FCC Drops All CB License Fees ...story pg.9

CB RADIO

S9

March 1977

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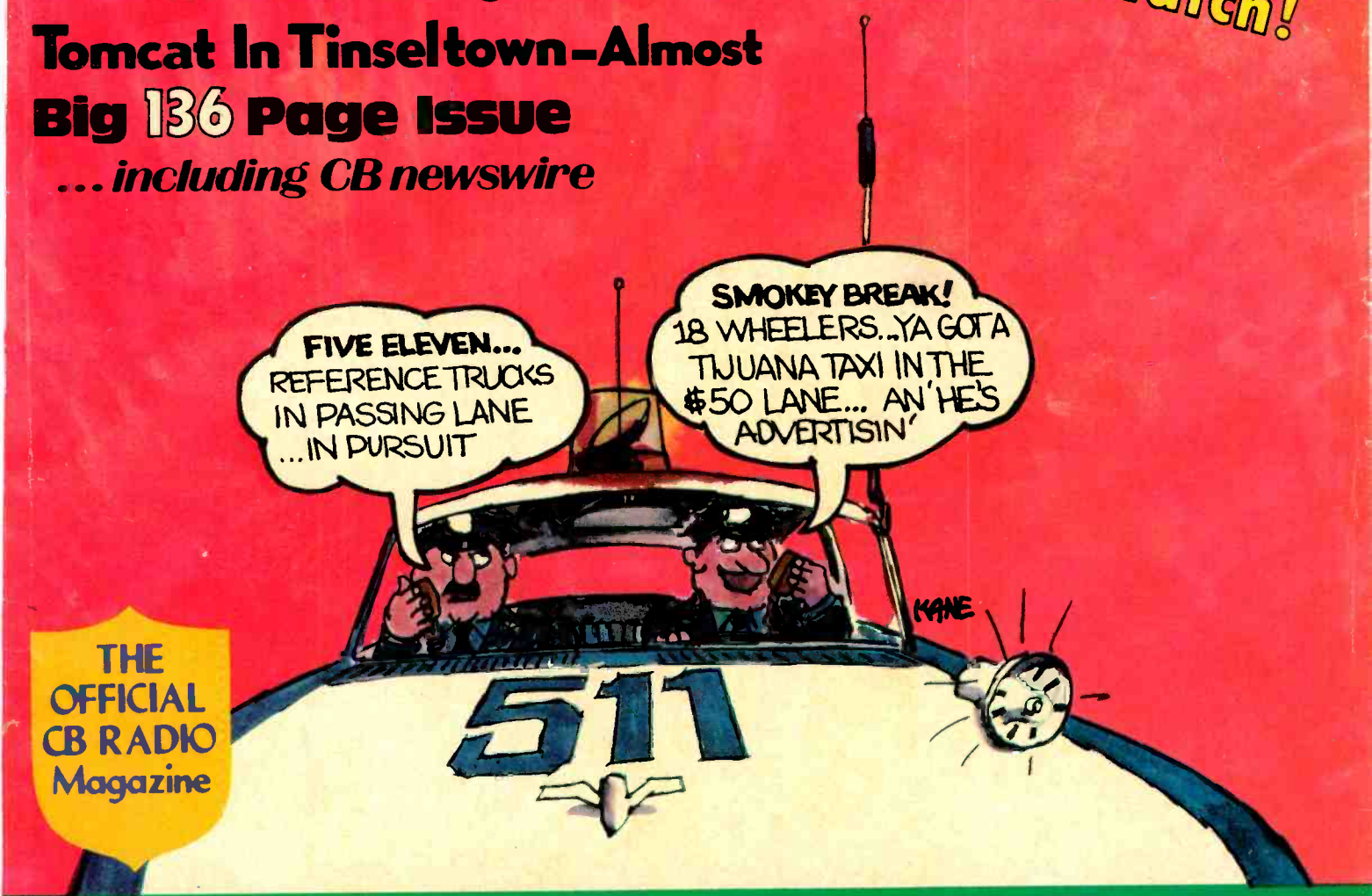

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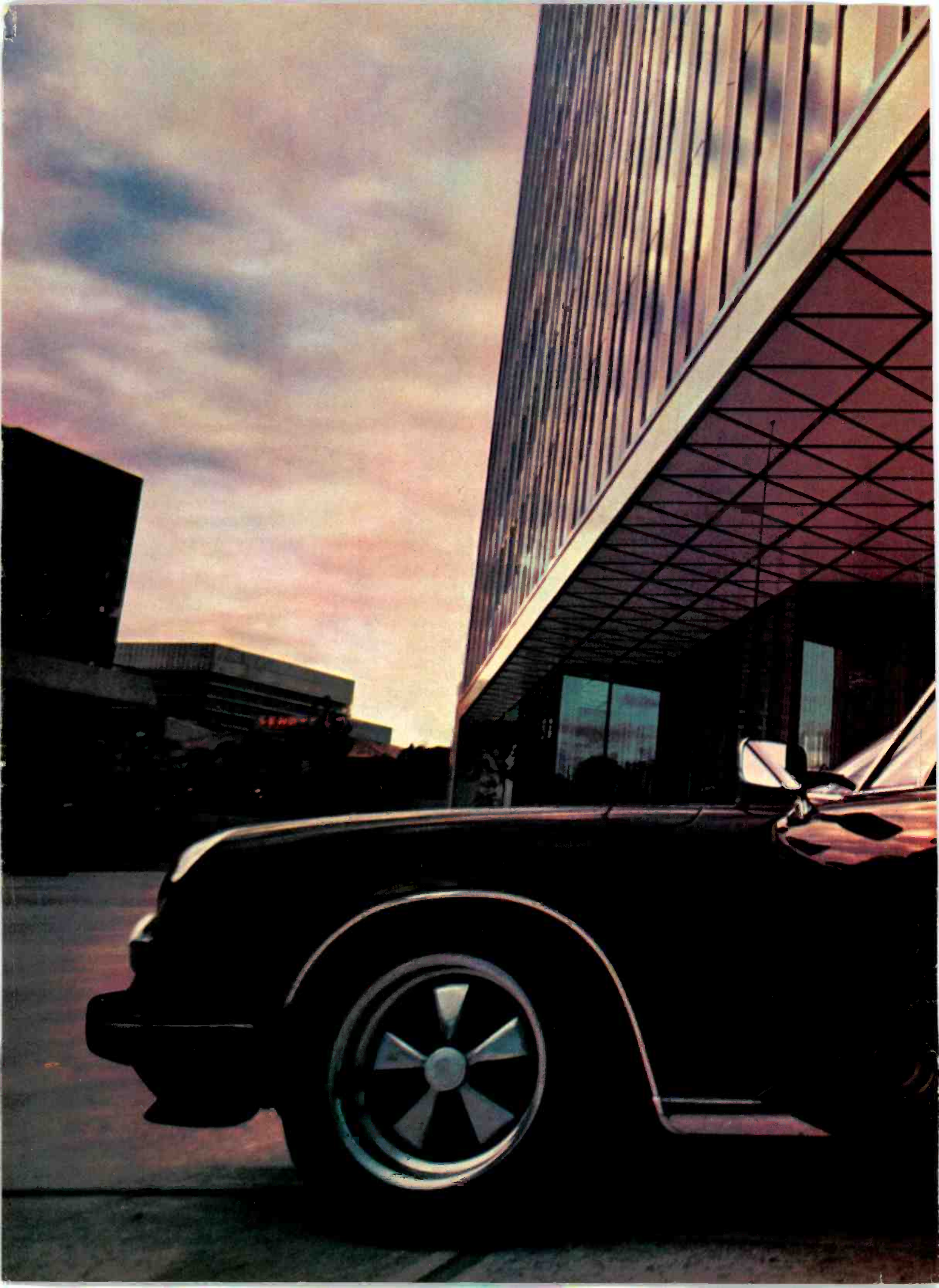

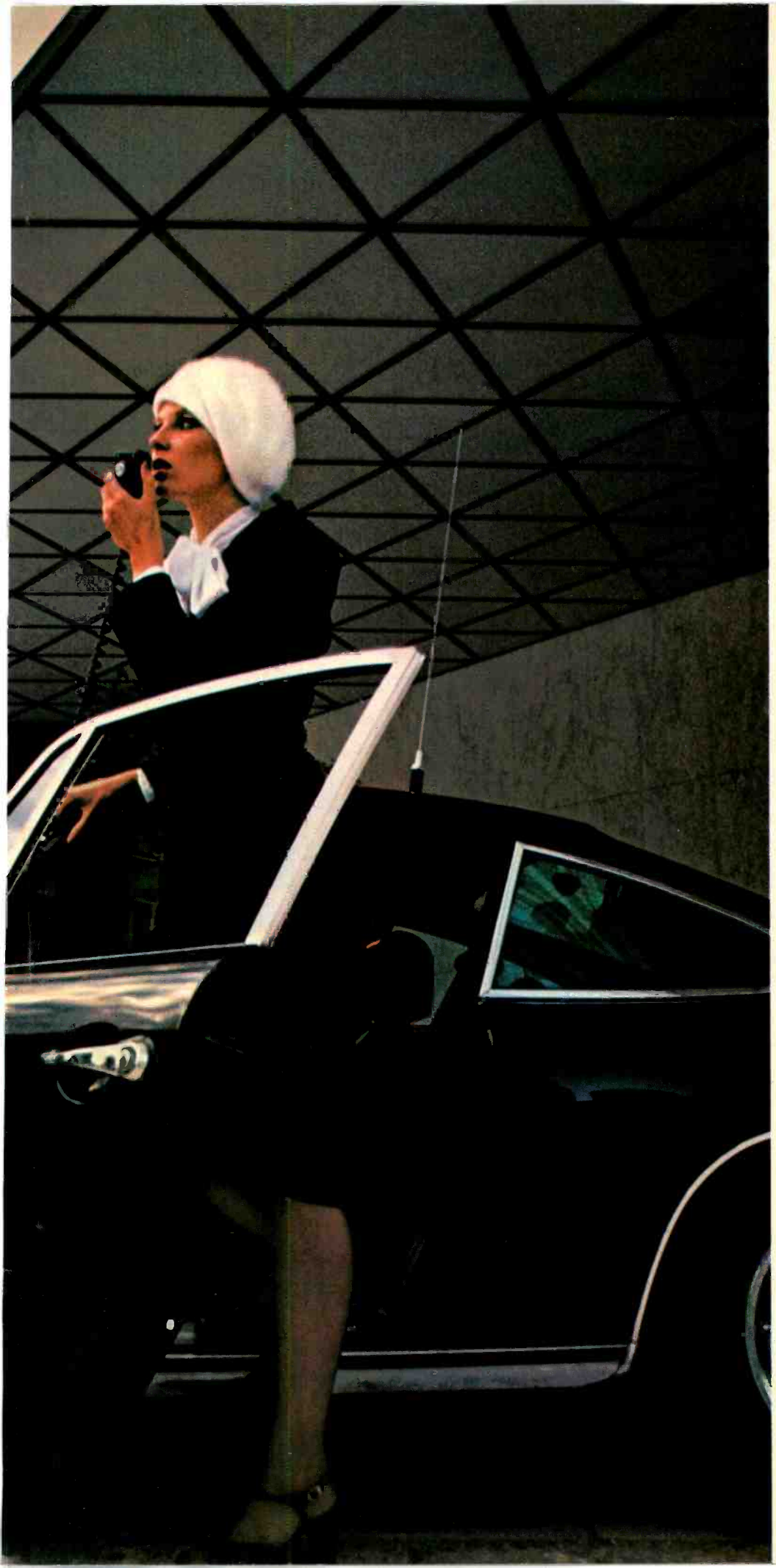

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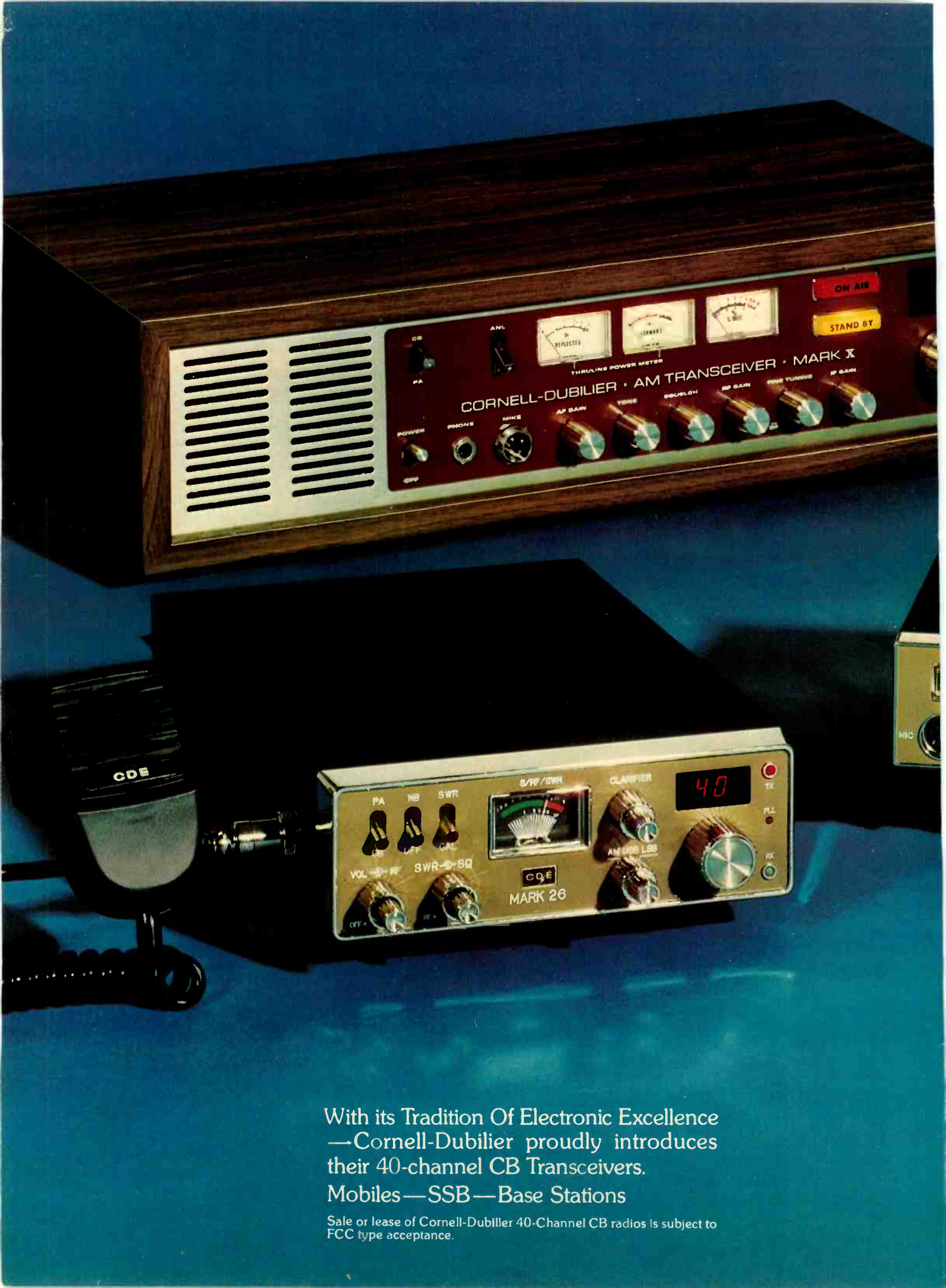

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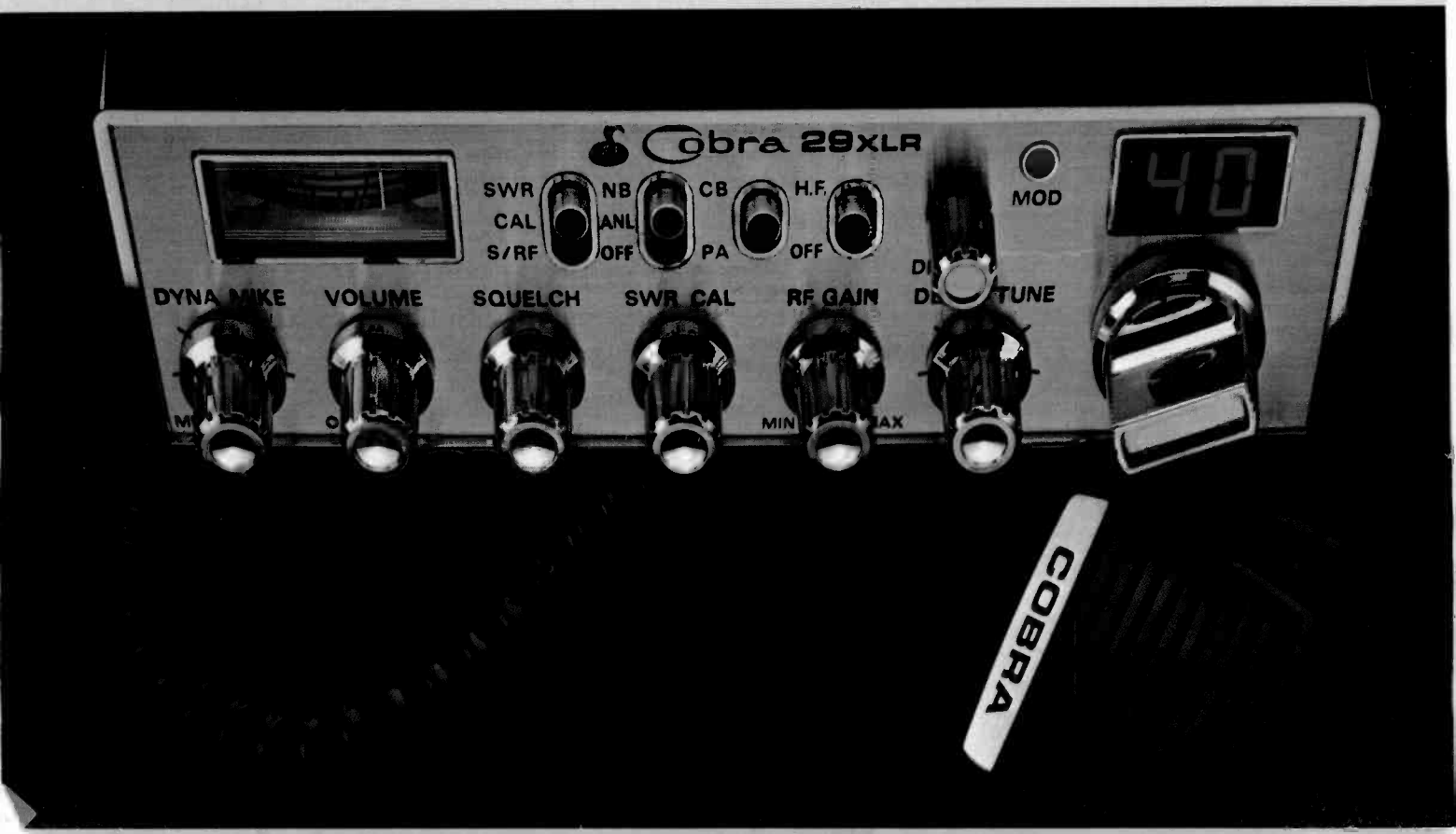

CB RADIO S9

14 Vanderventer Avenue
Port Washington, N.Y. 11050

America's Oldest & Largest CB Magazine

Vol. 17 No. 3 March, 1977

COVER STORY

Cartoonist John Kane explores the possibilities of smokies in contact with goodbuddies. More than just for smokey reports, CB can be an important anti-crime tool.

Table of Contents

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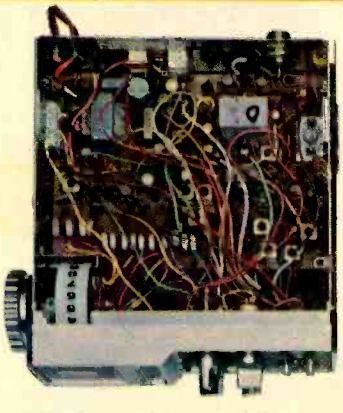

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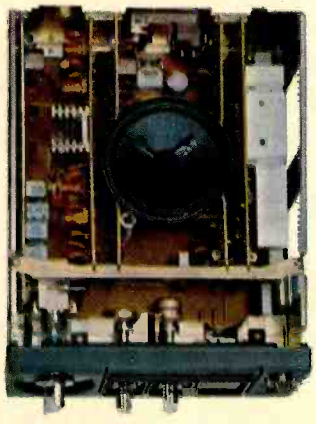

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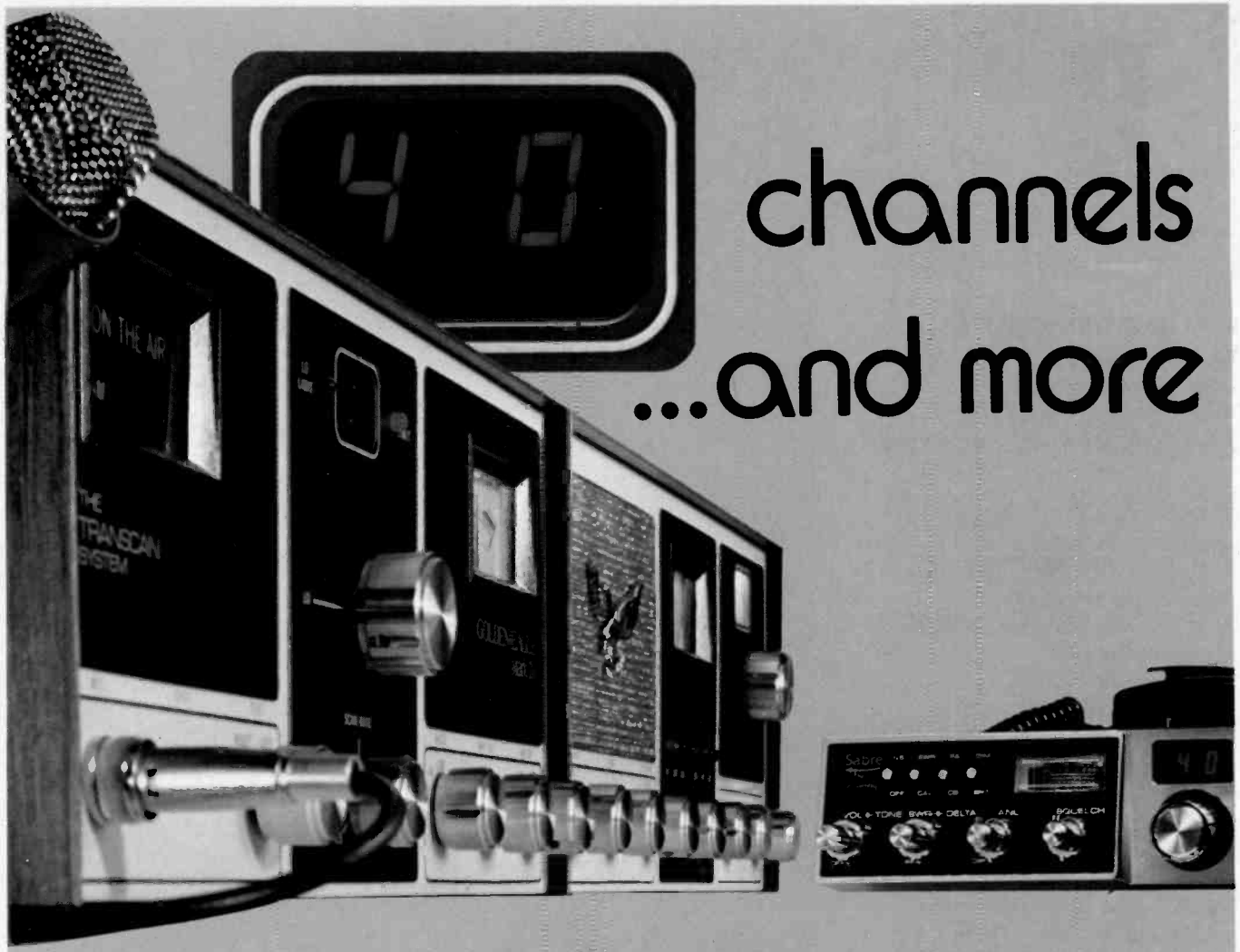

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Message from the Publisher

FCC Announcement On License Fees Startles CB World

We have some good news and some bad news. Here's the good news first: Effective January 1, 1977 all license fees for CB radio, and other FCC regulated services were suspended. Now for the bad news: Effective January 1, 1977 all license fees for CB radio, and other FCC regulated services were suspended. Okay, by now you've probably decided that I've lost my mind.

Not quite. Last December 22nd I received a phone call from a key staff member at the FCC's Washington office. The purpose of that call was to inform me that all FCC license fees were to be suspended indefinitely. My immediate reaction was that this would be a boon to all CBers. After all, four extra bucks in your pocket and mine can't be all bad. That's twenty million extra dollars to spend on shoes for the kids, that extra loaf of bread, etc.

But then I realized the long-term ramifications of the situation. The CB radio service desperately needs another entire service. Maybe not this year, but surely within the next year or so. Picture hundreds of additional channels on a noise-free band in the UHF spectrum. Picture interference-free operation, extended range for conversations. Picture a really viable point-to-point communications service.

The entire CB industry recognizes the long-haul need for the additional CB service, and so does the FCC. The obstacle so far has been money. The Commission's been working on a budget too tight to allocate extra services. It was the hope of many industry insiders that we could persuade Congress to allocate the entire $20 million that comes in from license fees back to the FCC. Last year the Commission's budget was $5.1 million, and this year it'll be about $6.8 million. Enough pressure in the right places could have brought the dollars to where they'd do the CB public the most good.

Now, unfortunately, we'll have to come up with other arguments to get the FCC off dead center on the Class E service. Sure, the need's still the same, and the staff at the Commission admit to it. But now, getting the extra dollars could be tougher than ever.

At any rate, these things somehow have a way of working themselves out. Hopefully, by this time next year, we might be able to announce FCC launches Class E CB service with two hundred channels. Hopefully. But not too likely!

CB Newswire

YOUR CB NEWSPAPER MARCH, 1977 INCLUDED IN S9

Appleton, Wisc., Police Accept Memorial Gesture

In a rather touching gesture at the Appleton Police Department, an Appleton man donated a 23-channel citizens band radio to the police department recently to honor the memory of his late wife.

Jerry Graham told Police Chief Earl Wolff that he could think of no more fitting tribute to his wife "who hopes it will be used to save lives."

The radio was accompanied by a gold plaque, which read "In loving memory of Katherine "Kat" Graham, donated by her husband Jerry, daughter Sherri and Valley CB'ers."

An obviously moved Wolff told Graham in response, "I'm quite sure it will be a long-lasting memory to your wife be helpful to people who are in need of emergency assistance."

Both Graham and his late wife have been CB radio buffs for about 14 years. Graham runs a CB radio outlet. His CB handle is "Guitar Picker" while that of his wife was "Kat."

When she died last November of a cerebral hemorrhage, Graham said there was an outpouring of sympathy from CB fans all over the Valley.

It was their spontaneous contributions of money to her memory that gave him the idea of purchasing the gift for the police. The police had earlier received an antenna and coaxial cable to hook up the base station unit from local CB fans. For a long time CB operators have been urging police to monitor their transmissions.

Helen Jorgensen—"Little Rowboat"—a close friend of the Grahams, said "there are over 20,000 CB users in the Valley and they are like members of a family." Some came from as far away as Fond du Lac to attend the funeral, even though they didn't know her personally, she said.

Wolff said the CB radio will be monitored by the radio dispatchers in the police department's communications room. It will be tuned into Channel 9, the emergency channel, and the police will have the callsign KFE-2865.

Sgt. Gerald Breen, of the police department's community support division, said the officers are coming to realize just how helpful the CB operators can be.

"They've really been an asset to us and of terrific value to law enforcement with all those eyes and ears out there," he said.

In recent weeks, he said, CB'ers have helped to halt a burglary in progress and apprehend a suspect, stop a man who was waving a gun in his car and recover walkaways from the Health Center.

Graham said "If you knew my wife, you would know how helpful she was. I'm sure this is what she would have wanted."

CB'ers Splice In Hawaii

There were many weddings going on last November in Oahu.

Probably only one, however, verged near the brink of unreality.

It occurred in the large and pleasant backyard of a Kailua house, dominated by a banyan tree, yellow polypropylene guy wires linked to a 60-foot-high antenna and a homemade wedding arch fashioned of green-papered sticks and fuschia bougainvillaea.

All was not quiet on the windward front.

"Hi, I'm Hot Lips," said a strong-looking female dressed in white.

The visitor moved on cautiously. Smiling. The visitor knew Hot Lips was not the one. Brides-to-be are not allowed to talk that way before the wedding.

"Hi, good buddy, I'm Red Rooster," said a jovial man. "Wanna see my camera?"

The visitor moved on relentlessly. Again, the stranger knew. He was not the groom-to-be. Where was the perspiration?

Suddenly, the couple was evident.

"Are you the bride?" the visitor murmured.

"Yes," she said. "My handle is Grover."

"And I'm the groom," said the man in white. "I'm the Cookie Monster. Preference is peanut butter. What's your handle?"

"I beg your pardon," said the visitor, who could move no longer.

Grover (Barbara Kahre) and Cookie Monster (James Munro), bearing their handles of Sesame Street characters, were wed in the yard of Big Art (Art Gertsen) by Family Court Judge John T. West Jr. (no handle).

While Kahre and Munro were introduced by a mutual friend, nearly every wedding guest present had met first via CB conversation before meeting one another in person.

Munro, a Navy E6 stationed at Barbers Point, met Big Art because of CB.

"Art and I used to talk every morning," reminisced Munro. "I met nearly everyone here on the radio."

Said Gertsen, "This could be a break if it weren't a wedding."

A break is CB-ese for a get-together of CBers. It is where voices become faces.

After West pronounced Munro and Kahre husband and wife, he "backed out," or stopped transmitting.

The couple kissed. For a long time.

Someone yelled, "ten-four." This means "okay, understood, received."

Then the Munros (the Cookie Monsters?) marched under the crossed CB antennae wielded just a shade short of snappy Naval Academy fashion by the Fonz, Bald Eagle, Four Roses, Lady K, Cricket and others.

Watching were the likes of Ricochet, Lucky Lady, the Bud Man, the Frito Kid, Pokey, Swinging Chick, Canuck and Soft Sailor. They were waiting to offer their "threes and eights," or best regards.

The visitor left cautiously. Stepping over valuable CB units removed from cars for the occasion, slipping through the driveway, head filled with short-speak language and the name of a handle (handle of a name?) for more CB advice.

But the scene was incomplete.

Where was the 18-wheel trailer rig, immortalized in a CB country western song waiting to take the newlyweds away?

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CB Newswire

YOUR CB NEWSPAPER MARCH, 1977 INCLUDED IN S9

Texas Shoot-Em-Up Ends In Indictment

The Tarrant County grand jury indicted a 47-year-old Haltom City man for the Oct. 15 death of a 36-year-old Fort Worth garage owner, one of two men killed in a gun battle over CB transmissions.

Henry Sidney Tidwell was indicted for voluntary manslaughter in connection with the death of Donald Hilcher, known as "Blue Goose."

Howard C. Collins, who used the handle, "Dirty Bird," died Oct. 21 of wounds received in the gun battle.

The indictment charges that Tidwell, "under the influence of a sudden passion arising from a just cause," killed Hilcher after Hilcher had shot Collins.

Bond was set at $2,000 by Criminal Dist. Court No. 1 Judge Byron Matthews, Sheriff's deputies said.

The grand jury opted to indict Tidwell on charges less serious than murder.

The Texas penal code defines voluntary manslaughter as the "reckless caused death of an individual" and classifies it a third degree felony.

If convicted, Tidwell faces a maximum of 10 years in the state prison and a $5,000 fine.

According to other CB operators and witnesses who talked with Haltom City police detectives, Collins got into an argument when Hilcher accused Collins of monopolizing Channel 6.

After several hours of threats and curses over their CB radios, the two agreed to meet and settle the argument.

Collins fell mortally wounded while, witnesses said, Hilcher sped away in his pickup, followed by a yellow pickup.

After more shots were fired, Hilcher was found dying from bullet wounds in the wreckage of his truck which had plowed into a utility pole.

Investigators said they discovered a pistol with three spent rounds in the wreckage.

Because of what investigators called "very complicated" facts, the case went directly to the grand jury instead of charges being filed.

CB More Than Fun On Guam

The CB community on the Pacific island of Guam is systematically solving the communications problems of Guam schools, many of which have been without telephones since the typhoon last May.

Working during their off-duty time, Andersen AFB CBers have installed radios at George Washington High School and Leon Guerrero School in Yigo.

"We're trying to get a CB radio in each school on the island," said the "Lone Ranger," Sgt. Donald Same. The flu started it. Without any telephones, the schools had no way to notify parents when their children became ill at school."

A fund-raising campaign on the base was begun to purchase radios and antennas to install in the schools.

When the "Tall Texan," S. Sgt. Bill Davis, stepped up to the counter at the Andersen Federal Credit Union to open an account and deposit $150 donated by the Andersen Chief's Group, Credit Union Manager Robert W. Gaskins added $2,500 to the fund. He personally donated $150 and took out a $2,350 loan from the credit union and loaned it, interest free, to the organization.

The CB equipment is being donated and installed in the schools "with no strings attached," according to Lt. Col. Gene Crissey, base liaison officer. The CBers' only request is that schools, villages and Andersen residents try to hold some kind of benefit to replenish the fund.

The first such event was Nov. 13 when the Leon Guerrero faculty played the Andersen CBers in a softball fundraiser at Andersen field.

In addition to the benefit of being able to reach the local community in emergencies, George Washington High School principal Marion Wright said, "It also gives better communication on campus. We can contact the assistant principals and others around the campus by turning to Channel 7, which is the same channel our walkie-talkies are on."

Ohio CBer Credited For Killer Capture

Ohio highway patrolmen are crediting "Whipped Cream" and her CB rig for the capture of four men wanted in connection with the death of an Athens County village marshal.

Louise Kincaid, 36, of Stone Creek, Ohio, disabled by lung disease, uses her citizen band radio as sort of a clearinghouse between truckers and state troopers.

So, authorities asked her to broadcast the description of a car wanted in connection with the death of Trimble Village Marshal Ted Holcomb, 29, who was killed when he was setting up a blockade.

The four suspects drove north from Athens County and were apprehended at an Interstate 77 interchange after a trucker radioed troopers he spotted the car.

CB—Where The Action Is?

CB'ers always say that our rigs put us where the action is, and they won't get any argument from Monty Rodgers.

The 32-year-old Bakersfield, Calif., man was sitting in his CB-equipped van outside his house when he and another operator got into a heated argument.

Witnesses said that shortly afterward, a man walked up to Rodgers' van and fired a shot from a large caliber handgun through the front window, striking Rodgers in the upper chest.

