's, and continue to do so today. Sales of CBs remain brisk according to local suppliers—this in spite of the wide acceptance of the cellular phone and the increasing number of business channels in use. Canadian CBers from all walks of life are buying up the little workhorse, but are they very happy with what they're hearing on CB these days? Apparently not, when they are forced to listen to a lot of people talkin' dirty.

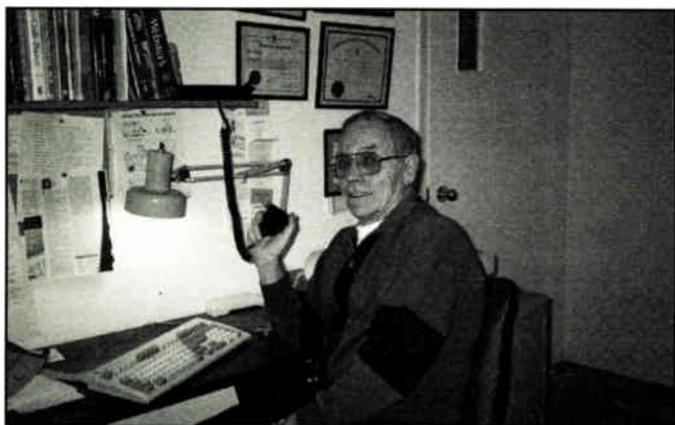


As a fellow remarked to me the other day, "CBs are okay if you can put up with all the garbage and filthy language." Since he appeared as if he might know his way around a few cuss words himself, I was a little surprised by his sentiments, but he was upset, even to the point of pricing some amateur radios as an alternative to using his CB.

Later on in the day our conversation came back to me, and I began wonder-

ing how many other people are turned off by what they're hearing on their CB, and are switching to alternative means of communication. I also wondered why some people think buying a CB somehow gives them the right to spout their noxious banality over the same frequencies the rest of us are using.

CBs were sort of a male thing at one time; women and kids didn't get to play with daddy's CB. But times have



Brynly Roberts of Lethbridge, Alberta, a city of 70,000 about 50 miles north of the Montana border. Brynly started using CBs in the late 60's and now has a couple of TRC-481s.



Dianne Roberts of Lethbridge, Alberta, loves the TRC-481 CB almost as much as she loves her little poodle, Jasper. Would you believe Dianne is 25 years old and has a diploma in Handicapped Services?



Jacob Hofer, a member of the Hutterite Brethern colony near Enchant in southern Alberta, says their TRC-438 makes farming easier. Local Hutterite colonies are not usually allowed the luxuries of radios, television or other entertainment devices.



Local four-wheeler Tony Theriau says his CB-equipped rig is ready for action in spite of the rust. Tony has been using CBs for 17 years and once used the call letters XM233321243. That's a pretty long handle!



Cindy Raab of Edmonton, Alberta is no stranger to a Kenworth or her TRC-8501 CB.



The unsolved mystery for most Canadians: Why Snowbirds abandon their \$250,000 homes in October to spend up to six months living in a trailer, even if it's parked in the inviting warmth of Arizona.

changed, with families of ranchers and farmers to vacationers at the cottage relying on their handy, inexpensive little radios to keep in touch. How much longer are they prepared to expose their family to the darker side of CBs?

Of course this may not be a problem in the more remote areas of the country where there is less radio traffic, but where it is, and whoever is responsible, it's getting too much for some people. Whether it's a few working stiffs shooting off at the mouth when the job isn't panning out, or the ever-present chatterbox idling away a few hours of their otherwise boring lives, they are causing a problem for other CB users.

When you consider that talking dirty on CB requires about the same mentality as scrawling silly little obscene messages on toilet walls, we get a picture of who

we're dealing with. These people apparently feel the need to express their deepest feelings without fear of being accountable, and the CB presently offers the same anonymity as a toilet stall.

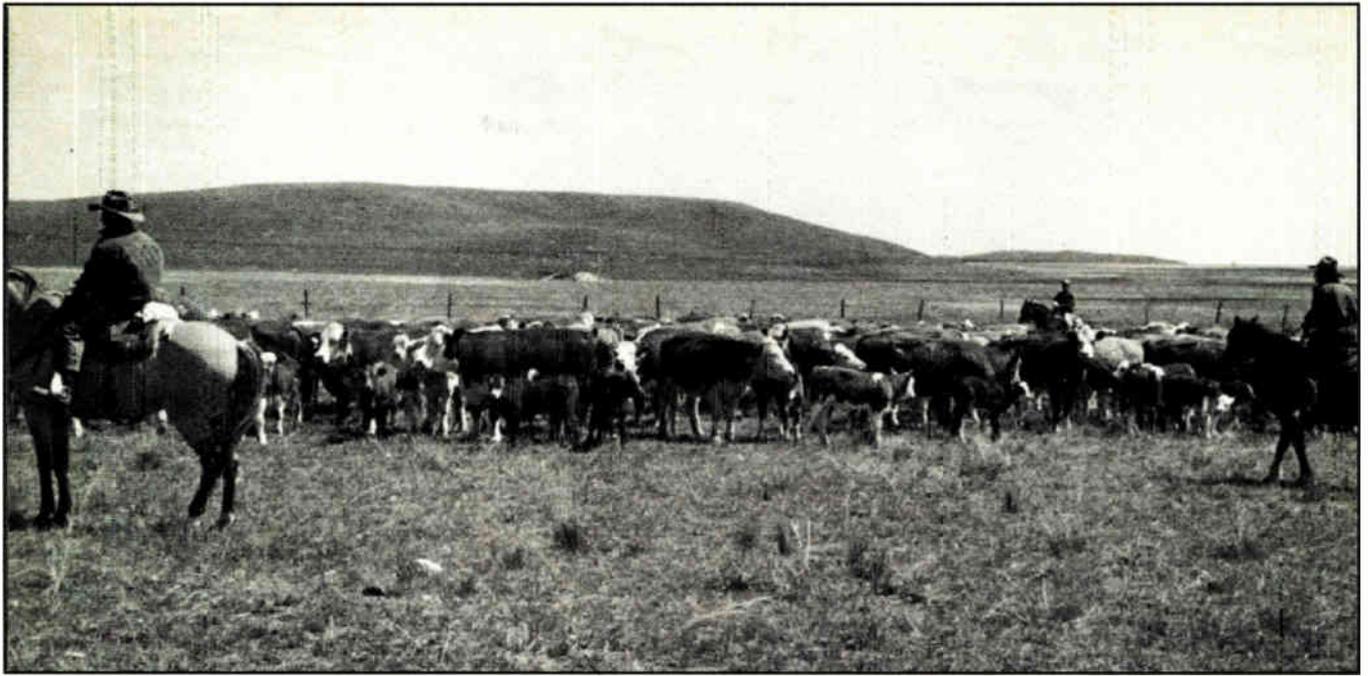
CB users were at one time regulated through licensing and call letters which allowed offenders to eventually be tracked down. However, all you have to do these days is plunk down the price of a CB, plug it in, and you're on the airwaves, apparently to do as you please.

There's certainly nothing wrong with allowing CBs to be available to everyone without the bother of licensing or monthly charges which other forms of communication require, until of course, CBers interfere with the pleasurable use of someone else's CB. This raises the question, should CB owners be regulated again?

It's easy to imagine the foofraw if CB

regulations were ever to be introduced into this country. I know of one fellow, protesting the introduction of seat belt laws into this province, who drove around town every day with the end of the car's seat belt dragging on the ground. He was hoping the police would arrest him, giving him his day in court. "I don't like the government tellin' me what to do," he would announce proudly.

Maybe none of us like being told what to do, but we usually end up doing what we're told for the simple reason it makes sense. Most of the legislation in our lives, from gun laws to highway speed limits, are there to protect us from our natural destructive selves. I guess we would all like to pack a gun for protection and break the speed limit to save a little time, but the laws are there to protect the violator, as well as innocent bystanders.



Keith Lane, right foreground, owner of the Willow Lane Ranch in southern Alberta, herds a few cows with help from summer guests from Germany. Many ranchers in the area use CBs to help out with ranching operations.

Federal governments in the U.S. and Canada are presently attempting to draft legislation which could establish the means of regulating television broadcasts into homes. This will allow parents to censor television programs they don't want their children to watch. Even the cable companies are getting into the act. Rogers Communications, Canada's largest cablevision company, is making preparations to offer their customers the V-chip, a Canadian programmable device that allows parents to delete unwanted shows from their television.

All this in spite of the fact that the on/off control continues to be the most effective form of censorship for televisions or any other electronic means of communication. But legislation, and devices like the V-chip, would go even further toward preventing the passive viewer, such as a kid left home alone from viewing what the parents consider unfit to watch.

By the very nature of CB, any user also becomes a passive listener to whatever is coming over the channel as they await calls from friends or relatives. They don't want to listen to the garbage, and they don't want their kids listening to it. However, they may be in the mood for a few regulations as a means of cleaning up the airwaves to protect themselves and their families from being exposed to the language they themselves don't normally use.

If legislation were introduced, and

assuming that militant CB users didn't riot and storm the government, is the task of licensing and regulating billions of CBs too prohibitive? Control of radio receivers and transmitters proved quite effective during the second World War, at least here in Canada. With the efficient use of computers today, the task would be minimized considerably.

Gun control, nasty words in these parts of Canada, is being accomplished mostly through point-of-sale regulations, a lengthy process that will allow gun owners to eventually be monitored. The system can easily be applied to CB radios, but only under the expected protests of many of the CB owners.

However, another problem in the CB world has been that the radios have seldom been taken as seriously as other forms of communication. While frequently described as a toy, a hobby, a fad, and produced in the form of those monstrous little \$9.95 jobs passed out as kid's Christmas presents, the CB has always suffered the "poor cousin" image. It appears as if the CB has never quite grown up, and that's a sad statement of fact for many CB users.

So what's in store for the future of CB? Its fate and welfare relies directly on the owner/user if we want to keep taking advantage of all it offers. We don't need Big Daddy government to control CB radios, but we do need to practice a little self-control and clean up our language.

We really don't have to keep talkin' dirty.

