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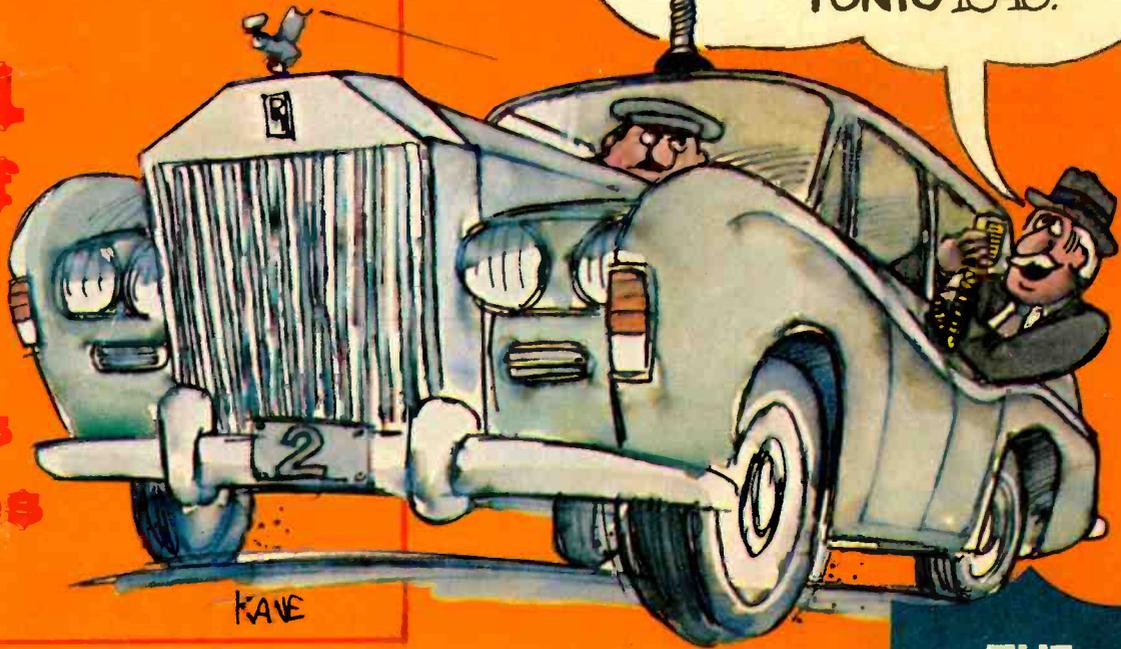
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**OUR COVER:** Zany cartoonist John Kane reflects upon how the guy behind the mike may really be quite different than he sounds. But is this CB'er getting as much fun out of his gear as he **thinks**? Maybe not! Turn to page 18!

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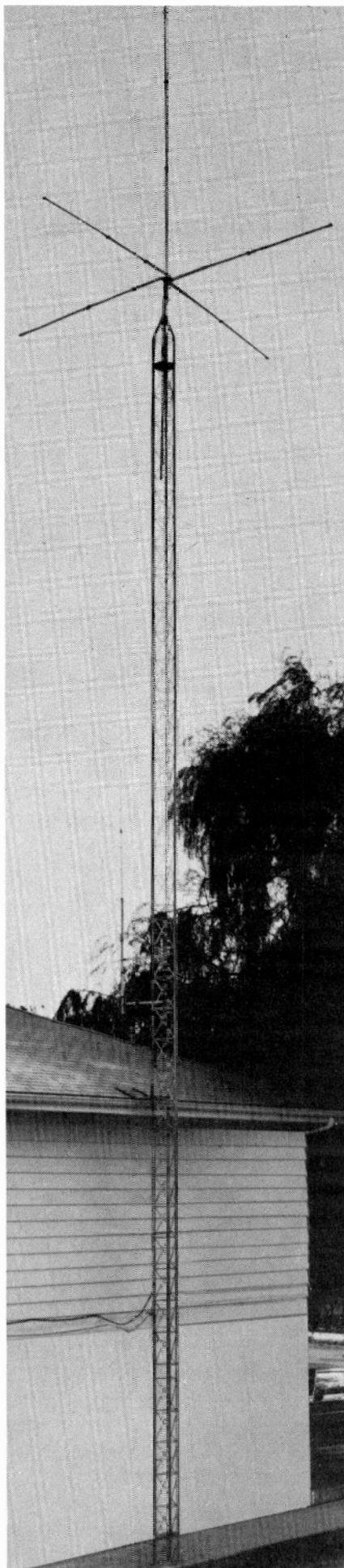
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# CB Newswire

YOUR CB NEWSPAPER

SEPTEMBER, 1976

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## CBer Helps Catch 2 Rape Suspects

Ervin "Cannon" Absher, a Bessemer City (N.C.) CB'er whose "handle" comes from the television private detective, was just going to get a late-night cup of coffee but instead he ended up playing a real-life cop.

Thanks to another CB operator and some quick action, Absher, a 32-year-old exterminator, helped capture two Charlotte men wanted for kidnapping, armed robbery and rape following the abduction of a couple from a Charlotte motel.

Absher was driving north on I-85 in Gaston County near the U.S. 321 exit shortly before midnight when he heard a man's excited voice cut into the chatter on his CB radio. The man said he was heading south on the interstate following a stolen car and asked for help.

Absher switched directions and took off in hot pursuit.

"I didn't know if it was a true thing or not," said Absher, who spotted the car and radioed the car's location to

police until a Gastonia police car stopped it off the expressway on Bessemer City Road.

An 18-year-old woman, one of the kidnapping victims, was still in the car when police pulled it over.

"It did kind of make my feet and everything quiver a little," Absher said.

Two men in the car, Alvin Curtis Quick, 35, and Joe Van McLendon, 27, were arrested and each charged with two counts of kidnapping, one count of armed robbery and one count of rape.

About three hours before Absher saw the two men, they allegedly stuck a gun in the face of a 19-year-old Davidson man and his fiance who had just registered at the Motel 6 at I-77 and Clanton Road.

The two robbers allegedly marched the man and his girlfriend to a nearby field and made them lie on the ground. When the robbers realized the man didn't have any money, he and his girlfriend were taken back to their car, po-

lice said.

The two victims were driven around for nearly an hour before Rivens was forced out of the car north of the motel.

The man's girlfriend later reported to the police that she was raped while the men drove her around.

Absher, who is a member of the Gaston County volunteer crime watching group called REACT, spotted the stolen car about a half-mile south of the U.S. 321 exit on I-85. He and the other unidentified CBer followed the 1975 Pontiac nearly five miles to the Bessemer City Road exit where a Gastonia policeman pulled the car over.

Absher said he tried to remain calm and radioed the location of the stolen auto to the Gastonia police every few seconds. The Gastonia police, as well as Charlotte police, routinely monitor CB channel 9 for emergency messages radioed in.

"The reason I'm in REACT," said Absher, a modest man who seemed uncomfortable in the limelight, "is to do something like that."

After the excitement was over, Absher went back and got his coffee.

## Va. CB'ers Honor Little Mountain at Hampton Bash

Mrs. Irene Widener knew she'd be going to her first coffee break, but she had no idea it would be any kind of big deal.

It was.

"Goodness sakes alive, I knew most of those people!" she exclaimed today recalling the bash at Sarah Bonwell Hudgins Center in Hampton at which she was honored by more than 300 people, many of whom she'd never seen before and whose names were equally strange.

Their voices and "handles," however, she knew intimately, as they knew hers. As Citizens Band radio operators, these Peninsula residents had been her "family" for the past year.

Mrs. Widener has been Little Moun-

tain since buying a CB set for her husband, James F. Widener Sr. (Mountain Man), last Fathers Day and then "sort of taking it over" for herself.

A series of back operations about the same time had left her paralyzed from the waist down, so the CB became her principal contact with the outside world.

From her bed, Little Mountain's cheery voice began chatting on the airwaves daily. Many CBers who've talked with her on their way to work each morning have taken to calling her the Sunshine Lady.

It's opened up a new world for her. Many of her new friends have dropped by to visit in person at the Widener home on Semple Farm Road in Hampton.

She's helped people in trouble who've called on their radios. One night she talked a sleepy driver home; he'd asked for her over the radio after some medicine he'd taken had made him drowsy.

"When you're helping people, it makes you forget your own pain. I don't have to take half as many of

those old pain pills as I used to," she says.

The Saturday night party was billed as just an ordinary "coffee break," a nightly gathering of CBers who like to meet in person and "eyeball each other," explains Elvis Hall, a shipyard worker who uses the CB handle White Cloud, who organized the event with the help of Sweetie Pie, Crazy Legs, Southern Belle and others.

Little Mountain began to suspect something else was up when Sweetie Pie (Pat Bolton of Buckroe) showed up Saturday afternoon "to fix up my house," but she didn't air her suspicions.

But the party itself still took her breath away.

"Gracious sakes, it really made a memory for Little Mountain that I'll have for the rest of my life," she says.

There was live country music by the Carolina Buddies, a Hampton band led by fellow CBer Carolina Buddy, and a solo performance by singer-guitarist Little Fat Albert (David Dean), a Newport News city employee also confined to a wheelchair.

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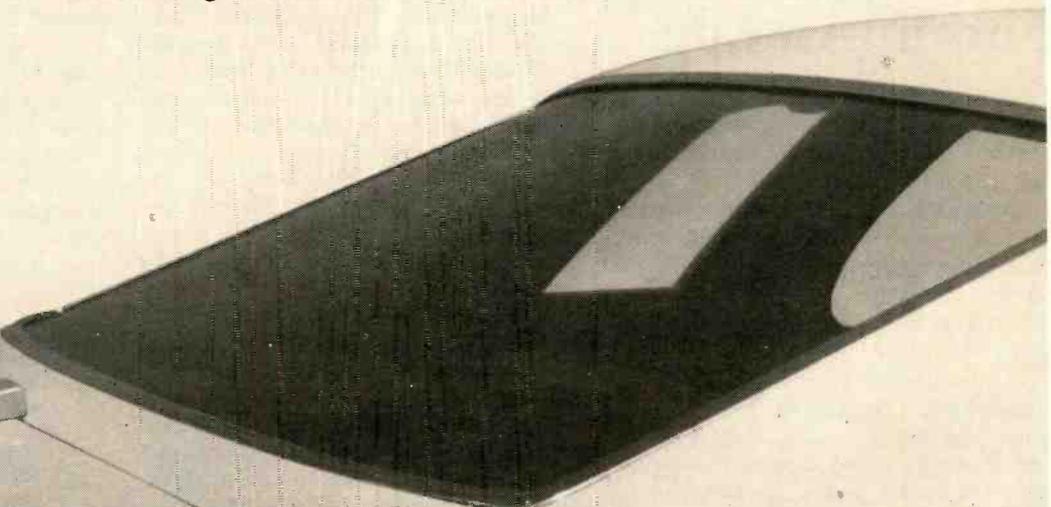
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## FLASH!

### Confusion on Parkways With Channel Switch Scheme!

A Long Island (N.Y.) Channel 9 Monitoring group suggested that the thousands of motorists using CB Channel 10 on the Southern State Parkway switch over to Channel 12, the channel used on the nearby Northern State Parkway. The "reason" for the suggested switch being that mobiles on Channel 10 were "bleeding over" in the monitor receiver which is tuned to Channel 9. It was a suggestion which was made without the agreement of those using Channel 10, including many Parkway police officers who monitor 10 on an unofficial basis in their patrol cars. Furthermore, the method of suggesting the channel switch was such that it appeared to be some sort of "official" and mandatory command, according to many CB'ers. The monitor team was attempting to estab-

lish a "guard band," or no-man's-land of frequencies surrounding "their" Channel 9, little concerned with the intense required usage of Channel 10—although their proposal didn't take into account the possibility of others moving in to use Channel 10 should the mobile units on the parkways switch over to another channel. They also didn't take into account the adverse affect upon Northern State Parkway communications on Channel 12 (the two parkways run parallel only a few miles apart, both have similar exit and pole numbers, and are in easy communications range of one another). Presumably, should this scheme have worked out, they might well then attempt to disrupt the communications on Channel 8, to establish *that* channel as a silent guard-band for Channel 9. On June 21, the date which

they had established for mobile units to evacuate Channel 10, there was considerable confusion. A great many operators decided that they would not be bullied off their 10-13 channel on such a flimsy excuse, and many of those operators were hassled by various base stations demanding that they clear Channel 10. Channel 12 was totally disrupted by those expatriates from Channel 10 trying to get 10-13's for one parkway on the frequency of another road. Base stations, figuring that they would seize Channel 10 for their operations now that the 10-13's were kicked off and hoping to utilize a "new" channel in the channel-short area, started setting up shop. As we go to press, shortly after the scheme was attempted, we would say that it was a flop.

### CBs Give N.Y. Sheriff An Edge

The citizen's band radio has been added to the tools being used by the Ulster County Sheriff's Department to aid in police work.

Since last June the sheriff's department has been monitoring the citizen's band emergency channel and with the aid of CBers has received reports on everything from fatal accidents to burglaries to hazardous road situations.

"I think it's been a big help to the department," Sheriff Thomas F. Mayone told the Freeman. "There are a lot of people riding around the county with CB radios and a lot is being reported."

From August through December of last year, the department received 268 calls over its CB unit. Of those calls, 48 concerned auto accidents, including two fatalities, 206 concerned disabled vehicles, mostly on the Thruway, 11 con-

cerned break-ins and one call came in for an escort for a pregnant woman who was on her way to the hospital.

Mayone noted that such calls have come from as far away as Greene and Columbia Counties, and that when such calls are received the nearest police agency is notified by the Ulster County Sheriff's Department.

The CB unit is also being used to enlist the aid of CBers. Mayone explained that at times vehicle descriptions are transmitted by the sheriff's department.

"With the CB unit we can give out information on a case with a particular car involved and have that many more people looking for it," he said, noting that the CBers are advised that if they spot the vehicle they should not take any action other than to report the vehicle's location.

Asked if giving out such information might cause a problem because those being sought might overhear it, Mayone said, there are already many people listening in on the frequencies reserved for police.

He noted that two stolen cars have

been located through the use of the CB radio and that a runaway 14-year-old Ulster County girl was located near Albany in the same manner.

The use of the CB radio by the sheriff's department began last June when a member of the Helping Hand CBers (an area club), Ron North of Mt. Marion, loaned a set to the sheriff's department. Some equipment was later donated by Greylock and Lafayette Electronics, Mayone said, and later the sheriff's department purchased its own set. Worth \$400, the set cost the department \$100, he noted.

The department is now licensed by the FCC to operate 20 units, and Mayone said he hopes in the near future to equip every sheriff's department car with a CB unit.

"It's a very useful tool," Mayone said, noting that the number of calls being received by the sheriff's department (nicknamed the "county mounties" by the CBers) is increasing.

"It gives us that much more of an edge on getting there on time," he said.



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## N.J. CB'ers Give Forest Fire Fighters Lift

As hundreds of people battled a fire that had consumed more than 1,300 acres of forest near here, they got a lot of help from Iceberg and his pals on the radio waves.

Iceberg is the handle Bob Feltwater uses when speaking into the citizens band radio in his truck. Feltwater is president of a citizens band radio club that carried a continuous supply of sodas, coffee and food to the marathon firefighters.

About 200 women and men at a time were using brooms, portable water tanks and shovels to stop the spread of flames through Worthington State Forest.

They were frustrated by shifting winds that shot the flames across the trenches they had dug, and they held little hope of extinguishing the fire without the help of rain.

Most of the firefighters were members of volunteer fire companies in towns as far as 30 miles from the forest in northwest New Jersey near the Delaware Water Gap, and some were members of state and national park services. But many were local people who just showed up to help.

The most effective weapon against the fire was the water being dumped on it from four helicopters. The choppers, stopping only to refuel at the local airport, would hover over a farm pond just long enough to fill the colossal buckets suspended from them, then circle around the fire and release the water.

Some of the firefighters were back for their second or third shift since the blaze started near Dunisfield Creek. Park rangers say a wayward campfire is to blame.

A local family named Ehasz dropped off their recreational motor home so the firefighters could use its kitchen, lavatory and beds.

Most of the food was brought in by members of the Feltwater's Action Base CB radio club. The year old club has 260 members in northwestern New Jersey.

## CB Radio Opens New Life For Chuckie King

Exciting things have been happening in the past year in the life of Chuckie King, a 19 year old Forward Township (Pa.) youth, who is confined in a wheelchair with muscular dystrophy.

The only son of Mr. and Mrs. Bernard King of Manown, he was born with the defect and has been a wheelchair patient since he was nine years old.

Up until the past two years Chuckie has led a quiet life, attending classes at Mon Valley School for Exceptional Children in West Mifflin where he graduated from high school in June 1975. He is a quiet youth and was content spending his time building model cars and watching television.

Two years ago Chuckie and his parents were invited by their neighbors, Mr. and Mrs. Ralph Hare, to attend a family reunion celebration at New Germany State Park in Grantsville, Maryland. Members of the Fiddler's Association were also in attendance at the annual event. Mrs. Ralph Martin, a native of Austria and the wife of the president of the Fiddler's Association noticed Chuckie in his wheelchair and started asking questions about him. She was sincerely interested and felt she wanted to do something for him because he couldn't get around like other boys.

After she went home she started to do some research on muscular dystrophy, reading all she could find on the subject. She couldn't get Chuckie off her mind.

Mrs. Martin, with the Fiddler's Association behind her, planned a benefit for the youth to raise funds to send him along with his parents to California, where he said he would like to visit.

Meanwhile Chuckie became interested in the radio and spent his graduation money to purchase a Citizens Band radio with antenna and a license which opened up a whole new world to him. He began listening to his radio from early morning until late at night

and became acquainted with other Citizens Band enthusiasts in the surrounding area and soon was known as "Chuckles" to his many friends. His mother said they gave him the name "Chuckles" because he is always laughing. He has made many friends since he received his radio last summer and now the King home is always full of visitors. Chuckie never has time to get lonely now. He is also a Steeler fan and is interested in sports and reading about them.

The Pennsylvania Road Runners Citizens Band Club of New Eagle met "Chuckles" last July at a Citizens Band Club gathering in the local area. At that time they presented Chuckie with a life-time membership in their club. Bill Patterson, president of the New Eagle Club, said that Chuckie is the only one in Pennsylvania that holds that type of membership. The club also presented him with one of their jackets which he proudly wears and cherishes along with the framed life-time certificate which hangs above his radio on his bedroom wall.

Mr. Patterson and the members of the club heard about the vacation fund the Fiddler's Association had started and felt they would like to do something too. They were given permission to place collection cans in the local business establishments and Mayor Bugaile of New Eagle has issued a proclamation designating March 6 as a "tag day for Chuckie King" in the valley towns of Donora, Charleroi, Monessen, Monongahela and New Eagle. Others have volunteered to make door-to-door collections and a spaghetti dinner is also planned.

Anyone who would be interested in making a donation can call 258-3758 or send a check to the Chuckie King Fund, Post Office Box 463, Monongahela, Pa. 15063.

Mr. Patterson had also secured free passes to Disneyland, Sea World, Marine World, Paramount and Universal Studios for Chuckie and his parents when they went to Stockton, California for their vacation the last week in April.

"We want to make it the best time he ever had with no expense to his family," said Mr. Patterson. The club is also in contact with officials of the Pittsburgh Steelers to have one of their players visit "Chuckles" during the weekend.

# Move up to Teaberry the Quality CB People



TEABERRY CORPORATION

## CB Radio Unites Ex-Trucker, Waterman— For A Rescue

Although the former truck driver and a Chesapeake Bay waterman never met one another, their paths crossed because of the one thing they had in common—a citizens band radio.

Preston Joiner has been tonging oysters and fishing for 38 of his 51 years on Maryland's Eastern Shore. Every morning when the weather permits, Mr. Joiner rises early to ply the bay's waters in his 38-foot boat.

As the waterman headed home one day, a strong wind suddenly came out of the north. The storm whipped the water into a fury and waves began to buffet Mr. Joiner's craft.

### *The Wind*

"The wind just picked the water up and threw it across the deck like a driving rain-storm," the waterman said later.

Nearly 5 miles from shore, the engine on Mr. Joiner's boat began to stall. Several times the carburetor quit and finally the motor died.

With no power, Mr. Joiner was at the mercy of the bay. Waves rolled over the sides and filled the boat. The waterman spent the six hours bailing madly with his 5-gallon bucket.

"I was trying to save my boat and my life," he explained.

### *Frantic Mayday*

With water up to his knees, Mr. Joiner started radioing a frantic mayday message on his citizens band radio. No one answered on Channel 9—the frequency designated by the Federal Communications Commission for emergency—so Mr. Joiner went to another channel.

At last an Eastern Shore resident heard Mr. Joiner's distress signal and transmitted the message with his more powerful base radio onto Channel 9.

Meanwhile, 30 miles away, Chuck McMahon, a former truck driver who is legally blind, was getting ready for bed. McMahon is president of the

Patapsco Alert Rescue Team, the local chapter of a national club for CB radio operators who help others in distress.

Mr. McMahon heard the mayday message and switched to Mr. Joiner's channel. Then began a night-long search operation to reach the waterman before his boat sank.

### *Contacted Coast Guard*

Mr. McMahon contacted the Coast Guard, the Maryland Marine Police and the State Police to set in motion a rescue squad to look for Mr. Joiner.

The truck driver also telephoned Mr. Joiner's wife, Donna, who spoke with her husband for two hours on the CB radio before they lost radio contact with him.

Between transmissions, Mr. Joiner continued to bail water out of his boat. Fortunately, a 45-knots-an-hour wind blew his craft towards shore until it finally washed aground.

His boat, hidden by trees and wet-

lands, wasn't found for several hours. Finally, a motorist spotted the mast while driving on the Kent Narrows Bridge.

Throughout the search mission, Mr. McMahon, whose CB radio name is The Derby Kid, acted as a liaison between Mr. Joiner and the search party.

The waterman is 1 of nearly 1,300 persons that the 62 members of the CB radio team have assisted.

### *Three Maryland Crews*

The Patapsco Alert Rescue Team is 1 of 3 Maryland crews and part of a national network of 580 teams with 14,500 members, all equipped with CB radios.

"We don't go looking for trouble, but when we see a situation, we stop and help in any way we can. We are another set of eyes for both the police and fire departments and we have radio communications at our disposal to get help quickly," Mr. McMahon said.

## Colorado

### CB Radio Jamming May Have Cost Life

Misuse of a citizens band radio may have contributed to the death of a retired Denver police sergeant, Cecil Curtis, known as "Lonsome Cecil" or "L.C." to his CB friends, had a history of heart trouble. On May 7, Curtis suffered an attack in the living room of his rural Longmont home.

Mrs. Curtis tried to summon an ambulance by telephone but couldn't get through. Her son, Dwaine, 17, ran to the family's CB unit to broadcast a "10-33."

"While Dwaine was calling for help, somebody told him to shut up and get off the channel," Mrs. Curtis said. "I couldn't believe my ears, and Dwaine just kept yelling into the radio. 'Please help us, he's dying.'"

The emergency message was received by Bobbie Hulbert who, under her CB handle "Shady Lady," is a favorite conversationalist of truckers on Interstate Route 25 passing the Del Camino Truck Stop.

"I heard the 10-33 while I was folding clothes and ran to my radio to relay it to Longmont," Mrs. Hulbert said. "But someone told me to shut up

and then started dumping a carrier on me."

Mrs. Hulbert then tuned her radio to Channel 9.

"But the carrier-thrower followed me," she said. "I managed to contact REACT and tell them to head an ambulance east, but I still didn't know where to tell it to go."

Mrs. Hulbert then tuned back to Channel 19 to relay the message that an ambulance was on its way and learned the victim was Curtis.

"I knew where they lived and went back to Channel 9 to give the ambulance directions," she said. "Then the carrier-thrower came back on and started knocking me off again."

"By God, a man may be dying, please clear the channel so we can get help to him," Mrs. Hulbert said. "He gave me a Bronx cheer but evidently got the message because I didn't hear from him again."

When the ambulance carrying a paramedic and emergency cardiac equipment arrived, Curtis was dead. What would have been a 6 or 7 minute trip had taken nearly a half hour!

# WHAT'S NEW IN THE CB JUNGLE? THE TIGER MARK 2™



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**PEARCE-SIMPSON**  
DIVISION OF GLADDING CORP.

# CB Newswire

YOUR CB NEWSPAPER

SEPTEMBER, 1976

INCLUDED IN S9

## Midland International Announces CB "Good Buddy" Award

John W. Lane, president of Midland International, announced today from the Kansas City headquarters that a "Good Buddy" plaque will be awarded quarterly by Midland to the CB group or individual CBer who has performed an outstanding action or accomplished something worthwhile via the CB affiliation during that period.

"Whenever possible," said Lane, "this plaque will be awarded in person by our own CB friend and spokesman, C. W. McCall. If his schedule prevents that, C. W. will add his personal congratulations to the Midland "Good Buddy" award winner by telephone.

Lane added that there would also be 10 merit-award certificates given, each one personally autographed by McCall.

When asked why Midland had decided to institute an award of this type, Lane explained, "The country at large is still not aware of the tremendous amount of good done by CBers. Since Midland is one of the largest CB manufacturers, we're anxious and proud to 'spread the word.'"

Midland is asking CBers and CB groups to tell them about the good things being done via CB association. "Although we have a clipping service which sends us great stories from all over the country," said Lane, "very often the Good-Samaritan CBers are referred to only as 'an unidentified citizen with a CB radio,' which may be indicative of an overall CBer modesty. So, we're asking all CBers, CB and REACT groups to help by sending us pertinent stories."

Stories can be sent directly to: The Midland CB "Good Buddy" Award, c/o Midland International Corporation, 1900 Johnson Drive at State Line Road, Shawnee Mission, Kansas 66205. For further information, please contact: Rose Marie Earp—Public Relations. 913-384-3550.

## CB Radios May Kill Need For Phones

Roadside telephones may soon be about as useful to travelers as horseshoes are to sports cars, says Nicholas Johnson, former Federal Communications Commissioner.

Radio, television and even telephone may lose profits because of citizen's band radio, Johnson said!

Because the public now has an alternative to tuning in to radio and television, he said, "commercial broadcasters might think twice about their programming quality." His remarks

were released in Washington.

Many of the nation's 3.5 million licensed CB operators find it cheaper and more fun to talk to friends on their radios rather than dial a telephone.

Johnson said broadcasting executives estimate that CB radio's popularity will cause a decline of about 12 per cent in out-of-home radio listening this spring, and roadside telephones will soon be no more useful to travelers than horseshoes are to a sports car.

## 2 Truckers Block Way, Halt Iowa Robbery Suspects

Two truckers on Interstate Highway 35 about 10 miles northeast of Webster City helped apprehend two robbery suspects by driving side-by-side in front of the suspect's car until state troopers could catch up with them.

State Trooper Ron Hintch of Hampton, who arrested the men, said the incident began with a holdup at the DX Service Station in Popejoy, about 6 p.m. The owner told authorities two men armed with handguns robbed him of \$100 and fled in a 1966 Ford.

"I heard the description of the car and was told the suspects might be heading toward I-35 on a county road, so I headed on down that way," said Hintch. "I have a CB in my patrol car, and I got on it and asked if anyone had seen a car matching that description.

"Right away, this 18-wheeler heading south said a car like that had just gotten on the interstate behind him, at the Dows interchange."

"I called back and told him to do what he could and I'd get on down there," said Hintch. "He and another trucker were running together, and they maneuvered around and got in front of the car, one in each lane, and slowed down to hold the car up until I could get there."

Hintch said the car "couldn't go anywhere, because it was between interchanges." He said he caught up with the trucks and car about 10 miles northeast of Webster City just north of the Wright County line.

"They stopped their trucks right there in the Interstate, after they knew I was behind them," said Hintch. "Another trooper arrived a short time later, and we made the arrest."

Hintch said he thanked the truck drivers and they drove on. They were identified as Paul Puggle, of Webb City, Mo., and Harley Steinhok of Prairie City.

Hintch said Dennis Craig, 25 of Radcliffe, and John Rowson, 19, of Sheffield, were charged with robbery with aggravation and were being held in Franklin County Jail at Hampton, pending court appearances.

Hintch noted that since last month, state troopers have been allowed to have citizen band (CB) radios in their patrol cars. While some have been installed at state expense, Hintch said he installed his own in his patrol car.

"CB radios are a great law enforcement tool," Hintch said. "Through the CBs, we get countless reports of stalled cars, drunk drivers and speeders. And I tell you, the guys that help us the most out here are the semi drivers who report problems and help motorists in trouble."

He continued, "Last night, if they hadn't slowed that car down, the driver might have made it to the next interchange, and maybe we wouldn't have gotten the suspects in custody at all."

# CB Newswire

YOUR CB NEWSPAPER

SEPTEMBER, 1976

INCLUDED IN S9

## CB Radio Use Forces Minn. Man To Flee

The sight of a CB radio in use may have prevented a crime on Hwy. 263 south of Welcome.

Mrs. Shirley McMurtry of Dolliver was on her way home about 10 p.m. after attending church in Sherburn.

According to sheriff reports, she said she was followed out of Sherburn on Hwy. 16 by a car flashing its lights and honking its horn.

Mrs. McMurtry said she turned onto Hwy. 263 going south toward Ceylon when the car passed her and slowed down. She then passed the car but was soon after forced off the road about three miles south of Welcome.

Mrs. McMurtry got on her CB radio

and contacted Ruth Schueler of Ceylon and told her to contact the police. While she was doing this Jerry Rosenberg came on the radio saying he was in the area and proceeding to the point where she was forced off the road.

Mrs. McMurtry said the man driving the car came to her window, saw her on the radio, ran back to his car and sped off in a southerly direction.

Mrs. McMurtry said the car was of maroon color, had no front or back license plates and no antenna.

When police reached the scene Mrs. McMurtry said she thought the car following her had turned off on country road 22.

She later said it had turned off on a farmhouse road about a quarter mile from where she was forced off the road.

Police investigated and questioned a man, but no arrest was made.

## Nursing Home Patient Enjoys Operating His Own CB Radio

Among the quiet and tranquil surroundings of the Fort Hudson Nursing Home, faint murmurs of "Breaker One," "Ten-four," and "Bleedover" can be heard coming from the library.

The source of the strange language is a Citizens Band Radio that has recently been purchased by a resident of the Nursing Home. Karl Dupell purchased the radio after scrutinizing catalogs that offered CB sets for sale.

Dupell had developed a growing interest in CB radio. However, a firm decision to go through with the purchase was made after Dupell's sister and brother-in-law, Joan and John Spirowski of Hudson Falls, informed him that they were also going to purchase a CB radio.

Dupell, who is originally from Hudson Falls, has resided in the Nursing Home since January 1973. A car accident that occurred when he was 18 left him disabled. His disability, however, does not stop him from keeping up with daily activities.

A monthly newspaper is typed by Dupell as are numerous painting and lettering projects. Dupell admits he could sit at the CB radio 24 hours a day listening and transmitting.

His radio is used primarily around lunch time and 3 p.m., with conversations between the Spirowskis and Dupell taking place sporadically throughout the day. Dupell pointed out that channels 1 and 3 are the ones he uses most often, adding that the trucker's channel 19 is "too crowded."

Permission to place an aerial outside the library was obtained from the administration at the Nursing Home. Dupell's brother-in-law did all the necessary "running around" to get the radio and installed the antenna at a height for good reception and transmission.

"Teddy Bear," which is Dupell's "handle" or name in CB language, has had conversations with people in Wilton, Corinth, Hartford, West Fort Ann, and Vermont. On good evenings or early morning hours, transmissions can be received from Massachusetts and Vermont.

## CB Friends Lend a Hand

Because Tiny needed help, Foxy Mama, Queen Pen, Sabre Tooth, Reporter, Papa Bear, Spare Tire, Little Wheeler and a lot of other people have pitched in.

Tiny is Jennifer Kalen, of Rockford, Ill., a Citizens Band radio buff who is only 6 years old. Doctors removed 90 percent of a three-pound malignant tumor from her rib cage Feb. 19.

Physicians still give the girl only a 25 per cent chance to live but chemotherapy is scheduled and Tiny has lots of courage.

Judy Kalen, Jennifer's mother, said she and her husband, Frank, a foreman at Viking Chemical Co. in Rockford were "really down" when Jenny got cancer. But then "all the nice people began to help."

The "nice people" were out there in CB-land—including Karen and Gordon Van Norman of Chicago, whom the Kalens met at Rock Cut National Park near Rockford in northern Illinois last year. Both families shared an interest in CB radio.

Because of their concern for Jennifer, Karen and Gordon, whose CB "handles" are Spare Tire and Bull Win-

kle, began seeking help for her on their CB band. So far they've collected about \$500 and more is expected from CBers in the Chicago area.

In Rockford, Mrs. Kalen's niece, Queen Pen or Bonnie Schultz, and friends, including Nancy Permeter or Foxy Mama, had set up a benefit dance in Rockford for May 15. Sabre Tooth, Reporter and Papa Bear expected 1,500 or more persons will show up.

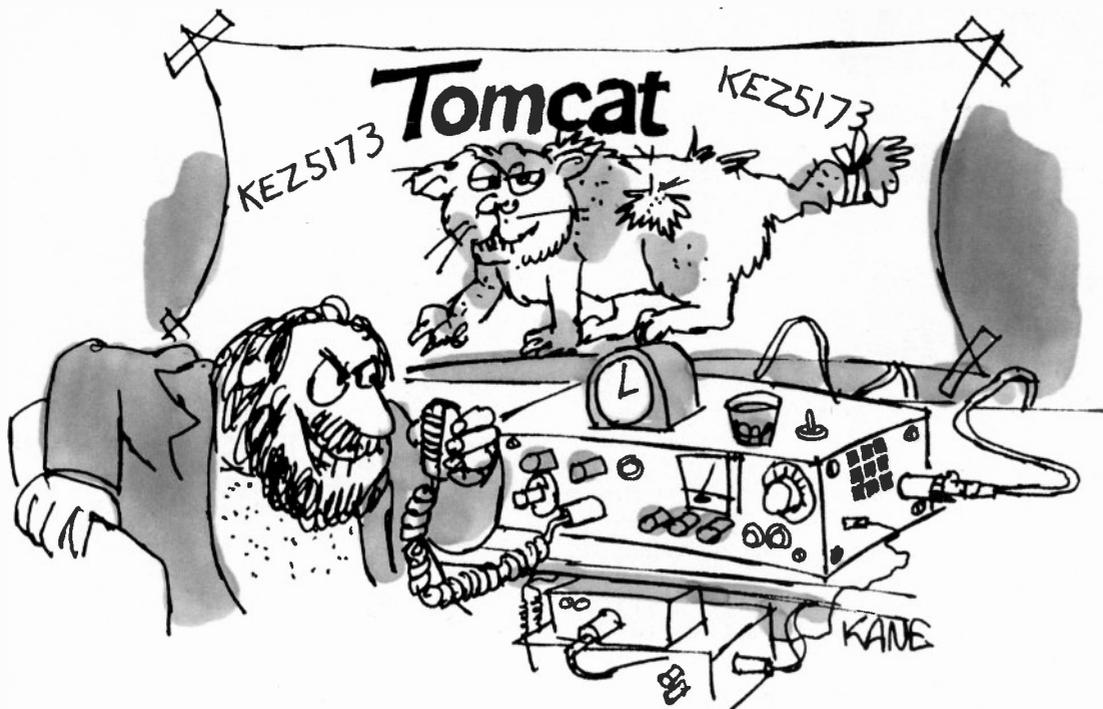
The night before the dance, CBers from southern Wisconsin and the Rockford and Chicago areas of Illinois assembled at Rock Cut Park for a cookout where Jennifer, whose handle is Tiny, was presented with a T-shirt with the handles of all the CB contributors on it.

Tiny has talked to many of them on CB radio, Mrs. Kalen said.

"She does fine for her age," she said.

Most of the CBers know Tiny and they give her a "breaker 12," which means go ahead on CB channel 12 whenever she is ready to transmit.

Mrs. Kalen said the family had a CB radio in their automobile but now have a second one in the house "so we don't have to go out and sit in the car to talk to our friends."



## The Ol' TOMCAT talks about... OPERATING YOUR CB RIG!

by S9's Editor, Tom Kneitel, KEZ5173/Tomcat

Cartoons by John Kane, KDL9051/Snow White

**U**NFORTUNATELY for all of us, too many people become "instant" CB'ers, that is to say that the elapsed time from CB-rig-in-the-carton to "Gimmie a radio check" seems to be about 30 seconds. The only thing *worse* than this is the new operator who spends a few minutes reading the mail before going on the air, just enough time to pick up some bad operating habits from other operators and then perpetuate them.

What's unfortunate is that not only is poor operating messing up the channels, it is also giving operators less from their equipment since, with little effort, they could be doing *much* more with it—having a *lot more fun!*

There are plenty of operators who have been around for several months (or years) who should also take a bit of time to re-examine some of their own operating techniques, see if some of the things they are doing really make any sense or are only adding to the confusion.

There are really many approaches to operating a CB rig successfully with full enjoyment and benefit—and in the coming months S9 will be presenting several of them. Some of these techniques differ from my own, there are those which disagree with mine. But I'm going to kick it off with my own views for several reasons. Firstly, it gives others a focal point with which to agree or disagree. Next, I've been an

active CB'er since the very first days of the thing. Also, I've spent a lot of time mobiling around the country and have heard (and been part of) the very best and very worst operating techniques used in cities and rural areas. But mostly I am taking first shot at it because, being the Editor of S9 I have my foot in the door for space in S9's pages, and also I'm the meanest and most miserable cotton picker who ever came down the pike and I'll *hand rassle* anybody who tries to say otherwise!

Let me preface my thoughts with the statement that these tips and techniques are primarily aimed at AM operation. Sidebanding is a totally different scene and the rules of the road are quite different.

### GETTING STARTED

Even though I just got finished knocking those who listen on the band only to pick up some of the worst operating habits, actually I think that it does pay to spend some time tuning around the various channels to determine several things. Take a day or two (if you can bear the delay in getting on the air) to see 1) If any channels are set aside in your area for specific purposes which should be known to you, 2) To see if any particular channels are overpopulated with operators you would particularly like to avoid, or if there

## YOUR HANDLE AND ITS USE

Most operators use a *handle*, or station name, as their ID. There are some people (especially new operators) who actually use their FCC callsigns, at least for a little while. A few operators use their callsigns all of the time. Most of the time the evolution of a station ID consists of the callsign being used exclusively, followed by a period where the callsign is used along with a handle. Eventually the FCC callsign seems to get lost in the shuffle and all that remains is the handle. The process from pure callsign to pure handle generally takes a few weeks. With the FCC's new 4-letter/4-digit "mouthful" callsigns on the way, the probable evolution time from callsign to handle will be about 5 days! FCC rules state that the callsign should be used to identify a CB station, but they do allow for the use of a handle *so long as the callsign is also given!*

When selecting a handle for your own use, be aware of the fact that some CB'ers will go directly into a hysterical frenzy if they hear another operator using a handle which they feel they had first. A few operators will go so far as to freak out if they hear someone usurping the handle of another operator with whom they happen to be friendly.

What with so many millions of CB'ers today, it is not difficult to comprehend that it would be very difficult to be totally original and that there will be hundreds of CB'ers who accidentally stumble on to just about any handle which could be devised. Perhaps even within your own communications area there may be multiple duplication of your own handle, especially if you have selected any of the dozens of more popular handles. Now, if that doesn't bother you, then go right ahead and use any handle you like—but don't overlook the fact that you might well be accosted over the air or (*horrors!*) *in person* by some dimwit who is in a snit about your ripping off his handle or his friend's.

In order to avoid this, some operators have gone off into the twilight zone to select handles which are so totally outrageous and unique that it would be highly unlikely that there is a chance of duplication. I've heard such clever ones as *Lucky Armpit*, *Frankenstein's Sister*, *Pickled Punchingbag*, *Rhino Rump*, and *Mustard Merangue*. I'm certain that now that these names have appeared in print here that within a few weeks there will be dozens of other stations using these handles—sorry 'bout that fellas and gals!

When selecting a handle, you might wish to pick one which relates to your job (some job-oriented handles I've heard include *Pencil Pusher*, *Pill Roller*, *Garbage Can*, *Legal Eagle*, *Chicken Flicker*, *Hog Slop*. A goodbuddy, Greg Baker, works at the CBS Radio affiliate station in New York as a newsman, his handle is—you guessed it, *The Newsman!*)

Then, again, you can select a handle which relates to your hobby (*Scuba Man*, *Rifleman*, *Royal Sportsman*, *Weaver*, *Cycle Freak*, *Knitting Nut*, etc.), or your



are certain channels in use which seem to attract operators you think are cool, and 3) To become familiar with the lingo and to form a basis for deciding which operating procedures turn you on and which are a turnoff!

If you can do this for a day or two *before* you press that mike button, you're ahead of the game! Also, use this pre-air time to read the FCC's Part 95 and become familiar with the rules and regulations. I'm not here to preach the FCC's gospel, it's your rig and it's the FCC's problem to enforce their rules and regulations, many of which I am in considerable disagreement. I've spent many thankless years of trying to bash my readers over the head with Part 95 only to have to come to terms with the fact that each individual operator must decide for him/herself which rules are necessary and convenient to follow, dent, bend, or break for their own happiness and ease of communications. I do, nevertheless, feel obligated to remind you that the FCC sort of hopes that you will tow the mark with Part 95 and also that you should be aware of the fact that CB operating techniques in common use around the country do not always follow Part 95 to the letter.

As I've pointed out a number of times previously, every time you press that mike button you are giving others a chance to form an opinion of you. If you couldn't care less, then be my guest to make a damned fool out of yourself. If you do care what they might be saying about you when you're 10-7, then keep in mind that every time you hit that button there may be hundreds of fellow CB'ers forming an opinion of you.

## OPERATING YOUR CB RIG (continued)

astrological sign (*Aquarius, Scorpio, Gemini*, etc.). You can select any personal attribute or distinctive physical attribute for your handle (*Goldilocks, Chow Hound, Red Nose, Bullet Head, Big Feet*, etc.). Some CB'ers relate their handles to a favorite set of wheels (*Duster, Super Van, Porsche Power, Jack-in-the-Jeep*, etc.) It is possible that you have a long standing nickname which lends itself to being used as a handle (Examples: *Billy Boy, Suzie-Q, Awful Arthur, Patty Cake*, or my own handle, *Tomcat*, which has followed me around on and off the channels for more than 15 years).

When picking a handle, don't be afraid to be bold and daring—anything goes! Nobody will see your handle as being unacceptable (unless it is outright obscene). But select one which will be easily understood over the air.

Never be forced into changing your handle by a "prior owner" or his buddy.

### ON THE AIR, AT LAST!

You've got your station, you've selected a handle, you've read Part 95, you've spent some time listening around the channels learning some basic lingo.

Guess it's time to lay that mighty carrier out on one of the channels!

Stay clear of Channel 9 unless your first transmission is a 10-33 (no, Bunky, mike fright doesn't qualify as a 10-33). Avoid Channel 19 and any additional area in-transit mobile channels. Avoid the channels used in your area for Single Sideband operations (probably 16 and 18)—easily determined by hearing communications on those channels which sound like distorted and raspy monkey chatter. That still leaves you with a lot of channels for you to do your thing, even taking into account the fact that you have already decided to avoid a few additional channels frequented by operators whom you have dubbed as unsavory characters.

The most frequently heard way of hooking into a channel is by means of the magic word "Break." The use and misuse of this word has reached phenomenal

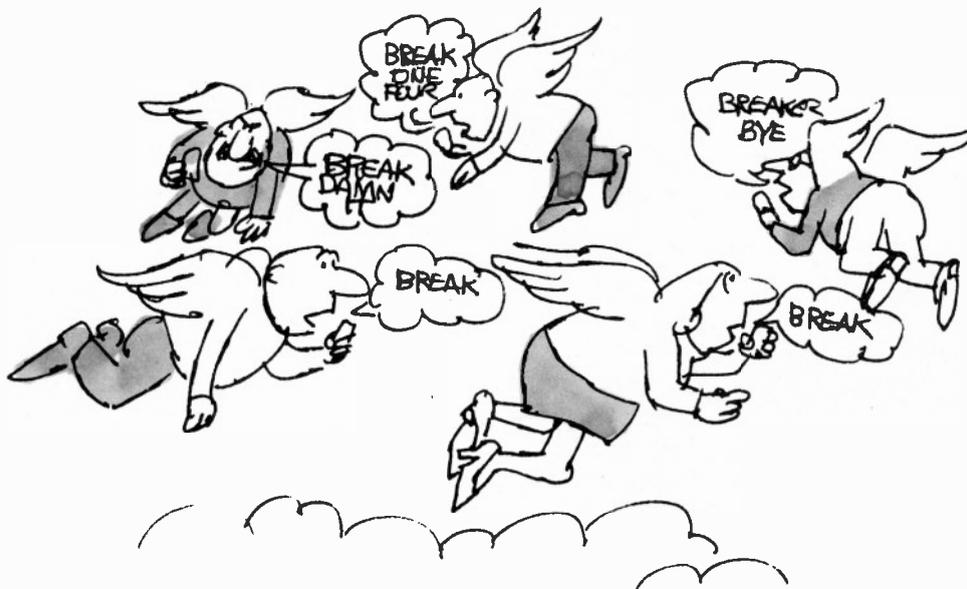
proportions. Also, until you became familiar with CB and comfortable with operating, your best bet would be to stick to the script with any one of several of the acceptable ploys used by CB'ers for making a contact. Here's the basic script for one of the more common ploys:

Wait for the channel to become clear of local shouts (don't worry about distant stations running less than a 3 on your meter) and then hit the mike button fast and say something like "Break," or "Breaker One Four (or whatever channel you are on)," or "Break-Break." Try to avoid any of the cutesy ways of doing this, such as "Breakity-Break-Break," or "Breaker-Broke-Broken," and the like, as you will immediately cause half of the stations listening to you to nominate you as a good station to avoid.

With so many channels in constant use, you may find that several other stations will come in at the same time you do. If your signal is choice, you'll take the honors. If the other stations are stronger than yours, you'll get *walked all over* or *stepped on* and will have to wait and try again, or seek out another channel for your world premiere.

Let's say that your signal won out (although with your luck it won't, but we'll pretend it did). Some other station will most likely come back to you with a "Pick it up, Breaker," or "Go Breaker." This transmission may come from some other operator casually listening on the channel and wishes to spend a few minutes chatting with you (or anyone). On the other hand, it may be a self-appointed "channel master" or "channel monitor," an operator who derives his jollies by "managing" (to one degree or another) that particular channel on the premise of preventing stations from walking all over each others' shouts. Some of these stations do a good job of it but far too many of them are simply unabashed channel hogs on a shabby ego trip. Best bet is to avoid a channel which sports a *monitor* until you become more familiar with the breed—in future issues S9 will have additional comments on the successes and failures of *monitors*.

(continued on page 25)



# Other CB's might have this Wireless Module concept by 1978.

## Royce has it now!

This is no ad talk about "new, improved..."

This is no "add-on" feature on the same old transceiver

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You don't have to be an engineer to figure out why. Truly wireless module assembly almost guarantees less chance of failure.

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**Royce Wireless Model 1-662.** 23 channel mobile CB channel selection with digital readout dial system + bright/dim switch. Vol-U-Mike permits receiver volume adjustment from mike. Phase Lock Loop adds reliability, accuracy. Large S/RF meter checks incoming signal strength, RF output power. Pushbutton Automatic Noise Limiter and PA/CB switches. LED Transmit Light. Continuous RF gain and fine tuning controls.

Model 1-653

Model 1-662



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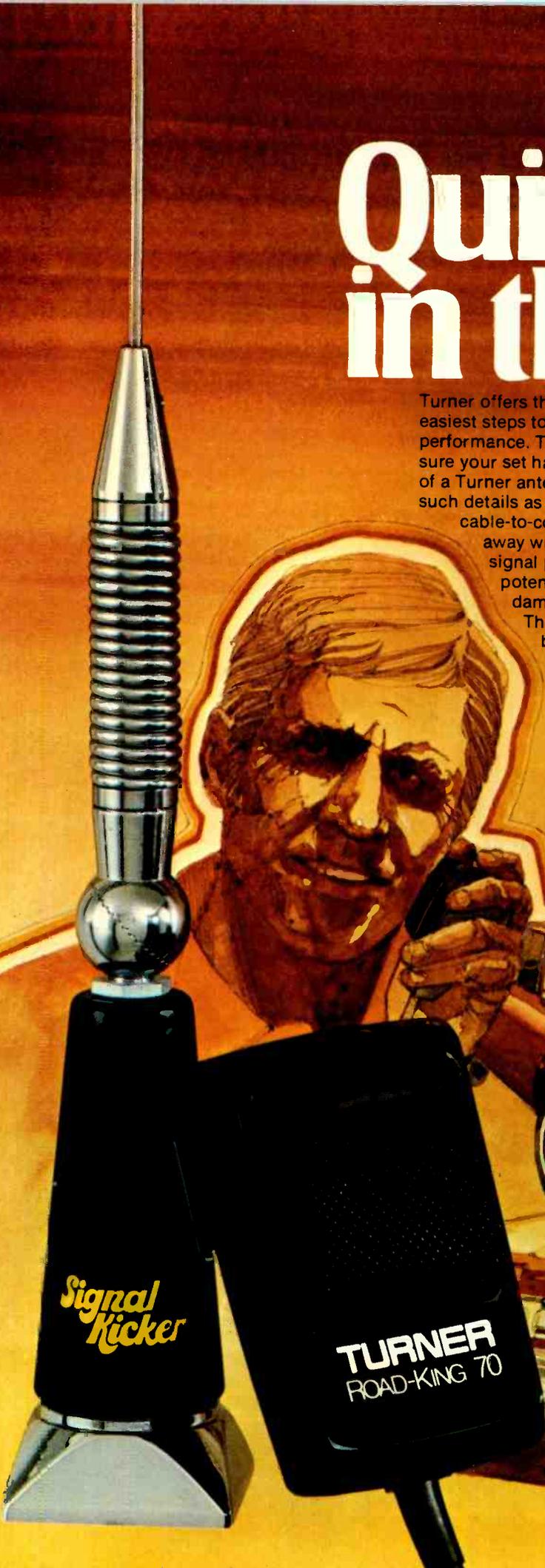
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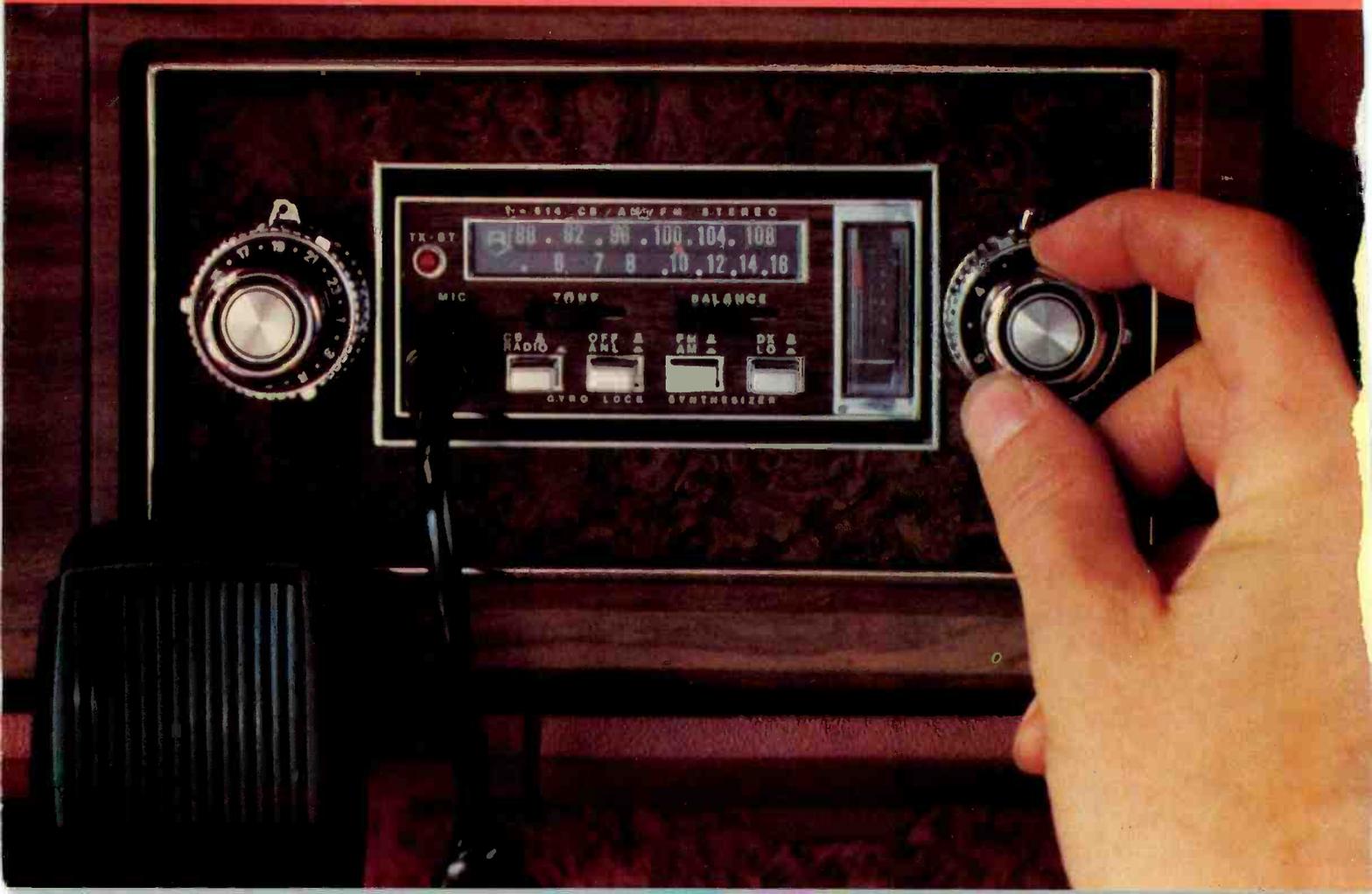
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## OPERATING YOUR CB RIG (continued)

Anyway, as you had hoped (or feared), someone has come back to you. Now it's *your* turn to take the initiative. Your moment has arrived, the *world* is listening and you're fully aware of it!

The problem is, what the hell to say! Here is a total stranger at the other end of the line, and the only thing you possibly have in common is that you both own a CB rig! Is this the basis for the development of a lifelong friendship, or are you only to be (*scoobie-doobie-doo*) strangers in the night who exchange a few meaningless pleasantries and then are fated to sink back into the limbo of static and anonymity on the channel?

According to the script you must return to the other station, stating who you are, asking the other station for identification, and then requesting a radio check. "You got the *Flying Widget* here, who've I got out there, and can you give me a radio check, goodbuddy?"

With your luck you will have hooked up with the one and only other guy in the world using the handle *Flying Widget*—and that should give you something to talk about for an hour or two; as you explain how you didn't realize that anybody else used that handle, and he explains how he has a Black Belt in one of the more gory martial arts and that he happens to be in an especially poor mood inasmuch as he has an impacted wisdom tooth and because he has become aware of a certain little weasel in town ripping off his handle!

Presuming that he doesn't lay claim to your handle, you move on to the next stage which calls for him to come back to you and ask you to "give him some numbers." That's your cue to go ahead and say "1-2-1-2-1-2." No other way of giving numbers seems acceptable; no more, no less than 3 sets of "1-2's" is in vogue, nor is counting from 1 through 5 or 10.

He will then probably return with your radio check, invariably it will be, "You're hitting me with a Nine Plus, crystal clear audio."

From that point, you're on your own—the contact ends with you thanking him profusely for the great signal checking service which he has provided, that you weren't sure if your rig was working properly, etc., etc. On the other hand, the other station may not wish to let you off the hook so readily, asking you, "How'm I making da trip ova dere? One-Two-One-Two-One-Two."

This is an encouraging sign, since you get a chance to broadcast again and say something like, "You're hittin me with a Nine plus too, crystal clear audio, goodbuddy."

All of this might even further develop into you asking him for his "20" (location)—and that gives him the opportunity to return to you and say that he lives across the street and down the block. If all goes well, you might then get into a discussion of your equipment, or something else along those lines.

Another famous ploy or rouse for getting a contact is to ask for a 10-36 (the correct time). It's about as pathetic a trick as has ever been heard on the band. It implies that there is a good possibility that you are either unable to tell time or cannot afford a wrist-watch. Moreover, after the other station comes back and says, "It's 8:27," what is there left to say? With the kind of luck you have, you'll hook up with someone else who is into asking for 10-36's and then you'll be in a fine mess!

Actually, if you just want to talk to somebody, wouldn't it be much more effective and direct to say something like, "Breaker (or *Flying Widget*) looking

for someone to talk to for a few minutes—anybody out there interested in discussing the

Dewey Decimal System?"... "about fishing?" "about stock car racing?"

or whatever your interest happens to be. Or, "Breaker looking for

some advice on pulling the crankshaft from a '71 Mercury."

Some guys simply come on the channel, announce their handle and add the words "on the side", as an

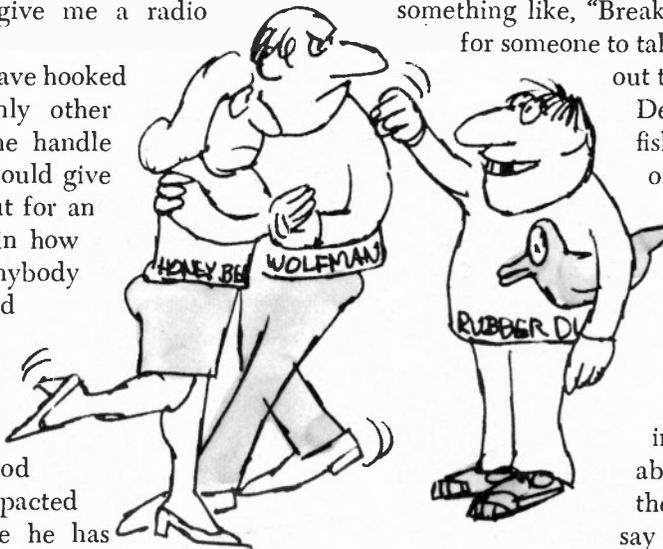
indication that they are available should anybody want to shoot the breeze, or maybe they will

say their handle and the words "contact, contact." Then there is the old Ham radio gimmick of calling

"CQ." Any of these are more direct, rewarding, interesting, and enjoyable than the tired old ploys which take up so much air time.