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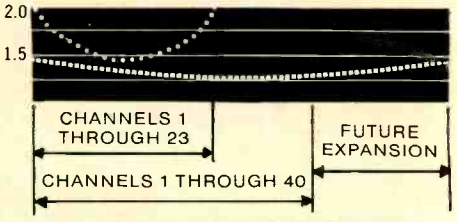

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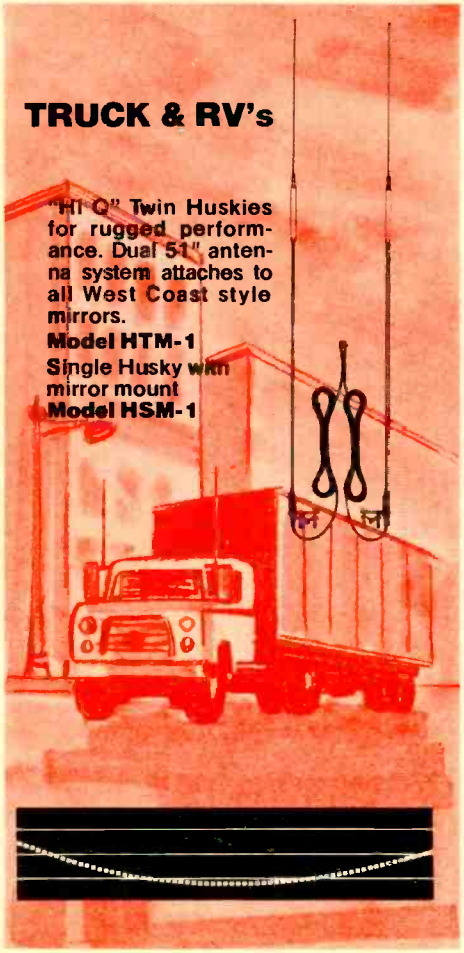

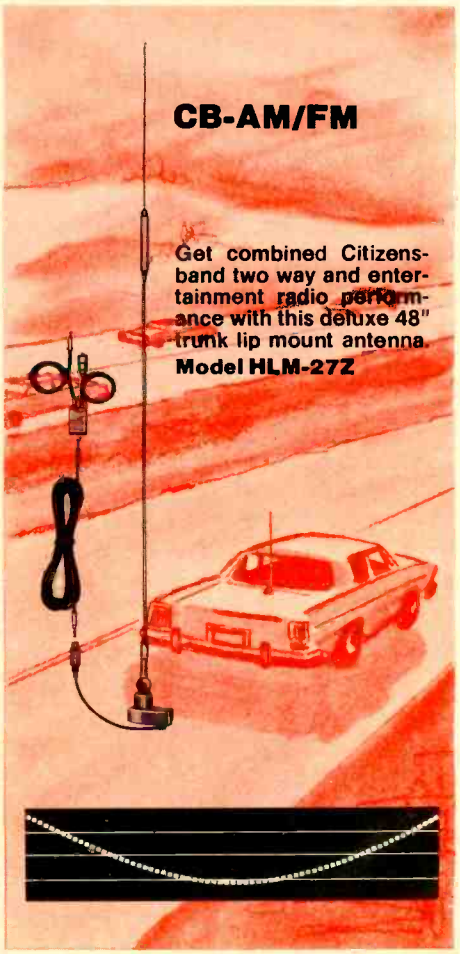

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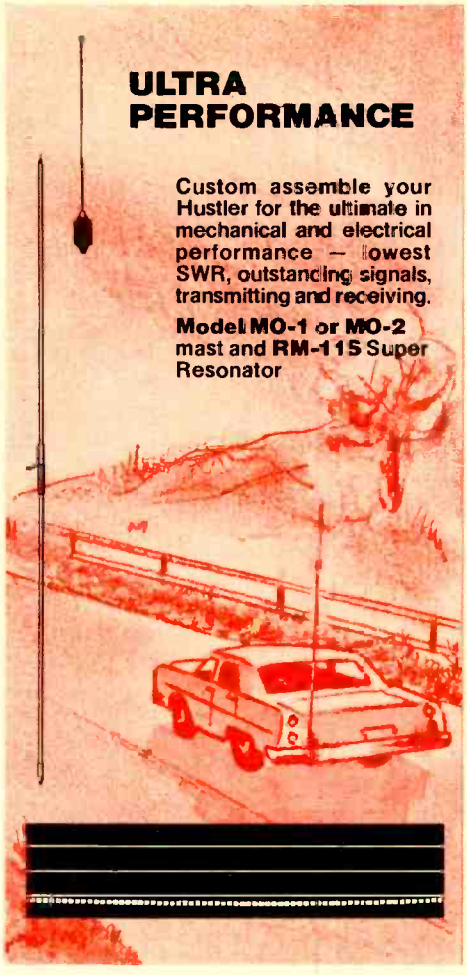

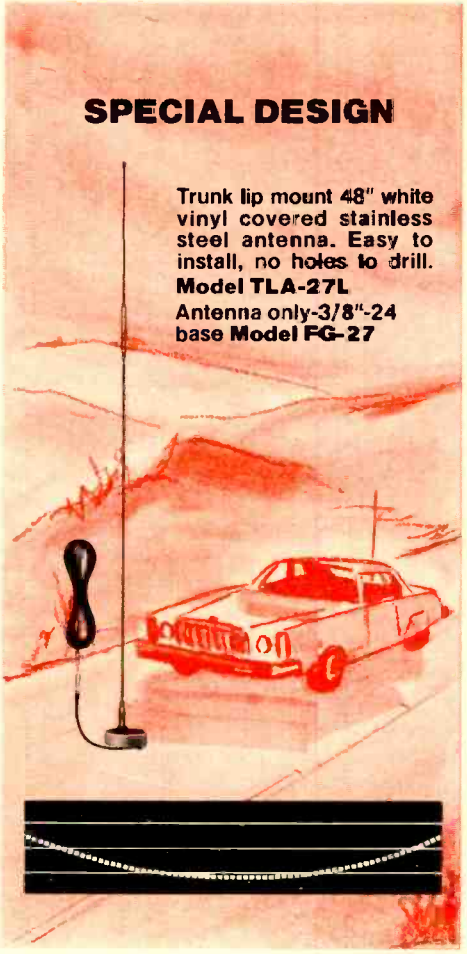

CB Newswire

YOUR CB NEWSPAPER MARCH, 1977 INCLUDED IN S9

"Sweet Pea" Helps Youngster To Regain Sight

Thanks to a trucker named "Sweet Pea" and his CB radio, 12-year-old Tammy Siegrist may soon see with both eyes.

Tammy, a seventh grader at Meadville Junior High School, Crawford County, Pa., lost the sight of one eye in a freak accident when she was 5 years old.

Her right eye was damaged by a splinter of wood and until recently doctors said she would be blind in that eye for life.

But in September, she went to Michigan with her mother and grandparents to consult a specialist.

After examining Tammy, he said he could repair the damage so she would need only the aid of a contact lens.

There was just one hitch.

According to the family, the doctor wanted $2,000 for medical expenses—before the operation.

Unable to meet costs, Tammy and her kin packed up to return home.

In Ohio, Tammy's grandmother, whose CB handle is "Lucky Lady," hooked up with Sweet Pea over the airwaves, and planned to meet him for a coffee break. Lucky Lady had been on the horn with Sweet Pea when the Siegrists were heading west to Michigan two days before.

They told Sweet Pea about the trip, and Tammy's disappointment.

"I saw this little girl and thought we should do something for her," Sweet Pea recalled. "She looked like she just come out of a magazine."

When they parted, Sweet Pea told Tammy's mother, "Green Pop," that he'd do what he could to help.

His promise became a reality.

With the help of dozens of CBers, Sweet Pea set up a donation headquarters along Interstate 80 in Mercer County.

Sweet Pea's friends brought doughnuts to give to weary travelers.

Volunteers manned the airwaves, asking truckers to take a coffee break and give a little for Tammy.

Sweet Pea was elated at the response—more than $1,150, two live turkeys, and CB radio paraphernalia.

"You wouldn't believe it," he said. "These guys are great."

"I didn't think we'd ever hear from Sweet Pea again," said Mrs. Patricia Siegrist, Tammy's mother. "He's such a kind, kind man."

Mrs. Siegrist said that through Sweet Pea's concern, a Meadville resident has offered to fly Tammy to Port Huron, Mich., for the operation.

"They're all wonderful, absolutely terrific," said Lucky Lady, who is Mrs. Paul Merchbaker.

"It would have been tough for my son-in-law, Charles ("Nine Fingers") Siegrist, to pay for that operation. He's got six mouths to feed and work has been slow.

"Heaven knows, my husband and I would help if we could," she said.

Mr. Merchbaker, "Cool Hand Luke," and his wife planned to drive to Michigan.

"All the truckers are stoppin.' That Sweet Pea—he's a wonderful guy," he said.

At the midway point sandy-haired Tammy knew the operation would take place.

Sweet Pea—alias James R. Lewis, played down his role in the fund raising.

"I just called up some women who had done this sort of thing once before, and talked with some buddies at Cooper Jarrett Trucking in Sharon.

"They did all the work," he said.

Tammy didn't believe Sweet Pea.

"He's a really nice man. I'm really grateful for all he's done."

Idaho CB'er Doesn't Read The Mail—He Delivers It!

When postal patrons on Boise's Rural Route 3 hear from the "Thresher" they know important mail is coming their way.

"Thresher" is the handle of Chet Lane, who is the postman on the rural route south of Boise, Idaho.

Last spring, Lane installed a CB in his own vehicle, used to make deliveries on the route. He estimates a third of the 460 families on the route have CBs in their homes.

"When I have a C.O.D. package or registered letter for them, I call them on the CB," Lane said. "They can get the money ready for the package or, with registered mail, they can be ready at home to sign for it. It saves them running to town if they're not home and I have to leave a notice."

Lane also said patrons on his route will call him via CB and ask him to deliver stamps or ask him to hold their mail if they are going on vacation.

"So many people on the route have CBs that it comes in pretty handy," he said. "It seems there's more and more of them (CBs) every day."

Lane said he goes by the handle "Thresher" because he runs a grain combine during his vacations. "A friend just started calling me 'Thresher.' " he said in explaining his CB monicker.

Lane said the CB in his car also comes in handy in other ways while making his deliveries.

"Once in awhile I'll see a traffic accident and use it to contact the sheriff's department," he said.

Lane said he just decided he wanted a CB in his car, and it was later that he discovered that it would be useful in his work. Lane, a postal employee for about 29 years, thinks he is the only postman using a CB on a Boise mail route.

His 48-mile route runs from Gowen Field to Cole Road south of the freeway.

When his daily mail deliveries are about completed, Lane said the CB comes in handy in another important way.

"I call the wife on her CB and tell her within a few minutes when I'll be home for dinner," he said.

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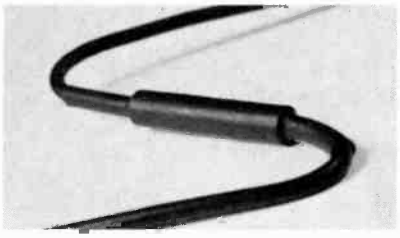

Channel Master CB

DIVISION OF AVNET, INC., S9377
ELLENVILLE, NEW YORK 12428

CB Newswire

YOUR CB NEWSPAPER MARCH, 1977 INCLUDED IN S9

Pigeon Base— A Silent Mike

New Jersey CB channels were all jammed early last November with the news of the death of an Edison woman who was known from coast to coast for her CB radio assistance efforts to long-haul truckers.

Known by the CB handle "Pigeon" or "Pigeon-Base," Clara Gaskill, 45, of McArthur Drive, helped truckers passing the area in a variety of ways, according to the chatter on Channel 19.

"I guess she was known coast to coast," said Mrs. Gaskill's husband, Walter, 51, after completing funeral arrangements. "She tried to help everyone all the time. She went out of her way for everybody."

Mrs. Gaskill got into CB three years ago, when it became necessary for her to spend a great deal of time at home with her invalid mother.

Until becoming ill a couple of weeks ago, Mrs. Gaskill manned her base station KFR-4542 on a regular basis, doing everything from giving out weather reports and traffic conditions to relaying a message to a terminal or warehouse that a trucker was disabled on the toll road.

Gaskill, a long-haul truck driver himself, said his wife took CB very seriously in the three years she was on the air.

"Everything she did for them was serious," Gaskill said. "Her aim was getting truckers to their destination and slowing them down so they wouldn't get tickets."

During an emergency situation on the turnpike not too long ago, Mrs. Gaskill was called upon by state police to relay to approching truckers the word to slow down and take alternate routes.

"She got into it, I guess, because I put her into it," said Gaskill, whose rig is equipped with a CB unit.

Truckers were steadily passing the word as to when the funeral was to be.

"There's going to be alot of 18 wheelers over there," one trucker said over Channel 19 which was being used during the early evening to alert truckers in the area of Mrs. Gaskill's death.

"This radio band is not going to be the same ever again," another trucker said. "In the mornin' she got everyone to work on time and home safe 'n sound at night."

"Yeah, good buddy, I know," said yet another trucker. "She was well-known across the Eastern Seaboard."

It was just two weeks earlier that Mrs. Gaskill received a letter of commendation and well wishes from Betty Ford.

A memorial fund drive is expected to last for a week, according to one CBer.

Alaskan CB Report

You start up the 4,800-foot pass in the care of "The Heartbreaker," who turns you over to "The Pass Watcher." Once over the top you are in the hands of "The Happy Pappy."

All three of them drive road graders on the trans-Alaska pipeline haul road. And their rigs are equipped with CB radios, which are much more than a device for "hollering" at friends when you are this far north of the Arctic Circle.

They can make the difference between life and death.

The 359-mile road north of the Yukon River is kept open all year to get supplies to the pipeline construction camps. Roughly 80 per cent of the road lies north of the Arctic Circle, and winter temperatures 60 below zero are common.

"The one and only, world famous Thunderbug" drives this two-lane dirt road like there was no tomorrow as he roars "home to mamma." As he stands in front of the shiny Rolls Royce-like grill of his 18-wheeler he looks tough enough to handle most obstacles.

Paul Konig, "the Thunderbug," boasts of going over Atigun Pass "barefoot" (without chains).

The Anchorage trucker says, "I will not go up this road without my CB."

His buddy, Marty DeWitt of Fairbanks, or "Tiny Tim," tells a story about hauling a pipeline load on the stretch of state-maintained road south of the Yukon. He was headed up a hill when his rig tumbled over a cliff.

He broke a rib but his radio still worked, and he heard a friend who was traveling ahead of him ask: "Did you make it over the hill?"

"I told him: "Yeah, but not the right way.' "

Alyeska Pipeline Service Co., the consortium of oil companies building the pipeline, maintains the road north of the Yukon.

The truckers, like their "good buddies" down south, monitor Channel 19. But they also can use Channel 11 to talk with the 12 pipeline camps along the route.

Each camp has a radio operator handling the commercial band frequency used by Alyeska Pipeline Service Co., as well as monitoring Channel 11.

The drivers are never more than 25 miles from a camp, so most of the time they are within the transmission range of CB radios. And if a trucker can't reach the nearest camp, there's usually another trucker closer who can relay a message.

Many Alyeska construction trucks have CB and can relay messages to camps via their more powerful company commercial-band radios.

The radio operator in Old Man camp said that hardly a day passes that he doesn't get a request for some kind of assistance, usually from a disabled vehicle.

Truckers also can call CBers like "The Winemaker" in Dietrich Camp, to reserve a room for the night. The drivers are allowed to spend the night in the camps and eat in the cafeterias free.

The truckers occasionally get road information from the camps, more often from each other. And there are road condition signs occasionally.

One thing truckers don't need to worry about are bears of the four-wheel variety. Bears—of the four-legged variety—and wolves are seen frequently along the road.

The radios also are crucial to break the loneliness. The truckers, many riding without partners, use them to pass the time. More than once we heard a static-filled and faint plea: "Breaker 19, is there anybody on this here haul road today?"

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CB Newswire

YOUR CB NEWSPAPER MARCH, 1977 INCLUDED IN S9

Truckers, CBs Foil Robbers

CB radios and two truck drivers were the heroes after a West Memphis, Ark., woman was assaulted by two men attempting to rob her at the rest area on Interstate 55 north of Fruitland.

But before it was all over, gunfire was exchanged at the rest area, injuring one of the assailants.

"CBs really saved us," said truck driver Gary S. Lively, who assisted the woman in recovering her car keys from the assailants and attempted to block their exit from the rest area.

Further CB contact from another truck driver who sighted the car at the Jackson-Fruitland exit after the robbers drove across the rest area grass to escape and CB contact with the Jackson Police Department led to the apprehension of the two men by Cape County sheriff's officers on Highway 61 at Route Y.

Charged with robbery and assault with intent to kill are R. V. Pride and Roscoe Pittman, both of Chicago, Ill.

Mrs. Mabel Jean Stewart of West Memphis was assaulted in the rest area women's restroom, officers said. Mr. Lively said he saw one of the men at the door on his way to the men's room. After coming out, he saw both men outside.

When Mrs. Stewart came to the door, her face bloody, he said she stood behind him and he demanded the men return her car keys. They returned the keys and walked toward their car.

Another truck driver, Philip W. Brough of Raleigh, Tenn., came to assist. He was given a .32-caliber gun by Mrs. Stewart that she had in her car. At least nine shots were exchanged.

A Cape County sheriff's deputy, Lt. Warren Rauh, said four shell casings from a .22 rifle were found where the assailants' car was parked and five casings from Mrs. Stewart's gun were found by a picnic table that Mr. Brough sought cover behind.

One of the assailants, Roscoe Pittman, 27, of Chicago, Ill., was wounded in the head during the shooting, Lt. Rauh said.

The two drove around Mr. Lively's truck, which was blocking the entrance to the interstate, but were apprehended after exiting south on Highway 61 by Cape County sheriff's officers and taken into custody.

Mrs. Stewart was taken to St. Francis Medical Center, treated for bruises on her nose, forehead and right eye, and released.

Pittman was treated for the head wound and released to the sheriff's office.

Boston CB'ers Ticket Voided

A ticket for using a citizen's band radio while driving has been voided, but the controversy it generated among CB proponents apparently lives on.

Gary LaRoche of Salem, N.H., who received the ticket on Sept. 29, said he won't give up the petition drive to legalize CB radio use in vehicles even though his ticket has been, in effect, thrown out of court.

"We want to make it 100 per cent legal so that no one else will be bothered with a ticket like this," he said in a telephone interview from Boston.

LaRoche said about 500 signatures were gathered at a meeting of the CB Club in Salem, and he expected that to grow to about 2,000.

The petitions will be presented to the Massachusetts and New Hampshire state legislatures, he said.

LaRoche was cited by a Massachusetts state police officer in Interstate 93 in Boxboro. The ticket said he was operating while "conversing with CB mike in hand."

However, LaRoche said he received a letter from Ayer District Court saying the ticket would not be processed. The effect was to invalidate the ticket.

The law in question says drivers may not have anything in their vehicles or on their person that could interfere with proper operation of the vehicle.

TVI Advice

The United States CB Radio Association, in conjunction with the Radio Shack Corporation and the FCC, has established an inquiry center for persons experiencing television interference problems caused by citizens band radios. A television interference instructional kit has been prepared by the R. L. Drake Company and J. W. Miller Company, both manufacturers of filters used to alleviate the interference problem.

This kit details how to handle the interference problem and will be sent at no charge to those requesting it by writing to TVI, P.O. Box 21, Hartford, Conn. 06101. The United States CB Radio Association will coordinate the dissemination of these kits.

Ontario Youth Electrocuted Putting Up Antenna

A 16-year-old youth was electrocuted when the citizen's band radio antenna he was helping to install toppled onto a power line.

Burton Smith was helping with the antenna at the family home in Port Credit.

Also injured were his brother, Roy, 19, and two friends, Gary Small, 16, of Helene St. N. and Norman Brown, 28, who lives at the Smith home.

Brown, Roy Smith and Small received burns to their hands and feet and internal injuries.

Roy Smith was taken out of intensive care and hospital officials said the three are out of danger.

"Nobody knows exactly what happened, but we think the pole toppled over because of the wind, its weight and maybe being attracted by the current in the power lines near the house," said Marshall Smith, the dead youth's brother.

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CB Newswire

YOUR CB NEWSPAPER MARCH, 1977 INCLUDED IN S9

Admits Sending Bad CB Signals

A 26-year-old Chaska, Minn., man pleaded guilty to broadcasting a phony distress signal on a citizens band radio.

Bruce Edward Schaaf entered the plea before U.S. District Judge Edward J. Devitt in St. Paul. Schaaf had been indicted for making the distress call from a truck in downtown Shakopee.

Up to 75 rescuers and two helicopters were sent out to search for a nonexistent airplane that reportedly was sinking in the Minnesota River near downtown Shakopee with three injured passengers on board.

Police called off the search after six hours when no plane was found.

The maximum penalty for the offense is a year in prison and a $10,000 fine. Under a plea negotiation between Schaaf's attorney and the U.S. attorney's office, the maximum sentence recommended to Judge Devitt was six months. The judge ordered a presentence investigation and continued the case for sentencing.

Schaaf did not say why he made the phony call, but he apologized to the judge for the hoax.

Connecticut CBers Credited In Boat Rescue

A group of citizens band radio operators helped police rescue a stranded boater and his 15-year-old son after the two had engine trouble on Long Island Sound.

Robert Salfton of Hamden, credited the CB operators with their rescue. "In a green boat, the same color as the water, they never would have found us" without the help of the CBers, he said.

Police heard the first distress call relayed from Madison resident John Chittenden. Police then called Joyce Bruno, wife of patrolman Frank Bruno who was on the docks trying to spot the missing boat with binoculars.

Meanwhile, Mrs. Bruno, "with a radio in one hand and the telephone in the other," worked for more than an hour to piece together messages heard by other CB operators regarding the Salftons' position.

Clinton police and fire boats finally rescued the two, who were not injured. Mrs. Bruno said the local CB group calls itself the "Night Owls" and often assists motorists and campers.

Crossed Wires

Training exercises are for training, but even a 'green' operator can come up with a red face.

During a recent Utah Wing Civil Air Patrol simulated emergency, a radio operator was handed a simple message. She hurried into the radio room and transmitted to a mobile unit stationed near Hill Air Force Base: "Check on a damaged Sessna report at Hill Air Force Base."

Since the messages were arranged with some "reality" intended, the mobile unit proceeded to question the security guard about a "damaged Cessna."

Receiving several funny looks, and no 'canned reply' to his question, he called back to the radio center to confirm the message.

The radio operator, inexperienced and quite red, said: "Check a damage assessment report at Hill Air Force Base."

CB'ers using unit number ID's with increasing popularity!

Many CB operators have begun switching away from their traditional *Handles* in favor of more professional sounding Unit Number type identifications or at least using Unit Numbers in addition to *Handles* at times. *Handles,* which have proven to be heavily duplicated and hard to copy under difficult communications conditions, are now giving way to ID's such as UNIT 177-X, UNIT 007, UNIT 2766, etc. The popular Unit Number ID system started up several years back, with all numbers being registered with and/or issued by one single national source; it's been growing with increasing popularity and now seems a major movement within the ranks of AM CB'ers. Those wishing to register existing Unit Number ID's, or receive assignment of a set of Unit Numbers should send a self-addressed stamped envelope and $2.95 to Z-Tech, P.O. Box 70-M, Hauppauge, N.Y. 11787. In return you will receive an official 2-color Certificate Of Registration, bearing your name, Unit Number, and the date of registration. Included is a valuable 1,400 word exclusive report on how to use Unit Number ID's for best results and maximum talk power. Don't forget the stamped self-addressed envelope! And don't forget to mention your Handle if you want it inscribed on the certificate.

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Not to mention, a complete line of 40 channel in-dash and under-dash mobile transceivers and base station units. Including 40 channel transceivers with memory control buttons, digital readouts and other up-to-the-minute innovations."

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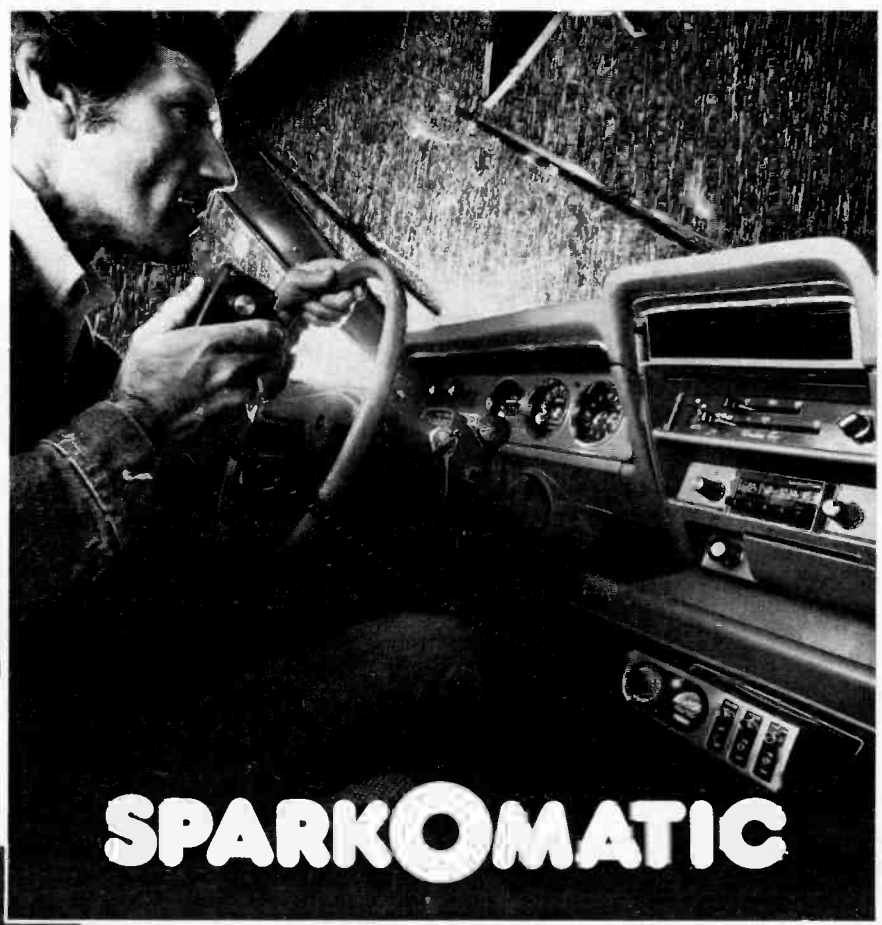

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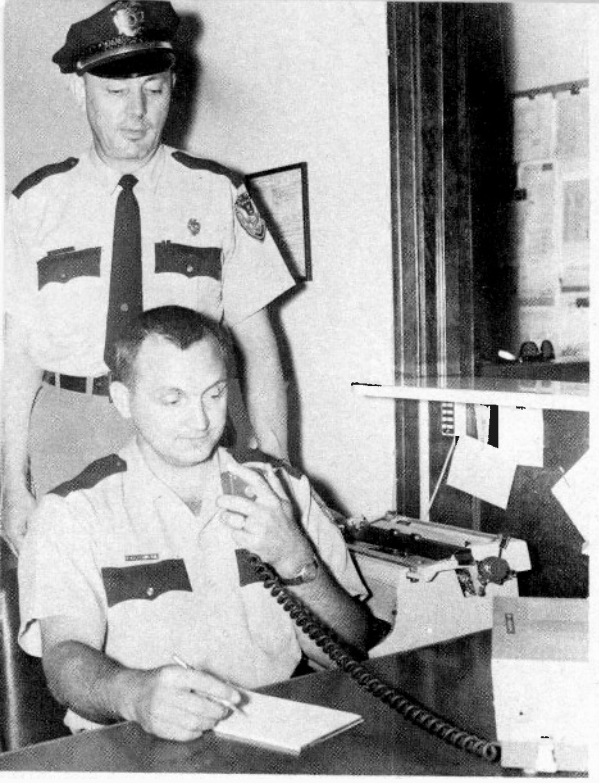


Tomcat Looks at CB CRIMEWATCH Use Your CB Rig to Fight Crime!

by Tom Kneitel, TOMCAT, Editor of CB RADIO/S9

IN case you haven't noticed, crime is on a continual upward spiral—there doesn't seem to be any easing of this trend; robberies, burglaries, muggings, vandalism, car thefts! CB'ers seem to have also become part of these statistics, siace our mobile communications gear has become the newest *in* thing for the small time sharpie.

Maybe it's time for CB'ers to do more than just sit around adding more locks and alarms to our cars, maybe it's time that we put our communications equipment into service to do battle against the tide of crime!

In some areas, law enforcement agencies have made arrangements with area CB operators to participate in a communications program which can effectively add to the success of law enforcement activities. For instance, in Aspen, Colorado, the police have commenced a project called CRIME BUSTERS which is coordinated with local CB operators.

We at CB RADIO/S9 think this project (and similar ones are popping up across the country) gives additional potential to the uses of CB Radio, it's one *more* way to serve the community.

Now don't get me wrong, CB'ers in such a program are *not* vigilantes or do-it-yourself Smokeys—there is *no* crime prevention or apprehension work involved—these CB'ers are asked only to be on the look out for certain types of criminal activity, and then to use their communications gear to summon the intervention of local, county, or state law enforcement agencies. The programs are done in cooperation and conjunction with these agencies. The *wrong* type of person for this is the potential *Death Wish* character who is interested in taking the law into his own hands—that's why police departments appreciate the opportunity to manage these programs in their own local areas, so they can see exactly who they are working with, and best judge the level of success of the program. In fact, I know of one police department (large western city) which absolutely refused to institute one of these programs because they did not feel that the bulk of their area CB'ers were serious or responsible enough to handle the task to any worthwhile ends.

There are no uniforms or badges, helmets or marked vehicles involved in this, no firearms—just CB'ers going about their business as usual, however they have been clued in on what to look for in the area of certain types of crime, and told how to radio the message to law enforcement officials.

WHY?

No police department can function effectively without the concerned assistance of responsible citizens. They depend upon citizens calling them and telling them whenever suspicious persons or actions are observed. This adds countless eyes to the marked and unmarked patrol cars already circulating in their regular patrol areas.

What happens is that some people fail to call the police simply because they are not aware of what seemingly innocent activities might be suspicious. Others may notice suspicious activity and be hesitant to call for fear of seeming a nosy *neighbor* or a *crank*. Still others take it for granted that someone else *surely* must have called!

Most law enforcement agencies say to call them immediately about any suspicious activity. Don't think that you are *bothering* them because that's what they are there for. Don't worry about your suspicions being unfounded—but think about what could happen if you *don't* act! And think about the possibility of you, your

For Information About Our Advertisers . . .

Here is the dispatch console for a program called "Neighborhood Watch," established by the police in Gardena, Calif. Such programs, while useful, must be operated at the discretion and under the direction of police authorities so they do not take upon themselves a distasteful "vigilante" flavor.

loved ones, or your property being a *future* victim of the person who got away *this time* because you did not take action.

ENTHUSIASTIC

The Aspen, Colo., Police Department are quite enthusiastic about their project, which is run under the direction of Det. Michael S. Chandler, the Aspen PD's Crime Prevention Specialist.

Det. Chandler told me that "Activity on our CB network has been brisk, to say the least. We've used the network for stolen vehicles, fleeing felons, lost children and motorists in distress. We even alert motorists when we're running radar in speed traps; our goal, of course, being to get people to slow down. The public's reaction to Smokey himself telling CB'ers about a *Kojak* is phenomenal."

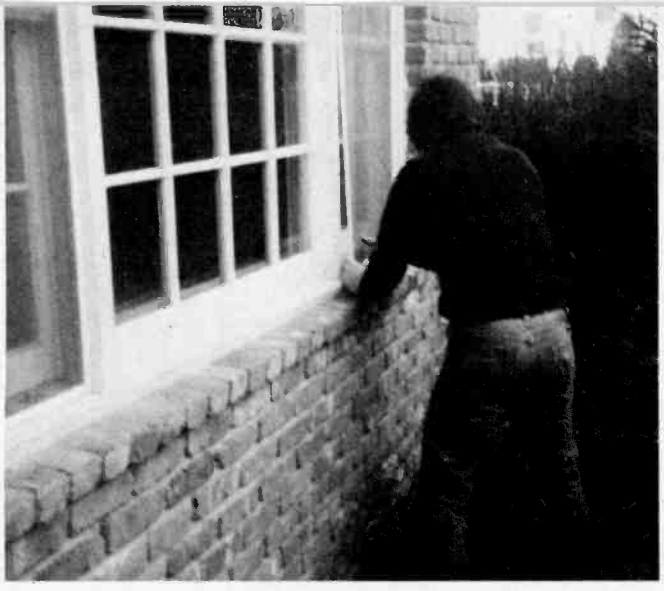
The Aspen PD, of course, has a fully coordinated and well planned-out program involving CB'ers, complete with a base station which transmits alerts for members of CRIMEBUSTERS monitoring Channel 9 (a notification to listen on Channel 9 is sent out in advance on Channel 19). Still, even in areas where law enforcement agencies do not have a formal program established, concerned CB'ers can probably be of use in calling messages in to their own base stations for 10-5 to the police via landline. Possibly in those areas the law enforcement agencies might be interested in starting such a program if it were brought to their attention by local CB groups or clubs—maybe they would be anxious to put this into action but don't know who to contact in CB-land. You could approach them—possibly let them read this issue of CB RADIO/S9!

If you are a member of a club, your club might wish to present the PD with a program in which members would maintain a base station (either at PD Headquarters or at another selected location) for CRIME-WATCH purposes. Possibly members could even establish Midnight to 6 AM (high crime hours) to cruise certain areas designated by the police to be on the look out for certain activities. These might be two-operator vehicles which could cover hundreds of miles of local streets in a single evening.

This, of course, would be an ambitious undertaking and should be attempted only with the sanction of local law enforcement agencies, lest *your* "patrol car," cruising around in the wee hours, be reported as being suspicious! That's why law enforcement agencies should be consulted should you be considering any organized effort.

However, on a lesser level, no organization is required for individuals or club members to simply become involved in community security—at least on a more increased level than present—by reporting suspicious activities spotted during regular activities.

Based on the excellent and successful program



established in Aspen, Colo., we are presenting herewith some thoughts on how a CB CRIMEWATCH might be instituted in *your* area with the sanction and cooperation of local law enforcement agencies. The Aspen PD, by the way, recruits members by having *Meter Maids* place brochures on all parked vehicles sporting CB whips—applicants can then appear at Police HQ to fill out an application, receive information on how to function, plus a windshield sticker.

Why not see how and if you can get something like this going in your neck of the woods? Let us know how you make out—and, also let us know any specific instances in which the use of CB Radio has been used to communicate with the police or sheriff in the fight against crime. We'll probably run the most interesting ones here in our pages—address these reports to: S9 CB CRIMEWATCH, 14 Vanderventer Avenue, Pt. Washington, N.Y. 11050. *(continued)*

CB CRIMEWATCH ORGANIZED EFFORT GUIDELINES

1. To commence an alert, the police base (or authorized affiliated base) will call members on Channel 19.
2. Alerts will be aired over a predetermined channel. All subsequent CB CRIMEWATCH transmissions between mobiles and will continue over this channel.
3. All transmissions connected with CB CRIMEWATCH will be accompanied by the member's FCC callsign *and* any other registered Unit Number ID or Handle suitable for rapid local identification.
4. Members are instructed NOT to take any overt or aggressive action in any CB CRIMEWATCH alerts dealing with criminal matters. The law enforcement agency will dispatch authorized personnel for appropriate action.
5. Fire and other non-police emergency reports may be handled at the discretion of the agencies concerned.
6. The CB CRIMEWATCH base(s) will monitor a specified channel 24-hours a day. Any member wishing to contact the police with information on accidents, suspected criminal activity in progress, fire, etc., should report as soon as possible on the designated channel.
7. Anyone transmitting deliberately false or misleading information will face immediate dismissal from the program, possible charges filed with the FCC, and possible local charges of filing a false police report.

INFORMATION MOST OFTEN NEEDED BY THE POLICE

- What happened?
- When?
- Where?
- Is anyone injured?
- Vehicle license number
- Vehicle description
- Direction of flight
- Description of persons (including clothing)
- When describing suspects, notice age, race, sex, height and weight. Compare your weight and height with suspects. Pick out some unique characteristics which will help you identify the suspect in the future if need be.

BUT WHAT IS SUSPICIOUS?

Basically, anything that seems even slightly "out of place" for our area or during the time of day in which it occurs may mean criminal activity.

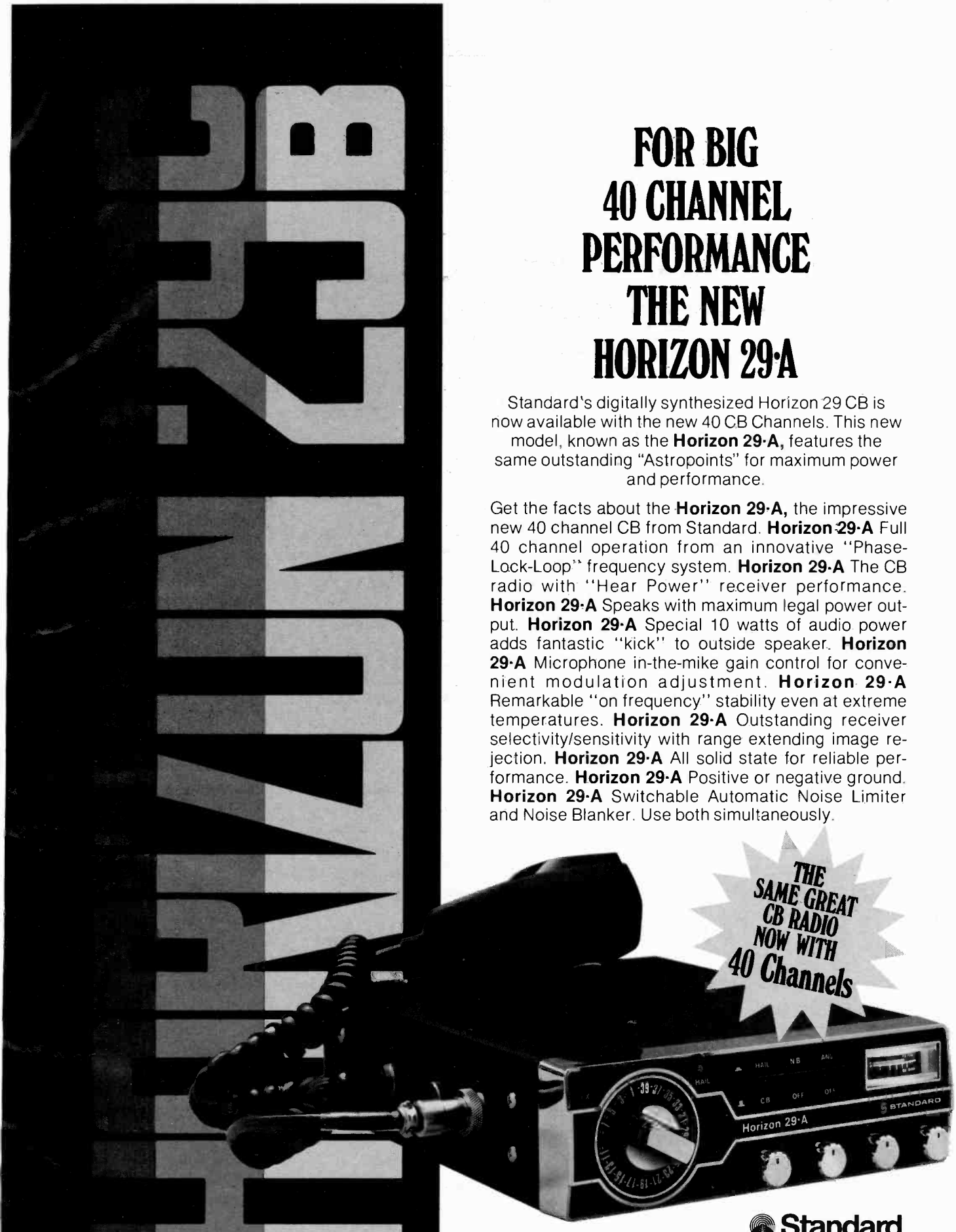
Some of the most obvious things to watch for and report include:

- A stranger entering your neighbor's house when it is unoccupied may be a burglar.
- A scream heard anywhere may mean robbery or rape.
- Offers of merchandise at ridiculously low prices could mean stolen property.
- Anyone removing accessories, license plates or gasoline from a car should be reported.
- Anyone peering into parked cars may be looking for a car to steal or for valuables left displaced in the car.
- Persons entering or leaving a business place after hours could mean burglars.
- The sound of breaking glass or other loud explosive noises could mean an accident, housebreaking or vandalizing.
- Persons loitering around schools, parks, secluded areas or in the neighborhood could be sex offenders.
- Persons around the neighborhood who do not live there could be burglers.