In the coming months, we will be exploring CB in Canada; I welcome all of your comments and letters. Before you seal the envelope, why not send us a photo of you or your family at the CB microphone? See you next month. ■

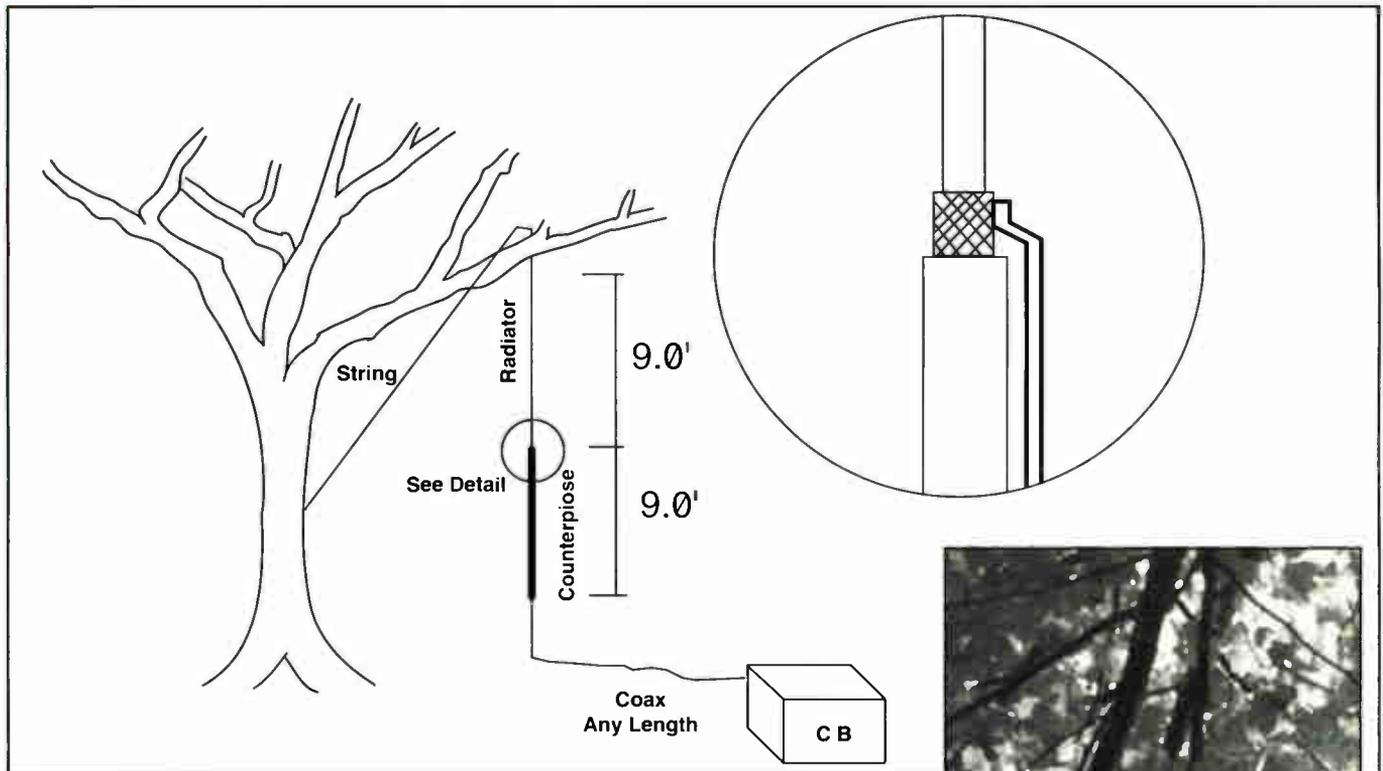
Brynly Roberts is a freelance writer since retiring from teaching, his articles have appeared in *The Western Producer*, a weekly agriculture paper; *Western People*, *Lethbridge Living* magazine, and the *Financial Post* magazine as well as other publications. Brynly taught pre-apprentice electronics at the high school level for 17 years and night classes in introductory electronics at the Lethbridge Community College. He has also taught Electronics transfer credit programs at the college. Brynly was also in the radio/television repair field for 12 years. During that time he also taught first-year radio/television apprentice courses. Before getting into the repair field, he spent eight years doing power line construction.

Brynly has been a leader in the Boy Scouts, volunteer fireman, volunteer ambulance driver and acted as sound technician for local drama groups. He and his wife Carol have been married for 40 years and have raised four children, the youngest of which is 25. He also has five grandchildren. An ardent biker, he logged nearly 125,000 miles in about eight years, traveling across Canada.

The Emergency and Backpacking Special

For a few bucks and few minutes, you can build a 27MHz antenna. Here's how . . .

BY KENT BRITAIN



The homemade Backpacker CB antenna. For a few bucks and a little time, this can be your emergency antenna.

If you're like many folks, there will come a time when you need an emergency CB antenna that's simple to make and fun too. This antenna is a variation of the Bazooka antenna that's been around for over 50 years. It costs only a few dollars and works as well as a quarter wave ground plane.

Construction

Take 25-50 feet of RG-58 coax and strip the vinyl jacket off nine feet. RG8 will work, but it's kind of heavy. There are two ways to build the counterpoise. You can work the center conductor out of the braid or cut it off and solder the braid you stripped off or another piece of wire to the shield and run it back along the coax. Again, trim it to nine feet.

Your "counterpoise" can be held on with tape, wire ties, heat shrink tubing, or even garbage bag ties.

Tie fishing line or another heavy string to the tip of your new antenna and hang it from a tree limb. Don't use wire because it really messes up your SWR. Higher is better, but you'll have to carry more coax and also find a higher tree. Try to find something high enough to at least get the end of the "counterpoise" off the ground.

Route the coax to your CB and have fun!

Materials List

- 20-50 feet of RG-58 coax
- 1 PL-259 connector
- String or fishing line
- Cable tie, tape or garbage bag ties



The real thing ready to use suspended from a nearby tree.

(Photos by Kent Britain)

Let's Talk About Vertical Antenna Basics . . .

Hello CBers. Over the last 10 years I have published articles and even a book about antennas. Your editor, Harold, has asked me to do a series of monthly columns about CB and scanner antennas. So over the coming months we'll cover a wide range of antenna topics, such as verticals, SWR, dB's and reader's letters. It's your column, too, so let's talk. Write that letter!

For a while I ran a small CB shop in Ft. Worth, Texas. It was there that I heard some of the most fantastic claims and rumors about antennas, how they work, and what you do to make them better. I'm really looking forward to this chance to clear up some of these "Antenna Fairy Tales." Let's get started.

Let's talk about vertical antenna basics. It's a subject of major concern for all of us who want to put the best possible signal on the air.

Your CB radio automatically thinks every mobile CB vertical antenna is 1/4 wavelength long. Some special antennas use a multiple of 1/4 wavelength, such as 1/2 or 3/4 the wavelength, but it's always related to 1/4 wave.

A 108 inch whip is a little awkward on a walkie talkie, so most of that 108 inches is wound into a coil. This coil or load shortens the actual length of the whip, but your CB radio still thinks the antenna is 108 inches long. So, if the antenna needs to be 108 inches long, why do they sell

102 inch whips? That's to allow for the spring and mount.

Loading Coils

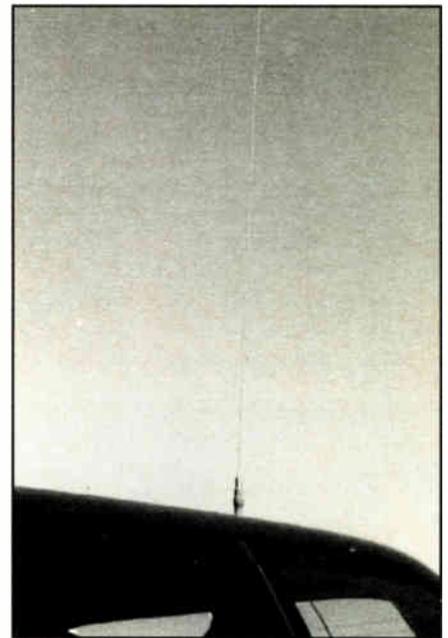
There are three places the loading coil can be mounted—at the base of the antenna—a base-load; mounted somewhere along the center of the antenna—a center-load; or even mounted at the top of the antenna for a top-load. (See **Figure 1**).

The Top-Load

Over 75 years ago, experimenters learned that a top-loaded whip radiated better than any other loaded antenna. So a 3 foot top-load works better than a 3 foot center or a 3 foot base-load. The problems with a top loaded vertical are all mechanical. A top-load needs far more wire in the load than any other type of loading coil. So the load is bigger, heavier, and catches more wind. The antenna has to be stiff enough to support this top heavy antenna, and a stiff antenna has a bunch of problems going under trees, into garages, and at the car wash.

The Center-Load:

While not quite as efficient as a top-loaded whip, the Center Load is perhaps the most popular vertical whip. The bot-



Here's a vehicle that doesn't make many trips through the bank's drive-up window. That's a 102" whip on the roof. Remember, the longer antenna is better. (Photo by Kent Britain)

tom section of the antenna is stiff, but the top section can be made out of something flexible. A thin stainless steel rod is very popular.

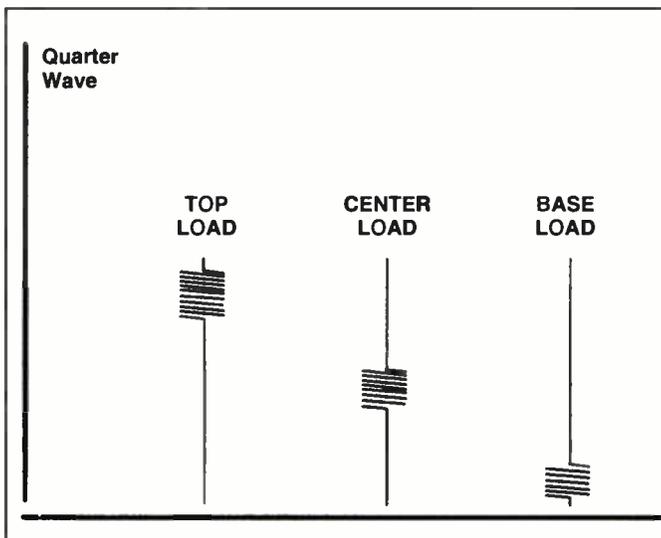


Figure 1

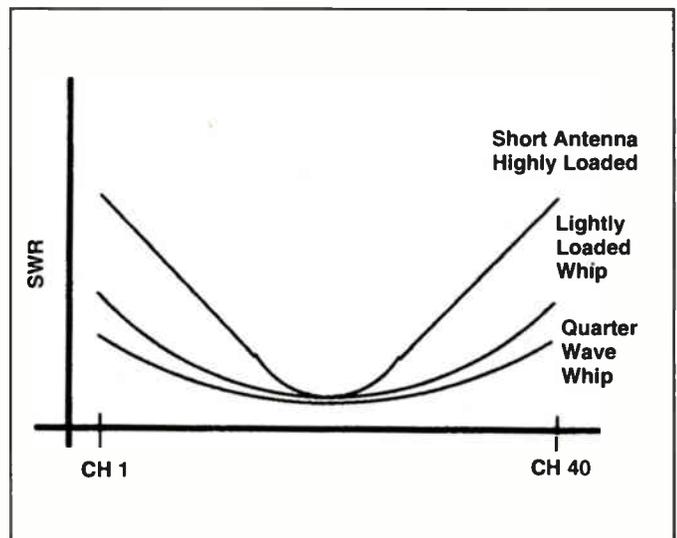
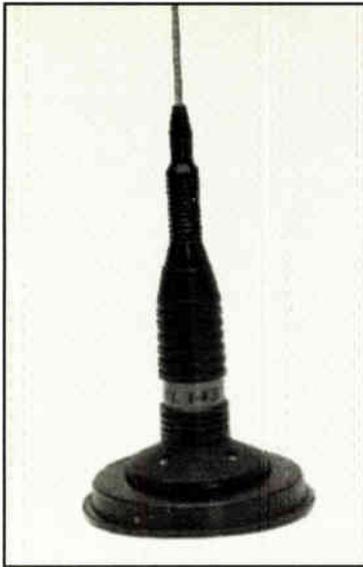