A commonly encountered situation is one where you are having your conversation and are really into the nitty gritty—the *meat*—of the Dewey Decimal System, and *BINGO!*, somebody else is in there bugging for a *break!* There is no FCC rule saying that you have to give anybody a whack at interrupting your conversation (although Section 95.91-b limits a station to 5-minutes on/1-minute-off, should you be paying attention to that particular rule). Many stations do, however, allow a 1 or 2 second delay between transmissions just in case there is a breaker, especially one in a mobile unit. It's good sense and courteous.

So, you did the pause bit and you heard the magic word, "Breaker." You either let the guy make his shout or you don't. If you are nowhere near the end of your conversation, good operating practice and courtesy would suggest that you stand by and let the other fellow elbow in (hopefully you will be able to recapture the channel when he is finished with it).





If you are pretty much finished with your conversation when you get the request from a *breaker*, let the breaker know you heard him (or else he will continue to keep repeating his break and walk all over you) by saying something such as, "Breaker, you're acknowledged . . ." or "Breaker, please stand by . . ." Then wrap it up with your contact and back off the channel.

Sometimes you are faced with the annoying reality of an operator breaking into your shout, and when you offer to stand by so he can do his thing, he calls *you* with, "Who am I looking at and what's your 20?" or "Who I got out there?" Only the most inconsiderate cotton picker will break into someone's shout to pull off this cheap shot at making a contact. It is obviously an operator who has absolutely nothing in the world to say and couldn't care less about the fact that you were talking to someone else. I always brush off these creeps with the request that they "take it to Channel 23." That usually does the trick.

But you really should at least see who the breaker is and what he wants, maybe he has something of value to add to your contact, or the answer to a question you've asked, or he may be a friend who has something to say to you, or just a station with an important shout to make. Give the breaker his chance.

If base stations are using a channel and someone comes in with a "mobile breaker" call—that means that the caller is in a mobile unit. It's customary to make every effort to permit mobile units to make their shouts in preference to base/base use of a frequency.

If someone calls for a "shortie break," that means that they wish to use the channel for only a few seconds and do not intend disrupting your shout with a long-winded gabbing festival of their own. Most folks really mean it when they ask for a shortie break, but some operators just use it as a trick to grab the channel away (since almost everybody will turn it

over to a shortie breaker) and then go into a ratchet jaw act. In that case, shortie break 'em right back and continue with your contact!

Hopefully any breaker you've let cut in on you will have the courtesy to make certain that *you* get the channel back to continue with your shout. Lot of times the guy who broke in on you turns it over to *another* breaker who cut in on *him*!

If there is a channel monitor on duty, you can back off the channel in the hopes that *he* will handle the other stations who may be stacking up to use the channel. There are operators who feel that once they are completing their shout that, channel monitor or not, it is *their* right to assign the next break on the channel (based upon the theory that the station operating on a channel "holds" the frequency and is therefore the only one who has the right to "pass it on" to the next "heir").

Channel monitors are prone to ignoring the FCC's 5-minutes-on/1-minute-off rule, either too caught up in their own elegance to realize that they've held the channel over the limit or else paranoid that in their absence some other blighter will usurp their power by setting up shop as monitor. All too often, when they do go 10-7 it is only after they formally "turn over" the monitors' job to their own appointed heir. On the other hand, the monitor will seldom sit by casually should a mobile user of the channel attempt to give over the channel to another breaker! That is viewed as a mutiny or insurrection of the most serious magnitude.

Should you ask for a break on a channel which is seemingly dead and you receive no reply, you may wish to try again. But don't keep asking over and over—after 2 tries you should go ahead and make your shout (if you really have one to make) without further pussyfooting.

Never deliberately start talking on top of another local station using a channel. It's not only rude, but serves no purpose in getting your shout through.

When a CB'er has called another station and gotten no reply, it is customary to announce "negative contact" in order to advise any others on the channel that they can go ahead and make their own shouts without fear of busting up your shout.

### CHUCKERS AND OTHERS OF THEIR ILK

Because anybody can buy a CB rig, it is only natural that you will find a wide spectrum of personalities occupying the channels—these would range from serious and courteous operators all the way to absolute idiots. Most of us probably lie somewhere in between these two extremes, perhaps gently fluctuating up and down the scale a little here and there as conditions permit. Unfortunately for all of us, there are some full time absolute idiots, and they seem to derive their life's pleasure in bouncing dead carriers off stations who are trying to hold a shout. In advanced stages of their problem, they may also add music to their broad-

casts. The most serious case I had ever heard was a creep who not only played music but also was a phantom disc jockey who took great pleasure in jamming a selected channel for hours at a time with his records and intros of the recording artists (eventually some fellows with a direction finding van got to him and had a little antenna party—he would have been better off had Uncle Charlie gotten to him first!)

Like the obscene telephone caller, there is no point in making any attempt at courteously asking such an operator to end his antics. The mere fact that you are reacting with annoyance to him is ecstatic fulfillment of his intent—and only encourages further jamming! I'm not a head shrink (and one would possibly disagree with me on this point) but I have found that trying to use a rational approach to a person such as this only seems to make matters worse.

Fact of the matter is that there isn't really *too* much you can do about it. If you saw a guy running down the street trying to destroy people with a weapon, you would see most people making big tracks to get out of his way. So it is with the person who is deliberately trying to jam a CB channel. The only thing you can really do is try to find another channel and get out of his way, hoping that eventually he will get caught by Uncle Charlie or the man from the funny farm, or that Zeus will send down a lightning bolt on his antenna—or all three things happening simultaneously!

### USING CODES & LINGO

Most CB'ers adopt a special on-the-air vocabulary which is incomprehensible to the outsider. This is a strange mixture of English, 10-Codes, Q-Codes, and special CB slang. Some operators are really quite adept at spewing forth such a rapid-fire stream of CB lingo that most CB'ers can't quite make all of their messages.

Books, dictionaries, magazine stories, and other summaries have been printed giving detailed instructions on how to talk this strange and exotic language, however the fact of the matter is that a great many of the terms listed are rather obscure and rarely ever encountered. One afternoon monitoring a few of the channels should give the novice operator a working knowledge of the couple of dozen terms most often used—Smokey, Tijuana Taxi, Front Door/Back Door, Clean 'n Green, Plain Wrapper, Mercy Sakes, Rocking Chair, Picture Taker, Good Buddy, Splash, Guy, For Sure, Definitely, Roger-D, 10-Roger, Good Numbers, Backing Down, Back Off, Back Out, We Down/We Gone, That's A Four, and the like. Some operators don't use any of this CB-talk anyway.

For what it's worth, Part 95 of the FCC rules says that if an operator is using 10-Codes or Q-Codes, there must be a listing of such codes in use on hand at the station. The rules also state that all communications must be in "plain language" (95.83a-10) but they do not say one way or the other if CB lingo fits into this



category—nor do they specify the yea or nay of a series of communications in "plain" foreign language, since Spanish is the popular language used in many areas where there are CB'ers under the jurisdiction of the FCC. Presumably non-English languages would be acceptable—but that seems to be just one more of the sketchy aspects of Part 95!

### THE HOME CHANNEL

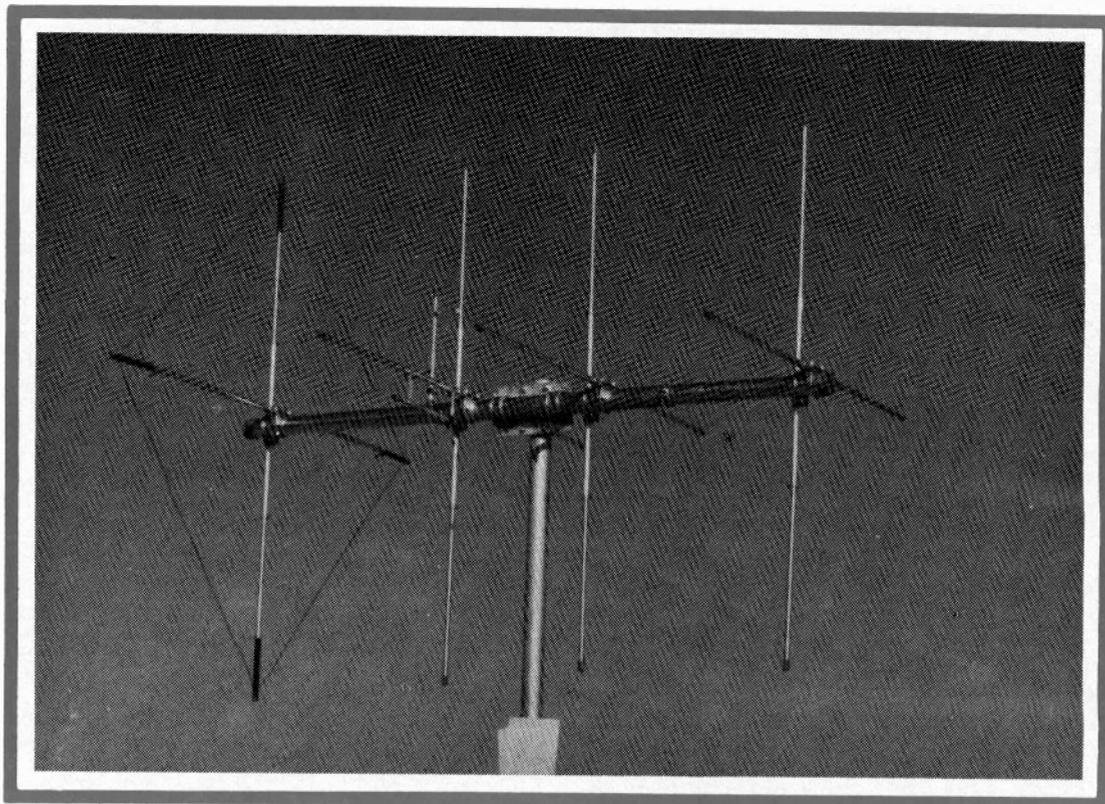
Eventually most CB'ers settle down upon on a channel which they come to consider their "home channel." That is to say, they will normally monitor this channel from their base station, and also at times when they are mobiling and their base station is in service. True, other channels may be utilized for specific purposes and shouts, but the intention is to always return to the home channel for general use.

The home channel may be one used by the majority of stations in a particular small community or even a specific neighborhood of a large city. After a while those operators who mutually share the same home channel get to know each other both on the air and in person—there are hundreds of "Channel 5," "Channel 8," and whatever, clubs made up of operators who share their home channel in the same general geographic area. What's especially nice about it is that if you are known on your home channel you've got dozens of built-in secretaries all anxious to supply you with information. If you have been off the air for a few hours, as soon as you return you are given a complete listing of those stations which have been shouting you while you were gone!

All is not roses. Those who settle into such little cliques come to feel (very often, not always) that they have some sovereign right to use the channel. "Unknown" stations attempting to make use of the channel are frequently treated with cold indifference or even outright hostility by the "regulars." Those new-

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## OPERATING YOUR CB RIG (continued)

comers who seek to establish a particular channel as their home channel may take months to be "accepted" by others on the channel—and some operators try to set up shop on 7 to 10 different "home channels" until a suitable one is found.

### MOBILE OPERATION

Other than points previously mentioned about mobile operation, I think that a few words are in order about in-transit mobile channels. In-transit mobile channels are ones normally used for 10-13's and that would include Channel 19. In addition to 19, other channels may also be designated and used for 10-13's on secondary roads and parkways. More often than not these channels seem to be 10 and/or 12.

Although most operators have gotten into the habit of coming on the air with the word "Breaker," the use of this word on an in-transit mobile channel does not imply that the transmitting station is seeking permission from a base station *channel monitor* in order to use the channel. While it would be far more expedient to say, "Flying Widget looking for a westbounder on 366," CB'ers seem to feel more at ease clinging to their "Breaker by for a westbounder . . ." even when it isn't called for. No harm done except for the fact that it has encouraged the setting up of channel monitors on in-transit channels where they are not needed, required, or desired! As long as there is someone around to utter the word "Breaker," the gods have seen fit to provide us with those who deem it their Karmic duty to acknowledge those breakers and grant them permission to use the channels.

Mobile units, having limited transmitting range and seeking primarily to talk to other mobile units in close proximity on in-transit channels, need to have channel monitors like they need an overheated engine!

While I've heard attempts at setting up the ol' channel monitor game on Channel 19, it is encountered far more often on 10-13 channels used on secondary roads which are frequented by 4-wheelers. Mostly this is because few people are willing to invite the possibility of a burly 18-wheeler CB operator from Channel 19 appearing on the front stoop of the home-20 to rear-range their face.

What's even more annoying than the attempts at monitoring the 10-13 channels are those base stations which do this in addition to the fact that they have *also* latched on to such channels as their *home channel!* Pretty sneaky; they *think* that nobody will notice that they have been clever enough to realize that if there are no other base stations on 10-13 channels so they can 1) get all their shouts through without hassle, and 2) have open season on dishing out permission for the mobiles to use the channel. While their normal home-channel ratchet jawing sometimes walks all over mobiles giving out 10-13's, luckily in-transit mobiles are located close enough to each other to override the carriers of many of these base stations. Some of these

base stations operate on the secondary 10-13 channels on the premise that they either *do not know of or recognize* any channel(s) other than 19 as being used or designated for any in-transit communications. Stupidity is a poor defense!

I *never* request permission to transmit on an in-transit 10-13 mobile channel, many other operators feel the same way. While trying to maneuver my vehicle down the road I have little patience with playing the monitor game. I will ask a break only if I am trying for a 10-13 while two other mobiles are using the channel for a long winded shout—then I might ask them if they could take it to another channel.

A "Smokey Break" means "all stations be aware that an advisory bulletin will shortly be issued concerning the location of a police vehicle." This is really a big game, an inside joke, for most CB'ers—it's fun to spot the Tijuana Taxis, although of minimal value unless you are doing something that will earn you some green-stamps. Most highway smokeys have ears today so all a Smokey Report accomplishes is letting Smokey know that you have spotted him and are duly impressed. Those who give Smokey Reports seldom give their own exact locations for fear that a Smokey with ears may ride up their tailpipe with a fistful of green-stamps! Some Smokeys don't like to be singled out of the crowd!

A going policy is that if some other station asks you for a 10-13 you are expected to announce your *approximate* location, the traffic/bear situation, and the speed at which the traffic is flowing. Many stations do not give their handles when making 10-13's, few stations will announce a speed higher than the posted limit on the road, even if the traffic is moving considerably faster (I have heard "Double nickles *plus tax*" on many occasions).

### BASE STATIONS

Other than those points already mentioned, I would also point out that base station operators generally do not announce their last names, exact addresses, or telephone numbers over the air.

Transmissions containing land line numbers invariably bring forth a score of midnight telephone calls containing heavy breathing or novel suggestions. Specific addresses are feared to summon Uncle Charlie, or burglars seeking to rip-off your *megacycle maker*. It is also felt that they might give too much information to any neighbors who might be listening to CB transmissions coming out of their TV sets, stereos, or hot combs, and wondering about their source.

Another reason that it's not too good an idea is because it might attract to your front door that other operator who you accidentally walked all over, or the boob who is in a tizzy because he thinks you've ripped off *his* handle.

### CHANNEL MONITORS

As mentioned, I will get into channel monitors at some other time. For the present, suffice it to say that

## OPERATING YOUR CB RIG *(continued)*

there is no moral, ethical, or legal reason why any station is *required* to ask for a break. Asking for a break is strictly optional—despite the fact that I have heard non-breaking stations told otherwise, sometimes by a “voice of doom” operator who comes on in a somber voice to announce “10-30” (“Does Not Conform To Regulations”). That statement is a big 10-100!

To be quite frank, if a channel is devoid of local activity for a few minutes and I have a shout to make, I go right ahead and make my shout, directly and to the point, without raising my hand to ask for permission from anybody. Nobody has ever been able to give me any valid reason why asking for permission would do anything of value except feed the ego of the channel monitor. I just pop right in there and announce, “*Stumblebum—Stumblebum! Gotcha ears on? The ol’ Tomcat callin ya!*” I will admit that this has sometimes brought forth an enraged channel monitor who would like nothing better than to do a tarantella on my skull—however I remain unruffled by all of this and I usually sit back and let the poor fellow get it all off his chest and then I continue with my shout as if nothing had happened.

Saves a lot of time too—also, note that I called the other station and used my own handle in the same transmission instead of calling myself “Breaker.” That would have forced the other station to return and ask me for my handle, dragging out the use of the channel longer than was necessary.

Hey, look, if you are using a channel where a monitor is really an asset and seeks only to keep shouts short and on the move, then by all means don’t fight it, because a good channel monitor is a fantastic asset. But if you feel that the channel monitor is a put-on, someone hogging a channel for the primary use of themselves and their buddies, then ignore him or tell him off!

### SKIP

Sometimes it comes to pass that the heavens reflect CB radio signals and we are all greeted with the miracle known far and wide as “skip.” Stations from hundreds or thousands of miles roll in like locals, many seeking to shout little ol’ *you!*

Uncle Charlie says that shooting CB skip is a *firm no-no*—although a great many operators are quite active in this phase of CB’ing. Many operators think that it’s a massive nuisance, and look forward to increasingly improving skip conditions (peaking in 1980) with nausea.

If you have decided to go that route, be aware that it isn’t allowed and that you could receive a fine or face loss of your license, keep your contacts short so that other skip shooters can have a turn, and that others wishing to use the channel for local communications are probably annoyed as hell about you. I realize that once you’ve caught skip fever it’s hard to turn down those goodbuddies from *Skipland*—especially

when the guy down the block is trying to use the channel to reach his mobile unit. Just remember that in an hour or 2, or 3, the goodbuddies of *Skipland* will be gone, but the guy down the block won’t!

### CHANNEL “22A”

There is no such thing as Channel 22A, it’s a myth which I’m hesitant to confess that I played some part in creating, having mentioned it as a gag back in early 1962 when I was Editor of the now defunct *CB Horizons Magazine*. Such a spectacular reaction greeted my tongue-in-cheek announcement about the frequency 27.235 MHz being “22A” that within a short period of time half of the industry had latched on to it and was producing CB rigs containing this mythical channel—much to the horror of Uncle Charlie. It was a stupid hoax which became a quasi-reality and which still continues to this very day, even though it is clearly *not* authorized for CB operation.

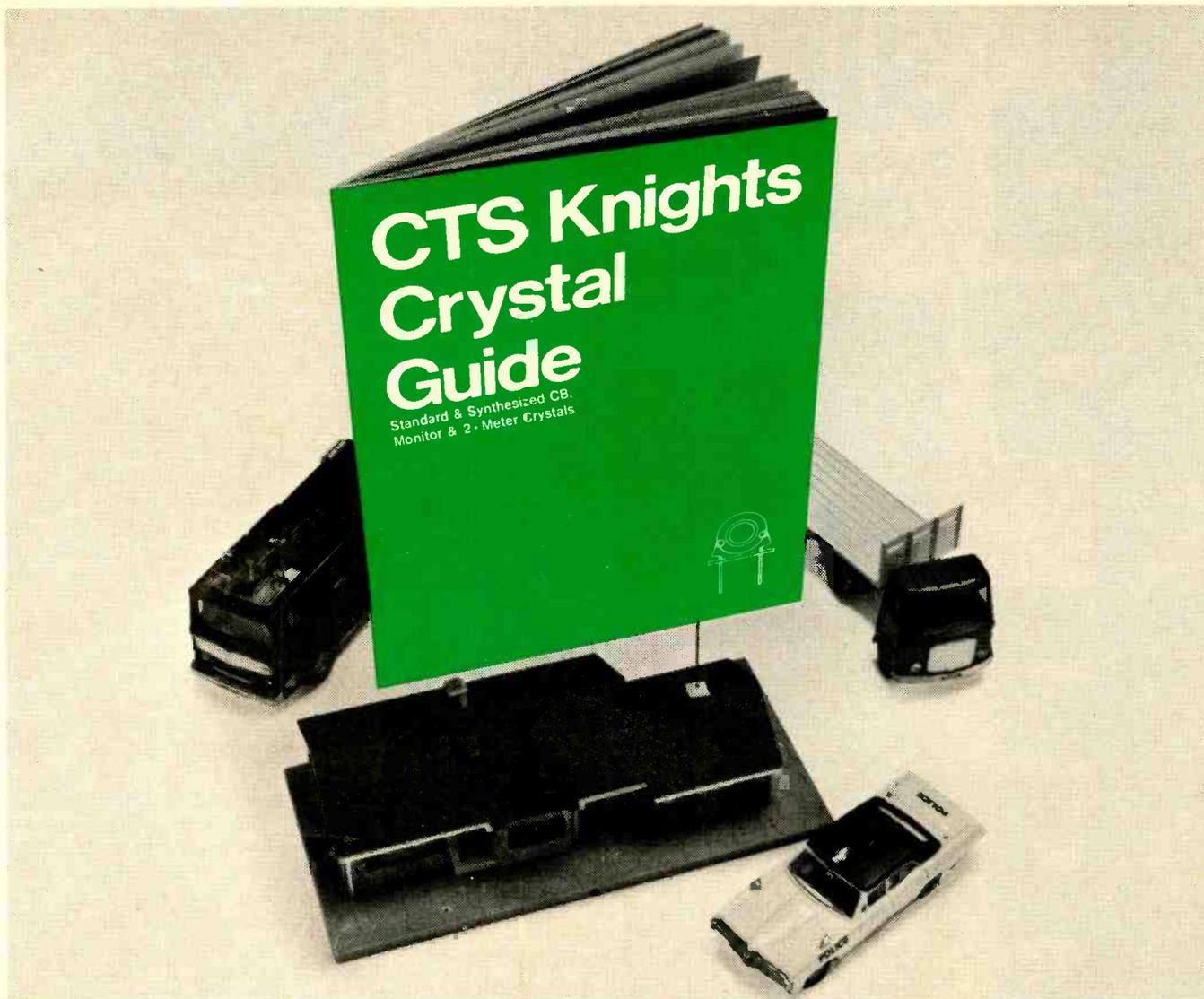
Much of the older CB gear was factory equipped for operation on this frequency, and even some of the currently produced CB units will operate on “22A” if the channel selector is carefully and slowly rocked back and forth between 22 and 23—even though there is no “22A” marked on the selector and the control will not “lock-in” on that frequency. Some operators have stock rigs *slid* in order to make operation on this frequency (and also so-called “22B,” another ersatz “CB channel”) possible.

Even though there is no such channel authorized for CB’ers, the call “Breaker By on A” is still heard throughout the land. The fact that there isn’t any such frequency doesn’t seem to bother the operators who function there, where they encounter less crowded conditions than on the authorized channels. Of course, quite a few operators actually believe that operation on 22A *is*, in fact, authorized by the FCC. Just thought I’d reinforce the news that there *is no such channel* since, according to my mail, there seems to be a lot of confusion surrounding it’s use.

### ALL IN ALL

Use common sense and courtesy on the channels—sometimes it’s not easy. If you think about what you are doing instead of blindly following the bad operating practices of many operators you’ll hear—just because you don’t know any better and/or your inexperience leads you to believe that since another station is using a particular operating technique, then *obviously* “that’s the way it’s done on CB.” *Wrongo!!* For all you know the guy you’re copying went on the air an hour before you did, and he learned from an operator that hit the mike button for the first time only an hour before *that!*

Don’t be short changed on your investment in CB gear—get the most from it. And that requires more than peaking the antenna for lowest SWR and running a power mike—a good operator is *the* most important component of a CB station.



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For just a dollar, get this brand new CTS Knights Crystal Guide for 1976. Completely updated, expanded and more usable than ever, this handy new manual now has more than 90 pages of valuable information, including references to most of today's CB transceivers.

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CTS' thoroughness goes right through its entire product line. CTS crystals are made to give the best, most stable frequency... for clean, clear reception always.

Take for example CTS' gold frequency calibration. People who know crystals know that's what gives the highest possible stability. And CTS military-grade quality is more assurance of getting best possible performance.

Your CTS dealer or distributor is equipped to give full service and prompt delivery. You'll get just the crystal you need, when you need it.

Mail coupon with \$1 for your copy of the all new *CTS Knights Crystal Guide*. And you'll find out how completely CTS can serve your crystal needs.

### CTS KNIGHTS, INC.

SUBSIDIARY OF CTS CORP., ELKHART, IND.

402 REIMANN AVE., SANDWICH, IL 60548, PHONE: (815) 786-8411



CTS Knights, Inc.		
402 Reimann Ave. • Sandwich, IL 60548		
I enclose \$1. Please send my copy of the new 1976 Knights Crystal Guide.		
NAME _____		
ADDRESS _____		
CITY _____	STATE _____	ZIP _____

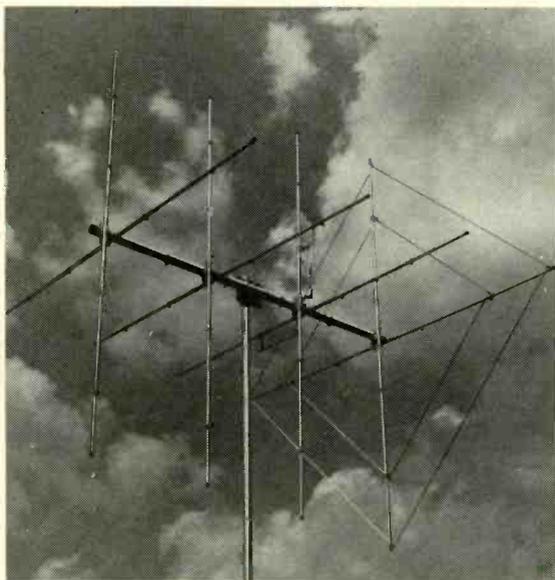
# COMING

# SUPERFIRE

gives

## CHANNEL COMMAND

at your fingertips



**EXTRACT YOUR SIGNAL** from the crowded confusion of today's CB channels.

Superfire's engineering features horizontal, vertical or axial polarization and a big 12.5 dB gain to beam your signal through, under all conditions. Exclusive twin loop reflector reduces "back door" interference up to 30 dB for higher quality communications.

Made in USA from high quality seamless aluminum tubing. Complete and easy to install at your base.

- 8 Element Superfire beam CFB-8
- 3 Position Coax Switch CBA-2

**PLUS** these exciting Power base Beams

- 3 Element 8dB Gain CB-11
- 4 Element 9.5dB Gain CB-114
- 5 Element 10.5dB Gain CB-115

See your local dealer today! . . . or write for free catalog C-9 listing all mobile and base antennas.



**cushcraft**  
CORPORATION

621 HAYWARD ST., MANCHESTER, N. H. 03103

## COMING EVENTS!

If you wish your Jamboree or Coffee Break listed in this column, the information must be sent to S9 at least 4 months in advance.

### SEPTEMBER

*Arkansas City, KS 3rd Annual CB Jamboree*, September 4th-5th. Sponsored by Cherokee Plains CB Club at Agri Bldg. at Washington and 6th Street. For information contact CB Jamboree, PO Box 79, Arkansas City, KS 67005. 316-442-9674.

*Hi-way Coffee Break*, 6 PM September 3rd, around the clock to 6 PM September 6th. Sponsored by Roanoke Valley CB Club. Food and drinks will be sold to cars and trucks stopping at Exit 40, Interstate 81 South in Roanoke Valley, VA.

*Jamboree*, Sept. 4 & 5, 45th Street and River Rd., Columbus, GA. Sponsored by Chattahoochee Chatters CB Radio Club. For more information contact P.O. Box 6221, Columbus, GA 31907.

*1976 2nd Jamboree*, Sept. 4th, 5th, 6th, Jensen's Park, 7570 Crow Canyon Road, Castro Valley, CA. For the benefit of Muscular Distrophy. For information, call Hughes CB Radios, 357-4226.

*12th Annual Jamboree-Camporee*, September 11th-12th, Lower Valley CB Radio Club, Inc. Held at Ponderosa Park, Rt. 161, East Lyme, CT. Contact Walt Corey, PO Box 177, Waterford, CT 06385.

*11th Jamboree*, Sept. 12, Point Breeze, Webster, MA. Just off Route 193. Sponsored by The Southern New England Citizens Radio Assoc. For more information contact, Bess Stevens, A. F. Putnam Road, Charlton, MA 01507.

*CB Break*, Sept. 12th, Desert Inn, 30-80 Whitestone Pkwy. (one block from Adventurer's Inn). For further information contact the American CB Radio Club, Inc., PO Box 321, Bronx, NY 10476.

*11th Annual Jamboree*, September 18 & 19, held at the Lorain County Fairgrounds, Rt. 18 West of Rt. 58, Wellington, OH. For more information contact, Lorain County CB's Inc., P.O. Box 634, Elvria, OH 44035.

*Jamboree*, September 19, held at the KC Hall, New Athens, IL. For more information contact, Carol Schiff, Southern Illinois Hustlers, 509 S. Grace Marissa, IL 62257.

2nd Annual Coffee Break, September 19th, Recreation Hall, West Leechburg, PA. For information, contact Kiski Valley CBers, Inc., PO Box 74, Park Station, Vandergrift, PA 15690 c/o Publicity Comm., Alice Mae Frayer, 412-568-3395.

Butler CB Ranger's 10th Annual Coffee Break, Sept. 26, Farm Show Grounds, Rt. 68 S., 5 miles South of Butler. For more information contact Ken Craig Sr., RD #1, Pinehurst Rd., Butler, PA 16001. Phone: 283-2969.

## OCTOBER

Annual Coffee Break, Oct. 2 & 3, VFW Hall, Vandalia, MO. Sponsored by Prairie Rangers CB Club. For more information contact Marvin Dillon, 209 W. Arlington, Vandalia, MO 63382.

American CB Radio Club Jamboree, October 3rd, Desert Inn, 30-80 White-stone Pkwy (one block from Adventurer's Inn). For information contact American CB Radio Club, Inc., PO Box 321, Bronx, NY 10469.

Apple Creek CB Radio Club Jamboree, October 3rd, Sangamon County Fairgrounds, S.E. Gate, New Berlin IL. For information contact Blaine Williams: 435-9246 or Jane Suttles: 435-5491.

4th Annual Coffee Break, October 3rd, Community Bldg, Transfer, PA. Sponsored by Tri-County REACT. For information contact Darrell Lewis, 1545 Cranbrook Drive, Sharon, PA 16146. 412-347-7500.

5th Annual Coffee Break, Oct. 10, American Legion Post Home, Rt. 50, Cambridge, MD. Sponsored by Chop-tank REACT Team #2189. For more information contact Mr. Levin Niblett, Sr., 415 Kent St., Cambridge, MD 21613.

Bi-Centennial CB Jamboree, October 10th, Owensboro Sportcenter. Sponsored by Kentucky-Indiana Citizen Band Radio Club. For information, write to them at PO Box 145, Owensboro, KY 42301.

Super Bicentennial CB Jamboree, October 17, Tappan Zee Inn, Exit 11, New York Thruway, Nyack, NY. For information please contact American CB Radio Club, Inc., PO Box 321, Bronx, NY 10469.

Jamboree, Oct. 22-24, Charlotte Motor Speedway "World 600". Sponsored by Concord Citizens Radio Club Inc. For more information contact Dottie Neal, 127 Crescent St., Kannapolis, NC 28081.

Bicentennial Coffee Break, Oct. 24, Guernsey Sales Pavilion, RT 30 East & RT 896, 6 miles east of Lancaster, PA. Sponsored by Lancaster County React Team Inc. For more information contact REACT, P. O. Box 1033, Lancaster, PA 17604.

(continued on page 166)

# big buster mobile antennas

## TRUCK BUSTER

Fiberglass co-phased mobile whips with nickel plated, west coast style, jiffy mirror mounts. These are complete package systems including antennas, mounts and co-phase harness with connectors all preassembled.

CM-423 co-phased mirror mounts with 48" TOP BUSTER WHIPS

CM-424 co-phased mirror mounts with 48" TUNABLE WHIP

## UNI BUSTER

Our 48" Fiberglass Top Buster mobile whip with 10' cable and jiffy mirror mount.

CM-405

## ADJUSTER BUSTER

Our 48" Fiberglass tunable tip mobile whip with 10' cable and jiffy mirror mount.

CM-406

## TOP BUSTER

Our 48" flexible solid fiberglass shaft top load. It has a high Q coil individually tuned on antenna for peak performance.

CM-401 Top Buster whip

## TOP BUSTER TUNABLE

Our solid fiberglass shaft antenna with sealed radiator. It is flexible to prevent breakage, resists corrosion and gives top performance. Stainless steel tuning tip, only 48" high.

CM-402 Top Buster tunable whip

## GO BIG BUSTER

Whatever your vehicle — truck, auto, boat, motor home or RV, there is a Big Buster Mobile for you. They have "Big Ears and Lots of Muscle" to extend the range of your communications.

SEE YOUR LOCAL DEALER  
TODAY!



**cushcraft**  
CORPORATION

621 HAYWARD ST., MANCHESTER, N.H. 03103



# ON THE COUNTERS



## NEW RIG

Arthur Fulmer Communications, Memphis, Tenn., has introduced a new mobile CB transceiver to its line of Fulcomm personal communications equipment.

Fulcom AM Transceiver, Model 15-2302, operates on 23 AM channels with 4 watts RF output power. It features illuminated S/RF power meter, squelch control, transmit indicator, built-in speaker, external speaker jack, public address capability and 90-day warranty. Suggested list price is \$145.50.

CB license application form, installation instructions and hardware are included.

### Specifications:

Receiver:	Sensitivity	0.7 uv for 10dB S+N/N ratio
(Dual conversion)	Selectivity	6 KHz @ -6dB 20 KHz @ -50dB
	Audio power out	3 watts @ 8 ohms
Transmitter:	RF power in	5 watts to final stage
	RF power out	4 watts
	Modulation %	100%
	Frequency stability	Less than .005%
General:	Dimensions	6 1/2" W X 2 1/4" H X 7 1/4" D

Power requirements 13.8 volts DC, positive or negative ground

For more information, write Arthur Fulmer Communications, P.O. Box 177, Memphis, Tenn. 38101.



## PORTABLE UNITS

Trans-Comm™ Manufacturing Company, Inc., has introduced a new product concept into the portable personal communications and entertainment market.

The concept is a single portable carrying case unit incorporating a Citizens Band transceiver, AM/FM stereo radio, and stereo tape player, or any combination.

The uniqueness of the concept allows the product to be easily carried and used virtually anywhere—in cars, trucks, campers, recreational vehicles, boats, homes and motels. Its portability allows it to be moved from vehicle to vehicle in seconds, and can be stored in the home or vehicle trunk. Because the entire unit and antenna can be easily removed and locked in the trunk or carried inside, theft can be eliminated.

Trans-Comm™ has two product lines of these portable radio units—King of the Road™, and Trans-Sportable™.

Every radio system in both product lines is enclosed in a crush-proof copolymer case that is also rust proof, spark proof and unaffected by oil or gasoline. The case is roomy enough to store the CB antenna, microphone and other accessories.

Each Trans-Comm™ unit has an exclusive patented polarity inverter—a specially-designed device that makes

(continued)



# two points of view...

Preferences in citizens band radios are as dramatically different as this Brownie AM mobile and Golden Eagle Mark III SSB/AM base station. Many choose the tough and rugged Brownie for family security on the highway — others strive for the ultimate in their CB life — a Golden Eagle proudly displayed and operated in their living room! Whether you're traveling on the road or CBing at home — rely on Browning to help you satisfy your specific ideas of what CB is all about!

Day after day since the very birth of the citizens band industry, Browning performance and quality have been tested and proven by knowledgeable CBers throughout the world. Be guided by their unanimous point of view . . . **the No. 1 name in citizens band is Browning!**

Plan now to see Browning's entire line of products at your nearby specialty communications store.

# browning®

browning laboratories, incorporated, laconia, new hampshire 03246

## ON THE COUNTERS *(continued)*

a wrong hook-up to a 12-volt power source virtually impossible. By just attaching one lead to hot wire, and the other to ground, the polarity is automatically correct. An optional cigarette lighter adapter makes it easy to operate all units from any 12-volt source without hot leads. And, an optional AC converter allows the unit to operate from any 110-volt outlet.

King of the Road™ and TransSportable™ radio units come with famous brand components such as Motorola for AM/FM radios and stereo tape players, and Royce for 23-channel CB transceivers.

King of the Road™ is a line of six units designed especially for the over-the-road professional trucker. The units are:

Model 1100 "Lil' Buddy" with AM push button radio and two large speakers.

Model 1300 "Two for the Road" with AM/FM solid state push button radio, 8-track stereo tape player with two large speakers.

Model 1400 "Swamper" that contains the Royce 23-channel CB transceiver with two large speakers.

Model 1500 "Gear Jammer" with stereo 8-track tape player plus the famous Royce full range 23-channel CB transceiver and three large speakers.

Model 1600 "Diesel Daddy" includes AM/FM push button radio and the great Royce 23-channel CB transceiver with three speakers.

Model 1700 "Big Rig" comes complete with AM/FM solid-state radio, stereo 8-track tape player, and the Royce 23-channel CB transceiver.

The TransSportable™, a 15-unit line, in several attractive colors, is designed more for the car, camper, boat, home, motel and other recreational uses. The units are: Model 2401 with Deluxe CB 23-channel transceiver; Model 2501 with 23-channel transceiver and 8-track stereo tape player; Model 2601 with CB 23-channel transceiver and AM/FM FM stereo radio and 8-track stereo player; Model 2701 23-channel Deluxe transceiver, 8-track stereo tape player with AM/FM FM stereo radio; Model 2801 with 23-channel Deluxe transceiver and AM/FM radio; and Model 2720 contains a Deluxe 23-channel transceiver with AM/FM FM stereo cassette player.

An all new marine line containing five models with combinations of VHF/FM radiotelephone and AM/FM FM stereo radio and 8-track stereo player and/or cassette with a new unique idea of a VHF marine band radiotelephone with a programmable 10-channel scanner as pictured in Model 2940.

Trans-Comm's™ specially-designed CB antenna has fast-hold clips that attach to any west coast mirror, auto rain gutter, luggage rack, etc. And the antenna just plugs into the system. The fiberglass CB clip-on antenna has a special copper coil that makes it electrically equal to a 102' whip antenna. The built-in telescoping AM/FM antenna folds away for convenience and protection.

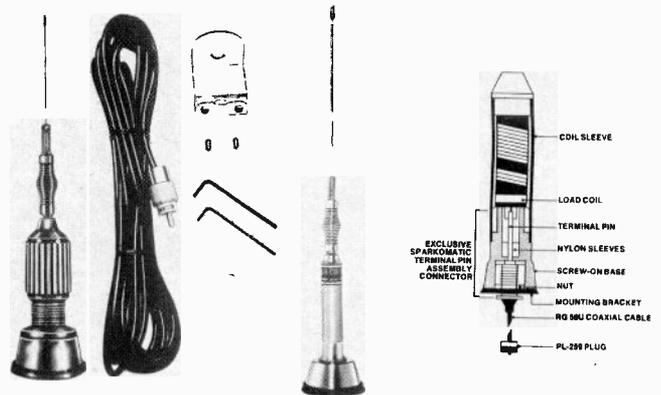
For further information, contact Mike Lohner, Trans-Comm™ Manufacturing Company, Inc., 8885 Bond Street, Overland Park, Kansas 66214.

## NEW CB TRANSCEIVER

Sparkomatic Corporation is now marketing a new, moderately priced distinctively designed Citizens Band 23 channel transceiver with many features found only on more costly units.

The Sparkomatic model CB-1123 incorporates an easy-to-read illuminated channel selector, transmit modulation light, volume control/on-off power switch, illuminated signal strength and radio frequency output meter, variable squelch control, automatic noise limiter switch and chrome mounting bracket and hardware.

Lightweight and compact—measuring just 2 inches high x 5 $\frac{1}{2}$ " wide x 6 $\frac{1}{2}$ " deep—the CB 1123 also includes a public address switch, jacks for P.A. speaker and external speaker and a dynamic screw down type detachable microphone.



In addition to Citizens Band transceivers, the Sparkomatic CB line includes a full range of mobile antennas, a base station antenna, external speakers, indoor/outdoor fully weatherproofed P.A. speakers and CB converters.

Headquarters of Sparkomatic Corporation are in Milford, Pennsylvania.

## NEW TRANSCEIVER

SBE's one-of-a-kind Touch/Com is a unique 23-channel transceiver in which controls for all key functions usually found on the front-panel are brought out on the microphone.

Complete CB operation is now possible entirely from the microphone. Two up/down buttons on the top of the microphone control channel changing—one for advancing to higher channels, and the other for reversing to lower channels. By momentarily pressing the appropriate button, the set will "step" to each channel, up or down. By depressing the button and holding it in, the channels will continue to change rapidly. The channel readouts on the microphone are large base-station sized red LED's, polarized for easy

*(continued)*

Now from M-Tron...

# A Security Blanket for Crystal Buyers

**RELAX** M-Tron has a plan that can make crystals the least of your worries. Our *Security Blanket* program is ready to give you:

- GUARANTEED PRICE**—a highly competitive unit cost that you can count on for the length of your “blanket” plan.
- GUARANTEED DELIVERY** of every scanner crystal you order in the shortest possible time.
- GUARANTEED QUALITY**—all M-Tron crystals carry our famous “life of the set” warranty.



Get the protection of the M-Tron Security Blanket. Contact your M-Tron Representative or call 605-665-9321 today!

 **INDUSTRIES, INC.**

P. O. Box 630, Yankton, South Dakota 57078



# Mobile Antennas

## That Deliver The Performance You Paid For!



When we build our antennas, we build them with one thing in mind— to provide the best possible performance. This objective is our guideline along every step of the way— from selection of materials to final assembly. And, we don't sacrifice appearance to get it either. Our antennas and mounts are designed to enhance your car, truck or camper.

There are many adjectives that could be used to describe our antennas: quality, reliability, dependability, variety. But, after all is said and done, you expect one thing: performance.

GC antennas deliver that performance. So, when you're ready to buy your next antenna, look for the GC brand at your favorite CB dealer.



**The Interceptor**

**The Grabber**

**The Marauder**

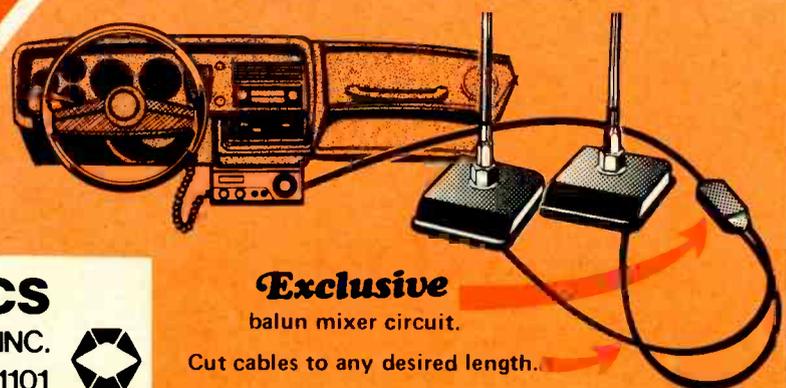
- Base loaded
- Jet black & chrome base
- Simple, snap-in mounting
- Comes with or without shock spring
- Includes 16' Coax Cable
- CAT. NO. 18-2025
- Top loaded
- Gain: 2 dB, SWR 1.1 to 1 normal
- Completely flexible 48" fiberglass whip
- Std. 3/8" -24 mounting stud
- Tunable loading coil
- CAT. NO. 18-2000
- Center loaded
- Weather and rust resistant
- Flexible 50" stainless steel whip
- Std 3/8" -24 mounting stud
- Heavy duty, tunable loading coil
- CAT. NO. 18-2040



## Twin Antenna Performance With Single Antenna Ease!

EXPAND YOUR COMMUNICATION RANGE BY USING TWIN GC ANTENNAS.

All models antennas available in twin kits that feature exclusive balun mixer circuit that enables you to install co-phased antennas without the hassle of two cables cut to precisely the same length. Cut either cable to any length and still be assured of impedance match.



**Exclusive**  
balun mixer circuit.  
Cut cables to any desired length.



**GC ELECTRONICS**  
DIVISION OF HYDROMETALS, INC.  
ROCKFORD, ILLINOIS U.S.A. 61101





daylight viewing. Full range volume and squelch thumbwheel controls, both fully adjustable, are located on the right side of the microphone. A push-to-talk switch is located on the left.

The Touch/Com, engineered with the famous SBE "Formula D" circuitry, includes phase-lock-loop with digital synthesis for 23-channel precise-frequency operation. The dual-conversion receiver contains an extremely selective 4-pole ceramic I.F. filter for sharp selectivity. Field Effect Transistors in the receiver RF section lead to optimum sensitivity with a low noise ratio. Receiver automatic gain control yields smooth un-distorted audio under varying signal conditions. Audio tone is adjustable.

The transmitter features the maximum legal output power with peak modulation, derived from a built-in speech processor.

The transceiver is equipped with front panel controls for audio tone, public address volume, local/distance switch control, delta tune, noise limiter, "on air" transmit light, and a large illuminated combination power output/S meter.

The receiver section utilizes dual conversion which enhances selectivity and decreases adjacent channel interference.

The unit operates on either 13.8 volts direct current positive or negative ground systems.

Priced at \$289.95, the SBE "Touch/Com" (identified as Model No. SBE-32CB) comes with the full-control microphone, mounting bracket, connecting cables, and PA speaker plug.

Further information is available by writing SBE, Inc., Dept. P, 220 Airport Blvd., Watsonville, CA 95076.

### SIGNAL 23

The Finney Company's SIGNAL 23 is a high performance Citizen's Band converter, designed for automobile installation. The SIGNAL 23 converts *all* 23 CB channels to the standard AM broadcast frequencies, thus making any auto radio a CB receiver. The con-



verter directly utilizes the auto radio's antenna—whether it be a whip mount or windshield type—thus, eliminating the need for a special antenna.

A tunable gain control is provided to help eliminate interfering signals and ignition noise. The push-push on/off switch in the "off" position *totally* disables the SIGNAL 23, thus the unit will have *no effect* on normal AM/FM reception. An L.E.D. (Light Emitting Diode) indicator glows brightly in the on position.

The electronic circuit has been carefully designed with special emphasis on stability, sensitivity, and clear signal reception. A crystal controlled oscillator assures the repeatability of being able to come back to the same channel, as selected by the push buttons on the auto radio—without retuning. The SIGNAL 23 incorporates an R.F. stage to greatly enhance image rejection and uses an F.E.T. transistor to provide an outstanding sensitivity of less than 1 microvolt at 10 dB S + N/N.

A dual gate MOS FET mixer provides freedom from cross modulation, thus eliminating strong signal interference.

The all metal housing measures a very compact 4 $\frac{3}{8}$ " W x 1 $\frac{1}{8}$ " H x 3 $\frac{1}{4}$ " D, thus making the SIGNAL 23 ideal for permanent dash mount. A universal mounting bracket facilitates mounting under the dash in any convenient location, and the interconnecting cables permit installation of the unit up to two feet from the auto radio.

Designed for use with a 12 volt negative ground system, the SIGNAL 23 takes only a few minutes to install and comes complete with all hardware, instructions, and a limited consumer warranty. The SIGNAL 23 has a list price of \$38.00.

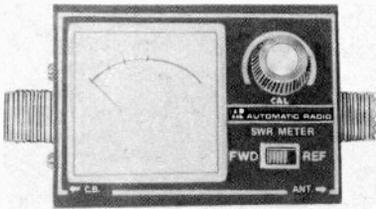
Contact: The Finney Co., 34 W. Interstate, Bedford, OH 44146.

### AUTOMATIC RADIO INTRODUCES "MINI" PORTABLE SWR METER— MODEL NO. CAM-1100

Automatic Radio, leader in automotive electronics, announces the introduction of its new portable SWR meter, the latest addition to their line of CB accessories. Model CAM-1100 is a compact unit which measures the ratio of reflected power to transmitted power for an accurate check on CB antenna installations. The unit is a necessity for proper trimming of CB antennas

(continued)

**ON THE COUNTERS** (continued)



**Model CAM-1100**  
Compact SWR meter

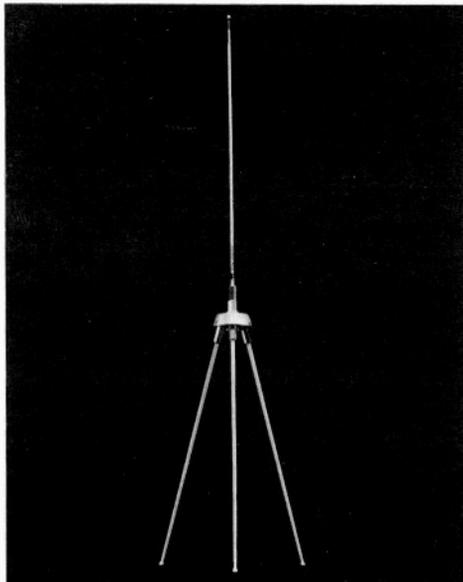


**Model PAM-2107**  
Pocket field strength meter

and has a range of SWR 1:1 to 1:3,  $\pm 5\%$  accuracy, with 52 ohm impedance. Suggested retail price is \$16.95.

Automatic Radio also announces the introduction of a unique pocket field strength meter for CB units. Model PAM-2107 is a handy "pen-light" sized instrument, helpful for on-the-spot transmitter/antenna checks. It measures relative radiated output power of CB units and is especially useful in checking the radiation pattern of antennas. The 18" telescoping antenna has a swivel base for easy reading. The unit has an attractive chrome plated body with pocket clip. Suggested retail price is \$14.95.

Contact them at 2 Main St., Melrose, MA 02176.



**PORTABLE BASE STATION ANTENNA**

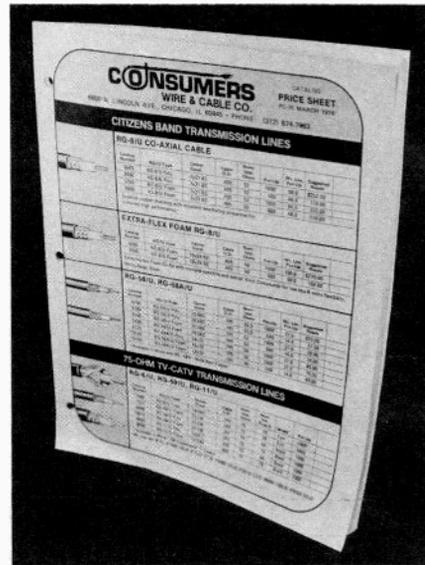
Pacer's newest CB antenna entry, the AntennaMent, has been eagerly received by distributors and retailers. The AntennaMent is the first indoor *gain* antenna ever offered.

Pacer engineers have incorporated, in the AntennaMent, the unique Pacer features of top coil loading, fiberglass construction and "finger-tip" tuning. All to make the AntennaMent truly portable.

Only 64" tall, the AntennaMent can fit just about anywhere indoors. And its rugged construction makes it ideal for outdoor use too: car, truck, boat, RV or picnic table.

The Pacer AntennaMent is manufactured in the U.S. and is a product of Progress, Incorporated, a Miami based CB antenna and accessory manufacturer.

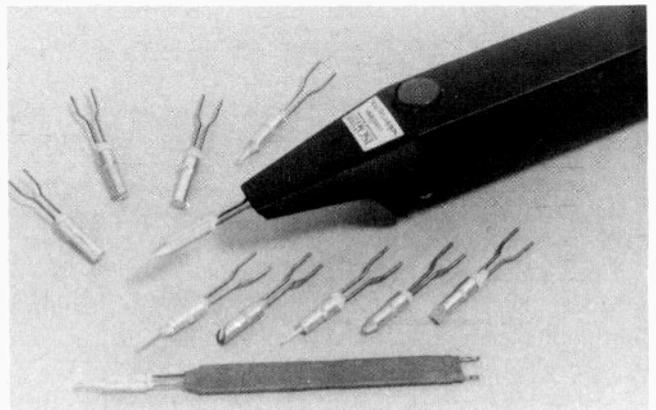
Contact: Barbara Eroncig, Progress, Inc., 3321 NW 79th Avenue, Miami, Florida 33122. 305-592-8242.



**CATALOG ISSUED BY  
CONSUMER WIRE & CABLE**

Consumers Wire & Cable Company has released its first illustrated catalog. The Chicago-based company's product line includes citizens band transmission lines, 75 ohm TV-CATV transmission lines, rotor cables, speaker cables, foam and twin lead TV transmission lines, Plasti-Coated and Super-Weave steel stranded guy wire, and ground rods. In addition, the national firm offers RG-8/U foam and RG-58/U foam packaged CB connector cables.

Copies of the catalog are available upon written request to Consumers Wire & Cable Co., 6600 North Lincoln Avenue, Chicago, Illinois 60645.



**SOLDERING TIPS**

Six new soldering tips just introduced by the Wahl Clipper Corporation for its "Iso-Tip" Cordless Soldering Iron brings the total choice to 11, the largest tip variety in cordless soldering. Wahl Clipper, which originally developed practical cordless soldering, also

(continued)

# The Big Stick Antenna.

## High, wide- ranging and handsome.

This half-wave, omni-directional fiberglass beauty punches out the big signal from 60 feet up to outperform all other base station antennas.

The Big Stick Antenna illuminates 12 times more capture area at 60 feet, sending the energy towards the horizon in a unique low angle radiation pattern.

Distributed dielectric loading, achieved by Shakespeare's exclusive fiberglass construction, enables the Big Stick to outrange taller, heavier metal antennas under all conditions.

Move up to the Big Stick. Pretuned. No ground radials. Works anywhere with any length cable. Also available in a lower cost model, Big Stick II. Shakespeare Antenna Group, P.O. Box 246, Columbia, South Carolina 29202.

Style 176

Shakespeare  
The Royal Line Of Fiberglass Antenna  
in Canada/Len Finkler, Ltd.,  
25 Toro Road, Downsview, Ontario

*Shakespeare*

THE ROYAL LINE OF FIBERGLASS ANTENNA

## ON THE COUNTERS *(continued)*

offers many options in accessories and charging units, including an exclusive Quick Charge model.

The new tips are: #7569 V Tip to send heat under a circuit board wire; #7572 Blunt Tip and #7577 Chisel Tip for general heating applications; #7573 Tinning Tip, grooved to coat wire surfaces; #7574 Concave Centering Tip for work on the reverse side of the board; and #7596 Knife Tip for stripping insulation without marring wire. The Knife Tip is also handy for cutting nylon rope since it seals as it cuts, preventing unraveling.

The six new tips join a line which already includes the #7566 Micro-Tip, #7545 Fine Tip, #7535 Regular Tip, #7546 Heavy Duty Tip, and #7556 Tuner Extension Tip.

More information is available from Noel Wallen at the Wahl Clipper Corporation, Sterling, Illinois 61081.

### "THE CHAMP"

For 15 years Anixter-Mark's top loaded fiberglass "Heliwhip" antenna has been a leader in the field. Anixter-Mark presents "The Champ" . . . featuring a sturdy base spring and heavy chrome plated metal mast to assure protection and long life. Even the adjustable sleeve is sealed to prevent moisture damage.

"The Champ" is top loaded with the loading coil wound on a high quality fiberglass base for outstanding performance. But "The Champ" offers even more—full adjustment for top performance on all channels, even new channels as they are released.

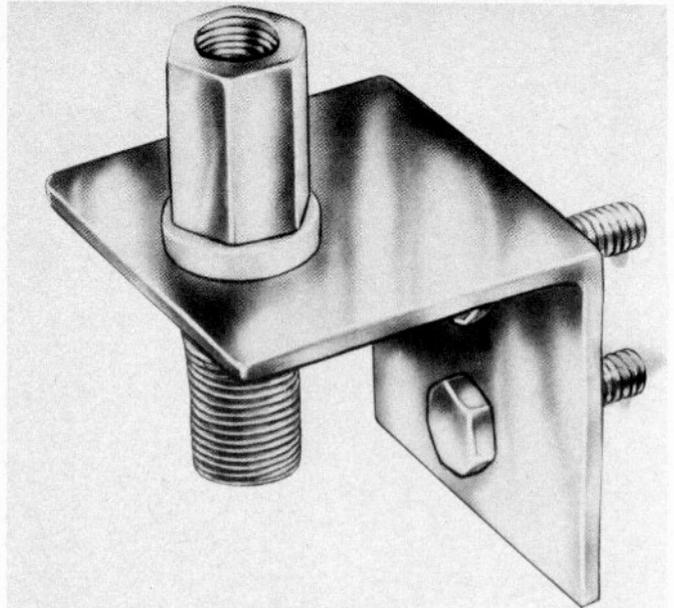
"The Champ" also features a deluxe mount with high quality coaxial cable designed for easy snap-on installation which includes a genuine PL-259 coaxial connector to insure long life. It mounts easily to any trunk lip with no drilling needed.

Specifications: Height 54" maximum; Tuning range, 26.9-27.5 MHz (50 plus channels).

### NEW ACCESSORIES

Valor Enterprises has recently added to their line of CB accessories, the 102AD Side Mount. The 102AD Side Mount is ideal for use in customizing your recreational vehicle (RV), camper or van. The 102AD mounts on any flat vertical surface and accepts the standard 3/4"-24 antenna.