FOR BIG 40 CHANNEL PERFORMANCE THE NEW HORIZON 29·A

Standard's digitally synthesized Horizon 29 CB is now available with the new 40 CB Channels. This new model, known as the **Horizon 29·A,** features the same outstanding "Astropoints" for maximum power and performance.

Get the facts about the **Horizon 29·A,** the impressive new 40 channel CB from Standard. **Horizon 29·A** Full 40 channel operation from an innovative "Phase-Lock-Loop" frequency system. **Horizon 29·A** The CB radio with "Hear Power" receiver performance. **Horizon 29·A** Speaks with maximum legal power output. **Horizon 29·A** Special 10 watts of audio power adds fantastic "kick" to outside speaker. **Horizon 29·A** Microphone in-the-mike gain control for convenient modulation adjustment. **Horizon 29·A** Remarkable "on frequency" stability even at extreme temperatures. **Horizon 29·A** Outstanding receiver selectivity/sensitivity with range extending image rejection. **Horizon 29·A** All solid state for reliable performance. **Horizon 29·A** Positive or negative ground. **Horizon 29·A** Switchable Automatic Noise Limiter and Noise Blanker. Use both simultaneously.



Standard Communications

Standard Communications Corp. · P.O. Box 92151 · Los Angeles · Ca · 90009

This device has not been approved by the FCC. This device is not and may not be offered for sale or lease or sold or leased until the approval of the FCC has been obtained.

SOME NOT SO OBVIOUS THINGS TO WATCH FOR

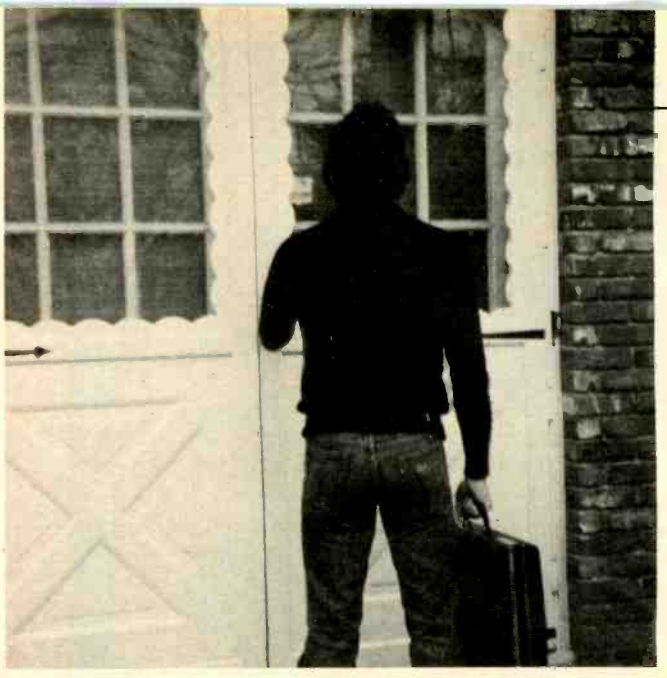
Not every stranger who comes into your neighborhood is a criminal by any means. There are many perfectly legitimate door-to-door salesmen, repairmen and servicemen moving around Aspen all the time. But criminals do take advantage of this by assuming the guise of the legitimate business representatives. After all, if a criminal looked like a criminal, no one would have any trouble spotting him.

Here are some situations involving people you might see and what their actions might mean.

- Someone is going door to door in your neighborhood. Watch for a while. If, after a few houses are visited, one or more of the persons tries a door to see if it is locked or goes into a back or side yard, could be a burglar. Such action is even more suspicious if one person remains in the front when this occurs or if there is a car following a few houses away.
- Someone waiting in front of a house or business becomes suspicious if the owners are absent, or—if it's a business—the business is closed. This might be a lookout for a burglary in progress inside.
- Anyone forcing entrance to or tampering with a residence, business or vehicle is suspicious anytime, anywhere.
- A person running, especially if carrying something of value, could be leaving the scene of a crime.
- Carrying property could be suspicious too, if it's at an unusual hour or in an unusual place, and if the property is not wrapped as if just purchased.
- A person exhibiting unusual mental or physical symptoms may be injured, under the influence of drugs or otherwise needing medical or psychiatric assistance.
- Much human traffic to and from a certain residence is not suspicious unless it occurs on a daily or very regular basis, especially during late or unusual hours. It could possibly be the scene of vice activities or a "fence" operation.

Here are some things to watch for involving vehicles.

- Any vehicle moving slowly and without lights, or following a course that appears aimless or repetitive is suspicious in any location, but particularly so in areas of schools, parks and playgrounds. Occupants may be "casing" for places to rob or burglarize, or could possibly be a drug pusher or sex offender.
- Parked, occupied vehicles containing one or more persons are especially significant if observed at an unusual hour. They could be possible lookouts for a burglary in progress, even if the occupants appear to be lovers.
- Vehicles being loaded with valuables are suspicious if parked in front of a closed business or untended residence—even if the vehicle is legitimate-looking commercial unit. More and more professional thieves are taking the time and trouble to "customize" their vehicles with special signs in order to move more freely without suspicion.
- Apparent business transactions conducted from a vehicle, especially around schools or parks and if juveniles are involved, could mean possible drug sales.
- Persons being forced into vehicles—especially if juveniles or females—may mean a possible kidnapping.
- The abandoned vehicle parked on your block may be a stolen car.



REPORT

- Continuous "repair" operations at a non-business location could mean stolen property being stripped, repainted and otherwise altered.
- Open or broken doors or windows at a closed business or residence whose owners are absent could mean a burglary in progress or already completed.
- Unusual noises such as gunshots, screaming, sounds of combat, abnormally barking dogs—anything suggestive of foul play, danger or illegal activity should be reported.

While some, if not all, of the suspicious situations described could have innocent explanations, the Police would rather investigate a crime-prone situation than be called when it is too late.

S9 CB Crimewatch Casebook

AN Associated Press national survey of state and local police indicates that for the most part the CBers in this country have been helpful. And the police say this even though CBers are fond of reporting highway patrol cars trying to catch speeders. Police say that practice results in traffic slowing down.

But there have been grim incidents.

—A woman kidnap victim was killed by her abductors after CBers interfered with a ransom drop.

—A vigilante posse of citizens band operators chased the wrong truck for 75 miles thinking it had sideswiped another vehicle.

—A Pennsylvania man shot another CB enthusiast after an argument on the air over use of a channel.

—In California, officers monitoring the CB network found that during a civil disturbance those involved were using CB radios to protect their flanks.

Florida Highway Patrol Sgt. Paul Gracey said citizens band operators are becoming an increasing influence on law enforcement operations—both good and bad.

"Like every other part of life, some people abuse CB radio," he said. Mostly, "They report traffic congestion, disabled vehicles, accidents and extent of injuries. It can save three minutes getting to the scene. It doesn't necessarily save anyone's life, but it does get help sooner, and you don't know what might have happened."

But he added, "There are some sick ones who make false accident reports."

"The big problem with CBers is overreaction," said David Arnold, a New York State trooper. "They overreact and get all excited in an emergency situation. But I don't think they are a nuisance."

Other law enforcement agencies reported that the CB operators have helped foil burglaries and car break ins, made reports that resulted in the arrest of a man wanted for the slaying of a police officer, the capture of another sought for killing his wife, and helped gather clues in the Cowchilla, Calif., kidnaping of 26 children and their school bus driver.

One parent of a child aboard the bus said he first learned the children were safe from a citizens band operator.

But CBers can also be an annoyance.

"Sometimes they feel that having a CB unit makes them nearly a policeman," said Sgt. Robert Marshall of the Little Rock, Ark., police department. "Their intentions are good, but mostly they are a nuisance, being in the way."

An example given by Marshall was the woman who thought she heard a robbery plan being discussed on CB, called police and detectives went to a motel where they found two persons, searched them and found no evidence of wrongdoing.

"We were lucky they were understanding," said Marshall. "We left redfaced."

In Ohio, Richland County Sheriff's Capt. Gene Hart said that his department has had good experiences with CB operators.

"When a Mansfield policeman was killed last February, a CB spotted the getaway car," Hart said. "We've gotten tremendous cooperation from them."

"It's an absolute asset to law enforcement," said Sheriff Bernard Grysen of Ottawa County, Mich. Grysen said the deputies monitor the CB channels, and there have been numerous cases where citizen band operators have helped in recovering stolen cars and catching traffic violators.

"It's been tremendously successful," said Lt. Roderick Moore of the Michigan State Police. "I've got to believe many of those possibly intoxicated drivers would have gotten away if it had not been for the CB reports."

In Alabama, Capt. John Henderson of the state partol said the only interference by CBers with law enforcement are the "Smokey reports, but even the reports on the location of the patrol cars have helped to slow traffic in the area," he said.

But in Livingston County, Ill., Sammie J. Graham was ticketed on a charge of interfering with a police officer after being stopped for speeding. The state police said Graham got back in his car after getting the speeding citation and broadcast the location of the police cruiser.

"I have a very positive feeling toward the ability of the officer to communicate with the citizen," said Lt. Col. Alton Crystal, assistant chief of the Iowa Highway Patrol. But he said troopers have to be wary of CB reports and make their own cases.

"The day we start making arrests on the basis of CB transmissions is the day we'll be in court for false arrests."

In Idaho recently, a CB operator whose camper-truck was sideswiped by a pickup, broadcast a description. The result was a 75-mile high speed chase which ended when police intervened. The CB chasers were chagrinned to find they had been pursuing the wrong truck. The pickup driver was charitable enough not to press charges, police said.

"We've had a few isolated incidents where they were playing vigilante," said Al Brockway, assistant police chief in Helena, Mont., "One involved a person allegedly using foul language on the air, and some CBers took it on themselves to find this person. A fight ensued and it turned out it was the wrong man."

Police generally agree that many CB operators do provide useful information to law enforcement agencies.

Michigan State Police reported that in June there were calls from CB operators resulted in 29 drunk driving arrests, 72 speeding citations and 37 for crimes including 11 felonies.

The California Highway Patrol said that of 36 reports on drunk drivers from CB operators, there were 35 arrests.

Coatsville, Pa., police said that the CB organization "Townwatch" resulted in seven arrests for mugging, burglary and assault in July.

In Boston, police credited CB operators with assisting in keeping tension down during the turmoil resulting from busing for desegregation.

"CBers have sometime assisted when they see someone driving into an area that is tense and advised the party of the situation," said a city police spokesman.

Boston police Capt. John Dow said that in one case a bus driver declined to drive through an area because earlier one driver had been pulled from his vehicle and others had been robbed. He said CB operators working with the Community Action Team, a civilian group, agreed to escort the bus and others until the trouble died down.

Tomcat in Tinseltown *(Almost!)*

CB Radio/S9 Visits a CB Film in Production

HAVING spent several of my pre-CB years in the motion picture industry, I was especially turned on when I received an invitation from Paramount Pictures to zip out to Shakeyside to spend a few days watching the Fields Company shoot the first major company film devoted entirely to CB radio—in fact, the film is called CITIZENS BAND and is scheduled for release this Spring.

Filming was on-location in Marysville, California, which is north of Sacramento, an especially beautiful area just west of the old gold mining towns in the Sierra Nevada Mountains. So I hopped a plane and made my way out to see what was going on.

The film is a comedy-drama, a $2-million color production, directed by Johnathan Demme—a talented young filmmaker.

The first thing I did when I got there was get a hefty smack on the back and a bear hug from none other than Chuck Napier, one of the stars of the film. Chuck is a long-time CB'er, in fact he's written for this publi-

Candy Clark strikes a happy chord in the soul of CB Radio/S9's Editor.

Candy Clark did more than act the roll of a CB'er, she has a Radio Shack CB rig at her apartment—she spent quite a bit of time on the channels. Hey guys, want her Channel number?

cation a number of times in the past. Well, besides being on CB (his AM handle is *Overdrive*, on sideband he's SSB-55), Chuck is a thousand and one other things —trucker, singer, general all-around zany character, and actor! You may have seen Chuck on *Baa Baa Black Sheep*, *The Rockford Files*, *Kojak*, or other TV programs. Some of Chuck's films include *Super Vixens*, *Rolling Thunder*, and *Moonfire*.

Chuck plays a trucker in CITIZENS BAND, his handle in the film is *Chrome Angel*—which is a handle that relates to a really spectacular 18-wheel vehicle used in the story.

Between takes, Chuck and I rattled on about (you guessed it) CB radio—some of the recent developments and where it's all heading.

Which one is the actor? It's Chuck Napier (right), also known on the sideband channels as SSB-55. Chuck greeted me with a friendly bear hug and discussed the current status of CB radio.

Left to right: Sidebander SSB-99, who dropped by to say hello; actress Ann Wedgeworth, who had some CB tales of her own to exchange; and Tomcat.

One of the stars of CITIZENS BAND is Candy Clark —whose handle in the film is *Electra*. You probably know Candy since her performance in American Graffiti earned her a nomination for an Academy Award— Candy was also in The Man Who Fell to Earth (with David Bowie). One of the days I was there, Candy was outfitted for a wedding ceremony (she was the bride)— and it turned out to be a CB wedding to end all past/present/future CB weddings!

Also in CITIZENS BAND is Ann Wedgeworth. Ann is a Broadway actress who starred in "Thieves". Ann was a delightful person with a total fascination for CB radio—in fact, during some of the orientation drives which the cast was given (in CB-equipped mobile units), Ann said that she had a great time shouting dozens of goodbuddies on Channel 19!

One of the highpoints of my visit was meeting Ed Begley, Jr., who plays a priest in the film (handle: *Priest*). Ed should be a familiar face to all of you *Mary Hartman, Mary Hartman* TV fans, since he appeared in the series as the deaf mute poet. Yes, he can and does talk—in fact he has one of those outrageous off-beat senses of humor which had everybody cracking up!

Others starring in the film are Paul Le Mat (you saw him in *Aloha Bobby and Rose* and *American Grafitti*), Marcia Rodd, Roberrs Blossom, Bruce McGill, and Alix Elias.

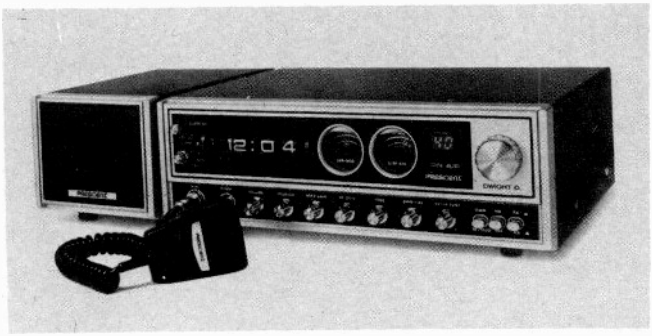
All in all, it was an interesting and tantalizing peek at CB on the silver screen—gives you something to look forward to. One of the scenes which I watched them shoot was when a local character gets lost in the woods and they locate him via CB—but when they find him he's—oh well, don't want to spoil the film for you. Wait until you see it!

Actor Ed Begley, Jr., who plays a priest in the film CITIZENS BAND, gives some words of encouragement to Tomcat.

ON THE COUNTERS

PACE 40-CHANNEL BASE

The deluxe PACE "8155," 40-channel base station brings it all home with L.E.D. channel display, S/RF meter, RF gain control knob, noise blanker switch, automatic noise limiter switch, tone and fine tune controls, dimmer button, transmit indicator light, public address capability and external speaker jack.



THE DWIGHT D 40-CHANNEL AM BASE STATION

President Electronic's new 40-channel AM base station, Dwight D. comes with an elaborate list of features, including a separate speaker and digital alarm clock.

Controls include volume, squelch, adjustable mike gain, RF gain, time set, alarm set, meter mode switch, noise blanker, delta tune and PA/CB switch. It has two dual-functioning meters, the SWR-MOD and the SR/F calibrate, as well as a large 100mm digital L.E.D. channel indicator.

The Dwight D also features a new automatic speech compression circuit for consistent high level modulation, selectivity is rated at –65 db or better.

On the back panel are jacks for AC and DC power, antenna, PA and external speaker. Earphone and mike jacks are on the front panel.

The transceiver is 4¾"H x 15"W x 11½"L, and weighs 13.2 lbs. The separate speaker is 4¾"H x 5¾"W x 11½"L and weighs 3.5 lbs.

The Dwight D is backed by a limited one-year warranty covering both parts and labor. The suggested retail price is $329.95. Complete details on the new Dwight D are available by writing to President Electronics Inc., 16691 Hale Ave., Irvine, CA. 92714.

40 CHANNEL BASE STATION

The Alaron B-5050 has a P.L.L. Synthesizer AC/DC circuitry, illuminated large S/RF meter, variable squelch control and a local-distant PA-CB switch.

It is also equipped with a built-in automatic noise limiter (ANL), transmit and receive indicators, and jacks for PA, extension speaker and headphones.

The four watt maximum RF output unit has both the AC and the DC power cables and a plug-in dynamic microphone with coiled cable.

Suggested retail price is $159.95 from B & B Import-Export, 185 Park St., Troy, Mich. 48084. *(continued)*

CP-400...
a 40 channel set from day one!

This device has not been approved by the Federal Communications Commission. This device is not, and may not, be offered for sale or lease, or sold or leased until the approval of the FCC has been obtained.

Here is no outdated design "doctored" for stretch to 40 channels . . . CP-400, two years in development, is a product of highly advanced computer technology . . . **had 40 channel capability from day one**; digital logic . . . high stability . . . digital frequency synthesis . . . comprehensive "memory" . . . state-of-the-art semiconductor technology throughout. 23 channels was child's play. 40 channels meant merely 17 more up the line. The functional, no-nonsense twin dials were already there for direct channel readout. CP-400 is designed and manufactured by CPI in the U.S. Come to think of it, who knows more about sophisticated technology than Americans?

Forget for the moment, the exceptional compactness, the very low silhouette, the handsome white cabinet and the anti-rip-off, swing away mounting bracket; consider only the following CP-400 **performance factors:**

- 40 channels. Digital frequency synthesizer has high (0.001%) stability (essential for SSB).
- SSB w/USB/LSB plus fully modulated AM.
- Super, logarithmic-speech-compressor holds AM,SSB modulation at highest levels without flat-topping. Meets new FCC modulation requirements and still has incredible talk power.
- Built-in, 7 element TVI harmonic filter.
- Excellent audio quality, transmit and receive. THD less than 3% at 2 watts output.
- Special microphone w/built-in transistor amplifier/gain control. Custom manufactured for Communications Power by Turner.
- Built-in JFET pre-selector has extremely low (1.5db) noise figure.
- Unequalled sensitivity: 0.25μV, SSB, 0.5μV,AM.
- 80db selectivity both SSB/AM. Uses crystal lattice filter. Very high rejection to adjacent channel "spillover" interference.
- High dynamic range! Has power mixer for −80db cross modulation performance. Practically impervious to overload. Also has automatic PIN diode RF gain control and AGC.
- Built-in noise BLANKER. Effective! Blanks out noise without distorting signal. Has it own noise sampling receiver. Commercial quality!
- Full power output: 4W AM, 12W p.e.p. SSB.
- Dimensions: 2.25"H, 9"W, 11.75"D. Wt. 7 lbs. MM: 57H, 228.5W, 298.5D. Wt. 3.1KG
- 13.8VDC. Positive or negative ground.

Unique, functional power supply converts CP-400 to handsome base station. 115VAC supply is voltage regulated, has 3"×5" speaker for full quality sound.

At your CPI dealer. Write for brochure.

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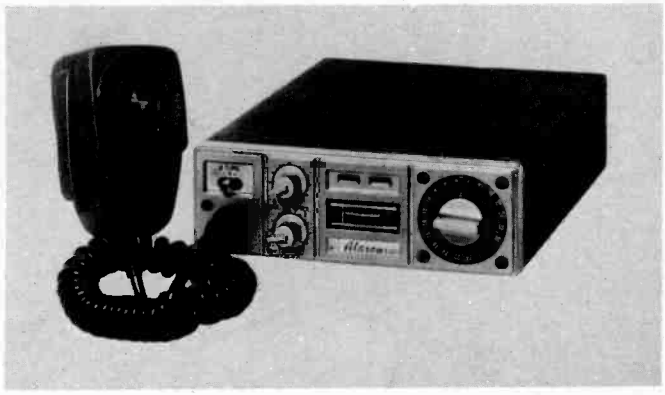


40 CHANNEL MOBILE TRANSCEIVER

The Alaron Model B-4075 has a large illuminated S/RF meter, variable squelch control (and PA switch) as well as a Delta Switch. It also features a built-in automatic noise limiter (ANL), transmit and receive indicator lights and jacks for PA and extension speaker.

It has the four watt maximum RF output and has a positive or negative ground 12V DC system.

Accessories include the plug-in dynamic microphone with coiled cable, mounting bracket and screws, mike mounting bracket and screws as well as the DC power cable with fuse holder and fuse.

Suggested retail price is $129.95 from B & B Imports, 185 Park St., Troy, Mich. 48084.

40 CHANNEL TRANSCEIVER WITH DIGITAL READ-OUT

Boman Industries announced an all new under-dash 40 channel CB transceiver with large digital channel read-out.

Designated the CB-760, this unit offers all the basic features the user looks for in a quality, standard CB transceiver. The CB-760 incorporates digital syntheses and phase lock loop circuitry for optimum frequency stability.

Other features include: large S/RF meter for monitoring incoming signal strength and relative power output; transmit and receive mode indicator lights; squelch control for quiet standby; noise blanker control for reducing external noise; PA system; external speaker jack.

Unit operates on positive or negative ground.

Boman Industries, located near Los Angeles, is one of the nation's leading designers and manufacturers of CB radios,—in-dash and under-dash—, antennas and accessories and in-dash and under-dash AM, AM/FM, AM/FM/MPX car radios, cassette and 8-track cartridge car stereos, speakers and accessories.

40-CHANNEL MINI-MOBILE

Small enought to fit into a glove compartment and priced for the budget conscious, the new PACE "8006," 40-channel CB Radio provides solid state reliability and features an RF gain min./max. switch, S/RF meter, noise limiter circuit, public address capability, external jack and a transmit indicator light.

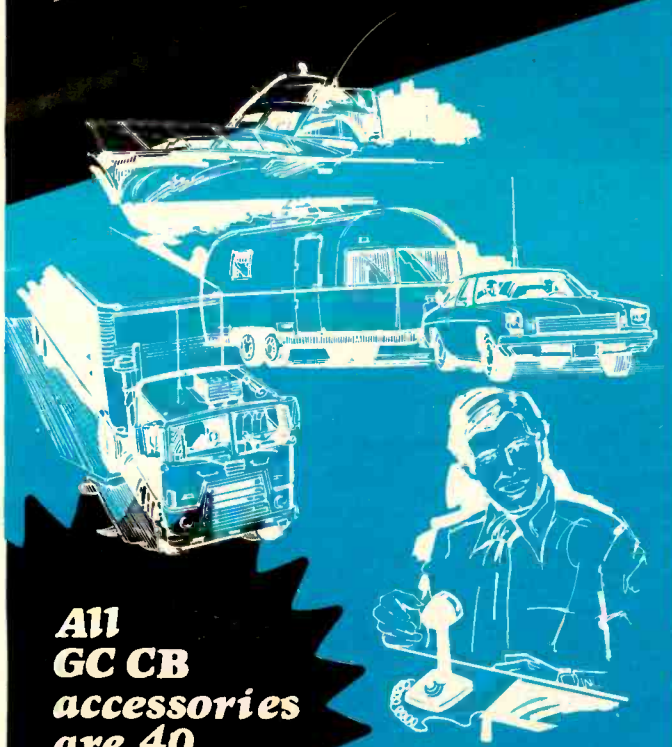
40-CHANNEL REMOTE TRANSCEIVER WITH THEFT PROOF DESIGN

The Hy-Gain 9 (2679A) is an advanced Phase-Lock-Loop system that transmits and receives on all 40 channels. With exceptional circuitry for a crisp far-reaching signal. And exceptional sensitivity (0.7 uV for 10 db (S+N)/N) to help pull in even distant signals. Plus 40 db adjacent channel rejection and 4 full watts RF power output, the legal maximum, on AM.

From a standpoint of design, the 2679A is even more

(continued)

When you're serious about CB only the BEST will do!



METERS...

CB MULTI-METER SWR/PWR & MODULATION METER

Measures R. F. Power in two scales: 0-10 watts or 0-100 watts, as well as VSWR and relative modulation. Front panel switches.
Cat.No. 18-153

SWR/FS METER

Accurately measures SWR and FS for peak system performance For mobile or base station application.
Cat.No. 18-155

MIKES...

POWER BASE MIKE

Built-in two stage amplifier increases range of any transceiver by boosting modulation up to 50 times. Excellent with AM and SSB also! Designed for use with modern, solidstate transceivers, but will greatly increase modulation of older tube type transceivers as well.
Cat.No. 18-000

POWER HAND MIKE

Rugged, powerful, dependable! Power amplified modulation punches through "skip" and interference to increase range. Solid-state circuitry withstands temperature extremes.
Cat.No. 18-010

ANTENNA ACCESSORIES...

TWO POSITION COAX ANTENNA SWITCH

Easy switching of directional to omni-directional antenna! No changing of connectors from ground-plane to beam antenna. Accepts PL-259 coax connectors. May be used for 52 ohm CB or switching 72 ohm Ham antennas up to 1000 watts.
Cat.No. 18-710

CB ANTENNA MATCH

Improves reception range and permits you to match your system even in adverse weather conditions! Tunes your antenna system to perfect SWR to allow all transmitter power to leave antenna. Accepts PL-259 coax connectors. Equipped with dual SWR adjustment controls.
Cat.No. 18-716

All GC CB accessories are 40 channel approved!

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IMPROVE THE PERFORMANCE OF YOUR RIG! COLORFUL CATALOG ILLUSTRATES AND DESCRIBES NEARLY 150 CB ACCESSORIES--ALL 40 CHANNEL APPROVED! FOR YOUR FREE COPY, SEE YOUR FAVORITE CB DEALER TODAY!

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

exciting. Hy-Gain engineers have separated the transceiver and its controls into two separate components, allowing the transceiver to be installed in a remote location hidden from would-be thieves.

All Hy-Gain 9 controls are located on the MSR (for microphone, speaker and radio) Control Unit for easy hand-held operation. There's volume and squelch thumbwheel controls. Push-to-talk button with integrated speaker. And a 40 channel selector switch plus digital channel readout.

The MRS Control Unit is linked by coiled cord to an under-dish connector. From there an optional cable (model 1179) runs to the transceiver which may be located beneath the seat, in the trunk or any other protected area.

The Hy-Gain 9 (2679A) is $239.95 manufacturer's suggested retail price.

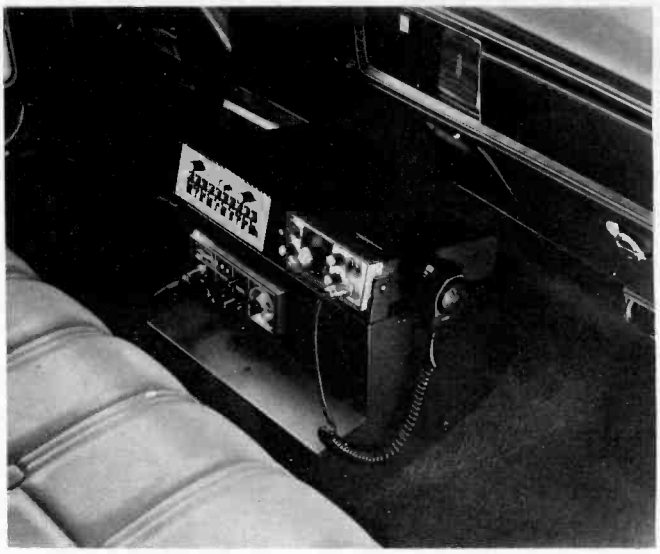
40 CHANNEL MODEL WITH BUILT IN SWR METER

General Electric's 40-channel Model 3-5819 CB transceiver contains a three-way lighted SWR/S/RF meter which not only shows relative receive and transmit signal strength, but in conjunction with a three-way switch and calibration control, can check and adjust the SWR for maximum antenna efficiency. Other features include delta tune, tone control, and LED channel readout.

The 3-5819 has a manufacturer's suggested retail value of $219.95.

MOBILE CONSOLE GIVES FAST, SECURE INSTALLATION

Hartzell Manufacturing Company of Dayton, Ohio, has just introduced a new mobile communications console that provides a means of installing ALL radio, communications and electronic equipment conveniently and neatly, quickly and securely! Additional benefits are realized with the console because equipment can be mounted prior to installation in the vehicle, thereby reducing time out of service. Once installed, all equipment is rigidly secured, with no threat of loose or flying units during emergency situations.



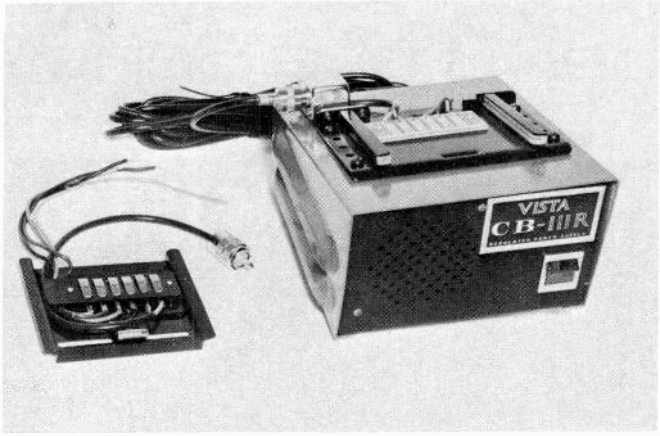
Mounting in any American-made car, this console puts all equipment at the fingertips of the operator, yet is centrally located, utilizing space normally unused. Fabricated from 20 gauge steel and heliarc welded, the console features double hems with rounded edges and two coats of baked-on, scratch-resistant epoxy paint.

Installation and mounting holes may be located according to the requirements of your equipment. Consoles, with equipment intact, can readily be changed from car to car at "Change-over time", at a fraction of normal time! Periodic in-shop servicing can be easily accomplished with all equipment processed at one time.

Typical units to be mounted on the Hartzell Console include; CB Radios VHF Control Head, Remote Speaker, Scanner, Cigar Lighter (for radar plug), Microphone clasps and map lights. Priced under thirty dollars in single units, generous quantity discounts are available.

40 CHANNEL UNIT FEATURES ANTENNA WARNING INDICATOR

General Electric's 40-channel CB Model 3-5812 features a warning light that glows to tell the user his antenna system needs adjustment. Other features include internal burn out protection, switchable noise blanker and ANL plus delta tune. The model 3-5812 has a manufacturer's suggested retail value of $174.95.

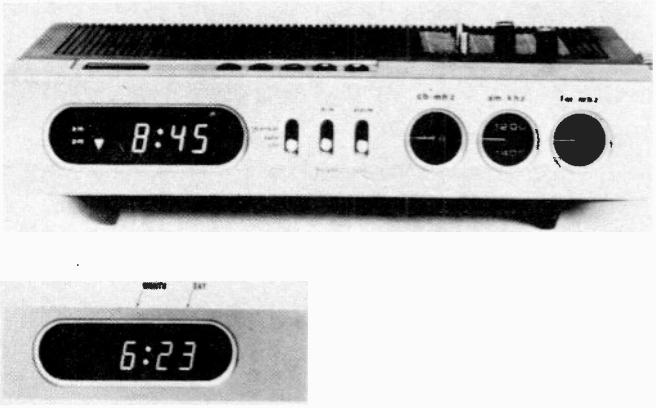


VISTA CB-IIIR POWER SUPPLY

Clifford Industries, Inc., has added to its extensive line of power supplies the VISTA CB-IIIR. This model provides 13.8 VDC 3 Amps continuous power.

The VISTA CB-IIIR incorporates a built-in slide mount for ease of attachment of power and antenna connectors. The model also has a built-in speaker, thereby making it possible to create a base station with a mobile CB. This model will accommodate either 23-channel CB sets or the new 40-channel CB sets.

Contact Clifford Industries, P.O. Box 436, Camarillo, CA 93010.



CB MONITOR/ELECTRONIC CALENDAR AM/FM CLOCK RADIO

KingsPoint's Model KP-23 can probably lay claim to being the clock radio with the mostest. This electronic AM/FM clock radio is also a perpetual calendar and it features large green digital read-out displays that are absolutely noiseless!

In addition, the unit has a full feature alarm system which can be set to awaken one to alarm alone, music alone or alarm and music. A 59 minute "snooze and/or alarm control" with automatic shut-off is also featured.

The display units are bright enough to provide a low power night light and can be adjusted to a pleasant soft glow. Automatic frequency control (AFC) assures drift-free FM reception. The KP-23 is priced to sell for under $70. For further details, write KingsPoint Corp., 106 Harbor Drive, Jersey City, N. J. 07305.

DELUXE CB TRANSCEIVER

Automatic Radio, leading manufacturer of automotive sound products for over fifty years, announces the introduction of its latest CB transceiver. Model BCB-1130 is a deluxe 23 channel unit with all the most useful features available. Included are delta tuning, to assure best reception of even off-frequency transmissions, and Automatic Noise Limiter (ANL) for quiet, interference-free operation. An illuminated S/RF meter and channed selector/indicator allow for convenient night use. The dynamic microphone is detachable and features a front panel connector for easy use. Variable volume control, squelch control and Public Address (PA) circuit are also included. Model BCB-1130 is a top-quality unit which provides the maximum legal output power. Suggested list price is $182.50.

PR-7 RADAR DETECTOR

Prime Electronics, Inc., 8605 Quivira Road, Lenexa, Kansas, announced the introduction of the Beartector PR-7 extended-range radar monitor. Capable of positive radar detection at an extended distance, the Beartector PR-7 provides an extra margin of early warning not presently available using other radar detectors. The very latest in state-of-the-art electronic design is incorporated throughout including several new circuit

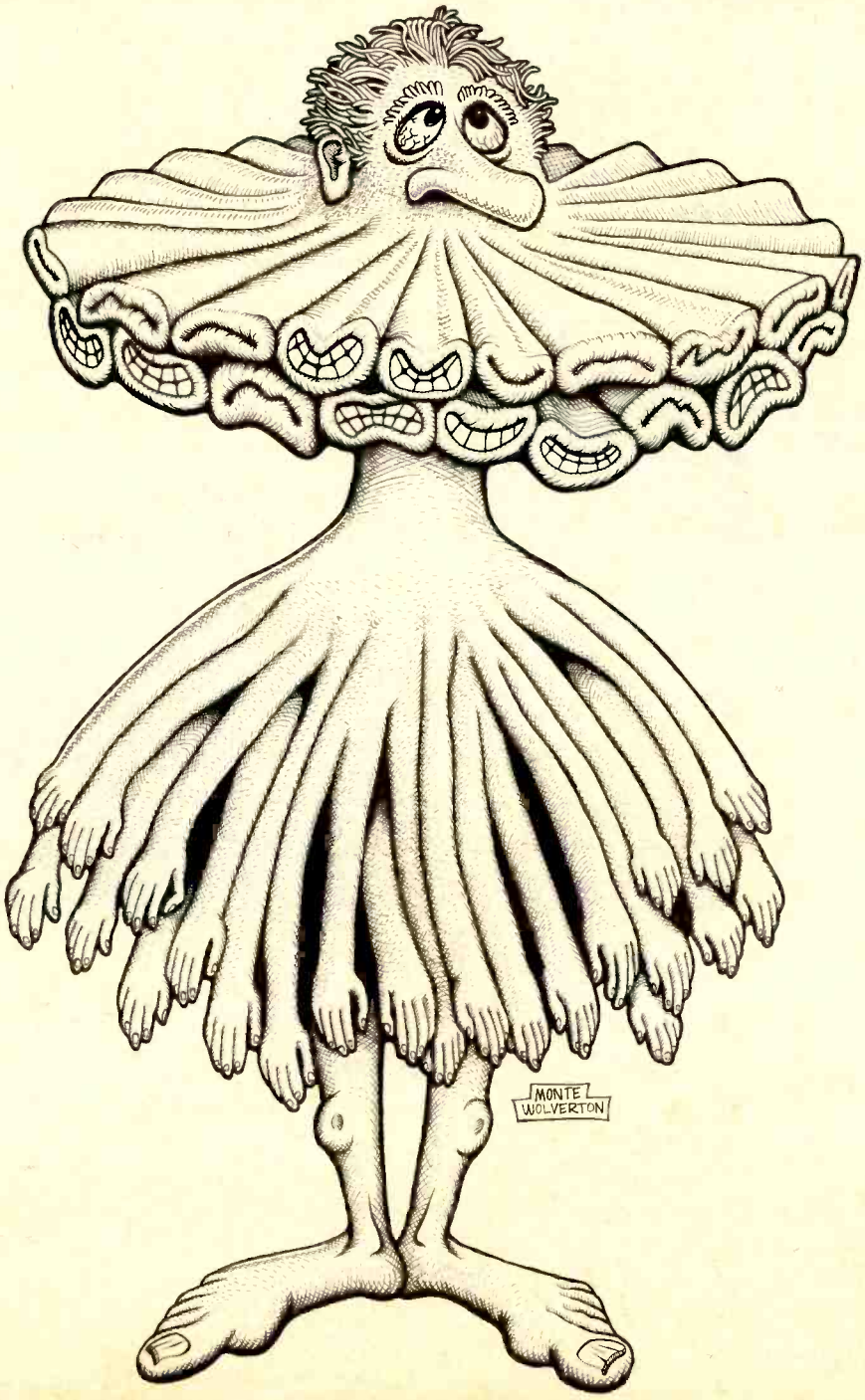
(continued on page 114)

CB Types: Number 3 of a Series

by WOLVERTON

40 CHANNEL PHYSIOGNOMY

A recent breakthrough in surgical technology allows the addition of multiple mouths. For many, this will mean the realization of a lifelong goal: to dominate the conversation on all 40 channels at the same time. In addition to 40 mouths, of course, one would need 40 transceivers, 40 hands to operate them, 40 pairs of lungs, and a 40 track mind. However, since 40 channel single sideband rigs have a capability of 120 channels, the operation is a bit more cumbersome for sidebanders, and 3 times more hideous—so hideous that postal authorities would not allow us to distribute an illustration of it through the mails.