Figure 2



The Sirio ML 145 MAG magnetic-mount CB antenna is a base-loaded design. The whip is made of stainless steel. (Photo Courtesy Sirio Antenna)

The flexible stainless steel "stinger" makes it a lot easier to drive through low hanging tree branches, or go on into the garage. If you make the antenna a few inches longer, the efficiency of the antenna goes up and it now works as good as a top-load.

The Base Load

By putting the load at the base, all that weight is now down low. The rest of the antenna is just a lightweight flexible stainless steel whip.

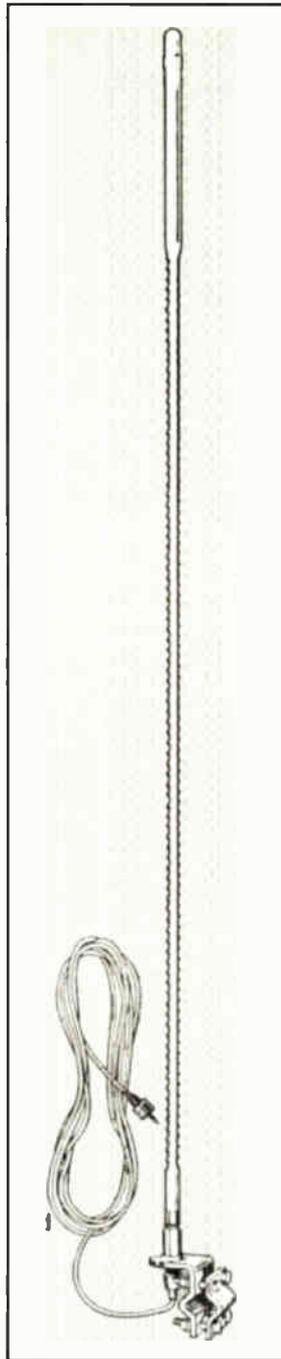
This type is cheaper to make and also let's you park in the garage. Again the longer the antenna, the more efficient it is. By making a base-loaded antenna just a little longer, it can work just as well as a top-load.

The Real World

Advertisers like to put a lot of claims in their advertisements. They talk about TalkPower, gain and so forth. But as a professional antenna designer, I often cringe at some of the amazing claims some companies make. Remember: Whatever the load, or whatever they make it out of, a 4 foot long whip will usually out-talk a 3 foot long whip. A 5 footer will get out better than a 4 footer, and a 102 in. quarter wave will work best.

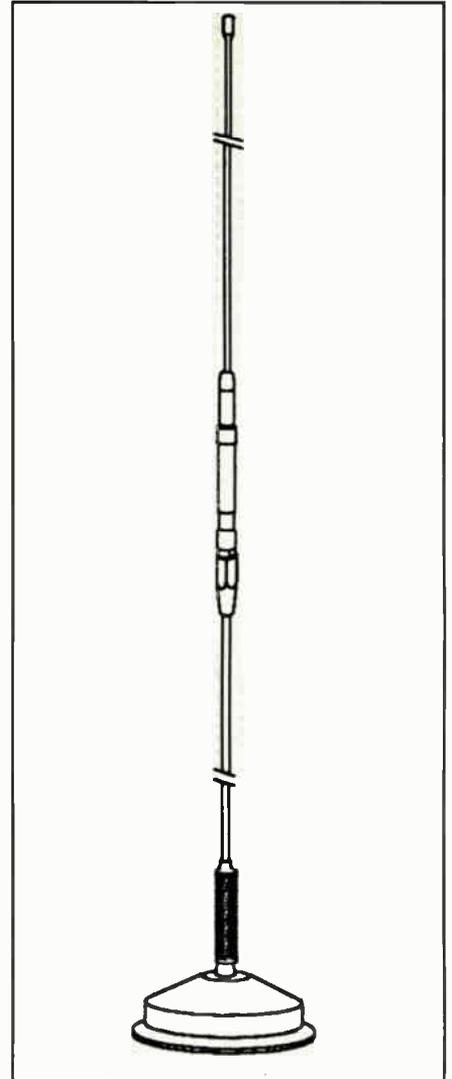
What's Coming Up

In a coming month we will devote an entire column to SWR, but I want to cover



Check out the Shakespeare 5055-1 top-loaded fiberglass core antenna. Being a top-loaded design makes it a great performer! (Photo Courtesy Shakespeare Electronics)

one point now. As a vertical is loaded, it is tuned to a frequency. As you tune away from that frequency, the antenna doesn't work as well, power is reflected, and SWR goes UP. As you can see in **Figure 2**, the more loading, the more the antenna wants to work on only one frequency. So a little 18 inch mag mount tuned to channel 19 doesn't work very well on channel



The Hustler RTM is a center-loaded mobile magnetic-mount antenna. (Photo Courtesy Hustler, Inc.)

1 or 40. They could build a 6 inch high CB antenna, but you better tell them the exact channel you plan to talk on.

The Bottom Line, LONGER ANTENNAS WORK BETTER! (But make more noise when you hit things!)

We will be happy to answer any antenna questions that you may have. Perhaps you have special installation circumstances. Chances are if you do, so does someone else!

Just send me your letters and questions to: *CB Radio* magazine, 76 North Broadway, Hicksville, NY 11801.

Kent Britain is a commercial antenna designer and professional antenna consultant. He also owns and operates an antenna range, regularly testing antennas from 50 MHz to 24 GHz. For four years Kent taught college courses on microwave and antenna theory.

CB—Spanning the Globe

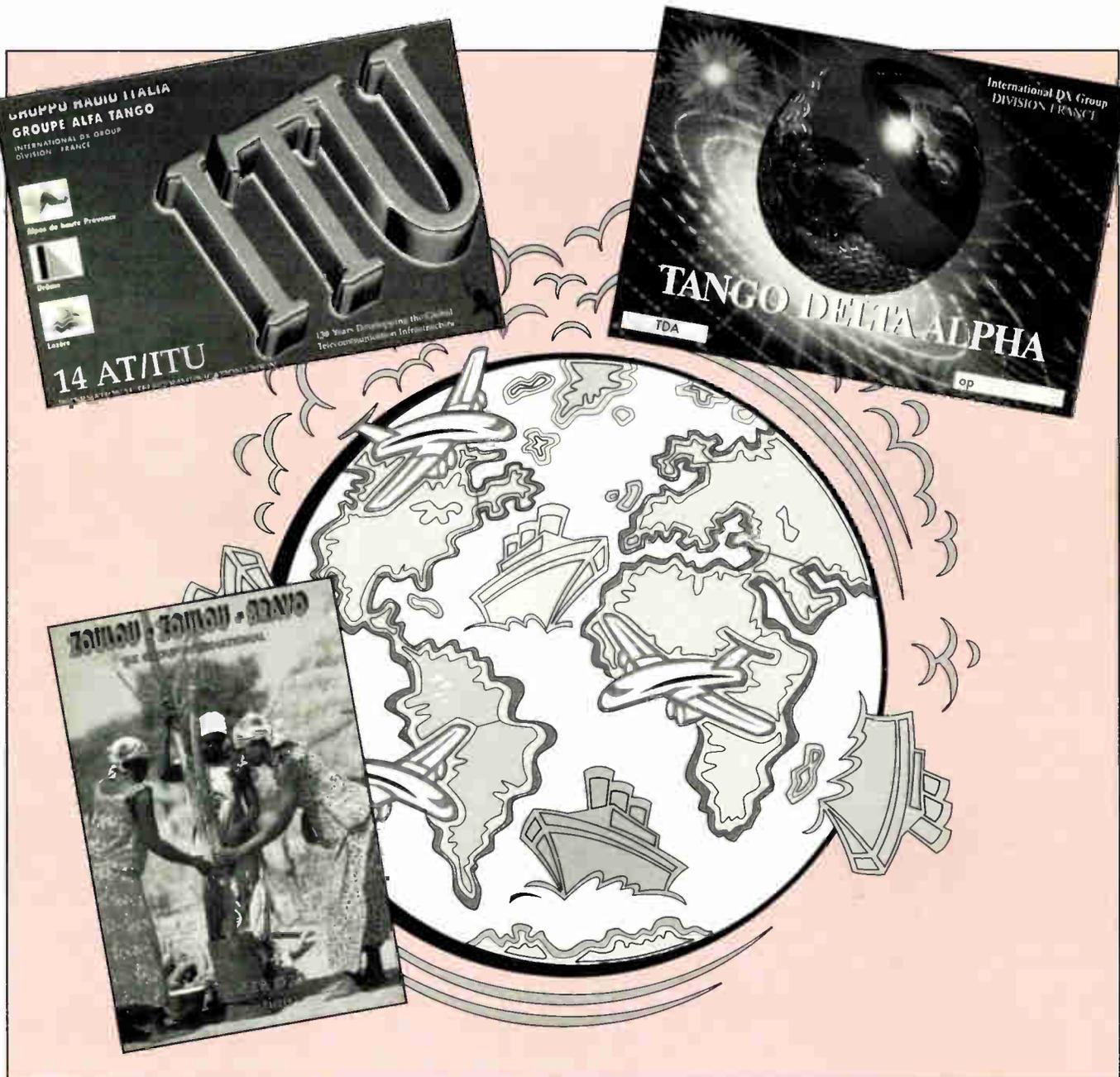
We're going international, presenting the best DX information available anywhere. You'll also get news, views and comments from almost every continent. This **MUST** be your international forum, where all CB enthusiasts worldwide will meet. Club info concerning DX activity, news from your friends on

the other side of the world are welcome. Make it **YOUR** column!