It is also supplied with back plate, bolts, nuts, washers and coaxial adaptors for attaching the popular PL-259 Connector. This mount is ideal for either single phasing or co-phasing of your CB system. The mount is of a high luster, corrosion resistant material that will not tarnish with weather conditions or long usage.



In addition to the 102AD Side Mount, Valor offers a complete line of Black Magic antenna systems and the "Valor Professional" tuneable tip antennas which are ideal for customized vehicles.

Valor also offers the Mighty Three Crime Fighters series which includes the 103 Quick Antenna Disconnect for one-hand removal of your antenna; the 120 Hump Mount which enables you to remove your CB and AM-FM radio, tape player, etc.; and also, the Nailer alarm system which makes your CB antenna and radio virtually untouchable by any unauthorized person trying to remove it.

For more information on the 102AD Side Mount and the Mighty Three Crime Fighters, contact Valor Enterprises, Inc., Dept. 114A, 185 W. Hamilton St., West Milton, Ohio 45383.



### PORTABLE MOUNT

SMA Products, Inc. of Springfield, Illinois announced the development and introduction of its new portable CB mounting unit—the Model 302 Port-A-Mount de-  
*(continued)*

# handic CB

TALKS BETTER...LISTENS BETTER...and it's QUIETER



**SPECIAL  
FREE OFFER.**  
**SAVE \$20<sup>00</sup>**  
approx.

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**SPECIAL DESIGN**  
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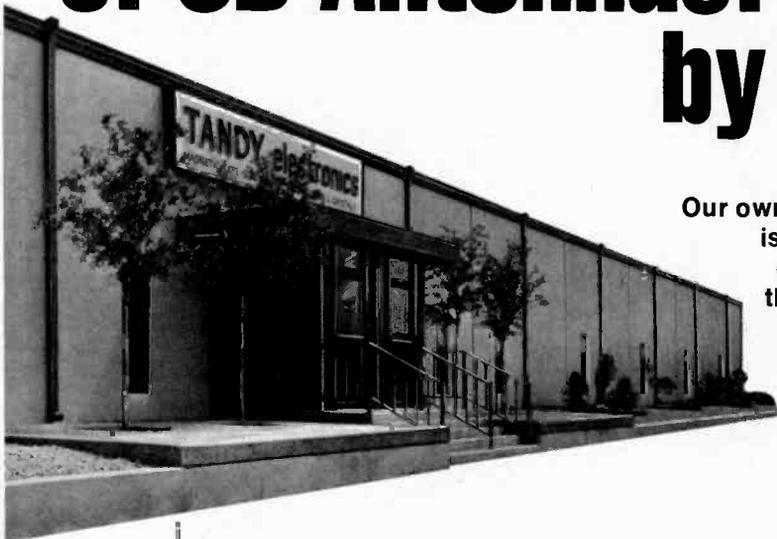
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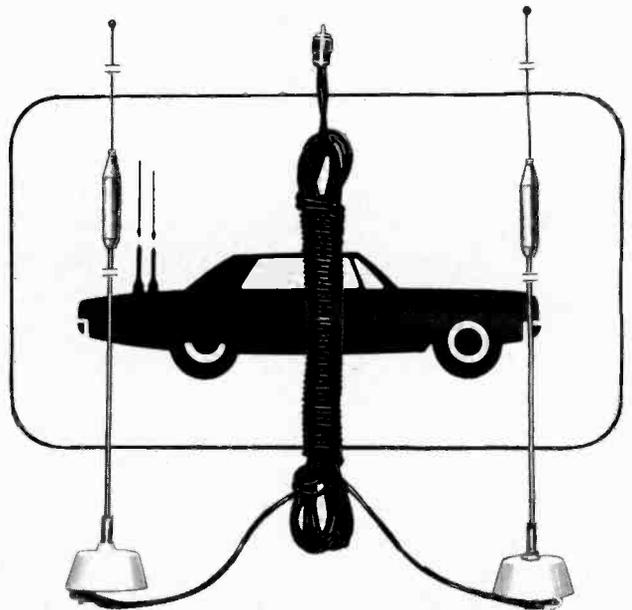
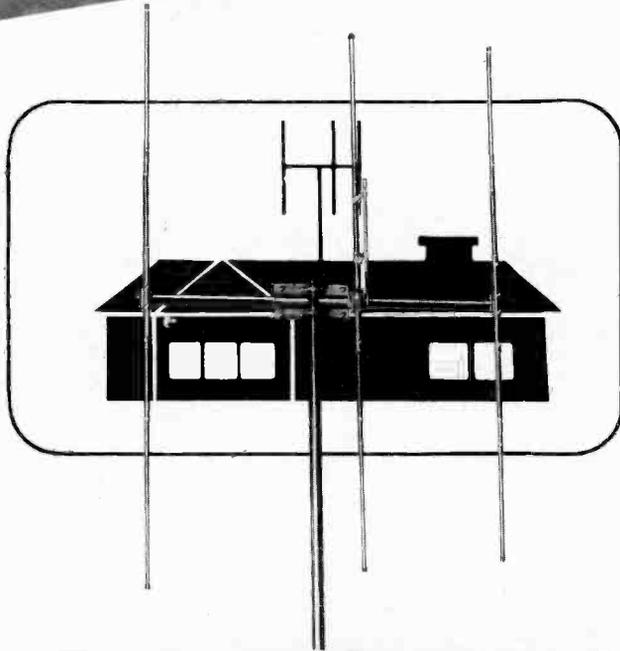


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About **3995\***

"Twin Trunkers" is the dual mobile antenna system that gives you doubled signal capture area, more uniform radiation, more freedom from dead spots. Durable stainless steel upper and lower rods. Fast and easy no-holes mounting on sides of trunk lid. Over-size resonators, adjustable tip rods. With 20' cable, PL-259 connectors. 21-943.

About **2995\***



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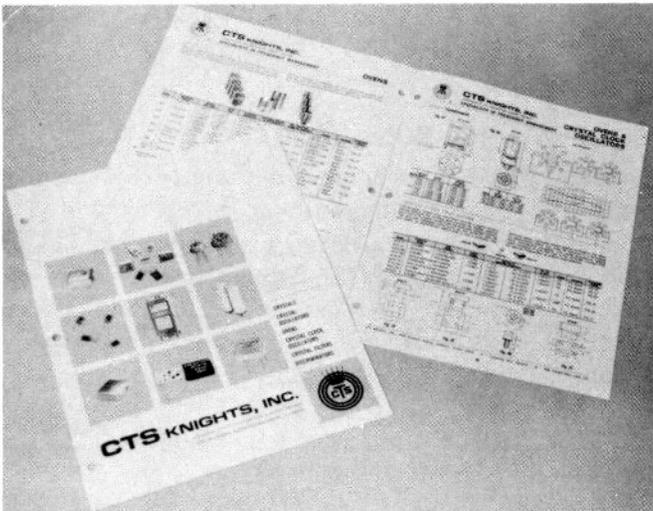
## ON THE COUNTERS (continued)

signed and engineered for use in trucks and van type vehicles.

Corporation officials stated, "SMA's Model 302 Port-A-Mount was developed in response to the unique CB mounting requirements of trucks, vans and other vehicles that have limited or inconvenient space to mount a two-way radio. The 302 is completely portable, may be positioned to best suit the operator's needs, and importantly, it eliminates the need for expensive and time-consuming installation processes."

The moderately priced 302 Port-A-Mount features rugged 22-ga. steel construction and a tilted surface design which offers ready access to operation controls and limits sound distortion. Suggested retail selling price for the 302 is \$13.95, and with an auxiliary speaker, the unit sells for \$21.45.

Contact SMA Products, Inc., P.O. Box 152, Springfield, IL 62705.



### CATALOG ILLUSTRATING CRYSTAL PRODUCT LINE

CTS Knights, Inc., Sandwich, Illinois is now offering a new 12-page Crystal Products Catalog which describes the complete CTS line of crystals, precision crystal oscillators, ovens, crystal clock oscillators, crystal filters and discriminators.

Included in this publication are the key operating characteristics for each crystal product . . . frequency ranges, stability, temperature range, wave output, voltage requirements plus dimensional data and general information about each frequency control product.

Copies of the CTS Knights Crystal Products Catalog are available from Case Mooibroek, Marketing Manager, CTS Knights, Inc., Sandwich, Illinois 60548.

### TWO MODELS OF CB SPEAKERS

Model CBM-10 has been designed to be either surface or flush mounted in autos, trucks, campers, mobile homes, vans, RV's, boats, marinas, base stations. As a surface mount it has a universal "U" bracket with ex-



clusive Adjust-O-Screw for tilting in any direction. The 3 x 5½" hi fidelity CB speaker has a heavy 10 oz. Big Brute magnet and is designed for outstanding clarity across the entire voice range. Heavy duty speaker cable with CB adapter plug is attached.

Model CBT is acoustically designed for best voice reception. The pedestal tilts for mounting in any position in trucks, autos, campers, mobile homes, vans, boats, etc. A 4" hi compliance cloth roll air suspension CB speaker with an 8 oz. Big Brute magnet provides maximum voice clarity. Heavy duty speaker cable with CB adapter plug is attached.

All Big Brute speakers have a 5-year warranty.

Contact COMM Industries, Inc., 1 Gateway Center, Newton, MA 02158.



### LITTELFUSE ENTERS CB MARKET

As part of its new CB marketing program, Littelfuse, Inc. has introduced two CB-Auto Stereo Installation Kits.

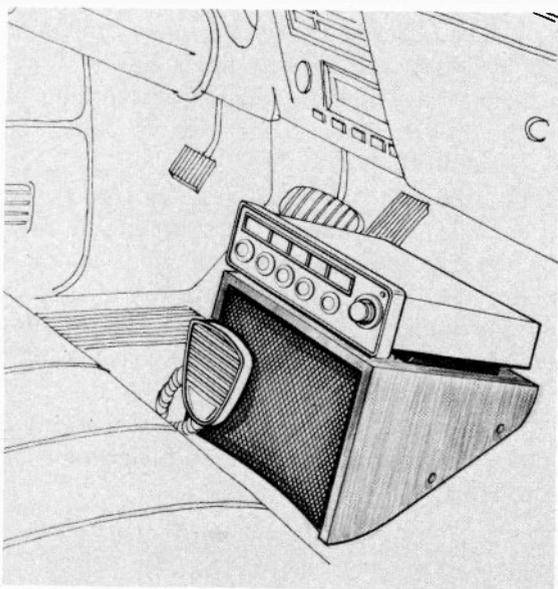
The first of their kind on the market, the new installation kits contain everything necessary to install a CB radio or auto stereo: fuses, wire connectors, tab terminals, quick-connect terminals, and in-line fuseholders. Each kit also contains quick-release set disconnectors, (continued)

## ON THE COUNTERS *(continued)*

which allow the unit to be removed from the vehicle when unattended.

Designed for the CB dealer and the do-it-yourselfer, the kits are available in a "single-pack" version, containing everything needed for one installation, and in a "six-pack" for six complete installations. Each kit includes easy-to-follow instructions for installing a CB radio or auto stereo.

Complete information on Littelfuse's new CB-Auto Stereo Installation Kits may be obtained by writing Littelfuse, Inc., 800 E. Northwest Highway, Des Plaines, Illinois 60016.



### CB MOUNTS

GAMBER-JOHNSON, INC., Stevens Point, Wisconsin, is introducing the first two models in its "Sound Mount" series of quality CB radio mounts.

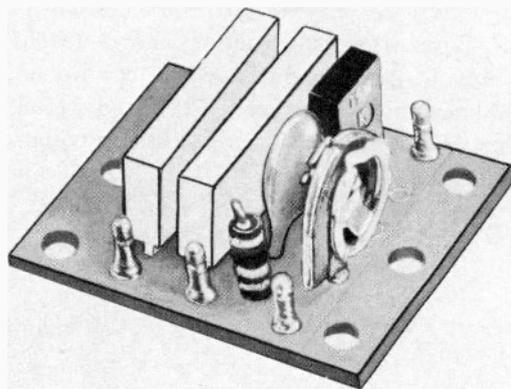
Both of the mounts, the "Ten-Two" and "Good Buddy" models, have features that are vital to the safe and efficient operation of CB radios. (1) Radios can be quickly and easily detached. There is nothing to unplug—antenna, power and speaker cables are wired through contacts in the mount. (2) Controls and mike are easily reached and visible from normal driving position. (3) Each mount is equipped with a communications speaker which improves sound clarity and filters out noise. And the mounts are positioned so sound is directed at the driver, not the floor. (4) Both models mount securely to the transmission hump or roof.

The "TEN-TWO" is made of finely textured  $\frac{1}{8}$ " ABS thermoplastic with a matte finish that complements any auto interior. It is  $5\frac{1}{2}$ " high,  $6\frac{1}{2}$ " wide and  $9\frac{1}{2}$ " deep. The detachable mike mount section is inverted when the "Ten-Two" is roof-mounted. Suggested retail price: \$29.95 with antenna connector and \$24.95 without (both prices include slide mount).

The "GOOD BUDDY" model is for those who prefer

the sleek styling and customized look of wood grain. It is made of heavy, scuff-resistant wood grain vinyl over  $\frac{3}{8}$ " particle board with black cloth speaker grille and metallic trim. It is  $5\frac{1}{4}$ " high,  $7\frac{1}{4}$ " wide and 10" deep. Provision is made for installing a mike hanger on the left side of the speaker grille. Suggested retail price: \$34.95 with antenna connector and \$29.95 without (both prices include slide mount).

For further information contact: Brad Johnson, President GAMBER-JOHNSON, INC., 801 Francis Street, Stevens Point, Wisconsin 54481.



### TONE ENCODER

Alpha Electronic Services Inc. announces its new thick film hybrid tone encoder Model 501-A. The Model 501-A miniature encoder will not only fit, but will perform excellently in virtually every make and model FM transmitter domestic or imported. In applications where high reed failure rate has posed a serious problem, this reliability factor is especially desirable.

The thick film hybrid technique along with the use of integrated circuits not only achieves the extremely small size  $1\frac{1}{2}$ " long, 1" wide,  $\frac{1}{2}$ " high, but makes possible an exceptional degree of long term reliability and the firm is providing a full five year warranty of all 501-A units.

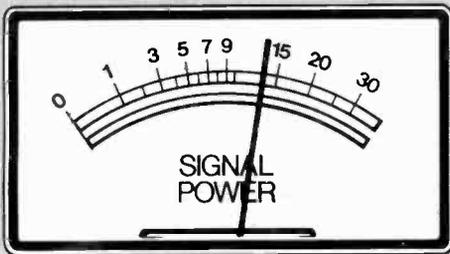
The Model 501-A is versatile in that it is used as an encoder but may be converted to an encoder-decoder as needed, it can be used in both sub-audible as well as the higher frequency tones. Several tone frequency modules can be coupled with one 501-A where multi-frequency is desired.

The frequency range is 20.0 Hz to 3000.0 Hz, stability is 0.5% over a temperature range of  $-40^{\circ}\text{C}$  to  $100^{\circ}\text{C}$ . The frequency determining network is a separate laser trimmed module, making frequency changes a simple plug in procedure. Current requirement is less than 4 milliamps at 12.6 VDC, however the unit will function to specification from 11 VDC to 30 VDC. Output is adjustable to 2.5 Volts RMS and a fast rise time is available at 10 milliseconds.

A complete installation manual is available at no charge. Contact Alpha Electronic Services, Inc. 8431 Monroe Avenue, Stanton, California 90680.

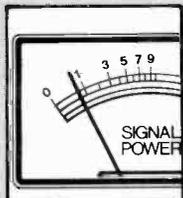
*(continued on page 144)*

# More miles per pound



## Turner mikes turn ordinary CB sets into heavyweights

Check the channels. You hear Turner mentioned a lot on CB. Most longtime CBers have a Turner mike. They often sound stronger and reach farther. It's



easy to understand why: Even a weak carrier signal can do the job if it has good mike input, while on the other hand a strong signal with poor modulation can be hard to copy. Demonstrate this to yourself by opening up your receiver squelch and listening to a distant station, a signal which barely swings the S-meter. Even though signal power hardly moves the needle, can you still copy through the noise? If so, that's good modulation. And you're probably listening to a Turner mike.



Many Turner models have a built-in pre-amplifier with volume control on the mike.

Mike volume control lets you adjust mike input, which allows the radio to put out a signal with all the voice modulation or "talk power" the set is designed to deliver.

A Turner mike can also add to your set's effective range by keeping input consistently high. The Turner M+3 and Road King 60 include a speech compression circuit to assure constant-level input, regardless of mouth-to-mike distances or natural rising and falling of the voice.

Or to get rid of cab rumble, traffic and



other interfering background noises that reduce effective range, consider the Road King 70, a rugged CB mike that adds noise cancelling to the other Turner features.

Ask a Turner dealer to help you get full performance out of your base or mobile CB. Or start by asking for a communications catalog from Turner, 716 Oakland Road N.E., Cedar Rapids, Iowa 52402.

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**Clearly Superior.**

I'VE seen some unusual things at CW coffee breaks, but this one took the crystal! I'm just standing there in the parking lot trying to disconnect my CB rig from under the dash of my mobile to toss it in the trunk when I get an eyeball on this freaky looking ancient car rolling up to the next parking spot—it was doubly wierd since it had a CB whip jutting from it's hind quarter and from it's open sides came the sounds of a CB rig in action. "Ah-Ha!" I said to myself, "this looks like a story for S9!"

Let's say that it was really *more* than doubly wierd since out of the driver's seat of that unusual car stepped something even more unusual—none other than Tom Kneitel, the ol' *Tomcat*, Editor of S9! Since the guy never runs his picture in the magazine, I had no idea who he is so I began bombarding him with questions about this whacky CB installation. After

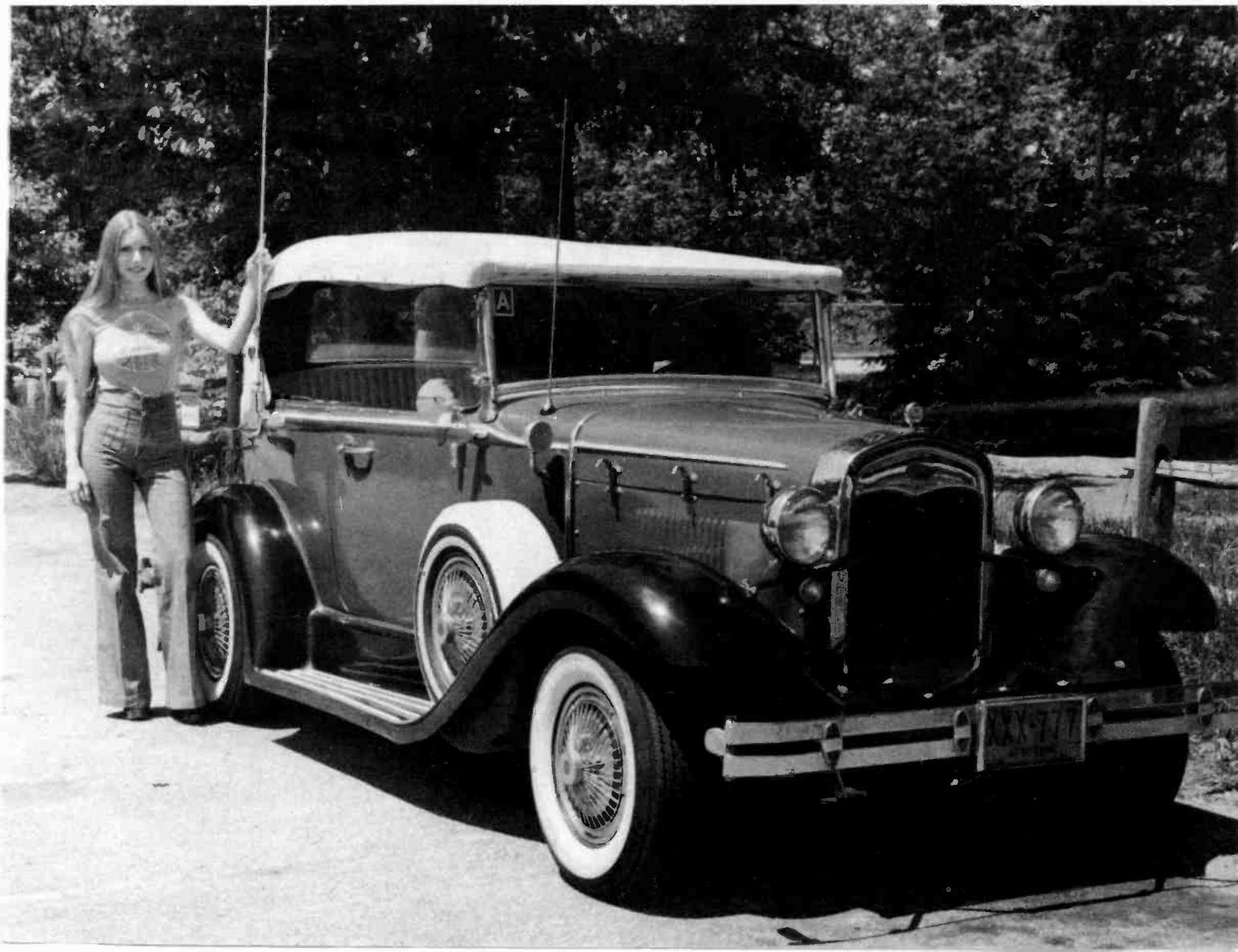
about 5 minutes of my 3rd degree he asks me if I'm writing a book—"No," I say, "I'm doing an article on the car for S9 Magazine." That brought an interesting response, which I don't think would be allowed over the air and probably would cause even more of a stir in print!

Well, after a few more minutes of discussion, the bearded one decided that he would institute a new first—being interviewed by a total stranger, in a parking lot at a coffee break, for an article in his own magazine! But, as I said, it was an unusual day and this was the most far-out CB mobile I've seen yet in 3 years of CB'ing.

Now here's a gasser—while this jazzy red and black 4-wheeler is the spittin' image of a 1931 Ford Model A Phaeton, it turns out to be a fiberglass duplicate only about a year old—it's called a *Classic Phaeton* and made

## CB—LIKE IT WAS IN 1931?

BY JAINE HEISER, "NORTHERN LIGHT"





By the use of a handset type rig with the controls topside, the rig can be placed on the seat or floor without having to actually install it anywhere—and you can still have easy access to the channel selector, squelch, volume controls.

by an outfit in Florida, a limited production job which is produced by hand for such people as Hubert Humphrey and fighter Ron Lyle—and *Tomcat*. 'Neath the quaint looking hood is a sinister Ford 302 8-cylinder mill, and that's hooked to an automatic gear box. These wheels can really move!

So, what looked to be a relic from the depression days of the 1930's turns out to be a relic from the depression days of the mid-1970's!

*Tomcat* says that installing the CB in this wasn't quite as simple as it might have been, and definitely not as easy a job as it was to toss a rig into his main wheels, the venerable VW *Bug!* First, being fiberglass, there was the job of running the power connection

The only suitable antenna mounting spot was on the frame which supports the rag top. Because the car is fiberglass, a whip was selected which did not require a ground connection. This is a base loaded fiberglass job made by Antenna Specialists, the M-306.



to a ground source, then there was the antenna ground to consider. Also, it turned out that the 302 engine was the most fantastic noise generator ever produced in Motor City. Besides all of this, there are no windows to roll up and the doors don't lock so any CB installation would have to be set up so that the rig couldn't be easily plucked out of the car by rip-off artists, but easily removed by *Tomcat*.

The ignition noise was finally squashed by the addition of gizmos and gadgets to the alternator, plugs, power line, plus grounding straps added here and there. Power was drawn from the fuse block, with the electrical ground going directly to the neg. side of the battery.

Placing the antenna, says *Tomcat*, was a hairy problem. Drilling into the fiberglass was to be the last choice, and mounting on the roof was obviously out since the car has a rag top. A bumper mount was tried but everybody complained that it spoiled the looks of the car—and then there was still the problem of running an antenna on a car where the antenna couldn't operate with a ground. Final installation was decided for the right side rear quarter, mounted to the frame of the rag top. An *Antenna Specialists* M-306 whip was used since it doesn't require a ground and, as a side benefit, it's color scheme went well with the car. Worked out fine too, in fact the whole job worked out so well, from the ignition shielding to the antenna installation that *Tomcat* was further inspired to install a regular AM/FM radio in the car

I just couldn't resist the temptation to do the "Bonnie and Clyde" bit. For you car buffs, this hunk of machinery weighs in at less than 2,500 lbs., so the 302 cubes really give it the moxie to get up and go.

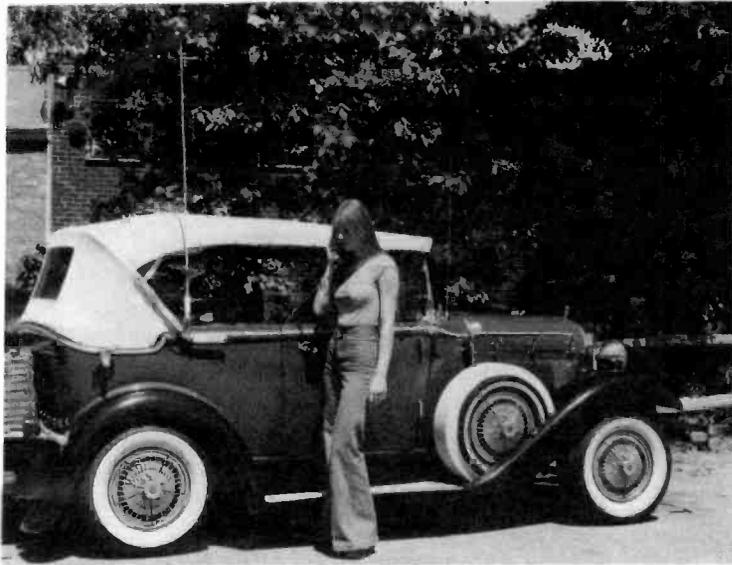


(that time he drilled the fiberglass for the antenna—says he simply ran out of ideas for places to install it!)

As with most CB installations which are contemplated, the rig selected must meet the exact needs for the specific use. The car can't be locked, so a rig would have to be chosen which didn't need to be mounted. Feeling great anguish at the thought of having to drill any more holes inside or outside of the car, *Tomcat*, said that he really wanted something which could be placed on the floor or the passenger seat when in use—so that meant a rig with the control panel on the top of the set. Several rigs were considered and the installation finally ended up with a *Lafayette Comphone 23*, a neat rig with a telephone handset and the controls on top. It is left on the seat or floor when in use. At other times it is quickly disconnected (a line plug is in the power cord) and removed from the vehicle. The whole "installation" goes together or comes apart in a few seconds!



The long coil-cord and handset arrangement on the Lafayette Comphone 23 lets you stand outside of the vehicle and hear as well as speak to the CB'er on the other end of the line. Of course, the fact that this car doesn't have any windows makes it even easier.



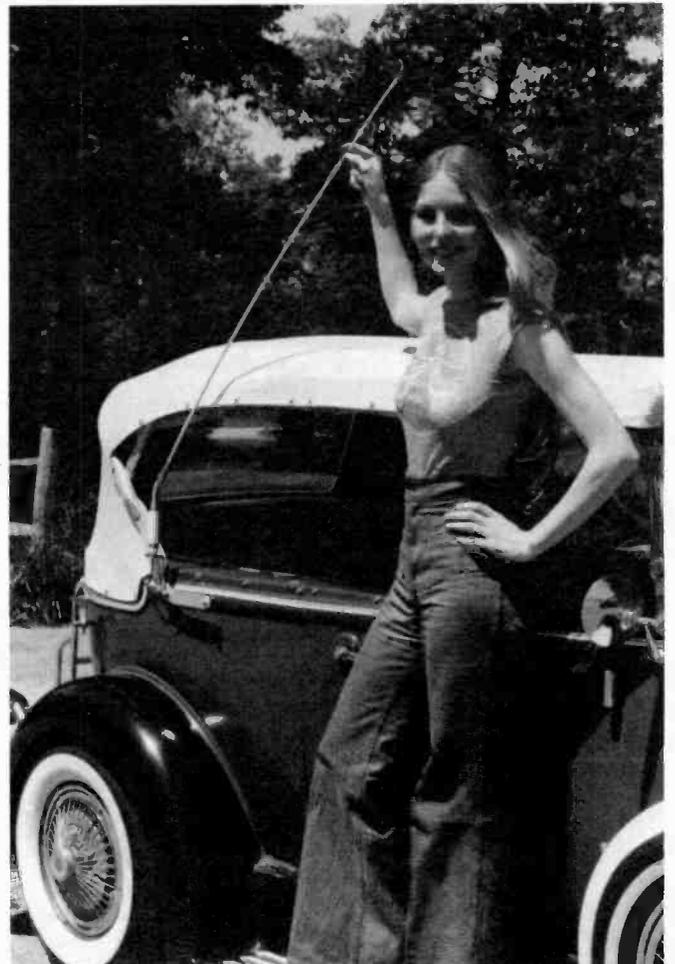
Hold the phone, *Tomcat* is busy on the other line!

At this point in the interview *Tomcat* seemed more interested in interviewing me than talking about his car—what channel did I monitor, can I be reached by land line, what was I doing after the coffee break? My audience with the bearded one was apparently over and, after a few pictures were taken (he insisted that I be in them—how corny can ya' get?) I decided to make tracks for the coffee break, solo!

Hey, next time you're on the road and you see what looks like a red and black fugitive from a Edward G. Robinson gangster movie, and it's sporting a CB whip—that's probably your old Uncle Tommy in his CB-equipped plastic *Tomcatmobile*—give him a shout! He drives it all over the place; even drove it up from the factory in Florida, and has had it into the Midwest! *Tomcat* says he may not always have his head screwed on right—but he's *always* got his ears on!

... Use S9 READER SERVICE.

A spring at the base of the whip makes for flexibility. As a happy coincidence, the antenna used matched the colors of the car.



# Innovations in CB from Hy-Gain.



Hy-Gain 8



Hy-Gain 7

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The Hy-Gain 7 is a low cost, 23-channel AM unit with automatic noise limiting, advanced circuitry, high quality microphone and a black out face panel with lighter S/RF meter and channel selector. **Order No. 3077-PR.**

The Hy-Gain 8 is an AM/SSB 69-channel unit with sophisticated noise-cancelling circuits, exceptional sensitivity and superb adjacent channel rejection. Behind the black out face panel are meters for SWR bridge and signal, transmit and receive LED indicators, and digital readouts for the channel selector and built-in clock. Truly a transceiver for the most discriminating enthusiast. **Order No. 3078-PR.**

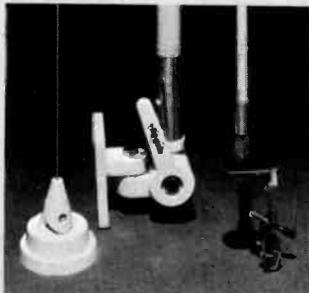
**Hellcat X.** This new Hellcat antenna adjust 180° verti-

cally and 360° horizontally to fit almost any vehicle on the road. The stainless steel whip always remains upright and efficient. Folds over for car washes or garaging. Installs with just two set screws, requires no holes. **Order No. 590.**

**Gutter Mount.** Here's an antenna with some important differences, a gutter mount with a fiberglass whip and spring-loaded foldover mount. Self-grounding, fully adjustable and corrosion resistant. Comes singly or in co-phased pairs. Single, **Order No. 538.** Co-phased set, **Order No. 539.** Mount only, **Order No. 537.**

**488 Base.** The Hy-Gain 488 is the most inconspicuous antenna you can buy for your home. Its trim 122½" fiberglass and stainless steel whip is entirely self-supporting and requires no unsightly guy wires. The high-strength Lexan® base is fully adjustable for mounting at any roof pitch. Easy to assemble and install. **Order No. 488.**

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Hellcat X, 488, Gutter Mount

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15 16 17



S9's Monthly Column for Sidebanders

by Bill Sanders,  
CLI 1849,SSB-295

## BREAK... LOWER SIDE

LOOKING FOR SIDEBAND ID NUMBERS?  
Drop a self-addressed stamped envelope to  
this column for info!

**S**TRONG signals have been booming in from overseas, so for those of you who have asked for the QTH's of some of the more frequently heard operators, here are two of them:

DX-50, P.O. Box 4581, Santiago, Chile  
78W1944, Dick, P.O. Box 56, Southampton, Bermuda

Why is it that I have gotten so many letters telling me that fiberglass whips are no good for SSB use? I haven't noticed any difference between fiberglass and steel whips in my own Sidebanding and I can't think of any good reason why there should be any difference. Anybody wish to present some facts on this—or is it just another one of those crazy CB myths which already abound.

In some areas 16-Lower has gotten so jammed with Sidebanders that it is used only as a calling channel, with communications taking place 5 and 10 down from center slot. Another problem has been with mobile units on 18-Upper getting splattered by truckers running a lot of heat on 19—probably 16-Lower is the best bet for mobilers. Never could understand why so many Sidebanders are sitting there on 18-Upper griping about the splatter from 19. Seems to me it would be to some small advantage to switch over to lower 18 as long as the choice is there. Also, it's just easier operating on the same sideband on each of the channels you use. So if you're on 16-Lower, 18-Lower would make more sense than 18-Upper.

A question from Freddie, SSB-1018, Chicago, Ill., who asks our opinion on what's the matter with his rig. Freddie says that when he cuts the noise elimination circuit into action the rig seems more prone to being affected by adjacent channel QRM ("splash") from the other locals than when the noise elimination circuit is inactive. Well, I hate to be the bearer of poor tidings, but that seems to be a little problem which has bugged a lot of operators. Nothing the matter with your rig, that's the nature of the beast. You takes yer choice—QRM or QRN, and rotsa ruck!

From Arizona we hear from Slim, also known as SSB-988, in Mesa, who asks if we have any info on a Sidebander whose only ID is the number "98." Seems he has heard this station poking through during several band openings, but the guy has always been heard without enough strength to get out from under the pileup of local stations in Arizona. Well, old man, the only "98" we have ever heard of is ol' Walter, whose QTH is Box F-64, Freeport, Grand Bahama, Bahama Islands, he is quite active on sideband and really gets out. Last time we heard Walter he was saying that he had a stick for an antenna but he was getting a beam to replace it—so maybe he'll come through a little better for ya' Slim!

No, Charlie, adding a power mike to a sideband rig that already has a built-in mike gain control isn't going to do much for you except distort your voice to the point where nobody else can understand what you're saying. For sideband rigs without a mike gain control, a power mike is out of sight—but souping up your voice before it hits the rig and souping it up again after it gets in the rig is something that sounds a heckuva lot better on paper than it does on the air!

Eddie, SSB-3422, of Seattle, Washington—who is sometimes called *Buckshot* on the Ancient Mary channels asks if we have had any experiences with people who have run into problems with TVI while using sideband gear. Actually, any radio communications device is capable of popping through radios, TV's, stereos and any other similar gear which is cheaply made and insufficiently shielded to keep out strong local signals. Sideband communications can also seep through, however the main difference is that while AM CB signals are easily readable with good copy when they come out through a TV or stereo loudspeaker, sideband signals are garbled monkey chatter. In any event, when they hear you causing *Indian* while you are using AM they can come over and pound on your front door. When they get a blast of a Sidebander *quacking* out of the loudspeaker they not only can't figure out who it is but chances are that they may not even realize that it's a human voice. Maybe they'll blame it on the vacuum cleaner next door, or static, or who knows what else!

(continued)

## BREAK . . . LOWER SIDE (continued)

From Phoenix, Arizona, we have a QSL card from *Sidewinder*, known as Mike to his XYL, and SSB-2147 on the sideband. Mike asks me to devote a few lines to explaining the apparently confusing terms QRX and QRT, which many Sidebanders use interchangeably but which are, in fact, different things. QRT means that you are going out of service, pulling the big switch, going off the air for the immediate future—that even if someone should call you you won't be around to hear it. On the other hand, QRX means that you are going to leave the rig for a few minutes but will be right back, or that even though you aren't transmitting you are standing by and reading the mail on the channel and will probably respond to anybody who might call you. Yeah, Mike, I've heard 'em messing these up too!

That BIG sideband signal from the fellow with the exotic accent which has been zipping in to the States is from Warren, who operates as BDA245 from the island of Bermuda. His QTH is P.O. Box 679, Bermuda 4. Warren says that he is located over near the luxury hotels area and "has the weakest station on the 3 by 3 mile island"—you'd never know it to hear the 5X5 signal! Bermuda is a British possession (Warren is quick to point out) which is a few hundred miles off the coast of the Carolinas. Of course, Warren is not to be outdone by Sessy, 78W1934, another Sidebander on Bermuda. Sessy gets his mail at P.O. Box 56, Southampton, Bermuda!

I couldn't mention Bermuda without also including Bill, 78W1, whose mighty SSB signal is a well known fixture on the band. Bill's QTH is P.O. Box 625, Dev 4, Bermuda.

Pictured here is the large and startingly handsome Sidebanders' decal—in the flesh it is 3½" across and done in brilliant red, white, and blue. All you do is soak it in some water for a few seconds and it will dress up your base or mobile unit, or even the ol' mega-



cycle maker box itself! Will stick to either the inside or the outside of a window! These nifties are available, postpaid, for only \$1.25 each (2 or more at \$1 each, ppd.) from Sidebanders' Service Bureau P.O. Box 381, Smithtown, N.Y. 11787.



Robyn International introduced the new Model GT-7C citizen's band transceiver. This 23 channel unit offers EXCLUSIVE BFO for SSB and cross mode communication. Other outstanding features include SELECT-O-MATIC tuning from either microphone or unit—Large easy to read LED digital channel display—Automatic channel scan—Large built in SWR/CAL meter and S/RF meter—Volume, tone, squelch, delta tune, RF gain, ANL, PA + 1—ground plus many more singular features including EXCLUSIVE BUILT IN INTERCOM!!! The SX-12 module allows the mobile to be easily inserted into the module for the conversion of the mobile unit to a base unit. Complete information and prices are available from Robyn International, Inc. P.O. Box 478, Rockford, Michigan 49341.

Midland International Corporation's Communications Division now offers a full-power, all-channel single sideband/AM base station at under \$400.00.

The new Midland base station offers fully compatible operation on all 23 AM CB Channels, as well as all upper and lower sidebands. The transceiver has been F.C.C. type accepted with legal maximum output powers: 4.0 watts on AM, 12 watts on single sideband.

Though it is the lowest priced single sideband base station in the Midland line, this sleek, low profile styled unit includes deluxe features such as RF gain control, switchable noise blanker, and hi/lo tone switch. In addition there are clarifier and squelch controls, a large lighted instrument-style signal/power meter and a P.A. switch.

Operation is on 115-volt 60 Hz AC or 12-volt negative ground DC for full operational versatility.

Midland Model 13-976 is supplied complete with full-size push-to-talk microphone with coiled cord, AC and DC power cords and owners manual. Manufacturer's suggested resale price is \$387.95.

We just couldn't let the column end without running a card from *Da Shed-House Gang* those *Derby City* sidewinders who seem to have made so many friends on the band. Here's the front of the card—the flip side says (slightly modified here, by the way):

(continued on page 77)

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# TERI Tries It!

a FOREST BELT feature



**S**OMETHING unusual again. Here I am, trying out a new CB power connector, the *Quick Disconnect Connector 2* from HARCOR International. It's similar to an earlier version, except that it hooks into the car easier.

Goodness knows, I've needed a fast way to take the CB out of my car. I always carry the set in the house when I'm at home. When I'm at work, or at the grocery, I put it in the car trunk. At least a dozen CBers I know have had sets stolen. I can't afford that kind of ripoff. (Neither could they.)

So anyway, I wanted to get away from fiddling around with the wires. I asked my roommate to install a disconnect on the red and black power wires for me. He said okay, when he got the time he would. That was just after Christmas. The garage was full of other stuff, and it was cold outside. So I don't blame him for waiting.

Came spring. I asked one of our technical guys if he would put a disconnect on for me. Sure, he said, soon as he got a chance . . . and had one handy. . . .

Well, you know the saying. If you want it done, do it yourself. But I'm not handy with tools; and I just couldn't solder at all, I don't think. So summer found

me still unhooking my CB radio at the in-line fuse holder and wedging the black wire under the edge of the ash-tray slide for a ground.

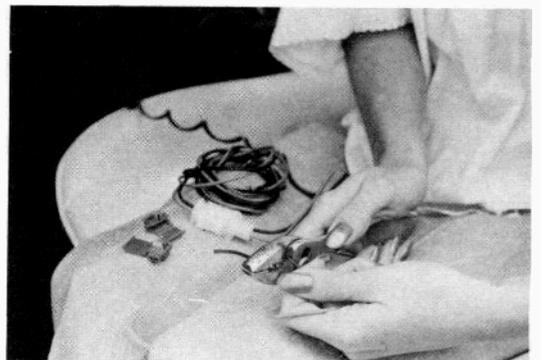
And then came HARCOR's *Connector 2*. I got turned on at the idea of its easy installation. "Connect directly to the fuse block," it said; and how about "quick wire splicers." Seems the time had come for me to have a quick disconnect on the power wires of my CB. So I found an old pair of pliers in the kitchen drawer, and set out to install the *Connector 2* myself. Here's how it went.

First, I cut the CB set's red and black wires off even at the ends. I could have shortened them, but I decided to leave them long and bundle them later. I also learned (since) that they would be easier to trim with diagonal cutters. But I managed okay—just caught the wires in the little notch of the pliers and twisted a bit.

Second, I laid the end of the black CB wire into the groove in one of the splicers furnished, and squeezed the little plastic gate shut to hold it there. Then I poked the *short* black wire from *Connector 2* into the hole in the other end of the splicer.

One good squeeze with the pliers pushed the metal contactors down into the insulation of both wires. They engage the wires inside, you see, which is what makes the electric connection. Then I folded down the large plastic flap to cover the metal contactors. Result: a neat splice with no metal showing. (Be sure no wire strands protrude from the wire ends where you cut them off.)

Third, I did the same with the other splicer on the red wires from *Connector 2* and the CB. Incidentally, that's the CB radio wire with the in-line fuse holder, even though it might not be red.



TERI could have chopped the wire ends cleaner with diagonal cutters. The important thing, however, was to have the wires equal in length.

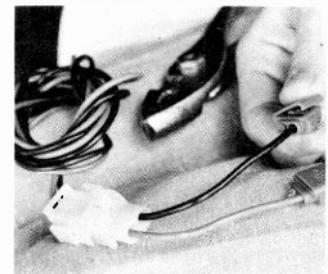
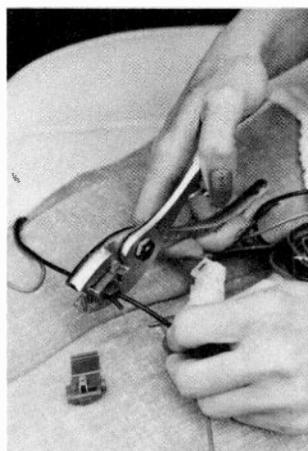
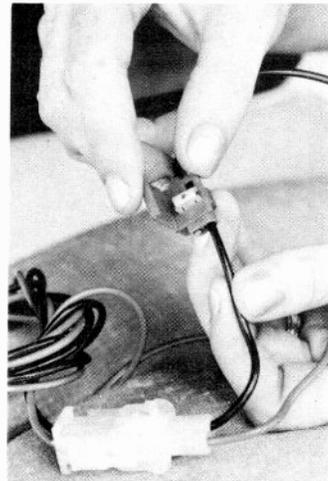
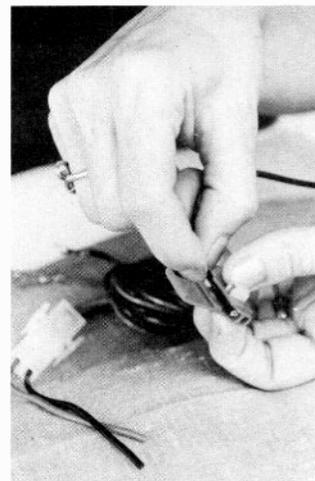
Fourth, I hunted till I found a screw going into metal at the dashboard. With the pliers, I loosened it. (Again, I learned later that a nutdriver would have made my task simpler.) Under the screw I slipped the U-shaped lug on the end of the long black *Connector 2* wire. Tightening the screw made a solid "ground" connection.

The technical guys tell me that the metal of the car body goes to the negative or "grounded" side of the battery. They say that in some trucks the *positive* side of the battery is grounded. For those, you would have to reverse the wires at the splicers, mating the fuse-holder (red.) wire in a splicer with the black *Connector 2* wire, and splicing the black CB wire to the red *Connector 2* wire. That's for positive-ground battery systems, when your CB radio is the "positive-or-negative" universal type.

Fifth, I made the red-wire connection at the fuse block. I remember last year when my radio was installed, the business of getting a good connection to the hot voltage was a hassle. They finally tapped into another wire, which my mechanic and our technical guys later insisted was a poor way to do it. With *Connector 2*, this was the easiest part.

I simply found the Radio fuse on the fuse block—which is up beside the steering column on most cars. Then I pushed the special HARCOR *Adapta-Clip* right into the fuse clip beside the metal end of the fuse. The *Adapta-Clip* has a curved end, that fits perfectly. I had the connection finished in seconds. It doesn't matter which end of the fuse you hook to, I'm told, as long as you're only connecting a CB unit.

That was it. I rolled up the wiring between the CB set and the disconnect, taped the roll, and hung it behind the set. The extra wire from the disconnect

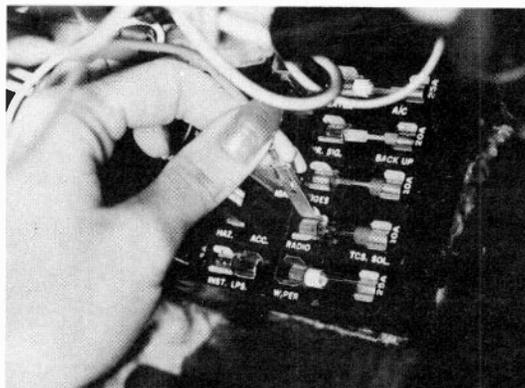
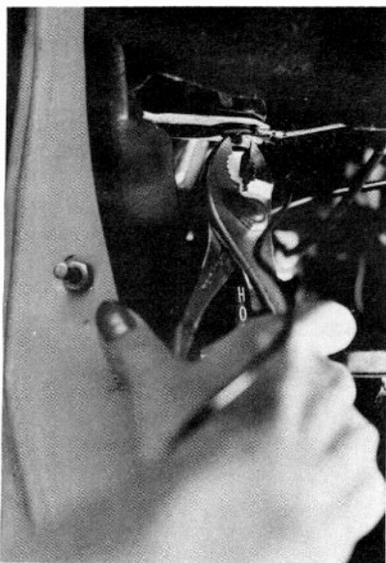


Splicing two wires together this way entails laying one wire in the groove; snapping the little side gate shut on it; then poking the other wire into the end hole and squeezing the cover flap till it clicks. Metal

contactors pierce insulation and make the connections.

to the ground lug and the fuse block, I bundled and taped to a brace above the steering column. Everything neat and out of sight.

Plenty proud of it, I am. I take the set out easily, and the kids can't kick the wires anymore. What I'm

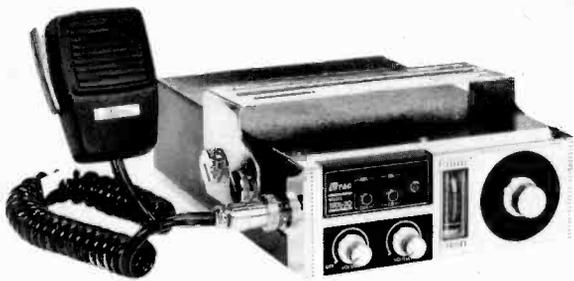


*Adapta-Clip* makes hot voltage connection quick and simple. Curved end of bar slips between fuse end and holding clip.

Open-end spade lug, already on black (ground) wire of *Connector 2*, slips under any convenient screw or bolt. Be sure there's good tight contact with body metal.

waiting for now is my roommate to notice. He'll probably want to put a *Connector 2* on his CB rig. Maybe when I get the time . . . and if I have one handy. . . .  
73s and 'bye.

TERI



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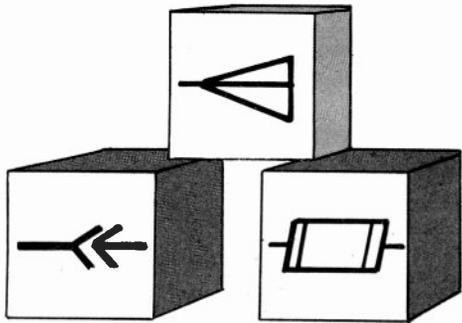
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# Basic Radio

by Irving Tepper

## PART 7

### Series & Parallel Circuits

**T**HE simple circuits used earlier to illustrate Ohm's Law (Figs. 2.10, 11 in Part 6) were all series circuits since a series circuit is defined as one that is arranged so that the electron flow has only one continuous path it may travel. But, unlike the earlier simple circuits, some series circuits can be a bit more complex because more parts are placed in the circuit as shown in Fig. 2.17. The one path for the electron flow, as shown, is from the negative terminal of the battery, through  $R_3$ , through  $R_2$ , through  $R_1$  and back to the positive terminal of the battery. If a break occurs *anywhere* in the circuit no electrons would leave the voltage source (the battery) and so none would flow through any of the resistances. We would then have the *open circuit* discussed earlier in Part 4 and shown in Fig. 2.3.

To properly analyze the behavior and characteristics of a series circuit, we must consider its total resistance, its current flow, its voltage distribution and finally its power dissipation. These are discussed below.

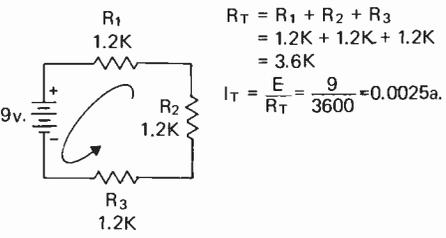
**Resistance of the Series Circuit**—As shown in Fig. 2.17, the electrons must flow through all the resistors in the series circuit before they can return to the positive battery terminal. Each resistor, therefore, contributes its share of opposition to the electron flow. That opposition to the electron flow, then, is the *sum of all the resistance values in the series circuit*. Expressed mathematically we have:

$$R_T = R_1 + R_2 + R_3 + R_4 + R_5 + \dots$$

where  $R_T$  is the total resistance.

For the circuit of Fig. 2.17, the total resistance can be found as:

$$\begin{aligned} R_T &= R_1 + R_2 + R_3 \\ &= 1200 + 1200 + 1200 \\ &= 3600\Omega \end{aligned}$$



$$\begin{aligned} R_T &= R_1 + R_2 + R_3 \\ &= 1.2K + 1.2K + 1.2K \\ &= 3.6K \\ I_T &= \frac{E}{R_T} = \frac{9}{3600} = 0.0025a. \end{aligned}$$

Fig. 2.17—A series circuit. All the current leaving the negative terminal must flow through each part in the circuit before it can return to the positive terminal of the battery.

**Current Flow in the Series Circuit**—The current or electron flow in the series circuit, as noted earlier, must be the same at any point in the circuit. To find out how much current is flowing in the series circuit we may calculate it using Ohm's Law or measure it

with a milliammeter. To calculate the current flow we use the formula:

$$I = E/R_T$$

where  $E$  is the applied voltage and  $R_T$  is the total resistance of the series circuit. For the circuit of Fig. 2.17 the current flow would be:

$$\begin{aligned} I &= E/R_T \\ &= 9/3600 \\ &= 0.0025A \text{ or } 2.5 \text{ mA} \end{aligned}$$

If instead of calculating the current flow we preferred to measure it with a milliammeter it could be done as shown in Fig. 2.18. You may interrupt the circuit at any point, A, B, C or D and connect the milliammeter across the break as shown. The current reading at each point will be the same since the electron flow is the same at any point in a series circuit.

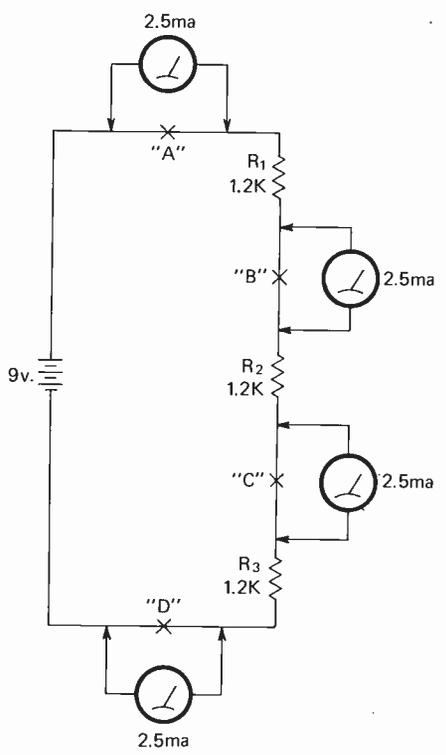


Fig. 2.18—The current flow in a series circuit is the same at any point as shown by the individual meter readings.

**Voltage Distribution in a Series Circuit**—The voltage applied to the series circuit shown in Fig. 2.19A divides between each of the resistors as shown by the individual voltmeters. Each voltmeter shows the voltage across each resistor required to force the current through that resistor. Since each of the resistors in this circuit are equal in value, the same voltage will appear across each. This can easily be proven by the use of Ohm's Law. We know  $R_T$  is equal to 3600 ohms and with an applied voltage of 9V, as shown in Fig. 2.17, the calculated current flow for the circuit is 0.0025A. We also know that this current flows through each resistor in the circuit. If we know the resistance value and the current flow through that resistance, then the voltage drop across each resistor in the circuit may be calculated as follows:

$$\begin{aligned} E_{R_1} &= I_{R_1} \times R_1 \\ E_{R_2} &= I_{R_2} \times R_2 \\ E_{R_3} &= I_{R_3} \times R_3 \end{aligned}$$

Since we know,  $I_{R_1}$ ,  $I_{R_2}$  and  $I_{R_3}$  to be the same value, 0.0025A, we can calculate: (continued)

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## BASIC RADIO (continued)

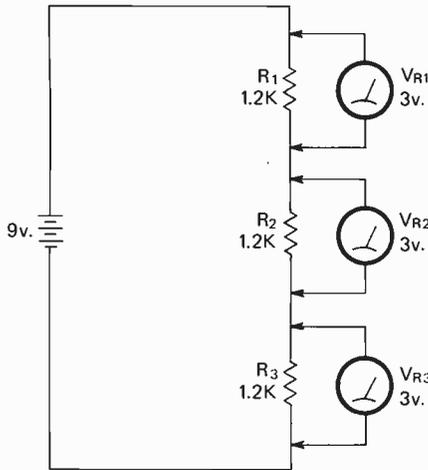


Fig. 2.19—In a series circuit the source voltage (the battery) is divided between each of the resistors in the circuit. The sum of the voltage drops, therefore, must equal the source voltage.

$$\begin{aligned} E_{R_1} &= 0.0025 \times 1200 = 3V \\ E_{R_2} &= 0.0025 \times 1200 = 3V \\ E_{R_3} &= 0.0025 \times 1200 = 3V \end{aligned}$$

The voltage reading across each resistor is called the *voltage drop* and the sum of all the voltage drops must equal the applied voltage. This is expressed mathematically as:

$$E_{\text{applied}} = E_{R_1} + E_{R_2} + E_{R_3} + E_{R_4} + \dots$$

For the circuit of Fig. 2.19:

$$E_{\text{applied}} = 3 + 3 + 3 = 9V$$

To reinforce these most important concepts let us review them by analyzing the series circuit shown in Fig. 2.20 where we also have three resistors in series but each one a different value.

First find  $R_T$ :

$$\begin{aligned} R_T &= R_1 + R_2 + R_3 \\ &= 1500 + 2000 + 5500 \\ &= 9000\Omega \end{aligned}$$

Second, find  $I_T$

$$\begin{aligned} I_T &= E_{\text{applied}} / R_T \\ &= 9 / 9000 \\ &= 0.001A \end{aligned}$$

Third, find the individual voltage drops:

$$\begin{aligned} E_{R_1} &= I_{R_1} \times R_1 = 0.001 \times 1500 = 1.5V \\ E_{R_2} &= I_{R_2} \times R_2 = 0.001 \times 2000 = 2V \\ E_{R_3} &= I_{R_3} \times R_3 = 0.001 \times 5500 = 5.5V \end{aligned}$$

Fourth, check to see that the sum of the individual voltage drops add up to the source voltage, 9V.

$$\begin{aligned} E_{\text{applied}} &= E_{R_1} + E_{R_2} + E_{R_3} \\ &= 1.5 + 2 + 5.5 \\ &= 9V \end{aligned}$$

Note that the lowest value resistor,  $R_1$ , has the smallest voltage drop across it because it requires the least amount of voltage to force the 1 milliampere of current through it. The largest voltage drop was needed to force the 1 milliampere of current through the 5.5K resistor, 5.5 volts.

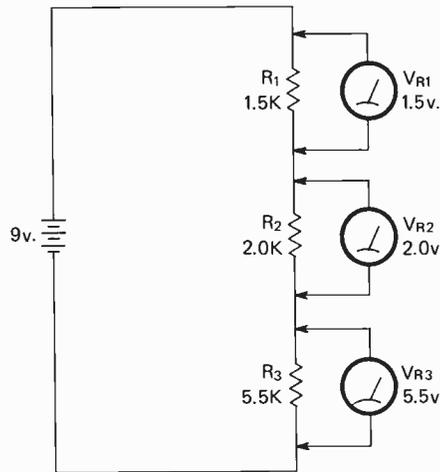


Fig. 2.20—In the series circuit the largest voltage drop appears across the highest resistance and the lowest voltage drop is across the lowest resistance.