Americans have been using Motorola 2-way radios to find campsites for years.

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Because Motorola® makes more radios for police, firemen, taxis, and lunar rovers than anybody.

And now Motorola makes a 40-Channel CB radio that shares much more than a name with our professional 2-way radios.

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Features that many manufacturers leave on the outside of their sets (or don't offer at all) are built into a Motorola CB.

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And operation easier.

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And every Motorola CB gives you the added advantage of a power mic that doesn't need batteries. That doesn't cost 50 bucks extra.

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We believe it's the most sensibly engineered CB radio on the market. We believe it will deliver years of service at a level of performance few could match.

Put a Motorola CB radio under your dash and you'll believe, too.

Motorola CB

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To find the dealer nearest you, write: Customer Relations Manager, Motorola, Inc., Automotive Products Division, 333 Northwest Ave., Northlake, Illinois 60164.
Sale or lease of Motorola 40-channel CB radios is subject to FCC type acceptance.

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We offer a complete line of CB's, from base stations to portables, to every kind of mobile transceiver that will put our power in your hands at a very reasonable price. Compare. We don't think anybody, anywhere will give you such quality at such an affordable price.
And we back up that quality with our Midland warranty and convenient service centers from Carolina to California.
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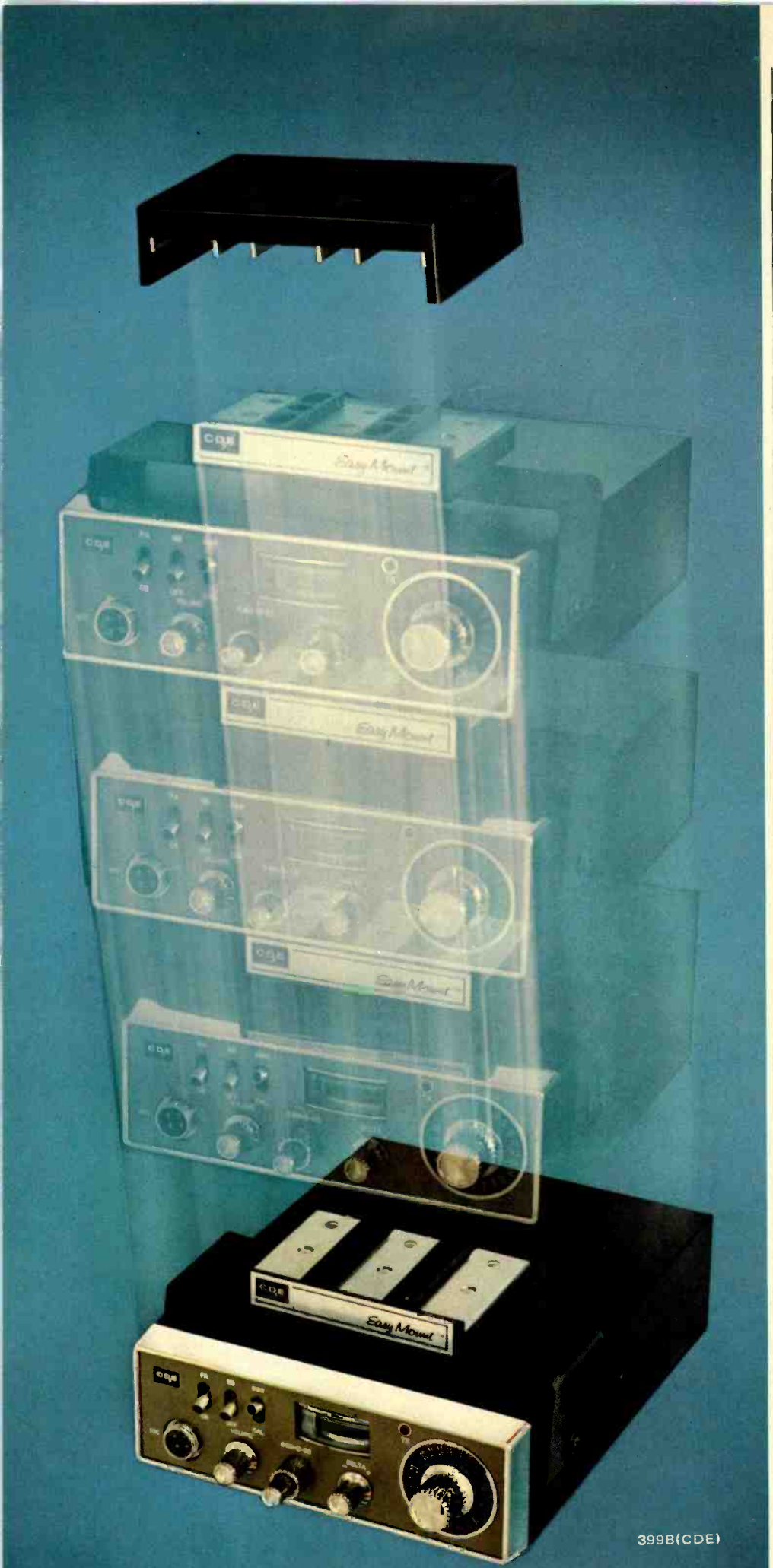

COMING EVENTS!

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.

MARCH

Panama City, Florida, *Jamboree, March 4-6, Panama City Municipal Auditorium, Sponsored by Florida State CB Radio Assoc., Dist. #7 & The Bay County CB Radio Council. For more information contact: Jamboree Control, P.O. Box 10203, Panama City, FL. 32401.*

Bronx, New York, *Super CB Jamboree, March 6th, Desert Inn, 30-80 Whitestone Pkway. Contact American CB Radio Club, Inc., P. O. Box 321, Bronx, New York, 10469.*

Starkville, Mississippi, *Coffe Break Jamboree, Sunday March 20th, Mississippi State University Campus. Mississippi State Animal Husbandry Bldg. For more information: Oktibbeha County Communication Club, P.O. Box 1082, Starkville, Miss., 39757. John Manuel—President.*

APRIL

Texarkana, Texas. *Twice As Nice 2nd Annual CB Jamboree, April 2-3, Four States Fairgrounds. Sponsored by Twin Cities CB Club. For more information contact Chairman, Bennie Cornelius, Rt. 2, Box 347, Texarkana, Texas. 75501.*

Hopkinsville, Kentucky, *7th Annual Coffee Break, April 3, Western Kentucky Fair Grounds Convention Center. Monitor Channel 11-KIZ-1934. For more information contact Hopkinsville CB Club & React, P. O. Box 112, Hopkinsville, Ky.. 42240.*

Lake Jackson, Texas, *Jamboree, April 3, Lake Jackson Farms Pavillion, Hwy. 332. For more info contact: John Stanford, Sr. P.O. Box 186, Lake Jackson, Texas 77566. Phone: 713/265-4005.*

Milford, Illinois, *Fourth Annual "Springtime" Coffee Break, April 3, Milford Grade School, Ill. State Route 1. For more information contact: Faye M. Thomas, 208 S. Grant St., Milford, Ill. 60953.*

Lackawana, New York, *April 6th, Annual Jamboree. At Col. John B. Weber Post No. 898, 2909 S. Park Ave. Rt. 62, ½ mile South of Ridge Rd. Erie*

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County Hawks, Inc., Monitor CH 10, KEK-0787. Call 675-0517, Chr. William Baker.

Greenfield, Indiana, *5 Watters Jamboree, April 17, Greenfield Fairgrounds, 4-H Building. For more information contact, Al Simpson R.R. 1, Box 317A, Reelsville, Ind. 46171. (317) 672-8367.*

Bronx, New York, *Super CB Jamboree, April 17th, Desert Inn, 30-80 Whitestone Pkwy. Contact: American CB Radio Club Inc., P.O. Box 321, Bronx, New York, 10469.*

Manitowoc, Wisconsin, *Coffee Break-Dinner & Dance, April 30, Club Bil Mar, Hwy. 141. Sponsored by West of the Lake C.B. Club. For info: West of the Lake C.B., P.O. Box 163, Manitowoc, Wi. 54220.*

MAY

Johnson City, New York, *Annual Coffee Break, May 1st, Lutheran Fellowship Center. Exit 71 N. from Rt. 17 North, Stella Ireland Rd. #3, .8 mile. For information: Susquehanna Valley CB Club Inc., Box 364, Vestal, N.Y. 13859.*

Columbus, Indiana, *Jamboree, May 7 & 8, Barthomeu County 4H Fair Grounds, Junction US 31A S. & State Rt. 58. Sponsored by Town & Country Citizens Band Radio Club Inc. Contact: Floyd Whitehead 1-812-372-3524.*

Bronx, New York, *Super CB Jamboree, May 15, Desert Inn, 30-80 Whitestone Parkway. Contact: American CB Radio Club Inc., P.O. Box 321, Bronx, N.Y. 10469.*

JUNE

Ottumwa, Iowa, *2nd Annual Armadillo Flats National Jamboree, June 3rd-5th, Ottumwa Coliseum. Hosted by Armadillo Flats Iowa. For more information contact Armadillo Flats, Inc., P.O. Box 313, Oskaloosa, IA.*

Great Bend, Kansas, *Jamboree, June 4-5, sponsored by Kansas Flatlanders C.B. Club. For more information contact: Bob Shanks, The Budman, 1209 8th, 792-2209 or Box 114, Great Bend, Kansas, 67530.*

Witchita, Kansas, *3rd Annual Good Guys Jamboree. June 17-19th, Cotillion Ballroom, 11120 W. Highway 54. For more information contact: William Webber, Chairman, P.O. Box 1694, Wichita, Kansas, 67201.*

(continued on page 103)

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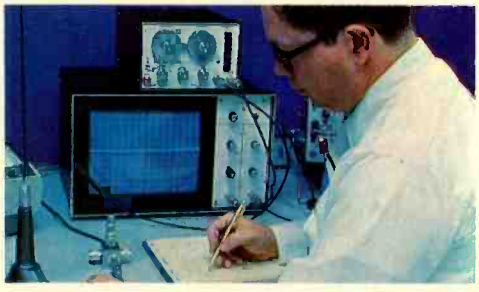

A spectrum analyzer is used to check new and experimental antenna designs.

An engineer field-tests a new model using a laboratory reference antenna.

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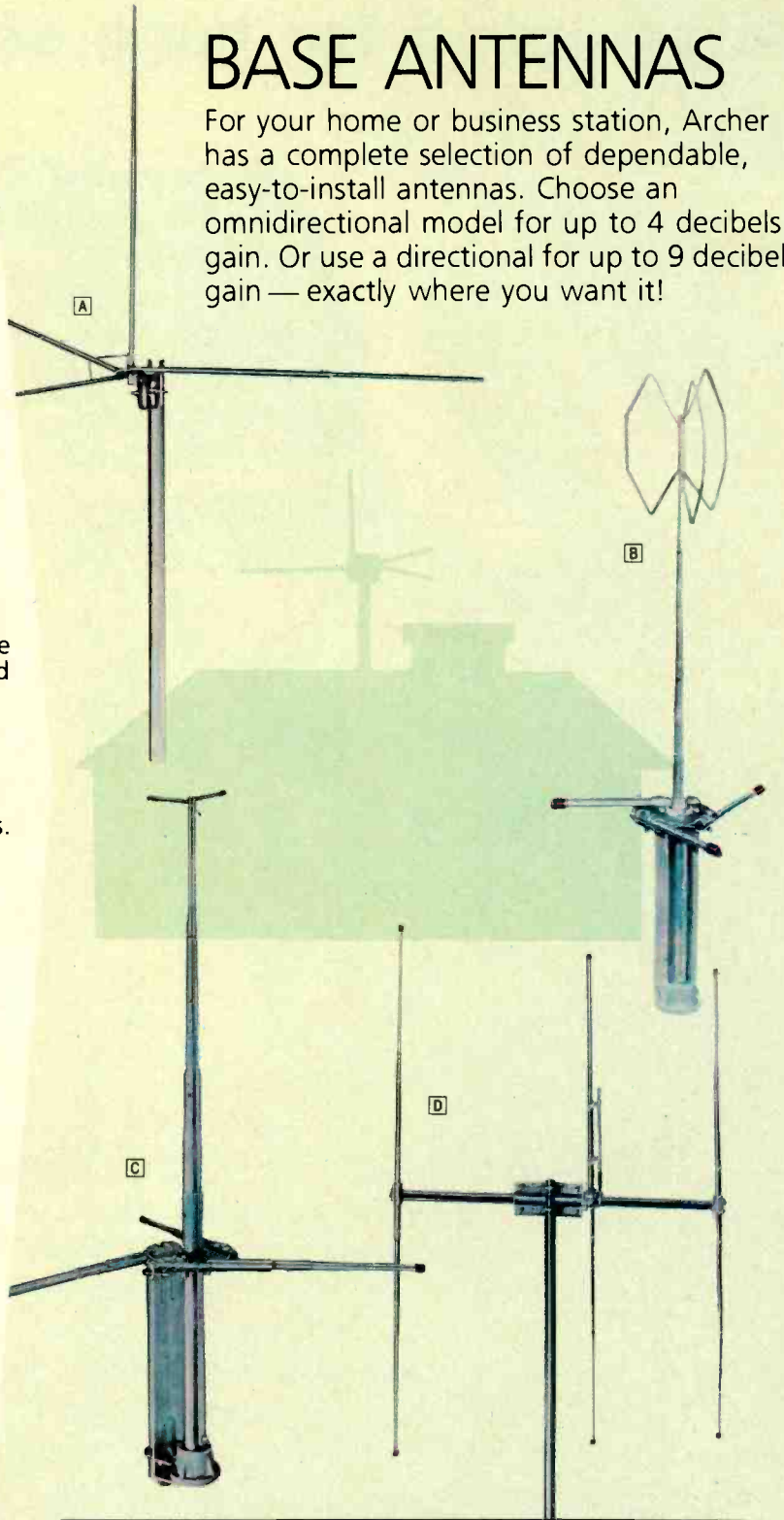

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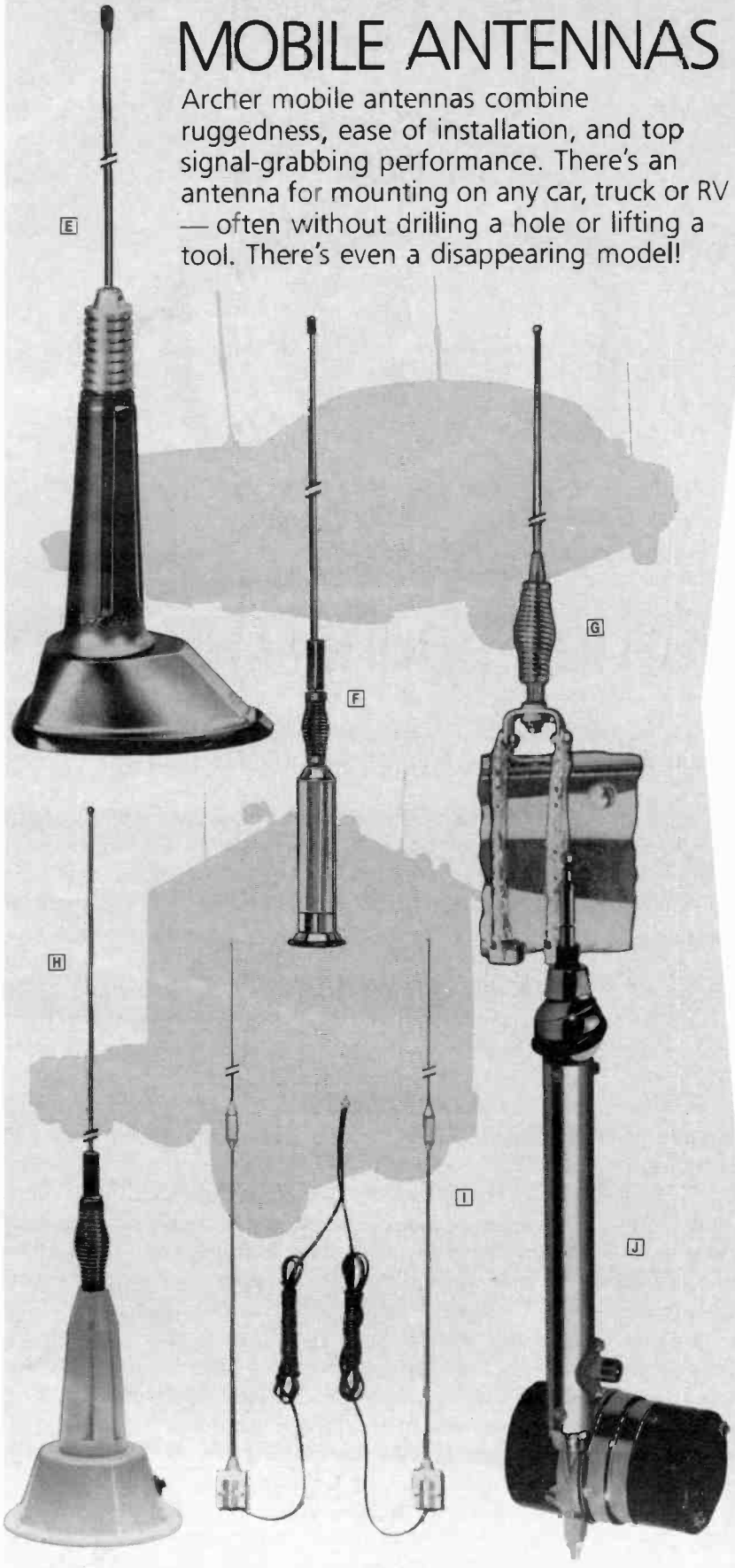

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Channel 9: Aftermath

Reader's Comments on Last November's Questions:

"Should We Dump Channel 9?"

by Tom Kneitel, TOMCAT, CB RADIO/S9's Editor

IN the November issue we featured a timely topic as our lead feature; discussing the snowballing abuses of the CB emergency channel, Channel 9. I couldn't help but wonder if, in view of how many CB'ers were disregarding its intended use, CB'ers *really* wanted to continue with it—if they felt it needed modification—or if (despite its many abuses) they felt it should remain just as it is. Part of the story was prepared by Gerald Reese, National Director of REACT, whom I invited to say whatever he liked on the matter—he was not limited to the amount of words he could use.

I asked readers what they thought. The results were interesting, to say the least.

Reader response was *enormous*—I knew that folks had opinions on the matter, but I had no idea how wide a range of thoughts would be forthcoming! Several major categories could be determined—those letters from REACT and other Channel 9 monitors which summarized the good work which they were doing on Channel 9 and saw few (if any) problems connected with its use; letters from REACT and other Channel 9 monitors which acknowledged that there were problems and either did or didn't endorse taking any steps to correct them; letters from CB'ers who wanted it continued as is, who wanted some changes made to help straighten it out, and letters from readers who did not see any need for it at all. There were other categories, and countless variations and subcategories.

There were even a smattering of letters from highly irate people who, unfortunately, didn't take the trouble to read the article very carefully to see what I said—these people fell into the following categories: those who thought that I was endorsing the discontinuation of Channel 9; and those who looked upon any discussion of Channel 9 which said that there were problems connected with it as blasphemy. One reader even sent me a clipping, apparently from some sort of CB "newspaper" (I don't know which one) in which the "Editor" was accusing me of "doubting the viability or necessity of an allocated emergency channel," and demanding that his readers write to me to complain about my position (a stunt, I might add, which he himself did not take the time to do!). Well, *one* person sent me the clipping, but I don't know how much of a protest that was! However, it all goes to show that even "Editors" sometimes can have reading comprehension problems.

The fact is that an examination of the November story will reveal that I took no position at all except to state the problem, enumerate *many* possible solutions, and then ask for reader opinions. Any of you who felt that your first read-through of the story had me

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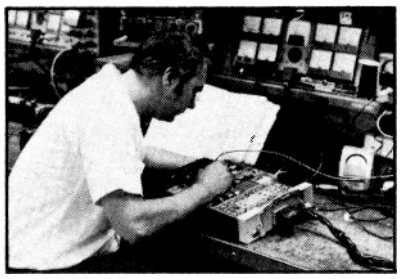

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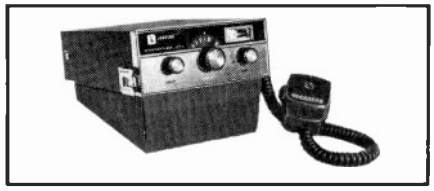

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cancelling Channel 9 should go back and try to read it carefully. And think to yourself that if I were suggesting the cancellation of Channel 9, would I have had the National Director of REACT there to contribute to the story?

So, in poured the letters, some serious and factual with an abundance of statistics, some constructive, some funny, some highly impassioned and emotional, some abusive, some complimentary. While some readers felt that I took a positive approach, others felt I was too negative. And while a few correspondents were unhappy that I mentioned it at all, others thanked me for approaching a tacky problem with the intent of getting a dialog going on the matter.

One reader asked, "If you wanted to be neutral, why did you negatively entitle the story *Should We Dump Channel 9?*" I replied by asking if he would have thought a more positive title would have been *Should We Keep Channel 9?* He didn't answer my letter.

Countless readers told me the story about how the man with the heart attack was saved via Channel 9—the story alternating between the writer's father or friend, or friend's father. Was this *one* heart patient or *many?* Suppose I'll never know.

Of course, one of the basic problems with presenting any timely topics concerns the fact that I'm usually damned if I do and damned if I don't. If I mention that there are people operating on the so-called HF channels, I get letters from readers asking why I am *endorsing* HF operation. If I say that there are problems on Channel 9, I get letters asking why I am *knocking* it! Last year I ran a story on how the FCC was monitoring for people operating on out-of-band frequencies—some readers wrote to say *thanks for the warning*—they were stopping the practice, but others wrote to say that I was being used as a tool of Uncle Charlie for their scare tactics, and still other readers wrote to say that I was running that information in order to *encourage* out-of-band operation. You figure it!

My responsibility to my readers, the way I see it, is to present as much information as possible on the subject of CB—the good and the bad, the sane and the insane; how else can you know what is going on? If I think something is good, I say so—if I think something or someone is stupid, I say so—and it is for my readers to take it from there and make their own decisions. While one month I may run a story explaining HF operation and why many CB'ers prefer it—the following month I may run a story on how the FCC busted a bunch of HF operators and took in $65,000 worth of radio gear!

If you wanted to learn anatomy, you wouldn't learn much if you studied only *one* side of the body; you couldn't learn medicine unless you studied the body in its healthy *and unhealthy* states— does a medical professor get accused of promoting disease because he mentions that sickness exists! Does a newspaper editor get accused of promoting and endorsing crime when he reports on a burglary? This is the philosophy I have in bringing you CB RADIO/S9—it's the way I've been doing it since 1962—any of you who wish me to present only a superficial and one-dimensional goody-goody fairy-tale picture of CB radio are going to learn that in CB RADIO/S9 you get it *all* layed out in front of you—CB in all of its glory, in all of its agonies. Would you *really* want less?

So, to me, Channel 9 and the problems therein were simply too important to ignore and—even though I knew there would be a small segment of my readership who would run for the barf bag at my mention of the topic —I dared to discuss it. For those of you who couldn't handle it—*sorry about that!* For those of you who took a serious look at the situation and gave me your thoughts —*thanks!*

More than a few readers wrote with a novel suggestion that the FCC allocate a "secret" emergency channel, the exact frequency of which would not be revealed to the public. The idea being that CB'ers using the frequency could not find it on regular CB equipment. Unfortunately, this defeats the purpose of CB radios—and what would there be to prevent anybody from buying one of the "secret channel" sets and conducting the same type of abuses currently found on Channel 9? And how much trouble would it be to measure and determine this "secret" channel's exact frequency on equipment as simple as a communications receiver. Sorry, poor idea.

I did receive a number of letters bringing to light further agonies connected with the use or attempted use of Channel 9, only strengthening my original contention that something must be done by *someone, somewhere, somehow,* if mobile emergency communications are to achieve *significant* recognition, use, and value.

I'm going to offer you a look into my mailbag, giving you a quickie peek at the range of thoughts sent in by readers—the opinions brought for th by the Channel 9 story, even the letters from readers who couldn't understand or handle my coverage of the topic. I'm sorry I can't run *all* of the letters which came in because they far outnumber the amount of space I can devote to them here. I had to leave out a lot of good ones, and even with those I am going to mention, I have had to capsulize down the general sentiments (with fidelity) to get them in. I tried to select those whose ideas were most representative of the ideas sent in by several other readers.

I have generally not included here the large number of letters received from REACT Teams which simply restated or reinforced those opinions previously presented by Gerald Reese, National Director of REACT —these letters supported the concept of continuing Channel 9 on a mandatory basis without change. The overwhelming endorsement of continuing Channel 9 in a status quo position by REACT Teams should therefore be kept in mind when evaluating the comments of others.

Following are some of the thoughts and opinions of our readers:

Gerald G., (SKELETON), of Calistoga, Calif., tells how he had a flat while on *Interstate 5* between San Diego and Los Angeles. His health not permitting him to change a tire, he called for aid on Channel 9, no response! He switched over to Channel 15 (a local in-transit channel), only to be told that he was lying about his location. Another try on a local channel brought him the advice from a base station that he should call the AAA on Channel 9. A second try on the same channel included his saying that he had a 10-33—someone came back and gave him the correct time. A third try got him chewed out for tying up the channel with requests for time checks while others were trying to conduct conversations! A try on another channel brought him a reply from mobile CB'er CONDOR, who offered to change the tire since he was in the vicinity. Gerald says, "The answer to Channel 9? I think it is the answer to the attitude and helpfulness of people, regardless of the channel they are on!"

Terry W. (QUICKSILVER), Red Ash, Va., says that too many newcomers don't fully understand how Channel 9 is to be used and any operating errors they make involving its use get them "ordered to leave" in an offensive way as they are threatened "with the horrors of breaking the FCC rules and regulations." Terry feels that it starts off a bad impression of those who monitor the channel and perhaps creates a disrespect for the entire Channel 9 concept. Terry adds, "Most CB'ers don't realize that there is a deathly serious side to CB as well as a fun . . . side."

Lee S., (MR FLASH), President of REACT Team #3280, is fully aware of the abuses of Channel 9 but feels that this is the result of public unawareness of the intent of the channel combined with a selfish attitude found with some operators. Lee would like the FCC to intervene, but realizes that there aren't enough dedicated souls across the nation to monitor all the time for emergencies. Nevertheless. Lee feels "It's a mess, yet why should we who care ahandon the effort because we aren't 100% eflective? Quitters never win; winners never quit!"

Rod B., a CPO in the U.S. Navy, says "Don't give in to channel hogs!"

Charles E., New Orleans, La., claimed that by discussing the problems on Channel 9 I have "done a great disservice" to CB, and done "more harm with this one article than all the good . . . trying to get the channel to begin with."

Walter T., Wayne, N.J., says he'd love to help out on Channel 9—in fact he has attempted to call in several 10-33's but has been unable to get any response in the northern N.J., N.Y. City, and Connecticut areas.

John S., (LIL PUMPKIN), East Northport, N.Y., comments, "My first reaction was to say to dump it, but after thinking your article over a bit I realized the point you were getting at. Maybe you can't get a REACT Team every time, hut you still have a hetter chance of getting a 10-33 through on Channel 9 than on any other channel. Even though it's becoming cluttered, it still gives the average CB'er a route for 10-33's."

Mel T. (PROSPECTOR), Salem, Ohio, comments that Channel 9 should be maintained, hut on a voluntary basis—that state police, plus local fire and police agencies should be required to monitor the frequency. Mel also says that they "answer a call for help even though the caller does not announce a callsign" (apparently in Mel's area you can't get a 10-33 through unless you give the monitor a callsign).

John B. (FRIAR TUCK), Grangeville, Ind., suggests that DX enthusiasts be given their own channel(s) to do their thing and that might help to eliminate skip shooting on Channel 9. John also thinks that parents might take a little more interest in some of the things their own youngsters are doing with their CB gear.

Frederick M. (THE OMEGA MAN), Forest Hills, N.Y., says that "If only 1 or 2 lives are saved via Channel 9, then its existence as the mandatory emergency channel is justified."

John B. (THE ROCKIN' CHAIR), Spartanburg, S.C., says "We do NOT need Channel 9 as a mandatory emergency-only channel. FCC 95.85a mandates priority on ANY channel in an emergency and since in many areas you can raise someone on every channel 24 hours a day, 7 days a week, it follows that Channel 9 serves no distinct purpose. A fringe benefit would be to reduce the number of self-appointed cliques on Channel 9 who guard it like Centurians and talk mainly to one another with the exclusiveness of the angels. On the other hand, such would not deter the truly sincere types who could still monitor Channel 9, however minus the Providential decree. I have called for help several times, and using *any* handy channel, worked every time!

John C., Painesville, Ohio, says it's easier for him to get 10-33's handled on "other channels" with no questions asked. He complains that "on Channel 9 they want to know your life history—and many people simply don't have CB licenses. I don't have a license. Wonder what they would say on Channel 9 if I told them that I don't have a license!"

Thomas H. (SYLVANIA), Eastchester, N.Y., comments that the story on Channel 9 was "loaded with errors" (although he didn't specify any) and "incited youngsters to believe the FCC given the right to regulate radio as a organization of incompetants" (sic). He says that like "most Editors", I am "ruthless and uneducated to our democracy", and that he deplores my writings as trash.

Peter W. (SPAGHETTI BENDER), Fairborn, Ohio, comments that the story on Channel 9 "was really an honest assessment of the issue which does have a great deal of *sacred cow* to it." Peter has felt a growing frustration with abuses of Channel 9 and is working towards improving the situation.

B. W. (WINN), President of Brazoria Co., Texas, REACT #2988, comments that he read the story with "considerable interest," and that "much of what [was written] is undeniably true." He feels, however, that I took an attitude that some "people are going to break the law regardless of the punishment, so why not bend the rules to make it easier for them do do what they want to." He says that if there were 100 CB channels there would always be violators who would want to do their thing on the emergency channel. In summing up, WINN decided that CB RADIO/S9 is a "fine magazine," and even though the story was basically and undeniably true, he was "sorry to see that you have taken a negative response toward a problem that needs to be met with positive action!"

Henry S. (THE RED ROOSTER), Strongsville, Ohio felt that my discussion of Channel 9 supported its use rather than put it down—and he agreed with that stand. He said, "Even with the few problems that exist with Channel 9, it is still the quietest channel and is still used efficiently."

Melvyn M. (GULLIBLE TRAVELER), Norristown, Pa., feels that "The FCC should be staffed to better enforce the existing regulations which would relieve the crowding on other channels."

Lee Q., Old Bridge, N.J., felt that I was suggesting that Channel 9 be killed—complaining that I said that "some Channel 9 monitors act improperly so they should all be eliminated." (I cannot myself find where I ever said such a thing, or even implied such a scheme—but Lee says that if Channel 9 becomes voluntary, then speed laws should also be voluntary." Whatever that means—Editor.)

Philip W. (THE BIG WHEEL), Springfield, Va., says that Channel 9 should be kept as mandatory—that the minority should not be permitted to punish the majority."

David W. (REBEL), Bellevue, Ky., wants Channel 9 preserved, but says "let's make these idiot monitors understand that REACT nor anyone else is sole guardian of the channel."

Jerry and Linda S., (THE SUBMARINE and THE BINKY BOMBER), Buffalo Grove, Ill., say that the few times they felt the need to use Channel 9, they received no assistance. They added, "If Channel 9 is to continue, we would like to assist in establishing on an *active* national basis."

Bill H. (WILD BILL POLOCK), a PD radio dispatcher in Texas, says, "Keep Channel 9 open, we need it!"

Alice D., (WONDER WOMAN), Merrick, N.Y. says one night she was driving in an unfamiliar area—with her 2 children (one being car sick), lost and afraid, and past the time she was supposed to pick up her OM at the airport. She called for info on Channels 10, 12, and 19—no response. Maybe her rig was dead. She called on Channel 9, she was desperate and felt that her situation was an emergency. She received an immediate reply, however it was that "this channel is used for emergencies. Please change to another channel." She was not advised which particular other channel to use, nor did the guardian of Channel 9 offer to meet her on another channel to help. She adds that all of the stories she has read about women being helped when late at night are "a crock." She asks, "What is an emergency? I firmly believe that a lost woman with a sick child is in an emergency situation, at least as much as a man with a flat tire!"

Charles C. (SEQUOIA), Pleasant Grove, Utah, says to leave channel 9 alone, "just enforce the FCC rules effectively." He feels that "Channel 9 *Kings*, *private owners*, and *pseudo-cops* should be stopped, but these weirdos are no different than those wanting to abolish channel 9 for their own personal reasons."

Harvey T. (SAVAGE), Va. Beach, Va., observes that it is "obvious" that I am "against the use of Channel 9" and that I "have nothing better to do than find something wrong with Channel 9."

Mrs. J. M. (BIG MAMA), Chicago, Ill., says "should we dump Channel 9, my answer is YES!" BIG MAMA observes that her son belonged to an area REACT team years ago when Channel 9 was "new." Used to spend at least 4 hours per day monitoring—and when the truckers were on Channel 10 all they had to was to easily switch down one channel for aid in a 10-33. She observes "now seldom is anyone on Channel 9, emergencies are handled on Channel 18, which she monitors—she says that even the Smokies seem to be giving preverence to monitoring channels other than Channel 9—such as Channel 19!

Joe S. (C. C. PALM TREE), Corpus Christi, Texas, agrees with maintaining Channel 9, but feels that "there should be some procedures on how to get help from REACT," since too many CB'ers are not sufficiently hip to how to do it.

C. A. C. (TURTLE), President of Mountaintop REACT, in Mountaintop, Pa., observes he can "see both sides," he goes on to say that he thinks "there is a natural tendency to be self-important and we constantly fight this phenomenon but I acknowledge that your readers have very justifiable complaints and I think that some Channel 9 monitors ought to feel ashamed and take heed." One of the solutions he sets forth is to have national leaders offer "more coordination," to head off further abuse of the channel by users and monitors alike.

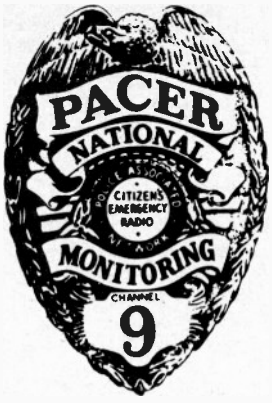
Jack D. (KINGFISH), Levittown, Pa., wants to know "what special training other than an elementary education and the ability to dial a phone is needed to monitor Channel 9?" He further comments "The CB vigilante groups patrol and respond automatically to anything. These types were known as *ambulance chasers* before the CB boom. Today they join monitoring organizations and wear funny, loud jackets . . . [have] flashing lights, tickets to the latest dance, coffee break, penny sale or whatever else they do between *emergencies*. I would suggest that Channel 9 remain exactly as it is. It's good therapy for frustrated groups that monitor it and since most of that type are self-appointed channel monitor types, the remaining channels get an added bonus of having these people out of the way listening to the eerie silence on Channel 9—while the rest of us on the lively channels answer untold numbers of emergency calls—without jackets, letters, etc."

Thomas P., member of a central Ohio REACT Team complains that REACT should make a greater effort to obtain national publicity on the uses and advantages of a well-run Channel 9. He thinks that most of the problems on Channel 9 are caused by those who just don't know any better.

John G. (GRAY GOOSE), Waterford, Ct., says that my "SWR is high" and so am I.

John G. (EARLY BIRD), a member of the Montgomery County REACT Team #2477 in Texas, says he invites more and more people to use Channel 9, adding that "the majority of people are afraid to break on it because they have been led to believe some sorehead may run them off." He further adds that even if the channel becomes totally overrun with nonsense in the future, his Team will still be "in there trying to help the breakers."

John I., (QUICKSILVER), New York, N.Y. (an employee of a major radio network's news staff) was in Florida for the big hurricane last August. A call came through on a local CB channel from a CB'er requesting aid for a woman hit by a car. He landlined the police, as did two other CB'ers. Soon after someone else asked for help with an auto accident. John then switched over to listen on Channel 9 to see what was



happening there—what he heard made him "sick." He says he heard "what I presume to be local REACT bases keeping a virtual constant chatter with a lot of number codes thrown in. I can't say whether what they were saying was important, but I did feel that if I wanted to break Channel 9 that night, I would probably have given up and gone to one of the local channels . . . which was apparently just what everybody was doing!" A few nights later John heard a break from an operator who required a tow truck, so John asked the mobile unit to switch over to Channel 9 with him. When he got there "local REACT bases kept stepping on our traffic, so I took the mobile unit to another channel where it took me about 10 minutes to copy vital info through the noise. Whatever the truth of what happened those two nights, it is high time that REACT and whoever else has self-appointed themselves as Guardians of Channel 9 come to realize that they have no official status, no right to interrupt a legal CB base operation from handling a 10-33. I personally would think twice about giving any assistance to REACT. ALL channels are for ALL licensed CB'ers. They would do well to heed the message."