The DX Scene

For starters, we'll take a look at the DX scene where everyone is impatiently wait-

ing for sunspot cycle 23 to pop up. As far as specialists are concerned, we'll not see any progression until mid-1996. For the time being, all we can do is either sit down and wait, or climb on the roof to optimize our antenna systems. However, this doesn't mean use more power, as many DXers do. Just remember that it's illegal in



most parts of the world (if not all!).

The lack of sunspots has almost no influence on propagation distances. It mainly reduces Maximum Usable Frequency (MUF) and, therefore, band openings. As far as 27 MHz is concerned (right at the top of the HF spectrum), best results are obtained during the afternoon. Again, there are only a few directions in which you may point your antennas and best results are obtained with beams—not high power.

We'll take a detailed look at 27 MHz propagation predictions every month in this column. Any questions on the subject, don't hesitate to write to me.

CB In Germany

German Citizens Band enthusiasts are now entitled to use digital modes on certain channels, including packet radio. Over the past months, the market has virtually exploded as specialty shops are now selling packet modems to connect between a computer and CB set. Most of the equipment is derived from amateur gear and all this is totally legal! Many operators using CB at home are now using packet. Specialized clubs are organizing the network over the country and everything seems to be working fine. If you don't believe me, tune into channels 24 and 25 and listen for yourself.

One of the latest inventions of a German CBer is the TV modem. Just plug it into the mic socket of any CB set and there you go broadcasting TV pictures! The modem has a built-in black and white camera and small monitor for receiving your correspondents pictures. I wonder if the FCC would make such equipment legal over here . . .

All these "new" modes make Germany the most liberal country when it comes to CB regulations. German CBers are also supposed to obtain 40 additional channels. Additionally, a German telecommunications authority spokesman has recently said that "European regulations are not acceptable for German CB enthusiasts." At the same time, many European countries are now adopting the new 40 channel FM-only standard. This is what we call "harmonization"!

CB Day—Worldwide!

French Minister of Cooperation, Jacques Godfrain, is one of the three million French CB enthusiasts. Last summer, at the French CB Federation annual general meeting, Mr. Godfrain told me that he would like to put together a Worldwide CB Day. He's in touch with over 70 countries around the world and said he'd be glad to organize meetings all over the planet. This unique opportunity could lead

toward friendship between CBers worldwide and, obviously, legal Citizens Band in those countries where CB operators are considered pirates.

If the event ever takes place, *CB Radio* magazine will be represented. Anybody interested? Your ideas are welcome.

News From Europe

If you're looking for a rare one from Europe, you could try beaming to the northern part of the continent and listen for 171 AT/DX on Svalbard. The station has been on the air since January and is supposed to be there until July this year. QSL for 171 AT/DX is via Adam, 161 AT 065, P.O. Box 79, Wladyslawo 84 120. A one dollar contribution is requested.

Still in the northern part of Europe, you may listen out for station 304 SD 0 who has also been on the air since the beginning of the year. This Estonian expedition should be around until December 1997. QSL is via John, 30 SD 044, P.O. Box 136, Castellon 12080, Spain. The usual one dollar contribution would be appreciated.

International DX Group "Belgium Radio Contact" had problems during 1995 with the Belgian police. Club president 16 BRC 001 is back on the air and the club is alive and well, including the BRC QSL service. More about this in next months column. Members may get in touch with their club at the following address: Belgium Radio Contact, P.O. Box 33, 3271 Zichem, Belgium.

From European Russia, 50 EB 0 is very active every weekend. QSL is via 1 EB 31 Luciano, P.O. Box 37, Eboli 84025, Italy. Luciano has many demands for QSL cards, so please don't forget to include the usual contribution.

If you're looking for some activity from ex-Yugoslavia, maybe 327 CA/DX is already in your log. This station is apparently operated by a UN soldier who transmits from Croatia. QSL is via 1 CA 003 Giancarlo, P.O. Box 19, Casalette 10040, Italy. Contribution is necessary. Giancarlo is also QSL manager for 328 CA/DX from Slovenia, mostly active during the week.

From Bosnia, you may hear 331 CRS 028 who sends his QSL card first. So don't bother asking him any address on the air.

News from Africa

The latest news from the African continent comes from Groundwave, the world-famous DX bulletin. One of the editors, 26 AT 029, has been to Zimbabwe where he signed 85/26 AT 029. QSL is via Groundwave, P.O. Box 17, Kenilworth, Warcks, CV8 1SF, United Kingdom. Contribution is also necessary for this rare one.

Many expeditions have been on the air,

including 44 SG/DX (South Africa), 64 SD 0 (Senegal), 170/14 RC 360 (Burkina Faso) and many others. Next month I'll try to get in touch with an Algerian Alfa Tango operator who seems to be very active. I've also been told that his QSL card looks great! We'll publish it, promised.

South America

Back to our side of the Atlantic Ocean, 24 CA/DX is on the air from Panama. QSL is via 1 CA 003 Giancarlo (see above info). Giancarlo seems very busy with QSL cards and is also manager for 88 CA/DX operating from Cuba.

Asian DX

Giancarlo is also managing cards for 180 CA/DX transmitting from Oman. The station is not on the air very often because 11 meter activity is illegal in this country. Other recent operations on 27 MHz have taken place from 94, 102 and 151 (Iraq) divisions, mainly with Greek QSL managers.

Antarctica

A Polish operator is on King George Island signing 200 TDC 0. He is supposed to be there for another few months, but all depends on his work. QSL is via P.O. Box 35, 80325 Gdansk 37, Poland. Contribution is asked for by the operator.

Heard of Heard Island?

You may have heard of . . . Heard Island these days. Activity from this island is only authorized if you have a ham license and many more official papers signed by the Australian government. Some fake stations, mostly from Italy, have been sending DX info concerning Heard Island to specialized publications all over Europe. Just note that all 11 meter activity from Heard Island is absolutely forbidden. You'll also need a helicopter and plenty of money to land there. So don't waste your QSL cards on any so-called DXpeditions on Heard Island.

That's All Folks

Here ends February's International CB column. Next month, we'll talk about more CB apparatus from around the world, propagation for DX enthusiasts and of course I'll be looking for the finest news and DX information that you'll see nowhere else than in *CB Radio* magazine! Your questions, info and other comments are welcome. Until then, take care.

73/51, Alex



A LOOK AT TECHNOLOGY FOR THE ROAD

This month: Telecommuters, RBDS and Radar Technology

Home Offices and Telecommuters Now Commonplace

As Ross Perot might put it, "that giant sucking sound you hear" is the sound of jobs moving from traditional workplaces to home, mobile and other "virtual offices."

Structural changes in the U.S. economy, combined with a dazzling array of new electronic products and services, have quietly transformed the way we work and live. As recently as a few years ago, those who chose to work at home were regarded as exceptions, if not eccentrics. Today, those who run home-based companies, 'telecommute' or complete their work at home are fast approaching majority status.

Sales data provide clear evidence that home information products represent the largest and fastest-growing consumer electronics category. The latest sales figures for these items to U.S. dealers totaled \$17.6 billion in 1994.

If the proliferation and widespread acceptance of the home office were not remarkable enough, both technologically and even sociologically, a parallel development has been the emergence of the mobile office. Many of today's businessmen and women not only run home-based enterprises, but also have the option to manage their business affairs while traveling or otherwise outside the confines of their offices.

Arguably the most important item in the mobile office arsenal is the cellular telephone. Some 5.7 million mobile phones worth \$1.5 billion will be reported sold to dealers for 1995, EIA estimates. More portable and less expensive than ever, mobile telephones allow the on-the-go executive to stay in close contact with the office or client.

The portable computer is another key piece of mobile office equipment. Those cumbersome portables of yesteryear have evolved into lightweight yet powerful laptops and notebooks offering a full range of PC capabilities from routine word processing to transmitting faxes and e-mail messages.

Radio Broadcast Data System News

The new Radio Broadcast Data System (RBDS) was recently introduced in several major U.S. media markets as part of an industry-backed effort to bring this innovative digital technology to the nation's consumers and broadcasters. Currently more than 60 top FM broadcasters have joined the Electronic Industries Association/Consumer Electronics Group (EIA/CEG) Radio Data System (RDS) promotional campaign. These stations, located in 16 of the top 25 radio markets, constitute a 20 percent increase in the total number of stations using RDS in the United States.

As we go to press, the EIA has made scheduled promotional presentations to FM broadcasters in the first seven of the planned 25 top radio markets—Chicago, Dallas/Fort Worth, Houston, Los Angeles, New York City, Philadelphia and San Francisco. More than 125 RDS presentations have been made

to interested broadcasters around the U.S. Additional contracts are being received daily by the EIA. RDS agreements have been made in nine additional markets, including Anaheim/Santa Ana, Boston, Cleveland, Denver, Minneapolis/St. Paul, St. Louis, San Diego, Seattle/Tacoma and Washington, D.C. The EIA campaign provides RDS capability virtually cost-free to any FM broadcaster in each of the top 25 U.S. radio markets. In exchange for the RDS equipment, software and training, the EIA seeks advertising or underwriting credits to be used in concentrated consumer awareness promotion periods predetermined for each market. In addition to consumer awareness programs, the EIA plans education programs for retailers, advertisers and consumers in each of the targeted markets.

According to Gary J. Shapiro, group vice president of EIA/CEG, "our manufacturers are convinced the RBDS will deliver a host of new features that will benefit consumers, including the ability to relay useful control and display to their radios."

RBDS technology allows broadcasters to transmit radio text as digital data on an inaudible subcarrier. Individual radio stations are able to purchase an RBDS encoder for as little as just under \$2,500.

Among the specific services that can be offered through RBDS broadcasters to their listeners whether at home or in their cars are:

- show the call letters of the station
- tune by program format (Top-40, Country, Sports, etc.)
- show song titles and artist names
- switch to alternate frequencies (for continuous reception of network programming on long trips)
- automatically announces emergency and traffic bulletins
- supply paging information
- provide business and navigation data

Broadcasters, for example, would be able to send and consumers receive text transmission, enabling radio stations to identify themselves by call letters and frequency, convey information about the recording artist and song/album titles, and feed clock synchronization signals.