**Polarity of the Voltage Drops**—When you connect a voltmeter across each of the series resistors to measure the voltage drops the test leads must be connected with the proper polarity to prevent reversed voltage readings. It is necessary, then, to be able to determine the actual polarity of the voltage drop across each resistor before measuring. Looking at Fig. 2.21 we see the arrows indicating the direction of the electron flow, from the negative terminal of the voltage source, through the circuit and back to the positive terminal. Since the electrons flow from minus to plus, the end of the resistor where the electrons enter will be the negative point of the voltage drop and the end where the electrons leave the resistor will be positive. Thus, in Fig. 2.21, the lower end of  $R_3$  will be negative, as marked, and the upper end positive as marked. This will also be true for  $R_1$  and  $R_2$ . When any of these voltages are to be measured the nega-

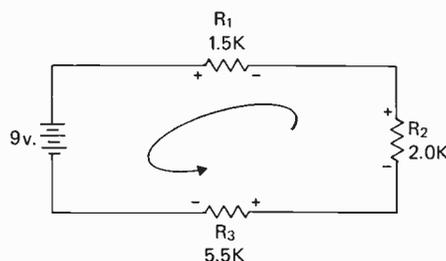


Fig. 2.21—The polarity of each voltage drop is determined by the direction of the current flow through the resistor. The electrons enter from the end that will be negative and leave from the end that will be positive.

tive test probe of the meter (black) should always be applied to the negative end of the voltage drop and the positive test lead (red) should be applied to the positive end of the voltage drop.

**Power Dissipation in the Series Circuit**—Each of the resistors in the series circuit consumes power. The amount of power dissipated or consumed by each resistor can be calculated from  $W=EI$ . For the circuit of Fig. 2.20, we can calculate the power dissipated by each resistor:

$$\begin{aligned} W_{R_1} &= E_{R_1} \times I_{R_1} = 1.5 \times 0.001 \\ &= 0.0015W \end{aligned}$$

$$\begin{aligned} W_{R_2} &= E_{R_2} \times I_{R_2} = 2 \times 0.001 \\ &= 0.002W \end{aligned}$$

$$\begin{aligned} W_{R_3} &= E_{R_3} \times I_{R_3} = 5.5 \times 0.001 \\ &= 0.0055W \end{aligned}$$

Since all of the power dissipated by the resistances has to come from the voltage source, the total power supplied must be the sum of the individual powers. Expressed mathematically, it is:

$$P_T = P_1 + P_2 + P_3 + P_4 + \dots$$

For the circuit of Fig. 2.20 the total power consumed is:

$$\begin{aligned} P_T &= P_{R_1} + P_{R_2} + P_{R_3} \\ &= 0.0015 + 0.002 + 0.0055 \\ &= 0.009W \end{aligned}$$

The total power dissipated could also have been calculated from:

$$\begin{aligned} P_T &= E_{\text{applied}} \times I \\ &= 9 \times 0.001 \\ &= 0.009W \end{aligned}$$

**Summary of the Series Circuit**—The major characteristics of the series circuit may be summarized as follows:

1—The resistance of a series circuit is equal to the sum of all the resistances in the circuit.

2—The current flow in a series circuit is the same at any point in the series circuit.

3—The voltage drops across each part of the series circuit must add up to equal the applied voltage.

4—The total power dissipated should equal the sum of the powers dissipated by each resistor.

## THE PARALLEL CIRCUIT

Another method of connecting resistances into a circuit is to place them in *parallel* with each other as shown in Fig. 2.22. Careful examination of this circuit should reveal that there are now two current paths (each path called a branch) one through  $R_1$  and one through  $R_2$ . Also apparent is that the voltage drop across each resistor is the battery voltage and so the volt-



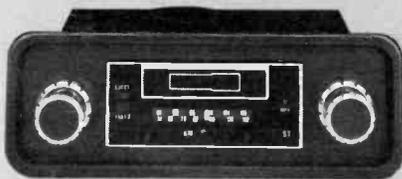
# Any way you add it up, it comes out J.I.L.

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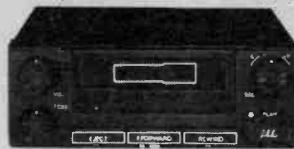
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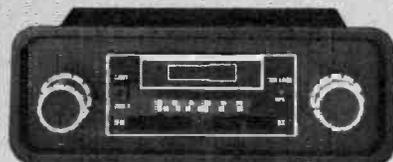
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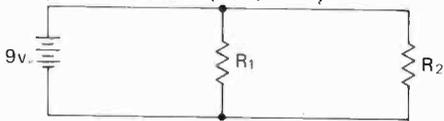


Fig. 2.22—A basic parallel circuit with two branches,  $R_1$  and  $R_2$ .

age across each branch is the same. This is quite different from the series circuit described earlier and requires some careful thought. Let's analyze the voltage and current distribution in the parallel circuit and then its resistance and power characteristics.

**Voltage in the Parallel Circuit**—The 9V source in Fig. 2.24 is connected directly to  $R_1$  through two wires and so the full voltage will appear across this resistor less any small loss from the two wires. Since this loss from the wires is so small it is ignored and we

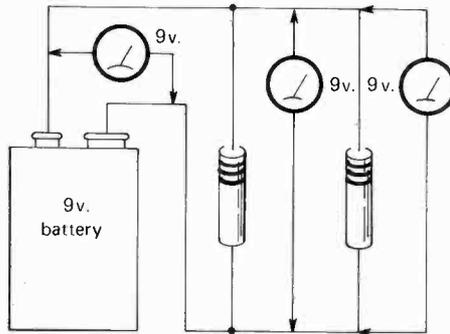


Fig. 2.23—Pictorial representation of the circuit of Fig. 2.22 shows how the battery voltage, 9V, appears across  $R_1$  and  $R_2$ .

state that the full voltage appears across  $R_1$ . Since  $R_2$  is connected to  $R_1$  by two wires,  $R_2$  will also have the full source voltage, 9V, across it. We can conclude (Fig. 2.22) that in a parallel circuit the voltage across each resistor is equal to the source voltage.

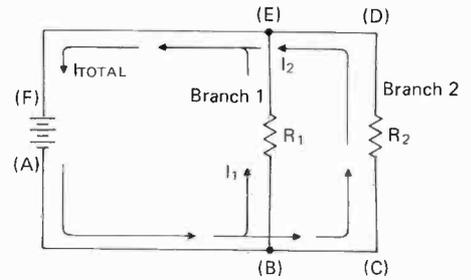


Fig. 2.24—Current distribution in the parallel circuit. The current flow in Branch #1,  $I_1$ , plus  $I_2$ , current in Branch #2 add up to the total current,  $I_T$ .

**Current Flow in a Parallel Circuit**—From the circuit shown in Fig. 2.24 it can be seen that the current flow from the battery has more than one path available, one path through  $R_1$  and a second through  $R_2$ . Electrons leave the negative terminal of the battery (point

**Experiment #6—Series Circuit**

**Material:**

- Resistors, 1.2K  $\pm$  10% (2 each)
- Resistor, 3.3K  $\pm$  10%
- Perfboard
- Fahnestock Clips (4 each)
- 40/40 hardware
- VOM

The purpose of this experiment is to test, verify and reinforce the concepts of the series circuit.

**Procedure:**

**Series Resistance**

- 1—Wire the circuit shown in Fig. 1A. The pictorial is shown in Fig. 1B.
- 2—WITHOUT THE BATTERY CONNECTED

measure the individual resistances by connecting the ohmmeter across each resistor, in turn. Enter the readings in Table I below.

Resistor	Meter Reading in Ohms	From	To
$R_1$		Clip 1	Clip 2
$R_2$		Clip 2	Clip 3
$R_3$		Clip 3	Clip 4

Table I

- 3—Add the individual resistances to calculate  $R_T$ .  
 $R_T = \underline{\hspace{2cm}}$
- 4—Measure the total resistance of the series circuit between Clips 1 and 4.  
 $R_T = \underline{\hspace{2cm}}$

Compare this reading with  $R_T$  calculated in step 3. They should be very close.

**Voltage in a Series Circuit**

- 5—Connect the battery to the circuit of Fig. 1.
- 6—Measure the voltage drop across each resistor and enter the readings in Table II. Try to determine the correct polarity before applying the test leads to the resistors.

Resistor	Voltage Drop	From	To
$R_1$	V	Clip 1	Clip 2
$R_2$	V	Clip 2	Clip 3
$R_3$	V	Clip 3	Clip 4

Table II

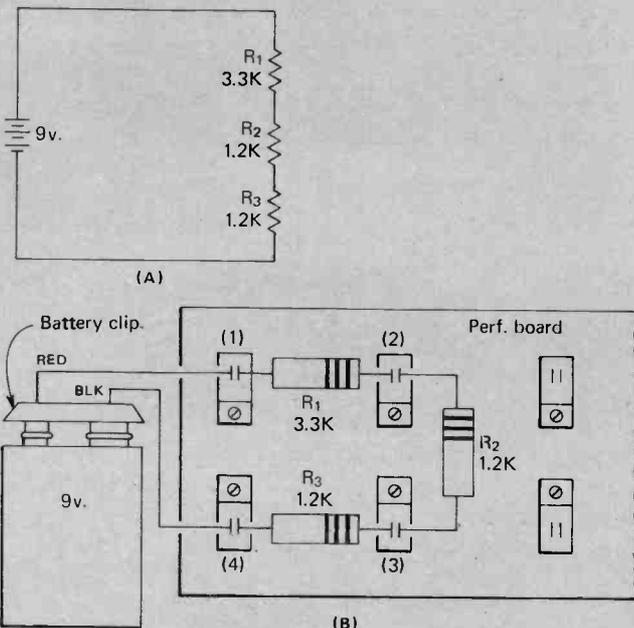


Fig. 1 (A)—Series circuit to be wired on the perfboard. (B)—Pictorial presentation of the circuit in (A).

A) and flow through the wire to B. At B, the electron flow splits, part flowing through  $R_1$  to point E and the rest of the electrons flowing to C, through  $R_2$  to D. From D the electrons flow to E where they recombine with the electrons leaving  $R_1$  and flow back to the positive terminal of the battery, F.

The total current drained from the battery is the sum of the current through each branch of the parallel circuit. Mathematically this is expressed as:

$$I_T = I_{R_1} + I_{R_2} + I_{R_3} + \dots$$

for as many branches there are in the circuit.

To find the current flow in any branch we need to know the resistance of the branch and the voltage across that branch. If in Fig. 2.24,  $R_1$  is 90

ohms,  $R_2$  300 ohms and the battery 9V, the total current drain can be calculated as follows:

$$I_T = I_{R_1} + I_{R_2}$$

where  $I_{R_1} = E/R_1$  and  $I_{R_2} = E/R_2$

By substituting, we have:

$$I_T = E/R_1 + E/R_2 = 9/90 + 9/300 = 0.1 + 0.03 = 0.13A$$

If the total or equivalent resistance of the parallel branches is known, the total current can be calculated from:

$$I_T = E_{\text{applied}}/R_{\text{equivalent}}$$

**Resistance in a Parallel Circuit**—In order to solve certain problems in parallel circuits, it is frequently necessary to find the equivalent resistance of the parallel network. If all the resistances in the parallel circuit are equal

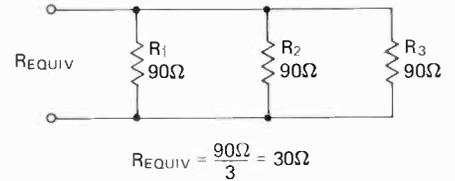


Fig. 2.25—When three equal value resistors are placed in parallel the equivalent resistance is 1/3 the value of one resistor. In this case 1/3 of 90 equals 30 ohms.

in value, the equivalent resistance can be found by dividing the value of one of the resistors by the number of resistors in the parallel circuit. For example, the circuit shown in Fig. 2.25 is made up of three 90 ohm resistors. The equivalent resistance may be found by:

$$R_{\text{equiv}} = R_1 / \text{no. of resistors} = 90/3 = 30\Omega$$

## Experiment 6 (continued)

7—Measure the applied voltage, the battery. \_\_\_\_\_ V.

8—Add the individual voltage drops in Table II and this should equal the battery voltage.  $E_{\text{BATT}} = V$ .

### Voltage Drops with an Open Circuit

9—Open the series circuit by removing one end of  $R_2$  from Clip 2 as shown in Fig. 2.

10—Measure the voltage drop across each resistor now that the circuit is open. Note that there are no voltage readings across any of the resistances. This is because the open circuit prevents an electron flow; with no electron flow through a resistor there can be no voltage drop across that resistor.

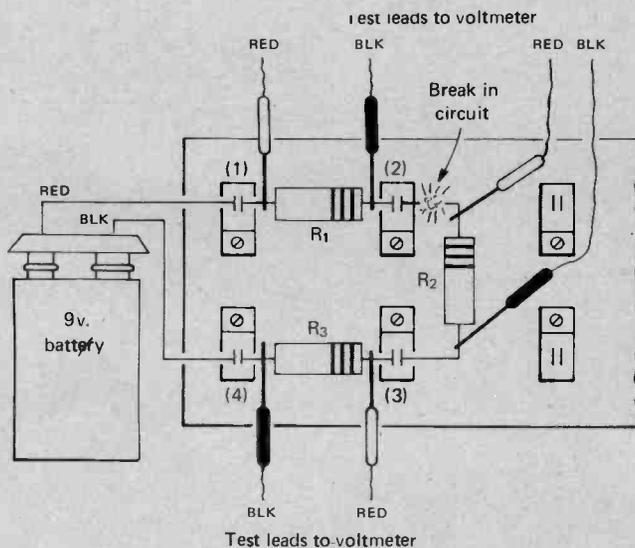


Fig. 2—Break in the series circuit interrupts electron flow preventing voltage drops across the series resistors.

### Measuring Voltage Across an Open Circuit

11—With the circuit set up as shown in Fig. 2, measure the voltage across the open circuit between Clip 2 and the free end of  $R_2$ . \_\_\_\_\_ V.

When there is a break in the circuit there can be no current flow and, therefore, no voltage drop across any of the resistors. As a result, when measuring the *voltage across the break* in the circuit, as in step 11, you will read *almost the full battery voltage*. This is illustrated in Fig. 3.

### Measuring Current in a Series Circuit

12—To measure the current flow in a series circuit it is first necessary to break the circuit as was done in step 9 and shown in Fig. 2.

The next step is to connect a *milliammeter* across the break in the circuit. Be sure that the:

1—range is set at 300 mA

2—positive lead is connected to Clip 2 and the negative lead to the free end of  $R_2$ .

13—Lower the range switch until a reading close to mid-scale is obtained. Enter the current reading in the space provided. \_\_\_\_\_ mA.

14—Check the measured current by calculating the current that should flow using  $R_T$  calculated in step 4 and the applied voltage measured in step 7, using Ohm's Law.

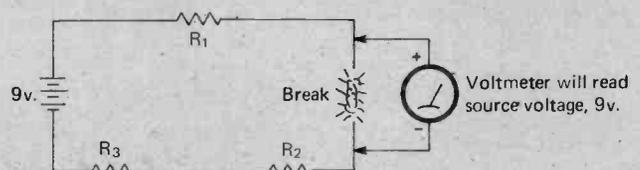


Fig. 3—Measuring voltage across the open in the series circuit usually results in a reading equal to the battery voltage.

## BASIC RADIO (continued)

When two resistances of different values are placed in parallel the equivalent resistance can be found by using the following formula:

$$R_{\text{equivalent}} = \frac{R_1 \times R_2}{R_1 + R_2}$$

If, for example, in Fig. 2.24, the resistance values were  $R_1 = 47$  ohms and  $R_2 = 82$  ohms, the equivalent resistance would be:

$$R_{\text{equivalent}} = \frac{R_1 \times R_2}{R_1 + R_2} = \frac{47 \times 82}{47 + 82} = \frac{3854}{129} = 29.9\Omega$$

If more than two resistors of different value are placed in parallel, the following formula may be used.

$$R_{\text{equivalent}} = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \dots}$$

If, for example, four resistors are placed in parallel, 40, 80, 20 and 160 ohms, the equivalent resistances could be found as shown below:

$$R_{\text{eq}} = \frac{1}{\frac{1}{40} + \frac{1}{80} + \frac{1}{20} + \frac{1}{160}} = \frac{1}{\frac{4 + 2 + 8 + 1}{160}} = \frac{1}{\frac{15}{160}} = \frac{160}{15} = 10.66\Omega$$

If this type of math problem is too difficult the parallel combination's value could be solved in three steps using the formula given earlier by dividing the circuit into two 2 resistor combinations and solving as follows:

$$R_{\text{eq}} = \frac{R_1 \times R_2}{R_1 + R_2} = \frac{40 \times 80}{40 + 80} = \frac{3200}{120} = 26.66\Omega$$

$$R_{\text{eq}} = \frac{R_1 \times R_2}{R_1 + R_2} = \frac{20 \times 160}{20 + 160} = \frac{3200}{180} = 17.77\Omega$$

Now, placing the 17.77 and 26.66 ohm networks in parallel we have

## Experiment #7—Parallel Circuits

### Materials:

- Resistors, 1.2K (2 each)
- Resistors, 3.3K
- Perfboard
- Fahnestock Clips
- 40/40 Hardware
- VOM

The purpose of this experiment is to test, verify and reinforce the principles of parallel circuits.

### Procedure:

#### Parallel Resistance

1—Wire the circuit shown in Fig. 1A. The pictorial for that circuit is shown in Fig. 1B.

2—Calculate the total resistance as explained in the text and enter the resistance value. \_\_\_\_\_Ω.

3—Measure the total resistance between Clips 1 and 4 with the ohmmeter and enter the resistance value. \_\_\_\_\_ Repeat the measurements between Clips 2 and 5 and then between Clips 3 and 6. Compare all three readings with each other.

4—Add a 3.3K resistor across clips 3 and 6 and

remeasure the effective resistance. \_\_\_\_\_Ω.

Note that the resistance drops but not very much.

5—Remove the 3.3K resistor and connect a length of hookup wire between Clips 3 and 6. Measure the resistance between pins 1 and 4. \_\_\_\_\_ Note that this wire produced a short circuit that resulted in a reading of zero ohms.

### Voltage in Parallel Circuits

6—REMOVE THE SHORT CIRCUIT from between clips 3 and 6.

7—Connect the 3.3K resistor between Clips 3 and 6.

8—Connect the battery connector between Clips 1 and 4, the red on 1 and black on 4 and connect the battery to the clip. The finished board should appear as shown in Fig. 2A.

9—Set the VOM on the 15 Volt range and measure the voltage across each resistor starting with  $R_1$  as shown in Fig. 2A. Enter the reading in Table I.

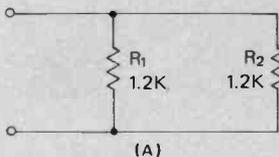
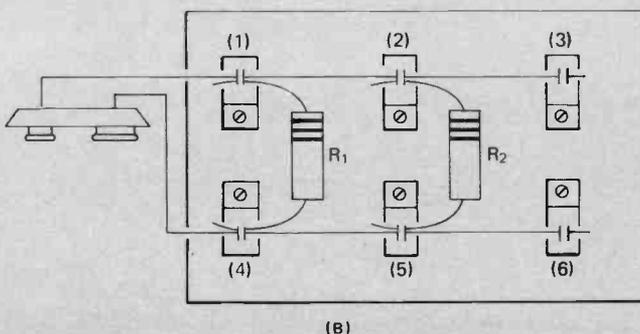


Fig. 1 (A)—Simple two branch parallel circuit. (B)—Pictorial presentation of the circuit in (A).



Resistor	Voltage
$R_1$ - 1.2K	
$R_2$ - 1.2K	
$R_3$ - 3.3K	

Table I

Note that the voltage across each branch is the same in a parallel circuit.

10—Remove  $R_3$  from the parallel circuit and remeasure the voltage across  $R_1$  and  $R_2$ . Compare these readings to those in Table I. Note that there is no change in the voltage.

11—Remove the battery and add a wire from Clip 3 to 6 where  $R_3$  was. This places a short across the parallel circuit. Now, reconnect the battery and working rapidly, remeasure the voltage across  $R_1$  and  $R_2$  and then disconnect the battery. Note that

$$R_{eq} = \frac{R_1 \times R_2}{R_1 + R_2} = \frac{17.77 \times 26.66}{17.77 + 26.66} = \frac{473.748}{44.43} = 10.66\Omega$$

Still a third way is to calculate all four branch currents, adding them up and then solving for  $I_T$  which is equal to  $E_{applied}$  divided by  $I_T$ .

No matter how the equivalent resistance is calculated, it should be apparent that the equivalent resistance will be *less than the lowest resistance* in any of the branches of the parallel network.

**Power Distribution in the Parallel Circuit**—As in the series circuit, each resistor consumes its power and since all power consumed must come from the battery the total power,  $P_T$ , is

equal to the sum of the individual power consumptions, or:

$$P_T = P_{R1} + P_{R2} + P_{R3} + \dots$$

If, in the circuit of Fig. 2.24,  $R_1$  and  $R_2$  are 50 ohms each and the battery is 100 volts,  $P_T$  could be found by one of two methods. First method:

$$I_T = E_{applied}/R_T$$

$$R_T = 50/2 = 25\Omega$$

$$\text{Therefore } I_T = 100/25 = 4A$$

$$P_T = E_{applied} \times I_T = 100 \times 4 = 400 \text{ watts}$$

The second method is to solve each individual power dissipation and then find the sum.

$$P_{R1} = E^2/R_1 = 100^2/50 = 10,000/50 = 200W$$

Since  $R_2$  is also 50 ohms, it too will dissipate 200 watts. Thus:

$$P_T = P_{R1} + P_{R2} = 200 + 200 = 400W$$

**Summary of Parallel Circuits**—The major characteristics of the parallel circuit can be summarized as follows:

1—The equivalent resistance of a parallel circuit is always less than the lowest value resistor in any branch.

2—The total current drain is equal to the sum of the currents in each branch.

3—The voltage across each branch of the parallel circuit is equal to the applied voltage. (continued)

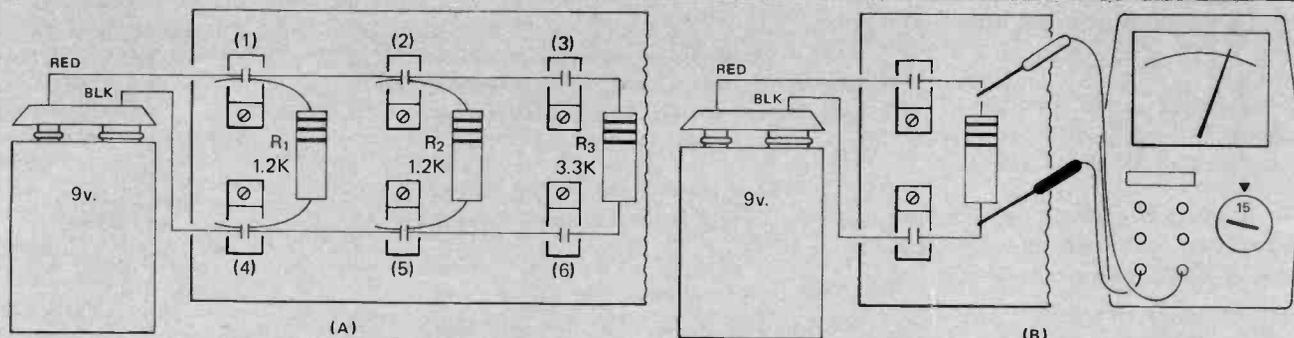


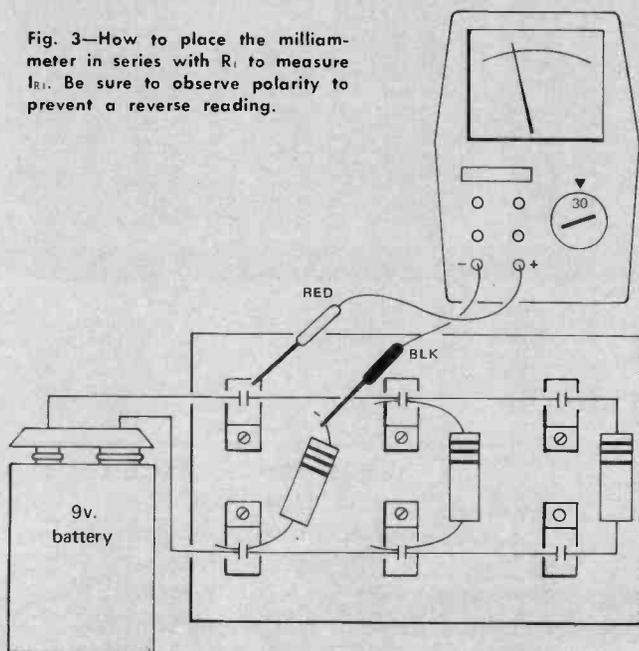
Fig. 2 (A)—Three branch parallel network with battery set up as directed in the procedure. (B)—How to measure the voltage across one branch of the parallel circuit.

when there is a short across *one branch* there can be no voltage across the other branches in the parallel circuit.

### Current in Parallel Circuits

12—Set the board up with three resistors and the battery as shown in Fig. 2A. With 9V applied to  $R_1$ ,

Fig. 3—How to place the milliammeter in series with  $R_1$  to measure  $I_{R1}$ . Be sure to observe polarity to prevent a reverse reading.



and  $R_2$ , 1.2K each, the current flow through each resistor should be  $I = E/R = 9/1200 = 7.5 \text{ mA}$ . For  $R_3$ , 3.3K the current should be  $9/3300 = 2.7 \text{ mA}$ .

13—To check  $I_{R1}$ , disconnect  $R_1$  from Clip 1 and place the meter in series with  $R_1$  as shown in Fig. 3. Enter the current reading in Table II and reconnect  $R_1$ .

14—Repeat this for  $I_{R2}$  disconnecting  $R_2$  from Clip 2 and for  $I_{R3}$  disconnecting  $R_3$  from Clip 3. Enter both readings in Table II.

Resistor	Current
$I_{R1}$	mA
$I_{R2}$	mA
$I_{R3}$	mA
$I_{Total}$	mA

Table II

15—To check the total current drain remove the red battery wire from Clip 1 and connect the milliammeter between the red wire and Clip 1 (Fig. 2C). Be sure to set the range selector to 300mA and then lower the range if necessary. Check this total current reading against the sum of  $I_{R1}$ ,  $I_{R2}$  and  $I_{R3}$  in Table II. They should be the same plus or minus any small errors due to approximations in meter readings and meter accuracy.

**BASIC RADIO (continued)**

4—The total power dissipated is equal to the sum of the powers dissipated in each branch.

**Suggested Reading**

Tepper, Marvin. Basic Radio, Vol. I, 2d Ed., New Jersey: Hayden, pp. 1-76 to 1-87, 1-88 to 1-92.  
Shrader, Robert L., Electronic Communication, 3d Ed., New York: McGraw Hill, pp. 32-36, 38-40.

**Self Check Questions**

1—In a series circuit containing 3 resistors the electron flow has the choice of 3 paths. T or F

2—In a series circuit, if a break occurs, a heavy current will flow. T or F

3—A series circuit contains 4 resistances, 5K, 2.2K, 1000 ohms and 50 ohms. Calculate the total resistance.

4—If the series circuit of Question 3 above is connected to a voltage source of 150V the current flow would be \_\_\_\_\_.

5—For the circuit of Question 3

with 150V across it, determine the voltage drop across each resistor.

6—The circuit of Question 3 is operated with 150V applied and the 50 ohm resistor opens. What voltage would be measured when the VOM is placed across this resistor?

7—In Fig. 2.17, what is the polarity of the voltage at the lower end of R<sub>2</sub> compared to the upper end of R<sub>2</sub>?

8—Two resistors are connected in series across an 18 volt source. Find P<sub>T</sub> if the resistors are 2K and 7K.

9—For the problem in Question 8, determine the wattage dissipated by each resistor.

10—State the rule for current flow in a series circuit.

11—When two or more resistors are placed in parallel the total resistance will always be less than the lowest resistor value in the combination. T or F

12—In a parallel circuit the current divides evenly between each branch. T or F

13—If in the circuit of Fig. 2.22 R<sub>1</sub> is 10K and R<sub>2</sub> is 35K the equivalent resistance is equal to \_\_\_\_\_.

14—If in the circuit of Fig. 2.22 R<sub>1</sub> is 170K and R<sub>2</sub> is 197K, the equivalent resistance must be less than 170K. T or F

15—In a parallel circuit, unlike the series circuit, the power dissipation of each resistance is additive. T or F

**Answers to Self Check Questions**

- 1—F  
2—T  
3—13-7.77K  
4—F  
5—T  
6—11  
7—10  
8—The current is the same at any point in the series circuit.  
9—7K = 0.0208W  
10—2K = 0.008W  
11—8  
12—0.036W  
13—negative  
14—Approximately 150V  
15—5K = 90.9V  
16—2.2K = 39.992V  
17—1K = 18.18V  
18—5 = 0.906W  
19—4 = 0.01818A  
20—3 = 8.250V  
21—F  
22—F

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2SC482 1.75	2SC773 .85	2SC1013 1.50	2SC1475 1.50	40082 3.00
2SC495 1.10	2SC774 1.75	2SC1014 1.50	2SC1678 5.50	2SC608 4.85
2SC502 3.75	2SC775 2.75	2SC1017 1.50	2SC1679 4.75	SK3046 2.15
2SC514 4.75	2SC776 3.00	2SC1018 1.50	2SC1720 2.15	SK3047 3.75
2SC617 3.80	2SC777 4.75	2SC1173 1.25	2SC1768 2.15	SJ2095 3.50
2SC815 3.90	2SC778 3.25	2SC1226A 1.25	2SC1816 5.50	SK3048 3.25
2SC616 4.15	2SC797 2.50	2SC1237 4.50	2SC1908 .70	SK3054 1.25
2SC617 4.25	2SC798 3.10	2SC1239 3.50	2SC1957 1.50	
2SC699 4.75	2SC781 3.00	2SC1243 1.50	2SF8 3.00	2SK19 1.75
2SC710 .70	2SC789 1.00	2SC1306 4.75	HEP-S 3001 3.25	2SK30 1.00
2SC711 .70	2SC796 3.15	2SC1306-1 4.90	2SD235 1.00	2SK33 1.20
2SC735 .70	2SC799 4.25	2SC1307 5.75	MRF8004 3.00	
2SC756 3.00	2SC802 3.75	2SC1307-1 6.00	4004 3.00	3SK40 2.75
2SC765 9.50	2SC803 4.00	2SC1377 5.50	4005 3.00	3SK45 2.75
2SC766 10.15	2SC839 .85	2SC1449 1.30	40080 1.25	3SK49 2.75

**JAPANESE TRANSISTORS**

2SA52 .60	2SB187 .60	2SC458 .70	2SC815 .75	2SC1569 1.25
2SA316 .75	2SB235 1.75	2SC460 .70	2SC828 .75	2SC1756 1.25
2SA473 .75	2SB303 .65	2SC478 .80	2SC829 .75	
2SA483 1.95	2SB324 1.00	2SC491 2.50	2SC830 1.60	2SD30 .95
2SA489 .80	2SB337 2.10	2SC497 1.60	2SC839 .85	2SD45 2.00
2SA490 .70	2SB367 1.60	2SC515 .80	2SC945 .65	2SD65 .75
2SA505 .70	2SB370 .65	2SC535 .75	2SC1010 .80	2SD68 .90
2SA564 .50	2SB405 .85	2SC536 .65	2SC1012 .80	2SD72 1.00
2SA628 .65	2SB407 1.65	2SC537 .70	2SC1051 2.50	2SD88 1.50
2SA643 .85	2SB415 .85	2SC563 2.50	2SC1061 1.65	2SD151 2.25
2SA647 2.75	2SB461 1.25	2SC605 1.00	2SC1079 3.75	2SD170 2.00
2SA673 .85	2SB463 1.65	2SC620 .80	2SC1096 1.20	2SD180 2.75
2SA679 3.75	2SB471 1.75	2SC627 1.75	2SC1098 1.15	2SD201 1.95
2SA682 .85	2SB474 1.50	2SC642 3.50	2SC1115 2.75	2SD218 4.75
2SA699 1.30	2SB476 1.25	2SC643 3.75	2SC1166 .70	2SD300 2.50
2SA699A 1.75	2SB481 2.10	2SC644 .70	2SC1170 4.00	2SD313 1.10
2SA705 .55	2SB492 1.25	2SC681 2.50	2SC1178 4.25	2SD315 .75
2SA815 .85	2SB495 .95	2SC684 2.10	2SC1209 .55	2SD318 .95
2SA816 .85	2SB507 .90	2SC687 2.50	2SC1213 .75	2SD341 .95
	2SB511 .70	2SC696 2.35	2SC1226 1.25	2SD350 3.25
		2SC712 .70	2SC1243 1.50	2SD352 .80
2SB22 .65		2SC713 .70	2SC1293 .85	2SD380 5.70
2SB54 .70	2SC206 1.00	2SC732 .70	2SC1308 4.75	2SD389 .90
2SB56 .70	2SC240 1.10	2SC737 .70	2SC1347 .80	2SD390 .75
2SB77 .70	2SC261 .65	2SC739 .70	2SC1383 .75	2SD437 5.50
2SB128 2.25	2SC291 .65	2SC739 .70	2SC1383 .75	
2SB135 .95	2SC320 2.00	2SC715 1.75	2SC1409 1.25	MPS-U31 at 4.00 ea.
2SB152 4.50	2SC352 .75	2SC762 1.90	2SC1410 1.25	
2SB173 .55	2SC353 .75	2SC783 1.00	2SC1447 1.25	MPS 8000 at 1.25 ea.
2SB175 .55	2SC371 .70	2SC784 .70	2SC1448 1.25	
2SB178 1.00	2SC372 .70	2SC785 1.00	2SC1507 1.25	
2SB186 .60	2SC394 .70	2SC793 2.50	2SC1509 1.25	

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1N914 .10	2N962 .40	2N2221 .25	2N2914 1.20	2N3771 1.75	2N4402 .20
	2N967 .50	2N2221A .30	2N2916A 3.65	2N3772 1.90	2N4403 .20
2N173 1.75	2N1136 1.35	2N2222 .25	2N3019 .50	2N3773 3.00	2N4409 .20
2N178 .90	2N1142 2.25	2N2222A .30	2N3053 .70	2N3819 .32	2N4410 .25
2N327A 1.15	2N1302 .25	2N2270 .40	2N3054 .30	2N3823 .70	2N4416 .75
2N334 1.20	2N1305 .30	2N2322 1.00	2N3055 .75	2N3856 .20	2N4441 .85
2N336 .90	2N1377 .75	2N2324 1.35	2N3227 1.00	2N3866 .85	2N4442 .90
2N338A 1.05	2N1420 .20	2N2326 2.85	2N3247 3.40	2N3903 .20	2N4443 1.20
2N398B .90	2N1483 .95	2N2325 2.00	2N3250 .50	2N3904 .20	2N4852 .55
2N404 .30	2N1540 .90	2N2326 2.85	2N3375 6.50	2N3905 .20	2N5061 .30
2N443 1.75	2N1543 2.70	2N2327 3.80	2N3393 .20	2N3906 .25	2N5064 .50
2N456 1.10	2N1544 .80	2N2328 4.20	2N3394 .17	2N3925 3.75	2N5130 .20
2N501A 3.00	2N1549 1.25	2N2329 4.75	2N3414 .17	2N3954 3.50	2N5133 .15
2N508A .45	2N1551 2.50	2N2368 .25	2N3415 .18	2N3954A 3.75	2N5138 .15
2N555 .45	2N1552 3.25	2N2369 .25	2N3416 .19	2N3955 2.45	2N5198 3.75
2N652A .85	2N1554 1.25	2N2484 .32	2N3417 .20	2N3957 1.25	2N5294 .50
2N677C 6.00	2N1557 1.15	2N2712 .18	2N3442 1.85	2N3958 1.20	2N5296 .50
2N706 .25	2N1560 2.80	2N2894 .40	2N3553 1.50	2N4037 .60	2N5306 .20
2N706B .40	2N1605 .35	2N2903 3.30	2N3563 .20	2N4093 .85	2N5354 .20
2N711 .50	2N1613 .30	2N2904 .25	2N3565 .20	2N4124 .20	2N5369 .20
2N711B .60	2N1711 .30	2N2904A .30	2N3638 .20	2N4126 .20	2N5400 .40
2N718 .25	2N1907 4.10	2N2905 .25	2N3642 .20	2N4141 .20	2N5401 .50
2N718A .30	2N2060 1.85	2N2905A .30	2N3643 .15	2N4142 .20	2N5457 .30
2N720A .50	2N2102 .40	2N2906 .25	2N3645 .15	2N4143 .20	2N5458 .30
2N918 .35	2N2218 .25	2N2906A .30	2N3646 .14	2N4220A .45	C103Y .25
2N930 .25	2N2218A .30	2N2907 .25	2N3730 1.50	2N4234 .95	C103D .40
2N956 .30	2N2219 .25	2N2907A .30	2N3731 2.75	2N4400 .20	C106B1 .50
					C106D1 .75

SILICON UNIUNCTIONS		INTEGRATED CIRC.		RECTIFIERS	
2N2646 .50	2N4871 .50	UA703C .40		10	100
2N2647 .60	2N4891 .50	709C OP. AMP. .25		IN4001 .60	5.00
2N6027 .55	2N4892 .50	741C OP. AMP. .25		IN4002 .70	6.00
2N6028 .70	2N4893 .50	7400 .15		IN4003 .80	7.00
D5E37 .25	2N4894 .50	TA7061P at 3.50 ea.		IN4004 .90	8.00
2N2160 .65	MU10 .40	TA7205P at 10.00 ea.		IN4005 1.00	9.00
2N4870 .50		UPC1001h2 at 6.00 ea.		IN4006 1.10	10.00
		NE555 at 1.25 ea.		IN4007 1.20	11.00



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- Horizon 29** The only CB radio with "Hear Power" receiver performance.
- Horizon 29** Speaks out with maximum legal power, power that nobody walks-on.
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- Horizon 29** All solid state for reliable performance off-the-road as well as in cars, trucks or boats.
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- Horizon 29** Backed by Standard's free lifetime, flat-rate "Radio Life Insurance" plan.

Get the facts about the Horizon 29, the innovative new CB from Standard.

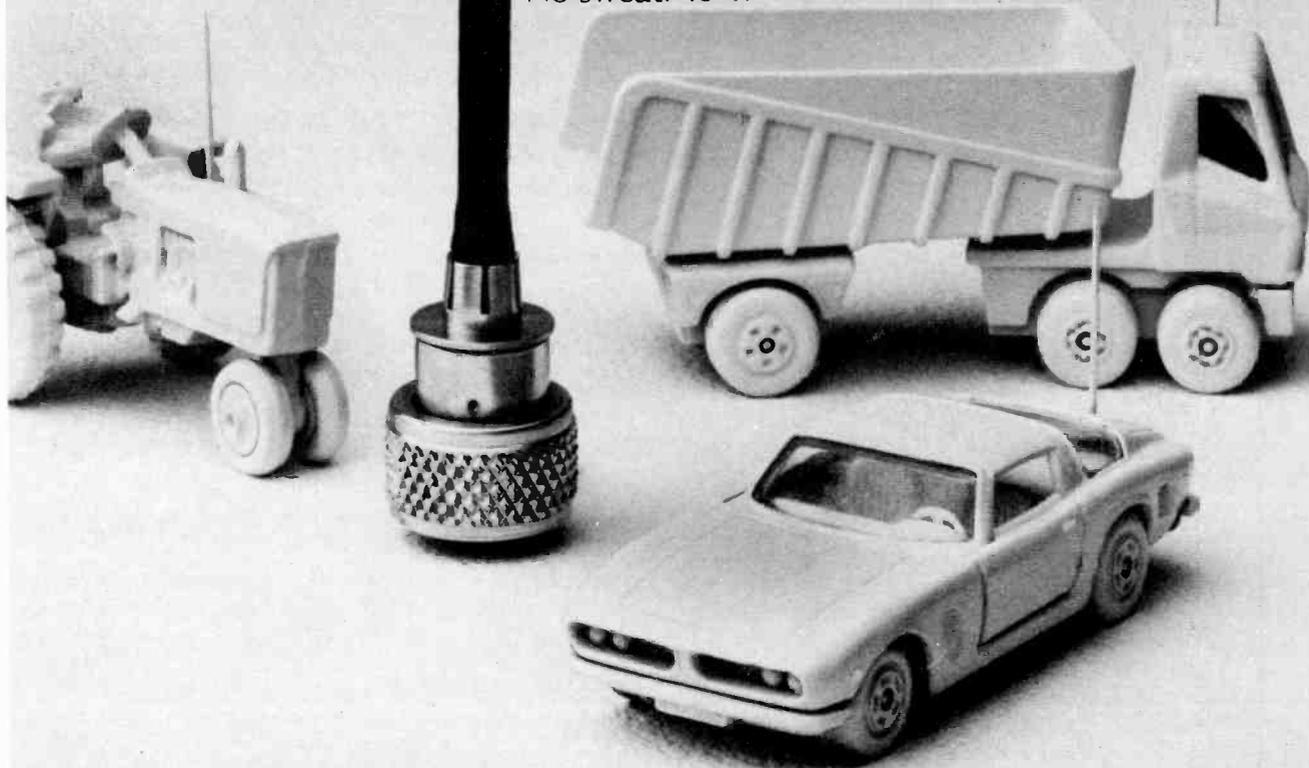


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California 90009

# 10-1?

Get a strong clear signal that's wall to wall. Install the new Amphenol® FCP antenna connector. No crimp tools. No solder. No goofs. No sweat. 10-4?



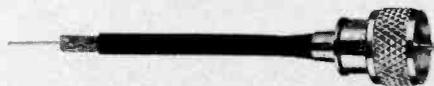
The new Amphenol FCP\* connector is what a lot of CB'ers have been asking for. Assembly's so simple there's no need for solder or crimp tools. And it really grips that cable!

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10-10 on the side!

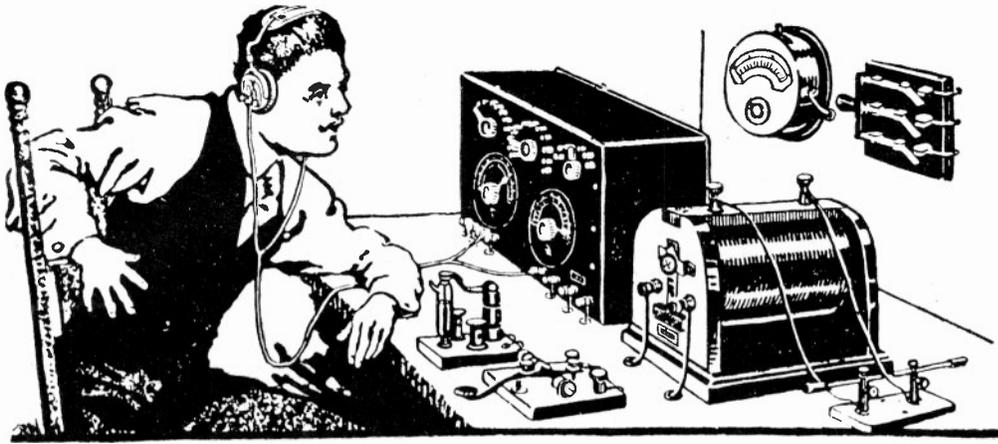
\*Patent applied for.



**//** When you can connect it  
and forget it...that's quality.

AMPHENOL CONNECTORS FROM

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RAMO**



## *FCC Eases Ham Radio Service Rules!*

**T**HE Commission has amended its rules concerning operator classes, privileges, and requirements in the Amateur Radio Service.

Specifically, the Commission:

- granted full Novice Class privileges to all Technician Class licensees;
- deleted the one year waiting period which prohibits the issuance of a Novice Class license to any person who has held within the prior 12 month period any class of amateur operator license;
- raised the Novice Class power limit to 250 watts input and limited all other operator classes to that limit when operating in Novice Class frequency subbands;
- granted full credit for examination elements passed on volunteer-administered tests;
- made Element 2 an examination requirement for all license classes;
- reduced number of license classes from 10 to 5;
- restricted the future availability of volunteer-administered mail examinations to only Novices and those persons who demonstrate by physician's certificate that they have a protracted disability which prevents travel to a Commission examination point.

Approximately 4000 comments and replies were filed in this proceeding, the Commission noted. It added that the severe manpower and time restrictions brought about by the recent surge in Citizens Radio Service applications has prevented the preparation at this time of a comprehensive Report and Order addressing all of the issues raised in the Docket 20282 Notice of Proposed Rule Making. Therefore, the Commission stated it would now address several matters of im-

portance and would prepare additional Reports and Orders as the workload permits.

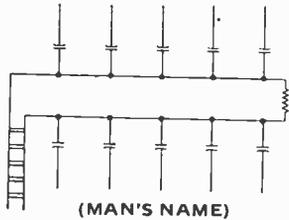
As one of the broad objectives in this proceeding, the Commission stated that it desired to preclude, or at least minimize, any adverse impact upon presently licensed amateurs, and the present rule amendments would meet that objective. Although the availability of volunteer-administered examinations is being limited to Novices and persons unable to travel to a Commission examination point, persons now holding licenses obtained on the basis of a mail examination will not be adversely affected. Full examination credit will be given for all elements passed during a volunteer-administered test, should the licensee wish to upgrade his license class.

In deleting the one year waiting period for the Novice Class license, the Commission said that this provision served no useful purpose and had prohibited otherwise qualified persons from remaining in amateur radio. It said that the granting of Novice Class privileges to Technician Class licensees was widely supported in the comments and would have the same effect as earlier rule provisions, subsequently deleted, which permitted Technicians to also hold Novice licenses.

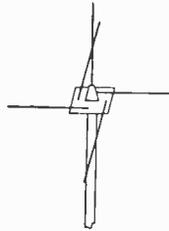
With respect to Novice power limits, the Commission said that it was raising this limit from 75 watts to 250 watts in order that Novices could buy equipment which would be readily useable and practical when they upgrade to General Class and above. In limiting all licensees to 250 watts when operating in Novice Class subbands, it said that it saw no reason to permit non-Novices to utilize high power in subbands where such power gives them a significant advantage over a license class which is restricted to those subbands.

# ANTENNA QUIZ

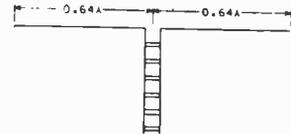
Here's one to try on that know-it-all technical expert in your CB club. All you've got to do is identify the types of antennas shown. The answers are on page 131.



1 .....



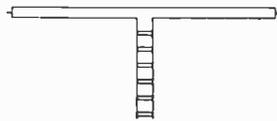
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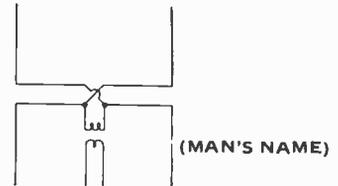
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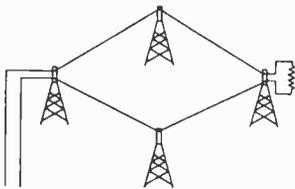
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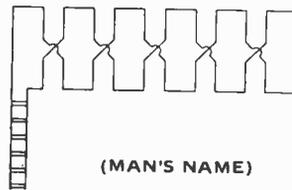
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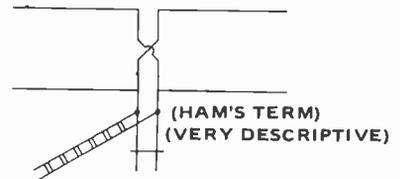
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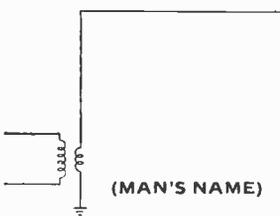
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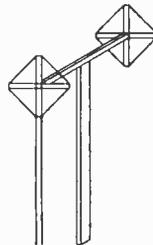
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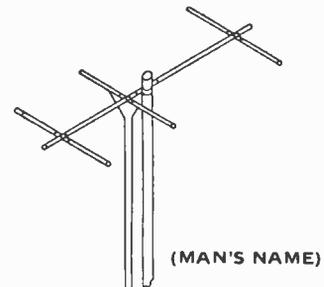
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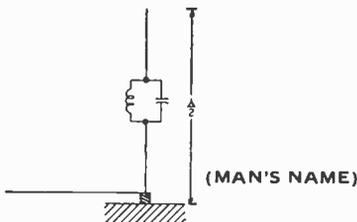
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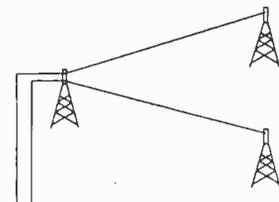
12 .....



13 .....



14 .....



15 .....

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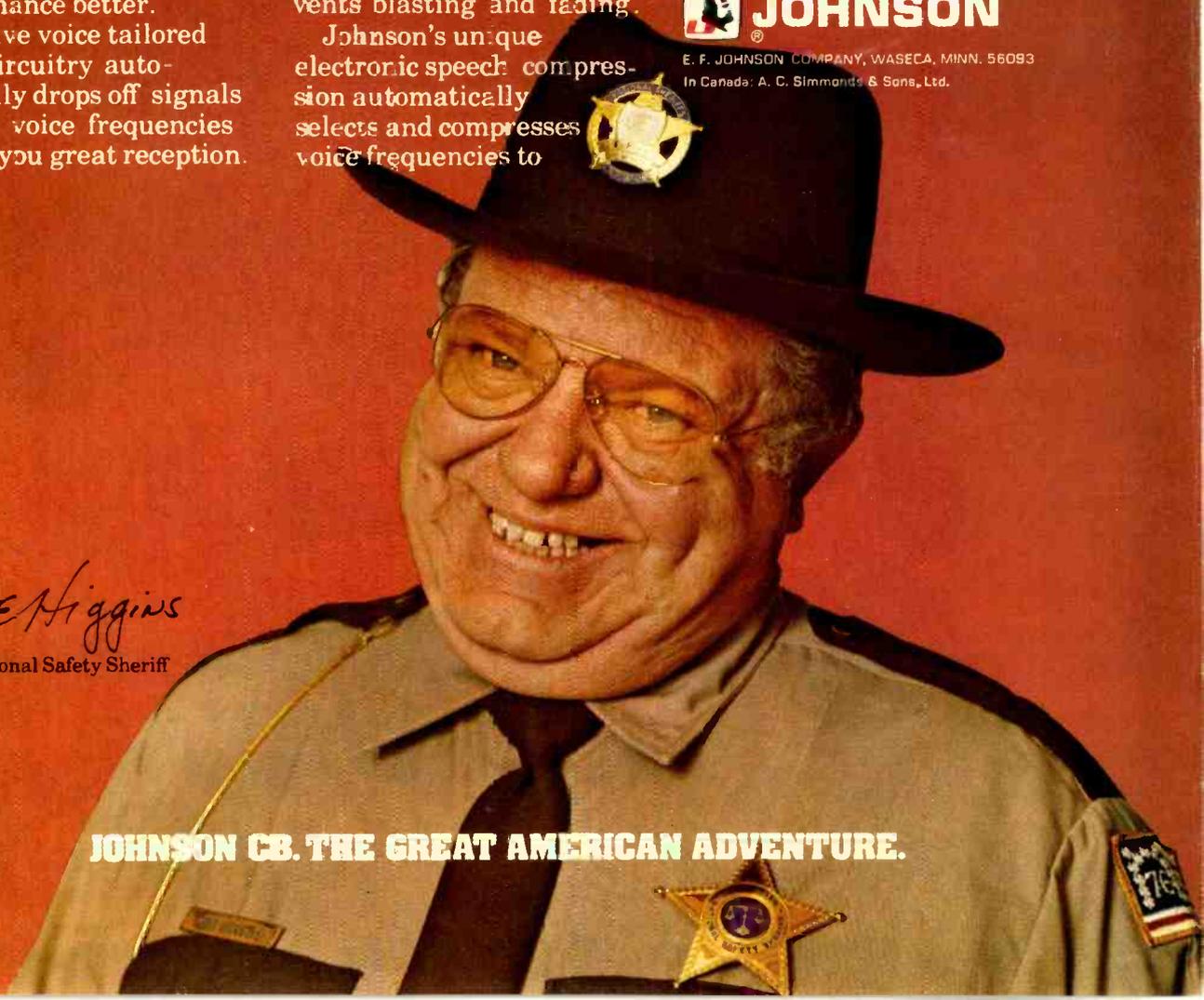


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# TOMCATTING with "Tomcat!"

Across The Channels With  
S9's Editor, Tom Kneitel (Tomcat/ KEZ5173)



**O**VERHEARD on Channel 8: "Hey, guy, how about a radio check?" "OK, fella, I just checked it and it's still here, hold on and I'll run out and check my mobile rig!" . . . Many readers have written to note that it's peculiar that Sundays seem to be the best days for skip openings—they feel that there is something "unusual" about this and ask why. I sort of get the vibes that many of these letters imply that there is some sort of Divine intervention on behalf of Skipland residents taking place, or at least *something* of a supernatural influence involved. My explanation? Sunday is everybody's day off—more operators out there sending out signals to skip, and you are there sitting at home by the rig to hear 'em! . . . Boris, who escaped from Czechoslovakia as a kid in World War II tells me that he, quite naturally, selected as his handle *Radio Czech*. Boris says that many fellow CB'ers in Detroit have gotten used to him with that handle, but those who don't know him hear

**". . . he wasn't interested in talking to a parrot — and did the other station want a QSL Card or a cracker!!"**

the handle and immediately come back with 1-2-1-2-1-2!! . . . Many CB'ers take to the open road this time of year—sometimes several vehicles moving in a convoy to a camping ground or vacation place. Naturally CB is used for communications, but sometimes the small-talk and chatter between such convoy vehicles is disturbing to (and disturbed by) other vehicles on the channel (especially if it's 19). Here's an idea—use dummy loads (like the S9 *Vampire Bat* of April issue fame) instead of antennas since they will give you adequate close-range communications while also cutting out much of the unwanted jabber on the channel from distant vehicles . . . Many of the CB'ers which roll in on

skip when the band opens are frequently heard whistling into the mike after each sentence, if they knew how dumb it sounds on the other end they would probably stop. One guy came back to one of these steam whistle stations and said that he wasn't interested in talking to a parrot—and did the other station want a QSL card or a cracker!! . . . Received some mail from people asking for my thoughts on the ethics of giving out *Smokey Breaks*, since I had mentioned in the May/June edition that I don't give them out. I suppose I don't give them out for a number of reasons of my own, however I guess that I should mention that I *don't* have any major complaint with those who do broadcast them if that's their thing. As far as the ethics go, if Smokey wanted to operate in an undercover manner he wouldn't be driving around in a multi-colored *Tijuana Taxi*—seems pretty apparent that a Smokey in a *marked wrapper* is hoping that he will be seen and noticed by 4 and 18 wheelers! In that case, reporting the location of Smokey would seem to be only helping him to make his presence known. If a Smokey was walking down the street near where you and a friend were standing, I don't think any eyebrows would be raised if you turned to your buddy and said, "Hey, there's a Smokey coming down the street." For some reason it seems to be a whole new ball of yarn if it's done over the air on CB—at least to *some* people! . . . *Freebie Department*: For a stamped, self-addressed envelope you can get a FREE "A to Z CB Slang Dictionary," send your request to E.C.B.R.P., 119 De Haven Drive, Yonkers, N.Y. 10703—don't forget to include the return envelope . . . Very often I hear members of CB clubs griping about this or that officer is "power crazy," has let the office go to his/her head, etc. Always makes me wonder about the contribution to the club effort being made by the complaining member. As a former member of one of the very first CB clubs ever (back in 1959) I recall that of the 100 or so

members, it was only the 4 or 5 officers who ever did anything at all—except gripe! So, if you feel that a particular member of your CB club is on a power trip, ask yourself if the reason is because everyone else in the club has dumped all of the work on his shoulders and it just *seems* like a power trip because he's the only one doing any of the work! . . . A lengthy petition was received here, signed by a large number of CB'ers in the Los Angeles area. It was apparently coordinated by one *Cuddle Bunny*—however it was similar in intent to other letters I have received in the past few months. The basic nitty gritty is to file a formal complaint against the frequently heard CB reference to YL's as "*beavers*." Our correspondents stating that it is degrading and dehumanizing, and should be discontinued. I second the motion—I have always felt it was a particularly irritating term to hear on the band and it probably says a lot about those who seem to take delight in using it!! . . . On the other hand, several letters have come in complaining about police officers being dubbed as *Smokeys* by CB'ers (a term which seems to have been picked up and put into general public use by non-CB'ers too). Well, it is one helluva improvement over the title "pig" which was in vogue before the CB'ers came up with *Smokey*!! . . . Most interesting CB "product" we've heard about is an apparent "mystery device" which you can buy for about 5 bucks—supposedly you put it on or in your mobile unit and 18-wheeler drivers will be fooled into thinking you are an 18-wheeler, because it somehow causes something to happen when you transmit which 18-wheelers recognize as "their own." My thought is—why would anybody want to spend a *nickel* to sound like something other than what they are?? . . . The CB-rig nostalgia story in the May/June issue (page 77) brought forth a note from Pete Kreer (who in the old days was known as 18Q5495 on the channels) who reminded me that the *Johnson Messenger 1* of 1960 vintage has become a real collectors' item, even though it was in continuous production for about 12 years. They've even got one at the radio exhibit of the Smithsonian Institution in Washington, D.C. Of course, Pete also pointed out that the gremlins screwed up the captions in our story so that the *Messenger* was shown with a description of another rig, and vice versa!! . . . CB'ers in the Elmhurst area (of Queens) in the *Big Apple* were saddened by the news about old time CB'er *Gas House Charlie*, who passed away in early May after a brief illness . . . A popular con game which seems to be growing in national popularity is the trick of a mobile CB'er getting pulled over on the road by another mobile

unit—the driver identifying himself as an "FCC Inspector" with some sort of hokey credentials. After a quickie "inspection" of the first operator's mobile installation a lengthy list of "violations" are discovered (things like not having a transmitter ID card attached, no copy of Part 95 and other such) and the "FCC" man decides that the CB rig must be immediately "confiscated." That is the absolutely corniest trick going, yet you'd be surprised at how many guys fall for it and willingly turn over their rigs to the self-ordained "FCC Inspector," who then turns around and peddles the set on the hot-rig market! Hey, if someone tries this trick on you—get his plate number, a full description, and then scream long and loud on Channels 9, 19 or anywhere else until you can get a Smokey to bust the creep—and then report him to the FCC for impersonating a government official. In any event—DO NOT give the guy your CB rig under any circumstances!! . . . Those AM and SSB operators who have asked about operator's achievement awards are directed to send a stamped, self addressed envelope to S.S.B. at P.O. Box 381 Smithtown, N.Y. 11787—they've got some good ones and will send you all of the details . . . Many readers who are into QSL card swapping have asked me if the ol' *Tomcat* is a QSL cardswapper—yessiree, just send me your card and I'll be happy to send you one back! . . . Here's a happy thought—in some states there are laws which regulate installation of mobile radio gear which is capable of picking up police radio transmissions. What with Smokey getting base/mobile ears in so many states, I wonder if the next thing we'll hear is that CB rigs can pick up Smokey channels and therefore CB'ers will need a special permit from Smokey for mobile installation!! . . . Sandro, of Sandro's Electronics in Bayshore, N.Y., that continental gentleman of CB, gave me a rare peek at one of the biggest warehouse supplies of CB goodies I have ever seen—part of the stuff he ships all around the nation. Wow! The ol' eyeballs really were watering, it was like the Garden of Eden! . . . Did you know that in Connecticut there is a statute (Conn. General Statute 14-259) which forbids the use of CB radio in a moving passenger vehicle? No foolin'—you could get fined \$100 per violation! Don't see how they can get away with bypassing a federal license with a state law. Anyway, the Lower Valley CB Radio Club (P.O. Box 177, Waterford CT 06385) has been trying to rally support for a bill to squash this statute but the bureauracy let it die before it got too far down the legislative road. The club could use some support, maybe some high powered legal advice and backing in this cause. Connecticut CB interests (users,

dealers, distributors) are going to have to make a loud and long howl to remove this dumb law from the books! . . . There was a letter in the May/June issue from a reader asking about the apparent great exploits and escapades I had in the Navy, as relayed to him by his buddy who was a first-hand witness. I didn't really relate to that question at the time, but no less than 8 readers wrote to point out that maybe they were talking about my son, Kerry, who is in the Navy and serving aboard the *U.S.S. Berkeley* (DDG-15) in the Pacific. I asked Kerry recently if he knew this cat and he said that he didn't think so. On the other hand, he said that if it was the sailor who borrowed \$10 from him at the San Diego Petty Officers' Club, to please have him return the greenstamps immediately!! . . . Did you know that Jackie Gleason, yes *the* Jackie Gleason, is a radio buff. He has as many as 24 frequencies going at the same time via CB and scanners at his Miami Beach 20! . . . I spent an enjoyable 3 hours doing a live radio broadcast one night with *Long John Nebel* over New York broadcasting station WMCA recently—Long John is a CB fan too, and an S9 reader! He's quite a guy!