Robert S. (BOBCAT), Brooklyn, N.Y. wants Channel 9 made voluntary "providing those who are chatting there sign off when someone wants to use it for a 10-33.

Joseph M. (CRAZY HORSE), Oakdale, N.Y., finds "with respect to REACT we should all bow our microphones in a minute of silence and then remove Channel 9 from the untouchable list." He says that "in the few instances that I needed help for myself or someone else; as a good CB'er I went to Channel 9. I found the channel dead and couldn't get help there, but could easily get helped on 10 or 19 where I was aided by a Smokey with ears. So if help can't be obtained on a channel reserved for help, it's a dead channel. It it's dead, let's bury it now!"

Alfred H. (J-A), Levittown, Pa., is a member of several Channel 9 monitor groups and is aware that "some REACT and ALERT Teams try to be official, but you have to use consideration and try to be both friendly and firm; without these ethics you cause hard feelings."

Peter A. (MOUNTAIN MAN), Lyndonville, Vt., criticizes CB RADIO/S9 for the story, says we have sold-out to the "masses," those people we mention would pass by a stranded motorist. He says that in his area the REACT Team to which he belongs requires "positive identification from any caller. Handles won't do, unless we know the CB'er involved."

Carson S. Mesa, Ariz., comments that "the lack of understanding or consideration for Channel 9 monitors does not deter the critics from requesting emergency assistance."

Michael T., an officer of San Jacinto REACT #2860 in Texas, wrote to say that the story "made the hair on the back of my neck raise up many times." He finally decided that I must have "been crossed at some time or another on Channel 9 and that is why you are taking the position you are. I have been receiving this feeling, reading your articles, for the last 2 or 3 months, and feel that you might be trying to settle a score, in your magazine, rather than going to the source of the problem." He says that in his area they "do not have the problem with people using Channel 9."

Bruce M., a member of REACT in Louisville, Ky., noted "your comments on Channel 9 are very valid and should not be taken lightly," and it is his feeling that it would be a "fatal mistake" to reduce the status of the channel. He says "Let's leave it alone!"

Ralph S. (HARLEY MAN), a Missouri State Highway Patrol trooper, says that Channel 9 is vital to him because "it is impossible to copy any 10-33 traffic on Channel 19 with numerous 4-wheelers trying to give your location."

Richard P. (TAO MOBILE), Huntington, N.Y., wants "Channel 9 . . . given back to general usage unless the FCC can guarantee that there will be a responsible monitor to *receive* all transmissions and transmit only in emergencies. This monitor should not think he is one step below God."

James B., Esperance, N.Y., says that CB needs a channel for 10-33's where there are no music-players or poets to jam up 10-33's.

James O., Bamberg, S.C., observes "Delete Channel 9: Serious operators are capable of taking 10-33's. As for REACT, they monitor Channel 11 in this area. The Police are on Channel 9."

Michael R., St. Louis, Mo., claims that "many of the claims" of REACT are "unfounded, at least in the St. Louis Area." He does however belong to another Channel 9 monitoring group which he says has provided better service and which has never been written up in CB RADIO/S9. For this and many other reasons, including the fact that we did not print a picture he sent us of his station, that we are "inciting arguments" with ham operators, tolerate the use of CB handles, have tried to exploit prostitution via CB, run disgusting ads, he is "sick and tired of the crap" we print.

Martin R. (UNIT 1477-C), Chattanooga, Tenn., felt that our analysis of Channel 9 took a lot of "intestinal fortitude but was something that was badly needed." He felt that "certainly to bury one's head in the sand and pretend that there are no problems connected with Channel 9, or to be afraid to discuss them, is to become qualified for the *Chicken Award*." Martin predicted that the story would "for sure, let everybody know that CB RADIO/S9 is there with its fingers on the pulse of CB, anxious to create a dialog between CB'ers which will result in effective communications."

Pati R. (PEPSI), Secretary of Montgomery REACT #3481, in New York, admits that they have had their "share of problems with the misuse of Channel 9. The good outweighs the bad. Channel 9 is there to help the people. How about the people helping Channel 9?"

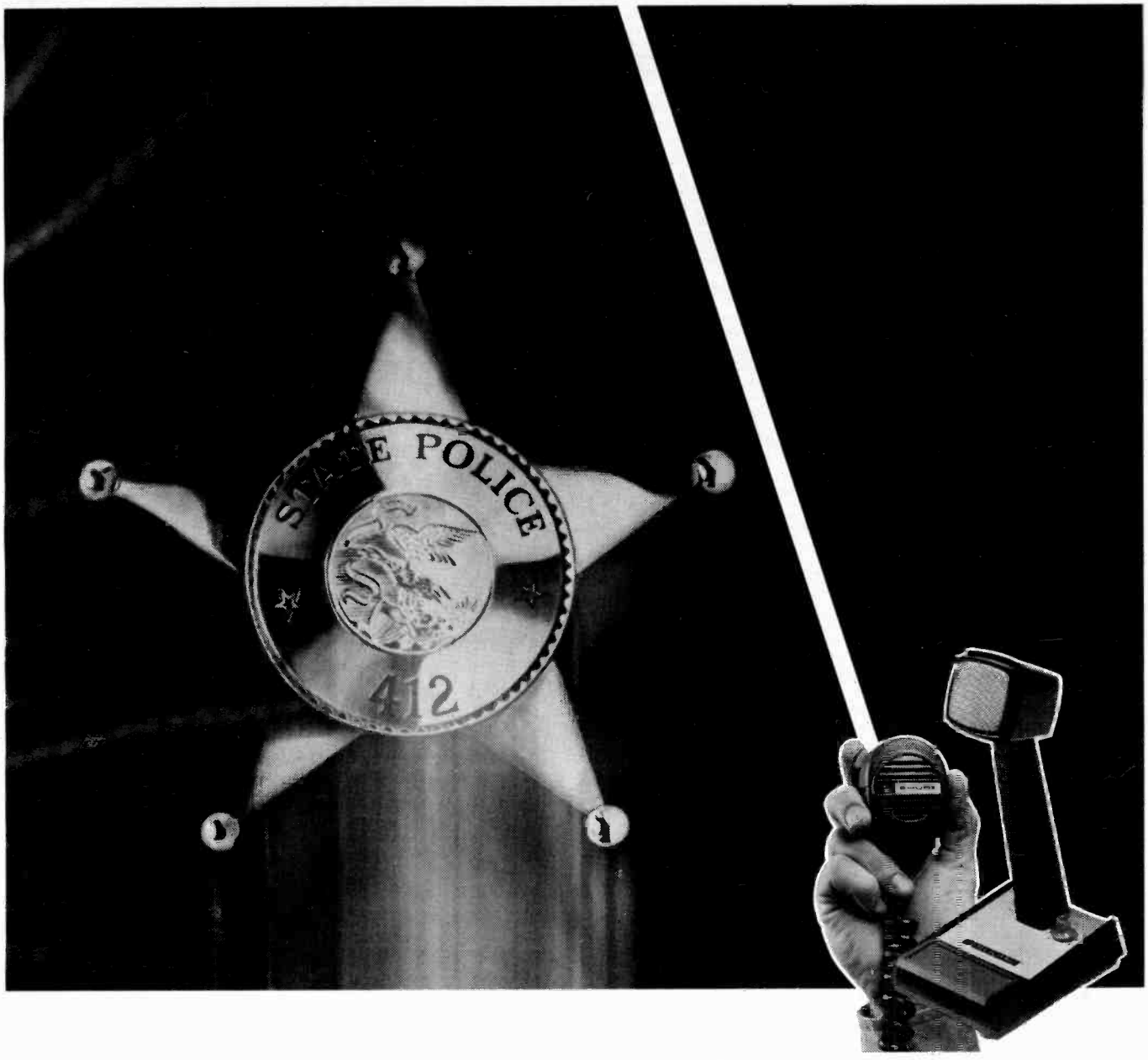
Ed (Unit 977-E) Arlington, Tex., says that the Channel 9 story not only "hit the fan, it also hit the spot and was sorely needed, especially by some of the monitors in the Dallas-Ft. Worth area," whom Ed finds "arrogant beyond belief and convinced that they were given a mandate to control all emergency communications." Ed says that S9's comments regarding Channel 9 were received "rather poorly by some of these folks" who were running around for weeks clucking like a bunch of stirred up chickens, telling everybody that you had come out *against* Channel 9." (Editor's note: We received a larger-than-proportionate amount of mail from the Dallas-Ft. Worth area. Apparently more than one group is monitoring since some correspondents offered praise, however the majority of writers felt much improvement was needed).

As you can see, feelings are running high on the matter, and somefolks really did become emotional on the topic. I suppose that we could have sat back and ignored it all, played it safe—but that's not going to solve any problems, is it?

I would say that if Channel 9 is to be continued as a mandatory emergency channel then there are some changes in attitude, procedures, and concepts which are going to have to be "adjusted" in order for it to be fully successful.

These adjustments are going to have to be made by those who monitor the channel, by those who use it, by those who *abuse* it, and even by the FCC. But to pay lip service to the *promise* of a National Emergency Channel, without *everybody* in full agreement as to how, when, where, and why to use it seems, to me, to be an exercise in time-wasting. Unless you've got nothing better to do with your time!

There are many factions in CB—somehow or other we are going to get it all together and work towards providing fully adequate mobile emergency communications. Of course—CB RADIO/S9 can always look the other way and pretend that there are no problems; then again a few of you get upset with us when we do speak about them. That will do as much good as the fellow who discovers the early symptoms of what might be a serious illness, but avoids going to see a doctor because he doesn't want to hear the diagnosis!



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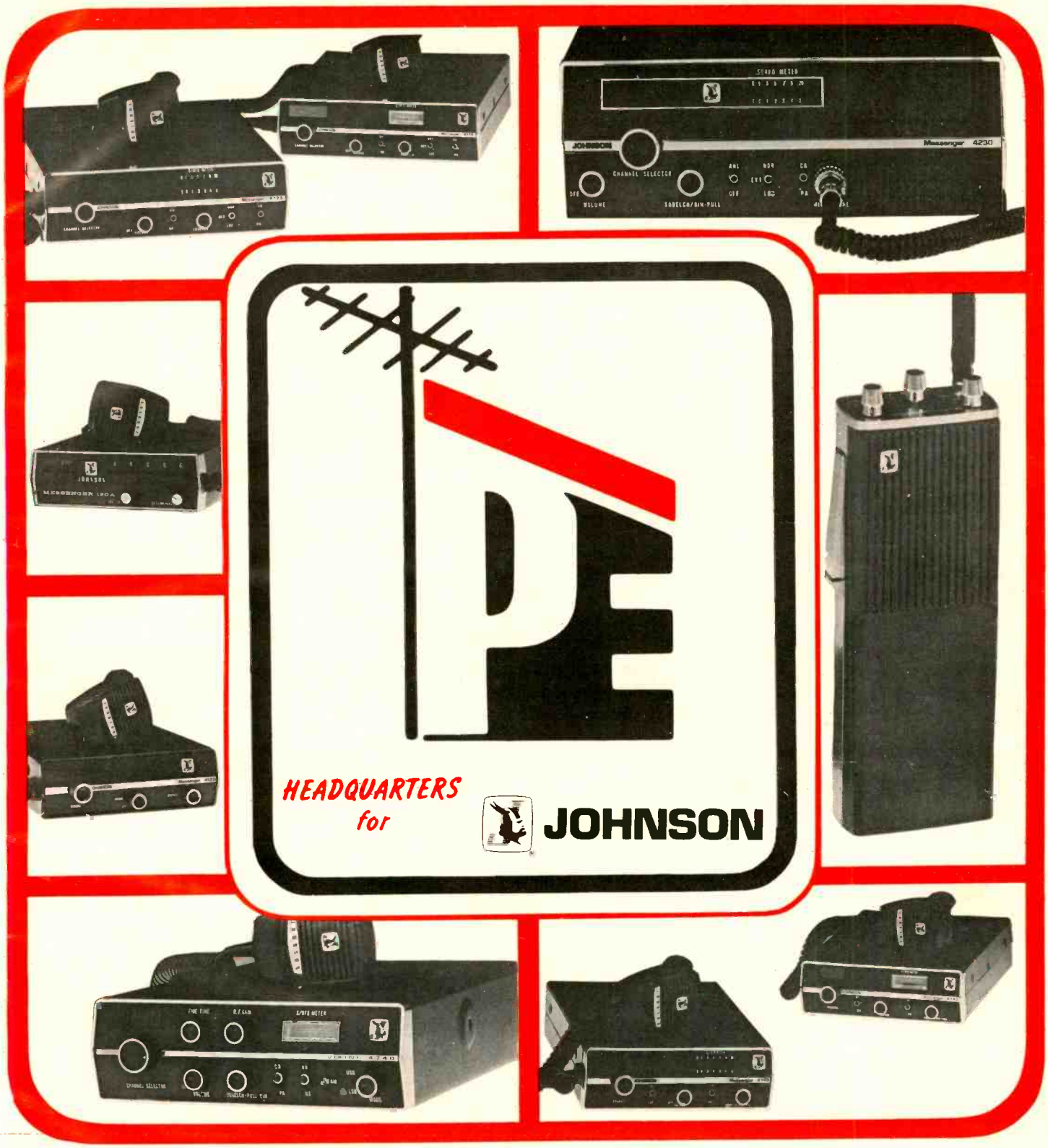

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15 16 17 ON THE SIDE.....

S9's Monthly Column for Sidebanders

by Bill Sanders, 1849, KW-5304 SSB-295

FIXEM-UP DEPT.: SIDEBAND ID NUMBERS

Single Sideband operators don't use AM type handles or unit numbers for identification purposes. Instead they use special Sideband ID numbers. Those many readers who have written to us asking about how they may obtain a set of these numbers are advised that we recommend joining the SSB Network, which is the nation's oldest and largest group of Sidebanders. A self-addressed stamped envelope sent to the Sidebanders' Service Bureau, P.O. Box 381-R, Smithtown, N.Y. 11787, will bring you information telling how you can become a part of this vast network. Their national "SSB" ID numbers can be obtained without cost or fee. We suggest that all Sidebanders avail themselves of this opportunity to join this network—even if you are a future Sidebander, or an old-timer who already has "local" numbers.

CLARIFICATION

Some operators have written asking about problems in adequately clarifying incoming signals to the point where they can be understood—a most unpleasant effect upon the eardrums!

Several things can take place which would result in your inability to clarify the other station—and they are not quite so horrifying as malfunction of your equipment. So before you panic—your problem might be caused, for instance, by the fact that the station you are attempting to clarify might be on the "other" sideband. Maybe everybody in the world is on 16-Lower, and that's where you're monitoring—but perhaps he's on 16-Upper, either deliberately or because he doesn't realize that folks are on 16-Lower, or maybe he *thinks* he's on 16-Lower but selected upper-side on his selector switch—perhaps he forgot altogether and is still using Ancient Mary! Well, those are *some* reasons why some stations seem to defy clarification. *More* reasons? Sure!

Maybe while you're cussing him out in your mind you had better check out how you have your own rig switched—perhaps you clicked to upper sideband while you thought you were on the lower—or maybe you're still listening on AM!

UPPER END

As mentioned previously, most sideband operators are staking out the lower sides of Channel 36 through 40, in addition to any previously established sideband channels. In a few areas we have heard that they are attempting to set up all the way from as low as 32 through 40—which seems to us to be unrealistic when you consider the ratio of Sidebanders to the total number of 11 meter operators crowding onto the channels. If you remove Channels 9 and 19 from the running, you've got a total of 38 channels remaining. By setting up on 32 through 40 (plus say 2 other previously used channels from the original 23), you have sidebanders proposing to set up on a minimum of 11 channels from a total of 38—that's saying that about 30% of all 11 meter operations are on sideband! I don't think that this is a realistic figure at this time and I also don't think that we are reasonable in attempting to expect any cooperation at all from AM'ers in respecting *our channels* if we propose *claiming* a lopsided and unrealistic share of channels.

It seems to me that right now Sidebanders may consist of about 15% to 20% of the total number of stations on the air—some estimates are only 10%!

I'm the first one to stand up and shout for and defend channel space for Sidebanders, but I haven't been sold on irresponsible gobbling up everything in sight. Thus far I have received a considerable amount of mail in support of using 36 thru 40 and it seems that in some areas Channel 36-Lower is establishing itself as a calling channel in addition to 16-Lower.

MAILBAG

Bill, SSB-1427, of San Diego, passes along word of a new sideband rig known as the CP-300, made by Communications Power Inc., 2407 Charleston Rd., Mountainview, Calif. 94043. The specs look really good and we hope to have additional data on this unit soon.

Joseph, from Nutley, N.J., SSB-1956, asks about the Q-Codes—when/where/how did they originate? He says that he hears only ones starting with QR, QS, and QT—and asks if that covers them all. Well, Joe, I understand that the Q-Codes (or Q-Signals) go back to pre-radio days into the realm of landline telegraph where

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they were originally devised as communications shortcuts. The exact date or their origin and who their inventor was may well be lost in antiquity, however most of the 3-letter combinations starting with the letter "Q" are actually used for communications, even though only a small number of them are suitable or ever heard on the sideband channels. Some starting with QA are strictly for aeronautical use, there are also dozens of others relating to maritime direction finding, to the handling of telegrams, etc. One of the gag ones which is sometimes heard on the CW Ham bands is QLF, said to mean, "Now try sending with your left foot."

Gene, SSB-3289, of Marrero, La., wonders about the oncoming sunspot/skip situation—and asks if stations wishing to take fullest advantage of long-haul DX reception would do better by tilting their antennas upward towards the ionosphere. It's really a rather complex matter, Gene, but there would be *no* advantage to doing this, and leaving the antenna parallel to the ground's surface would offer best all-around results. Tilting the antenna upwards might well cut down on that incoming long-haul stuff, while also ably hindering local coverage. Some 6-meter Ham operators even claim that tilting the base station beam 5° *downward* is really *better* than leaving the antenna parallel to the ground, as this compensates for ground surface signal distortion which might shape the signal upwards.

Jack Gould, formerly of the metro New York area (he was the Radio/TV Editor of the *New York Times* for many years) is now basking in the sun in California. He passes along the information that in the northern part of the state the Sidebanders seem to like to congregate on Channel 23!

Bill, NY4113/WW232, of Marietta, N.Y., informs me that the upper *and* lower sides of Channels 16 and 17, as well as 18-Lower are used in the northern parts of New York State. Some of the local clubs in this area include WX, WW, UFO, WR, NY, YZ, and TSS. This would include from above Watertown south to Binghamton, and between Rochester and Albany.

A few issues back I mentioned *The Coyote,* well known Sidebander from Bermuda. Harold has subsequently dropped us a note to say that his actual ID's are BDA-064, 78W64, and VOB-64—and that he was honored to be mentioned in *CB RADIO/ S9* since he is always amazed to find out that he gets his signal off the island! Harold uses a SBE Console II with a power mike. Harold has just erected the first and only Avanti Moonraker IV on Bermuda—has brought in Brazil, the Canal Zone, South Africa, Switzerland just about every state in the union. We'll be listening for you, *Coyote!*

Mary, NB-306-1/2, who gives out NB numbers in the area of Fremont, Nebraska, passes along the suggestion that when members of clubs give out ID numbers over the air they also give the recipient a quickie outline of some of the local operating customs and channels. We second the motion, Mary—and anybody else listening in who *isn't* a newcomer might also be reminded too!

THE SIDEBANDER'S CREED

Here's a creed sent to us by the SSB Network—conceived for the Sidebander. We present it here because we feel it is an admirable guideline, one which if followed by all on the sideband channels, would make for top-notch QSO conditions.

You can cut this right from the pages of CB RADIO/ S9 and hang it in your radio room, looks nice framed. If you don't want to slice up your magazine, we've made arrangements with the *SSB Network* for readers of *CB RADIO/S9* to obtain a beautiful copy of this printed on nice color stock. There isn't any cost—however you'll have to enclose a *self-addressed stamped* No. 10 (that's one of those 3 X 4½ jobs) *envelope.* If you *don't* enclose the self-addressed stamped envelope you *won't* receive this. Indicate in your request if you are a member of the *SSB Network* (state your *SSB Network* ID numbers)—while these Creeds are available to *all* who properly request them, they ask that those who are members of the *SSB Network* please identify themselves!

Here's a welcome addition to any Sidebander's radio room, and CB RADIO/S9 makes it possible for you to have one—*no cost, no catch!*

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As an 11 Meter Sideband Operator, I recognize my obligations:

To my fellow operators, who depend upon me to follow established good practices, procedures and courtesies.

To my neighbors, who may be required to entrust their lives and safety to my skill and judgment during times of emergency.

To the Sideband organization of which I am a member, which relies upon me to present myself to other operators in a manner which will be a credit to that organization.

To discharge these responsibilities, I will at all times observe the highest standards as an 11 Meter Sideband Operator.

I will never knowingly cause interruption or interference to another Sidebander engaged in communications.

I will make all efforts to respect the proper use of any channel(s) established in my area for the purposes of calling only.

I will operate only on those channels which are normally used for single sideband transmission, and will endeavor to advise others of these channels in order to keep them clear of non-sideband transmissions.

I will use only those sidebands which are normally used by other Sideband operators in my community.

I will aggressively maintain my proficiency as a Sideband operator and keep abreast of electronics and communications developments so that my operation, which largely depends on such knowledge, may be of the highest order.

I will conduct myself on the air to reflect credit upon myself and other Sidebanders.

I will constantly strive to keep my standards high.

I pledge adherence to these principles, so that I may contribute my part to more efficient communications, and advance the dignity and continued growth of the national Sideband movement on the 11 Meter Band.

_____

Operator's Signature

SSB Network ID #_____

Which 40 Channel Antenna Do You Need?

By Herb Friedman

IF you spend even a few minutes monitoring the *old* 23 channels you're certain to hear at least one self-styled expert running the 17 expansion channels into the ground. It it isn't some comment to the effect the new 40 channel rigs "ain't built like the old ones", at the very least our expert will spout endless technical gobblygook proving a 40 channel transceiver won't work too well with a 23 channel antenna, or a 23 channel transceiver won't load "all the soup" into a 40 channel antenna.

Getting transceivers out of the way first, just about any 40 channel transceiver, because of tighter F.C.C. type-acceptance requirements, is *better* than its 23 channel counterpart (in the same price and quality category). As for antennas, a few antenna manufacturers trying to play the game fair and square gave the *CB experts* the opportunity to confuse many CB'ers with technical expertease straight out of Alice In Wonderland.

The plain truth is that most of you already have a 40 channel antenna, or at the very least an antenna capable of efficient performance from one end of the band to the other. Those of you who don't have full-40 coverage with your present antenna at the very least have sufficient efficiency to get by until you can afford an antenna capable of high efficiency on all 40 channels. At most, only a handful of CB'ers in any neighborhood have an antenna *so* inefficient on the new channels it calls for immediate replacement.

The key to antenna coverage is the antenna system's VSWR, or SWR as it is more commonly known to CB'ers. Bear in mind that contrary to anything you have heard or read, in a mobile CB installation a VSWR of 2:1 or less is good. Fact is, there is no receiving station that will discern any difference from a mobile with a 2:1 or 1:1 VSWR. In actual practice transceivers usually deliver good-to-excellent performance working into mobile antenna systems with a VSWR as high as 3:1, but as a general rule we can say and prove that a VSWR or 2:1 or less is the desired value.

Now this means that any transceiver will work efficiently *on any channel* if the antenna system VSWR is 2:1 or lower. It makes no difference whether the antenna is a "23 channel model", a "40 channel model", or a bent coathanger; if the VSWR is the same for each antenna the transmitter loads just as efficiently into one as it will into the other two.

How the energy the transmitter feeds into the antenna is radiated is determined solely by the antenna design and usually has nothing to do with the channel in use. For example, the 108 inch CB whip will outperform any 42 inch base loaded whip on any channel if they are compared from the same mounting location.

Okay, at this point you might logically ask: "Is there really a reason I should buy a 40 channel antenna?" The answer depends on what type of antenna you're presently using.

Though 40 channels might sound to the ear like a large number, they represent only 440 kHz of spectrum, a bandwidth easily handled by virtually any 108" (¼ wavelength) whip. For example, the worse-case VSWR measurements from five different size cars using ¼ wavelength 108" whips was 1.7:1 across all 40 channels. On some cars the VSWR ran no higher than 1.5:1 across all 40 channels when using a full length whip. So you see, if you're using a full length whip you've probably got the best 40 channel antenna you can buy.

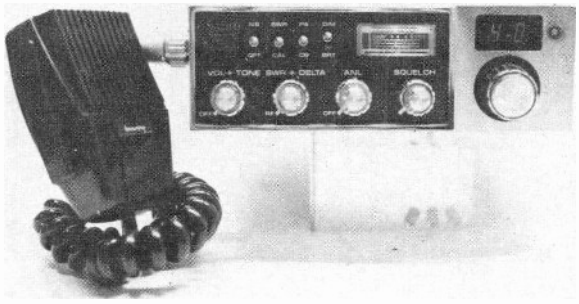
The problem in channel coverage comes in when we start to use loading coils in order to reduce the physical length of the antenna. Though the antenna remains an *electrical* ¼-wavelength its size can be shrunk down to 18-inches through proper application of loading coils and matching networks. But the greater the loading

the narrower the antenna's bandwidth. As the loading coil inductance is increased, and depending on the position of the loading coil, the higher the VSWR at frequencies removed from the precise resonant frequency of the antenna. As a general rule, the lower the loading coil the narrower the bandwidth: a base loaded antenna has less bandwidth than a top loaded antenna.

Now it is easy to claim that since a "loaded" antenna has a less narrow bandwidth than a full length whip a new antenna is required for 40 channels. The real truth, however, is that every loaded antenna we tested, regardless of type, that was 48 inches or longer worked efficiently across all 40 channels. Top loaded, center loaded, or base loaded, if the antenna could be "tuned" —adjusted for lowest VSWR—to channels 19 and/or 20 the worse-case VSWR at any frequency was less than 2:1. The 48-inch top loaded helicalwound whips which have no tuning adjustment had a VSWR less than 2:1 within the old 23 channels, but no higher than 2.8:1 VSWR on channel 40, so even this antenna could perform with acceptable efficiency on the expansion channels.

Problems come in with loaded antennas less than 48 inches, and the shorter the antenna the greater the possible problem. The common 42 inch loaded antenna (measured from the mount to the tip) can easily handle 40 channels if center or top loaded. Base loaded models might have a slightly high VSWR on channels 1 or 23 if not tuned for the precise center of the band. They cannot cover all 40 channels efficiently; base loaded antennas with VSWR as high as 6:1 is not uncommon if channel 1's VSWR is under 2:1. (Getting a 2:1 or lower VSWR from center or top loaded 42 inch whips takes some very careful adjustment of the tuning stub, but as we said, it can be done.)

More than ever a VSWR check of mobile antenna systems is required to insure optimum radiation. Make certain you check for a low VSWR on channels 1, 19/20 and 40. Don't accept a low VSWR in the middle of the band and assume it's okay on the ends. That used to be true for most 23 channel installations; for 40 channels you can't make any assumptions.



That 40 on the channel indicator of this Browning "Sabre" represents just another seventeen channels to some CB'ers, to others it means reduced antenna efficiency and the need for a new or different antenna. As you'll see, it's really "48" that turns out to be the magic number.

As the antenna gets shorter than 42 inches the VSWR gets completely out of hand. We've seen antennas in the 18 to 25 inch range running VSWR values higher than 10:1 on channels 1 and 40.

In short, 48 inches appears to be the minimum size for a standard antenna to cover all 40 channels; so if you already have an antenna 48 inches or longer it probably requires only a slight "tuning" for full-40 coverage. As a general rule, if you tune the antenna for minimum SWR on channels 19 or 20 you'll probably pull in the entire bandwidth of the 40 channel CB band.

As for the shorter antennas; the old models simply won't hack it. But if you need a short full-40 antenna don't worry too much, technology has a habit of catch-

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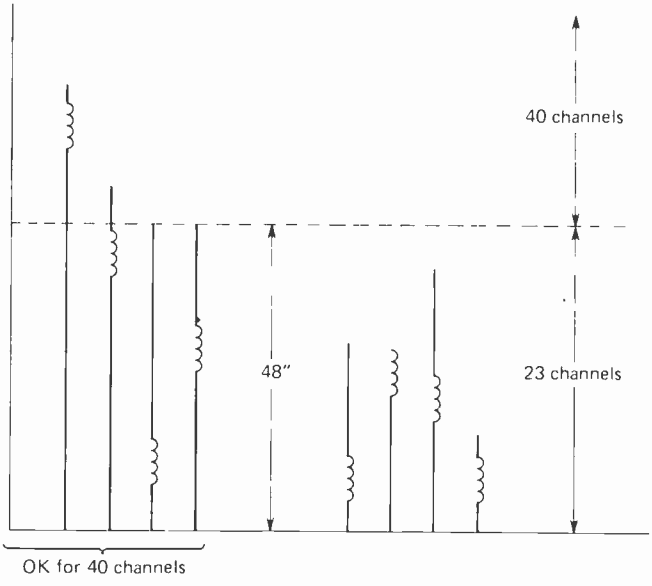

48-inches is the magic number regardless of antenna type. Full length 108-inch whips, top loaded, center loaded, base loaded, it makes no difference, if the antenna is 48-inches or more from base to tip it will most likely work very well on all 40 channels. Antennas less than 48 inches cannot give full-40 coverage; and the smaller the antenna the fewer the number of channels covered with low VSWR. But we can expect the antenna manufacturers to soon come up with short (less than 40-inches) antennas that will be efficient on all 40 channels.

Bill Orr on Antennas

PART 13: THE QUAD BEAM ANTENNA

LAST month this column started a discussion on *gain antennas*. The popular Yagi beam was discussed in detail. And this month we'll have a penetrating look at the *Quad beam antenna.*

In order to start off on the right foot, the definition of *power gain* is given once again: power gain (or signal gain) is a term used to express the power increase noted in receiving or transmitting of one antenna as compared to a standard reference antenna. By comparing all antennas to a standard antenna it is possible to make camparisons between individual antennas and to determine a figure of merit for the antennas, based upon the signal gain.

The reference antenna used in the industry may be either a dipole antenna or an isotropic antenna and the manufactured antennas are compared against one or the other in terms of power gain. The unit of reference is the *decibel.*

One more point: a beam antenna is an antenna that concentrates radio energy in one direction at the expense of radiation in other directions. (Remember the searchlight comparison?).

The Quad Beam

Of great interest to the active CBer and the radio ham alike is the famous *Quad* antenna (sometimes called a *Cubical Quad*). The name comes from the square, or diamond, shape of the antenna. Originally developed by a radio ham, and first used at the shortwave broadcast station HCJB in Ecuador, the Quad is probably the only gain antenna that was not developed in the antenna laboratory.

The full story of the amazing Quad antenna is told in the book, "*All About Cubical Quad Antennas*"[1] written by the author of this column. As the discovery of the Quad principle is of interest to CBer and radio ham alike, a short excerpt from the book is given herewith:

> In the year 1939 a group of radio engineers installed radio station HCJB at Quito, Ecuador to transmit programs to North America. The station radiated 10 kilowatts, but it was found that the Yagi beam antenna erected for the station was useless at the 10,000 foot elevation in the Andes that was the home of HCJB. The beam wouldn't work because of the enormous corona discharge at the tips of the elements which eventually melted the aluminum tubes.
>
> Clarence Moore, the engineer of HCJB, took the problem to task, and after a great deal of thought evolved the idea of a pulled-open folded dipole (Figure 1), devised from an early form of television antenna. The advantage of the pulled-open dipole, or quad-shaped loop, was that it had no ends to the element, thus preventing the formation of corona.
>
> A Quad antenna consisting of two elements was hastily built and put on the air. As Moore remembers, "Warily, the crew of tired builders watched the new antenna through the long operating hours of the night. The vigil continued during the evening hours as the jungle exhaled its moisture collected during the hot daylight hours. The tension of the onlookers grew as a film of dew collected on the antenna wires and structure, but not once did the new Quad antenna flash over or break into a deadly corona flame. The new Quad antenna design distinguished itself in a short time

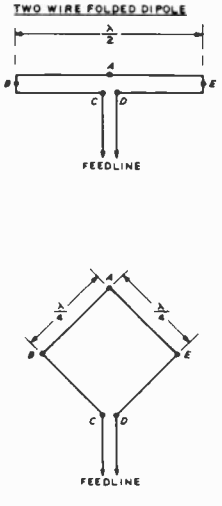

Fig. 1—Derivation of the Quad loop. At top is the folded dipole, a simple antenna developed for TV reception before World War II. The dipole is normally fed with TV-type "ribbon line". If the dipole is "pulled open", as shown in the bottom drawing, a Quad loop is formed. Points A through E correspond with the same points shown for the dipole. (Drawing courtesy of Radio Publications, Inc.).

[1] "All About Cubical Quad Antennas", William I. Orr, Radio Publications, Inc., Box 149, Wilton, CT 06897. $4.75 plus 35c postage and handling.

as reports flooded the station, attesting to the strength of the signal".

Clarence Moore patented his antenna, and other shortwave broadcast stations—as well as radio hams—built the new, amazing antenna, born in the wilds of Ecuador. It shortly became "topic number one" wherever radio hams and antenna engineers gathered to discuss antennas and DX.

After World War II, the Quad was widely accepted as an effective shortwave beam antenna and various models of it have been made by manufacturers the world over. And by 1965, it was one of the more popular CB base station antennas.

The Quad—How Does it Work?

For purposes of this discussion, let's examine the driven element of the Quad, forgetting about the reflector and director for a moment. It is convenient to borrow the description of the Quad element given by Clarence Moore—"a pulled-open, folded dipole". This antenna consists of two closely spaced half-wave dipoles connected in parallel at their tips. One of the dipoles is fed at the center with a transmission line (Figure 2).

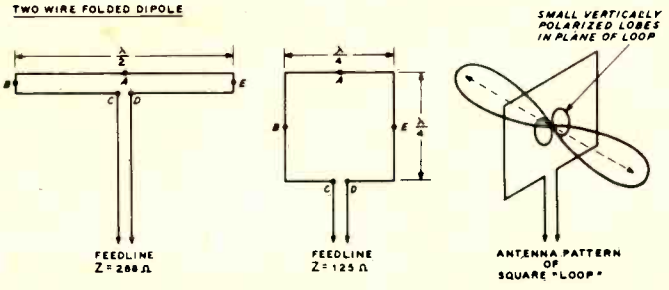

Fig. 2—The folded dipole (left) may be pulled open in the form of a square (center) as well as a diamond. Operation is the same in either case. The Quad loop has much the same radiation pattern as the dipole (right) with the addition of minor lobes at right angles to the main lobes of radiation. These "ears" usually disappear when the Quad elements are formed into a beam antenna. In this illustration, the Quad loop is fed at the bottom and horizontal polarization results. If the loop is turned on its side, polarization is vertical. (Drawing courtesy of Radio Publications, Inc.).

The folded dipole works exactly the same as a simple dipole, except that the radiation resistance at the feed point is four times the value of a single dipole. The single element has a radiation resistance of about 72 ohms, and the folded dipole element has a radiation resistance of about 288 ohms. The folded dipole was a very popular antenna in the early days of TV and it is one reason why TV "ribbon line" is commonly called "300 ohm line". It was designed to be used in conjunction with the folded dipole.

Moore made the discovery that when the folded dipole was pulled open into a diamond-shape, or a square, the radiation resistance dropped sharply and the loop exhibited the usual characteristics of the dipole, *except that it showed a power gain of nearly 2 decibels over the dipole!*

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BILL ORR ON ANTENNAS *(continued)*

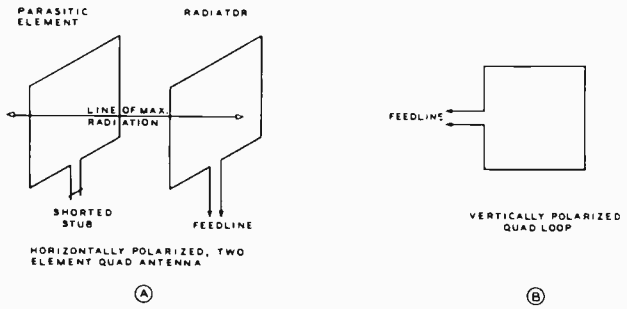

Fig. 3—Original Quad beam design provided horizontal polarization (A). A small stub was added to the parasitic element to tune it either as a reflector or as a director. By turning the radiator (driven element) on its side, the array is vertically polarized (B). The parasitic element "doesn't know" whether the polarization is horizontal or vertical, so it does not have to be turned. It works equally well with either polarization. (Drawing courtesy of Radio Publications, Inc.).

This was a *very* interesting discovery, as it led the way to a beam antenna composed of a number of loops, acting as directors or reflectors. The original Quad antenna was horizontally polarized (Figure 3), but by simply turning the antenna on its side, with the feedline at the middle of one side as shown in the drawing, the antenna became vertically polarized.

The early Quad antennas were tuned up with an adjustable stub, or variable wire section, in the parasitic elements, but additional design work has rendered this stunt unnecessary. The two element Quad was found to have a power gain of nearly 7.5 decibels over a dipole, and that gain is approximately equal to the power gain of a three element Yagi antenna!