In addition, broadcasters could interrupt in-car CD and cassette players with traffic or emergency alerts.

The RBDS technology could also become a key part of a successor to the Emergency Broadcast System. RBDS makes possible a new-generation system that would not only transmit information when people are listening to their radios, but actually could turn on radios in the middle of the night to alert them to a potentially devastating storm, for example.

While car radios would feature an eight-character digital display, home RBDS receivers will offer a 64-character display making possible the transmission of stock quotes and other financial information, sports scores and statistics, weather reports and even brief commercials.

(Above courtesy the Electronic Industries Association)

The Escalation of the Speed Enforcement Arms Race

BY RADIO ASSOCIATION DEFENDING AIRWAVE RIGHTS (RADAR)

The trend in police speed enforcement technology is crystal clear: They don't want you, the driver, to know when your speed is being monitored. It's been true since radar first appeared in a police cruiser parked behind a hedge and it remains true today as lawmen stand on highway overpasses aiming lasers at us.

But Americans are very innovative. Every time police come out with a new weapon in their anti-speeding arsenal—whether instant-on radar, radar that can move from one point on its assigned frequency to another, radar-detector detectors or the newest rage, laser guns—drivers acquire effective countermeasures of their own. Today's tiny detectors are true technological marvels that quickly and accurately scan for every known type of radar and lasers. They simultaneously look ahead of and behind the vehicle. On top of all that, they boast undetectable "stealth" features and are incredibly affordable for the amount of technology packed into them.

There is no arguing that some speed-limit enforcement is necessary to remind us all to drive more reasonably and safely. However, the irony of this technological escalation is that the evidence shows that enforcement is most effective when it is most visible. In other words, a marked car sitting for all to see in the median, shooting conventional radar far down the road, is going to do a whole lot more to encourage compliance and improve safety than the typical instant-on ambush or laser sniper.

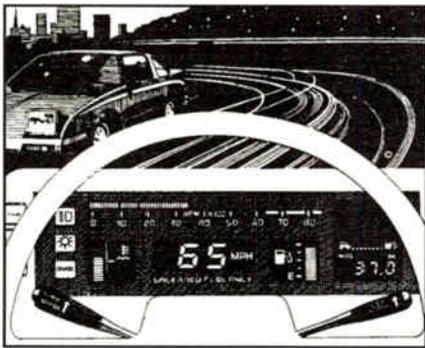
Radar Roundup

So what is the driver up against these days? On the radar front, most of the effort has gone into defeating radar detectors. For instance, the hand held battery-powered Stalker uses digital processing to operate at a specific spot within radar's wide Ka band. The manufacturer offers police different chips that can move the Stalker's operating point to a different spot on the band or otherwise keep a step ahead of detector technology. Detector manufacturers were quick to pick up on the trick and dealt with the Stalker through advances in scanning capabilities.

Radar manufacturers seem to have a penchant for naming their products after things that fly. The MPH BEE 36A operates in the Ka band between 33.4 and 34.4 GHz, known in the war of the spec-



The Whistler 1170 SW Laser detector responds to laser and Superwideband radar signals. (Courtesy Whistler Co.)



ifications as a super-wideband. Again, a check of detector features shows that this threat has been covered, too.

The Hawk, meanwhile, has the ability when operated from a moving patrol car to check the speed of vehicles in front of the cruiser and going in the same direction, approaching from the front, directly

behind the patrol car in the same lane and behind in the opposite lane (to try to nab those who speed up again after passing by a cop car going the other way). Many detectors now offer the capability of checking for radar both in front of and behind your vehicle.

Getting the Fastest Vehicle

Newest among the birds is Kustom Signal's Eagle, which employs digital signal processing (DSP) claimed to more accurately identify the fastest vehicle in traffic. Instead of fixating on the strongest target (which can be the biggest or closest vehicle) in a group, the Eagle is said to be able to cut through the "noise" to find which car is going fastest. The unit can monitor the speeds of vehicles traveling in the same direction ahead of the police car, those approaching from the opposite direction and those approaching from the rear. It can also double as a VASCAR unit, allowing the operator to calculate speed by timing a vehicle as it travels a known distance.

Photo Radar

The only other thing worth mentioning on the microwave front is photo radar. This highly automated marriage of a radar gun, camera and computer is good only for generating enormous numbers of tickets. Instead of being pulled over at the time of the alleged infraction, you get a notice in the mail saying you can either pay up, identify who was driving (if not the owner) or show up in court to contest the speeding citation.



Getting Your Vehicle Ready for the Road

Regular Maintenance is the Key to a Good Driving Machine . . .

BY JENNIFER ORT

While the attitude of some people may be, "as long as it takes me to my destination, that's all that matters," to most of us, owning a vehicle means more than knowing it gets you from one place to another. Your vehicle needs regular maintenance. It's also been said that to have a quality operating and sounding mobile radio, you've got to have a properly-operating mobile in the first place.

Mike Morrissey, spokesperson for the American Automobile Association says that simple maintenance is the key to keep a vehicle running properly.

"Some ads claim that certain cars can go 100,000 miles before the first tune-up. But people still need to look at everything from time to time," Morrissey said. "There's always a need for maintenance."

To help ensure a better on-road experience, Morrissey recommends following the AAA 14-point plan that explains, rather simply, the necessary steps for basic vehicle maintenance:

Under the Hood

1. Check the anti-freeze/coolant level weekly. Newer cars have see-through reservoirs with level markings. Top off with a 50/50 solution of permanent anti-freeze and water. Caution: Do NOT remove the pressure cap when the engine is hot.

2. Inspect belts monthly. Replace worn, glazed or frayed belts; tighten when they have more than one-half inch of slack when depressed between the pulleys. Replace bulging or rotten hoses and tighten clamps.

3. Check transmission fluid while the engine is warm and running. With the parking brake engaged, shift to drive, then to park. Remove dipstick, wipe dry, insert and pull it out again. Add fluid if needed. Do NOT overfill!

4. Check oil every other time you fill up. Remove the dipstick, wipe clean, insert it and remove again. If low, add oil.

5. Check the air filter every month or two. Replace it when it's dirty or as part of a tune-up. It's easy to reach-right under the big metal "lid."

6. Check brake fluid monthly. First wipe any dirt from the brake master cylinder reservoir lid. Pry off the retainer clip and remove the lid. If you need fluid, add the approved type and check for possible leaks.

7. Keep windshield washer reservoir full. When topping off, use some solvent on a rag to clean off the wiper blades.

8. Check the battery monthly in cold weather, weekly in hot weather and daily on long trips. Make sure the cables are attached securely and free of corrosion. Check fluid level. If yours has filler holes, add water as needed. Note: Do NOT smoke or light a match near a battery.

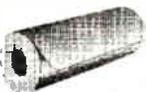
9. Check the power steering fluid level once a month.

On the Outside

10. Inspect windshield wiper blades whenever you clean your windshield. Replace worn or brittle blades. Wiper blades should be replaced at least once a year, more often if smearing occurs.



Winter Survival Kit Checklist

<input type="checkbox"/>		Flashlight
<input type="checkbox"/>		Blankets
<input type="checkbox"/>		Booster Cables
<input type="checkbox"/>		Warning device, such as flares or reflective triangle
<input type="checkbox"/>		Small bag of abrasive material, such as sand or cat litter
<input type="checkbox"/>		Cloth or a roll of paper towels
<input type="checkbox"/>		Small shovel

11. Be sure all your lights are working, including brake lights, turn signals and emergency flashers. Keep them clean.

12. Keep tires inflated to recommended pressure. (It helps to have your own gauge). Check for cuts, bulges and excessive tread wear. Uneven tire tread wear indicates misalignment or out-of-balance wheels.

13. Look for signs of oil seepage on shock absorbers. Test shock action by bouncing the vehicle up and down. The car should stop bouncing when you step back. Worn or leaking shocks should be replaced. Always replace in pairs.

14. Look underneath the vehicle for loose or broken exhaust clamps and supports. Check for holes in muffler or pipes. Replace rusted or damaged parts.

Morrissey said in one year alone there were 26.8 million calls made to AAA for emergency road service. Most people called, he said, "Because their car just didn't start—but running out of fuel and getting a flat tire were reasons, too." That's why following these 14 points can save people time and money.

Legal questions about this ticket-by-mail scheme, a preference for face-to-face enforcement by police and allegations of ticketing for profit all have kept camera radar from spreading beyond a very few locations in the U.S. It has, however, been used throughout Canada and in other countries. The radar transmissions can be rather difficult to detect due to the low power of the transmitters and the fact that the beam is shot more across, than down the road.

A Look At Lasers

Grabbing the most headlines these days are speed lasers, which use pulses of light instead of microwaves to calculate speeds. The main advantages, from the officer's point of view, are that at typical ranges, the laser's beam is a couple feet across, where radar's beam would be covering a couple lanes or more. Lasers are also invisible to radar detectors. The narrow beam is a mixed blessing: While it allows the operator to be more sure of the target, it can take marksman-like steadiness to keep the beam aimed properly. Even though you can buy up to three radar units for the price of one laser, this technology is spreading steadily.

There are lots of myths about lasers, including those disseminated by police. Here are a few FACTS:

- The range is typically much shorter than radar (about 1,000 feet.) Manufacturers claim ranges up to 2,500 feet.
- They are greatly affected by atmospheric conditions. Their range can be cut to just a few hundred feet on a cloudy or foggy day.
- A laser can only be used from a stationary position. Watch for the cop on the overpass, shooting speeders and radioing descriptions to chase cars.
- They pose no threat of eye damage when one is pointed at you.
- Though they appear to be susceptible to fewer mistaken readings than radar, errors can be made due to refraction, reflection and diffraction.
- Lasers CAN be detected. Radar/laser combo detectors are commonplace now. And sooner or later somebody (with or without a badge) will tell you, "If your laser detector goes off, all it means is that you've been caught and it's time to start reaching for your license and owner's card." It's true that in many instances your laser detector will give you less warning than its radar-seeking counterpart. Yet because of reflection and dispersion, a laser detector can ferret out signals from a range of up to two miles. In short, if your laser detector gives even the smallest peep, it's best to immediately check your speed and start paying close attention to your surroundings.