*Tomcat!*

**BREAK . . . LOWER SIDE** (continued)

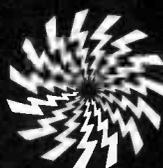


*Greetings:*

This card from Da Shed-House Gang confirms that you were in direct violation of FCC Rules, Part 95 when you talked to me. Your signal was: Damn Good—, Good—, Lousy—, Rotten—. My equipment is a "Bucket of Bolts" that I got with Green Stamps. My antenna is a Stay from my Grandmother's Corset boosted with a D-104. I am married, on Welfare, get free Food Stamps, a Freeloader and Shoot Skip. If you want any further information on me, you will have to sit down with me and buy a cup of coffee or send a dime. So 73's and 88's from our House to yours and call any time. If you or your friends send us a card, we will send one in return.

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# Bill Orr on Antennas

## PART 7: FLAT SIDE CB'ING

**W**ERE you listening this past spring when skip opened up and CB signals from all over the United States boomed in? The channels sounded like a million dogs baying at the moon. Whistles, howls, groans, Okies and Arkies hollerin' at each other . . . Mercy! What a mess!

And radio conditions are very poor this year. As they gradually improve over the next few years, what we hear now is only a prelude of what is coming! With millions more CBers on the channels, CB radio is going to be hectic, to say the least.

Not only is there heavy interference from CBers "shooting skip", but there's equally heavy interference from purely local conversations—a simple case of too many signals on a channel. The manufacturers are seeing to it that everyone who wants a CB rig can darn well have it, but the number of channels remains the same—at least for the foreseeable future.

What can the serious CBER do about this racket? Not much, although there are a few antenna tricks that can be put to use to reduce the interference level. For a base station, one obvious solution is to switch from a vertical, single element antenna to a multi-element beam antenna. The beam antenna will enhance signals coming into it from the front, while rejecting signals that arrive from the sides and back of the beam. This helps to knock down unwanted "garbage" on the channel. It also makes the fellow in the line of the beam much louder than he would ordinarily be on a vertical antenna (ground plane, or equivalent).

In addition to the use of a beam antenna to reduce interference, there's another stunt that is *not* widely used in CB radio, although it is well known in ham radio and in the commercial services. And that is antenna *cross-polarization*.

### HORIZONTAL POLARIZATION

CB antennas are generally vertically polarized. Things started out this way because the easiest antenna type that could be mounted on a vehicle was the vertical whip antenna. And to maintain polarization, this meant that the base station antennas had to be vertically polarized, too. Hence all CB antennas

ended up being vertically polarized.

There's nothing sacred about vertical polarization, however. Hams use horizontal polarization almost exclusively on the high frequency bands. Why should CBers not try horizontal polarization?

Cross-polarization (one antenna horizontal talking to one vertical) leads to quite a signal loss on short distance transmission. Thus, if you have horizontal polarization and everybody else has vertical polarization, you'll have just about a 20 decibel (five S-unit) signal loss as compared to vertical polarization at both ends of the circuit. *However*, if you and a buddy want to maintain a better communication path between your base stations, you would *both* be smart to switch over to horizontal polarization, and knock the other local signals down in strength!

Cross-polarization, however, doesn't help much on most skip signals. When the waves are reflected back to earth from the ionosphere (a skip condition) the initial polarization is lost, and the signals arrive at the edge of the skip zone with random polarization. So for skip interference, polarization is relatively unimportant.

It is easy to try horizontal polarization and with a few tests you can find out if it is worthwhile for you to switch over to it. All you have to do is to build yourself a horizontal dipole antenna for a few dollars and connect it to your station. It may help you with local interference problems.

### BUILD A HORIZONTAL DIPOLE ANTENNA

Want to try horizontal polarization? You don't have to take down your present CB antenna—just build yourself a dipole antenna and sling it up between your house and a tree, or two other convenient supports.

The dipole is a very simple antenna. It is about as long as the whip on a ground plane antenna, and doesn't require any radials. An inexpensive dipole you can build is shown in Figure 1. The "flat-top" measures 17'3" end-to-end and is made of copper wire. Enamel coated, or other coated wire is best, but stranded wire (or even hook-up wire) will do the job. Wire size is not important, but #14 is suggested as a good compromise between cost and strength. The

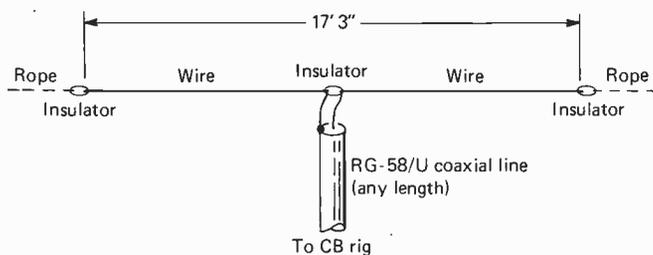


Fig. 1—A horizontal dipole for CB operation. The dipole is made of two sections of wire, separated at the center by an insulator. The coaxial line is attached to the wires at the center insulator. The shield of the line goes to one wire section, the center conductor to the other section. Be sure to solder the center connections. At the outer insulators, the antenna wire is twisted back upon itself to make a good mechanical connection to the insulator. This connection need not be soldered. The dipole antenna is strung between two supports by means of rope threaded through the outer eyes of the insulator. Insulators may be glass, ceramic or even well-varnished wood. Space between the insulator holes is about two inches.

ends of the antenna are supported by glass or ceramic insulators and the free ends of the insulators are tied to sections of rope. The center of the antenna is split and a small insulator is inserted at this point. The transmission line is connected across the center insulator. Light weight, RG-58/U line is suggested. The center conductor of the line is attached to one section of the antenna, and the shield of the line is attached to the other antenna section. Coaxial line length is unimportant.

The antenna column in the July issue of S9 discussed a quick and effective method of preparing the coaxial line for attachment to the antenna. For those of you who don't have this back issue, here's a quick summary of how the job is done:

The outer insulation of the RG-58/U is removed from the end of the coaxial line with a sharp knife, or razor blade. The jacket is slit in a circle about 3 inches back from the end of the line. Next, the jacket is slit from this circular cut out toward the end of the cable and the jacket is removed in one piece, exposing the braid. The braid is pushed back upon itself to loosen the weave.

Next, a sharp tool, such as a nail or an awl, is used to carefully open up a hole in the braid just above the insulating jacket. Separate the fine wires of the braid with care, using the point of the tool, until a hole slightly larger than the inner conductor is made. Go slowly, so as not to break any fine wires.

Now, bend the cable sharply at the hole and fish the inner conductor through the hole in the braid you have just made, using the nail or awl as sort of a hook. Once the inner conductor has been carefully pulled through the hole in the braid, the empty "pig-tail" of braid may be flattened into a lead.

The last step is to strip the insulation from the inner conductor. The end of the braid, and the inner conductor are now tinned for connection to the centers of the dipole antenna. A summary of the above steps is shown in the photograph of Figure 2.

Now that you have placed the insulators on the dipole wire, you are ready to attach the coaxial line to the dipole. The wires of the dipole must be scraped clean of enamel at the center point so good soldering can be accomplished. The braided "pig-tail" of the coax is attached to one section of the dipole and the inner conductor is attached to the other. Solder both joints securely.

The last step is to waterproof the center joint so that moisture cannot get into the end of the coaxial line. The easiest way to do this is to coat the end of the cable with ordinary bathtub caulk. This white "goop" comes in a tube and can be squirted on the end of the cable and smoothed over the joint with the fingers. When it dries, it forms a flexible, waterproof seal that keeps moisture from getting in the end of the line. Don't be afraid to overdo it—a good glob of sealant will protect the line from rain and moisture that otherwise would corrode the conductors.

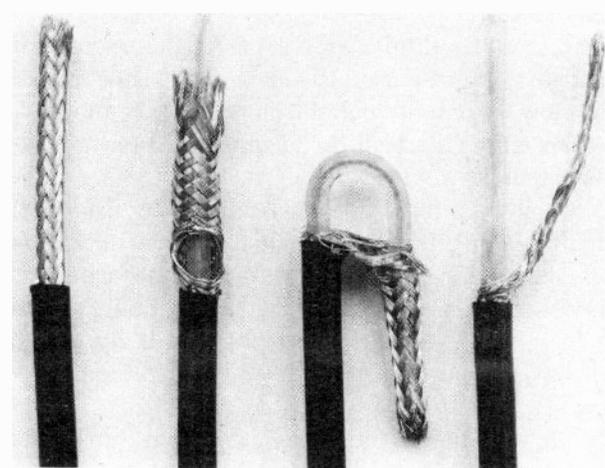


Fig. 2—How to prepare RG-58/U coaxial cable for a "pig-tail" connection. At left, the outer vinyl jacket of the coaxial line is removed. Next, the braided outer conductor is pushed back to loosen the weave and a hole is formed in the braid with a sharp instrument. Be careful not to break any of the tiny wires. The next step is to bend the end section back upon itself and fish the inner conductor through the hole made in the braid. And finally, at right, the braid is flattened into a "pig-tail" lead. The insulation is now stripped from the end of the inner conductor.

### ERECTING THE DIPOLE ANTENNA

The dipole antenna should be mounted high and in the clear. Heights above 20 or 30 feet are especially effective as ground wave coverage increases with greater elevation. The "flat-top" is parallel with the surface of the ground. Maximum signal is at right angles to the wire. That is, if you want to talk east-west, run the antenna wire north-south. The antenna radiation is bidirectional and the pattern resembles a figure-8 (Figure 3).

The coaxial line should drop away beneath the antenna, free and clear, for 15 or 20 feet, then it may be brought away at an angle, if desired. Running the transmission line parallel to, and close to, the antenna is bad business, and will impair the operation of the antenna. It's best to bring the line straight down until it is well clear of the antenna, and then lead it

off in the proper direction. Line length is not important and you don't have to cut it to any specific figure.

You can check antenna operation with your SWR (standing wave) meter. On the *reflected* measurement, the SWR reading should be about 1.5-to-1, or less, right across all the CB channels.

### USING THE DIPOLE ANTENNA

Remember that the dipole tends to reject vertically polarized signals and enhance horizontally polarized signals. Thus most CB signals (other than skip-reflected signals) will probably be somewhat weaker on the dipole than on a vertical antenna. However, if another base station has a horizontal dipole, communication between you and that station will be improved, by virtue of the unwanted vertically polarized signals being reduced in strength.

Since the dipole is broadly directional at right angles to the wire, you'll have to "aim" it for the direction you wish to communicate. Actually, the dipole pattern is quite broad, with only a sharply defined null off each end, in line with the wire.

### TILTING THE DIPOLE

Some CBers mount the dipole at a 45 degree angle with respect to the ground (Figure 4). This enables the dipole to respond to *both* horizontally and vertically polarized waves with equal efficiency. (Sort of like having your cake and eating it!) But, of course, the rejection to cross-polarization is lost. At least one

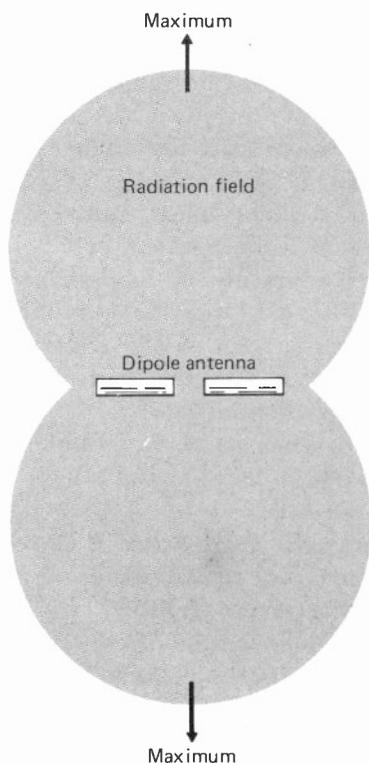


Fig. 3—The pattern of radiation of a horizontal dipole antenna, as viewed from above. The signal strength off the ends of the dipole is reduced by about 3 S-units as compared to the signal strength broadside to the antenna. Thus if maximum signal strength is desired in an east-west direction, the antenna should run in a north-south direction.

CB friend of mine has a 4 element Yagi beam mounted at a 45 degree angle to take advantage of both modes of polarization. It looks odd, perched at a tilt, atop the tower, but it does an excellent job on both vertically and horizontally polarized signals.

A small body of CB experimenters are working with horizontal polarization and their results seem to show that this is a worthwhile communication technique. It will be interesting to see if this becomes more popular during the coming months.

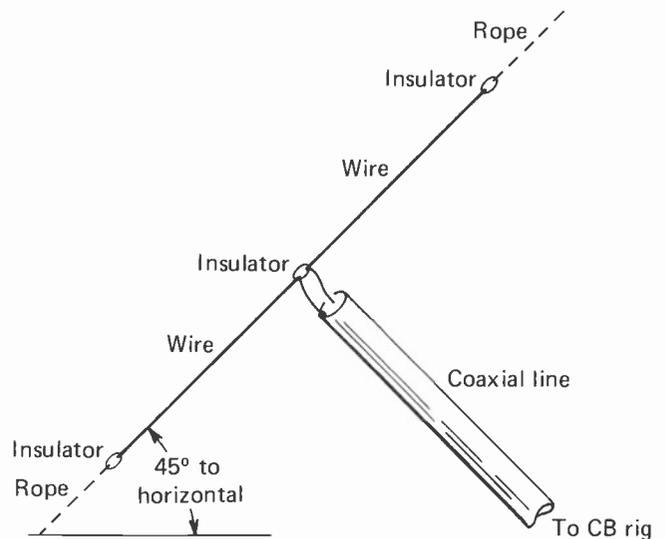


Fig. 4—The dipole antenna may be tilted at a 45 degree angle to receive both horizontal and vertical polarization of incoming signals. Transmitted signal, of course, is then both horizontally and vertically polarized. Bottom end of antenna should be at least 15 feet clear of the ground. Coaxial line is brought off at right angles to antenna wire.

### THE MYSTERIOUS SWR METER

The rest of this column will be devoted to a discussion of the *SWR meter*, the CBers best friend and worst enemy. This small device is known variously as an *SWR meter*, *SWR bridge*, or *reflectometer*, depending upon which branch of electronics you happen to be involved with. It was developed during World War II, principally for use with radar equipment. Shortly after the war, radio hams adapted it for use in the high frequency region and it is surely the greatest invention since the moustache cup.

In order to understand the SWR meter and to get the most information from the readings of this unique device, the user should understand what the SWR meter is measuring. A lot of baloney has been written about the SWR meter, but the little bugger really isn't very complicated once you grasp some fundamental ideas.

Most CBers know that coaxial line comes designated as "50 ohm" line. CB rigs are designed to work with "50 ohm" antennas, and antennas are advertised as having a "50 ohm" feedpoint.

It is unfortunate that the word *ohm* is used in these common descriptions, because the situation has nothing to do with ohms. These peculiar CB ohms can't be

## BILL ORR ON ANTENNAS (continued)

measured on an ohmmeter and this poor choice of words has really screwed up the detail, as far as the average CBER goes.

### THE "50 OHM" DESIGNATION

In the beginning, the early military coaxial lines had to compromise between efficiency and the ability to carry high voltages, particularly when used in aircraft service. The compromise meant that the cable diameter, diameter of the inner conductor and type of insulating material were varied until the desired attributes were achieved. After this was done, when the cable was used in a *matched system, the ratio of the voltage to the current in the cable was always 50*, regardless of the amount of power sent through the cable. The easiest way to express this ratio was to say the cable had an "impedance of 50 ohms", since this ratio could be expressed in terms of Ohm's Law for current and voltages.

After the war, this cable became available for general use in two types: RG-8/U and RG-58/U and for convenience, the cable was generally referred to as "50 ohm line". Because of the standardization of cable, manufacturers of transmitting equipment and antennas were quick to design their devices to use this cable. This meant that the transmitter had to deliver power with a ratio of voltage to current of 50, and the antenna had to be designed to accept power from the

transmitter at the same ratio.

This is no insurmountable problem if the designer has control of the design of both the transmitter and antenna, and the environment around the antenna is known. But what happens when Brand-X transmitter is used with Brand-Y antenna? And what happens when the transmitter is used on 23 channels, as in the CB service? Can the same ratio of voltage to current be maintained in the system?

Sadly, the answer is "no". Tuning controls have to be added to the transmitter, or it has to be modified electrically to work over 23 channels, and—theoretically—the antenna should be adjusted for each one of the 23 channels. This solution is both impractical and costly. There's no problem making a transmitter with tuning controls to cover 23 channels and some modern transmitters can cover all channels without any tuning adjustment! However, tuning the antenna to each individual channel is not practical, *nor is it required*.

If the antenna is tuned to a mid-channel (say, channel 11) it will work well on channels on both sides of the mid-channel. The only problem is that on all channels except the center one, the desired voltage to current ratio in the coax line to the antenna departs from 50, to a greater or less extent. *The SWR meter measures the departure from the desired voltage to current ratio*. It thus compares the electrical characteristics of the antenna system under test with a "perfect" system and indicates the degree of departure.

### WHAT THE SWR METER DOES?

What is the importance of the SWR reading? Some CBERs make a fetish of the SWR reading and get very exercised if it is high. Little gadgets are for sale on the market that promise to reduce the SWR, and antenna manufacturers often boast that their pet antenna provides a low value of SWR.

Where there's smoke, there must be a fire and a goodly amount of money is spent by CBERs to purchase SWR meters and plenty of head-scratching goes on when the SWR meter provides an unlikely reading.

As stated earlier, the SWR meter measures the amount of departure from the "perfect" voltage to current ratio in the transmission line from CB station to the antenna. In some mysterious fashion, a low value of SWR is spozed to be good and a high value of SWR is spozed to be bad.

This picture falls apart, when it is realized that a dummy antenna (one that radiates no signal at all) provides a perfect value of SWR!

All this good dope will be discussed in the next column. So hang in there, and don't throw your SWR meter out the window—yet.

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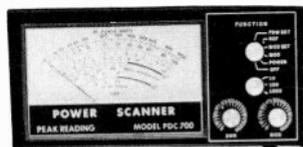
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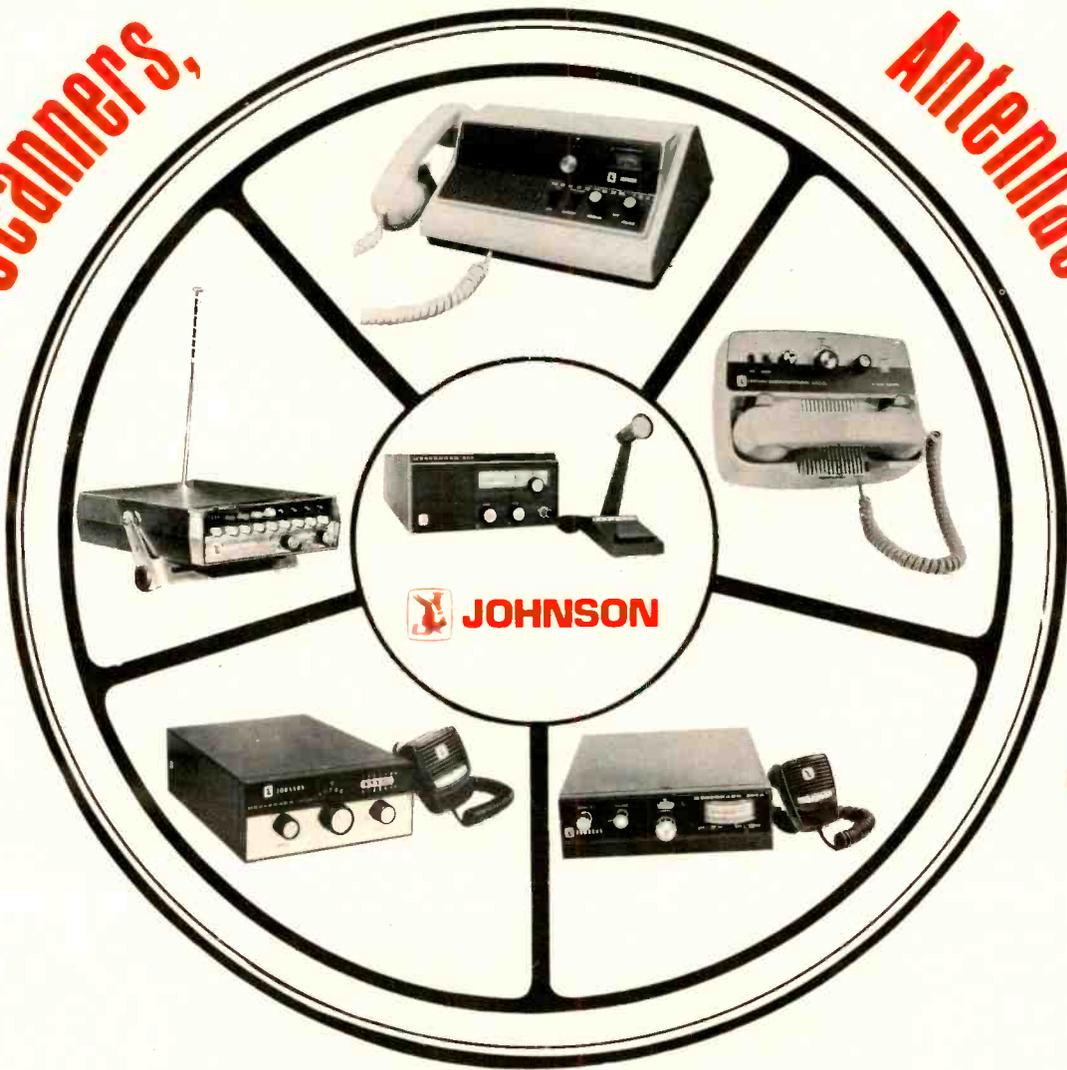
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## Class D Citizens Radio Station

# 1

## Instructions

- Use this form only if you want a temporary permit while your regular application, FCC Form 505, is being processed by the FCC.
- Do not use this form if you already have a Class D license.
- Do not use this form when renewing your Class D license.

# 2

## Certification

Read, Fill In  
Blanks, and Sign

### I Hereby Certify:

- I am at least 18 years of age.
- I am not a representative of a foreign government.
- I have applied for a Class D Citizens Radio Station License by mailing a completed Form 505 and \$4.00 filing fee to the Federal Communications Commission, Box 1010, Gettysburg, PA. 17325.
- I have not been denied a license or had my license revoked by the FCC.
- I am not the subject of any other legal action concerning the operation of a radio station.

Name

Signature

Address

Date Form 505 mailed to FCC

If you cannot certify to the above, you are not eligible for a temporary permit.

Willful false statements void this permit and are punishable by fine and/or imprisonment.

# 3

## Temporary Call Sign

- Complete the blocks as indicated. Use this temporary call sign until given a call sign by the Federal Communications Commission.

<b>K</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	↑	↑	↑				
	Initial of Applicant's First Name	Initial of Applicant's Last Name	Applicant's Zip Code				

# 4

## Limitations

Your authority under this permit is subject to all applicable laws, treaties and regulations and is subject to the right of use or control by the Government of the United States. This permit is valid for 60 days from the date the Form 505 is mailed to the FCC.

You must have a temporary permit or a license from the FCC to operate your Citizens Band radio transmitter.

**Do Not Mail** this form, it is your Temporary Permit.

See the reverse side of this form for a summary of operating instructions.



# Using Your Citizens Radio Station

(See Part 95 of FCC Rules & Regulations for complete instructions on authorized station use.)

## Welcome to the Citizens Radio Service

Citizens Band Radio is a shared communications service with many people using the same frequencies and channels.

The guidelines provided in this form are not intended as a substitute for FCC Rules, but as a general reference to those operating practices and procedures which will benefit you and other users of Citizens Radio.

Your compliance with these guidelines and your consideration for the rights of others in your radio service is necessary if the full potential and enjoyment of Citizens Radio is to be realized.

**1**

## Who May Operate Your Citizens Radio Station?

You, members of your immediate family living with you, and your employees while on the job.

**2**

## How Many Transmitters Does this Permit Authorize?

A maximum of five (5).

**3**

## Can the FCC Inspect My Station?

Your station and station records must be available for inspection by an authorized agent of the FCC.

**4**

## Where Should I Keep This Permit?

Keep it in a safe place. Post photocopies at all fixed station locations. Indicate on photocopies the location of this permit. Attach a card with your name, address and temporary call sign to each transmitter.

**5**

## How Shall I Identify My Station?

Identify transmissions in English with your temporary call sign.

**6**

## How Can I Use My Station?

Use it for private short-distance radio-communications for your personal or business activities. Channel 9 is reserved solely for emergency communications and to assist motorists.

### Prohibited Communications Include:

Activities contrary to law

Transmitting obscene, indecent or profane messages

Communicating with non-Class D stations

Intentional interference to other radio stations

Transmitting for amusement, entertainment, or over a public address system

Transmitting false distress messages

Advertising, selling, or for hire

**7**

## How High Can My Fixed Station Antenna Be?

See Section 95.37 if your antenna will be over 20 feet above ground. Additional information is available in SS Bulletin 1001-h.

**8**

## May Amplifiers Be Used With My Transmitter?

'Linear' amplifiers are absolutely prohibited. 'Power' microphones may require adjustments to your transmitter.

**9**

## Who Can Make Adjustments to My Transmitters?

Adjustments affecting proper operation may be made only by, or under the supervision of a licensed first or second-class radio operator.

# CHAIN LETTER WOES



## THE OL' TIMER HAS SWAPPING PROBLEMS

By THE OL' TIMER

**B**ROTHERS and sisters, have you ever been afraid to look in the mailbox, for fear there were QSL's in it? Not very likely, unless like me you are caught up in the entrails of your own sins! (As our guest sermonist speaks, we shall begin passing the basket, and all contributions will be gratefully accepted.)

My tale of woe began one April day. Suspecting nothing, I turned on my CB rig for a call to my mobile unit—when I heard it.

Yes, the skip was in, in full battledress. I could hear *Doctor Gab*, *Hardluck Charlie*, *The Ol' Pillpusher*, *The Silver Voice of Dixie*, *Big John*, *The Bear*, and 20 people called *The Rebel* coming in. The powers tempted me to work some of that skip, I don't deny that. But I resisted, and did no more than read the mail (a minor sin, child, forgivable under the circumstances.)

I copied down some 10-20's, and shipped out some QSL's. I know now that I shouldn't have sent a card with my CB calls on it, because if they hadn't learned that I was a CB'er . . . well, it's too late to go back now. (Yes, we will accept trading stamps.)

The final temptation that led me down the pathway to perdition was a return QSL from "*Barnacle*," in Louisiana. With it was a letter—this tear-stained, innocent-looking sheet—which I read in part.

Send a card to the first name on this list and a copy of this letter, with your name added, to seven of your friends. In 20 days you will be surprised, when about 250 QSL cards turn up in your mail. This chain has

been going since 1972 and is approved by the U.S.P.O. Please do not break this chain. A CB'er in Ohio broke the chain and the next day his linear exploded.

Well, I hide my face in shame, because I gave in! (The choir will now add appropriate background music to this testimony.)

Who could explain what made me go ahead with it? The letter said that the more copies I sent out, the more cards I'd get back. So, I ran off 10 copies on the office mimeo. After all, what harm could *ten* letters do, with so many CB'ers around?

Well, sure enough, in 20 days I had over 200 cards. I was satisfied. But the cards kept coming!

I sat down to figure it out. Originally, there must have been four names on the list, with instructions to send out four copies. That's  $4 \times 4 \times 4 \times 4$ , which comes out to 256.

But my letter had asked for seven copies; that would produce 823,543 cards! But evil was piled upon evil, because I sent *10 copies*—and if there were enough CB'ers in the world, I would receive something like 8,235,430 cards!

To top it off, most of the people getting that letter wanted to get as many cards as they could, and make up multiple copies as I did, and added more names to the list, and so on. I figure on applying for SCC-100,000 by the end of the year!

Yes, hell is paved with good intentions, but only *I* know what its walls are papered with!

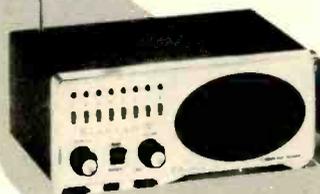
(Amen, Brother.)

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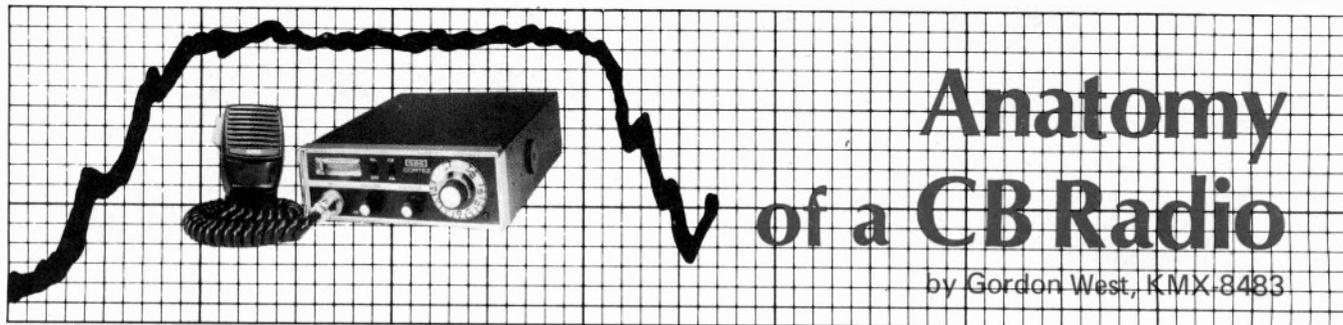


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## Part 7: ALL ABOUT BASE STATIONS

**O**PERATING a citizens band transceiver from your base station can be quite a bit of fun, and just looking over the statistics, I can see that there are a lot of CB-ers missing out on this fun.

Last year, a survey was conducted by several major CB manufacturers, and the following statistics were derived: CB mobile operation—80%; CB portable operation—6%; CB base station operation—14%.

That's right, only 14% of those operating Citizens Band transceivers that responded to the poll operated their sets from their home or office—and that's not many operators at all!

Let's take a look and see how easily one can convert his mobile unit to a base station, and how easy it is to be bitten by the bug of operating a base and possibly purchasing a custom Citizens Band base station.

With your CB license, you can operate it in almost any way you want to—in the home—in the car—on a boat—in an airplane—portable—or any other way that you want to! This also includes CB units mounted on bicycles, motorcycles, and even "dirt bikes". Not only is this type of "remote" operation fun, but it also provides a degree of safety when you need to call for help and you are located in a remote area. And who do you call for help? Obviously, a Citizens Band base station that can "land line" your plight to the local authorities.

An inexpensive way to convert your Citizens Band mobile unit to a CB base station is to purchase an inexpensive base station power supply. These "AC power supplies" convert your home's 110 V AC current into 12 V DC current with enough amperage to power your Citizens Band set. Most AC supplies are rated by their direct current amperage output. The majority put out at least 2 amps, with several yielding as much as 3, 4 and sometimes 5 amps at 12 V DC.

If you operate a fully transistorized AM mobile Citizens Band set, an AC

power supply that yields 2 amps will be more than sufficient. In fact, you can probably get by with a one amp AC power supply for the majority of those transistorized mobile CB sets. Remember, we're talking about one amp at 12 volts DC.

Take a look at your mobile CB's instruction manual, and it will probably tell you the maximum amount of current it will consume. This will be in the transmit mode, and it will generally be rated in amps. The majority of CB transceivers today pull less than 1.5 amps on 12 volts DC—hence, a 2 amp AC supply will be more than sufficient.

For those of you who operate mobile single side band transceivers, they pull up to 2.0 amps of DC current. This means that single sideband operators who wish to operate their mobile CB from an AC supply should choose at least a 3 amp power supply. This will yield enough current to adequately power their side band set on voice peaks.

**NEVER TRY TO USE AN AC SUPPLY THAT YIELDS BARELY ENOUGH DC AMPERAGE FOR YOUR CITIZENS BAND SET!** In other words, if you have an AC supply that yields one amp at 12 volts DC, and you operate a single sideband set that pulls as much as 2 amps at 12 volts DC, chances are you are going to not only damage your AC power supply, but possibly damage your Citizens Band set when the supply blows up! When too much current is drawn from inexpensive AC power supplies, usually one of the inside components will "go" putting as much as 60 volts of alternating current to your CB set. The set will last approximately one one-thousandth of a second before it goes up in smoke. Needless to say, insure that the AC supply yields at least one and one-half times the amount of current that your CB set may pull at 12 volts DC.

Most AC power supplies have their output rated either in their instruction manual, or on a name plate affixed to

that supply. It will generally read something like this: "110 V.A.C. input, 12.0 V.D.C. output at 2 amps".

Some AC supplies rate their DC output in watts, and if they do this, you will need to convert those wattage figures into amps. Additionally, some AC supplies rate their DC output at 13.5 volts direct current—which relates directly to any CB set that operates on 12 volts DC. The 13.5 volts represents the basic charge of a storage battery when it is fully charged, and there is no current being consumed, so whether it reads 12 volts or 13.5 volts DC, you may be assured that is the proper voltage for your 12 volt set—just insure that there is enough amperage to power your set.

Those adapters that have the transformer built into the plug that plugs into the wall generally will not yield enough DC current to power a Citizens Band set on transmit. For those of you considering using those adapters—be extremely careful in that most will yield less than 500 milliamps of direct current—that's only one-half amp—definitely not enough to power any type of mobile transceiver. Those small adapters *could* power some 100 milliwatt CB walki-talkies, but that is all that they are good for. Do not attempt to use them on a standard sized mobile CB set.

AC power supplies come in many varieties—and usually every company that markets a mobile CB transceiver will also market an AC power supply for the utilization of that mobile unit on house power. The AC supply sometimes contains a speaker, so when you plug in the appropriate power connections, you may optionally plug in the AC power supply's built in speaker.

These AC power supplies generally have provisions for accepting the CB mobile transceiver to sit on top of the power supply, or slide into the power supply. Obviously, those AC power supplies that will accommodate a certain brand of transceiver to slide into them look a bit more custom when installed

at your favorite operating shack. However, even the AC supplies that accommodate a CB mobile transceiver on their top look quite well as your home base station center. All you have to do is to add your proper power connections, being careful to observe polarity, and screw on your base station antenna and away you go! In addition, you may also, when the speaker is provided, plug in the speaker for additional fidelity by utilizing the AC power supply's larger built-in speaker.

Choose a top quality AC power supply for your CB set—preferably the one manufactured expressly for your set. As I mentioned before, leading manufacturers market AC power supplies they know will power their particular type of CB transceiver, and many times these AC power supplies will have the same decor as the CB set.

This doesn't mean that other AC power supplies won't work—they probably will quite well, and we'll leave it up to you as to how you actually want to affix your set to that other type of power supply. There are many excellent AC to DC power supplies available in a variety of output amperages for almost every mobile CB set manufactured today. Again, it is recommended that you always use an AC power supply that is well over the

rated amperage of your CB set. If your set draws 2 amps at 12 volts DC on transmit, choose a 3 amp power supply. If your set draws 1.5 amps at 12 volts DC, then choose either a 2, or better yet a 3 amp power supply. That way, you've got enough amperage to handle your set's operation.

Listen carefully to your own transmitted carrier once you install your CB set on the AC power supply. If you utilize good power supplies of top quality construction, as well as those



power supplies well over-rated for your CB transceiver's current consumption, you will probably *not* notice any AC hum on your transmitted carrier. However, even with the best power supplies, some of this hum may leak through, and you may faintly hear it on your transmitted carrier.

AC hum is nothing new to base station operation when you use this type of voltage converter. If the hum is barely perceivable, then give it no

further thought, but if the AC hum is quite discernable and people comment about it, start looking for a new power supply, or take that one back for one of a higher amperage. When you operate an AC power supply that barely has enough amperage to power your CB set on transmit, the result will either be a blown up power supply in CB set, or a CB set that has a terrible AC "hum" on the carrier.

The AC power supply is an inexpensive way to convert your mobile CB transceiver for base station operation.

Sooner or later, you're probably going to get tired of hauling that CB set into the house each time you wish to operate as a "base station". Obviously, the answer is to select another CB transceiver to add to your system, thus providing communications from your automobile to home with two transceivers now in the circuit. Let's now take a look and see what desirable points we'll look for in a good 23 channel Citizens Band Base station.

### POWER REQUIREMENTS

Since we are choosing a base station, you may be assured that it has all of the necessary components to operate directly off of household power. All you have to do is plug the AC power cord into your home power socket and

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## ANATOMY OF A CB RADIO (cont'd)

automatically the set will light up and be ready for operation once the antenna is added. The majority of Citizens Band base stations have been engineered in such a way as to run extremely cool from their built in AC power supplies. Rarely will these power supplies yield any hum on your transmitted carrier—but if they do, take your set back immediately in that any CB base station should be completely free of AC hum.

A bonus feature to look for would be the provision for 12 volt DC operation of that base station. I know, you're asking why anyone would want to operate a base station from 12 volts DC—but what happens if your local power fails? For REACT members, this is an extremely important feature in that the time they really need to be on the air is in time of possible "blackouts". Better Citizens Band transceivers will automatically "switch over" when the AC

power fails, and will operate on 12 volts DC. This means that it will be necessary to have a source of 12 volts battery power—completely independent of any AC house power.

Automobile batteries make an excellent emergency 12 volt DC power supply in case your home power should "black out". Inexpensive batteries may be purchased almost anywhere that will easily handle CB operation for up to five days without recharging. These automobile batteries do need attention, however.

You should first select a spot for your emergency 12 volt battery that is well ventilated. Since your battery is going to be charged now and then, this charging will make the battery give off dangerous gases in small quantities. In an unventilated room, charging a battery is extremely hazardous and should be totally avoided. Keep that emergency 12 volt battery source in an area that receives adequate ventilation—maybe positioned near an open window. You might also consider putting the battery in a sheltered box outside your home so that any charging of the battery will not cause dangerous gases to enter into your radio shack.

Once you have found a safe location for this automobile battery, you now need to purchase a small, inexpensive

battery charger. This battery charger should be used once or twice a week to keep the battery in tip-top shape. Those battery charges that yield one amp of charging current are usually more than adequate to keep your battery full if used at least once a week for eight hours. However you handle it, insure that your battery is routinely charged, so in case of an AC power blackout, your set will begin immediate operation when switched on, on your DC reserve battery source.

With both provision of power (AC and DC), there is no way your CB base station is ever going to be "off the air", because of an AC power failure. Look for a transceiver that has this automatic "switch over" in case of AC failure if you want one of the most flexible base stations around—and there are plenty with this feature.

## CHANNEL CAPACITY

Until we see the new expanded channels become a reality, you would want to choose a Citizens Band base station capable of operation on all 23 channels. Although there might be a few older base stations around with only a few channels included, you would want to steer clear of them and go for the best—all 23 channels.

(continued on page 98)



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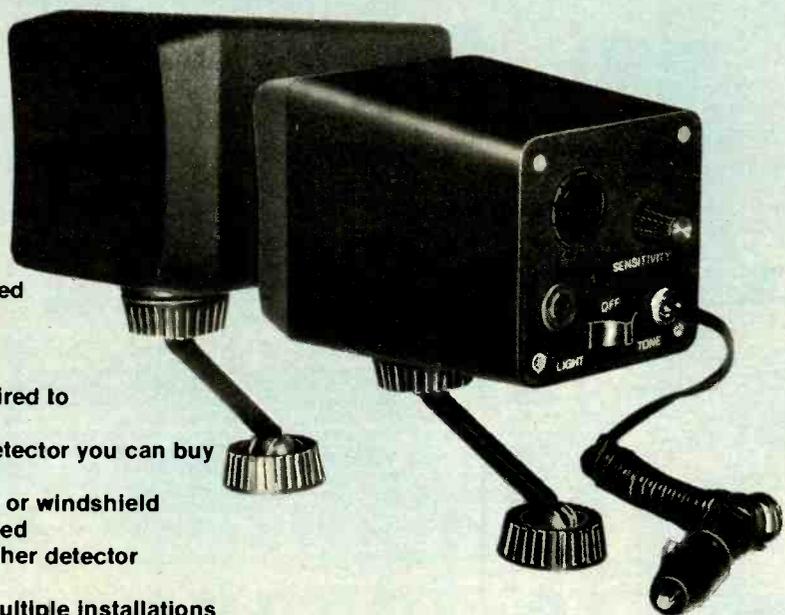


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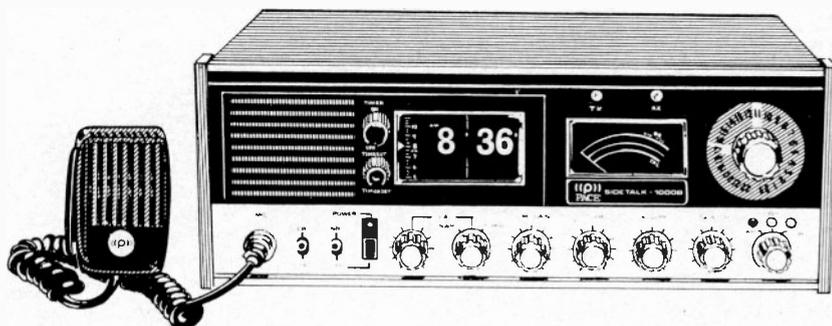
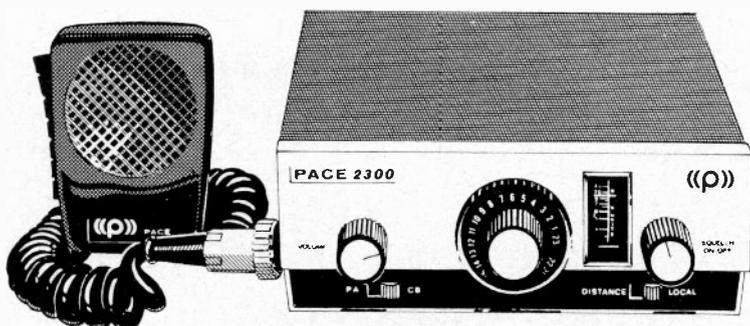
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## ANATOMY OF A CB RADIO (cont'd)

### MODES OF OPERATION

Base stations are available in both AM and single sideband. If you are not an enthusiast for single side band operation—and plan never to be—then choose an AM base station that will probably fulfill all of your communication needs on 22 channels—that last channel, channel 16—reserved for single sideband use.

For those of you who have been bitten by the exciting single sideband bug, then select a single sideband base station for operation primarily on channel 16, or any other channel where you are able to squeeze a single side band signal through. Obviously, two stations communicating on single sideband will have a very hard time if the channel is occupied with AM stations. This is why the majority of those who operate single sideband confine their operations to channel 16. It is my hope that sidebanders will be able to pioneer new channels—and with the cooperation of the "AM-ers", it would be nice if we could operate, let's say, channel 16 through 18. AM'ers, what do you say you let us have a couple more channels for exclusive single sideband operation!

Single sideband base stations almost always give you the option of operating double sideband with a simple flick of the switch. So, when you buy a single sideband transceiver with this feature, you're really getting two CB sets in one—a base station that transmits and receives AM on 23 channels, and the same base station that also operates on 23 channels lower side band and 23 channels upper side band. That type of base station would make a nice combination! So if you choose a single sideband base station, insure that it also has capabilities of operating in the compatible AM mode.

### R.F. POWER OUTPUT

The AM base station should be capable of four watts R.F. output. A single sideband base station should be capable of 12 watts R.F. output. Any power levels less than these are under the F.C.C. maximum allowable power output, and you should only select base stations that will yield the maximum legal F.C.C. power output.

### THE RECEIVER

Since the base station is going to be operated off a large base station antenna, there are going to be many signals on many different channels that are going to be mixing within the receiver. This is why you only want to choose a top quality base station to minimize intermodulation and adjacent

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## ANATOMY OF A CB RADIO (cont'd)

channel "slop over". To do this, choose a base station with a good selectivity figure—at least 60 dB selectivity for 20 kHz. Any selectivity figure higher than 60 dB at  $\pm 20$  kHz will be an acceptable figure for an AM base station. For single sideband, you would want a figure higher than 50 dB at  $\pm 5.5$  kHz.

Sensitivity is a lot easier to obtain than selectivity, so always insure that your base station you are thinking of selecting is more sensitive than one  $\mu\text{V}$  for ten dB S+N/N, for an AM base station, and at least 0.5  $\mu\text{V}$  for 15 dB S+N/N, on single sideband. Remember, for sensitivity, as the  $\mu\text{V}$  figure gets lower, sensitivity is better. Obviously, a set with 0.3  $\mu\text{V}$  of sensitivity is better than a set with only 0.8  $\mu\text{V}$  of sensitivity. AM base stations are generally rated at about one  $\mu\text{V}$  for good sensitivity with single sideband better at about one half  $\mu\text{V}$  for good sensitivity.

A single sideband or AM base station with "dual conversion" in its receiver will generally yield better performance than a base station with single conversion in the receiver. Dual conversion in the receiver usually yields better results in discriminating against signals that are not on the same frequency as you are tuned into—especially those "image" signals that are on an entirely different channel than the one you are tuned into. Although single conversion receivers will work extremely well in most cases without any intermodulation, dual conversion receivers will work in those cases where intermod is sometimes a problem because of "images" in the receiver.

### AUDIO OUTPUT

In order for a base station to get rich, full fidelity, it should be capable of at least four watts of audio output. Also insure that the AM or single sideband base station speaker that accompanies that transceiver is large enough to handle four watts with full fidelity. If for some reason the base station features an extremely small speaker, consider adding an external speaker of a larger diameter that will probably give a much more full audio sound.

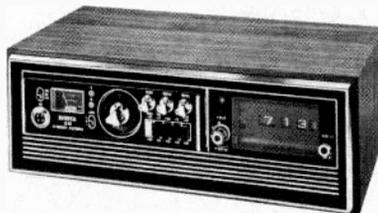
### PUBLIC ADDRESS PROVISION

This is something that probably will never be used on a base station unless for some reason you wish to announce in other parts of your household that you are about to work a rare station on Citizens Band! You should not really be too concerned with a P.A. output unless you have some precise requirement for a public address system. For mo-

biles, it's great. For a base station, I really can't see where it's an added feature unless it comes with a station at no additional charge.

### PLUG IN MICROPHONES

Here is an essential point in base station operation—there are many different types of mikes for all base stations. Because you want the most flexible base station around, you should always insure that the microphone is one that may be plugged in, and may be substituted for another microphone. Many CB operators choose "power" microphones that amplify the voice so that you can talk on your base station with full modulation without having to have the microphones pressed up to your lips. An ideal setting on a "power" microphone would be about one foot from the mike so that as you talk, you are fully modulating the station without picking up too much background noise. Remember, on power mikes, they do pick up the sounds in the background, such as birds, kids, or other household members, so insure that only those sounds that you want to be transmitted are actually broadcast by the microphone that is turned up!



### VOX

This stands for Voice Operated Relay. The VOX accessory on your base station will allow "hands off" operation. Just as soon as you begin to speak with the VOX turned on, automatically the base station will transmit your words. When you stop talking, it will wait approximately one second, and then automatically switch to receive. If you begin talking, it will automatically go back into the transmitting portion. The VOX is an added feature that allows you to completely control transmit and receive functions of your base station simply by the sounds the microphone picks up. Obviously, if you should sneeze, you're going to transmit. A hiccup—the same thing.

However, if you don't have any of these ailments, the VOX system on your base station really enhances operation ease. Most VOX systems are adjustable, too, so you can not only control the amount of gain necessary to "trip" the VOX circuit, but also control how long the station will continue to transmit after you stop speaking. One word of caution—those operators who frequently

use VOX tend to precede all sentences with the word "AAAAHHHH". This is a natural occurrence when the operator wants to bring up the base station on transmit so as not to miss the first word he speaks. It can be quite a bad habit!

### NOISE BLANKER

For those operators who utilize a base station near major freeways or highways, you should probably select one that has a provision of switching in a noise blanker to eliminate automobile noises. It's surprising how far the ignition systems of some automobiles may travel—sometimes up to a quarter mile distance! This is why a noise blanker would be useful in a base station. In addition, noise blankers can also filter out electric razors, mix-masters and other household appliances that generate a steady but annoying amount of static.

Noise blankers are not too effective on noises that are not regular—such as thunderstorms and sporadic power line sparks.

### THE SIZE

With base stations—it's the size that suits you! Some manufacturers have purposely made their base stations large—bulky—and heavy—and if this suits you, then that's the base station for you! Some manufacturers have gone in just the opposite direction and have designed base stations that are compact, miniaturized, and look almost like a mobile unit. If that size suits you, then that's the base station for you!

Relating performance to size of a base station is not applicable, as I have just described! In fact, some of the better base stations today still utilize tubes—and there's nothing wrong with tubes, providing you have the AC power to make them operate. Obviously, a tube type base station operating on an emergency battery would greatly decrease the amount of operational time because of the much higher current consumption on that DC battery supply. On household current, tube sets will work just fine—however—they will require more ventilation.

### METERING

While operating a base station, unlike a mobile, you will be staring intently at something—probably the meter. Choose a base station with metering that appeals to you, and if you're like most CB-ers, you'll choose one with a large, easy-to-read meter. This meter can measure many things—you might even choose a base station with a combination of meters—measuring everything from S units, power output, VSWR, modulation, and input power. (continued)

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## ANATOMY OF A CB RADIO (cont'd)

There are even some new base stations that have meters that show the relative setting of your squelch, and how far you have advanced the squelch into the noise level! This is quite some sophistication as to meters.

Those base stations that have built-in VSWR meters offer a great deal to the CB base station operator, in that he can use that meter to immediately determine his antenna performance.

In addition, those base stations that offer metering on power output also give the operator a true indication of how much power is leaving his set into the antenna.

Metering is most important on a base station, to choose one that gives you the most!

### THE BASE STATION CABINET

How do you want your base station to look? If you're going to build it into a console, chances are you won't be too concerned about the exterior finish of the base station. However, if it's going to sit on your one thousand dollar hard wood desk, you will want to insure that it has a nice wood finish—or a finish that will go well with the interior of your operating station.

Many times, base stations have optional cabinets that you may choose. So take a look at the full selection and choose the cabinet that houses your base station so it meets your decor requirements.

### R.F. GAIN CONTROL

Many times, due to strong signals, it will be necessary to decrease the amount of reception your base station will be capable of achieving. Your R.F. gain control is the ideal device that allows you to actually decrease the receiver sensitivity to the point that the strong incoming signal sounds clear. Sometimes, "overloading" may occur in the receiver when someone down the street operates on an adjacent channel, and at times the R.F. gain control may help to eliminate this receiver "overloading".

I have also received reports that in certain parts of the country, where signal levels are at an all time high, such as in Los Angeles, the squelch knob alone cannot cut off all the background stations, due to their phenomenal signal strength. When this happens, simply decrease the R.F. gain of the receiver and automatically your squelch action will take hold. The R.F. gain control is an extremely important device to have on any AM base station, and an absolute necessity for any single sideband base station.

### DELTA TUNE

For those of you who operate an

AM base station, this knob will probably make no difference at all on incoming signals. This is because the knob only lowers or increases the receiver frequency ever so slightly. Since most stations these days broadcast directly on frequency, the delta tune will have little bearing on incoming signal reception.

However, since single sideband receivers require critical tuning, this delta tune is an absolute necessity, and is usually classified a "clarifier" on single side band base stations. In fact, this same single sideband "clarifier" even controls your transmitter frequency, so you may tune to one side or the other side of your authorized frequency to broadcast single sideband on. Summing up the "delta tune" feature, for AM base stations, it's of little value, but for single sideband stations, it's an absolute necessity—commonly called a "clarifier".

### CHANNEL READOUT

Obviously, you want to be able to easily see what channel your are monitoring on your base station, and a large readout is always preferred.

### DUAL MONITOR

Few base stations are capable of monitoring two channels at the same time, but for those base stations that do, it's a fantastic feature. If you were a REACT member, you might leave the primary channel set on channel 9, and the secondary channel selector on channel 11, the calling channel. That way, you may be assured of hearing conversations on either channel if a call should come through to your station. Dual monitoring is always a big plus in base station operation—also mobile!

### SUMMARY

If you're considering base station operation, you first might want to try your mobile out on an AC supply to see how you might like operating as a base station. Once you have decided that this is the way to go in addition to your mobile operation, then select a base station of the highest quality in that base station use has many more receiver requirements than mobile use. Remember—you are going to be connected to quite an extensive base station antenna that is going to be picking up thousands upon thousands of signals—some on frequency and some on adjacent frequencies—and you want to insure that your base station is going to be capable of handling all of the signals and singling out those signals that you do want to hear on the channel you are tuned into.