Moore's development of the Quad element has led to many interesting variations of gain antennas. Adding reflector and director Quad elements to the Quad loop has produced a powerful beam antenna, one that is relatively easy to adjust. Today's Quad beams boast as many as three or four director elements, in addition to the reflector element and many base stations make use of this interesting antenna.

Quad Versus Yagi—Is There Any Significant Difference?

A direct comparison between the effectiveness of a Quad and that of a Yagi is difficult to make and the results of on-the-air checks between the two types of antennas are often inaccurate and confusing. Laboratory field strength measurements of the power gain of the Quad over a test dipole may lead to confusing results and are often open to various forms of interpretation. Unless such tests are run by unbiased observers on a well-calibrated antenna range, the difference in power gain between two gain antennas of about the same physical size will be lost in the inherent measurement error of the test set-up. Antenna tests repeatable to an accuracy of a decibel, or better, are difficult to manage even under the best of circumstances.

Extensive tests over the years imply that the Quad antenna exhibits an advantage over a Yagi (having an equal number of elements) of nearly two decibels. Is

(continued on page 73)

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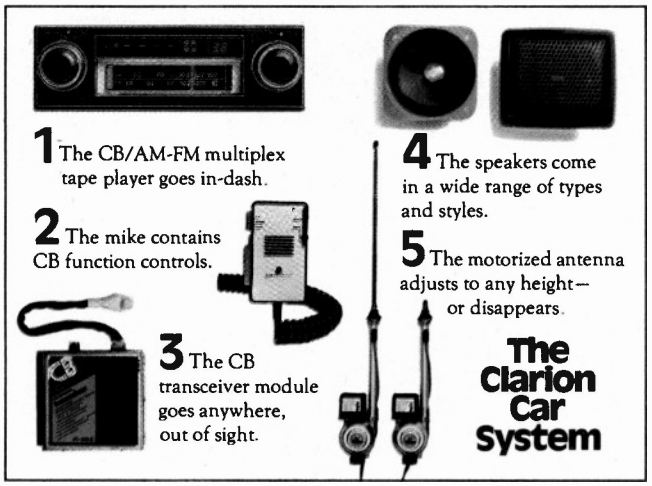

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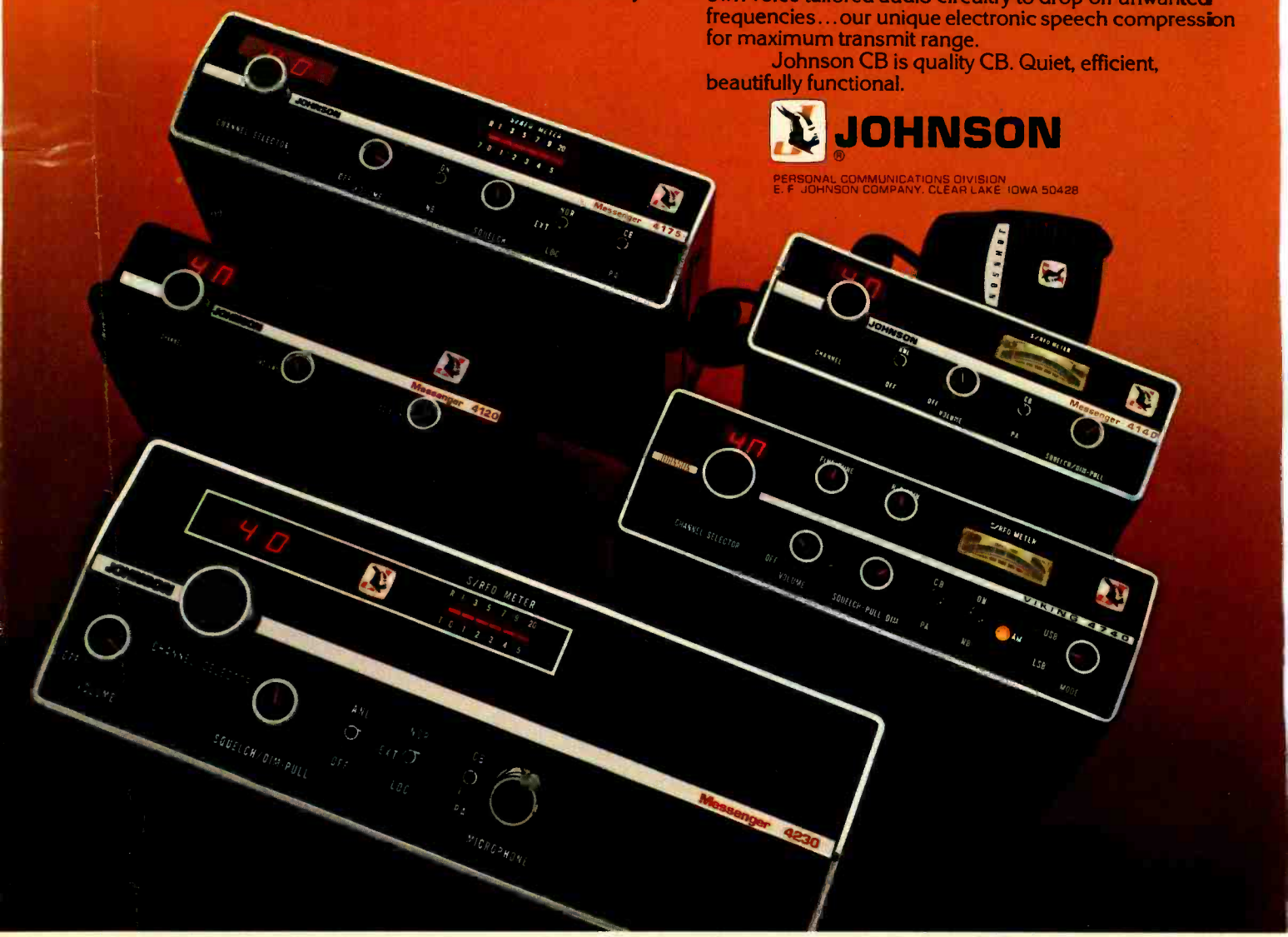

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this advantage in power gain that the Quad shows over the equivalent Yagi worth the effort of building (or assembling) the Quad, which some frustrated builders classify as a mechanical monster? After all, a Quad is a three dimensional object having length, width and height. The Yagi, on the other hand, is a two dimensional object having only length and width. Addition of the third dimension (height) to a construction project immensely increases assembly and erection problems and also increases the wind resistance of the antenna. No doubt about it, the Quad is a bulky, unruly, hard-to-handle assembly, usually of fragile construction. The Yagi, on the other hand, is simple to assemble, rugged and easily moved about on the ground and atop the tower.

The Quad Wins!

The conclusion drawn by this writer from both objective and subjective tests over the years is that the Quad antenna has a definite advantage over the Yagi. The extra two decibels of power gain, element for element, does make a difference over the long run. Under difficult conditions, the Quad seems to out-perform the Yagi most of the time in a matter that is not readily explained by a mere comparison of antenna gain. Sometimes a Yagi seems to be better than an equivalent Quad, but the reverse seems to be true under more circumstances and over a longer period of time.

Element for element, the power gain difference between the Yagi and the Quad is shown in Figure 4. The advantage seems to grow less as the number of elements are added to each antenna. As an example, a comparison of the two element Quad with the two element Yagi shows the Quad is better by about two decibels. The five element Quad, on the other hand, is better than the Yagi, but only by about one decibel. An examination of the chart shows that a two element

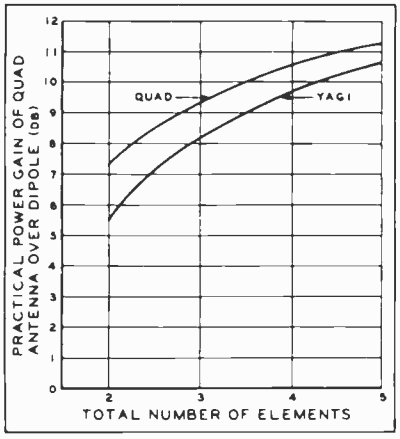

Fig 4—A comparison of power gain between the Yagi and the Quad antenna. For an equivalent number of elements, the Quad exhibits a power advantage over the Yagi of nearly two decibels. Expressed in terms of overall boom length, the Quad has about two-thirds the boom length of a Yagi for equivalent power gain. As seen from the chart, a two element Quad is about equal to a three element Yagi, as far as power gain goes. (Drawing courtesy of Radio Publications, Inc.).

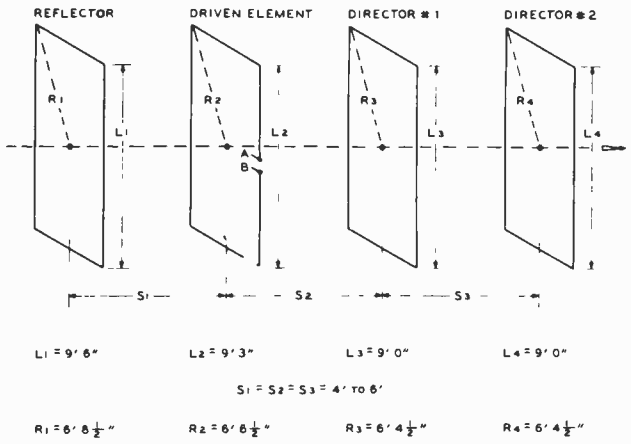

Fig. 5—Electrical diagram of the Monster Quad. A reflector and two director loops are used in this effective beam antenna. Driven loop (second from left) is fed by a coaxial transmission line at points A-B for vertical polarization. Parasitic loops (reflector and directors) are continuous wires, having no electrical connections made to them. Loops are square, with top and bottom wires parallel to the ground. Side wires are in the vertical plane. Loops are made of #14 enameled copper wire. Approximate dimensions from center of loop to corner (R1-R4) is given to aid in drilling the Quad arms. (Drawing courtesy of Radio Publications, Inc.).

Quad is about equal to a three element Yagi, a three element Quad is about equal to a four element Yagi, and so on.

The Monster Quad—King of CB Antennas

Several manufacturers sell a four element Quad antenna for CB service. The original design for this antenna is shown in Figure 5, with the dimensions derived by the author of this column. The Monster Quad makes a 5 watt CB transmitter equivalent in "talk power" to one of nearly 125 watts input working with a ground plane antenna. That is to say, substitution of the Monster Quad at your station for a ground plane antenna is equal to boosting your transmitter power input to 125 watts in a completely legal manner. Best of all, the impressive power gain of the Monster Quad (over 10 decibels better than a dipole or ground plane) is also achieved on received signals as well as during your transmission. The Monster Quad can literally make a weak signal jump right out of the noise level and interference often encountered when using a low gain, nondirectional antenna for receiving. *(continued)*

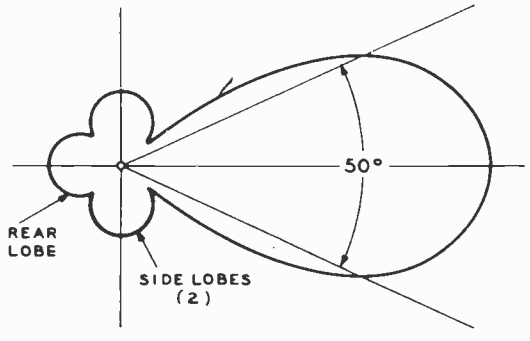

Fig. 6—Polar plot of the Monster Quad shows a tight, 50 degree radiation pattern as seen from above the array, looking down. Reduction of signals from sides and back is very good. Array must be aimed accurately for best results. (Drawing courtesy of Radio Publications, Inc.).

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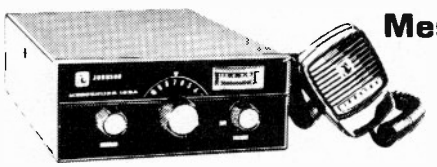
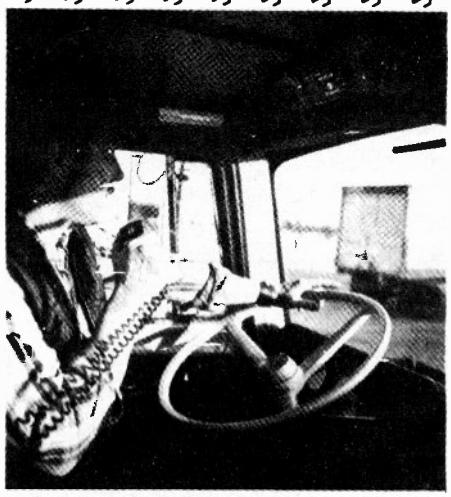
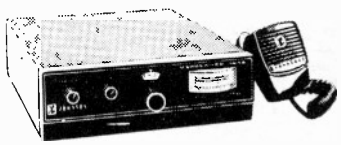


Messenger 123A



Messenger 323A



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The Monster Quad also cuts down interference received from signals arriving off the sides and back of the beam, as it provides a narrow, tight 50 degree pattern, as shown in the polar plot of Figure 6.

The Monster Quad is a complex antenna assembly and its construction is recommended only to those knowledgeable CBers who have gained experience in building beam antennas and who, in addition, have the yard area available to assemble the beam. If you have the know-how and the space, be assured that your efforts and the expense will be amply rewarded by the signal power gain of this hefty beam antenna.

The basic electrical design of the Monster Quad is shown in Figure 5. It is a four element array using two director loops, a driven element loop and a single reflector loop. Each loop is about nine feet on a side (a quarter-wavelength at 27 MHz).

Spacing between the loops is not particularly critical and may be as little as 4 feet or as great as 6 feet, with only minor change in beam performance. When the smaller element spacing is used, the power gain of the Monster Quad is decreased about one decibel from maximum value, but the front-to-back signal ratio is maximum. At the greater element spacing, the power gain is at maximum value at the expense of a slightly decreased front-to-back ratio.

Realistically speaking, element spacing really depends upon the available overall boom length. If six foot spacing is used, a boom length of over 18 feet is required. Aluminum tubing (rectangular cross-section) may be purchased up to 21 foot lengths but round tubing seems to be available only up to 12 foot lengths. Round aluminum *pipe*, on the other hand, may be obtained in 21 foot lengths.

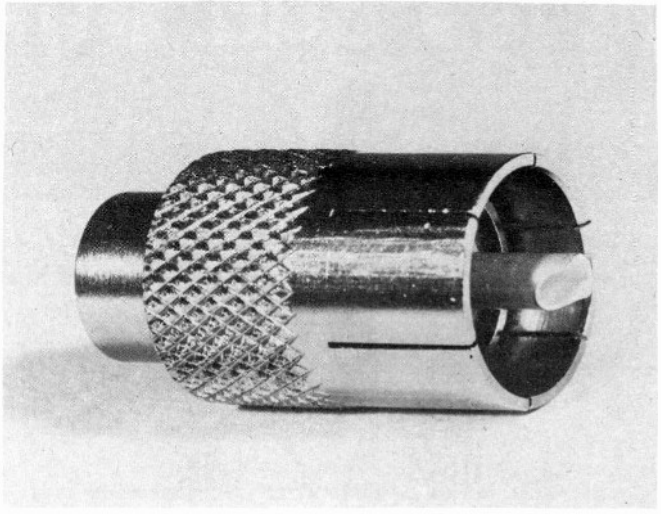
For those who wish to build their own Monster Quad antenna, some assembly hints and suggestions will be given in next month's column. For those CBers with a fat purse, various Quad antennas can be purchased from a number of manufacturers.

A Quick-Disconnect UHF Connector

In closing, I'd like to draw your attention to a nifty, new gadget. It is a quick-disconnect coaxial plug (Figure 7). This new *Amphenol* product is especially suitable for CB work as it provides a fast, simple means of making a termination for cables which are frequently disconnected. For example, mobile CB rigs can be quickly disconnected and removed from a vehicle which will be left unattended, to help prevent a rip-off.

Assembly procedure is identical to that for the standard PL-259 plug and for use with RG-59/U cable a reduction adapter is needed.

Don't forget, however, that a slip-on plug can be a slip-off plug, too. It remains to be seen if vibration will loosen this useful gadget, and until it is determined



how reliable the new plug is under vibration, it should be used with caution in a mobile application. In any event, it is a great idea, and the push-on *Amphenol* coaxial connector should prove to be a popular CB item.

Nuts and Bolts Dictionary

By Harold Perry

A Special THANKS to our Goodbuddies who sent in these great CB Slang words.

Bob Larson KHK - 1360 (Buckeye Hobo) Monclova, Ohio

LADY BUG STATE

The Lady Bug is the state insect of Ohio.

P. J. Shea (The One Turkey Buzzard) Sarasota, Florida

DOLPHIN MOUNTIE

That's the Florida State Marine Patrol. Other Names for Marine Police are "Waterbear" and "Smokey the Fish"

HAVE YOU GOT A CB SLANG WORD THAT I DON'T HAVE? (You probably do!) Then send it to me and I'll put it in the next issue of S9 with your name and handle. In case of duplicate definitions the one postmarked first will be used. SEND postcards to: HAROLD PERRY c/o S9 Magazine 14 Vanderventer Ave. Port Washington, New York 11050

TOMCATTIN' with "Tomcat!"

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

I was talking to a trucker recently who told me that he didn't have a CB rig. I was surprised, since this fellow made regular cross country trips. "I tried it," he said, "but I wasn't interested in listening to the jabbering." His solution was to remove the CB—and how did he keep abreast of the Smokey situation? Easy, he said, he just never went faster than any truck with ears he saw on the road! . . . Big inside secret is that about 80% of the country music stars who have been receiving a lot of publicity as CB'ers, together with their *handles*, have never seen a CB rig except for the times they've posed for photos, have never even heard a CB rig in action! . . . Most novel QSL from a novel CB club—*The Chain Gang CB Club,* all prison inmates. They can't use their ears, but would like to receive some QSL's. President is *Hustlin' Hitchhiker,* J. DeFabritis #48505, P.O. Box 1, Block R-I-A, Yardville NJ 08620. . . . A smokey told one of our readers that he doesn't hassle CB'ers when they zip past his picture taker (unles they are doing over 65 MPH) because of the fact that CB'ers have been so helpful in calling in accidents. He said that he does, however, just love to hassle those speeding wiseguys who tailgate CB'ers because they figure that the CB'ers all slow down when they get to *Kojak's Kodak.* . . . CB radio has been featured in recent segments of the TV shows *One Day At A Time* and *Law and Order.* . . . On a sour note, the *New York Times* ran a story which I think made CB'ers look like a lot of jerks. . . . Forget those rumors about the FCC supposedly banning power mikes—I don't know how they got started but at this time there isn't any truth to them. . . . One of the most unusual reception reports I ever received came in the other day—from a reader in Indiana who was monitoring the VHF mobile telephone channels and heard S9's author Gordon West ("Anatomy of A Scanner") and I chatting—Gordon had called me from his car phone! . . . Ziggy, UNIT 455-Kilo, tells me that he's gotten much better results with his QSL (wallpaper) efforts—and a lot more use and fun out of his gear since he started using a Unit Number ID. Says he used to alternate it with his handle, but of late he has been using the Unit Number ID most of the time instead of his handle! . . . While riding along the entrance ramp to one of the parkways recently, I could see a smokey parked on the side up ahead of me. For sure, he called me on the channel—"Hey white Mustang II, gotcha ears on?" Not believing this was really happening to me, I came back to him—his reply was to ask me to pull off the road. I had been driving at 20 MPH—couldn't imagine how I might have earned greenstamps. I was happily surprised when I pulled over and smokey told me that that day was the very first day that smokeys had ears on that road and that they had an NBC News film crew there interviewing CB'ers as to what they thought of the idea. So instead of getting greenstamped, I got interviewed!! . . . The *Holiday Inn* at Framingham, Mass., has installed a CB rig so that motorists can call in via CB for room reservations, on a 24-hour a day basis! . . . A reader in the United Kingdom informs me that they've formed an association to campaign for CB Radio or something like it, for truckers. Those interested in this project can get in touch with The Citizens' Band Association, 16 Church Road, St. Marks, Cheltenham, Gloucestershire, England. . . . We received a QSL card (1959 vintage) from reader Jim Harris of Johnstown, Pa. Jim's card reads 20W1343—but he also included his current card (same design) reading KIE0514. Jim has been a reader of our publication since the first issue back in 1962! Jim comments with some amusement on the odd sounding new-style 4-letter/4-numeral CB callsigns. . . . "Not so funny," those new style callsigns, says reader Scott Peters, *WATERGATER,* of Potomac, Md. Scott's a commercial broadcast newsman, 10 of those on a national network—and he still stumbles and stutters when it comes to the awesome task of attempting

to say KAAH7386. He says that his problem can't be fully appreciated until you attempt to say the KAAH aloud—all of the letters end up sounding alike! Scott also wants to give some public recognition to a CB'er whose handle is *HUSHPUPPY* who acts as a clearinghouse for some of the communications on Channel 19 on the north end of the 495 Beltway in Washington. *HUSHPUPPY* handles accidents, highway reports, and much other work. Scott doesn't know who or where he is—but says he's on the air all of the time. Scott also says that he's worked the *Hole In The Wall Gang* (Baltimore Tunnel gang) on Channel 3! . . . At broadcast station WCOD on Cape Cod, in Mass., the New Director (Deven Black) enlisted 60 CB operators to relay primary election results from 15 Cape Cod communities to a couple of base stations. Black commented that he used CB'ers instead of the usual landline volunteers because CB'ers are "more willing to help." He added, "Besides, it's more fun to do it by radio!" . . . Ed Wilberg (SSB-826, also Unit 219-F) comments that it's really weird that any time he goes to a certain CB shop with some problem—the dealer always claims to be able to solve the problem with "just the right combination of products, which are fortunately right in stock." Except that it *isn't* too fortunate that too often these on-hand products don't do the job. Ed wonders if other CB'ers have ever been faced with the situation of a dealer being more anxious to deplete inventory than seriously consider a customer's problem. Or is it just this one dealer? . . . I noticed on the boob tube the other night a commercial for a particlar brand scanner monitor. Showed the supposed interior of a newspaper office—a cub reporter has the scanner hidden away in a closet, and when the ace reporter gets sent out by the Editor to cover a crime, the cub reporter sneaks off to his closet to listen-in on the police channel. He then writes a news story based upon his information and hands it in to the Editor, thus scooping the ace reporter. Nice little story, except it presents a clear violation of Section 605 of the Communications Act (secrecy of communications) which this manufacturer should have realized! And I wonder if Uncle Charlie is going to lean on TV stations which permit this type of advertising! Same outfit has an ad for their CB equipment which shows a guy driving along laughing as he listens to the antics on Channel 19—next thing you know he's smashed his wheels into the side of another vehicle amidst clouds of swirling steam. Really makes you want to get a rig, doesn't it! . . . Guess I've gotten cynical in my old

age—takes a lot to make me laugh, I mean *really* laugh. But they did it with something called *Instant CB*, an outrageous novel produced by Good Karma & Co., P.O. Box 65, Larkspur CA 94939. It's available through dealers and less than $3—I think you'll really get a charge out of this insane development in the art of CB. And if you're a dealer selling to the CB market—I suggest you contact the manufacturer to find out how to carry *Instant CB.* Tell 'em Tomcat sent you! . . . Stu, a reader, from Dallas, Tex., comments that he's had to change his handle about 4 times because he wanted something unique, only to find that someone else had the same or similar. Stu's given up on handles and is now registered as Unit 142! . . . There seem to be countless scores of CB newspaper columns cropping up across the land—but I think that one of the best written and most informative is syndicated weekly throughout most areas of Michigan and written by Bill ("Wild Bill") Cote, also known as KIE2509, and also as SSB-2656 on the sideband channels. If you live in Michigan, check out Bill's column in your local newspaper!

Tomcat!

WHICH 40 CHANNEL ANTENNA DO YOU NEED?

(continued from page 63)

ing up with needs, particularly when there's a waiting market. While there aren't any very short 40 channel antennas available at the time this article is being prepared, there might well be several models available by the time you get to read it.

Finally, keep in mind there is always an exception to every rule. Somewhere out there is a CB'er using a very short antenna that does a great job on all 40 channels—and there probably isn't an engineer anywhere who can explain why it works. Before you rush out to buy a "40 channel mobile antenna" check your system with a VSWR meter. Tune the antenna to channel 19 or 20 and measure the VSWR on channels 1 and 40. If you're real fussy about your signal get a new, longer or "40 channel" antenna if the VSWR is greater than 2:1. If you're not all that fussy get a new antenna if the VSWR is greater than 3:1. But if the VSWR is greater than 3:1 and you choose to go with your old antenna to save a few dollars don't start complaining about the transceiver if your signal gets walked on by a station across town. Even the best transceiver/transmitter doesn't do much good if a good part of the RF gets lost on its way to the antenna. An antenna system can radiate only the RF energy that actually gets into the antenna.

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Dealers ask for Johnny or Len

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6 Centennial plans to remain in the CB two-step business for many years. When the late comers have abandoned the market, we'll still be here to serve you.

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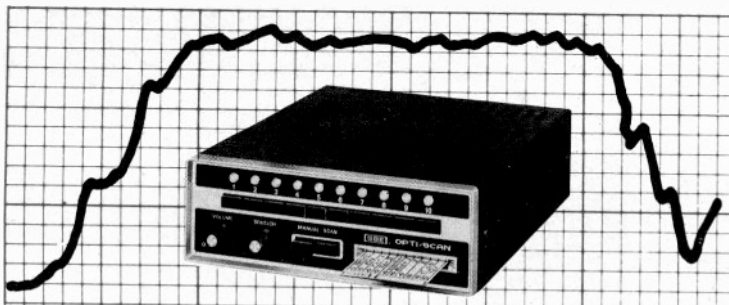


Anatomy of a Scanner

by Gordon West, KMX-8483

PART 4: PROGRAMMABLE SCANNERS

PROGRAMMABLE Scanners only amounted to fifteen percent of the Scanner business last year. Seventy-five percent of the business went to crystal type Scanners, ten percent to pocket Scanners, and the remainder to programmable Scanners. Why such low figures for such a unique Scanner, you say? Obviously, the price! Most pocket scanners loaded with 4 channels run around $100; most mobile crystal type scanners run about $175 with several channels of crystals installed. Most programmable scanners approach the $350 mark.

There are four well known manufacturers of programmable scanners—SBE, Tennellec, Electra and Regency. There's much debate among these manufacturers as to who really came up with the programmable scanner idea, but all four units appeared on the market at the same time about a year and a half ago. When these first units were brought out, they were plagued with minor problems in their complex receiver sections. All four had the same type of problems—"spurs" making the scanner lock-up on frequencies not actually being broadcast on, and "intermodulation." I'm happy to report that all four manufacturers have pretty well cleaned up these problems of "spurs," and all four manufacturers are attempting to solve the intermodulation problem at the present time.

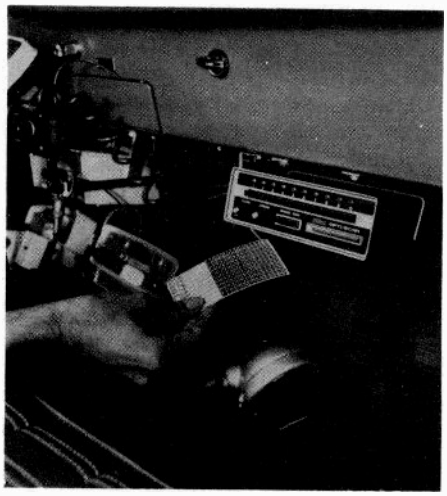
Here is a list of who makes what in programmable scanners:

SBE—"Opti-Scan"
Regency—"Whamo" and their Direct Frequency Entry Adaptor
Electra—"Bearcat 101"
Tennellec—"Memory Scan MS-2" and their Direct Frequency Dial-N Scanner, the "MCP-1."

By the time you read this, there will probably be at least three new programmable scanners on the market by several other manufacturers who want some of this new and exciting business.

What exactly is a programmable scanner? It's much like those crystal type scanners that I described in my earlier articles about scanners, except the programmer has a big advantage of not requiring the use of crystals for determining the exact frequency to be monitored! What this means for you is that when you get your scanner at home, you'll never have to make another trip down to the scanner store to buy more crystals when you want to change frequencies. All the frequencies are derived by specialized micro-chip circuits within the scanner itself-utilizing no crystals!

All programmable scanners cover the 30-50 MHz band, the 150-170 MHz band, 450-470 MHz, and the 490-512 MHz band. Some of the programmable scanners also cover the 2-meter ham band below 150-50 MHz. Additionally, some programmable scanners also cover, without interruption, the "T" Band which is in-between 450 and 512 MHz. For those programmable scanners that may not tune into a band located near these major frequencies segments, they may usually be specially ordered from the factory to cover that elusive band of frequencies that are not advertised as being able to be received by the scanner. Take for instance the SBE Opti-Scan. Although the specifications of the scanner do not include the 144 to 148 MHz two-meter band, nor the 470 to 490 MHz "T" Band, special SBE Opti-Scans may be ordered from the factory to take in those frequencies at no additional charge. Other programmable scanners claim to take in all of those frequencies without any further modification. Review the specifications carefully before you decide which programmable scanner you want, to ensure that the frequency you wish to monitor is available in that certain type of programmable scanner you have ordered.



"We are just beginning to see a new era of scanners," states SBE's David Thompson, President. "As micro-processing circuits become less expensive to build, and the components for those circuits more readily available, the price of the programmable scanner in the next few years will drop dramatically. Probably in two or three years from now a programmable scanner will cost only a bit more than a conventional crystal scanner. Programmable scanners will soon dominate the scanner market, and we are seeing the change beginning now."

Yes, I agree with David Thompson of SBE, the programmable scanner will soon replace most mobile and base station crystal scanners as the prices will sure drop in the next few years. However, don't put off purchasing that programmable scanner today—it's still going to be a few years off before we see any major price breakthrough!

How does a programmable scanner work? Let's take a look at it from a non-technical standpoint—so I don't bore a lot of readers that might want to know the basics, but not the ensegrevities. Today's programmable scanner is much like the new breed of CB transceivers that don't use crystals—utilizing phase-lock-loop circuitry for the generation of frequencies. On a CB set you enter the frequencies on a 40-channel dial selector into the phase-lock-loop circuitry, and magically, the frequencies are at your command. With a scanner, it's the same principle, except you have a lot more than 40 channels! Some scanners that are utilizing the new micro-proc-

essing circuitry may have the frequency entered directly in MHz, such as 155.160 MHz. Simply dial it up, or push the appropriate keyboard buttons, and the frequency is automatically entered. Another popular way of entering the frequency is through the use of computer type "binary codes." We'll describe what they are in just a moment, but first, let's take a look at our friend in both CB and Scanners, the "phase-lock-loop circuit." Remember, the phase-lock-loop circuit is the one that is pretty much common to all new 40-channel CB sets, as well as common to all programmable scanners, so now is a good time to review exactly how this circuitry works.

The basic invention of phase-lock-loop, commonly called "PLL," is nothing new; it's been around since 1930. Early phase-lock-loop equipment utilized discrete components for its circuitry, and because these components were quite costly, there were few applications to this system for the personal communications field.

With recent developments of the integrated circuit, prices immediately began to drop for phase-lock-loop equipment. Just recently, Citizens Band and programmable scanners have begun to employ this new circuitry.

A PLL system contains four basic circuits; the phase comparator, the low pass filter, the DC amplifier, and the voltage controlled oscillator (VCO) (Fig. 1). An input signal is first introduced to the phase comparator stage. At the same time, the phase comparator is also being fed a voltage from the VCO output, and these two signals are mixed and will produce a phase difference that will result in an error voltage. The phase comparator output is filtered, amplified by the DC amplifier, and applied as a control voltage to the VCO. The control voltage, or error voltage, is used to slightly shift the VCO frequency in the direction that reduced the phase

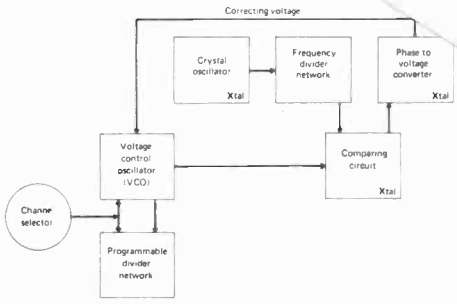


Fig. 1—Conventional phase lock loop circuit utilizing three crystals (P.L.L.).

difference between the input signal and VCO output. This "corrective feedback" circuit will automatically synchronize, or "lock," the input signal and will track it over small frequency variations. It takes only microseconds for this entire complex circuit to "lock-in" on a signal, and even if the signal should drift slightly, the circuits will automatically track it. The actual range of frequencies over which the PLL circuit

HOW TO DETERMINE PROGRAMS FOR FREQUENCIES—1 MHZ AWAY FROM SPECIFIED BANDS IN SBE OPTI-SCAN

Band	Band Code	Formula
30-50 MHz	11	$f_o = f_i + 16.9$ MHz
150-170 MHz	01	$f_o = f_i - 103.1$ MHz
450-470 MHz	10	$f_o = f_i - 403.1$ MHz
490-510 MHz	00	$f_o = f_i - 443.1$ MHz

f_i = input frequency. The frequency you wish to monitor.
f_o = oscillator frequency.

Step 1. Find f_o for the band you wish to program a frequency on.
Example: $f_i = 154.325$ then $f_o = 154.325\text{-}103.1 = 51.225$

Step 2. Divide the above result by .05.
Example: $\frac{51.225}{.05} = 1024.5$

Step 3. Take the number to the right of the decimal point in the above result and using chart A find the four digit code.
Example: 5 = 0010

Step 4. Take the number to the left of the decimal point in the result in Step 2 and subtract it from 1409.
Example: $1409 - 1024 = 385$.

Step 5. Take the above result and determine its 9 digit code using the method described on the following page.
Example: 385 = 1000 00011

Step 6. Write out complete 15 digit code as in example below.

4 Digit Code	9 Digit Code	Band Code
0010	1000 00011	01

CHART "A"

0 = 1001	5 = 0010
1 = 0001	6 = 1100
2 = 1110	7 = 0100
3 = 0110	8 = 1000
4 = 1010	9 = 0000

Step 5

TO CONVERT DECIMAL TO BINARY

385 ÷ 2 = 192 with a remainder of 1	Left
192 ÷ 2 = 96 with a remainder of 0	
96 ÷ 2 = 48 with a remainder of 0	
48 ÷ 2 = 24 with a remainder of 0	
24 ÷ 2 = 12 with a remainder of 0	to
12 ÷ 2 = 6 with a remainder of 0	
6 ÷ 2 = 3 with a remainder of 0	
3 ÷ 2 = 1 with a remainder of 1	
1 ÷ 2 = 0 with a remainder of 1	Right

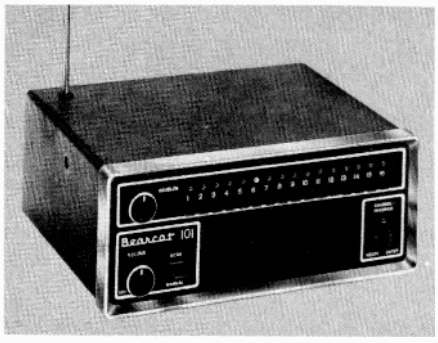
LEFT ⟶ RIGHT

Written 1000 0001 1

Notice: This step should have 9 digits. It is sometimes necessary to add zeros to the right of your answer to give you 9 digits.

Note 1: When programming one of the new split channel frequencies, such as 470.6875 MHz, compute your program for the frequency 2.5 KHz above or below the desired frequency. Example: 470.685 or 470.690.

ANATOMY OF A SCANNER *(cont'd)*



can maintain "lock" with an input signal is defined as the "lock range" of the scanner. Take a look at your scanner specs and those bands that they list are within the "lock range" of the PLL synthesizer.

The advantages of PLL circuitry in a programmable scanner over the circuitry of a crystal type scanner are very important to know.

PLL circuitry only requires about three crystals in a scanner which will generate up to ten thousand individual frequencies. Hence, we don't need any more crystals than three to generate all of these channels. What with the crystal shortage in the United States, this is a definite benefit, plus it doesn't cost you a cent more to dial up a new frequency to monitor.

PLL circuitry is precise and extremely stable. You know what it's like to have a crystal scanner in an automobile and try and listen to the UHF Band when you first get into the car after a snow storm. Generally the crystal is quite cold inside the scanner, and you will not hear the incoming calls clearly. After the set warms up—sure—all is well, but temperatures do adversely effect crystal type scanners. A PLL programmable scanner is virtually uneffected by temperature, and the precise frequency is "on target" each time the scanner is turned on. There's no worry about off-frequency reception with a programmable scanner.

Another advantage of PLL circuitry is the way in which we enter the "program." Some programmable scanners use binary code buttons—and these work out fine in entering the program. Still using the concept of binary coding, another approach is to use combs that have certain teeth removed which is the equivalent of binary "ones" and "zeros." This is another way of entering the program.

A very unique is one that SBE employs—the use of a card in which certain stickers are removed to allow light to shine through to photo-cells; the light shines through only those holes that represent binary "zeros." The stickers are left in place for each binary "one."

And of course, the micro-processor circuitry is a fun one to play with, in that it lets you dial up the precise frequency without having to use binary codes—a time-saving method.

What's all this about binary codes, you say. Why are binary codes necessary, and why do I have to use them to enter frequencies? Unless the programmable scanner you select has the new micro-processing circuit which automatically does the binary "counting" for you, you need to first look up the frequency, and then enter the resultant binary code information into the scanner in order to receive that frequency. That's a job very easily done either by pushing buttons, breaking teeth off of combs, or removing stickers on an optical card.