Today's stealthy enforcement tools

make it increasingly effortless for police to catch people driving above the speed limit. Add to that the fact that researchers have found that many, many speed limits are set considerably lower than they should be, so that most traffic is traveling above the limit, but below the maximum safe speed. Also factor in the reality that countless municipal and state governments are always looking for ways to make their revenue match their expenses. The result is that it's very easy to cross the line between enforcement for safety purposes and enforcement as a means of generating income for government.

Unless you enjoy contributing at random to the coffers of various state and

local governments, our best advice is to drive with a state-of-the-art detector and to keep an ear open for reports of bear sightings over your CB. We contend that instead of encouraging you to become a speed scofflaw, a radar detector helps increase your awareness of what's going on around you on the road. And who can argue that being alert, aware and informed as you drive is a bad thing?

Actually, we have been working diligently on a system that will allow your radar detector to alert you to nearby road hazards such as stopped school buses, road construction, icy bridges and work zones, plus tell you when emergency vehicles are approaching. Sound exciting? We'll tell you more about it next time.

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Scanners: User Friendly

HOW TO GET THE MOST OUT OF SCANNING VHF/UHF

By Steve Adams

What's So Special About Scanning?

Scanners in a CB magazine? You bet. CBers use scanners and vice versa. But why do folks use scanners in the first place? WRONG WAY DRIVER HEADED TOWARD YOU! FLEEING FELON IN YOUR NEIGHBORHOOD!

Are those reasons enough? Is your life worth a hundred dollars or so? Scanning is an answer and an attitude. It's about knowing what those sirens are for, where those fire trucks are going and why traffic is so backed up. It's about having information in real time, unedited and uncensored; having more control of your life by using technology you don't need to understand to use effectively. Scanners are tools, like a cellular phone, television, CB or computer.

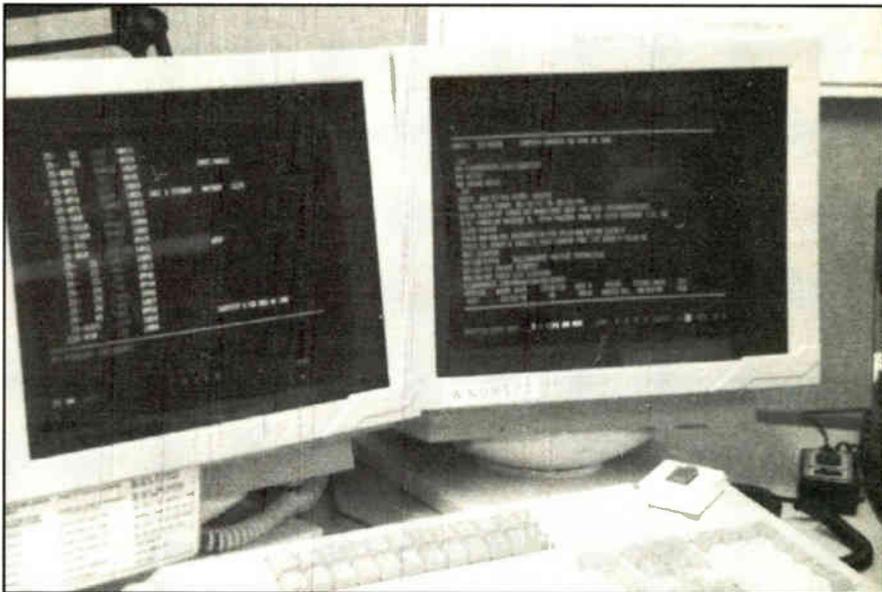
Getting Organized

Since scanning is primarily a solitary pursuit, information is its life's blood. In coming months we'll be exploring all aspects of scanning including controls and features, 10 and 11-codes, maps and map reading for following the action, jargon, acronyms, abbreviations, public safety organization, emergency kits, antennas, 800 MHz trunked systems, scanning and the law, setting up your scanner's banks and much more.

This month is a good time to organize your scanner notes to have everything handy in one place. Computer printouts, 3 x 5 cards, three-ring loose leaf binders are all useful. Pick any system you're comfortable with and that you'll keep using. Simple is better. Computer files are a great way to organize, but it's still easier to read hard copy. Besides, you'll need your notes away from your desk. I've condensed my frequency guides into computer printouts and use a combination of loose leaf binder plus 3 x 5 cards for specific events and for sticking in my pocket. Tailor your notebook with index tabs for your scanning interests; police, fire, news media, government agencies, etc. You might want sections for codes, abbreviations, acronyms, and magazine articles. Large three-ring plastic sleeves hold your equipment manuals as well as maps. A spring clip holds frequency guides and legal pads for notes.

Buying A Scanner?

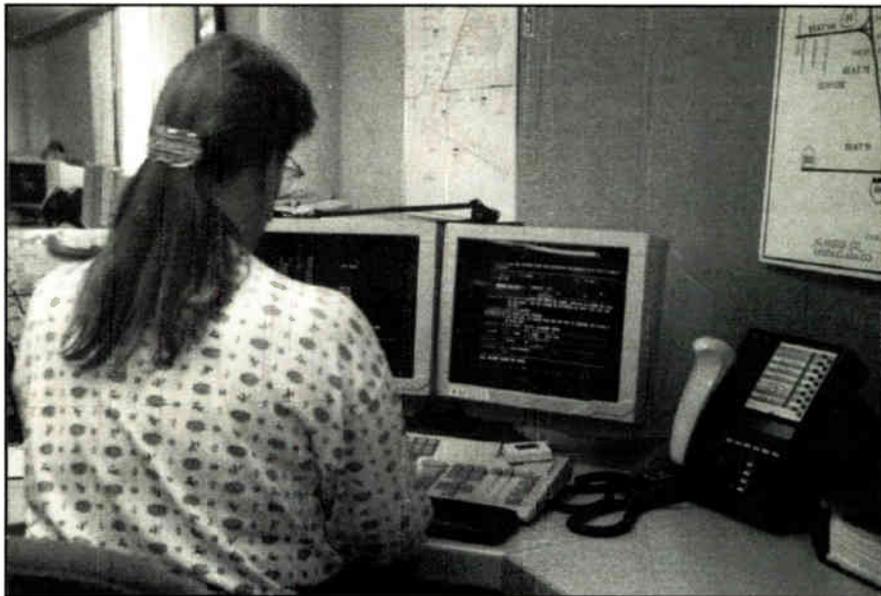
My local scanner dealer (and technical



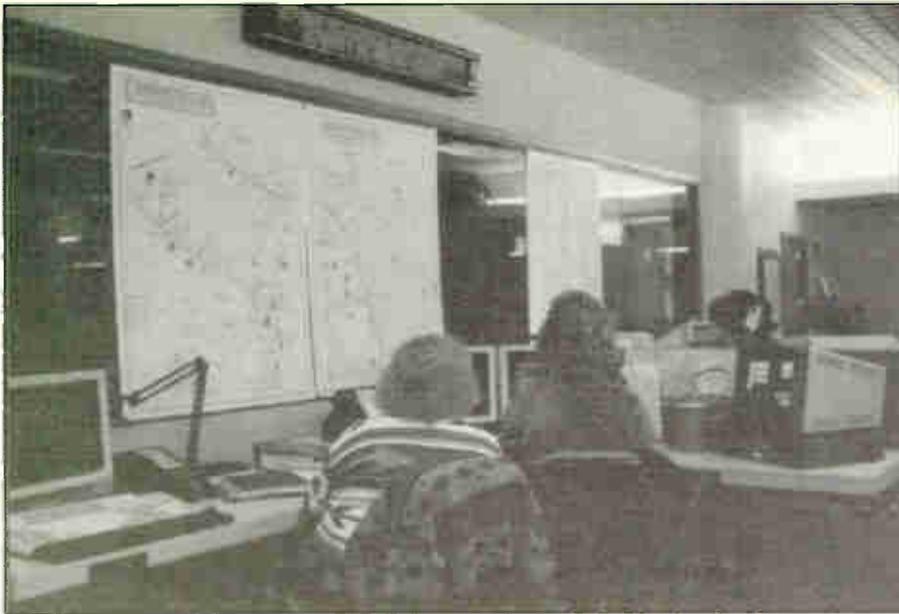
Part of the CAD (computer-aided dispatch system) of the California Highway Patrol.

advisor for the real tough stuff), Mr. Art Mayoff, has over 25 years of sales and service experience in scanners, CBs and amateur radio. He tells me the most often-asked questions when buying a scanner for the first time are: How far can I hear? Who can I pick up? How many channels

do I need? Art responds to these questions with his own—What do you want your scanner for? What are your interests? Do you want to use it in your car? Do you want to power it from your car? Art tries to determine if the buyer needs 800 MHz capability and if they want to



The screen on the right is for the CAD. Reports are generated there. The left screen shows units available, their status and location.



Training is an ongoing process at the California Highway Patrol's Golden Gate Communications Center in Vallejo.



The business office of a California Highway Patrol officer.

take it on the road as well as listen at home. He asks enough questions to be sure a potential buyer won't quickly outgrow a new scanner. Once he determines a buyer's needs, Art recommends and demonstrates a few scanners that meet those needs. He shows them handhelds, base/mobile and base stations. Although price is often a factor, most buyers opt for one of the recommended scanners.

After The Sale Questions

After the sale, buyers sometimes return

with complaints. Most often heard is: I lost the instruction manual. How do I program the darned thing? And—I used to be able to get . . . and Art will find that it's locked out of the scanner's memory. Sometimes an agency will change frequencies. The buyer then thinks something is wrong with the scanner. Another frequently asked question is why a user can't hear both sides of a particular conversation. Art explains that they may not be on a repeater and one station is out of range or they may use a system in which each side uses a different frequency. Most of these problems and questions can be

Coming Soon . . .

CB Shop—Your CB Radio Classified Center

Welcome to *CB Radio* magazine.

As you know, we are just getting started as your monthly magazine for all your CB needs. So that we may better meet the needs of our readers and subscribers, we are now accepting classified advertising for future issues.

Our **Advertising Rates** are as follows:

Non-commercial ads are 30 cents per word, including abbreviations and addresses; minimum charge \$6.00 per issue.

Ads from firms offering **commercial** products or services are \$1 00 per word; minimum charge \$20.00 per issue.

Boldface words are \$1.20 each (specify which words.)

Leading key words set in ALL CAPS at no additional charge.

All ads must be PREPAID IN FULL at time of insertion (NO MONEY—NO AD)

Visa, MasterCard, American Express, Discover and personal/bank checks are accepted.

A 5% discount is offered for prepaid 6 time insertions.

ALL ADS MUST BE TYPEWRITTEN AND DOUBLE SPACED.