Inexpensive, cheap base stations cannot do this well—and not only will you

(continued on page 166)

# FOR VISUAL TRANSMISSION ...WHAT THE HEX!



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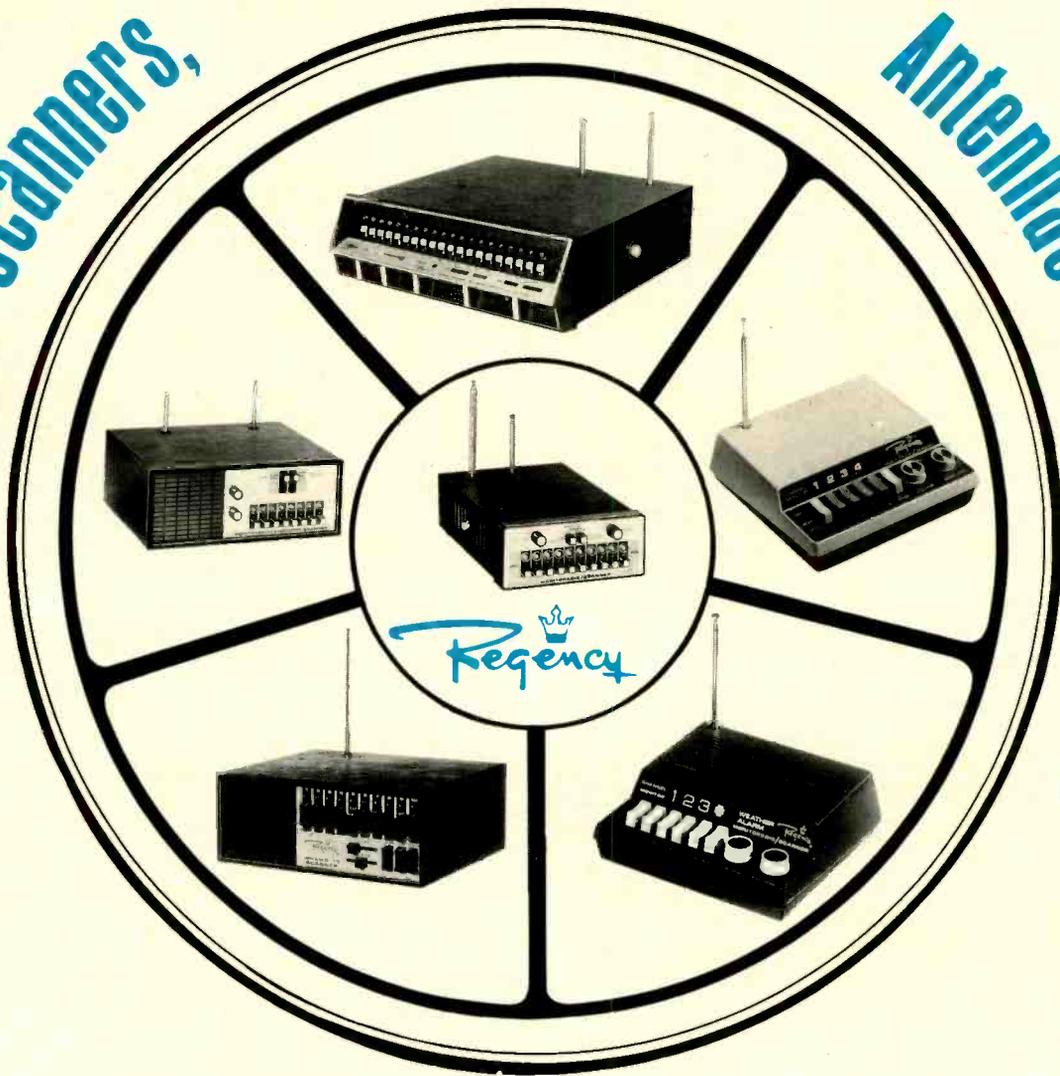
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*All Telex communications equipment is made in the U.S.A.*



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Telex has a full range of aviation-type communications products for better CB. Try'em and you'll get the message — loud and clear.



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\$1,000

**REWARD**

\$1,000

I will pay a \$1,000 reward as compensation for a like new or mint Lionel train engine Number 5344 if accompanied by the original full scale freight cars or red "rail chief" passenger cars that were originally catalogued with this engine. The engine mentioned above is also referred to as the "scale Hudson", and sometimes is referred to by the Lionel catalog number 700E, although that number doesn't appear on the engine itself.

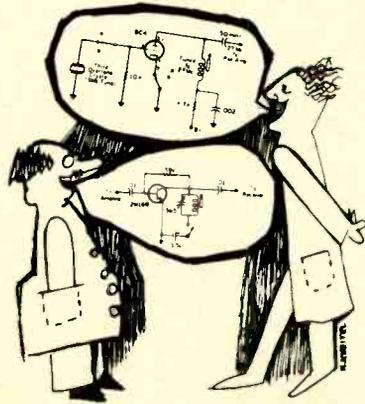
I will also pay top cash for any of the following pre-WWII Lionel engines in really fine condition:

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# 256	# 260E # 263

Many prewar Lionel engines are worth hundreds of dollars to a true collector, and thousands of these engines gather dust in attics and basements across the country. I'm willing to pay hard cash to get them for my collection.

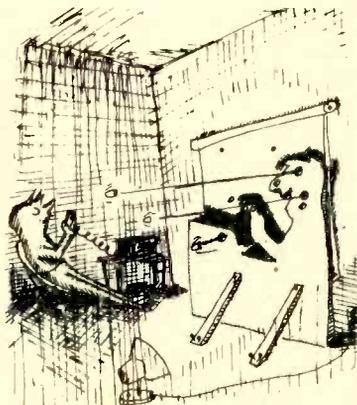
If you have **any** old Lionel trains or accessories, please get in touch with me. But please, make certain that you list the numbers on the side of the engine or cars, since this is the key to determining the collector's value.

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# The Interference

## Blues

by ROSS THE BOSS



**E**VER get the feeling that CB'ers get the blame for all cases of interference to radio, TV, communications, etc.? Well, we may get the blame for a lot, but we actually cause only a small fraction of the hash, noise, jamming, crackling, buzzing, and whatever, being complained about by the public. As a matter of fact, a great deal of the interference complaints being received by the FCC are the result of signals being sent out into the airwaves by such things as loose rivets, neon bulbs, and even dog warmers!

The next time your grouchy neighbor pounds on your door because he thinks your CB rig is lousing-up his \$5 table radio, remind him of some of these yarns which are actual cases from FCC files.

Interference to an amateur frequency was traced by the FCC Los Angeles office to a Navy station near San Diego. There it was found that a mistuned transmitter had invaded the "ham" domain. The technical explanation was that "the teletype keyer stage of the transmitter had been accidentally bypassed and that the oscillator frequency was multiplied in the latter stages and transmitted with full power on an unauthorized frequency." Anyhow, the mistake was easily rectified by the Navy.

### 2-WAY RADIO BECOMES A 1-WAY STREET

A sporadic burst-type noise of 20-second duration plagued two radio channels used by a volunteer fire department in a small Maryland community until the FCC Baltimore office entered the picture. The investigative engineer traced the cause to a defective deep freeze locker in the complaining fire station. The volunteers went without frozen items until repairs were made.

It took less than an hour for the FCC Allegan, Mich., monitoring station to clear up a case of interference to the Chicago police radio systems. Frequency measurements and direction-finding techniques traced it to a radio printer at a U.S. Government installation.

A Western state's forestry service relayed to the Portland monitoring station an interference complaint from another state's forestry department. The annoying signal had been on the air continuously for several days. Direction finder fixes showed that it came from an unattended repeater station operated by the complainant. The repeater had inadvertently been left "on."

FCC field engineers used ingenuity to trace complained of interference from this side of the border to the Canadian Government's forest service radio system. The Commission's monitoring network first determined that the signal was originating in either Michigan or Indiana. Two FCC engineers in a mobile unit happened to be in that area at the time. Though lacking radio

FCC Engineers Kept Busy Tracking Down  
Kooky Interference Complaints

# RIP OFF!

**YOUR CB ANTENNA IS INVITING THEFT!**

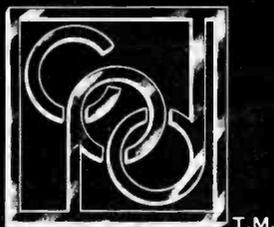
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**THE INTERFERENCE BLUES** (continued)

direction finding equipment, they began the search. To conserve battery power, they used electric current at gasoline service stations to operate their receiver and transmitter for contact with the Allegan monitoring station in order to be advised when the intermittent signal was active for them to observe. In that way, one locality after another was eliminated. The unit finally got within the groundwave range of the offending signal and followed it to a manufacturing plant in Indiana. The culprit proved to be an induction heater. The management promptly idled it until proper shielding was provided.

In another case, radio interference in a Pacific coast locality was determined by an FCC marine office engineer to come from 30 horns, mounted on 17 power poles, used to signal key employees working in a nearby oil field. A switchboard operator could transmit a series of blasts in coded sequence to indicate the particular employee wanted. Radio frequency interference resulted from arcing of the relay contacts vibrating in unison with the sounding horns. The manufacturer of the horns promptly installed filters which eliminated the trouble.

"Rock-and-roll" music invaded a marine rescue frequency to give operators an additional headache. The Millis, Mass., monitoring station found it was caused by an overmodulated emission of a broadcast station. When notified, the broadcast station promptly sup-

pressed it—the overmodulation not the "jive."

Severe "hash" on a distress calling frequency was reported by the Coast Guard station at Jacksonville Beach, Fla. An FCC engineer at Savannah, Ga., took bearings which suspicioned one of the two 150-foot towers carrying a high-voltage power line across the Inter-Coastal Waterway. After a trip of nearly two hours in a boat furnished by the Coast Guard, power company officials climbed to the 125-foot level of the tower and threw a blanket over the photoelectric cell which controlled the tower lights. Its unintentional generation of broadband interference was then and there fixed.

Interference to a mobile radio communication service in Kansas affected programs of a local broadcast station. The cause proved to be an old AM receiver which the owner kept on continuously, night and day, in order to get the time because he did not have a clock. One tube in the set had become defective and was, in effect, rebroadcasting the programs to which it was tuned. The owner bought a new receiver—presumably with a clock.

A letter from a Pennsylvania college student reported hearing "code signals" from a radiator in his quarters. He added that he was a former radio operator in the military service and thought the signals might be coming from a clandestine station. The case was referred to the FCC Buffalo office. The latter determined that the sound was due to signals transmitted over the

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college's power lines to regulate the flow of water into radiators. The clickings of the valve could be mistaken for characters of the Morse code by someone "rusty" in his code ability.

### MISCAST BROADCASTS

Countless electronic gadgets, if not adequately shielded, can emit energy disturbing to radio communications. For example, one "wireless baby sitter" in New Orleans probably minded the baby all right but played havoc with broadcast reception up to a distance of four miles from the home in which it was used. Upon being notified of the neighborhood's displeasures, the owner discontinued use of the apparatus in favor of live talent.

A broadcast station received a complaint from a "captive" listener that the station's programs were blanketing the entire dial on his receiver. Before the FCC Baltimore office could investigate, word came of the complainant's shamefaced discovery that the inside cord on the dial of his set had broken, causing the tuning condenser to remain stationary when the dial was turned.

A man telephoned the FCC Boston office to report that he was hearing an intermittent sparking noise on his broadcast receiver. An FCC engineer asked the caller to hold his telephone mouthpiece near the set so as to relay the disturbing noise. This helped to identify its probable cause as a thermostatically controlled

switch, and the engineer explained the way to locate the trouble. Within 10 minutes the man called back—he had found the defect in his electric heating pad.

A resident of San Leandro, Calif., called the FCC field office to report interference to radio reception. Inquiry showed the source to be a defective heating pad in the home of a neighbor. When the latter had the pad fixed, the complainant was so advised and was requested to turn on his radio to confirm that the trouble had ceased. But the complainant declined to make an immediate check. He was then watching TV!

Whenever an FCC field office receives a telephone call from a broadcast listener about an unusual signal on the latter's radio dial it usually braces itself for an interference complaint. But the unexpected happened at the Kingsville, Texas, monitoring station. Here a man inquired only as to the identity of a station he had picked up on his receiver. Kingsville found it to be a special industrial station. The caller explained that he was anxious to apply for a job he had heard mentioned by it over the air. The result of his personal follow-up is not known, but an investigation of the "interference" was not necessary since it was obvious that the man's particular receiver was responding to an "image."

### ALONE, BECAUSE OF THE TELEPHONE

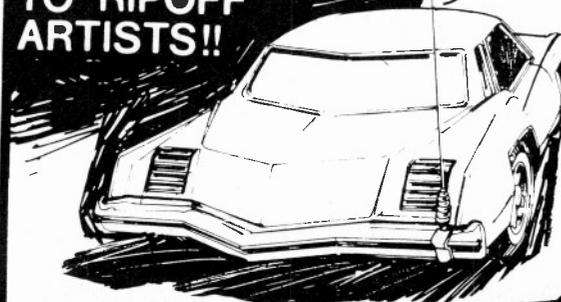
Complaint of interference by a telemetering type signal to a Canadian government station at Frobisher,

## Interference MANUAL

A while back S9 put out a dandy (and handy) manual about detecting and eliminating TV Interference, Power Line Interference, Mobile Noise. It was a smash success and we sold out the print run in short order—we thought! A recent inventory of our stock room disclosed that we still had one half of a precious carton of these books remaining. So, hop to it all you who have been bugging us about this book—here's your chance to snap up the few remaining copies of this publication, which has now become a rare classic! Pre-inflation prices, too. *Only \$1, plus 25 cents postage—first come, first served, while they last!*

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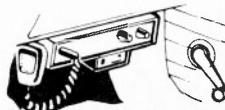
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## THE INTERFERENCE BLUES (continued)

Saskatchewan, brought FCC field engineering inquiry. The offender proved to be a telephone company in North Dakota which had for years relayed telemetering information without causing trouble. This time, however, it was discovered that a bolt in a reflector antenna structure had broken and caused the antenna to swing out of its fixed position. Replacing the bolt and reorienting the antenna remedied the trouble.

During inquiry into a series of complaints about operation of an amateur station in North Carolina, the FCC Norfolk engineering office received a counter complaint by the "ham" involved. It found that the signal he complained of was being radiated from telephone lines with about equal intensity in all parts of the town. The origin was traced to a rooming house, where friendly entrance was made. The cause was an FM receiver converted to listen to police transmissions, plus unterminated telephone line leads. The telephone company removed the leads and the receiver owner was warned.

A telephone company complained to the FCC Norfolk office about interference presumably from a Navy radio station at Annapolis, Md. But FCC direction finder bearings pinned the origin in North Carolina, and further investigation found the cause to be a loose connection on a remote control at the telephone company's own Elizabeth City, N. C. terminal. The telephone lines, acting as an antenna, received transmissions, which modulated the carrier of the company's transmitter.



In another case, Commission engineers discovered that an open wire several miles long used by a Federal Aviation Agency installation at Columbus, Ohio, likewise served as an antenna because it ran in the direction of a Navy transmitter and picked up the latter's signals. Adjustments corrected the difficulty.

### UP IN THE AIR

Cross modulation between AM broadcast stations often intrudes on transmissions of other radio services. In the area of Jacksonville, Fla., planes had difficulty receiving aircraft marker beacon signals. FCC field engineers discovered that the antenna of one broadcast station was picking up energy from another broadcast station and then radiating a combination of both over the aircraft marker frequency. This was cured by the installation of tuned filters in the antenna circuits of both stations.

On another occasion the FAA notified the FCC Santa Ana, Calif. monitoring station that a broadcast station was plaguing the Los Angeles air traffic control center. An engineer from the FCC Los Angeles office noted that modification work on the broadcast station's antenna had temporarily loosened some tower bolts and arcing resulted. The trouble was remedied within two hours after receipt of the complaint. Later the FCC was advised that the bolts had been brazed to prevent recurrence of the trouble.

Brute force diagnosis was resorted to in a Spokane

**"Brute force diagnosis was resorted to in a Spokane interference case."**

interference case. The Federal Aviation Agency reported reception of severe noise on one of its frequencies. It suspected a nearby power line, but the power company failed to find any defects. An FCC engineer located the particular power line pole responsible. A few lusty whacks on the pole convinced the power company that it was time to repair some faulty insulated and grounded hardware thereon.

Engineers of the Dallas FCC engineering office found utilization of a helicopter to be the only effective means of resolving a complaint of interference to communication with jet planes by an Air Force base. The investigators found that the trouble reported by the jets was not heard in the control tower. With the volunteered use of a helicopter, bearings taken while hovering over selected areas placed the fix near Big Springs. However, a four-hour ground search was fruitless, so two more helicopter flights were made. Land mobile search eventually led to a garage which had a faulty electronic door opener. Though radiating  $2\frac{1}{2}$  miles into the air, it was barely detectable 200 feet from the garage. The owner stopped using the equipment until repairs could be made.

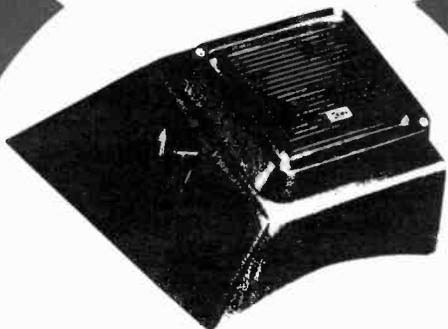
It took a long time to trace interference to an aviation instrument landing system at Oakland, Calif. An engineer from the FCC San Francisco office was unable to hear the offending signal at the airport. Joint flights confirmed that severe interference did exist and indicated it came from a nearby concrete supply company plant. Mobile equipment and further checks led to auxiliary gasoline engines used to rotate mixing drums on trucks transporting concrete. The cooperative firm eliminated the difficulty by changing ignition cables.

Investigation of interference to the instrument landing system at the Wilmington, N. C., airport revealed several possible causes along the commercial power line. A request by the FCC Norfolk office brought prompt attention from the power company and resulted in eliminating the trouble. The causes were a bad connection, a defective transformer and misbehaving fluorescent lights.

(continued on page 115)

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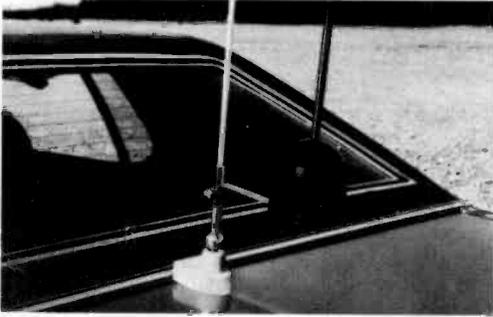
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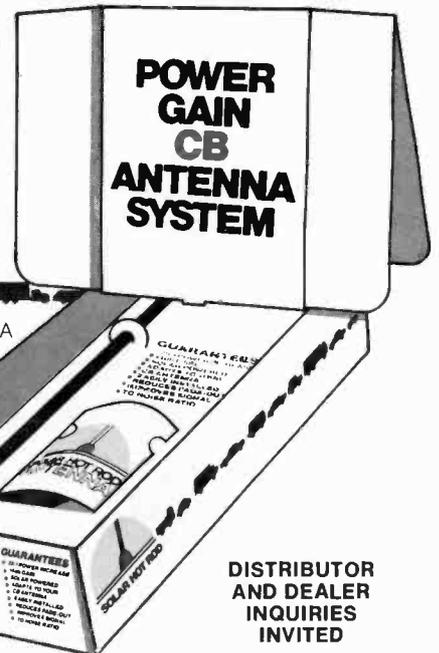
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S9

## THE INTERFERENCE BLUES (continued)

Interference was reported to FAA experimental glide-slope equipment in California. Aural monitoring of the frequency failed to reveal the trouble but an in-tilt recorder did. The complainant then recalled that he first noticed it after replacing the battery power supply with AC power. When the battery was substituted the equipment functioned properly. The FCC engineer suggested that an AC power line filter would overcome the difficulty.

A "popping" sound heard by aircraft between Houma and Lafayette, La., resulted in the New Orleans office mobile unit identifying it as a spurious emission from a radar data transmitter. The latter shut down until the conditions were remedied.

Complaint by an airline of interference to its radio communication in Texas resulted in the FCC New Orleans office tracing the origin to the Little Rock, Ark. area where a furniture factory was using an electronic heater to set glue. The equipment was not properly grounded or shielded and its radiations traveled more than a thousand miles. Its use was discontinued upon receipt of a cease-operation order. The plant took corrective action.

The airport at Watertown, N.Y. noted interference on a channel used to communicate with Air Force planes. FAA local investigative efforts failed to place the blame, so the FCC was called in. An engineer from the Commission's Boston office traced it to the Air Force's own nearby radar station.



### WAY OUT INTERFERENCE

A National Aeronautics and Space Administration laboratory in Maryland was troubled by a pulse-type emission on a terrestrial frequency. The interference was so severe and persistent that NASA personnel concerned were considering moving their work to a distant location, especially since their complaints to several neighborhood industrial plants had produced no relief. FCC help was asked finally. Engineers from the Baltimore office visited the scene, observed the effect, and found that it came from a defective high speed printer teamed with an electronic computer being used by another NASA project in the same building.

The Philadelphia FCC monitoring unit, in investigating interference to sensitive radiotelescope receivers at Ohio State University, found that the annoying signals were arriving from a source well above the horizon. This led to determination that sideband frequencies generated by radar operation were being reflected

back to earth by chaff dropped by Air Force bombers to disrupt radar tracking during training missions. This resulted in ink-line recordings of the radioastronomical observations being driven completely off the chart. As a result, the Air Force is endeavoring to protect the university's observations in future chaff-dropping exercises.

At a mobile missile-tracking station in Florida, electronics technicians demonstrated the traditional sledge hammer diagnosis of noise sources for an FCC engineer from Tampa who responded to their complaints of excessive electrical noise in the vicinity of their installation. By using detection equipment and making painstaking search, the FCC engineer found three sources of the noise—voltage regulators, two rusty antenna guy wires, and insulators on an electric power line pole half a mile away. In each instance a smart rap of a sledge hammer localized it. However, the FCC engineer was able to suggest several more-lasting remedies.

A contracting firm reported to the FCC Dallas office that continuous interference was being received on a

**". . . 3 sources of the noise—voltage regulators, 2 rusty antenna guy wires, and insulators . . . In each instance a smart rap of a sledge hammer localized it."**

space telemetry project. The intruding signal was more than twice as strong as the telemetry signal. The complainant had checked possible outside and inside-plant sources with negative results. The FCC engineer found the trouble to be a defective receiver in the project's control tower. In so doing, he discovered three other receivers at the same place also radiating spurious signals. All four jets were taken out of service until their faults could be corrected.

The Seattle engineering office received complaint from a scientist that his satellite-tracking receiver was beset by severe interference. It appeared only when two local TV stations were operating. However, the equipment for receiving signals from space objects was found to have insufficient selectivity. At the suggestion of an FCC engineer, the scientist installed input filters and his gremlin disappeared.

On report of unidentified interference to a satellite-tracking radar installation, an investigating engineer from the FCC Philadelphia office could not detect the signal on his own equipment. However, by using the meager facts available, he determined that the offender was a transmitter 13 miles away on the Pennsylvania Turnpike. Post-analysis showed the radar tracker was so sensitive that it picked up the distant output power of less than three watts, even though the dish antenna of the highway station was beamed in the opposite direction. Solution was being worked out by the parties involved.

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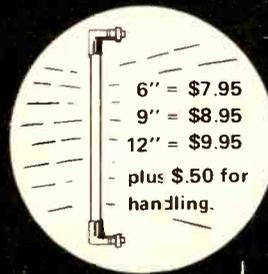
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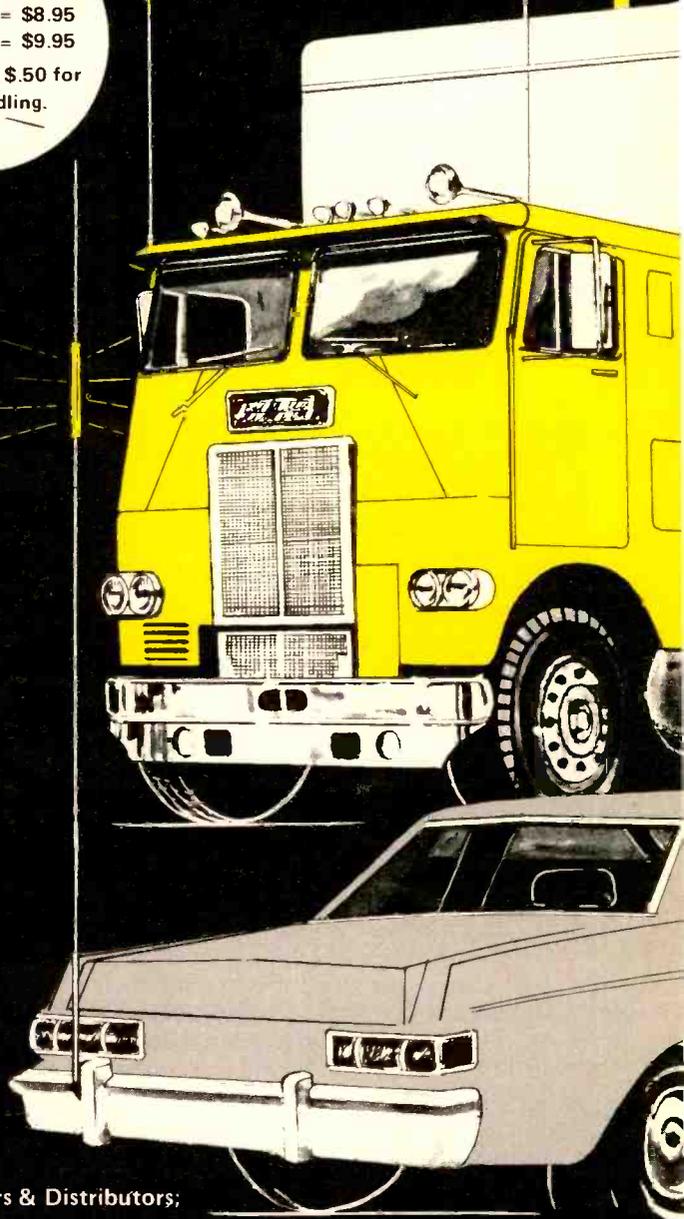
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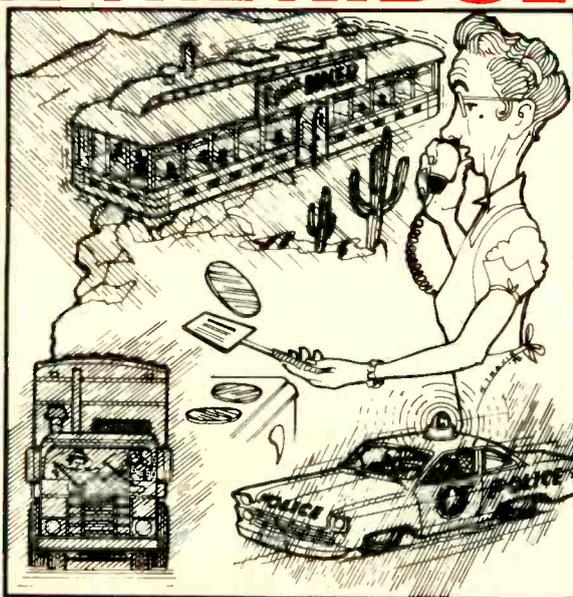
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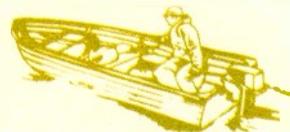
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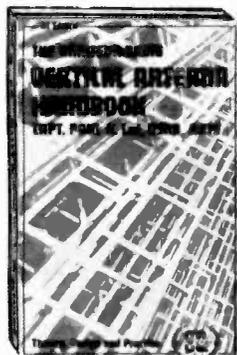


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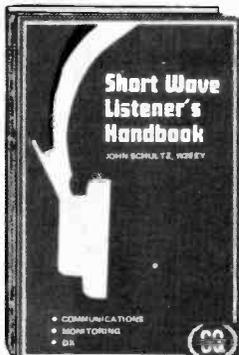
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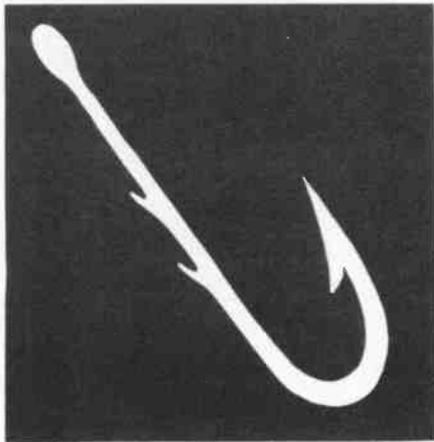
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# CB'ER OFF THE FCC HOOK

**F**CC Administrative Law Judge Joseph Stirmer, in an initial decision has dismissed an order to show cause why the license of John K. Mollert, of Albuquerque, N. M., for Citizens radio station KGX-9897 should not be revoked.

The show cause order, released July 23, 1975, charged Mollert with various violations of the rules including wilful violation of Sections 95.95(c) (failure to identify own station and station communicated with) and 95.41(d)(2) (operating on a frequency-channel 21—not authorized for communications

between units of different Citizens radio stations).

Mollert also was charged for failing to make his radio station available for inspection on request of authorized FCC personnel in wilful violation of Section 95.103 of the rules and Section 303(n) of the Communications Act.

The hearing was held in Albuquerque on February 10, and the record was closed that same day.

Mollert admitted to the operating violations. However, regarding his failure to allow inspection of his radio station, Mollert said he had received

conflicting advice regarding the authority of FCC representatives to come into his home to check equipment.

Mollert claimed that within one or two weeks prior to the Commission personnel coming to his residence to inspect his station, he heard rumors that FCC inspectors were in the area. He said he called the American Civil Liberties Union in an attempt to find out if Commission personnel could enter his premises and was told they could not without a search warrant.

In addition, Mollert said he had some doubts whether the inspectors

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were authorized FCC representatives, and local authorities had advised against allowing strangers into homes or apartments. This, he said, together with the fact that his wife was not appropriately dressed and nervous, contributed to his decision not to allow the inspectors into his home.

Judge Stirmer said that while he could understand and sympathize with the general reluctance of an individual to allow strangers into his home, the Communications Act, FCC rules and case precedents indicate that a radio station must be made available for inspection on the request of an authorized representative of the Commission. Although Mollert may have believed he had good reason for not allowing the inspectors into his home for the inspection, Judge Stirmer found those reasons unconvincing.

However, the judge said, having seen and heard Mollert testify, he was convinced that Mollert's refusal to allow inspectors into his home was due more to a genuine misunderstanding of the inspectors' authority and his desire not to upset his wife than from a wilful design to violate the rules. He noted that Mollert had not shown a defiant attitude or contempt for the Commission and its regulations and had testified in a forthright manner. He gave the impression of being a sincere individual, truly contrite and apologetic for his conduct, the judge said.

While these factors in other cases might not be enough to influence against revocation, Judge Stirmer found they were persuasive in this case. In this connection, he pointed out two of the violations with which Mollert had been charged are no longer violations.

(The Commission later amended its Citizens Radio Service rules making channel 21 available for communications between units of the same or different stations and deleting the requirement that the station with which communications are being conducted must be identified.)

While these rule changes do not excuse the violations, the significance of these particular violations have been diminished, Judge Stirmer said. As to Mollert's failure to allow a complete inspection of his station, the judge said this violation was somewhat ameliorated by the surrounding circumstances. Finally, he pointed out that there was no prior history of violation or allegation of wrongdoing on Mollert's part in the eight years he had been a Citizens radio licensee.

In view of all these factors, Judge Stirmer concluded that Mollert's conduct was not sufficiently flagrant to justify revocation of his license.

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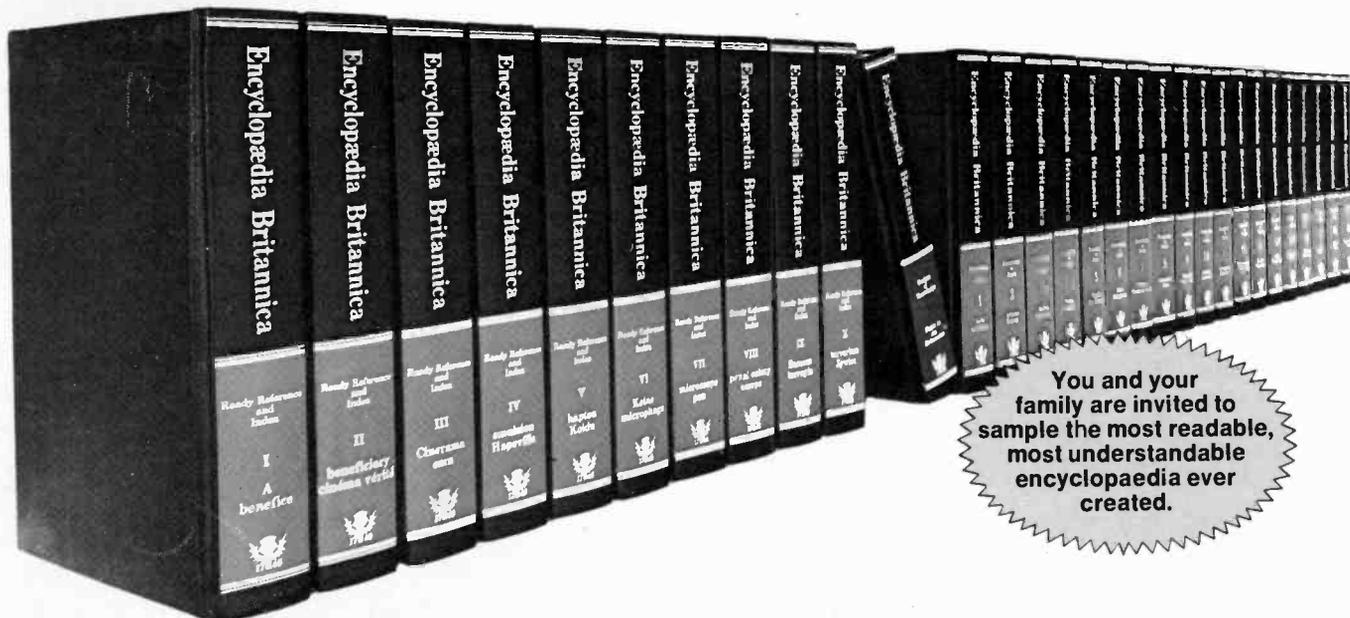
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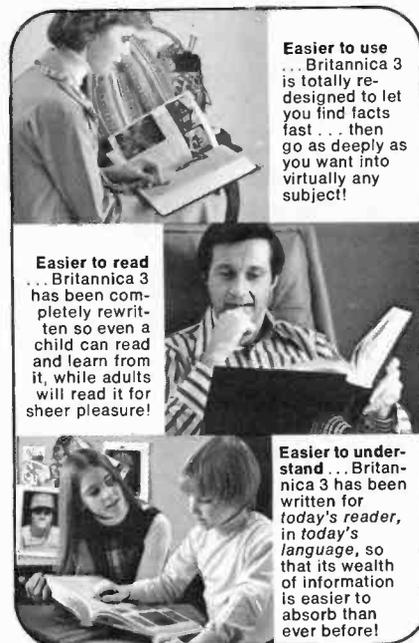
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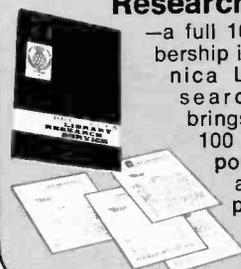
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# CB Usage Tips From S9

(CUT OUT & PLACE AT OPERATING POSITION)

## Preferred & Designated Channels

- Channel 9 Emergencies only
- Channel 13 Maritime
- Channel 16 Single Sideband only
- Channel 18 Single Sideband only
- Channel 19 Trucks/Vehicles in transit\*

\*Note that in many areas there are also 1 or more additional channels designated and/or normally used for in-transit vehicles, most often Channels 10 and/or 12. This is especially true in metro areas and their suburbs where Interstate Highways are on 19 and secondary roads such as parkways are on alternate channels. It is not the practice for mobile units on such channels to request breaks. Base stations are requested to avoid using all area in-transit vehicle channels in order to permit their full, free, unobstructed and exclusive use by in-transit vehicles. "Channel Monitors" are neither required nor desired on in-transit channels and are requested to honor any in-transit channels which may have been so designated in local areas by the operators by means of their customary and general usage habits.

Those operators who feel the need to function in CB by establishing themselves as "Channel Monitors" should not expect to monitor or control distant stations which are being received at S-3 strength or lower. They should also be aware of the fact that even those local stations in their area may not wish to avail themselves of their services; all stations having free access to the channels may elect to bypass the monitor

should they wish to do so. Those who attempt to pass themselves off as "Channel Monitors" as a ploy to hog the channel for their own purposes should expect to be ignored by most stations. Those monitors who are successful are those with a good signal and good ears, who earn the respect of other operators by keeping their own transmissions as brief as possible, by giving up their own rights to hold conversations while acting as monitor. ALL transmissions from the monitoring station should consist solely of acknowledging breakers who wish to use the channel, and NOTHING more. During busy periods monitors should deny requests for 10-36's and radio checks on their channel.

Those seeking 10-36's should be encouraged and instructed in the art of telling time by means of wristwatch, clock, or broadcast radio station. Those whose primary interest in CB is chucking carriers and/or playing music are requested to consider the pleasures and benefits to be derived from finger painting and shock therapy, respectively.

Stations using power mikes should be cautious that their audio levels are set to a level which will not cause voice distortion, over modulation, or splashover on adjacent channels.

Single Sideband stations generally operate on Channels 16 and 18, although this may vary in specific areas. Stations using standard AM transmission are requested to avoid use of local Sideband channels, likewise Sidebanders are requested to confine their transmissions to those channels established locally for their use.

( from page 72 )

## So, You Don't Know Antennas!

1. Beverage (Ha! You missed that one, eh?);
2. Ground Plane (no excuse for missing that one);
3. Extended Double Zepp (you didn't really call that a dipole, did you?);
4. Hertz (sure, it's a dipole, but that isn't a fellow's name);
5. Folded Dipole.
6. Adcock (this one might be called a Kraus 8JK);
7. Rhombic;
8. Sterba;
9. Lazy H;
10. Marconi (old 160 meter men should know that one);
11. Cubical Quad (well, it might be a bisquare);
12. Yagi (did you spell it right?);
13. Franklin (look, we know you missed that one);
14. Zepp;
15. V.



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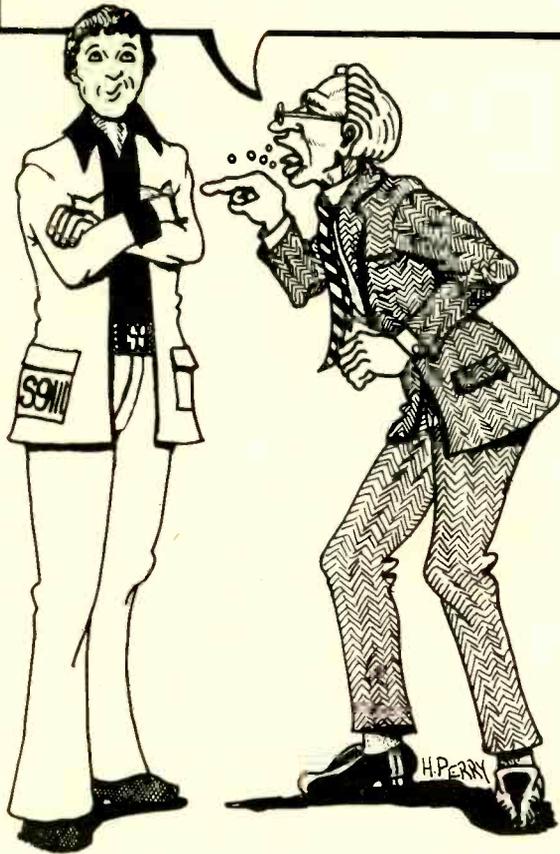
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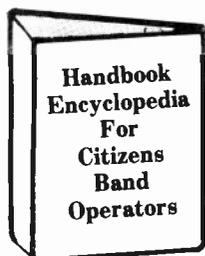
**He didn't have much more to say.**

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# WASHINGTON OUTLOOK

## APPLICATION FOR LICENSE SET FOR HEARING

The FCC set for hearing the application of Albert S. Holt, Lawrence, Kan., for a Citizens radio station license.

The FCC said that on January 24, 1975, it directed Holt to show cause why he should not be ordered to cease and desist from further unlicensed operation.

It noted Holt had waived his right to a hearing and promised future compliance with the Commission's rules. At that time he submitted his application for a license.

The FCC said on May 15, 1975, it directed Holt to cease and desist from unlicensed operation, stating he operated radio transmitting apparatus on a frequency allocated to the Citizens Radio Service on June 16, 1974, without a valid radio station license. He also refused to permit an inspection of his station by authorized Commission personnel, and operated his station in violation of the purposes of the Citizens Radio Service, it said. The Bureau added that his operation would have violated various Commission rules had he been licensed.

It also noted that Holt physically had assaulted the Commission personnel when they attempted to inspect his station and had stolen government and personal property from them.

The FCC said in view of the findings and conclusions of the cease and desist order, it could not be determined that grant of Holt's application would be in the public interest.

Therefore, it said, it would designate the application for hearing to determine if Holt has the requisite qualifications to be a Commission licensee and whether grant of his application would be in the public interest.

## NEW ZIP CB APPLICATIONS

The U.S. Postal Service has designated a new ZIP Code number to be used by applicants sending in for FCC licenses for Citizens Band radio stations.

The new address is:  
FCC  
Gettysburg, Pa.  
17326

The new ZIP Code was assigned by the Postal Service in order to expedite delivery and help reduce the backlog of applications piled up at the Gettysburg Post Office and the FCC.

The Commission stressed that the new ZIP Code is to be used only for CB applications, and pointed out that other types of mail sent to that particular number might be delayed because it was not addressed correctly.

The FCC pointed out there are millions of forms now in circulation with the incorrect ZIP Code. Applicants should assure that their mail is corrected to ZIP Code 17326 to obtain faster service.

## SENTENCED FOR UNLICENSED RADIO TRANSMISSION

Lyle S. Wiggins, Jacksonville, Fla., has been fined \$400 and sentenced to nine months imprisonment for operation of an unlicensed Citizens radio station in violation of Section 301, Title 47 United States Code.

United States Magistrate, Charles R. Scott of the United States District Court, Middle District of Florida, suspended execution of the prison sentence and placed Wiggins on probation for nine months.

The case was presented by Assistant United States Attorney, Howard T. Snyder of the office of the United States Attorney for the Middle District of Florida, following investigation by engineers from the Commission's Miami District Office and Special Enforcement Facilities at Powder Springs, Ga.

## ON USE OF POWER MIKES

The Federal Communications Commission urges caution in using power mikes by Citizens radio station licensees.

A power mike is a microphone with a built in pre-amplifier that is used for the purpose of increasing the signal range of a CB station. The FCC Rules

do not prohibit the use of power mikes provided the FCC technical requirements are met.

A recent FCC survey of 50 CB stations (selected at random) indicated that 28% of the stations surveyed were equipped with power mikes. Tests conducted by the Commission on those stations equipped with power mikes showed that 64% of the stations were capable of excessive modulation in violation of Section 95.51 of the FCC Rules when the power mikes were improperly adjusted. (Section 95.51 requires that the modulation percentage of a double sideband, amplitude modulated signal shall not exceed 100%.)

The Commission stated it is aware many licensees are causing severe interference to other CB licensees, licensees in other radio services, and viewers of television receivers by operating their stations with improperly adjusted power mikes.

To combat this the FCC is recommending all licensees using or proposing to use power mikes seek advice from a commercial first or second class radio operator concerning proper operation of the device. Although, willful or repeated violations of the FCC technical rules may result in fines, license revocations and the loss of all operating privileges, the Commission stated voluntary compliance and cooperation by all licensees are necessary for a freely accessible, useful personal communications service.

#### REVOKED

**Anchorage, Alaska, Richard A. Boyce, KDY-6728.** Ordered that the license be revoked, effective May 24, 1976, for violation of various sections contained in Part 95 of the rules including Section 95.83(a)(1) by using radio station as a hobby or a diversion.

**Hollywood, Fla., William H. McNeely, HFK-4236.** Ordered that the license be revoked, effective May 17, 1976, for violation of various sections contained in Part 95 of the rules including Section 95.95(c) by failing to use the assigned call sign at the beginning and end of each transmission or series of transmissions and failure to identify the station communicated with by its assigned call sign.

**Fontana, California, Cheryl J. Harding, KEK-0012.** Ordered that the license be revoked, effective June 1, 1976, for violation of various sections contained in Part 95 of the Commission's rules including Section 95.95(c) by failing to identify radio station by the assigned call sign at the beginning and conclusion of each transmission or series of transmissions, and by failing to

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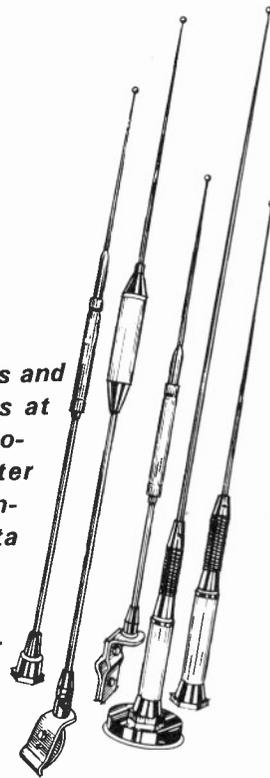
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**WASHINGTON OUTLOOK (cont'd)**

identify the station with which it was in communication by its assigned call sign.

**Cleveland, Ohio, David L. Dean, KDY-6978.** Ordered that the license be revoked, effective May 14, for violation of various sections contained in Part 95 of the Commission's rules including Section 95.103 by refusing to allow the Commission's personnel to inspect his Citizens radio station.

**Pine River, Minnesota, David M. Jones, KGU-1756.** Ordered the license be revoked, effective May 13, for violation of various sections contained in Part 95 of the rules including Section 95.83(a)(5) by exchanging communications with unlicensed stations.

**Hickam AFB, Hawaii, Nunzio J. Sciscent, KEO-3452.** Ordered that the license be revoked, effective May 27, 1976, for violation of various sections contained in Part 95 of the Commission's rules including Section 95.95(c) by failing to identify radio station by the assigned call sign.

**SHOW CAUSE**

**Portland, Oregon, Fred Gasperson, Jr., KGX-6896.** Ordered to show cause why the license should not be revoked for violation of various sections contained in Part 95 of the Commission's rules including Section 95.41(d)(2) by transmitting communications to other radio stations on a frequency reserved for communications between units of the same Citizens radio station.

**Anchorage, Alaska, Gary P. Fisher, K1Y-7267.** Ordered to show cause why the license should not be revoked for violation of various sections contained in Part 95 of the Commission's rules including Section 95.95(c)(1) by operating without being identified by its assigned call sign at the beginning and conclusion of each transmission or series of transmissions.

**Santa Ana, Calif., Deborah D. Smith, KFN-9279.** Ordered to show cause why the license should not be revoked for violation of various sections contained in Part 95 of the rules including Section 95.95(c) of the rules by operating radio station without being identified by its assigned call sign at the beginning and conclusion of each transmission.

**Mission, Kansas, Modified Motors and Mfg., KHS-8197.** Ordered to show cause why the license should not be revoked for violation of various sections contained in Part 95 of the rules including Section 95.95(c) by failing to identify radio station by the assigned call sign.



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Hillside, Ill., United Mobile Association, Inc. Ordered to show cause why the license should not be revoked for violation of Section 1.89 of the rules by failing to respond to official communications.

**NOTICES OF APPARENT LIABILITY**

The Commission's Safety and Special Radio Services Bureau, issued Notices of Apparent Liability to Monetary Forfeiture on various dates to the following radio station licensees in the Citizens Radio Service for willful violation of various sections contained in Part 95 or a repeated violation of Section 1.89 of the Commission's rules:

Ontario, California, Ray A. Wholf, \$50, KTO-6925.

**Baton Rouge, Louisiana**

David K. Bahlinger, \$50, KZV-7222.

David S. Bridges, \$100, KSJ-0194.

Stanley L. Broussard, \$100, KBV-8975.

William H. Findlay, Jr., \$100, KFS-2284.

Donald R. Furnish, \$100, KXC-2477.

Ansel A. Marbury, \$100, KEO-9818.

Ernest H. Moorman, \$100, KJX-6958.

Samuel S. Phillips, \$50, KET-6046.

Alvin M. Pliker, Jr., \$50, KWI-3564.

George W. Rush, \$100, KJL-5391.

Edwin N. Wilkins, \$50, KIQ-4091.

Paducah, Kentucky, William C. Harper, \$50, KJY-0311.

Demarest, New Jersey, Raymond J. Wriedt, \$50, KGG-4732.

Alice, Texas, Charles D. Buendel, \$50, KDC-0070.

Arkansas Pass, Texas, City Taxi, \$50, KTI-7301.

**Corpus Christi, Texas**

Wesley M. Bevely, Jr., \$50, KXS-3954.

Daniel B. Ideus, \$50, KDR-4703.

Stephaney W. Lott, \$50, KHf-2422.

Rita R. Runter, \$100, KZB-3933.

Driscoll, Texas, Robert E. Parker, \$50, KTA-5015.

Garland, Texas, Edward B. Middlebrook, \$50, KYI-2179.

**Kingsville, Texas**

Edward C. Cook, \$150, KCR-5544.

Roel V. Perez, \$50, KYR-5013.

Linda J. Walker, \$50, KTT-2296.

**Portland, Texas**

Richard L. Fulton, \$50, KXI-1982.

Terry D. Ivey, \$50, KYA-9201.

Fremont, Calif., John F. Jones, \$100, KGX-4468.

**Crescent City, Calif.**

William R. Wortell, \$100, KWH-2468.

Doyle N. Alexander, \$50, KDT-3388.

**Alexandria, Virginia**

James A. Ludwick, \$150, KGZ-9506.

Clyde D. Stocks, \$100, KIT-9001.

Mark E. Robey, \$100, KJO-6854.

Bradley Beach, N.J., Adorables, \$50, KFL-0315.

Marion, Indiana, Donald L. Miller, \$50, KHK-4098.

Indianapolis, Indiana, Mary F. Simpson, \$50, KIU-2214.

Kansas City, Kansas, Dennis L. Harris, \$100, KGL-1664.

Rockwell City, Iowa, Harlan Van Scoy, \$50, KCZ-5137.

Baton Rouge, Louisiana, Robert L. Cantrell, \$50, KZC-8368.

Pasadena, Texas, Gordon R. Gauthier, \$50, KRB-4960.

Bulverde, Texas, Sound Factory Musical Group, \$50, KYB-8893.

Brownsville, Texas, Trans Gulf Trawler, Inc., \$50, KYC-0641.

Beaumont, Texas, Eva R. Browning, \$50, KYE-4940.

**Charlotte, N.C.**

Troy J. Whitley, \$100, KIZ-2527.

Gary C. Baker, \$200, KFR-7405.

Matthews, N.C., George K. Baunedict, \$150, KXW-3589.

Virginia Beach, Virginia, Charles William Hartwell, Jr., \$50, KRK-3084.

Fredericksburg, Virginia, Gerald W. Morfey, Jr., \$50, KSL-6345.

Stokes, N.C., Will B. Congleton, \$50, KXU-6962.

Virginia Beach, Virginia, Carl O. Southers, \$50, KCK-0487.

**Paducah, Kentucky**

Richard Farneley, \$150, KKL-7448.

Joel R. Fondaw, \$50, KWA-3749.

David R. Fraser, \$50, KSO-8275.

Donald G. Grace, \$50, KWP-3976.

Wilson J. Keeling, \$150, KZB-3447.

Larry H. Myers, \$150, KIP-7258.

Larry G. Riley, \$50, KDD-4736.

Charles O. Ruoff, \$50, KJR-4033.

Ronald E. Sigo, \$50, KYP-6161.

Frank R. Taylor, \$100, KXW-9681.

Donald E. Utley, Jr., \$50, KIN-6191.

Franklin Wilkins, Jr., \$50, KIM-5420.

Ligon Yamaha, \$100, KHT-6531.

Symsonia, Kentucky, Robert L. Peck, \$100, KIO-8953.

**Fayetteville, North Carolina**

Paul C. Aldmon, Sr., \$50, KCI-1181.

Samuel R. Boyd, \$50, KCT-3767.

J. C. Broadwell, \$100, KWQ-5215.

Arnold L. Capps, \$100, KSH-9346.

Don S. Clayton, \$100, KGT-1383.

Eddie Jones, Jr., \$50, KXP-8815.

Masons Paint & Body Shop, \$100, KSA-8713.

William E. McLean, \$100, KTJ-1675.

R. J. Nail, \$50, KXK-9204.

Darvin R. Schlegel, \$100, KHS-4670.

Fort Bragg, North Carolina, Lester R. Gaff, \$50, KWA-1054.

Fort Hood, Texas, Ivan E. Carr, \$50, KET-6908.

Bergenfield, New Jersey, Ralph D. Rotholz, \$50, KCW-8587.

Evansville, Indiana, Carlos Ross, \$50, KJW-3161.

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Miss \_\_\_\_\_

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### WASHINGTON OUTLOOK (cont'd)

Paterson, New Jersey, Kenneth C. Bon-  
agura, \$50, KHN-3165.  
Dallas, Texas, Clinton D. Robinson,  
\$50, KYP-2904.  
Baker, Louisiana, Adley J. Dupuis,  
\$100, KJX-2657.  
Brownsville, Texas, Rudy Hernandez  
Zenith Center, \$50, KYH-3140.  
Broderick, California  
Robert G. Espinoza, \$50, KGU-0319.  
Richard E. Morris, \$50, KSH-5725.  
Lawrence W. Rogers, \$100, KEQ-  
4727.  
Robert S. Warren, \$50, KGP-8505.  
Carmichael, California  
Fred J. Beeson, \$100, KEU-8629.  
James W. Faucett, \$100, KIU-2072.  
Albert C. Riley, \$50, KCH-0659.  
Citrus Heights, California  
Verl L. Gilder, \$100, KHU-9658.  
Dorsey V. Griggs, \$50, KWL-5387.  
North Highlands, California  
Patricia L. Anthony, \$50, KXN-9461.  
Dale N. Conahy, \$50, KHN-5819.  
Ronald A. Heinz, \$50, KFD-2862.  
Stanley W. Lebsach, \$50, KIW-7958.  
Evelyn I. Locks, \$100, KZJ-4103.  
Oxnard, California  
Clifford A. Marity, \$50, KGP-6890.  
Jeffrey L. Yates, \$50, KBJ-6052.  
Port Hueneme, California, Anthony J.  
Fantee, \$50, KFA-4962.  
Rio Linda, California  
Michael H. Edwards, \$100, KWC-  
9372.  
George R. Glenn, \$50, KGX-1099.  
Ralph H. Langston, \$50, KJR-1668.  
Sacramento, California  
Elmo H. Bailey, \$150, KHW-6696.  
Harold E. Bush, \$50, KXQ-4597.  
Elmer V. Crowley, \$50, KBQ-9504.  
Michael J. Crossan, \$50, KDO-3305.  
James R. Hoff, \$50, KSU-8115.  
Betty J. Hughes, \$50, KTF-5136.  
Joseph W. Immormino, \$100, KWM-  
0361.  
Julius K. Laboff, \$100, KSG-2904.  
Preston A. Martin, \$50, KYR-5832.  
Frank R. Mayo, \$50, KTP-7660.  
Richard D. Owens, \$50, KHO-4321.  
Allen L. Pahike, \$50, KXC-3891.  
Geary B. Ritchie, \$100, KMZ-7619.  
Vernon J. Schwan, \$50, KWZ-3405.  
Fred C. Schubert, \$50, KLT-5214.  
Marvin E. Tupan, \$50, KWW-2301.  
Charles E. Willis, \$50, KTN-0896.  
Stanley T. Wirth, \$50, KCV-6503.  
Simi, California,  
Edgar R. Jansen, \$50, KXI-4406.  
Michael L. Stanek, \$50, KJS-8857.  
Simi Valley, California  
Betty J. Harshbarger, \$50, KBO-  
2822.  
Harry N. Lyons, \$100, KFZ-5627.  
LeRoy B. McCann, \$100, KWD-  
2539.  
Louis W. Pistachio, \$100, KDY-  
7396.

Edward S. Sparkman, \$100, KGK-  
2348.  
Larry K. Stevenson, \$50, KEH-2339.  
Domenico E. Tacelli, \$50, KDY-  
7411.  
Gordon A. Wilson, \$100, KJX-1166.  
Stockton, California, Delbert R. Parks,  
\$50, KYR-4604.  
Ventura, California  
Albert L. Johnson, \$50, KBT-8557.  
Douglas H. Osborn, \$50, KQY-6413.  
Robert J. Winfrey, \$50, KJM-9183.  
West Sacramento, California  
Fernna Albericci, \$100, KSC-8330.  
Dayle W. Clover, \$50, KCI-5511.  
Reed Equipment, \$100, KES-2563.  
Boax, Kentucky, Larry J. Purcell, \$150,  
KSB-9495.  
Kevil, Kentucky, Ruben R. Moyers,  
\$100, KWE-2338.  
Paducah, Kentucky  
Glenn H. Bailey, \$50, KNJ-4490.  
Robert C. Boulnois, \$100, KEY-  
2799.  
Hubert K. Boggett, \$50, KBD-3072.  
Dans Heating and Air Cond., \$200  
KWQ-2446.  
San Antonio, Texas, Francis P. Carney,  
\$50, KCJ-3127.  
Sinton, Texas, Judith A. Miller, \$50,  
KSR-7556.  
Taft, Texas, Allene L. Krause, \$100,  
KDK-1364.  
Fort Worth, Texas, Gene B. McCalmont,  
Jr., \$150, KYO-4102.  
Belmont, North Carolina, Daniel M.  
Moore, \$100, KTX-1546.  
Charlotte, North Carolina  
John E. Barrett, \$100, KSJ-3489.  
Walter B. Carlisle, \$50, KJX-5346.  
Thomas A. Warren, \$100, KHS-  
7685.  
Durham, North Carolina, Bruce Tall-  
man Peters, \$50, KWK-9714.  
Raleigh, North Carolina, Willie Law-  
rence Moon, \$50, KCW-8380.  
Roanoke, Virginia, Barry C. Mobley,  
\$50, KST-5596.  
Centralia, Washington, Gordon W. Nel-  
son, \$100, KWT-2119.  
Pasco, Wisconsin  
Darrell D. Hays, \$50, KGG-8818.  
Robert L. Charrier, \$100, KXP-9816.  
Richland, Washington, Loren F. Adams,  
\$100, KIX-2067.  
Compton, California, Dillie L. Sowell,  
\$50, KST-4081.  
San Dimas, California, Stephen M.  
Grimes, \$50, KXQ-9928.  
Oakland, California, Arthur S. James,  
Jr., \$50, KCJ-6341.  
Coral Gables, Florida  
Nelson Enriquez, \$150, KYK-2495.  
Spanish Radio & TV Programme,  
\$150, KXC-0563.  
Miami, Florida  
Jesus H. Garcia, \$100, KJQ-3656.  
Guillermo Perera, \$150, KHG-5346.  
Gibson, Florida, James O. Peterson,  
\$200, KWW-5587.

**Tampa Florida**

Frank E. Dediego, \$50, KEN-5613.  
Calvin E. Hordge, \$50, KCB-4125.  
Ronald E. Kaufman, \$100, KWI-5288.