Unfortunately, electronic devices do not have the ability to read directly such numbers as 12, 14 or 19. In order for us to assist these electronic counting marvels, we need to reduce the information to either open circuits, or closed circuits. This type of "on-off" circuitry is easily desiphered by the scanner. By using this "on-off" type of numbering system, we arrive at a two-digit system called binary coding. Those individual digits, either ones or zeros, are called "bits." Short for *bi*nary dig*its*.

Counting in binary code, we find that: Zero is Zero, 0; One is One, 1; Two is One-Zero, 10; Three is One-One, II; Four is One-Zero-Zero, 100; Five is One-Zero-One, 101; Six is One-One-Zero, 110; Seven is One-One-One, 111; Eight is One-Zero-Zero-Zero, 1000; Nine is One-Zero-Zero-One, 1001.

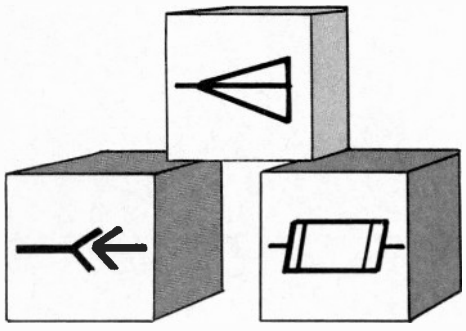
Obviously, the list goes on from here, but if you study the progression of ones and zeros, I think you'll see how binary code is derived from our numerical system more conventional to us.

Whether you enter the information into your scanner via binary code or actual frequency, both systems work out well. Each has its advantages. And obviously, the most prominent advantage of a programmable scanner is the fact that it does not need any crystals for which to generate the frequencies you wish to monitor.

40-Channel CB Transceivers Pass FCC Laboratory Technical Tests

The Commission announced that as of the end of November samples of the following models of Class D, Citizens Radio Service, 40-channel transceivers have been tested by the Commission and found to be in compliance with applicable technical requirements for type acceptance and certification.

Applicant or Brand Name	Type No.
Applicant or Brand Name	Type No.
Applicant or Brand Name	Type No.
Applicant or Brand Name	Type No.
Applicant or Brand Name	Type No.
Applicant or Brand Name	Type No.
Alpine Electronics Co. Ltd.	BR-640
Benjamin Electronic Sound Co.	200
Channel Master	CB6835
Colt Communications Inc.	COLT 290
Commando Communications Corp.	CC4040
	CC4086
Dynascan Corp.	21XLR
	89XLR
	138XLR
	139XLR
Fanon/Courier Corp.	FANFARE 100F
	REBEL 40
General Electric Co.	3-5801A
	3-5811A
	3-5811B
	3-5812A
	3-5819A
	3-5821A
	3-5825A
General Motors Corp.	GM CBD-10A
Hy-Gain de Puerto Rico, Inc.	682A
	2700
	2702
	2703
	2705
Ray Jefferson	CB-740
Kris, Inc.	XL-45
Lafayette Radio & Electronics	HB-640
	HB-740
	HB-940
Mars Radio Corp.	CON 400
	CON-450
	M-368
	M-374
	M-375
	M-379
Matsushita Communication	CR-B4700EU
	CR-B4701EU
	CR-B4747EU
	CR-B4748EU
Maxon Electronics Co., Ltd.	MAXON 40
Meishoh Electronics Co., Ltd.	ME-400
	ME-402
Meriton Electronics, Inc.	RS-5111
Midland International Corp.	63-240
	77-853
	77-857
	77-882
	77-883
	77-888
	77-955
Pathcom, Inc., Pace Communications Division	1000B
	8041
	2300CA
	CB-166
Pearce-Simpson, Inc.	SUPER COUGAR 40
	SUPER CAT 40
	SUPER TIGER 40
	TIGER 40
J. C. Penney Co.	6203
	6237
Pioneer Electronics Corp.	GT-6600
President Electronics Inc.	DWIGHT D
	ZACHARY T
Radio Shack	21-1520
	21-1521
	21-1524
	21-1526
	21-1542
RCA Corporation	14T270
	14T304
Royce Electronics Corp.	1-648
SBE, Inc.	BRUTE 40
Sears, Roebuck & Co.	2862674
	2862676
	CM 2378SA
	CM 6000LA
	CM 6000LB
	CM 6100S
	CM 6200S
	TA 4501
Shakespeare Co.	GBS-240
Sharp Electronics Corp.	CB-2260
	CB-2460
Sony Corp.	ICB-2500
Standard Communications Corp.	HORIZON 2900
Superscope, Inc.	CB-340
Teaberry Electronics Corp.	4001
	4002
	4006
Toyota Motor Sales USA, Inc.	00860-00001
	00860-00020
Tran Sonic Industries, Inc.	MCB-41
Well, Inc.	W-605
	W-705



Basic Radio

by Irving Tepper

Part 13
Alternating Current

IN all the previous descriptions of electrical circuits, they were always shown as, in Fig. 4.1(A), with the polarity of the voltage source fixed and the electrons flowing from the negative terminal to the positive terminal. This voltage source, whose polarity never changes and so whose current always flows in one direction, is defined as a *direct current* source, abbreviated as D.C. Direct current is plotted graphically as shown in Fig. 4.1(B) and (C). Graph (B) is a plot of voltage versus time while graph (C) is a plot of the current versus time. Usually the voltage and current levels of DC remain constant.

In alternating current, abbreviated as A.C., the polarity of the voltage source does not remain constant but changes, usually at a constant rate. As shown in Fig. 4.2, the current flows first in one direction and then, when the voltage reverses polarity, the current also reverses and flows in the opposite direction. Not only does the alternating current reverse direction but it also changes its voltage value constantly.

AC compared to DC—While alternating current is different from direct current, it is not in any sense better or worse. AC serves purposes that cannot be met by DC and in other instances, DC performs functions that cannot be accomplished by AC. Some applications, however, can be served by either AC or DC.

AC has the advantage in that its voltage value can be increased or decreased using a device called a transformer. If, for example we require 220 volts AC, the house power line, normally 117 volts AC can be stepped up to the required 220 volts AC using a transformer. If, however, the power line in the home was 117 volts DC the process of increasing it to 220 volts DC would be comparatively complex requiring electronic circuitry to do the job. Using transformers permits changing the AC power line from 117 volts to any desired value greater or less than the power line.

There are, however, many functions in electronics where DC *must* be used. Many circuits and devices can only operate when powered by DC and applying AC to such equipment results in non-operation or damage. In most pieces of electronic equipment it is not unusual to find several types of voltage such as DC, AC from the power lines, and AC voltages that represent the intelligence such as *audio signals* and *radio signals*. There may also be combinations of AC and DC voltages as well as AC voltages of various shapes as shown in Fig. 4.3.

Generating AC Voltages

There are several methods of generating alternating voltages but the most common method is by magnetic generators that are driven by mechanical means. This basic system is the heart of the power station used to generate and distribute electricity to our homes and industries. The magnetic generators

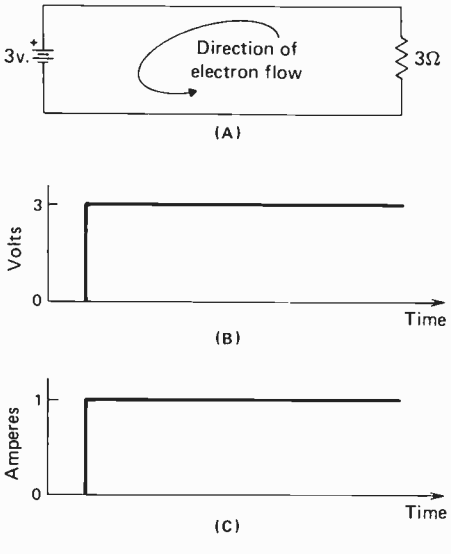


Fig. 4.1(A)—A circuit in which the electrons flow in a single continuous path without changing direction is defined as direct current, DC. (B)—A plot of DC voltage versus time shows the rise of the voltage to its value at which point it remains constant. (C) The current also rises and remains unchanged.

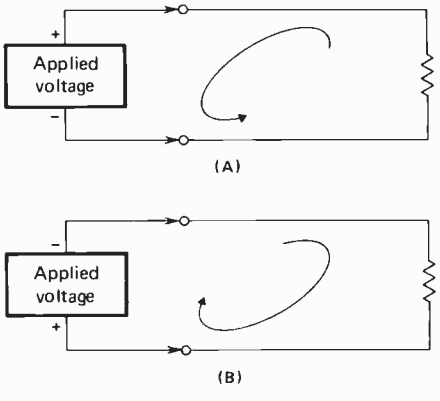


Fig. 4.2—Direction of electron flow reverses when the polarity of the applied voltage changes. During the process of reversing polarity the voltage must drop to zero and so the amplitude of the voltage also changes. This type of voltage and its resulting current is defined as alternating current or AC.

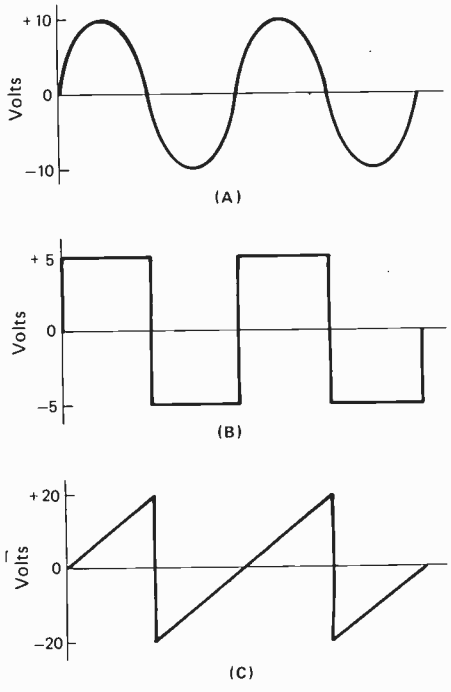


Fig. 4.3—Various waveshapes of AC voltage. (A) a sine wave, (B) a square wave and (C) A sawtooth (also called a ramp voltage). The one common feature of all the waveforms is change of polarity.

are rotated by steam or water turbines.

In order for us to understand the nature of AC it is necessary to understand how it is generated. Earlier we explained how an electron flow through a wire generated a magnetic field. Now we will describe how a wire, passed through a magnetic field, can *generate a voltage* that can cause an electron flow.

Electromagnetic Induction—Electromagnetic induction occurs whenever a wire is passed through a magnetic field in such a way that it *cuts across* the lines of force. As the wire passes through the magnetic field a voltage is induced or developed across the wire. As shown in Fig. 4.4(A), when the wire is moved upward through the field the electrons in the wire will be forced to end B making that end negative with respect to end A while at the same time end A becomes deficient in electrons making it positive with respect to end B. The effect is that a difference of potential exists across the wire as long as it is *in motion* through the magnetic field.

If the direction of movement is reversed, that is the wire is moved downward, end A will become negative and end B positive as shown in Fig. 4.4(B).

If the wire is moved *parallel* to the lines of force as in Fig. 4.4(C), no voltage will appear across the wire as no lines of force are actually being cut in the magnetic field.

Strength of the Induced Voltage—The amount of voltage induced in a wire that cuts through a magnetic field is determined by four factors. These are:

1—The *speed* at which the wire moves through the magnetic field.

2—The *strength* of the magnetic field.

3—The *angle* at which the wire cuts through the magnetic field.

4—The *length* of the wire in the magnetic field.

The greater the speed at which the wire moves through the magnetic field, the greater will be the effect on the free electrons in the wire. More electrons will be moved to one end of the wire and a greater difference of potential will be developed across the wire. Recall that electrons in the wire have a magnetic field about them and so respond to the external magnetic field.

If the wire moves through the magnetic field at right angles to the lines of force the greatest possible voltage will be induced across that wire (Fig. 4.4A). If the wire is moved through the magnetic field parallel to the lines of force no voltage will be induced (Fig. 4.4C). If the wire is moved through the magnetic field in a direction between parallel and right angles,

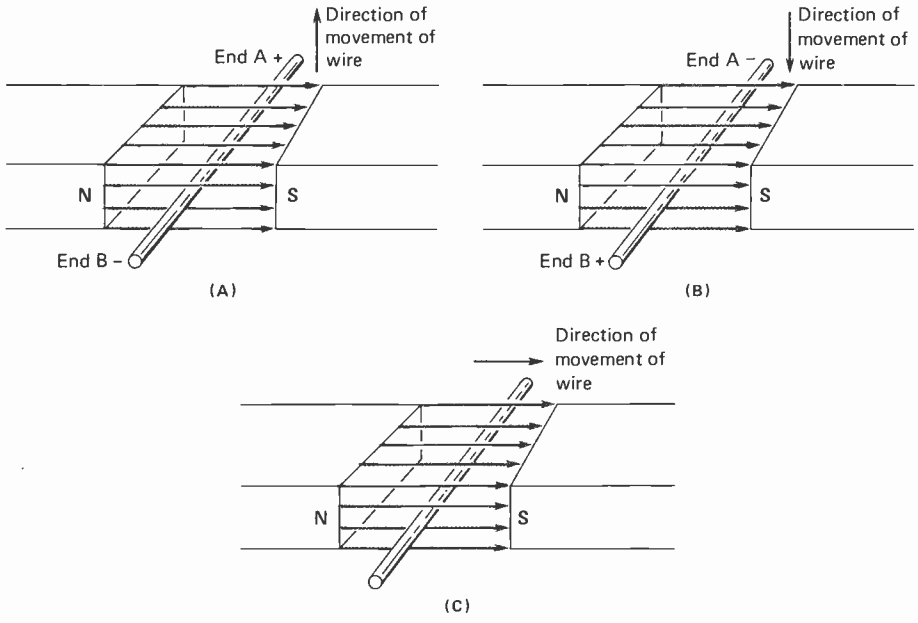


Fig. 4.4—When wire is moved through the magnetic field in the direction shown in (A) a voltage is induced of the polarity indicated. When the direction of movement is reversed as in (B) the induced polarity is reversed. When the wire is moved parallel to the lines of force (C) no voltage is induced.

a voltage somewhere between zero and maximum will be induced.

The Simple Generator—The AC generator, also referred to as an alternator, consists of two parts as shown in Fig. 4.5. The first part is the generator itself and the second part, called the *prime mover*, provides the power to rotate the generator. The prime mover may be powered by water flow—such as at waterfalls or dams, or by steam generated by coal, oil or atomic power. Some generators are driven by gasoline or diesel engines.

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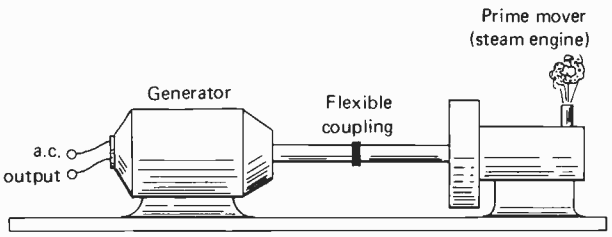

Fig. 4.5—Physical arrangement of the generator and the prime mover. The flexible coupling allows for slight errors in shaft alignment.

The internal construction of the simplest possible generator is shown in Fig. 4.6. It consists of a loop of wire placed in the magnetic field developed between two magnets. One end of the loop is connected to the prime mover through a non-conducting shaft. The other end of the loop is connected to two slip rings. Slip rings are round pieces of copper which rotate with the loop. Two brushes, usually made of carbon, ride on the rings, making electrical contact. This permits the voltage developed by the rotating loop to be removed from the generator without any tangled or twisted wires.

Looking at Fig. 4.7A, again we can see that the wire loop in the magnetic field really consists of two wires, A-B and C-D. Each of these wires will develop a voltage as they move through the field and each voltage will be opposite in polarity compared to the other. When A is positive and B is negative D will be negative and C positive. This happens because when wire A-B is moving downward wire C-D must be moving upward. Referring back to Fig. 4.4(A) and (B) we can see that wires moving through the magnetic field in opposite directions induce voltages of opposite polarities. When analyzing the operation of the generator, however, it is simpler to consider the voltage induced in a single wire to see how the AC is developed.

The operation of the generator can be understood from the drawings in Fig. 4.7. In (A) we have removed the drive shaft that connects to the prime mover and the slip rings and brushes for the output, all of which are understood to be necessary if operation is to take place, but is done to help simplify the drawing. We have also darkened one half of the loop so that we can determine the position of the wire between the two magnets. Since we are going to rotate the loop, the most logical way to determine and indicate its position is by means of the circle which we can divide into 360 degrees. We can then rotate the loop and determine the effect every 30 degrees. The following conditions must exist for our explanation to be valid:

1—The magnetic field must be uniform in strength across the faces of the opposing magnets.

2—The loop must be rotated in a counter clockwise direction.

3—The loop must be rotated at a constant speed.

As the loop is rotated at a constant speed it passes through the zero degrees position as shown in Fig. 4.7(B). Since the wire is moving parallel with the lines of force at this point no voltage develops across the loop.

As the loop rotates from zero to thirty degrees (Fig. 4.7C) the loop begins to cut across lines of force at an angle. While the angle at which it cuts the lines of force is not close to ninety degrees it is no longer zero degrees or parallel and so a small voltage is induced in the loop. As the loop advances to sixty degrees, as shown in Fig. 4.7 (D), it begins to cut across more lines of force at an angle closer to ninety degrees. This results in a larger induced voltage. As the loop continues to rotate another thirty degrees to move through the ninety degree position, it is now cutting through the lines of force at right angles to induce maximum voltage.

Continuing its rotation from ninety degrees to 180 degrees causes the voltage induced in the loop to decrease as the angle of passage through the field moves closer to parallel.

From 180 degrees, through 270 degrees and back to 360 degrees (zero degrees, the starting point) the induced voltage is identical to that of the first 180 degrees (0°-180°) except that the polarity of the output voltage is reversed because the loop is cutting

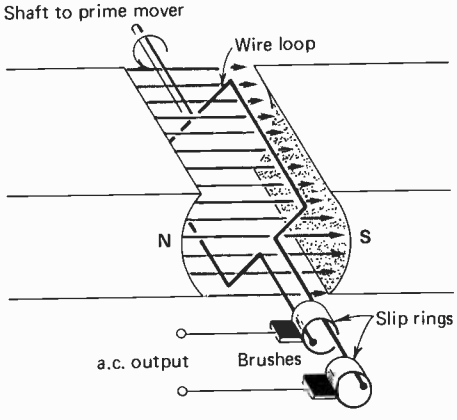

Fig. 4.6—Construction of the basic AC generator. Loop is rotated in the magnetic field by the prime mover. The AC output is taken off the slip rings by the sliding brushes so wires are not entangled by the rotation.

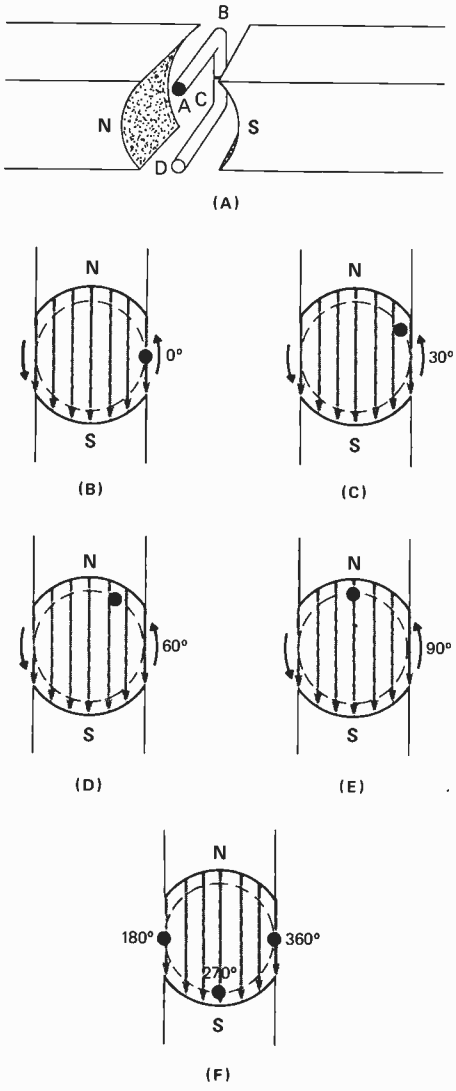

Fig. 4.7(A)—Structure of the loop in the generator field. The voltage across A and B adds to the voltage across C-D to provide the total output from A to D. (B) to (F)—Position of the top portion of the loop every 30° of the rotation.

through the field in the opposite direction.

The entire rotation of the loop and the resultant output voltage is shown in Fig. 4.8. To the left is the generator with the position of the rotor marked off every fifteen degrees, lettered from A to X. To the right is the resultant output voltage. The horizontal axis is marked off every fifteen degrees (from 0° to 360°). The vertical axis is marked off in voltage, positive above the zero line, negative below the zero line. The plotted voltage is the result of one rotation of the loop.

Further examination of Fig. 4.8 shows that the maximum positive voltage is generated as the loop passes through ninety degrees and the maximum negative is generated as the loop passes through 270°; as the loop passes through 0° and 180° zero output voltage is developed; from 0° to 180°, rotation of the loop produces only a positive output; from 180° to 360° rotation produces only a negative output.

AC Terminology

Because an AC has continuously changing values of voltage and current and the rotor of the generator can be driven at various speeds it is necessary to carefully define this type of voltage or current. The following terms must be understood.

Cycle—The rotation of the loop in the generator through 360° produces an output voltage defined as one *cycle*. As shown in Fig. 4.9(A), one cycle consists of the positive alternation (from 0° to 180°) and a negative alternation (180°-360°).

Sine Wave—The shape of the output waveform shown in Fig. 4.8 is called a *sine wave* (or a sinusoidal wave) because the voltage induced in the rotating loop is determined by the *sine* of the angle, a trigonometric function.

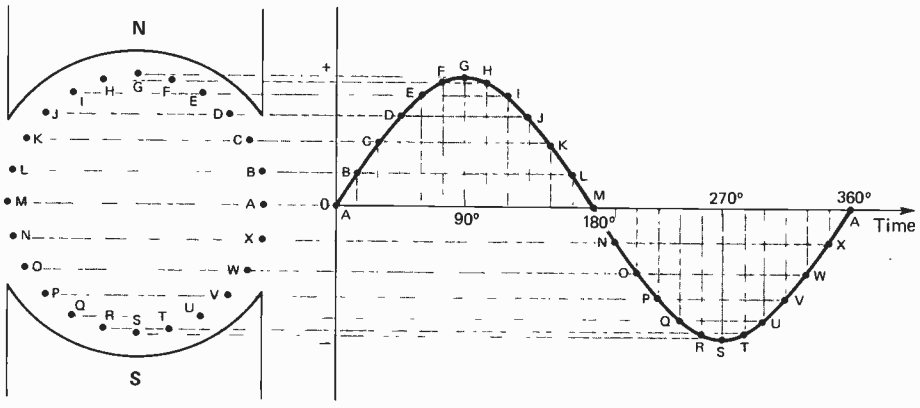

Fig. 4.8—The full rotation of the loop shown on the left produces the sine wave on the right. The horizontal axis of the sine wave is marked off in degrees rather than time in seconds because different frequencies would each have a different time but for all frequencies the loop must rotate 360° regardless of its speed.

Frequency—By increasing the speed of the prime mover and thus the speed of the loop in the generator field, it is possible to increase number of alterations or cycles in a given period of time. The standard unit of measurement is *one second* and so *frequency is the number of cycles completed in one second.* Therefore, if 60 cycles are completed in one second, it is noted as 60 Hertz, Hertz meaning the cycles per second. This is abbreviated as 60 Hz.

If, as shown in Fig. 4.9(B), three cycles are generated in one second, the frequency of the output is 3 Hz. If the generator rotation is increased twenty times the output would contain 60 cycles in one second or 60 Hz. As the frequency of the AC increases, new units are used to simplify notation. For example:

1000 Hz = 1 kilohertz = 1 kHz
1,000,000 Hz = 1 megahertz
= 1 mHz
1,000 mHz = 1 gigahertz = 1 gHz

The frequency of most power systems is low, most often 60 Hertz. On occasions it may be 25, 40 or 50 Hz but 60 is most popular because it is equally suitable for lighting and operating motors. Some generators are built to provide 400 Hz (a popular frequency for aircraft use) and some, for special purposes, produce 20 kHz.

Period—If the frequency of a generator output is 60 Hz, this tells us that 60 cycles are being produced in one second. Each cycle, therefore, must be occurring in 1/60 of a second. This time duration of one cycle is defined as the *period.* There is a simple mathematical relationship between time and frequency.

$$t = 1/f$$

where t = the time duration of one cycle in seconds
f = the frequency in Hz.

Thus, if an AC voltage has a frequency of 5000 Hz, the period of one cycle is found by

$t = 1/f$
$= 1/5000$
$= 0.0002$ seconds

By rearranging the formula (transposing) we can solve for f if t is known.

$$f = 1/t$$

To illustrate, we can find the frequency of an AC voltage if we know, for example, that it has a period of 0.005 seconds.

$f = 1/t$
$= 1/0.005$
$= 200$ Hz

Methods of Measuring AC

When DC is applied to a resistance it is very simple to calculate the current flow and power dissipation. As shown in Fig. 4.10(A), the applied voltage is a constant 10 volts resulting in a constant current of one ampere which in turn results in a constant power dissipation of 10 watts. In the circuit shown in Fig. 4.10(B), an AC voltage is applied to a 10 ohm resistor. (Note the symbol for the AC generator.) The AC voltage rises to plus ten volts and drops to minus 10 volts. Will the resistor also dissipate 10 watts as in example (A)? No, because the 10VDC caused a *constant* current of 1A while the AC voltage causes 1A to flow only twice each cycle. The rest of the time the current is rising up to 1A or dropping down to zero. Clearly then, we must have a different system of measuring AC so that we will have a true idea of the work it can accomplish. Some methods of measuring AC are outlined below.

Peak Voltage—The peak voltage of a sine wave is the maximum voltage reached during an alternation or cycle. For a sine wave the positive peak voltage is always equal to the negative peak voltage and each alternation is a mirror image of the other. The peak voltage is indicated as E_{pk} or E_{max}. While the peak voltage is important in some calculations and applications it is not the standard unit of measurement. The peak voltage measurement is shown in Fig. 4.10(C).

Peak-to-Peak Voltage—The peak-to-peak

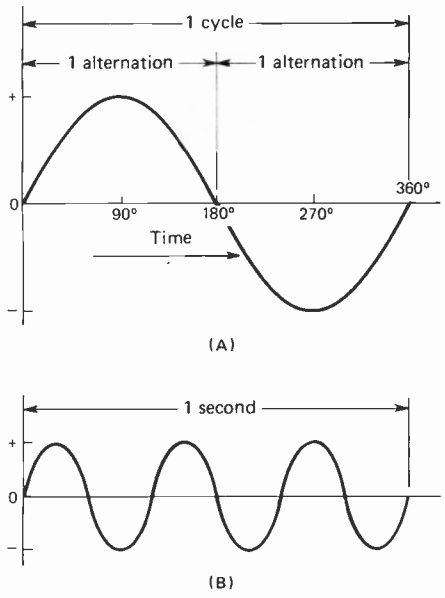

Fig. 4.9(A)—One cycle consists of two alternations, the positive from 0° to 180° and the negative from 180° to 360°. (B) When 3 full cycles occur in one second the frequency is 3 Hertz or 3 Hz.

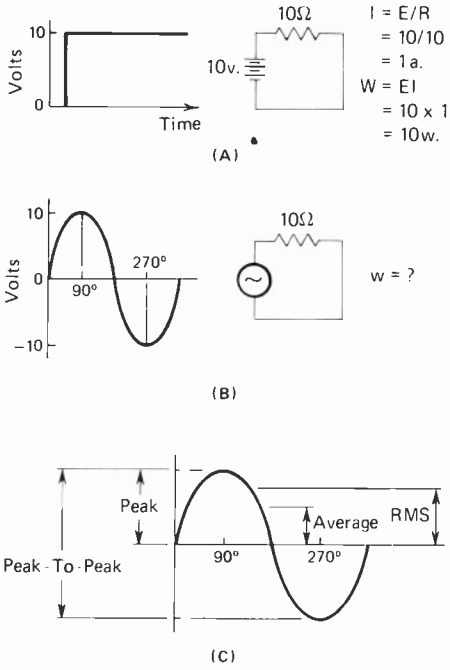

Fig. 4.10(A)—A DC voltage produces a constant current and so a constant power dissipation. (B) A sine wave does not provide a constant voltage and so the current must also vary. (C) A sine wave with the various ways of measuring the voltage marked off.

voltage is the sum of the positive peak and the negative peak as shown in Fig. 4.10(C). Since the negative and positive peaks of a sine wave are always equal, the peak-to-peak voltage is always equal to $E_{pk} \times 2$. Again, the peak-to peak voltage, abbreviated $E_{p\text{-}p}$, is not the standard unit of measurement but is encountered in some calculations.

Instantaneous Voltage—The instantaneous value of an AC voltage is the voltage that exists at any one instant. The instantaneous voltage will have a specific amplitude (height) and polarity. The instant of time is specified in degrees between 0 and 360. For example, in

Degrees	sin	cos
43.0	0.682	0.731
43.5	0.688	0.725
44.0	0.695	0.719
44.5	0.701	0.713
45.0	0.707	0.707
45.5	0.713	0.701
46.0	0.719	0.695
46.5	0.725	0.688
47.0	0.731	0.682
47.5	0.737	0.675
48.0	0.743	0.669
48.5	0.749	0.663
49.0	0.755	0.656
49.5	0.760	0.649
50.0	0.766	0.643

Table I—Extract from a typical Sine and Cosine table.

Fig. 4.10(B), at 90° the instantaneous voltage is +10V; at 180° it is 0V; at 270° it is −10V and at 360° it is 0V again. To determine the instantaneous voltage at any point other than those marked in Fig. 4.10(B) we use the formula

$$e_{inst} = E_{max} \times \sin \theta$$

where e_{inst} = the instantaneous voltage at some angle between 0°-360°

E_{peak} = the peak or maximum voltage of the sine wave

$\sin \theta$ = the value for any angle determined from the Sine and Cosine Tables found in a math text or by the use of a calculator with scientific functions.

For example, to find the instantaneous value of voltage at 45° for the sine wave of Fig. 4.10(B) we first refer to the Sine and Cosine Tables and find the sine of 45°, 0.707. Substituting, we have

$$\begin{aligned} e_{inst} &= E_p \times \sin \theta \\ &= 10 \times 0.707 \\ &= 7.07V \end{aligned}$$

Again, this calculation is rarely required in the field, if ever, but permits us to understand the basis for the measurement standards to be explained below.

Average Voltage—The *average voltage* of a sine wave is determined by calculating the large number of instantaneous voltage values from 0 to 90°, adding these voltages and then dividing by the number of voltages added. If, as shown in Fig. 4.11, we calculate the instantaneous voltage every 5° from 0° to 90°, we will have 19 voltages. Adding these voltages and dividing by the number of voltages added, 19 in this instance, will provide us with the average voltage. The answer will always be 0.636 of the peak voltage. Thus:

$$E_{average} = 0.636 \times E_{peak}$$

For example, if the peak voltage of a sine wave is 47 volts, Eav would be

$$\begin{aligned} E_{av} &= 0.636 \times E_{pk} \\ &= 0.636 \times 47 \\ &= 29.89V \end{aligned}$$

It should be noted here that while the average value of one alternation (either one) is $0.636 \times E_{pk}$, the *average of an entire cycle is* 0V since the negative and positive peaks cancel. However, the average value referred to is *always* for one half cycle. Again, this is not the major measurement for an AC voltage but it is encountered in some calculations.

Effective Voltage—All the previous methods of measuring the AC voltage or current are used for calculations and

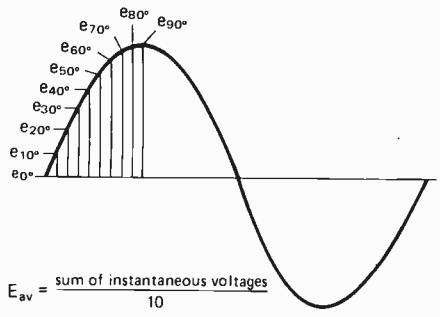

Fig. 4.11—The average voltage is computed by averaging a large number of instantaneous voltages.

simple design work but are not used in practical work because they are not comparable with DC. The AC that is the *equivalent of DC* is defined as the *effective or root mean square voltage* (abbreviated rms). The effective value of an AC voltage is determined by calculating a large number of instantaneous voltage values from 0° to 180°, squaring each, adding them, dividing by the number added to get the average and then taking the square root of that average to give us the root mean square or rms value. *It is this value of voltage which will have the same effect as an equivalent value of DC*. The calculated value of rms voltage will always be 0.707 of the peak voltage. Thus

$$E_{rms} = 0.707 \times E_{peak}$$

If we wish to determine the rms, or effective value of an AC voltage with a peak voltage of 75 volts, we substitute as follows:

$$\begin{aligned} E_{rms} &= 0.707 \times E_{pk} \\ &= 0.707 \times 75 \\ &= 53.025V \end{aligned}$$

AC Voltage Conversions—Since it is often necessary to convert from one AC voltage or current measurement form to another, particularly when learning basic electronics, it would be helpful to see the conversion procedures clearly. These are summarized below.

Unknown	Known	Method
Peak	Peak-to-Peak	÷2
Peak-to-Peak	Peak	×2
rms	Peak	×0.707
Peak	rms	×1.414
Average	Peak	×0.636

The ordinary household outlet provides us with 117VAC. Is this voltage value peak-to-peak, peak, rms or average? It is *rms*, the effective value. Any time an AC voltage is given and the unit of measurement is *not* indicated, *it is automatically understood to be rms*. The 117VAC available from an outlet can then be converted to the other measurement forms using the formulas above. *(continued)*

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BASIC RADIO *(continued)*

Rate of Change—Examining any of the sine waves shown in Figs. 4, 8, 9 and 10, one can see that they do not have a constant rate of change. This refers to the voltage increase or decrease for any unit of time, measured in degrees. This is more clearly laid out in Fig. 4.12. At 30° the instantaneous voltage is 5V. At 60° e_{inst} is 8.66V and at 90° it is 10V. The change in voltage from 0° to 30° is 5V. This is noted as Δ5V, or delta 5V, the Greek letter delta meaning *change of*. From 30° to 60° the voltage rises from 5 to 8.66V, a change of 3.66V. From 60° to 90° the voltage rises from 8.66 to 10V, an increase of 1.34V. Comparing the voltage changes we have:

1—For the first 30°	Δ5V
2—For the second 30°	Δ3.66V
3—For the third 30°	Δ1.34V

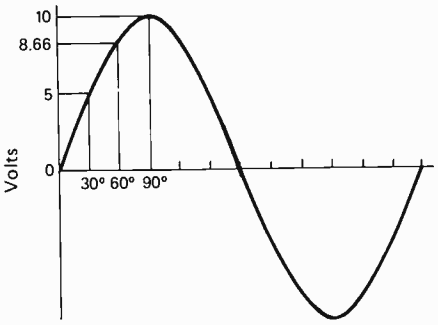
An important point to observe in the rate of change concept is that it also changes with frequency. As shown in Fig. 4.13, the higher the frequency the greater the rate of change.

Frequency Spectrum—AC voltages and currents can be generated at frequencies lower than 1Hz to as high as 5×10^{20} hZ (5 followed by 20 zeros, a number too cumbersome to write). We have already listed those frequencies used for power systems. AC at other frequencies are used for radio communication, medical purposes, navigation and so on. The range of frequencies available for these purposes is called the *frequency spectrum* or sometimes the *radio spectrum*. A partial listing of the spectrum is shown below.

1 to 10 Hz
Below audible threshhold
10 Hz to 20 Hz
Audio frequency range
10 to 600 Hz
Power system frequency range
15 kHz to 1.5 mHz
Ultrasonic range
5 to 30 kHz
Very low radio frequency (VLF)
30 to 300 kHz
Low radio frequency (LF)
300 kHz to 3 mHz
Medium radio frequency (MF)
3 to 30 mHz
High radio frequency (HF)
30 to 300 mHz
Very high radio frequency (VHF)

Suggested Reading

Schrader, Robert L. *Electronic Communication*, Third Edition, New York: McGraw-Hill, pp. 62-66.
Tepper, Marvin, *Basic Radio*, Vol. II, Second Edition, New Jersey: Hayden, pp. 2-8 to 2-18.



At 30° e_{inst} = Epk x sin 30° = 10 x 0.5 = 5v.
At 60° e_{inst} = Epk x sin 60° = 10 x 0.866 = 8.66v.
At 90° e_{inst} = Epk x sin 90° = 10 x 1 = 10v.

Fig. 4.12—The rate of change of voltage in a sine wave is not constant. As shown above, the first 30° segment produces a change of 5 volts while the third 30° segment produces a change of 1.34 volts.

300 mHZ to 3 gHz
Ultra high radio frequency (UHF)
3 to 30 gHz
Super high radio frequency (SHF)
30 to 300 gHz
Extremely high radio frequency (EHF)
3×10^{11} Hz to 4.3×10^{14} Hz
Infra red (heat)
4.3×10^{14} Hz to 1×10^{15} Hz
Visible light
1×10^{15} Hz to 6×10^{16} Hz
Ultra violet
6×10^{16} Hz to 3×10^{19} Hz
X-Rays
3×10^{19} Hz to 5×10^{20} Hz
Gamma Rays

Above this lies the cosmic radiation range.

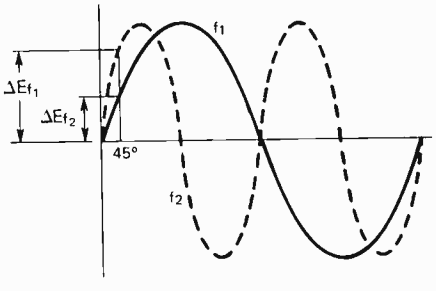


Fig. 4.13—The rate of change is greater for a higher frequency signal for the same given time.