Approval: All ad copy is subject to Publisher's approval and may be modified to eliminate references to equipment and practices which are either illegal or otherwise not within the spirit or coverage scope of the magazine

Closing Dates: The 5th day in the third month preceding date of publication. (for example: March 5th for the June issue). Any ads received *after* that date will be published in the following issue.

Because the advertisers and equipment contained in CB Shop have not been investigated, the Publisher of *CB Radio* cannot vouch for the merchandise that is listed there.

Please direct all correspondence and ad copy to:

CB Radio magazine CB Shop
76 North Broadway
Hicksville, NY 11801

Remember When . . .



Frank Bartholomew, formerly 2W 3637 holds a couple of old CB relics. (Photo by Harold Ort)

Here's Frank Bartholomew of Lincroft, New Jersey. Look closely, all you antique CB radio collectors. He's holding two relics of the earliest days of CB. On the left is a Lafayette HE-20a; on the right is a Lafayette HE-15 AC (which still works!).

Frank recalls the days when CB was different. He said, "Our call letters were 2W 3637. Things were different back in the late '50's when my father and I were on the radio from East Keansburg, New Jersey." He continued, "We used to talk to people on Staten Island. I remember a fellow named Larry from Port Monmouth, NJ. We had a good time." There was little interference back then.

"We'd also operate mobile from our '49 Plymouth with a huge whip antenna," he said.

Eventually both he and his late father got out of CB because of discourteous operators.

But Frank still remembers those QSL cards that came from other CB operators. "I remember our farthest card came from Puerto Rico," Frank said.



A comparison of scanner features will help you make an informed buying decision. Pictured here are three Uniden hand held units.



The Base Station in Concord, California has a large selection of CBs and scanners to choose from. Visit your local full-service dealer to see the latest in radio technology.

easily addressed by your full-service dealer. Rarely is the scanner defective.

Starting From Scratch and Appreciating Police Pros

Next month we'll start from scratch and talk about scanners as radio receivers, covering the basic functions. We'll look at the frequency spectrum, what it is, what's out there, how it's allocated and how to use it.

Since much of our scanning involves monitoring police calls, it doesn't take

long to develop some understanding of what police do on our behalf and to appreciate and applaud their efforts. We hear the professionalism of officers and dispatchers, the experience and wisdom of sergeants, the endless license plate checks, domestic disturbances and seemingly routine calls punctuated by the unexpected, the high-speed pursuits, armed robbery-in-progress calls and barricaded suspect situations. Think about it for a moment: Scanner enthusiasts may have the best understanding of police work outside of the police.

Does the current trend of police-bash-



What can you hear? Plenty. Scanner listeners scanned the grounding of the U.S.S. Enterprise in San Francisco Bay.

ing trouble you as it does me? If police work becomes socially unacceptable, as military careers once were, who will want to do the job? Will the best and brightest quit going into law enforcement? Will the very people we seek to eliminate from police ranks become eligible candidates through a lowering of the standards to get enough recruits? Are we looking for solutions or blame? When police officers run amok, let's support swift and sure methods to censure, discipline or weed them out, but let's not condemn all. Condemning without offering solutions or acceptable alternatives is easy, but is also counter-productive. Public safety should be the number one function of government. Let's equip and train police properly to do a tough job. Let's look for solutions (training, screening, counseling, closer supervision, accountability), not blame. The alternative to having police is anarchy. There are some things we can do. One way to show support is to write letters to the op-ed page of your newspaper, citing good experiences you have had from police officers and supporting well conceived departmental reforms and budgets. There is a lot of good that goes on by police officers. We MUST cite the good as well as the bad.

Another way is to go on a police ride-along and meet the officers in your area. Let them meet a resident of their beat in circumstances other than the worst. Ride-alongs are enlightening and put perspective on what you hear on your scanner. Most departments offer ride-alongs, tours of communications centers, recruiting events with demonstrations and open houses on a regular basis. Call the Public Affairs or Watch Commander's office of your police department for details. I've found them eager to show off their departments. Use these opportunities to see for yourself. Let's help make law enforcement noble again!

In the coming months we'll be exploring all aspects of scanning. Taking an interest in public safety is certainly one of them. We'll also touch on things we'd like to see in the next generation of scanners, including rechargeable NiCd battery packs for handhelds that slide in and out rather than being hardwired; search modes that will take multiple inputs to search around data channels or an open carrier in the middle of a search band; lockout review for all scanners with more than 20 channels (cycling through 200 or more channels to remember what you locked out is a drag!); adjustable delay feature so time lag of repeaters and emergency traffic tones can be compensated for; a built-in, adjustable gain, pre-amp with BNC fitting; and hand held scanners with a light that goes on with the push of a button and goes off when pushed again.

We're Interactive!

This column is interactive. Send your technical tips, anecdotes, questions, comments, photos (no Polaroids, please), schedules of events and anything unusual and of interest about scanning to: Scanners: User Friendly, *CB Radio Magazine*, 76 North Broadway, Hicksville, NY 11801-2953. There is a three month lead time in publishing your letters and photos, so please be patient. By the way, be sure to pick up a copy of the *CB Radio Buyer's Guide* and the *Popular Communications Guide*, both available from 1-800-853-9797. See you next month. ■

Steve Adams is a management consultant and a retired Command Master Chief Petty Officer (E-9), USN, with a background in weapons systems and operations. He has been a scanner enthusiast since 1980.

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Meet “The Virginia Creeper”

This being the premier issue, since you haven't yet had a chance to nominate anyone for the coveted office of *CB Radio* magazine's *CBer of the Month*, and since there's a fair amount of lead time between the typewriter and the finished magazine, it'll probably be a few issues until information sent by readers can find its way into print. Until then, I'll be writing about people who I run into in my travels.

If you know someone worthy of the honor, try to get a couple good clear B&W or color picture (slides don't work too well) and tell us what makes this person so special. You'll need to give us a whole shipload of information about the person so we can do a nice write-up such as the one you see here. 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* correspondence course (Monday and Wednesday evenings at 7 PM on channel 32 USB), you might like to interview your candidate and write a highly polished piece such as the one that follows, making you the envy of your peers—just remember, clear photos, no dangling modifiers, and don't say *ain't!*

AL BUTLER, a/k/a *The Virginia Creeper*

Al has never been one to operate a base station—says he's never operated a CB that was plugged into a wall outlet—so you'll notice this page is devoid of pictures of Al's “shack.” With the narrow doorway from the garage into the family room, we didn't think it was wise to bring Al's pickup into the house, so we shot our pictures outside in a drizzle that yielded nicely saturated colors and clothing.

He's not as active on the air as he was when he was a professional driver—Al might be what you'd call a “Past Master” at this stuff, having retired from professional driving back in 1987. He did continue driving a “mobile lounge” at Dulles International Airport outside the nation's capital, but he came home in 1992 to grow roses, do favors for his friends, and spend time with his wife, Nona (a/k/a *The Texas Rose*, who I will announce right here can out-cook the average person and is a far sight prettier than Al).

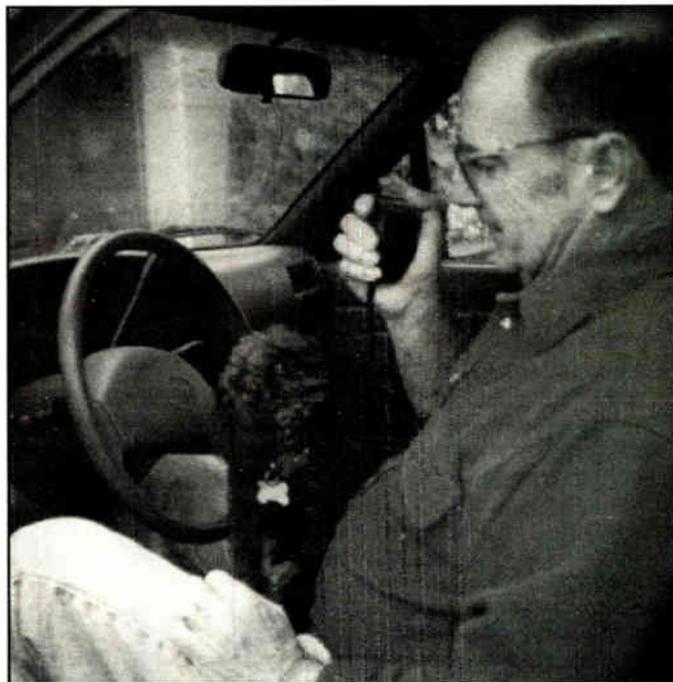
When he gets behind the wheel, though, *The Virginia Creeper* still tunes to channel 19 and listens for old friends from his contract mail-hauling days. Al says he doesn't remember the last time the radio was tuned to another channel.

I could tell Al was still a professional driver at heart when I asked him if he remembered his first rig. “Sure—just like it was yesterday,” he told me, “it was a Chevrolet C-90.” When he saw my puzzled look he said, “I guess you meant my first *radio*.”

“It was some kind of GE 23 channel deal—it was solid state, but back then ‘compact’ meant it was about twice the size of today's radios. It worked for years, and if I hadn't lost it when we moved out here I'd probably still have it today,” he said. “I'm sure it's still workin'—wherever it ended up.”

Al's got another old 23 channel transceiver in his pickup. “Sometimes I wish it would break so I could get a new one like I put in the car,” he said, “but it's been so reliable I can't part with it.” I tuned around the dial and I had to agree—no scratchiness to the controls, decent audio, and good signal reports from the guy I spoke to. It was a basic 23 channel rig with no frills, and I had to agree—it was a shame it worked so well.

The radio in the family car, however, is a different story. Neatly mounted under the dash is a Radio Shack TRC-493—Tandy's



Al Butler, “Virginia Creeper,” and his dog Cinder using their mobile CB in Virginia. (Photo by Bill Price)

top-of-the-line AM rig. I asked Al why he chose to spend the big bucks for a 40 channel AM rig. “Listen,” he said, turning on the rig. “You'll *hear* why.” He was right. It didn't sound like any CB I'd heard before. “I call this my *family* radio. You take my other rig—or *any* AM rig without digital signal processing—and half of what you're listening to is whistling and squealing—*heterodyning*—it's a terrible racket—particularly on channel 19. After a few miles it'll get so annoying you'll either turn it down or turn it off—you might as well not have a radio at all. I want a radio I can listen to and still play a Ralph Stanley tape while we're riding—you can't do that with a three-dollar radio.”