**Chicago, Illinois, Betty J. Floyd, \$50, KIT-8650.**

**Baltimore, Maryland**

Jeffrey D. Grim, \$50, KXR-0397.  
Edward W. Mehl, Jr., \$50, KHL-0018.

**Glen Burnie, Maryland, Charles W. Mather, \$50, KFX-2683.**

**Princess Anne, Maryland, Eryvn G. Landing, \$50, KTA-6258.**

**New Haven, Connecticut, LeRoy Sulamond, \$50, KGO-4873.**

**Minneapolis, Minnesota, Garv J. Blichfeldt, \$100, KIP-5167.**

**Topeka, Kansas, Larry F. Cook, \$50, KHX-0921.**

**Pittsburgh, Pennsylvania, Theresa L. Dubrawsky, \$50, KSM-4164.**

**Easton, Pennsylvania, William O. Dutter, \$50, KIU-6234.**

**Las Vegas, Nevada, Walter L. Winn, KDY-3622.** Ordered the license be revoked, effective May 14, 1976, for violation of various sections contained in Part 95 of the Commission's rules including Section 95.83 (a)(13) of the rules by discussing the technical performance, capabilities, or testing of radio equipment.

**Phoenix, Arizona, Five Star Aquarium Supply, KJS-3723.** Ordered to show cause why the license should not be revoked for violation of various sections contained in Part 95 of the Commission's rules including Section 95.41(d) by transmitting on 26.945 MHz, frequencies not assigned to the Class D Citizens Radio Service.

**Ewa Beach, Hawaii, Charles R. Hibbs, \$50, KBS-5599.** For violation of Section 95.83(b) of the rules by communicating, or attempting to communicate, with a unit of the same station over a distance of more than 150 miles.

**Sacramento, Calif., David G. Lopez, \$100, KGN-1683.** For violation of Section 95.95(c) of the rules by failing to identify radio station by the assigned call sign and Section 95.41(d)(2) of the rules by transmitting communications to a unit of another Citizens radio station on a frequency reserved for communications between units of the same radio station.

For violation of Section 95.95(c) of the rules by failing to identify radio station by the assigned call sign.

**Lexington, Kentucky**

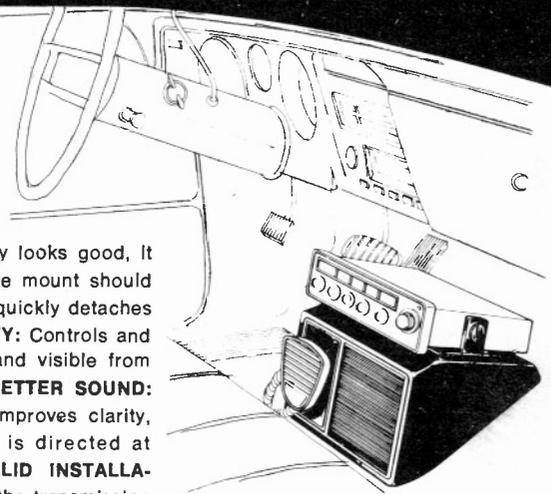
Omar R. Atwood, \$50, licensee of Citizens radio station KZQ-6940.

(continued)

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\* COMING IN THE NOVEMBER ISSUE OF S9—

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## WASHINGTON OUTLOOK (cont'd)

- Everett Stanley, \$50, licensee of Citizens radio station. KSX-5377.
- Santa Clara, California, Robert W. Hurney, \$50, licensee of Citizens radio station KIR-0719.
- Lexington, Kentucky, Virginia E. Greer, \$50, licensee of Citizens radio station KTX-1522.
- Carlsbad, Texas, Robert W. Goddara, \$50, licensee of Citizens radio station KYE-8024.
- Lexington, Kentucky, Joel R. Taylor, \$50, licensee of Citizens radio station KZT-7035.
- Lake Shore, Mississippi, Gordon F. Courage, \$100, licensee of Citizens radio station KGZ-0036. For violation of Section 95.95(c) of the rules by failing to identify radio station by the assigned call sign and Section 95.41(d) of the rules by operating radio station on a frequency not authorized for use by such station.
- Bartlesville, Oklahoma, Lawrence L. Shartle, Jr., \$100, licensee of Citizens radio station KWF-2879. For violation of Section 95.95(c) of the rules by failing to identify radio station by the assigned call sign and Section 95.41(d)(1) of the rules by operating radio station on a frequency not authorized by the Commission for use by such station.

## OTHER ACTIONS

- Anchorage, Alaska, Dennis Williams. Ordered that a hearing be designated to determine whether the applicant possesses the requisite qualifications to be a licensee of the Commission and whether the public interest, convenience and necessity would be served by a grant of the application.
- Elmendorf AFB, Alaska, Michael L. Daly. Ordered to cease and desist from further violation of Section 301 of the Communications Act of 1934 for operating radio transmitting apparatus without a valid radio station license.

The Commission, by its Safety and Special Radio Services Bureau cancelled the following licenses:

- Anderson, Calif., Gerald D. Tanksley, KTG-5247.
- Jacksonville Beach, Florida, Sheila A. Reynolds, KWG-1794.
- Omaha, Nebraska, Eleanor C. Shreffler, KCN-7432.

The Commission, by its Safety and Special Radio Services Bureau, dismissed proceedings on orders to show cause for the following:

- Natchez, Mississippi, Frank Anders, KCV-4508.
- Junction City, Kansas, Camilio F. Grieco, KDQ-1396.

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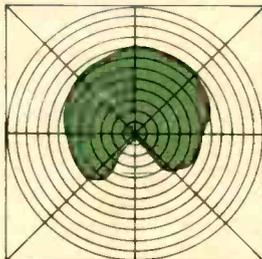
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A 40 db+ rejection means that if a signal is coming in at a certain strength and the ASTRO BEAM is turned around so that the back is toward the signal, the signal will drop 40 db or more\*.



\*The Actual Astro Beam Polar Plot Shows Signal at 41 db Power Level Reduced to Almost 0 db on Back of Antenna. Think of how you can cut out unwanted signals with this kind of rejection.

Forward gain of 11 db over an isotropic source is a means of rating the antenna's ability to increase, receive, and transmit signals. The point here is that the ASTRO BEAM has about 1 db more than the best 3 element beam currently on the market. This gain has the equivalent of multiplying your power about 12.5 times.

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Rejection — 40 db+ front-to-back  
 Forward Gain — 11 db over an isotropic source  
 Impedance — 50-52 ohms  
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 Mode — Vertical Beam      Wind Load Area — 2.6 sq. ft.  
 Light to Medium duty rotor needed  
 Turning Radius — 63 inches      Power Multiplication — 12.6x  
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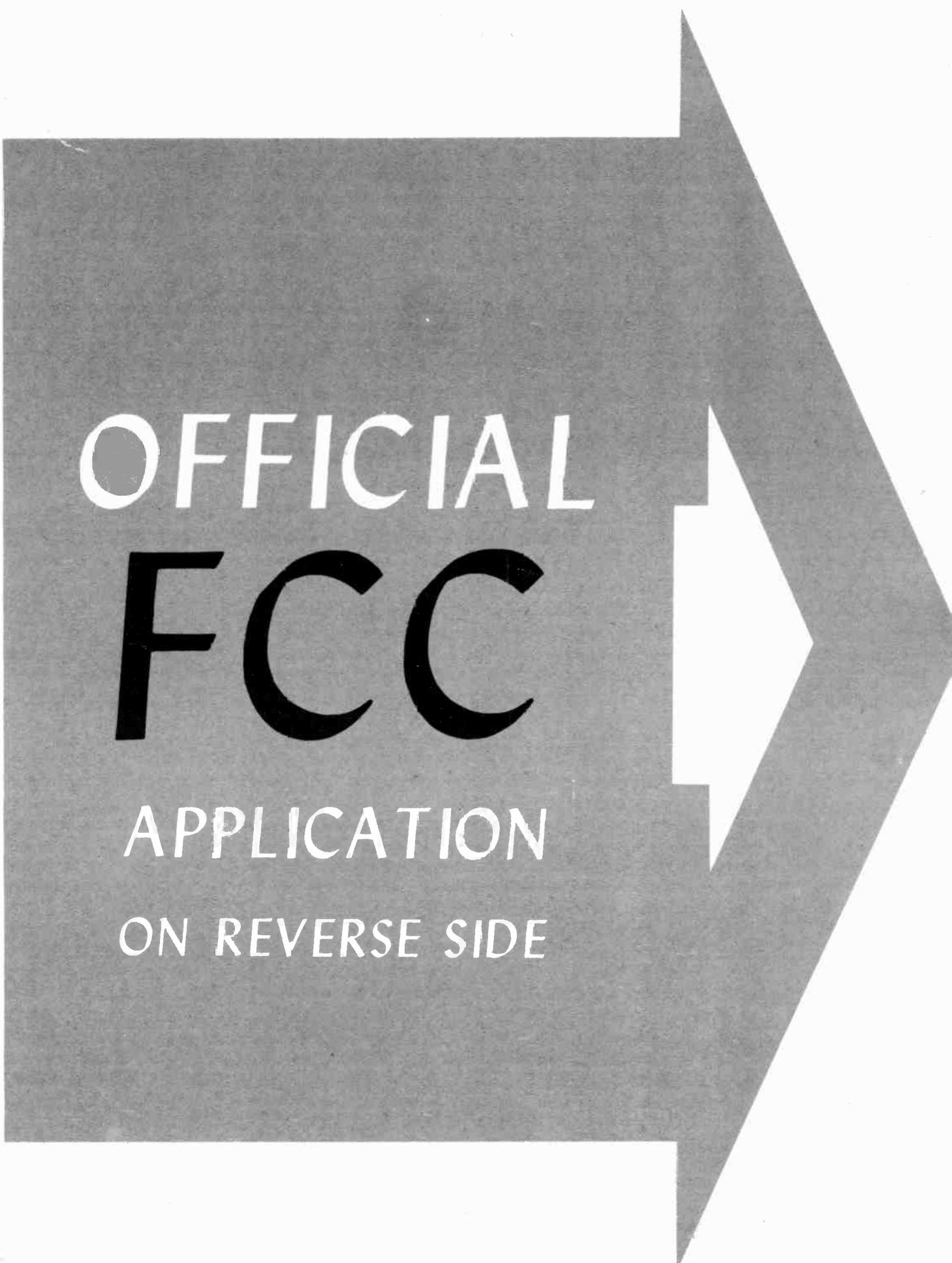


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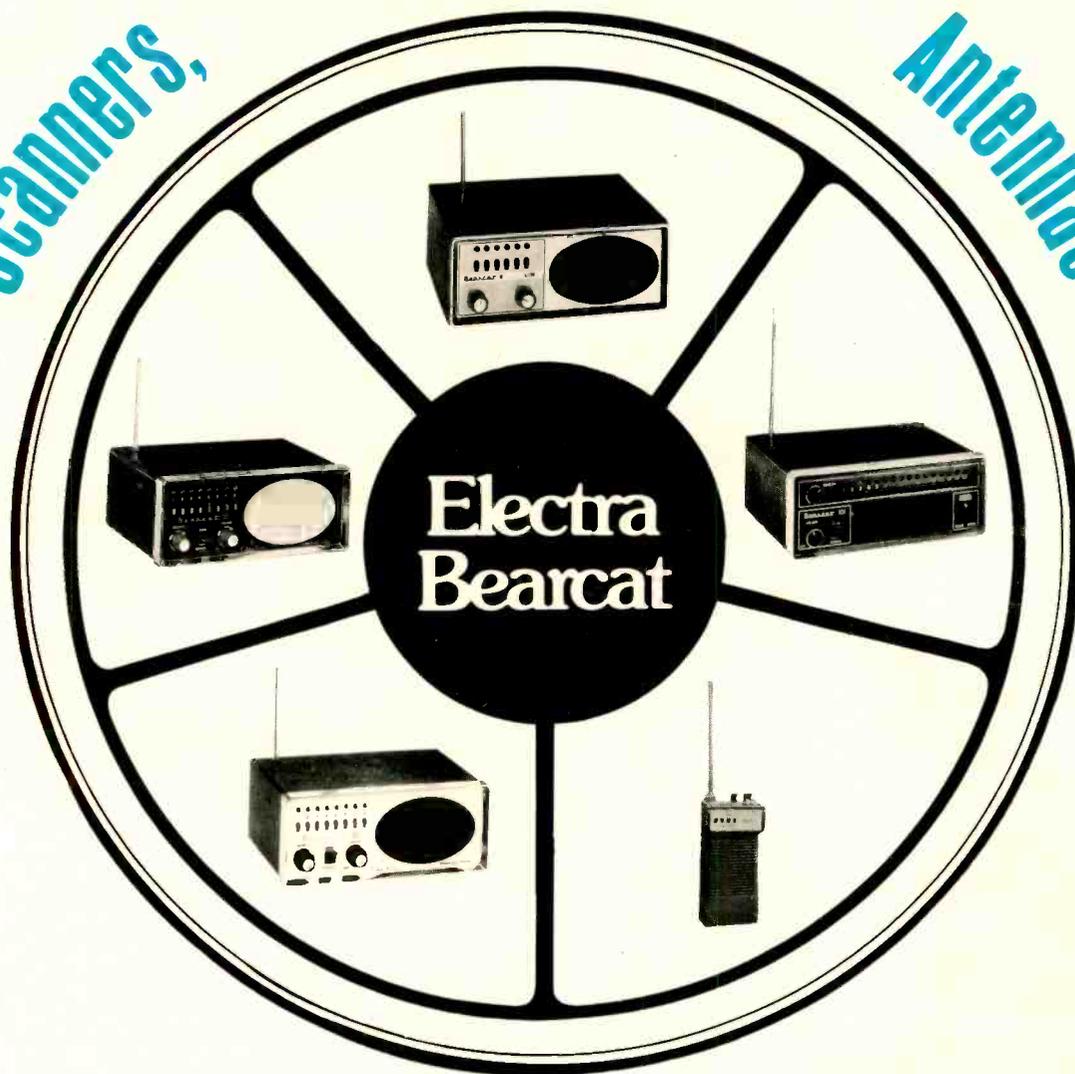
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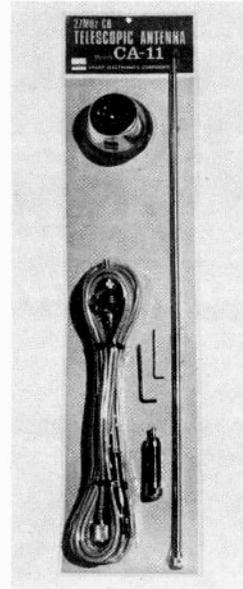
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Been Looking For

CB dealers! If you do not have it—you cannot sell it.

## ON THE COUNTERS

(continued from page 46)



### TRUNK MOUNT LIP ANTENNA AVAILABLE

Sharp Electronics Corporation's CA-11 CB Trunk mount lip type antenna consists of a three-step telescopic rod with loading coil parts, fixing grip and 17 feet of coaxial cable. This stainless steel trunk mount antenna provides ease of installation with no holes to drill and telescopes from a minimum of 26 inches to a maximum length of 60 inches. One end of the coaxial cable is permanently connected to the base. A joint-plug is attached three feet from the base for easy installation. The CA-11 comes complete with anti-theft hexagonal nut and mounting hardware. Weight is approximately 1.5 pounds, with cable. Suggested retail price is \$19.95.

Contact Sharp Electronics Corp., 10 Keystone Pl., Paramus, NJ 07652.

### THREE NEW MICROPHONES

A new series of CB microphones incorporating a unique patented circuit that conditions voice signals for greater transmission clarity and power has been announced by Mura Corporation. The new microphones offer a potential increase of 16 dB fully modulated voltage gain, an average increase of 4 dB in effective RF transceiver output power.

These microphones are the first in the CB field to incorporate Peak-Redistribution Modulation (PRM) circuitry, which electronically prevents clipping of voice-signal, allowing maximum modulated power output from limited-level amplifiers.

The Mura Model PRX-100 is a power microphone offering an infinitely variable gain setting controlled by a slide switch on the microphone. The PRM feature of the circuit assures maximum clarity of the

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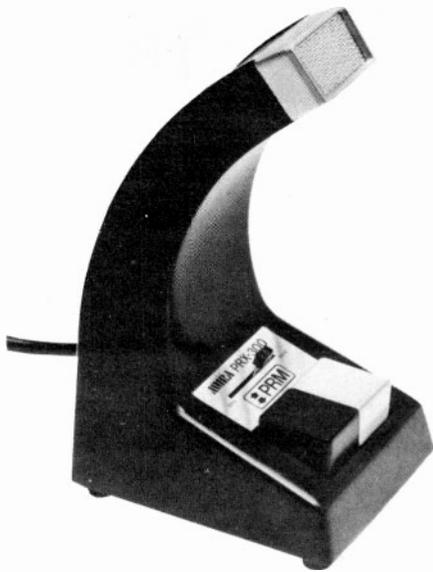
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broadcast voice signal. Powered by a standard 9-volt battery, the PRX-100 is wired for either electronic or relay switching. The suggested manufacturer's retail price of \$39.95 includes battery, 5-foot coil cord and a complete wiring guide.

The Mura Model PRX-200 power microphone offers the advantage of the peak-redistribution modulation circuitry for maximum audio clarity and power, and the flexibility provided by three separate gain settings: 12dB, 14dB or 16dB. The microphone is powered by a standard 9-volt battery and is wired for either electronic or relay switching. The manufacturer's suggested retail price is \$34.95, including battery, coil cord and a complete wiring guide.

The Mura Model PRX-300 is a distinctively styled base-station microphone featuring PRM circuitry and variable-gain control for matching microphone gain to the sensitivity level of the transceiver. The paired push-to-talk and lock switches provide the convenience of hands-free communication. The PRX-300 is wired for either electronic or relay switching and is provided with a complete wiring guide to simplify installation with any transceiver. The manufacturer's suggested retail price is \$69.95.

All Mura microphones are covered by a limited 24-month warranty. The Mura PRM models are made in the United States and are covered by U.S. Patent 3,060,389, Japan 306326 and other foreign filings. For further information, write to Mura Corporation, 50 South Service Road, Jericho, N.Y. 11753.

#### NO-HOLE TRUNK MOUNTED ANTENNAS

Three new "Freedom Line" mobile CB antennas designed for fast, scratch-proof installation on vehicle trunk lids have just been introduced by the Breaker Corporation. They are manufactured in Texas, U.S.A.

The Bicentennial inspired "Spirit of '76", (Model 10-235), has an attention getting red base, white fiber-

(continued)

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## FLASH! Rumor Mill In Action!

As we go to press (late June) the rumors are flying that the FCC is about to release a Report and Order which will establish CB Radio at a total of 40 to 45 channels, extending to 27.405 MHz. Class C Radio Control channels are still hanging in the balance due to flack from model aircraft pilots. Tech standards are expected to affect both transmitters and receivers on the new gear, converters may be allowed to permit updating of existing gear to new channels, although existing gear will still be suitable for present channel operation. Grapevine sez that some new VHF channels may also be suggested soon. Additional 27 MHz channels may be operative in early 1977.

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## WHY WORRY ABOUT CABLES ?

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Regardless of how much you spend on your radio and antenna system, they can't do their best job unless all of your output power gets from the radio to the antenna, and all of the weak signals get from antenna back to radio. The road both power and signals use for this trip is your coaxial cable. Obviously, then, if the cable is broken or contains losses, you won't get the performance you paid for, yet, very few radio operators pay any attention to the quality of the cable they buy, nor do they replace it periodically. Even the best of cable weathers, ages, and develops losses. The coax cable is the least expensive part of your system. The difference in the best and the cheapest you can buy is only a couple of dollars at worst and yet it can literally "make or break" your performance.

Most cable available today in ready-made lengths, and most cable furnished with new antennas, has three less-than-desirable characteristics.

First, most such cables have a single center wire, which breaks with bending, twisting, and day-to-day handling. SouthCom's cables have a 19-strand center wire, so all 19 strands must break before the cable loses connection.

Second, most cable does not have full shielding. You can peel back a small section of the outer black insulation, and you can see the inner insulation through "holes" in the braid. SouthCom's cable is fully shielded!

Third, most cable uses bare copper conductors, and you know how quickly bare copper can corrode. SouthCom's cables use tinned copper to resist corrosion.

Connectors vary widely. Solder-on types are the most common, yet they require a lot of heat which can partially melt the inner insulation, and distort the shape of the cable. In addition, you can't tell how much of the braid has actually been soldered through the four tiny holes in the fitting. SouthCom uses AMP, Inc. air-cripped connectors, which require no heat, and assure a solid bond to all of the braid. Because of the inner construction of the connector, it is almost impossible for a SouthCom cable to short.

In seven months of production, we have had only one report of a defective cable! Quite a record. Part of this record can be attributed to our quality control which checks every cable for SWR and power loss, not just continuity. We think the quality we build in, and the care with which we put our cables together makes them worth a little bit more. Since you're surely entitled to the performance you paid for when you bought your radio and antenna, you should insist on SouthCom cables. If your dealer won't get them for you, we will ship to you from the factory. Add \$1.00 postage and handling, Texas residents add also 5% sales tax. Send cashier's check or money order for immediate shipment.

58-3	3-ft. cable/PL-259's	\$3.98
58-6	6-ft. cable/PL-259's	4.85
58-12	12-ft. cable/PL-259's	5.65
58-20	20-ft. cable/PL-259's	6.50
58-20L	20-ft. cable, PL-259-solder lugs	5.95
58-50	50-ft. cable/PL-259's	9.95

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## ON THE COUNTERS (continued)



Model 10-330, "Concord"

glass whip and blue base load. The "Concord", (Model 10-330), offers the same minimal noise and distortion advantages of a fiberglass whip, plus a matching white load and base that blends with any vehicle decor. The "Minuteman", (Model 10-230), in classic trim-matching stainless steel, offers excellent durability and radiation characteristics.

Each model has a specially designed universal mounting bracket that securely clamps the antenna base along the side or rear lip of any vehicle trunk. No drill holes are required and an anti-scuff rubber gasket protects the surface of the trunk from scratches. Single bolt-on fastening permits the antennas to be easily installed or removed for hide-away trunk storage.

A static arrestor tip, weather-resistant stainless steel auto-flex spring for optimum stability and strain relief, and a fine-tunable hi-impact ABS encapsulated base load to achieve maximum gain are included with each antenna.

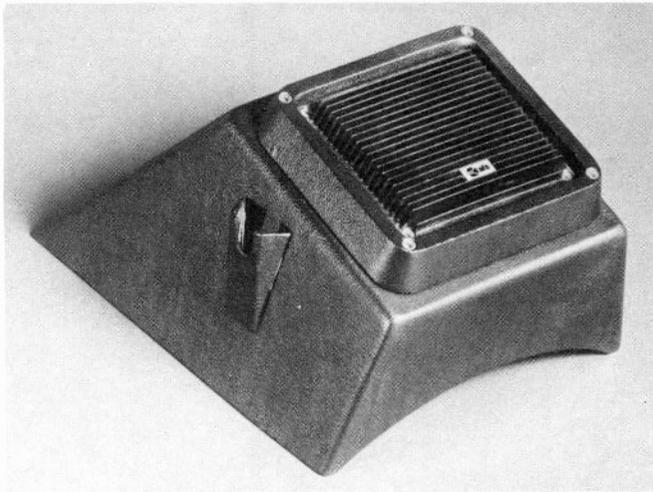
Heavy-duty, corrosion resistant mounting brackets and hardware are furnished in addition to a 18 ft. coaxial transmission cable terminated with a PL-259 plug for quick insertion into any SO-239 transceiver receptacle. An Allen wrench is included for adjusting the antenna whip length for minimum transmission cable S.W.R.

The Spirit of '76 (Model 10-235) and the Minuteman (Model 10-230) mobile antennas list for \$26.95 each. The Concord (Model 10-330) lists for \$27.95. They are available nationwide at electronic distributors.

For additional information on these no-hole trunk mounted CB antennas, contact the Breaker Corporation, Marketing Department, 1101 Great Southwest Parkway, Arlington, Texas 76011.

### "HUMP-MOUNT" EXTERNAL SPEAKER

Superior sound and security have been designed into Acoustic Fiber Sound Systems, Inc.'s new KRIKET® KAMEL™ external speaker.



Now, for the first time, speaker, transceiver and microphone can be combined into a single unit that simply rests on the transmission hump of an automobile, van or truck. Specially designed "teeth" in the speaker base hold the unit firmly in place while driving. So, installation problems are totally eliminated as well.

To remove the AFS®/KRIKET® KAMEL™ speaker/transceiver unit, simply unplug the antenna and power leads, lift the entire unit off the floor and place it in the trunk.

To provide maximum clarity and intelligibility across the entire voice range, the 3½ inch waterproof speaker is housed in AFS' patented "WORKING WALL"® enclosure. Cross-laminated tubular fiberboard controls the sound, deadens static. Annoying reverberations are eliminated and the result is a clear, clean, brilliant sound.

A newly developed plastic, Copolymer™, was developed by the AFS research/engineering team to house the unit. It is resistant to impact and extreme weather conditions. The product is available in black Duralux™.

"Because speakers are our only products, we are intensively developing the broadest line on the market today," AFS President Davis said. Companion speakers to the newest entry are the mobile KC-35, the fastest selling speaker in the CB field; the all-weather KC-45 P.A. speaker and the top-of-the-line base station unit, model KC-55.

#### HATCHBACK CB ANTENNA

A new CB antenna for hatchback and fastback model cars, model M-432, has been introduced by The Antenna Specialists Co. This latest addition to the A/S line is center loaded, with whip and loading coil pressure-molded into a single weatherproof, vibration-resistant unit.

The new "hatchback" trunk groove mount is fully adjustable, allowing the user to set the antenna in a vertical position to overcome the sloped roof lines of the new hatchback and fastback cars.

(continued)

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# STOP CB THEFTS

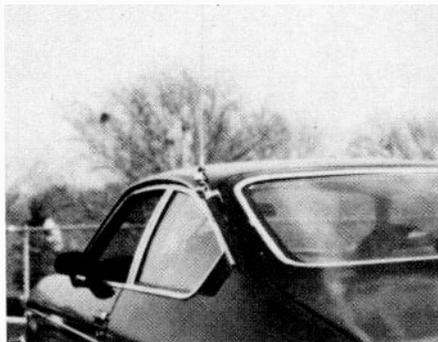
Introducing a new sensitive, electronic **AUTO ALARM** that installs in 15 minutes and will protect the whole auto or RV, including the antenna.

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## ON THE COUNTERS (continued)



The "static ball" tuning tip eliminates the need for cut-and-try antenna trimming. Once the desired setting is achieved, the static ball can be secured in position with an allen wrench that comes with the antenna.

The manufacturer's suggested list price is \$19.95. For further specifications contact: The Antenna Specialists Co., 12435 Euclid Avenue, Cleveland, Ohio 44106.

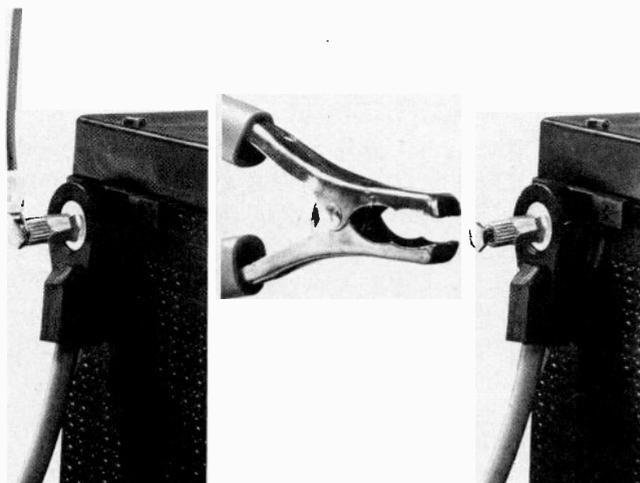
### STUD!

Falcon Enterprises has released a new replacement, terminal stud for side terminal batteries.

Falcon's new stud has an extended length that provides for easier booster cable hook-up. An added feature allows auxiliary power hook-up for accessories and tune-up instruments. This power take-off feature is not possible with stock terminal studs.

The long, terminal studs fit all standard side terminal batteries and replacement cables. (All G.M. cars from 1969 to date.)

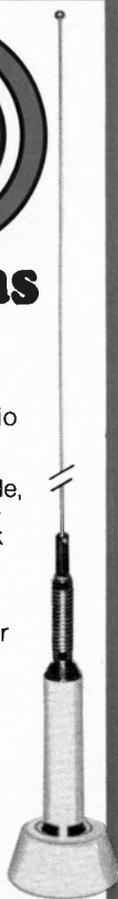
The studs are plated for corrosion resistance and are skin packed on attractive display cards, 2 per card, complete with auxiliary terminal screws.



Full range in  
reception  
and mounting:

## New Target Mobile CB antennas

Ride the range of fine performance with S & A's Target tapered steel whip antenna. Designed for less wind resistance and maximum signal radiation. SWR: 1 1/2 to 1 ratio or better. Nominal impedance of 52 OHMS. Target's great for going places with your CB set. Goes just about anywhere on your vehicle, too. A variety of mounting types are available including: trunk lip, snap-in, rain gutter, trunk groove, mirror and unique new recreational vehicle side mount. And they're all easy to install!  
Reception. Mounting. Design. You'll discover Target mobile CB antennas are in the quality range you've been looking for.



*S & A Electronics*

202 W. Florence Street, Toledo, Ohio 43605  
DIVISION OF THE SCOTT & FETZER CO.

Falcon's new terminal studs are an ideal addition to any battery or battery accessory program. Contact: FALCON ENTERPRISES, INC., 3960 S. Marginal Rd., Cleveland, OH 44114.

### HEAVY-DUTY 200-AMP FILTER

Sprague Products Company has introduced a new heavy-duty feed-thru filter to suppress alternator and generator noise in mobile CB radios installed in large trucks, tractors, farm equipment, etc.

Designated as Type QX1-600, the new filter is rated .5  $\mu$ F @ 600 VDC, and has a current-handling capability of 200 amperes, making it the heaviest-duty noise filter in the Sprague Q-Line. Typically, the QX1-600 will suppress up to 30 dB of unwanted noise at 4-30 MHz.

The QX1-600 is hermetically-sealed in a metal case for full protection against mechanical damage, moisture, dirt, and grease. It has rugged flatted rod terminals for strong vibration-resistant screw connections. Pre-packaged with a 7" accessory cable and complete installation instructions, it may be easily and effectively applied to alternators and generators in all vehicles with heavy-duty electrical systems. The cable is also available separately (QH1-2). When it is necessary to cut alternator output wire, cable connectors, QH2-15, should be used.

Q-Line Filters are available from Sprague distributors and CB dealers displaying the Sprague Mini Q-Mart Self-Service Merchandiser. For the name of the distributor or dealer nearest you, write or call Joe Cronin, Sprague Products Company, North Adams, MA 01247. Telephone 413/664-4481.



### PHASE-LOCK-LOOP (PLL)

The Colt Communications Division of Directional International, Ltd., introduces another CB unit . . . its new Colt 280 Mobile Transceiver.

The precision engineered Colt 280 features Phase-Lock-Loop (PLL) circuitry with advanced digital techniques to synthesize frequencies covering all 23 transmit and receive channels. This sophisticated circuitry with closer tolerances and better stability achieves superior performance levels and greater dependability than conventional crystal controlled units.

The chrome and matte black face panel includes  
(continued)

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Now you don't have to let everyone know that you've got a mobile CB radio. Our model MR264 disguise antenna looks and acts just like a normal car radio antenna, operating on AM and FM as well as CB. We know the disguise is effective because we've been making them for law enforcement agencies for years. If you don't need a disguise antenna, but you do want superior CE performance in a cowl mounted 3-way antenna, check out our model M-267. Both models feature a stainless steel whip that detaches easily so your antenna won't get ripped off in the car wash either. When you're looking for antennas, 3-way, disguise or otherwise, take advantage of our 20 yrs. experience. Look for the Stripes of Quality.



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## ON THE COUNTERS (continued)

full range volume and squelch controls, switchable automatic noise limiter and separate noise blanking circuits, public address control, illuminated channel selector, S/RF meter, and receiving and "on-the-air" transmit lamps.

Colt 280, priced at \$169.95, includes detachable push-to-talk dynamic microphone, with full length coiled cord, all mounting hardware, external speaker jack and operates on 13.8 VDC positive or negative ground.

Further information is available by writing Colt Communications Division, Directional International, Ltd., 5725 N. Central Avenue, Chicago, Illinois 60646.



### MOBILE CB TRANSCEIVER WITH 2-CHANNEL SCAN

Xtal Model XCB-12 is a 23 channel mobile unit with 2-channel scan. The Xtal XCB-12 is a "full feature" CB including switchable ANL and Delta Tune. It also features a unique camera-lens type illuminated channel indicator.

Suggested list \$219.95.

### COMPUTERIZED AUTO ALARM SYSTEM

A new concept in unauthorized car entry alert that thwarts CB radio thieves and protects the car is provided by KAR-SAFE, a small, compact and solid state electronic auto alarm system introduced by James Electronics, Inc., Chicago.

The James computer-programmed auto alarm unit Model C-7390 operates by detecting increases in electrical current. When the unit is turned "on", opening the car door, hood or trunk, or ground wire interruption will sound the car's horn 60 times per minute. It is, however, programmed to wait for 7 to 12 seconds to assure that false entry has occurred before the car horn sounds off.

When entry has been made and the horn is sounding off, the car's ignition system is also temporarily disabled without damage to the coil, according to the manufacturer. The horn continues to blow for at least five to eight minutes, then the system recycles and



resets conserving battery energy. If the intruder returns waiting for the battery to run down, the car alarm will again sound off.

KAR-SAFE consists of a solid state electronic computer control with a connecting cable plus a utility sensor. It is designed for the do-it-yourselfer, and installs in minutes. No special tools, drilling or cutting mounting holes are required. According to James, all that is needed are pliers for the supplied self-tapping electrical connectors.

Its portable design permits transfer from car to car. Also, the use of the horn makes the system legal in all 50 States and meets insurance company requirements.

The James auto alarm system is attractively packaged in a red, white and black display type carton. A special package consisting of the Model C-7390 plus Model C-7401 auxiliary switch for accessories and door, lists for \$39.95 and is available through CB retail outlets or direct from James Electronics, Inc., 4050 North Rockwell Avenue, Chicago, Illinois 60618.

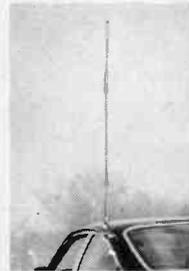
### STOPPING THEFTS

Universal CB Association is doing it's part to stamp out CB stealing and any thief would certainly be taking a big chance if he tampers with a UCBA registered unit. Even if he did steal it, where in the world could he sell it or the identifiable parts? The person he tries to sell it to could call the police and claim the reward. Just as autos are individually registered through the state registration system, now your CB can be individually registered through UCBA and in cooperation with law enforcement agencies, organizations, CB enthusiasts, merchants and individuals all over the nation, a stolen unit can be identified in seconds with just one phone call. The registration is accomplished by mailing in a small application card made available through retail outlets, individual members and repair shops. Just ask for a UCBA registration card. Your permanent registration number will be what appears

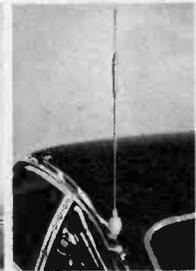
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## One of the best CB Antenna ideas we've hatched in 20 years.

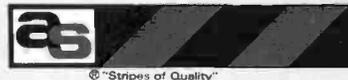
Hatchback and fastback car owners of the world, rejoice. Now you too can enjoy excellent CB reception. Our model M-431 CB antenna doubles as a hatchback mount and a trunk groove mount. Its unique mounting hardware lets you adjust the antenna to a perfect vertical position to compensate for roof line slant. The stainless steel whip and shock spring combine with a weather-proof, base loaded coil for maximum durability and performance. When you're looking for antennas, take advantage of our 20 years experience. Look for the Stripes of Quality.



also available in a center loaded model M-432.



Got a scanning monitor? Model MON-60 is a hatchback monitor antenna.



© "Stripes of Quality"

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## **ON THE COUNTERS (continued)**

on the card. Enclose only \$5.00. Mail it off and in addition you will receive a renewable membership card and a window sticker telling of your membership and warning any would-be thief that your unit is protected by UCBA. Police agencies from all over the nation are being requested to contact UCBA Headquarters if they presently have any registered CB's in their custody or if they ever recover any. Soon, nobody will buy a used CB without first checking the registration with UCBA or buy a new unit without registering it and obtaining their permanent registration number. Universal CB Association Inc. P.O. Box 6606, West Palm Beach, Fla. 33405.



## **NEW RF SIGNAL GENERATOR**

The VIZ Test Instruments Group has announced a successor to the extremely popular RCA WR-50B signal generator. Designated the VIZ WR-50C, the new signal generator includes improvements such as a rugged FET amplifier and completely solid state design.

The signal generator is one of several new products announced since VIZ acquired the RCA test instruments business.

The VIZ signal generator covers fundamental frequencies from 85kHz to 40 MHz in six ranges and harmonic frequencies on higher bands. A large, highly visible frequency selection-scale keyed to a range switch makes the generator simple to use. The selection switch also includes two positions for special 455kHz and 107MHz sweep outputs for broadcast and FM IF sweep alignment.

The RF output is 75mV rms min. for all ranges; the dial calibration accuracy is  $\pm 2\%$ . The generator has built-in modulation plus a crystal controlled oscillator circuit for special markers or calibration. Included is a two-step ten-to-one switch plus vernier for VFO sweep output attenuation and a two-position seven-to-one switch for crystal oscillator attenuation.

Highly reliable, the WR-50C RF signal generator is designed for convenient, dependable alignment and trouble-shooting in the shop, lab, factory, school, or home. The unit is small and compact, measuring only

7¼" x 5¾" x 4¾"; it is powered by 105-130V, 50-60Hz but can be changed to operate on 240V, 50-60Hz. The dealer optional price is \$117.00.

Further information, including the names of nearby VIZ distributors, can be obtained from Robert Liska, VIZ Test Instruments Group, 335 E. Price St., Philadelphia, Pa. 19144.

### ANTENNA CATALOG

CUSH CRAFT has just released a colorful new CB antenna and accessory catalog. It includes more than 40 CB mobile and base antennas with related accessories, plus a full line of monitor antennas. The new catalog C-9 is available through your local dealer or by writing direct to Cush Craft Corp., 621 Hayward Street, Manchester, NH 03103.



### NEW CB ACCESSORIES

For safety when you're driving you strap yourself in. Now, The Magitran Company suggests that for safety when you're parked, you strap your antenna on. The safety is, of course, security against antenna thefts.

To help thwart would-be antenna thieves, the company has developed a unique anti-theft strap. Model CB 10-12, which holds the mast and base together, even when the mast is unscrewed from the base.

Fabricated of a tough, special break-resistant material, a would-be-thief can't remove your antenna from the car even after he has unscrewed it. Thus, the CB 10-12 offers a low-cost, but effective means of protecting mobile CB antennas from rip-offs.

The other strap Magitran has developed is the Model CB 10-22 Ground Strap, specially designed to provide effective conductive grounding for improved transmission and reception of Mobile CB equipment.

Model CB 10-22 reduces static induced receiver noise by providing a direct grounding discharge path,

(continued)

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## ON THE COUNTERS (continued)

and also reduces the potential danger of damage or injury caused by lightning striking the car or antenna.

Installation is quick and easy—just attach to the bumper or underside of the vehicle.

Contact Magitran Co., Moonachie NJ 07074.

### CB VEHICLE ALARM SYSTEM

Universal Security Instruments, Inc., announces what it believes to be a first in the security industry. The company has developed a complete CB Burglar Alarm System that will protect all doors, hood and trunk of a vehicle plus a direct sensor to the CB unit, which if tampered with produces the alarm for immediate response. This CB Vehicle Burglar Alarm System will answer a much needed consumer need for protection of their CB equipment. The Universal Alarm part number will be CB-250.

Contact Universal Security Instruments, Inc., 2829 Potee St., Baltimore MD 21225.

### NO CRIMP CB CONNECTOR INTRODUCED

A "new concept" Amphenol® PL-259-type CB connector—featuring a patent-applied-for design that provides instant, simple termination of RG-58 A/U coaxial cable without solder, special tools or adapters—has been introduced by Bunker Ramo RF Division, Danbury, Connecticut.

Designated Amphenol 83-58FCP (for field crimp plug), the new, reusable connector has application in both CB base and mobile installations, and will see extensive use in antennas, CB accessories, and similar coaxial system situations.

To complete a termination, the CBER simply strips the coaxial cable and pushes the connector parts onto the center conductor and braid. The contact is squeezed at the tip to secure the center conductor. Or, if reuse is desired, the contact can be soldered. No braid soldering, combing of cable braid, special crimping tools, or adapters are needed. The result is a fail-safe, fast termination that eliminates the single largest cause of radio system failures—faulty interconnections.

Amphenol 83-58FCP connectors have a frequency range of 0-300 MHz, and a voltage rating of 500 V peak. Thermal limits are -67° to +300° F, and the connectors are non-waterproof. They also have standard 5/8-24 threads, and mate with standard UHF receptacles and adapters.

At the heart of the solderless connecting mechanism is a body assembly featuring a hollow barrel with a barbed end. After the cable is stripped, the slotted outer ferrule and coupling nut are slid onto the cable. Then the body assembly is pushed onto the cable so the barrel fits over the cable dielectric but under the braid. The coupling nut is then slid over the body assembly, and the outer ferrule is pushed forward until



14 Vanderventer Ave., Port Washington, New York 11050

### DEALERS

If you haven't yet subscribed to THE COMMUNICATOR, you're missing out on vital news important to *your* business. THE COMMUNICATOR is the only newsletter in the industry directly devoted to CB marketing.

The latest issue of THE COMMUNICATOR includes these features:

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- Latest news on the Status of Class E CB
- Equipment availability lists for all major CB Distributors. You can't sell 'em if you don't stock 'em.
- New product roundup of CB transceivers, antennas and accessories.
- New marketing ideas for increasing CB sales.
- A market survey questionnaire directly aimed at getting more information to aid your sales.

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it traps the cable braid against the rear flange of the body assembly. The ferrule then seats automatically. The resulting termination passes a 35 lb. pull test.

Manufactured by RF Division exclusively in the U.S., the new connectors are machined from brass rod stock and plated with Amphenol's ASTROplate® lustrous, non-tarnish finish. Insulators are Bakelite.

The new instant-on connector is available in OEM quantities or from distributors in both off-the-shelf (bagged) form and in blister packs for POP display racks. Blister packs have assembly instructions printed on the back.

For additional information about Amphenol 83-58FCP solderless connectors, contact Bunker Ramo RF Division, 33 East Franklin Street, Danbury, Connecticut 06810.

### SWIVEL BASE CB ANTENNAS

Midland International Corporation's Communications Division has expanded its Citizens Band mobile antenna line with three swivel base models to meet most installation needs. The ball swivel base design permits vertical mast positioning as well as easy antenna removal, when desired.

Model 18-274 is a top-loaded omni-directional antenna with fiberglass shaft and convenient "clamp-on" trunk mount base. With an overall length of 57 inches, this antenna is designed to achieve less than 1.2:1 VSWR over the entire Class D Citizens Band. No holes

are required for installation. Impedance is standard 50 ohms. Model 18-274 includes 17 feet of RG58/U coaxial cable with standard PL-259 connector installed. Manufacturer's suggested resale price is \$29.95.

Model 18-275 is a center-loaded gutter-mount design with stainless steel mast and an overall length of just 34 inches. With standard 50 ohms impedance, the design allows less than 1.3: VSWR over the entire Class D Citizens Band. Model 18-275 includes 12 feet of

(continued)



18-274 18-275 18-279



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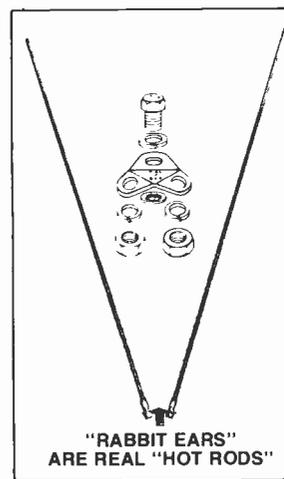
**BASES NOW RIVETED SO THEY CANNOT BREAK!**

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## ON THE COUNTERS *(continued)*

RG58/U coaxial cable with PL-259 connector installed. Manufacturer's suggested resale price is \$33.95.

Model 18-279 is similar to Model 18-275, above, with center loaded stainless steel mast, except is intended for clamp-on trunk mounting. Overall length is 30 inches. Impedance is 50 ohms. Included is 17 feet of RG58/U coaxial cable with PL-259 connector installed. Manufacturer's suggested resale price is \$31.95.

Contact: Sales Department, Midland International Corporation Communications Division, P. O. Box 1903, Kansas City, MO 64141. Phone: 913-384-4200.

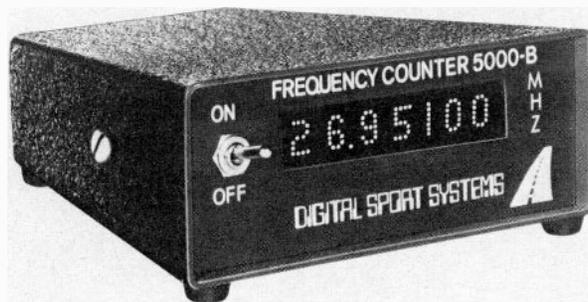
## BE A PAL

PAL enters the antenna market with a brand new concept in antennas. The "FIRESTIK", made here in Phoenix, Arizona is the only true, helically wound, high gain whip manufactured. It is a  $\frac{1}{4}$  wave top load and is more efficient than center or base load antennas. It's of rugged fiberglass construction, tuned from 26.965 to 27.505 to cover the new frequencies that we expect will be coming very shortly.

Also brand new to the antenna market is the PAL V-Bar Mount which allows you to use two PAL "FIRE-STIKS" together for a rabbit-ear effect. They are run on a single coax instead of co-phasing. You will hear the difference.

Even though we've only been in production six weeks, they are the hottest items on the market and are almost in a back-order situation already.

In a very few weeks PAL will be moving to a brand new 50,000 square ft. building in Phoenix, Arizona. PAL's new advertising slogan will be "PAL products are sold *ONLY* by PAL Dealers and Distributors who are communication specialists."



## FREQUENCY COUNTER

A new compact frequency counter for automobile or, with optional power supply, base use is now available from Digital Sport Systems, West Liberty, Iowa.

The Model 5000B Digital Readout Frequency Counter provides full seven digit readout accuracy to the nearest 10 Hz.

Only 1 $\frac{1}{4}$ " x 4 $\frac{1}{2}$ " x 4", it also offers typical aging of only 3 PPM over one year and a temperature drift of

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less than 18.6 PPM. Voltage supply variations are less than 4 PPM.

Other Digital Readout Frequency Counter features include pickup head for easy mounting and eliminating the need for bulky RF cables and connectors. Power hookup connectors, remote pickup and all cables and hardware are also included.

Optional AC power adapters and remote pickup head for readings up to 250 MHZ are available, too. Standard frequency range is 10 HZ-35 MHZ.

Digital Sport Systems, an innovator in miniaturized citizen band radio accessories and electronic monitoring equipment, is also introducing several other products this year, including a new wattmeter, amplifier and preamplifier.

For literature, write Digital Sport Systems, P.O. Box 337, West Liberty, IA 52776.

### FILTERS AND COMMUNICATIONS ACCESSORIES BROCHURE

A new brochure describing CB filters and communications accessories is now available from BELL INDUSTRIES/ J. W. Miller Division.

The filters have been designed to eliminate or greatly reduce virtually any type of interference that CB operators might encounter.

Included are high pass, low pass, audio interference, power line and TV set antenna filters, and alternator and generator suppressor kits.

A selection of connectors, plugs and cable assemblies to facilitate easy installation also is described.

For additional information, contact Jerry Hall, Operations Manager, BELL INDUSTRIES/J. W. Miller Division, P.O. Box 5825, Compton, California 90224.

### LOW-COST MAG-MOUNT WHIP

Hy-Gain Electronics has announced the latest in its new series of inexpensive, high performance citizens two-way mobile antennas. Known as the Hellcat Z, this new antenna follows the popular Hellcat X and shares many features, with the exception that the Hellcat Z is a magnetic mount.

The Hellcat Z features a 48" stainless steel whip that's tapered to a specially computed diameter for lower wind loading. This whip is mounted on a high impact base that adjusts 360° horizontally and 180° vertically. This adjustment allows the whip to remain upright for efficient radiation and low take-off angle when the antenna is mounted on a sloping body panel. The sturdy metal vertical ratchet also allows the Hellcat Z to be laid down for car washes.

A heavy duty Alnico magnet in the base attaches the Hellcat Z securely to all flat, ferrous metal body surfaces. To protect painted surfaces from possible marks and scratches, the magnet is covered by a tough plastic shield.

(continued)

# Precision

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Sentry's manufacturing methods are the most precise anywhere. We start with the Brazilian quartz. We use the latest state-of-the-art specifications. Then we add a lot of care from our trained, experienced personnel. Gold-plated quartz for longer life. And rigid standards of quality control.

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Since Sentry has the largest semi-processed crystal bank in the world, we can custom-make crystals for any rig. Any frequency. Faster than anyone else in the business.

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Maybe that's why people who count on communications count on Sentry.

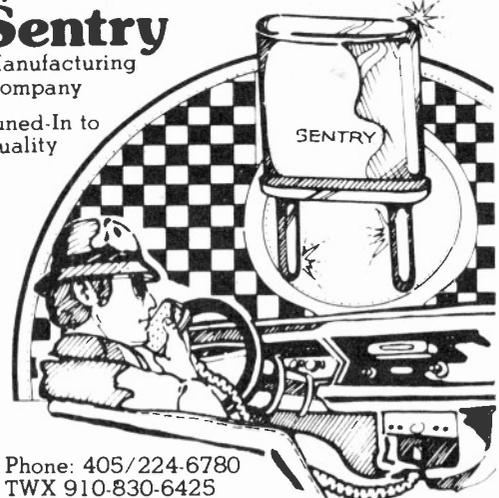
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CB/S92

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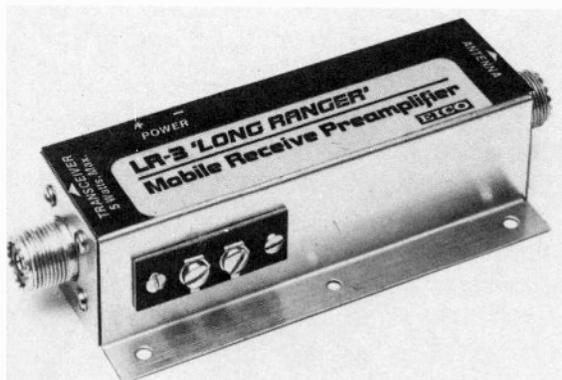
## HE COUNTERS (continued)

The Hellcat Z is ideal for temporary or semi-permanent citizens two-way installations. It installs instantly and leaves no marks when it's removed. This convenient new antenna comes complete with 18' of coaxial cable and a standard PL-259 connector. It is entirely factory pre-tuned and features a famous Hy-Gain etched copper coil in the base.

For more information on the Hy-Gain Hellcat Z citizens two-way mobile antenna, Order No. 580, contact Hy-Gain's Department MM. Hy-Gain Electronics Corporation; 8601 Northeast Highway Six; Lincoln, NE 68505.

### CB AMPLIFIER

Sensor Electronics is the manufacturer of a precision-built C.B. Pre-amp, called "Sensor I". The Sensor I was demonstrated at a meeting of representatives and distributors by Representative Richard Lewis, of Willow Grove, PA. Mr. Lewis is representing Sensor Electronics for PA., So. New Jersey, Maryland and VA. Further information on the "Sensor I" is available from Sensor Electronics, P.O. Box 18807, Phila., Pa. 19119. Telephone: 215/745-0777.



### THE "LONG RANGER"

"If you can't hear 'em, you can't work 'em!" is an old radio operator's adage. This applied to the new operator who would invest a fortune in his transmitter, and simply overlook the quality of his receiver.

Today's CB operator cannot do anything to increase the range of his transmitter, for power is limited by law. However, receiver efficiency can be increased by improving the sensitivity and selectivity which is precisely what the "Long Ranger" CB preamp accomplishes.

The Model LR-3 Preamp mounts out of sight and out of the way, for it has no operating controls. It simply plugs in the line between the antenna lead and the antenna jack on the transceiver, connects to the car's 12-volt battery system, and is controlled by incoming signals. When a signal is sensed by the "sniffer" circuit, the unit turns on and boosts the sig-

nal level by 20dB gain on all 23 channels. It operates with all systems, both positive and negative ground.

The Model LR-3 enables you to ferret out those weak signals that were previously lost in the background noise. You'll find yourself working stations that other operators in your vicinity cannot even hear.

The EICO Model LR-3 is priced at \$29.95.

For further information contact: MARK EHREN, EICO ELECTRONIC INSTRUMENT CO., INC., 283 Malta Street, Brooklyn, N.Y. 11207.

### NEW 40-PAGE CATALOG

A new 40-page catalog describing the test instruments of B&K-PRECISION has just been released.

Among the new "cost effective" instruments in this catalog are a 30MHz scope, a 15MHz scope and a 5MHz scope. Also being introduced for the first time is a new low cost 3½ digit multimeter. Other devices described include frequency counters, signal generators, semiconductor and transistor testers and numerous other test instruments.

The catalog is available without charge by writing directly to B&K-PRECISION, Dynascan Corporation, 6460 W. Cortland, Chicago, Illinois 60635.

### BREAK!

Break! Break! A booklet which came into existence at the request of hundreds of CBers, containing real life stories of incidents taking place on the blacktop and concrete highways of America.

The Shakespeare Company, a leading manufacturer of CB radios and fiberglass CB antennas, compiled the book after tremendous response to a recent Shakespeare ad entitled, "Break! Break!"

It invited readers to share their favorite CB experience—help to someone in distress; help received; heartwarming, humorous or "just plain memorable".

The first edition of the book was completed and published after reviewing hundreds of letters sent in by CBers from all over the country. And the book is a reflection of the high caliber people enjoying CB radio today. Aside from a small amount of editing, the stories are intact exactly as they were written.

All contributors to the Break! Break! Book received complimentary copies as well as a parchment "Certificate of Merit" for their deeds and services on the road.

The back of the book contains an order form for an official Knights of the Road belt buckle. Cast in antique silver finish, it makes a perfect gift for any fellow CBER.

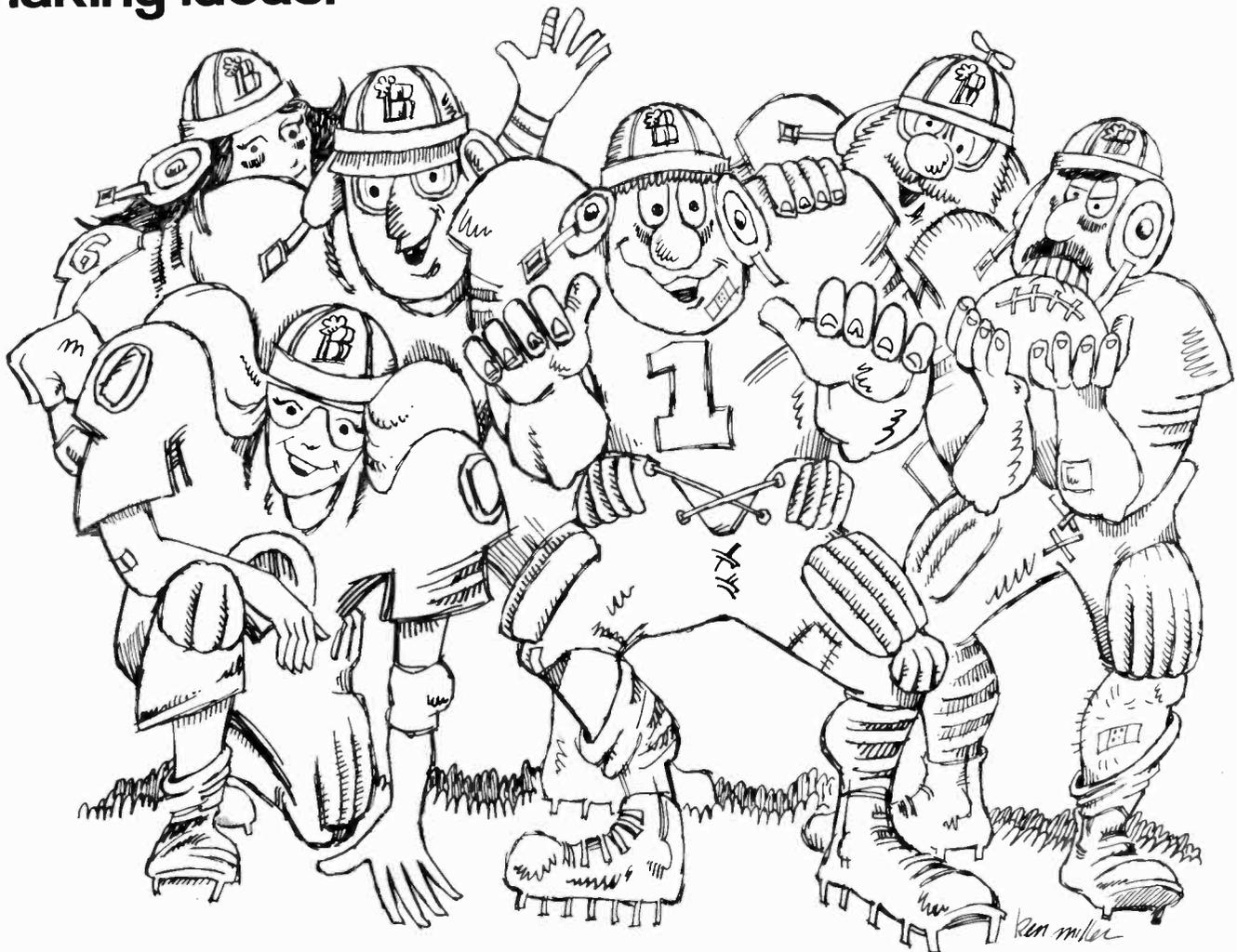
Copies of the Break! Break! Book are available on a first come, first serve basis by writing to: Break! Break!, Knights of the Road, Post Office Box 246, Columbia, South Carolina 29202.