Al has some other preferences in his daily life, including:
FAVORITE FOOD Salt-cured country ham
FAVORITE FASTFOOD A Big Mac
FAVORITE OVERPRICED SNACK “Snobby little jars of pickled watermelon rind”
FAVORITE BEVERAGE Cherry Coke
FAVORITE MUSIC Bluegrass
FAVORITE STRETCH OF HIGHWAY The Pennsylvania Turnpike, heading westbound from Harrisburg.
FAVORITE STATE TO DRIVE THROUGH Texas (“It's flat and straight, and the bears don't bother you much.”)

IF YOU COULD LIVE ANYWHERE IN THE United States—IN THE *WORLD*, FOR THAT MATTER, WHERE WOULD IT BE? “Right here in Virginia,” Al answered without hesitation.

“Any particular place—the mountains? The seashore?” I asked.

No—I mean right here in Bealeton,” he said, pointing at the kitchen table where we sat.

FUNNIEST THING YOU EVER HEARD ON CB: “I was haul-

ing mail up into Pennsylvania and my friend *Sundance* (who was from PA) was driving behind me for a good stretch of the trip. We passed a bus displaying a *Charter* sign in the lighted window above the windshield and I decided to have some fun. I figured the bus driver would play along, so I pressed the mike button and said, 'Sundance—you're from around these here parts. Where do you suppose this town of *Charter* is? I must have seen about a dozen buses all heading there. Is it a tourist attraction around here, or what?'

"Sundance played right along. He came back to me and said, 'Golly, Creeper, I don't exactly know. I think it's over near Pittsburgh, though.' By that time the bus driver joined in, and instead of playing along as we had expected, he explained very carefully and in great detail what charter meant, explained how people could hire a bus and go anywhere they want, and on and on about the entire concept of chartering a bus, covering the history of charter bus travel from the day the first one opened its doors.

"Once I quit laughing long enough to speak into the mic, I called Sundance to see if he was still with us. I heard him key his mic, and he made a few snorting noises I recognized, but try as he might, the man couldn't stop laughing long enough to get a word out. It wasn't 'til the next rest stop that we were able to stop laughing long enough to swallow a sandwich and drink a can of soda."

NICEST PERSON YOU EVER WORKED ON CB: That would have to be a lady who called herself "Maw Squaw," somewhere off US 15 near Emmetsburg, PA. She always talked to us mail haulers, and she was always a friendly voice on an otherwise lonely trip. There was also a guy named *Grumpy* who used to haul mail over the same route as I did—that's *Grumpy* like Disney's dwarf—on the air his wife goes by *Snow White*. Funny

thing about him was that while we were sittin' around talkin', his voice sounded just about as normal as yours and mine, but when he spoke on the radio he all-of-a-sudden had this big deep voice that'd make James Earl Jones sound like Dennis Day.

I asked Al if he had any other radio interests—ham radio, scanners or shortwave. "No—not really. I got a CB when I began driving trucks in 1971 because CB radio served a purpose—still does. I just never got interested in other kinds of radio. I never owned a radar detector, either," Al said. I asked if that was a choice he made on moral grounds.

"Nope—strictly economics—most of my driving was here in Virginia, and they're illegal here. I just couldn't see spending enough money for a good one, then not being able to use it except for a few miles in Maryland, West Virginia, and Pennsylvania. Besides—good ones were expensive—still are."

"DO YOU HAVE A BRIEF MESSAGE FOR THE FCC COMMISSIONERS?" (Assuming they still have jobs by the time this goes to press.)

"I'd like to see 'em get rid of all the amplifiers and make it a level playing field out there."

I then tried to trick Al by asking him, "What's the one thing you'd hate for all the world to find out—the one thing you'd hate to see in print?" I think he was just about to answer when his wife called in from the other room, "Don't answer him, Al—He's probably going to sell this to one of those tabloids at the check-out stand!" She had me there.

In spite of Nona's wise assessment of my journalistic scruples, Al did allow me one last question:

"YOU'VE GOT THIS ONE CHANCE TO TELL THE WHOLE WORLD OF CBERS ONE THING—WHAT'LL IT BE?"

Al's reply? "Clean up your language—there's mamas and children out there." ■

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Don't Forget the Nightgown, honey!

I met Norm shortly after he had learned why it's not a good idea to mount a 102 inch whip antenna on the roof of a car. He was just signing off with Charlie, a county sheriff with a CB radio in his patrol car, as he pulled into an all-night gas station. It was past midnight and Norm was clutching the address of some guy selling a Lafayette Comstat 23—a state-of-the-art rig back then. He was to meet the seller at 598 S. Grant St. when the guy got home at 2 a.m.

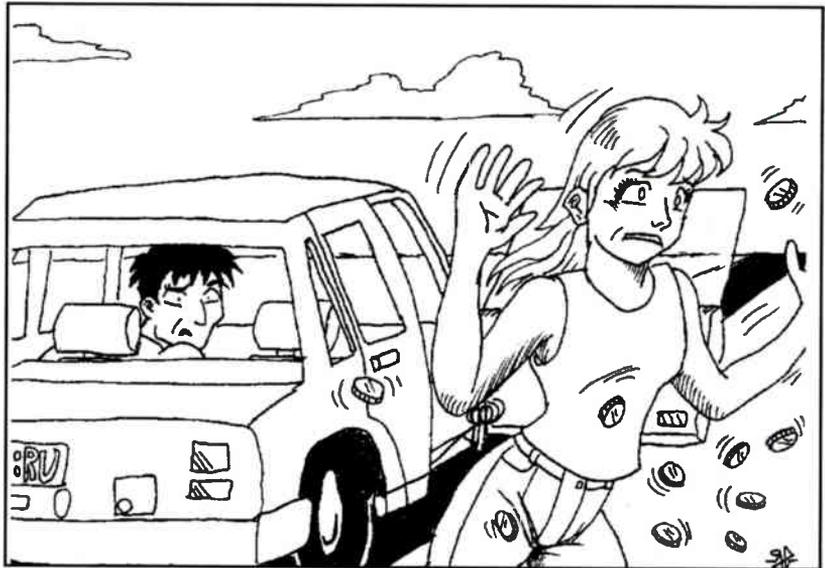
Norm headed for the cheap pump when he saw bright flashes in his mirror and realized that his new antenna had knocked out five of what he later counted to be 72 fluorescent tubes. As a large attendant came out yelling, Norm successfully escaped, and in doing so darkened the entire station with his new antenna, but not before the attendant noticed that Norm's car was almost identical to his own.

Across town, in the second-floor bedroom at the front of her parents' home at 598 S. Grant St., Shirley Maralko waited nervously in the dark for her fiancée to toss pebbles at her window. Just that morning they had firmed up plans to elope. Shirley's parents couldn't stand her suitor, who had played defensive end for his high school for three years running—all of them as a senior—and had finally gotten a full-time job.

Earlier that evening, Shirley had dumped her gallon jug of pennies and wrapped them in 152 rolls and stacked them in the bottom of a cardboard box—it would come in handy on their honeymoon, she reasoned. She placed her new nightgown on top of the box of pennies, then lay in the dark with her bathrobe over her shorts and blouse, awaiting her lover's signal.

Fate steered Norm to the only available parking place in front of the Maralko home at 10 minutes to two. As he backed sharply, his wheels hit the curb and he jabbed the brakes, setting his monster antenna into gyrations, its tip inscribing circles some 13 feet in the air. The Maralko's house was set right against the sidewalk, so the antenna's little anti-static ball tapped Shirley's window repeatedly, waking her from her light sleep and setting her plan into motion.

Shirley's fiancé was no less anxious to get his hands on Shirley than Norm was to get his hands on a Comstat 23, which is why the new attendant left a brief note



about the broken lights and closed the station early that night. He had swapped shifts with another attendant and had four days off for his honeymoon, which would begin as soon as he picked up his bride-to-be. When he drove down South Grant Street, he was annoyed to find the parking space in front of her house occupied—by a car that looked just like his own, but with a big whip antenna on the roof. Without making the connection to the incident at the station, he drove past the house, turned around, and headed back to an empty space across the street.

Norm waited quietly, his engine idling to power the tubes so he could speak to Charlie on his CB. Norm would meet Charlie for coffee once he picked up the "new" rig.

When she heard the tapping and saw the station wagon at the curb, Shirley forgot her glasses and felt around for the box. Not wanting her parents to be awakened by continued tapping, she quickly lugged the box down the stairs and out to the car, still wearing her bathrobe.

Norm saw the box lifted into the passenger window of his car, reached over and set it on the seat. He was more than surprised when Shirley got in and sat down, but without the dome light (to know Norm is to expect a lack of everyday conveniences) Shirley was not surprised by what she saw, which was merely a blurry shadow in the driver's seat.

As Norm opened the box and set the nightgown aside, he told Shirley what a surprise it was to have the radio delivered

by such a lovely young lady. In the dark, he figured the nightgown was merely some rags put there to protect the transceiver. Shirley screamed when she heard Norm's voice and backed out of the car, grabbing the box containing her life savings, which spilled (you saw that coming, didn't you?) onto the sidewalk. A large figure lumbered across the street toward Norm's car, by this time recognizing Norm as the perpetrator who'd left him in the dark, while Norm only recognized impending danger following the scream and drove off quickly with pennies spilling out of his open passenger door.

The two lovebirds began questioning each other loudly about the situation amid some 7,500 pennies, and Norm sought refuge in Charlie's patrol car while they had coffee and donuts. He and Charlie wondered why the girl had brought a brand new nightgown to Norm, and asked each other what kind of person would advertise a CB, then send a half-naked girl out to deliver it, then run away screaming. They were not surprised when Charlie's radio announced a dispatcher's call sending city police to investigate a loud domestic incident at the Maralko address.

Charlie had just taken a bite of donut and a mouthful of coffee when Norm told him about the incident at the gas station, and Norm had to help clean the inside of the cruiser's windshield. Charlie suggested that Norm anonymously send restitution to the station's owner to keep his conscience and his record clear. ■

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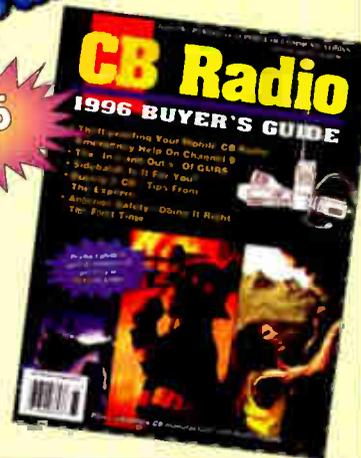
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