### CB BUMPER STICKERS

Bright yellow and black bumper stickers are claimed by the manufacturer to attract more calls for the mo-

(continued)

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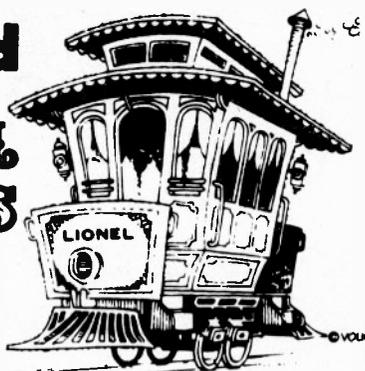
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## OLD LIONEL TRAINS



I'm looking for many fine Old Lionel trains and trolleys to fill out my collection. Already many dozens of CBers have responded, and are now enjoying new CB sets that they've gotten by selling or swapping trains that were just gathering dust in the attic or basement.



Specifically, these are some of the items I'm looking for.

- Any pre-war Lionel Standard Gauge engine or cars.
- Any pre-war Lionel "O" Gauge engine or cars.
- Any pre-war Lionel trolley or electric runabout.
- Any post war "O" Gauge engine or box cars.

In fact I'll buy just about anything Lionel made except the smaller "O 27" Gauge engines. I'm also interested in the old American Flyer or Ives Standard Gauge from before WW II.

So, if you've still got that old train or trolley collecting dust somewhere, pull it out and drop me a line. I'll try to answer every letter promptly.

**Dick Cowan,  
Publisher S9 Magazine  
14 Vanderventer Avenue  
Port Washington, NY 11050**

# URGENT NOTICE



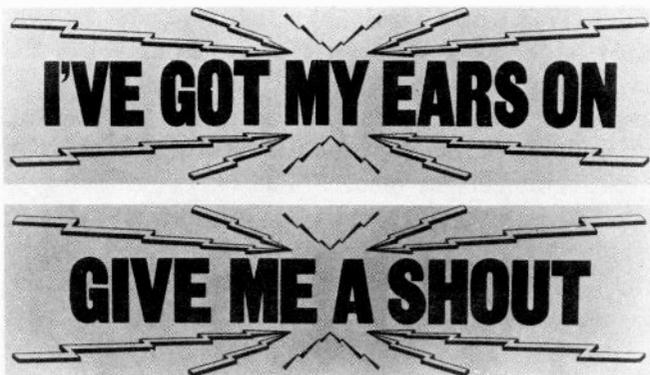
The FCC Regulations state that a copy of Part 95 (Rules and Regulations) must be in your possession whenever you are operating a CB transmitter.

Many CBers have been fined for the failure to comply with this rule. However, it's been both expensive and time consuming to obtain a copy of Part 95 until now.

S9 Magazine will send you a complete copy of Part 95—a full 24 pages for just \$1 plus 25 cents for postage and handling. Get your copy today and be certain that you don't get caught for illegally operating.

Send \$1.25 check or money order to  
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We can provide sets of these regulations in volume quantities. Order ten or more at \$.60 each, plus \$.50 for shipping and handling.



bile CBer who puts them on his rear bumper. Designed to encourage the reticent or hesitant mobile CBer following, they act as a friendly invitation to call.

Made of high-quality, pressure-sensitive Fasson vinyl, they are oil, grease, and water resistant and are highly visible even at a distance. Size is 3 $\frac{3}{4}$ " x 14 $\frac{1}{2}$ ".

Contact: Serendipity House, P.O. Box 11063, Chicago, Ill. 60611.

#### SIMPLE MARKING SYSTEM

A new system that enables electronic media to protect their equipment from theft and helps assure recovery of stolen items has been developed. It has the endorsement of insurance agents and various police departments. Using invisible ink, it marks items like a pen and enables police to identify them easily.

The Brink's protection system, developed by Sanford Corp., has three elements—a marker that applies invisible ink, a crime-detering Brink's emblem that warns that property has been invisibly protected, and a procedural guide on how to use the security system. All are available in stationery, department and other stores at \$2.95. The markers are used like any ballpoint pen, requiring no special treatment or skill.

The sharp increase in burglary in recent years and the broader range of items stolen have overwhelmed the usual police processes for identifying and returning stolen goods, according to Robert Bergdoll of Sanford. The invisible ink of the Brink's markers can be read easily under long-wave ultra-violet light that is available at most police stations and other law enforcement agencies. When a victim reports items stolen and indicates what markings have been put on them and where, the police can readily scan all items suspected of being stolen. The thief does not know where the markings have been put on the items and the invisible ink is hard to remove without leaving telltale marks.

The ink does not mar or deface any surface. It withstands exposure to light. Marked items kept indoors should be checked annually for possible fading, and items exposed to the weather more often. Only long exposure to ultra-violet light and some cleaning ma-

terials will remove the markings and require remarking.

The Brink's system has the endorsement of Brink's, Inc. and the National Association of Insurance Agents, as well as many police departments.

Further information is available from Sanford Corp., 2600 Washington Blvd., Bellwood, Ill. 60104.

#### CB'S AND ATTACHED STEREO SOUND SYSTEMS FROM BOHSEI

Compact mobile CB units, CB accessory antennas with various mounting configurations, model M-7505 universal digital frequency counter, and a unique sound system completely encased in an attractive attache case are among the items featured by Bohsei Enterprise Co., USA.



Model ARC 6100 stereo sound system contains an AM/FM radio, 3-speed phonograph and cassette tape recorder/player. Two input mic jacks provide for stereo recording from outside sources or direct recording capabilities from either the radio or phonograph directly onto the unit's cassette. This solid-state transistorized unit, with built-in antenna and two remote speakers, is both AC or battery operated. Total weight, 12 lbs. 10 oz.

Advanced technological features for the all-new CB model C-7511 include automatic noise limiter, PA-CB switch, SIP-RF with tamper-proof bolts and wrench. This moderately priced unit is now available for immediate delivery.

For more information contact: Mr. Don Goorhouse, Bohsei Enterprise Co., USA, 7037 Hayvenhurst Avenue, Van Nuys, CA 91406.

#### TITLE AND REGISTER ALL COMMUNICATION EQUIPMENT

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(continued)

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### ON THE COUNTERS (continued)

For the titling fee of \$3.50 the C.C.T. Registrar will issue a TITLE and input into their computer all pertinent information, which will and is available to the law enforcement agencies and insurance companies nationally. Issue a window sticker of \$200.00 Reward, and invisible Marking on the CB sets for identification by law enforcement officers. The C.C.T. Registrar is forming an Association that any member may obtain insurance to cover the theft of his insured CB set, the insurance premium is based on the cost of the set, 10% per year.

To get a TITLE and the set registered CB'r--must meet our stringent requirements, positive proof of ownership is required.

Manufacturers cooperation to issue a certificate of sale with each set has been started.

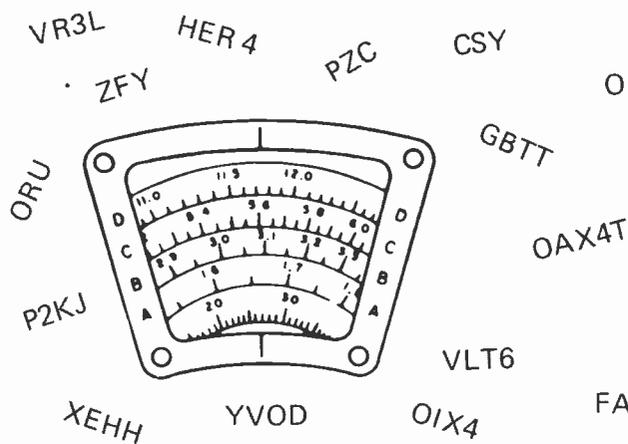
The C.C.T. Registrar program has been well accepted by many CB Clubs and Law enforcement agencies throughout the country.

Application for TITLE and Registration can be obtained by writing to C.C.T. Registrar, P.O. Box 127, Daytona Beach, Fla. 32019.



### WATTMETER

The Model 85, 4 range, termination wattmeter covers 20 to 512 MHz and services everything from hand held portable transmitters to base station installations. Four power ranges go down to only three watts full scale. It's designed for use in 50 ohm Coaxial Systems as an accurate direct reading RF wattmeter and a 150 watt non-radiating dry termination. The multiple, full scale ranges with temperature compensation gives it a unique flexibility on the transmitter production line, in the laboratory, on the service bench and in the field. As the commercial equivalent of the military AN/PRM-33 its rugged construction and use of "hi-rel" components contributes to a long life under the most severe conditions. For complete description and specifications write: Coaxial Dynamics, Inc., 13110 Enterprise Avenue, Cleveland, Ohio 44135.



# DX Korner

Send SWL reports to:

Don Jensen  
c/o S9 Magazine  
14 Vanderventer Ave.  
Port Washington, NY 11050

**T**HERE are exceptions, of course, but most shortwave listeners, when they start out in the listening hobby, concentrate almost exclusively on those broadcasts in the English language.

No big surprise there, right? To understand a program you've got to know the language and, for most of us, that means English. Fortunately, there are scores of foreign broadcasters that do transmit English programs.

Sooner or later, however, many SWLs are really bitten by the ol' DX bug. Naturally they remain interested in the program content of the stations they tune on shortwave. But they find an extra added attraction of hunting for the hard-to-hear stations. In these cases, DXers go after the lower powered, distant stations simply for the thrill of being able to log a "tough" one. The challenge of hearing a hard-to-log station is reason enough to try and the programs these stations air are only of secondary importance.

Because these smaller, elusive SW stations aren't beaming programs to English-speaking overseas audiences, most of the programs will be in various foreign languages. The idea of listening to non-English-speaking stations tends to scare off some beginning listeners... but it shouldn't!

You can learn to "get around" in the DX world of foreign language broadcasts with not too much trouble.

Obviously, no one would suggest that you try to learn all the languages you can hear on shortwave. There are literally hundreds of languages and dialects. A nodding acquaintanceship with some of the more important lingos is enough for most SWLs.

The stations from Central America southward to Cape Horn use, for the most part, Spanish. The major exception to this rule is Brazil, where Portuguese is the language. African stations use many local languages, but south of the Sahara, English, French and Swahili are, perhaps, the most common. In South Africa, English shares the billing with Afrikaans, an

offshoot of Dutch. In northern Africa, as in the Middle East, the primary language is Arabic.

The major European broadcasters use their own native languages, obviously, but also in the foreign broadcasting services other languages are aired as well. The "biggies," such as the British Broadcasting Corporation and Radio Moscow, transmit programs in several score of languages.

In Asia, the major stations broadcast in many languages. SWLs find these more exotic and, perhaps, a bit more confusing to sort out. There are programs in Chinese, Japanese, Korean, the languages of south-east Asia and the Indian subcontinent.

Few SWLs are genuine linguists. It isn't necessary to be fluent in a foreign language to be an active and successful DX listener. With some practice and experience you can learn to identify a language, pick out a few key words whose meanings you can learn and, from this, identify many of the stations you hear, even though not a word of English was spoken.

For starters, concentrate on the more commonly heard languages on SW. I'd suggest you begin with Spanish, Portuguese, French, German and Arabic.

Your initial reaction may well be, "It's all Greek to me!" But that's not really the case. Different languages "sound" different. You'll notice the real difference between the harsher and more guttural German and the much softer sounding French. More experience will allow you to tell the difference between those which sound somewhat alike, such as Spanish and Portuguese. You'll eventually be able to spot even more subtle differences between languages, just by their "sounds."

Learn to pick out certain words that frequently are heard in station identifications. There are words in many languages which translated, very roughly, mean, "here is," or "this is," and when followed by a place or station name serve as identification. Here are some examples: Arabic: "Huna Omourman (Sudan); French: "Ici la voix de la Revolution Congolaise" (Congo); German: "Hier is der Deutsche Welle" (West Germany); and, Spanish: "Esta es Radio Havana Cuba."

A great way to familiarize yourself with foreign languages is to listen to the major international broadcasters when they air programs in those languages.

(continued)

## DX KORNER (continued)

As I noted, the big international stations transmit in many languages. Listen, for instance, to the Voice of America broadcasts. The languages used are announced in English at the beginning of each transmission. Listen to these programs carefully, learn the "sound" of these languages, and try to pick out key words and phrases to help you identify other stations later.

Program format can help in identifying broadcasts in an unfamiliar language. Even if you don't know a word of the foreign lingo you can readily learn to recognize, for example, a news broadcast by the manner in which the announcer speaks. In a newscast you're apt to hear familiar names and places mentioned, words that sound similar in any language. Words like "Kissinger," "Moscow," or "Beirut" come out sounding much as we're used to hearing them in English.

Dramatic programs can be recognized by the back-and-forth dialogue quality and the emoting of the speakers. Political commentaries also have the emotional quality that makes them identifiable as such even when spoken—sometimes shouted—in a foreign language.

It doesn't take very much knowledge of a foreign language to identify the type of program you're hearing, and, very probably, the identity of the station itself. Naturally you won't get very much of the program content, but for that sort of information, entertainment and education, you always have those stations which broadcast programs in English.

Once you begin to listen to stations that transmit in other than English, you'll open up a whole new world of DXing possibilities.

### WHAT'S NEW

**ON AND OFF**—The new joint shortwave venture of the British Broadcasting Corporation and West Germany's Deutsche Welle, a new high-powered station on the Caribbean island of Antigua, is expected to be testing by about the time you read this. No firm schedule or frequencies, but "insider" information suggests the following may be frequencies to watch: 6,055, 6,065, 6,085, 9,590, 9,605, 9,735, 11,765 and 11,810 kHz.

Unfortunately, this "plus" is offset by a negative SW development. Abruptly, on May 1, Radio New Zealand left shortwave. The familiar old story was given for RNZ's disappearance from the air . . . a pocketbook pinch!

**NORDIC NEWS**—Both Norway and Denmark have announced plans to increase the powers of their shortwave outlets. Radio Norway, reportedly, will add a powerful new 250 kilowatt transmitter. And, more recently, came an announcement that the Danish government will invest in a pair of 500 kilowatt transmitters to replace the aging 50 kw. SWers of Radio Denmark. For years Denmark had resisted making a large investment in new SW broadcasting equipment. What apparently turned the trick was a complaint campaign

by thousands of Danish merchant sailors who reported they couldn't hear the station from home while on the high seas.

**FRIENDLY VOICE**—There are only a few private shortwave operations in the United States. One of the few is KGEI, the International Voice of Friendship, which operates from the San Francisco area. According to Jack Brooks, the station's chief engineer, KGEI's tentative schedule of English language broadcasts for late summer and fall is 0700 to 0800 GMT, and 1000 to 1100 GMT on 5,980 kHz.

**GO BUMP IN THE NIGHT**—Legends of adventure, suspense and superstition are combined, somewhat improbably, with music from Swiss villages and valleys on the twice-a-month program, "Twilight Tales," aired by the Swiss Broadcasting Corporation. The program is scheduled for the first and third Saturdays of the month. Listen at 2100 GMT on 9,535 kHz.

**PROPOSED BROADCASTER**—The South African DX Club reports that a giant religious station beamed to "the communist countries" is soon to be established in the Transvaal, South Africa. The company behind this venture is the "Social Adaption and Leaders Information Group" (SA-LIG). According to reports, SA-LIG not only will operate the station but plans to build fixed frequency radio receivers and smuggle them to its "enslaved audiences."

### QUESTIONS AND COMMENTS

Jeff Powley of Wyckoff NJ, reports hearing Radio Tirana, Albania with "good English programming" during the evening on a 49 meter band frequency.

Dunno, Jeff, if you meant that "good" to modify the quality of the English spoken, the quality of the program itself, or, most likely, the signal strength. Tirana normally puts in a good, solid signal in North America, although programming doesn't turn ME on. Other SWLs looking for the Albanian station might try 6,200 kHz around 0100 GMT and later.

"I visited the Land of Voodoo last winter on a West Indian cruise," writes Bill Larsen of St. Louis. "Now that I'm back home I'd like to tune in a Haitian station. How?"

The easiest way to hear Haiti on SW, Bill, is with the missionary station, 4VEH, Cap Haitien. You can try 9,770 kHz about 1315 GMT, or if you prefer, about 0015 GMT, when you can hear English.

Tougher, but more interesting from a DX standpoint is Radio Citadelle, apparently the only other Haitian SW station on the air today. It has been reported irregularly around 1100 to after 1200 GMT on 6,155 kHz.

Thomas Ernst of Tucson, Ariz., is turned on to Radio Nederland, one of the more popular SW stations in the world.

Tom, who divides his radio hobby time between his interests in CB and shortwave listening, has a few comments about Radio Nederland's "Happy Station" program.



Thomas J. Ernst, Tucson, Arizona, combines CB and SWL interests at this neat-looking console.

"It comes on Saturday at 0800 GMT," notes Tom, "in the 31 meter band, 9,715 kHz. Or you can hear the same program repeated Sunday at 0500 GMT on the same frequency. It's a family show and very good, running for an hour and 20 minutes."

Righto, Tom! I first heard the "Happy Station" program on Radio Nederland back when I started as a DXer, in 1947. But the show dates back much further. Some readers may be surprised to know that the "Happy Station" program began in 1928.

For 40 years the program was hosted by Eddie Startz. The present host, Tom Meyer took over from Eddie at the end of 1969.

Eddie Startz died earlier this year at age 77. His show, now approaching the half century mark, goes on.

#### DOWN THE DIAL

**BOTSWANA**—There are some strange things to be heard on shortwave. One of the better African catches on the 60 meter band is Radio Botswana on 4,845 kHz. If you catch the station's sign on at 0357 GMT, you'll hear the rural-flavored interval signal, cowbells, a rooster crowing and, perhaps a few bovine "moos." Yet if you stick around a few minutes you're apt to hear some popular music by the likes of Elton John and others.

**HUNGARY**—No one should have any great difficulty in hearing Hungary's Radio Budapest. This station operates on 6,000 kHz—a nice round frequency, no?—in English from 0200 GMT.

**LUXEMBOURG**—Radio Luxembourg was the original pop music station, long before other, more staid government broadcasters got involved in that sort of thing. From 0000 until 0200 GMT you can hear this sort of programming on Radio Luxembourg's 6,090 kHz frequency.

**CANARY ISLANDS**—The BBC, Deutsche Welle, Radio Nederland and other European broadcasters have established overseas relay stations for better "coverage" of the world. Did you know that Spain's Radio Nacional de Espana also has an overseas relay station. Centro Emisor del Atlantico is located at Tenerife in the Canary Islands. Listen in to Spanish programs, relayed from RNE Madrid, after 2145 GMT on 11,800 kHz.

(Credits: W. Noel Brown, Michigan; Michael Carter, Kansas; Wesley Thompson, Pennsylvania; Guy Dunn, New Jersey; Jack Jones, Mississippi; North American SW Association, Box 13, Liberty, Indiana 47353).

#### EMBLEMS

#### EMBLEMS



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## COMING EVENTS

(continued from page 33)

### NOVEMBER

*Jamboree*, November 7th, Desert Inn, 30-80 Whitestone Pkwy (one block from Adventurer's Inn). For information write American CB Radio Club, Inc. PO Box 321, Bronx, NY 10469.

*5th Annual Jamboree*, November 20 & 21, held at the Convention Hall, South First St., Gadsden, AL. For more information contact, Alabama CB Assoc., Inc. Rt. 1 Box 589A, Rogersville, AL 35652. Phone: (205) 247-0374.

### DECEMBER

*Jamboree*, December 5th, Desert Inn, 30-80 Whitestone Pkwy (one block from Adventurer's Inn). For information contact American CB Radio Club, Inc., PO Box 321, Bronx, N.Y. 10469.

*9th Anniversary Christmas Party*, December 12th, Community Building, North Main St., Marion, NC. Sponsored by Radio Patrol Emergency Service and Community Watch, Inc. For more information contact them at Rt. 3, Box 68, Marion, NC 28752.

## ANATOMY OF A CB RADIO

(continued from page 103)

hear stations on that channel, but probably stations on adjacent channels. A good quality base station will discriminate against all signals except those on the precise channel you are tuned into.

Remember to look for those meters—they can really tell you what's going on as you are talking and receiving on your base station. And since you don't have to keep your eyes on the road, you've got to look at something, so cast your eyes onto those meters to insure that your station is operating at optimum performance.

A well chosen CB base station, whether it be AM or single sideband or a combination of both, will provide you with many enjoyable hours of communications.

For those of you who are participating in the REACT, REST, and ALERT programs, your AM base station is a valuable link to motorists to call help to. I certainly tip my blond hat to all of you who operate your base stations as public service monitors—you folks do an extremely valuable job with an invaluable type of equipment.

So choose it well—your Citizens Band base station.

## HAVE YOU MADE CONTACT WITH THE



## STAFFERS "ON THE CHANNELS?"

NAME	HANDLE	PRIMARY CHANNELS	NAME	HANDLE	PRIMARY CHANNELS
Tom Kneitel	Tomcat CLI-73 KW146 SSB13	10, 12, 15, 19 16L, 18H	Cary Cowan	Green Dragon Sleeping Beauty	12, 17, 19
Karen Fusco	One Duster LIS813	13 16L, 18H	Richard Cowan	Trainman	13, 16L, 19
Lori Ressa	Loreli	12, 19	S. R. Cowan	Gramps	19
Marc Gilman	Deacon KW339	12 16L	Pat Hartman	Six Pack	4
Hal Keith	Flasher	12	Gordon West	California Dreamer	9, 16L
			Gary Deckelnick	Baby Bull	7, 19

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# The Monitor Post

by Rick Maslau, KNY2GL

## TWO 8-CHANNEL TRI-BAND SCANNERS

Two new 8 channel compact FM monitor scanners with 3 band capability has been introduced by Fanon/Courier Corporation, 990 South Fair Oaks Avenue, Pasadena, California.

The mobile unit called the Courier Cop-Scan M8-HLU, features TRI-BAND operation with full intermix, manual or automatic channel selection and individual channel scan by-pass switches. Cop-Scan M8-HLU covers high and low band VHF, and UHF. Features of the Cop-Scan M8-HLU include high selectivity and sensitivity with superior protection against intermodulation and excellent adjacent channel rejection characteristics. Circuitry is dual conversion superheterodyne with high frequency monolithic crystal filter and ceramic IF filter. Audio power output is 2 watts for high ambient noise operation.

The base/mobile unit called Cop-Scan BM-8A features TRI-BAND operation with full intermix, manual or automatic channel selection and individual channel scan by-pass switches. Cop-Scan BM-8A covers high and low band VHF, and UHF. Features of the Cop-Scan BM-8A include high selectivity and sensitivity, with superior protection against intermodulation and excellent adjacent channel rejection characteristics. Circuitry is dual conversion superheterodyne with high frequency monolithic crystal filter and ceramic IF filter. Complete with AC supply, stand and telescoping antenna.

Fanon/Courier Corporation, has also introduced a new concept in dual band 4 channel portable FM monitor receivers with their COPSCAN VHFH/U. The new COPSCAN VHFH/U features a double screw mounted flexible antenna duo as standard equipment to provide maximum adaptability under all circumstances.

COPSCAN VHFH/U enables the user to listen to public safety, weather, or other broadcasts on either high band VHF (146-175 MHz) or UHF (450-475 MHz). The unit uses dual crystal sockets to permit any channel to be assigned to either the high band VHF or UHF. COPSCAN VHFH/U features superior selectivity and sensitivity with excellent adjacent channel rejection characteristics. COPSCAN VHFH/U uti-

lized dual conversion superheterodyne circuitry with both high frequency crystal filter and ceramic IF filter.

Along with the double screw mounted flexible antenna, which is provided as standard equipment, the unit comes equipped with provision for earphone, 6 volt power supply and external battery charger operation if an optional Nickel-Cadmium battery package is employed. Controls include number one channel scan by-pass, manual or automatic scanning, squelch and volume. Carrying case, auto lighter adaptor and power supply/charger are offered as accessories. The unit can also be used with the unique accessory model SCMA-1, which is a mobile adaptor featuring an Audio Amplifier boost circuit and large speaker with charger as in all COURIER COPSCAN portable units. The COPSCAN VHFH/U is housed in a high impact case with textured surface and side ribs for easy removal from a shirt pocket. Colors of the unit are gray, chrome and black. *(continued)*



Here is a rig photo sent in by Mail Man and Moon Baby, of Florence, Alabama. A nice compact and cozy little monitoring post if there ever was one.

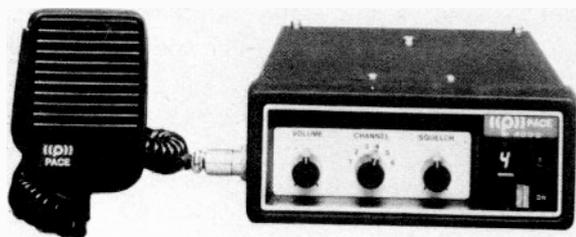
### BROCHURE ANSWERS NEED FOR LONG RANGE CRIMEFIGHTER

Aerotron, Inc. has developed a new four-color brochure that explains how public safety agencies can get a real crimefighter . . . that's not make-believe.

Answering the question, "How about a real crimefighter that doesn't wear a cape and blue tights, a mask and silver bullets . . .", the brochure explains how Aerotron's new 110 Watt Mpac transceiver is "the super radio, the long ranger" that can provide any public safety agency with continuous, obsolete-proof communications.

The brochure features Aerotron's exclusive SCAN-10 control head and shows in detail Mpac's modular insides and superior circuitry. The all solid-state, trunk-mount mobile is available in all frequency bands, choice of power levels and with a full complement of accessories.

For a free copy of the brochure write: Super radio brochure, Aerotron, Inc., P.O. Box 6527, Raleigh, N.C. 27628.



### BUSINESS RADIO FEATURES "REPEATER TALKAROUND"

PACE Two-Way Radio Products (Pathcom, Inc.), announced that "Repeater Talkaround" capabilities has been incorporated in their Model BI 4000 UHF/FM Business Radio. A channel spread on transmit of 5.5 MHz, *without* power reduction adds flexibility to the system by permitting direct mobile-to-mobile as well as mobile-to-base communications.

The PACE BI 4000 is a high performance UHF/FM mobile transceiver designed for simple operation and easy maintenance. Standard features include 6-channel capability, provision for optional tone squelch, a seven segment LED (light emitting diode) digital channel readout, a separate speaker for individual placement, full 10 watts of RF power output, 5 watts of audio output, detachable sturdy microphone, and electrical specifications to match those found in more expensive radios.

For full details, contact F. Hamer, Business Radio Marketing Manager, PACE Communications, Division of PATHCOM, INC., 24049 South Frampton Avenue, Harbor City, California 90710.

### NEW EXPERIMENTALS

KS2XGS, MOTOROLA, INC., Ft. Lauderdale, Florida. Mobile experimental development station to operate on 806.2625, 815.7625, 851.2625 and 860.7625

MHz for development and testing of two-way radio communication equipment and associated accessories.

KS2XGT, MOTOROLA, INC., Ft. Lauderdale, Florida. Fixed experimental developmental station to operate on 851.2625 and 860.7625 MHz for development and testing of two-way radio communication equipment and associated accessories.

KS2XGU, MOTOROLA, INC., Schaumburg, Illinois. Fixed experimental development station to operate every 25 kHz beginning at 860.4875 and ending at 860.9625 MHz for development of two-way radio equipment and associated accessories.

KS2XGV, MOTOROLA, INC., Schaumburg, Illinois. Mobile experimental developmental station to operate on every 25 kHz beginning at 815.4875 and ending 815.9875 MHz for the development of two-way radio equipment and associated accessories.

KS2XGX, KELSEY-HAYES COMPANY, Romulus, Michigan. Mobile experimental developmental station to operate on various discrete frequencies between 3.8 and 444.50 MHz to determine and reduce radio frequency susceptibility of electronic anti-lock braking system.

KS2XGY, KELSEY-HAYES COMPANY, Romulus, Michigan. Fixed experimental developmental station to operate on various discrete frequencies between 3.8 and 444.50 MHz to determine and reduce radio frequency susceptibility of electronic anti-lock braking system.

### ADDITIONAL AERONAUTICAL FREQUENCIES PROPOSED

The Commission has proposed rule amendments providing for the utilization and assignment of additional aeronautical advisory and aeronautical multicom frequencies and a realignment of certain existing frequencies within the 121.9625-123.0875 MHz band.

On July 31, 1974, the Commission initiated an inquiry to review problems relating to the growing congestion on the frequency 122.800 MHz assigned to aeronautical advisory stations (unicoms) at uncontrolled airports. Unicom stations are used for advisory and civil defense communications primarily with private aircraft stations.

In the inquiry notice, the Commission pointed out that congestion on the primary unicom frequency (122.800 MHz) had been increasing steadily for the past decade to the point where the safety of flight may be compromised, particularly in the more densely populated areas of the country.

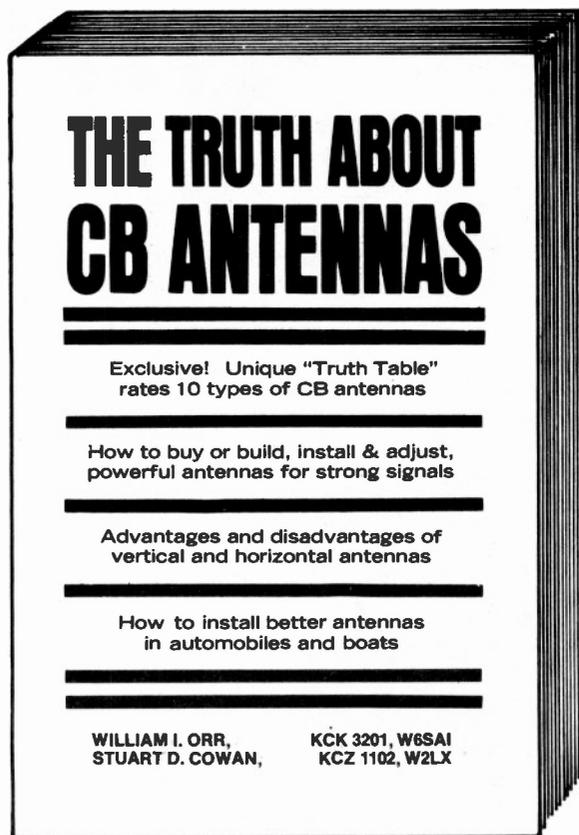
Therefore, it requested comments that would confirm the problem and would serve as a basis for the design of an effective and equitable solution.

Unicom stations now operate on the following frequencies:

- 122.800 MHz, standard unicom where there is no control tower or Federal Aviation Administration (FAA) flight service station at the landing area;

- 123.000 MHz, standard unicom where there is a

(continued)



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## THE MONITOR POST (continued)

control tower or FAA flight service station at the landing area;

- 123.050 MHz assigned to heliports;
- 122.850 and 122.950 MHz for additional assignment when such assignment is requested for communication with aircraft at altitudes greater than 10,000 feet above the runway elevation and for assignment to private fields.

In addition to these five unicom frequencies, the frequency 122.9 MHz is termed multicom and is assigned for the purpose of directing activities air-to-air, air-to-ground or ground-to-air, such as agriculture, ranching and conservation, forest fire fighting, advertising and parachute jumping. Recently, the frequency 122.925 MHz was made available for multicom use on natural resources programs.

The Commission found that separating these special purpose communications had not provided corresponding distribution of usage, noting that the special frequencies were being used very lightly while the congestion on 122.800 MHz grows daily.

In response to the inquiry notice, 131 comments were filed and one reply comment filed by the Aerospace and Flight Test Radio Coordinating Council (AFT-RCC). In addition, the Aircraft Owners and Pilots Association (AOPA) filed a rulemaking petition (RM-2622) on this matter, requesting expedited action and proposing a specific frequency plan.

The FCC said that while not all replies alluded to the fact of congestion on 122.800 MHz, the vast majority either agreed directly that there was congestion or this fact could be directly concluded from other statements made.

Generally, the Commission said it agreed with AOPA's proposal to transfer a band segment of 122.6875 -122.7875 MHz which now is utilized for communication with flight service stations to unicom and multicom use. This would require those flight

service stations currently on 122.7 and 122.75 MHz to be changed to other flight service station frequencies.

As suggested by AOPA, the Commission proposed assigning three 100 kHz channels—122.700, 122.800 and 123.000 MHz—for unicom use at airports where there is no control tower. By assigning three 100 kHz, the FCC said, there eventually should be approximately 700 ground stations on each of these frequencies, which should result in significantly reduced congestion on 122.8 MHz, which now has more than 2,000 assignments.

Although it proposed to allow applicants to request which of the frequencies they prefer, the Commission said it would reserve the right to assign a particular frequency.

The Commission also proposed, as nearly all those commenting suggested, to redesignate all the 25 kHz frequencies between 122.8 and 123.1 MHz as aeronautical advisory or multicom for either present or future use.

Since the two high altitude unicom frequencies (122.850 and 122.950 MHz) have been underused, and in view of the FAA's planned use of 25 kHz channels for high altitude enroute control, the Commission concurred with AOPA's recommendation to use the frequency 122.975 MHz for high altitude unicom purposes, leaving the frequencies 122.850 and 122.950 MHz available for other uses.

In this regard, the FCC proposed to assign 122.950 MHz for use at airports where there is a control tower and to designate 122.850 for general multicom use.

Other proposals include:

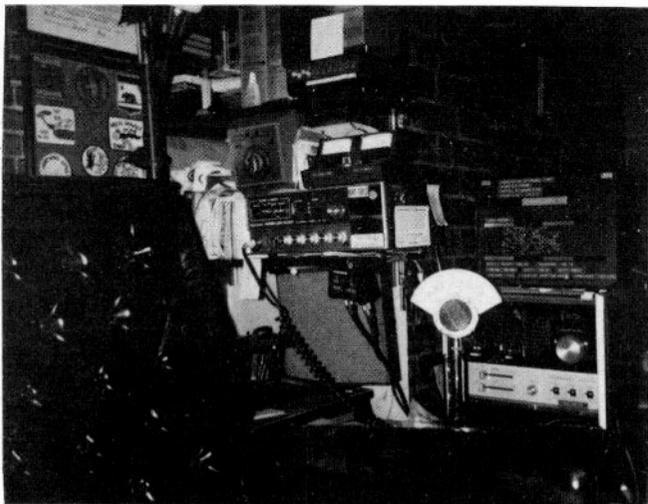
- deletion of the use of 122.850 and 122.950 MHz at private airports and the substitution of 122.725 and 122.750 MHz with the latter frequency to be shared with air-to-air use;
- retaining 123.050 MHz for use of aeronautical advisory at heliports and adding 123.075 MHz for that purpose;
- expanding the use of 121.95, 123.3 and 123.5 MHz to include glider to tow-ship communications.

Recognizing that these proposed amendments would involve frequency changes for many ground stations, the Commission said it planned to accomplish these proposals over a period of approximately two years to reduce the impact. It also said there would be frequency sharing during the transition period, but found this should not cause any serious problems.

### EXPANSION OF BASE/MOBILE FREQUENCIES

The Commission has proposed amending its rules to expand the secondary fixed use of base/mobile frequencies in the 450-470 MHz band.

The present rules permit fixed operations in the 450-470 MHz band on a secondary basis to regular base/mobile operations except within a radius of 100 miles (75 miles with reduced power) from the center of the 87 largest urbanized areas (200,000 or more population).



This photo was sent in from a Long Island (N.Y.) reader who didn't include his name or handle and requested that we not publish his callsign. Dunno why, but here it is!

When these rules were adopted in 1968, the Commission said these urbanized areas had reached a level where frequency congestion existed and since the congestion probably would continue to increase, these areas should be protected.

After an analysis of the problem in several protected areas, the Commission found the more heavily populated areas were congested but in the more lightly populated urbanized areas, overall base/mobile congestion was not a problem.

The Commission said it would propose elimination of the less populated urbanized areas from the restricted list and only prohibit point-to-point operations within 100 miles from the center of the top 40 urbanized areas. It said this should make available large, sparsely populated areas, where applicants could meet their relatively limited point-to-point requirements more economically than using microwave and yet be free from the restrictions imposed in the 72-76 MHz band.

It pointed out that it was not proposing renewal of the grandfather provision beyond the November 1, 1976, date in the 40 remaining protected areas because companies in those areas already had an additional five years in which to amortize and replace equipment for compliance with the rules.

It asked for comments on whether the 100 or 75 miles radius circles surrounding the top 40 urbanized areas could be reduced and by how much.

## TAB POPULAR CB BOOKS

### CB Radio Operators Guide—2nd Edition

Tells what CB is, how it is used, how to buy and install equipment—PLUS Part 95, the FCC rules regulating CB. 256 pps.  
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Complete details on CB operation, installation and repair, including 21 programmed troubleshooting charts and complete schematics for 18 popular transceivers. Also an in-depth section on antennas and feedlines. 238 pps.  
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## ORDER FORM

### S-9 Magazine

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Ship the books listed below. To cover shipping, I've added 50¢ for the first book and 25¢ for each additional book. Enclosed \$

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July	100	84	July	36%	23%
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September	116	88	September	44%	22%
October	134	104	October	50	29%
November	140	100	November	44%	24%
December	196	100	December	60	21%
January	180	116	January	49	35
February	144	68	February	54	23
March	176	84	March	61½	24½
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† Including CB Radio Marketing

**Now,** we hope you judge **S9** on its own merits. But, if you like to have something else to compare us with, the number two magazine is a fine place to start. And anyway you compare, S9 stands out as Number One in every respect. Show these facts to your CB friends. They'll thank you for it, and we'll be most grateful.

# Free Classified Ads

Your classified ad may be run Free of Charge in **THE ELECTRONIC FLEAMARKET** - this offer is good for all S9 and/or Fleamarket subscribers every month. Please limit ads to thirty words or six lines and not more than two ads per month. You can buy, sell, swap or advertise for QSLs. Your ad may cover ham gear, CB gear, test equipment, stereo, or anything else an electronic hobbyist may find of interest.

Remember, this service is absolutely free to subscribers who use the coupon below (or a reasonable facsimile thereof). **THE ELECTRONIC FLEAMARKET** will be read by thousands of electronic hobbyists, so don't miss out.

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# Dealer Business Card Advertisement

This advertising section is reserved exclusively for CB dealers who wish to keep their name in front of their local customers, but who would otherwise not advertise in a national publication. The ads included are limited to one column-inch; advertising copy is limited to non-mail-order type. The costs for business card ads are \$45.00 prepaid. In

addition to the ad in the business card section, each dealer participating receives twenty five copies of the issue containing his ad, to sell or pass out in his store. For further information, dealers should contact the publisher, S9 Magazine, 14 Vanderverter Ave., Port Washington, NY 11050. Phone: 516/883-6200.

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## AWARDS

Swappers Awards are given to those readers who have sufficiently proven that they have reached certain specified levels of achievement in QSL card swapping. There are 19 different and distinctive Swappers Awards, and if you would like a complete set of rules, address your request together with a stamped, self-addressed envelope to: Swappers' Awards, CB RADIO/S9 MAGAZINE, 14 Vanderventer Avenue, Port Washington, NY 11050. Awards cost \$1.00 each. Here are the winners of the black, pink, and white certificates for the past month:

PX-25, 1060; PX-50, 930  
Pat Patton, KGY-1874, Monument, CO.  
PX-100 661 Mrs. Ronald M. Wiseman, KGT-5508, Electric City, WA.  
PX-250, 291; PX-275, 168; PX-300, 167; PX-325, 137 Paul Miller, KDY-8988, Canton, NY.  
SSC-1 398 Alan L. Wommer, KIY-2599, Perkionmenville, PA.  
SSC-13 113 Wayne & Margo Heck, KBN-2024, Oneonta, NY

## QSL MONTHLY LISTING

If you would like to be listed as a QSL card swapper in our monthly listing, you must do the following: Send us one card and enclose 20 cents in cash (no stamps, checks, or money orders) for each month you are to be listed, or send in \$2.00 for a full year's listing. (Minimum order at one time is 5 months) Try not to write on your cards and don't scotch tape your money to the card. Address the material to: Card Swappers' Unlimited, CB RADIO/S9 MAGAZINE, 14 Vanderventer Avenue, Port Washington, NY 11050. Deadline for listing in any issue is the 5th day of the third preceding month of publication.

### DOMESTIC

KBC-6286 Al Kaiser, 194 Glen Hills Road, Meriden, Conn. 06450.  
KBI-0227 Margie & Eddie Albertson, 2 Boulevard, Sea Cliff, NY 11579.  
KKB-4688 The Velpels, 4125 Roxton Lane Fort Wayne, Indiana 46805.  
KBQ-0282 Bob Bell, 1822 Cooper Street, Saginaw, Michigan 48602.  
KBQ-1403 Golden Hawk, Mark Milosky, 41 Spring Hill Ave., Norwalk, Conn. 06850.  
KCD-2744 The Daviets, 404 Eighth St., Lockport, La. 70374.  
KCD-5826 Joe J. Dziak, 1441 N. Olden Ave., Trenton, N.J. 08638.  
KCG-0706 Edith M. Becker, 5606 Franconia Rd., Alexandria, Va. 22310.  
KCG-8676 Paul Mayer, 3516 Ruby Street, Franklin Park, Illinois 60131.  
KCN-1113 The Lesuer's, 21 Montague Rd., Binghamton, N.Y. 13901.

KCO-2682 Ronnie, Kathy, & Holly Jean Lent, P.O. Box 8726, Boston, Mass. 02114.  
KCP-8919 Ed & Maxine Hayes, 719 Locust, Clinton, Iowa 52732.  
KQC-8140 Terry W. Rockow, 1525 County Line Road, Kendall, N.Y.  
KCS-4250 Jim Brown, R.D.1, Tionesta, Penna. 16353.  
KCX-0423 Ray Williams, Stewart Pt. Rd., Nassau Lake, NY 12123.  
KCX-0829 Philip Steven Kurland, 3000 Valentine Ave., Apt. 1A, Bronx, New York 10458.  
KDI-5095 The Carnes Clan, 821 East 28th St., Hialeah, Florida 33013.  
KDK-1059 Ralph E. Cathcart, 71 Akin Street, Fairhaven, Ma. 02719.  
KDV-7237 Gordon L. Carley, P. O. Box 1, Dalton, Nebraska 69131.  
KDY-2289 Ted & Marilyn Oathout, Box 1121, Gloversville, N.Y. 12078.  
KDY-3427 D.P. Murray, 3046 Hillanlake Drive, Brooklyn, Mich. 49230.  
KDY-7323 Nathaniel L. Jones Jr., 5475 Lynbrook Court, Fayetteville, North Carolina 28304.  
KDZ-9056 Jack & Thelma Jackson, 1121 So. Grant St., Muncie, IN 47302.  
KEQ-7526 Mickey & Petey Bachrach, P.O. Box 1895, Winter Park, FL 32789.  
KEN-9732 Earlin & Joan Armantrout, 4041 N. 325 W. La Porte, IN 46350.  
KER-8778 Ray Morrell, P.O. Box 107, Massapequa, Park, N.Y. 11762.  
KEW-0375 Karl Wayne, 4 Forest St., Darien, Conn 06802.  
KEW-1717 Gene Murray, 25 Knoolwood Drive, New Haven, CN 06515.  
KFK-3311 James E. Logan, 126 St., James Place, Apt.2, Atlantic City, N.J. 08411.  
KFL-0136 Roger & Marilyn Schumann, 422 Derrer Rd., Columbus, Ohio, 43204.  
KFO-8183 Wade Swancy, Box 1169, Summerville, SC 29483.  
KFR-0172 Peter M. Semenick, Jr., 125 Evans Dr., Manville, N.J. 08835.  
KFS-1383 Tony & Janet Masi, RD No. 1, Box 39B, Bainbridge, NY  
KFS 1726 The Brown's, P.O. Box 587, Buchanan, Georgia 30113.  
KFT-3377 Randy Wolfson, 1008 Summit Lane, Oreland, PA 19075.  
KFU-0985 Richard Wick, Rt. 2, Box 892 Libby, Montana 59923.  
KfV-5353 Bruce & Jo Anne Kieffer, Box 102, Glen Elder, Kansas 67446.  
KFW-8487 Carroll and Lila F. McAdoo, 710 S. 15th P.O. Box 1223, Mt. Vernon, Illinois 62864.  
KFZ-4729 Terry & Pat Nowak, Box 22, Edmore, ND 58330.  
KFZ-9836 High Pockets, P.O. Box 4373, Downey, California 90241.  
KGB-9516 Kenneth & Delores Frey, R.D. 3, Box 51, East Penn St., Pa. 17756.  
KGI-7696 Herb and Donna Thiel, 111 Hazelwood, Terrace, Rochester, N.Y. 14609.  
KGG-5146 David O. Trumbull, P.O. Box 418, Roseville, MI. 48066.



## Electronic Fleamarket

a new monthly publication  
from the publisher of S9

THE ELECTRONIC FLEAMARKET is a complete new shopping source for anyone interested in buying, selling or swapping used electronic equipment of any kind.

It will appeal to CBers, hams, experimenters and professionals.

THE ELECTRONIC FLEAMARKET will contain thousands of classified ads on transmitters, receivers, transceivers, test equipment, amplifiers, antennas, towers, stereo equipment, etc.

It will also contain ads from retailers, wholesalers, and manufacturers offering used equipment for sale.

Classified ads will be published free of charge to all regular subscribers of S9. Free ads will be limited exclusively to individuals. Commercial ads may be ordered at a rate of 25 cents per word, with a \$3 minimum. Non-commercial ads for non-subscribers are 10 cents per word, \$1 minimum. THE ELECTRONIC FLEAMARKET will be available on a paid subscription basis only at a cost of \$10 per year. All issues will be mailed by first class mail on the tenth of each month.

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## A New Ham License Is On The Way!

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And the easiest way to learn what it's all about is to read *CQ*, The Radio Amateur's Journal. *CQ* is published by the same people who bring you *S9*, and they've been publishing *CQ* for over 30 years. That makes *CQ* the oldest independently published Ham magazine in the USA....and the most widely read, too.

*CQ* will keep you up to date on all that's new in Ham Radio - the new equipment, the newest antennas, Slow Scan Television, DXing, Contests (*CQ* runs the biggest and best Contests in the Ham world), and much, much more. You won't want to miss a single issue.

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NAME.....  
ADDRESS.....  
CITY.....  
STATE.....ZIP.....

- KGL-9498 Ernie & Natalie Pameticcky, Cedar Rapids, Iowa 52404.  
KGM-6840 The Minneapolis Locksmith, P.O. Box 11093, Minneapolis, Minn. 55411.  
KGP-0220 Pete McArdle, 23 Flower Lane, Centereach, L.I.N.Y. 11720.  
KGQ-1133 The Foxtrots, 1223-56th, Des Moines, Iowa 50311.  
KGQ-3762 Paul and Marilyn Beck, Route 10, Box 330-F, Winston Salem, N.C. 27107.  
KGT-2324 Milton E. Timms, R.R. 3, Box 403, Warsaw, Ind. 46580.  
KGT-3127 Sonny Denesha, R.F.D. 5, Gouverneur, New York 13642.  
KGU-3844 Tom & Jerry Ernst, 3802 East Nebraska St., Tucson, Ariz. 85706.  
KGV-4171 The Micks, 205 E. Spring Ave., Bellefontaine, Ohio 43311.  
KGV-7384 Forrest & Jacqueline Blackmer, Box 155, Heuvelton, NY 13654.  
KHK-8647 Betty Hazen, 124 Brighton Blvd. Zanesville, OH 43701.  
KHM-0855 Hand, Frieda & Jim Hard, 924 Middle Street, Sullivans Island, South Carolina 29482.  
KHM-0973 Cookie Girl & Blue Sail, P.O. Box 19582, New Orleans, LA. 70119.  
KHO-6846 The Martins, 1409 North 53rd St., Washington Park, IL 62204.  
KHP-8833 Wayne High, Box 154, Cave City, Kentucky, 42127.  
KHU-5100 George Wills, 3785 Brookhaven Club Dr., Dallas, TX 75234.  
KHV-7513 Dan Birch, 152 Second Ave., Tiffin, Ohio 44883.  
KHV-7567 B. Scott, 210 Forest Ave., Erlanger, KY 41018.  
KHX-2518 Tim Maenpaa, Box 305, Wauchula, FL 33873.  
KHY-6047 Bob Logan, 419 Sibley Blvd., Calumet City, ILL. 60409.  
KHZ-2803 Pat and Dick Laymon, P.O. Box 1144, Springfield, IL. 62705.  
KIG-4908 The Martins, P.O. Box 394, Bainbridge, Georgia 31717.  
KIM-8284 John Lord, Fenimore Rd., So. Glens Falls, NY 12801.  
KIO-1675 The Georges, 2430 Ruth Street, New Castle, PA 16101.  
KIO-4461 Norman H. Lueschen, Box 1022 Fremont, Nebraska 68025.  
KIO-4466 Richard Christy, Star Route, Canton, New York 13617.  
KIO-8717 The Romicks, RR 4, Findlay, Ohio 45840.  
KIP-1637 Cathy Burnham, P.O. Box 9814, Brook Park, Ohio 44142.  
KIP-2487 Jerry & Jo Ann Morrison, 503 Warren St., Terrell, Texas 75160.  
KIP-6577 Larry Weaver, 3681 Rogers Dr., Douglasville, GA. 30134.  
KIP-9834 Bill & Judy Altweis, 524 Lyon Street, Ripon, Wis. 54971.  
KIR-0790 Glen S. Saxon, 605 W. Madison St., Houston, Miss. 38851.  
KIV-8653 Joe Cochran, P.O. Box 283, Reynoldsville, Pa. 15851.  
KIY-2599 Alan L. Wommer, R.D. Box 201A, Perkiomenville PA.  
KJG-0041 Joe & Margie Perry, 12 Beverly St., North Dartmouth MA 02747  
KJN-1648 Don & Sandy Cook, RFD 1 Fulton, N.Y. 13069.  
KJO-2682 Porcupine, P.O. Box 51, Merrill, Wisconsin 54452.  
KJP-0146 Dale Reich, 141 North Center Seville, Ohio 44273.  
KJP-9360 Freda L. Parslow, Box 38, RD 1, Howes Cave, NY 12092.  
KJQ-7224 Blue Moon, Rt. 3, Box 740, Bartow, FL. 33830.  
KJR-8141 Charles & Sandra Mills, Box 323 Baytown, TX 77529.  
KJW-4434 Bill & Louise Brown, 48 East Front St., Marietta, PA. 17547.  
KKK-3635 Horace & Annie Lee Engle, PO Box 709, Graham, North Carolina 27253.  
KKS-9040 The Bettss', 62 Vincent St. Chillicothe, Ohio 45601.  
KLJ-0412 Margaret & Herman Hipshur, Sr. 107 Iowa Ave., Joliet, IL  
KLN-9155 Evans, Geri & Shawn Johnson, 6319 Balfour Drive, Lansing Michigan 48910.  
KMD-6979 William Koutler, Valeria Home, Peekskill, New York 10566.  
KMV-2120 Jim Thompson, 815-East Orchard, Ada, Oklahoma 74820.  
KMX-1007 Rolly Butler, P. O. Box 112, Long Beach, California 90801.  
KMX-3299 The Badger, P. O. Box 8214, La Crescenta, Ca. 91214.  
KNN-4121 Marion & Howard House, P. O. Box 357, Winchester, KY.  
KNP-3121 Randy & Jane Hitchcock, 751 River Road, Box 314, Chenango Bridge, New York 13745.  
KOA-0054 Steve Rowe, 12 Hauser St., Milford, Connecticut 06464.  
KOA-9964 The Drydens, RFD 1, Jenkins Lane, M & E & R White Birch Ranch, Durham, N.H. 03824.  
KOG-1195 The General, RFD 1, Box L-15, Raymond, NH 03077.  
KPK-0022 W.E. Johnson, 3102 Dell Brooke Ave., Louisville, Ky 40220  
KPK-0086 The Aiyas, 14 N. Dayton, Rockford, Mich. 49341.  
KPK-1775 Doug Pete, Potsdam, NY 13676.  
KPK-5470 The Sissons, Box 116, Asbury Avenue R.D. 3, Binghamton, New York 13901.  
KQD-5496 Harold R. Rumer, 403 W. 23rd. St. Wilmington, Del. 19802.  
KQH-3989 Virginia RFD 1, Box L-15, Raymond, New Hampshire, 03077.  
KRM-5711 Mildred S. Bugbee, 6477 Burkhardt Road, Howell, MI. 48843.  
KSF-7973 Rich & Betty Mastro, P.O. Box 160, Roseville, Mich. 48066.  
KSI-3962 Jonathan C. Merritt, 6897 So. Goddard Rd., Lithonia, Georgia, 30058.  
KSK-3828 Michael Cooper, 248 Navaho Drive, Paducah, KY 42001.  
KSO-0122 Mike T. Nix, P. O. Box 124 Porterdale, Ga. 30270.  
KSP-7687 Robert Carfora, 49 East 9th St., Apt 2, Oswego, NY 13126.  
KSU-5155 Harry & Jennie Collier, P.O. Box 71, Baldwinville, Mass. 01436.  
KTC-4409 Marshall Norman, 800 South Indep. MO. 64050.  
KTI-3305 Gene Orefice, 64 W. McClellan Ave., Livingston, N.J. 07039.  
KTJ-2418 Chuck & Lee Mills, 3648 So. Miller Ct., Denver, Colo. 80235.  
KTP-8831 Bob Churchill, 411 Beckett St., Lebanon, MO. 65536.  
KTP-9694 Everett & Betty, P.O. Box 424, La Grande, PR. 97850.  
KWA-3822 White Lightning & Bedroom Eyes, 53 Walker St. Manchester, Washington 03102.  
KWB-3920 Lou Harbaugh, 121 Hallock St., Jamestown, New York 14701.  
KWC-4671 Edward Graboski, 106 Valeview Drive, Penn Hills PA. 15235.  
KWF-2034 Ray Creswell, P.O. Box 14, Indep. MO 64050.  
KWF-7563 The Professor & Teachers Pet, Rt. 2, Box 343, Montello, Wisc. 53949.  
KWM-1756 Kirk Ballard, 1110 Northwest 4th, Ankeny, Iowa 50021.  
KWM-9095 Sam Davis, P.O. Box 254, Union City, Tennessee 38261.  
KWN-3531 Jack Moehlenhaller, 302 N.W. Kline, Ankeny, Iowa 50021.  
KWP-9007 Kenneth Van Tassel, Palen Rd., Hopewell Junction NY 12533.  
KWR-8038 Shirttail-Cricket, P.O. Box 1289, Weaverville, N.C. 28787.  
KWS-9432 The Lanes, 646 Ave. 'E', Bugalusa, La. 70427.  
KWT-1582 Ray Zantarski, 41 Wintergreen Ave, Bricktown, N.J. 08723.  
KWT-6328 Bill Garland, P.O. Box 830, Paintsville, KY. 41240.  
KWT-6730 John Tarallo, 432 Bordenstown Ave., South Amboy, NJ 08879.  
KWV-1076 Allan S. Adelman, 6347 Oakland St., Phila. PA. 19149.  
KXF-2606 The Knight, 26 Knight St. Glens Falls, New York 12601.  
KXH-1996 Mr. & Mrs. Greg Fish, Box 522, Strong, Maine 04983.  
KXH-3067 A.M. Unruh, 3738 Kalamazoo Ave. SE, Grand Rapids Mi 49508  
KXI-5124 Pete Jackson, P.O. Box 400, Maywood, New Jersey 07607.  
KXO-4413 Bruce N. Rolland, 457 South 4th St. Hamburg, Penna. 19526.  
KYG-1517 Bob & LaVerne Smith, 5705 Arklow Court., Norwood, Ohio 45212.  
KYP-1946 Jimmy Spry, P.O. Box 75, Avenel, New Jersey 07001.

(continued on page 177)

# CB SHOP



Rates for CB SHOP are 10 cents per word for advertising which in our opinion, is obviously of a noncommercial nature. A charge of 50 cents per word is made to all commercial advertisers or business organizations (minimum ad, \$20.00). Regular S9 display advertisers are exempt from the classified ad minimum rate. A 5% discount is in effect for an advance insertion order for six consecutive months.

We do not bill for advertising in CB SHOP. Full remittance must accompany full orders

sent in; otherwise, will not be run or acknowledged.

Closing date is the 5th of the third month preceding publication.

Because the advertisers and equipment contained in the CB SHOP have not been investigated, the publisher of S9 cannot vouch for the merchandise or services listed therein.

All paid classified ads must be sent to the attention of Eileen Lucey, Classified Ad. Manager.

1-PAIR LAFYETTE Dyna-Com, 3 watt, 3 channel walkie-talkies, 1 antenna broken, needs replacing. Both for \$69.00. You ship. Bondurant, Box 7171, Tampa, FL 33603.

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(continued from page 173)

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We strongly urge readers to purchase from those companies whose advertising appears in S9; by doing so, you will be assured that the company with whom you're doing business is a reputable one. You'll also be supporting those companies that help make S9 possible. Now, we recognize that many advertisers cannot advertise in every issue. If you don't see the company's ad in the current issue, check back two or three issues to be certain, since almost every major advertiser appears six or more times in one year. If you have doubts about the reliability of any particular product or company, feel free to contact our publisher for information. This service is offered as a safeguard to our readers.