Generation of AC Experiment

Experiment #2B, April, 1976, page 109, described how to generate voltage magnetically. Review the results or perform the experiment over again.

SELF-CHECK QUESTIONS

1—In direct current circuits the polarity of the voltage source _____. (Changes; remains unchanged).

2—In alternating current circuits the polarity of the voltage soure _____. (Changes; remains unchanged).

3—Alternating current is not as desirable as direct current. T or F.

4—Alternating current voltages can be stepped up or down by the use of a transformer but DC cannot. T or F.

5—A wire moved through a magnetic field at right angles to the lines of force will develop a voltage across it. T or F.

6—The amount of voltage induced in a wire moving through a magnetic field is a function of the speed of movement, the strength of the magnetic field and the polarity of the magnetic field. T or F.

7—If a wire moves through a magnetic field parallel to the lines of force, the voltage induced in that wire will be _____. (maximum; minimum; a moderate value).

8—The function of slip rings and brushes is to remove the output of the rotor of the alternator without tangling the wires. T or F.

9—The output wave shape from the generator shown in Fig. 4.6 is called a _____ wave.

10—The first 180 degrees of rotation of the loop generates the positive _____.

11—How many degrees is represented in one cycle of AC?

12—One cycle of an AC wave consists of one positive and one negative alternation. T or F.

13—The speed of the prime mover has little or no effect on the output frequency of the generator shown in Fig. 4.6. T or F.

14—Frequency is defined as the number of cycles completed in 360°. T or F.

15—1,000 kHz is the same as 1mHz. T or F.

16—1,000 mHz is the equivalent of 1gHz. T or F.

17—The time duration of one cycle is its period and the period is measured in degrees. T or F.

18—Find the period of a 2.7 kHz sine wave.

19—Calculate the frequency of a sine wave whose period is 0.0001 seconds.

20—If the peak positive voltage of a wave is 25 volts, its negative peak

may be 25 volts, plus or minus 10 volts. T or F.

21—The instanteous voltage of a sine wave at 43.5° given a peak voltage of 30 is _____.

22—The average voltage of a sine wave is

a — equal to the effective voltage
b — one-half of the peak voltage
c — equal to 0.636 × E_{peak}
d — equal to 0.636 × $E_{peak\text{-}to\text{-}peak}$.

23—Given a sine wave with a peak-to-peak voltage of 70 find the following:

A — E_{peak}
B — $E_{average}$
C — $E_{effective}$
D — E_{rms}

24—The rate of change of voltage for a sine wave is the same regardless of frequency. T or F.

ANSWERS TO SELF-CHECK QUESTIONS

1—remains unchanged.
2—changes.
3—F.
4—T.
5—T.
6—F. The polarity of the field only affects the polarity of the induced voltage, not the amount.
7—minimum.
8—T.
9—sine.
10—alternation.
11—360°.
12—T.
13—F.
14—F. It is the number of cycles completed in one second.
15—T.
16—T.
17—F. Period is measured in seconds.
18—t=1/f=1/2700=0.000037 seconds.
19—f=1/t=1/0.0001=10 kHz.
20—F. If the positive peak is 25 volts the negative peak must also be 25 volts.
21—$e_{inst}=E_{pk} \times \sin\theta = 25 \times \sin 43.5 = 25 \times 0.688=17.2V$.
22—c.
23—A—$E_{pk} = E_{pp}/2 = 70/2 = 35$ V
B—$E_{av} = E_p \times 0.636 = 35 \times 0.636 = 22.26V$.
C—$E_{eff} = E_{pk} \times 0.707 = 35 \times 0.707 = 24.745V$.
D—$E_{rms} = E_{eff} = 24.745V$.
24—F. The higher the frequency the greater the rate of change.

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SIDEBAND ID NUMBERS?

They don't use "handles" to ID on the sideband channels, stations use "Sideband ID Numbers." If you're an active Sidebander you may already have several local or regional group ID numbers—if you're a newcomer or a future Sidebander, you may not have any Sideband ID numbers at all! Whether you have a dozen numbers or none at all, it's easy and important to you to get yourself a set of *national* ID numbers from the *SSB Network*, the oldest (1964) and most prominent national sideband group. Old timers, newcomers, and future Sidebanders should obtain information and an application for national *SSB Network* numbers by sending a self-addressed stamped envelope to: Sidebanders' Service Bureau, P.O. Box 381-XF, Smithtown, NY 11787.

THE HAM BANDER

Get Your Ham License -- PRONTO!
It's Easier Than You Think!
PART 3 OF A SERIES

By Lee Aurick, KNE7802, W2LE

HOW is your c.w. practice coming? Can you call off all the letters by now? More importantly, if someone sends the letters to you, can you identify them? By now you should be able to write all the letters, all the numbers, and should have a good grasp on the operating symbols. I *know* you've got the three punctuation symbols down cold.

Is There a Plateau?

If you've had any recent contact with friends who may be hams it's likely that you've been asked, "Have you reached the plateau yet". This refers to a certain point many people reach in learning c.w. which they just can't seem to move beyond. No matter how hard they try, they are unable to improve their speed by even one word-a-minute. To these people, the ability to increase their c.w. speed is gone. They seem to have reached a level plateau, and can go no further. It takes a great effort and considerable time to "climb" above this plateau, but it can be done with perserverance. The plateau does exist—and for those individuals who have experienced it, it is very real. The pity is that it doesn't have to be there at all.

The plateau is usually the result of improper practice technique. For example, you are now at the point, or have just passed it, of learning the alphabet and number symbols. It is only natural to have someone send the letters and numbers slowly and laborously while you are practicing and learning. And here is where the groundwork is laid for the plateau which can plague you for months, and even years. Your friend is sending the letters of the alphabet to you in a dragged-out sequence—dah—dah—dit—dah. OK, you'll eventually learn to recognize "Q". But it will be difficult to get beyond the plateau he is building for you. As you advance, you'll have to *relearn* the sound of the symbols at *each* increase in speed. Six words, seven words, eight words-per-minute, and so on. How can you avoid the plateau?

It's easy. You'll recall that in the second part of this series (*S9* for February) it was suggested that each *letter* be sent either by mouth or key, at an *average* speed of *one second*. That would be sixty letters per-minute, which, at five letters-per word, is twelve words-per-minute. So—what you've been doing up to this point is learning *letters* at a speed of twelve words-per-minute (if you've followed the suggestion). It makes no difference that the letters may have been spaced far apart so that the words were sent at three or four per minute. Practice will improve that, but the letters were being *learned* at twelve words-per-minute.

If you kept on until your speed reached twelve *words*-per-minute you *might* be at a plateau. It's possible. Most people who learn improperly plateau-out at about eight words-per-minute. From here on, no matter how slowly the *words* are sent, the letters should be sent at a speed of twenty words-per-minute. You'll find that you will never reach a plateau. Steady practice (as much as you wish to invest) will result in steady improvements in c.w. speed. "Isn't it possible to reach a plateau at twenty words- per-minute?", someone asks. It's not likely, since by the time you reach that speed you'll already be copying by whole words, not just letters. So, pick up the sending speed now to the point where the letters are being sent in about three-quarters of a second, each. It's unimportant how many letters you send or receive in a minute. That speed will continue to improve with practice. And remember, practice is the answer. You're on the right track now, and you'll never have a difficult plateau to climb. Promise.

Geographical Areas, Call Signs, and What They Mean

In part two we learned that it is important to learn numbers because you will be involved with them as soon as you get on the air. All amateur call signs have a number as a part of the prefix. In the U.S., as in many countries, that number is assigned by the government dependant upon the area in which you live. The U.S. is divided into ten call areas, and the number which appears in an amateur call will give you a pretty good idea as to the

Fig. 1—This multi-band high frequency transceiver is available in kit form, and may be constructed with a great savings over commercially manufactured gear.

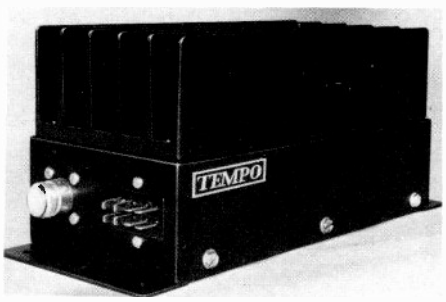

Fig. 2—Solid-state linear amplifiers such as this will step up a 5 watt mobile signal to 100 watts at 2-meters.

Fig. 3—Linear amplifiers are used at fixed locations to boost SSB signals to 2,000 watts PEP, and 1000 watts c.w.

location of a station, just as soon as you hear it. There are now many prefixes assigned to amateurs in the U.S., and as the number of amateurs grows there will be even more.

Prefixes presently in use in the U.S. are W, K, WA, WB, WD, N, and A. The latter two are recent assignments. WC is reserved for commerative stations, and is assigned to aid in celebrating a specific event; such as the centennial of your home town. The number of the call area follows the first letter, or letters, and together they comprise the prefix. The remainder of the call, the suffix, is generally assigned by the FCC in alphabetical order. Recently, Extra Class licensees were given the privilege of requesting their choice of any unassigned calls, and many thousands took advantage of the opportunity. As you progress you will learn that each country, by international agreement, has a distinctive prefix that serves to identify amateurs of that country the moment you hear them. For example, F for France, G for Great Britain, PY for Brazil, VE for Canada, XE for Mexico, and so on. If you decide to become a DXer (specializing in contacting foreign countries) you will come to know the prefixes of many exotic, far away countries as well as you know you own name. There is even a special contest and award, sponsored by *CQ—The Radio Amateur's Journal*, to amateurs who make contact with three hundred or more stations with different prefixes.

Scoring The Novice Exam

At the end of the study in any course one must expect to take an exam, and this Novice course is no exception. The twenty questions on the exam have multiple-choice answers. That is, five answers are provided only *one* of which is absolutely correct. Your task is to determine the correct answer and then place a mark on the answer sheet alongside the number that corresponds to this answer.

Some of the answers may appear to be partially correct, but only *one* will be entirely correct. The FCC requires a grade of at least 74 per cent to pass any of its exams, so this means that at five points for each of the twenty questions on the Novice exam you may miss no more than five correct answers.

Unit Relationships

Some of the terms used in electronics, such as volt, ampere and farad (unit of capacitance) are frequently too large for easy use. Other terms, such as hertz (cycles-per-second) are too small. Standard prefixes have been established

Call Area	States
1st	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont
2nd	New Jersey and New York
3rd	Delaware, Maryland, Pennsylvania and the District of Columbia
4th	Alabama, Florida, Georgia, Kentucky, North and South Carolina, Tennessee and Virginia
5th	Arkansas, Louisiana, Mississippi, New Mexico, Oklahoma and Texas
6th	California
7th	Arizona, Idaho, Montana, Nevada, Oregon, Utah, Washington and Wyoming
8th	Michigan, Ohio and West Virginia
9th	Illinois, Indiana and Wisconsin
10th	Colorado, Iowa, Kansas, Minnesota, Missouri, Nebraska, North and South Dakota
KL7	Alaska
KH6	Hawaii

Chart I

The ten call areas of the U.S. and the states they comprise.

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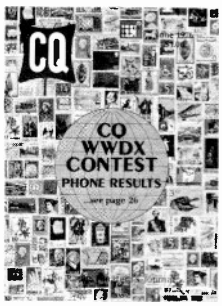
Then **S9**'s Sister Publication



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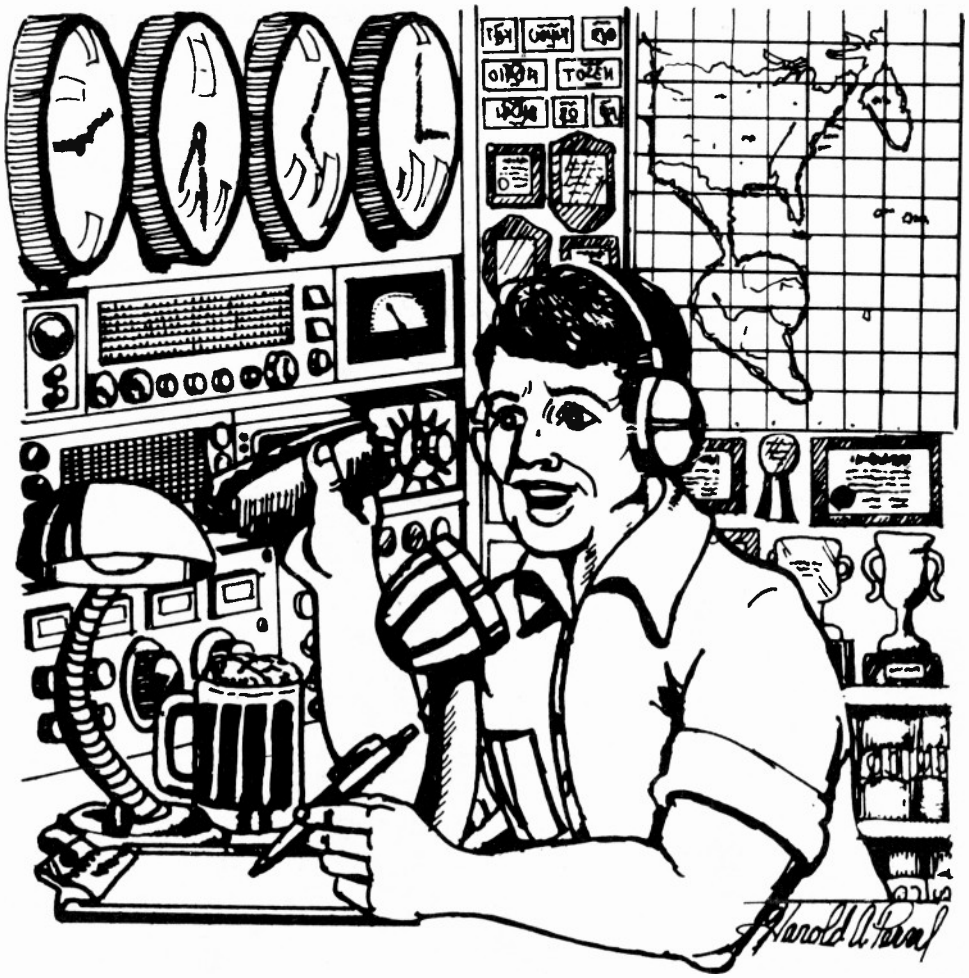

A recent survey of S9 readers indicated that two out of every three replying to our questionnaire would like to become an amateur radio operator. And we're all for that, because CQ, The Radio Amateur's Journal, is the oldest magazine in our company's stable.

CQ is not just another ham publication; it's the only ham publication aimed at the beginner as well as the old timer. It's the only ham magazine that recognizes that every new ham isn't an electronic engineer. The editorial features in CQ are aimed at people — people like yourself who turn to amateur radio as a means of having fun.

CQ caters primarily to the operating end of radio, with just a smattering of technical material to keep you up to date on what's happening. And even the technical portions of CQ are presented in a manner that every new amateur will understand.

In other words, CQ is the fun magazine in the amateur radio field. It's the amateur magazine that you'll enjoy from cover to cover. And remember, CQ is brought to you by the same folks who bring you S9. What more could you ask for?

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which make it easier to use these terms. You will need to know them, and their relationship to each other. They are shown in Chart II.

milli-thousandth
micro-millionth
pico-millionth of
a millionth
kilo-thousand
mega-million
giga-billion

Chart II- Prefixes frequently used when the value of a unit is otherwise too small or too large.

Pico is pronounced *peek-oh*, and giga is pronounced jig-ah. Terms which you will normally encounter are milli-ampere (thousandth of an ampere—mA), picofarad (a millionth of a millionth of a farad—pF), kilohertz (one thousand hertz—kHz), megahertz (one million hertz—MHz).

Q Signals

In part two, Q signals were discussed very briefly in connection with a question on the written exam.

Q signals are internationally-agreed-upon abbreviations. Their meaning is the same in every language in the world, and their primary purpose is to aid operators in exchanging information quickly, sometimes under poor conditions, and often where language might otherwise be a barrier. There are many of them, and you will, in time, learn those that you will use most frequently. Only a few are really needed for the Novice exam and they are shown in chart III. Q Signals may be used to ask a question, or to answer one. For example, "QRQ?" means "Shall I send faster?" If the receiving operator wants the other station to send faster he may send "QRQ 20" which means "Send faster, 20-words-per-minute."

The Written Exam

In part two, you saw just how simple the written exam really is. The Novice license requires only basic arithmetic, a minimum technical knowledge, and just enough understanding of the Rules and Regulations of the FCC to keep you out of trouble. The idea is that once you get your license and get on the air your knowledge will mushroom with your experience, and you'll be well on your way to becoming a well rounded amateur operator.

If you're ready for the next installment of questions—standby. Here it is.

Rules and Regulations

The Amateur Radio Service is *best* described as:

a) A radio communication service of self-training, intercommunication and technical investigation carried on by amateur radio operators.

b) An emergency radio service manned by volunteers.

c) A service dominated by highly skilled engineers.

d) A service dedicated to communications in the public interest.

e) A training ground for military operators.

The correct answer is a). While many amateurs do participate in emergency communications and preparedness, b), and amateur radio exists because it is a public service, d) and many young amateurs do eventually find

SELECTED HAM RADIO "Q" SIGNALS

Abbreviation	Question	Answer or Advice
QRA	What is the name of your station?	The name of my station is.
QRG	Will you tell me my exact frequency (or that of . . .)?	Your exact frequency (or that of . . . is . . . kc/s(or Mc/s).
QRH	Does my frequency vary?	Your frequency varies.
QRI	How is the tone of my transmission?	The tone of your transmission is . . . (1. Good; 2. Variable; 3 Bad).
QRK	What is the readability of my signals (for those of . . .)?	The readability of your signals (or those of . . .) is . . . (1. Unreadable; 2. Readable now and then; 3. Readable, but with difficulty 4. Readable; 5. Perfectly readable).
QRL	Are you busy?	I am busy (or I am busy with . . .) Please do not interfere.
*QRM	Are you being interferred with?	I am being interferred with.
*QRN	Are you troubled by static?	I am troubled by static.
*QRQ	Shall I increase power?	Increase power.
*QRP	Shall I decrease power?	Decrease power.
*QRO	Shall I send faster?	Send faster (...words per minute).
*QRS	Shall I send more slowly?	Send more slowly (. . . words per minute).
*QRT	Shall I stop sending?	Stop sending.
*QRU	Have you anything for me?	I have nothing for you.
QRV	Are you ready?	I am ready.
QRX	When will you call me again?	I will call you again at . . . hours (on . . . kc/s(or Mc/s)).
*QRZ	Who is calling me?	You are being called by . . . (on kc/s or Mc/s)).
QSA	What is the strength of my signals (or those of . . .)?	The strength of your signals (or those of . . .) is . . . (1. Scarcely perceptible: 2. Weak; 3. Fairly good; 4. Good; 5. Very good).
*QSB	Are my signals fading?	Your signals are fading.
QSD	Is my keying defective?	Your keying is defective.
QSK	Can you hear me between your signals?	I can hear you between your signals.
QSL	Can you acknowledge receipt?	I am acknowledging receipt.
*QSO	Can you communicate with . . . direct or by relay?	I can communicate with . . . direct (or by relay through . . .)
QSP	Will you relay to . . . free of charge?	I will relay to . . . free of charge.
*QSY	Shall I change to transmission on another frequency?	Change to transmission on another frequency (or on . . . kc/s (or Mc/s)).
*QTH	What is your position in latitude and longitude (or according to any other indication)?	My position is . . . latitude . . . longitude (or according to any other indication).

Chart III

Selected International Q Signals. Those with an asterisk* are likely to be of most importance to Novice operators.

themselves welcomed by the military services, e), there is absolutely no truth to c).

Radio Phenomena

Describe the relationship between frequency and wavelength.

a) there is no relationship.

b) the frequency (in hertz) multiplied by the wavelength in meters equals the speed of radio waves in free space (300,000,000 meters per second).

c) the lower the frequency the shorter the wavelength.

d) the higher the frequency the longer the wavelength.

e) they are equal.

The correct answer is b). In other words, if you divide the speed of a radio wave in free space (300,000,000 meters per second) by the frequency (in Hertz) you have the wavelength in meters. On the other hand, if you divide by wavelength you have the frequency (in hertz). This is how you convert from frequency to wavelength. As the wavelength gets shorter, the frequency gets higher.

Operating Procedures

How is the RST reporting system used by amateur radio operators?

a) to tell the other operator you are ready for emergency communications.

b) to alert an amateur that something is wrong with his signal.

c) as a means of reporting the readability, signal strength and tone of amateur signals.

d) to inform the other operator that you have finished talking with him.

e) to tell the operator at the other end that his signal is fading.

The correct answer is c). RST stands for Readability, Signal Strength and Tone. Readability is on a scale of 1 to 5 (unreadable to perfectly readable), Signal Strength is on a scale of 1 to 9 (barely perceptible to extremely strong) and Tone is similarly on a scale of 1 to 9 (rough note to perfect tone). Today, most amateur transmitters have T9 signals, and you will likely never hear one that isn't. In the next lesson we'll have a chart describing the complete system of reporting.

Emission Characteristics

Aø emission is the emission (transmission) of:

a) an on/off keyed signal (c.w.).

b) an unmodulated carrier (steady carrier).

c) voice.

d) frequency shift keying.

e) a new kind of FM.

The correct answer is b). If you were to press the mic button on your rig and *not* modulate the carrier with audio, such as your voice, that is Aø.

Fig. 4—This small handheld transceiver is capable of 1 watt and 5 watt power input. Many amateurs use such equipment to talk great distances by means of repeaters.

It is legal, on frequencies below 51 MHz, for short periods of time when required for authorized remote control purposes or for experimental purposes. Aø may be used, without limitation, on all amateur frequencies above 51 MHz.

Electrical Principles

Electromotive force (EMF) is another name for:

a) current.

b) voltage.

c) resistance.

d) power.

e) electrons.

The correct answer is b). It is the electrical pressure in a circuit and its unit of measure is the volt. In Ohm's Law is it the symbol E.

Practical Circuits

A low pass filter is customarily used in conjunction with:

a) a TV receiver.

b) an audio amplifier.

c) an i.f. amplifier.

d) a v.h.f. amplifier.

e) a transmitter.

The correct answer is e). A low pass filter is used in the transmission line between a transmitter and an antenna. Generally it is located adjacent to the transmitter. Its purpose is to reduce the strength of harmonics generated in the transmitter, and to help

The Pisces CB Personality

FEBRUARY 19-MARCH 20

by Paperdoll—KMI 4549

Poetic, mysterious Pisceans will lure you to find their 20 as they lazily drift down the boulevard engrossed in a never ending daydream. Ruled by the king of the seas, Neptune, Pisces' natural habitat is usually found close to water. Catch them modulating on marine channel 14 on their "sea-B" radios. These submarinal creatures have a strong psychic sense and use their built-in sonar to detect your very private thoughts. This keen sixth sense of these natural born mystics is used in the psychic arts of forecasting, healing and aurism. Dual sign Pisceans are generally extremists in one way or another and at times completely change course in midstream and swim against the tide. Many of the ambitious have reached high political office, namely President of the U.S. The other extreme may be found in the Bowery. A good motto for them is, "I had a dream." Their capacity for sympathy and solace overwhelms their good buddies. They'll suffer right along with you while giving a helping hand. Catch an eyeball on *their* eyeballs because they have the largest and most beautiful eyes of all the signs. No wonder this sign excells in the TV/movie world. Pisces, also ruler of feet, produces the best dancers, skiers and ice skaters. Typical Piscean handles might be: Waterbug, Lorelei, Charley Tuna, The Great Carnak, Bright Eyes.

MARCH STAR CHECK

PISCES—Creative Pisceans have the ability this month to turn their thoughts into greenstamps. Just before the new moon of the 19th, though, thinking proccesses may be blocked as sun sign ruler, Neptune, does a flip flop. You make a mental comeback end of March. March 2nd is a good time for a complete physical checkup to assure that you're in 10-4 condition.

ARIES—Active Aries has really got the hammer down on personal activities and has to back up on the 16th after stepping too fast. Personal magnetism pins the needle and you find yourself overmodulating all month. As March goes out like a lamb, you charge out like a ram taking some new followers along.

TAURUS—Docile Taurus keeps busy all month trying to keep some deep dark secret quiet. Behind the scenes activities flourish. March 29th tests your patience and confidence. The 19th introduces a new good buddy to modulate with. Last chance this month to capitalize on opportunity that's been knocking at your front door for the past year.

GEMINI—Jubilant Geminis use their gift of gab to best advantage at work 20 this month. Suggestion box is full of idealistic Geminian concepts. End of March brings you together with former YL or buffalo who instantly attracts your attention.

CANCER—March brings an early spring flurry of activity at work 20. Your new philosophies and ideas are on the table. Things look good till the 16th when a coworker may throw the curse of the dreaded carrier. Usually quiet Cancer will just have to turn up the volume and walk all over them, fer sure.

LEO—March definitely comes in like Leo the Lion, 10 roger! You and better half or business partner come to meeting of the minds over the company piggybank. Many greenstamp transactions this month, some quite unexpected. Entertainment may have to take a back seat around the 16th, something Leo has been learning to live with for the past year.

VIRGO—Merci sakes! Mercurial Virgos be mighty restless this month waiting for a break from motor mouth better half. Usually just the opposite. Commotion could be over some household loss discovered around March 18th. Be forewarned that the 16th is no day to haggle over other half's lettuce. March you put an eyeball on some attractive YL or buffalo to whom you are irresistably drawn.

LIBRA—Librans fall out of the weekend ski convoy and all of its social events as the season comes to an end and spring begins to emerge. The frequency is crystal clear for communication now and receptivity between you and loved one is at its peak all month. You won't even have to key the mike to be heard or understood.

SCORPIO—An early spring flurry of frolic awaits all Scorpios who kick their everyday pressures and throttle down to play around. Refreshed and re-energized, you are welcomed back to the junkyard by co-workers. Watch the buzzards, though, on the 16th when your overenthusiasm may be taken advantage of.

SAGITARRIUS—Sagitarrians March scenario is home 20 for a month. People coffeebreak all day with you, while other half is on hand to give a helping hand with friendly modulations and entertaining. Don't be surprised if a cottonpickin' good buddy upsets a good time for you on the 16th. Your excellent sense of humor transforms the situation to your advantage, though.

CAPRICORN—Usually quiet and reserved Capricorns hog the channel this month and meet someone influential on the boulevard who might give a push up the ladder to success. Watch for misrepresentation, though, on the 11th and 16th. With all the travelling you'll be doing now, truck 'em easy, truck 'em slow.

AQUARIUS — Everthinkin' Aquarians capitalize on a super streak of inventiveness this month. Piggybank gets several donations. Considerable wheeling on the boulevard puts extra stress on that mobile which may need some routine work done on the 16th. A preventative spring tune-up is best protection. End of March is a good time to thaw out and make a last minute investment in real estate or improve home 20 if you haven't already this past year.

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stop them from passing on to the antenna and being radiated.

Circuit Components

A tetrode tube contains _____ elements.

a) two.
b) three.
c) four.
d) five.
e) no specific number.

The lorrect answer is c). A diode contains two elements, a cathode and an anode (also called a plate); a triode contains, in addition, a control grid; a tetrode, in addition, a screen grid; and a pentode, in addition, a suppressor grid.

Antennas and Transmission Lines

A dipole is an antenna to which the signal is applied at:

a) the end.
b) both ends.
c) a third of the way from one end.
d) two-thirds of the way from one end.
e) the center.

The correct answer is e). Dipoles are usually one-half wavelength in length. In part two it was learned that a half wavelength is 126 feet at 80 meters, 66 feet at 40 meters, 22 feet at 15 meters, and 17 feet at 10 meters. These are the four bands in which Novices may operate.

Radio Communication Practices

Precautions to reduce shock hazard in your station should include:

a) all equipment grounded to a common external ground (water pipe).
b) three conductor wiring.
c) enclosed equipment.
d) use of interlock switches.
e) all of the above.

The correct answer is e). There are other precautions that should be observed, as well, and they most definitely include the placement of antennas and transmission lines so that these external parts of the amateur station can not contact power lines under any circumstances. 73, W2LE.

Questions From Readers

Q: I understand that the code test is given for a period of five minutes. How much of that time must I copy correctly?

A: One minute, which figures out to 25 letters at 5 words-per-minute (WPM). The FCC is testing a new concept in code testing. It involves showing the applicant five different samples of copy, and asking him to identify the copy that most nearly resembles the copy actually sent. This is *really* multiple choice testing. It has not been announced as yet whether the FCC plans to have volunteer examiners conduct this new type of testing, and at this writing you are still expected to copy down 25 letters correctly, and in sequence. Incidentally, it doesn't matter whether those 25 letters are in the beginning, the middle, or at the end.

Q: How many diagrams are required to be drawn on the Novice exam.

A: Diagrams are no longer required to be drawn for any amateur exam. However, diagrams will be provided and you will be expected to identify components, and calculate their values by Ohm's Law.

Q: Is there someplace where I may read about what Novices are doing on the air, right now?

A: Yes, there is a fine Novice column which appears each month in *CQ Magazine, The Radio Amateur's Journal.* Written and edited by some of the countries most experienced and knowledgeable amateur radio operators, *CQ* is must reading each month for the *active* amateur. It is available on newsstands everywhere, and from *CQ Magazine,* 14 Vanderventer Avenue, Port Washington, NY 11050. Twelve monthly issues are just $7.50.

COMING EVENTS

(continued from page 45)

JULY

Beatrice, Neb., *NEB Sidebanders Club 1st Annual Jamboree, July 2, 3, 4 at Gage County Fairgrounds. For more information contact: NEB Club, Box 81, Holmesville, Neb. 68357.*

Whitney Point, New York, *Electronic Show & CB Jamboree, July 8-10, Whitney Point Fairgrounds, Rt. 11, Exit 8 I 81. For more information: International Order of Chiefs & Squaws QSL Club, P.O. Box 25, Binghamton, New York 13903. (607) 722-3536 or 722-8860.*

Jacksonville Beach, Florida, *July 16 & 17, Jacksonville Beach Coliseum. 4th Annual Voice of the Beaches Jamboree. For information: Bill Jackson, P.O. Box 50906, Jacksonville Beach, Fla. 32250 or 904-285-2937.*

Bristol Ind., *Jamboree, July 16-17, Eby's Pines, Rt. 2, Junction U.S. 131 & Interstate 80-90. Contact Chairman, R. M. Shipman, P.O. Box 7092, Toledo, Ohio 43615.*

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In addition to S9, we also publish a trade magazine for CB dealers. It's very important to us to have this magazine reach every CB dealer in the country, no matter how large or small.

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Dick Cowan
Publisher, CB Radio/S9

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WASHINGTON OUTLOOK

ALBUQUERQUE CB PROCEEDING TERMINATED

The FCC Review Board 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. It terminated the proceeding.

The Board said it did not "believe that permitting Mollert to continue as a Commission licensee will in any way adversely affect the Commission's continuing need and ability to enforce its rules governing the citizens service."

The show cause order, released July 23, 1975, charged Mollert with various violations of FCC rules including Section 95.95(c)—failure to identify his station and the station he communicated with—and 95.41(d)(2)—operating on a frequency (Channel 21) not authorized for communications between units of different Citizens stations. Mollert also was charged with failing to make his station available for inspection by authorized FCC personnel in willful violation of Section 95.103 of the rules and Section 303(n) of the Communications Act.

In an initial decision released June 10, 1976, FCC Administrative Law Judge Joseph Stirmer dismissed the show cause order. While finding that Mollert had violated the rules and the Act as charged, Judge Stirmer concluded that Mollert's conduct was not sufficiently flagrant to justify revocation of his license.

The Commission's Safety and Special Radio Services Bureau appealed the judge's decision.

The Review Board said it had reviewed the initial decision and all other matters of record, and agreed with Judge Stirmers' decision not to revoke Mollert's license. It said it was satisfied that the judge's findings adequately and fairly reflected the evidence of record.

However, the Review Board said, the Bureau's appeal, which contested the failure of Judge Stirmer to impose the ultimate sanction of revocation, required additional comment.

It noted that during the hearing (at which Mollert represented himself), Mollert admitted to the operating violations. However, regarding his failure to allow inspection of his station, Mollert said he had received conflicting advice regarding the authority of FCC representatives to come into his home to check equipment.

Mollert explained that within one or two weeks prior to the FCC personnel coming to his residence to inspect his station, he heard rumors that Commision inspectors were in the area. He said he called the American Civil Liberties Union in an attempt to find out if FCC 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 were authorized Commission representatives, and local authorities had advised against allowing strangers into homes and apartments. This, he said, together with the fact his wife was not appropriately dressed and nervous, contributed to his decision not to allow the inspectors into his home.

The Bureau, in appealing the decision, contended that Judge Stirmer's failure to revoke, in light of Mollert's operating violations, was contrary to FCC precedent, and that although two of the rules which Mollert was charged with violating subsequently were deleted, the significance of the willful violations was not diminished.

It also contended that FCC precedent required revocation for Mollert's refusal to allow an inspection, and that effective regulation of the citizens service was impossible unless rule violations such as Mollert's were dealt with by imposing significant sanctions.

The Review Board said the Communications Act does not require the imposition of the revocation sanction in every case of a rule violation. Instead, it said Congress left to the Commission

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the task of weighing the nature of the violations and surrounding circumstances to determine whether the ultimate sanction of deprivation of all operating authority should be invoked.

In this case, the Board said, it believed the extreme sanction of revocation was unwarranted.

It said while Mollert willfully refused to allow inspection of his station, he was not motivated by a conscious intent to violate or defy FCC rules. Of particular significance, the Board said, was Mollert's unrefuted testimony that he relied on the erroneous advice of the American Civil Liberties Union to the effect that FCC inspectors could not enter his home without a search warrant; that he believed the station was his van since his transceiver was kept there; that he subsequently allowed a complete inspection except for power and frequency measurements, and that his wife had a "nerve problem."

The Review Board added that Judge Stirmer's demeanor findings also were of particular importance. It noted that the judge stated that "having seen and heard Mollert testify [he] was convinced that Mollert's refusal to allow inspectors into his home was predicated more on a genuine misunderstanding of the inspectors' authority and his desire not to upset his wife than from a willful design to violate the applicable Commission regulation."

Absent any conflicting testimony, the Review Board said it could find no basis to reject Mollert's testimony.

Mollert's operating violations, the Review Board said, were an isolated incident. It pointed out that examination of Mollert's approximately eight years as an FCC licensee revealed that he has had no history of violations and the Commission has not received any complaints concerning the operation of his station.

While he did not believe that the fact that two of the four violations were deleted from the rules in any way excused Mollert, the Board said it did tend to show that those rules were not of critical importance in the Commission's regulatory scheme.

The Review Board said it did not condone Mollert's behavior, but added, however, that in light of the mitigating circumstances, the public interest did not require revocation of license because it believed Mollert could be relied on to operate his CB radio in full compliance with FCC rules.

The Board concluded that its decision should not be construed as a lessening of the FCC's determination to continue to enforce its rules governing CB radio, adding that any licensee who

violates those rules did so at great risk to the continuation of his licensed operation.

MAN FINED FOR SELLING LINEAR AMPLIFIER

Carl A. Wilbur, of the Sarasota CB Center, Sarsota, Fla., has been fined $250 by U.S. Magistrate Ben Krentzman of the U.S. District Court, District of Middle Florida, for selling an illegal radio frequency power amplifier for use on Citizens Radio Service frequencies in violation of FCC rules and the Communications Act.

Wilbur, on October 22, 1976, pleaded guilty to willfully and knowingly selling the amplifier which did not meet the criteria specified in Section 2.815 (c) of the rules in violation of Section 302 of the Communications Act.

The case was presented by Assistant U.S. Attorney Gary Takacs of the office of U.S. Attorney for the District of Middle Florida, following an investigation by engineers from the Commission's Tampa, Fla., District Office.

This case, which results in the first conviction for violation of the FCC's current marketing regulations which were implemented on January 23, 1975, was the result of the Commission's continuing program of enforcement of the radio frequency device rules and regulations.

CURRENT LICENSEES DON'T NEED NEW LICENSES TO OPERATE 40 CHANNEL CB RADIOS

The Federal Communications has received inquiries as to whether an additional Class D citizens band license will be required to operate 40 channel CB radios. Persons holding valid Class D Citizens Radio Service station licenses need **not** apply for a new station license in order to operate the new 40 channel sets which will be available on January 1, 1977. CB operators are cautioned not to transmit on the expanded channels until January 1, 1977.

CRACK DOWN ON CB OPERATORS IN ALABAMA AND GEORGIA

U.S. Attorneys Ira DeMent (Middle District of Alabama) and Ronald T. Knight (Middle District of Georgia) have cracked down on illegal Citizens Band (CB) operators in the Phoenix City, Ala., and Columbus, Ga., areas. While no arrests have yet been made as a result of the crack down, illegal equipment valued in excess of $7,000 has been seized.

The illegal operations were interfering with authorized U.S. Government frequencies, industrial radio and international public radio services, as well as nearby television reception.

Under the direction of Assistant U.S.

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Attorney Robert C. Watson, Montgomery, Ala., and the U.S. Attorney of Macon, Ga., FCC agents from the Atlanta District Office and Powder Springs, Ga., Monitoring Station, conducted extensive investigations into the operations of illegal CB equipment on unauthorized frequencies.

Search warrants issued by U.S. Magistrates John V. Danson II, Opelika, Ala., and William L. Slaughter, Columbus, Ga., which were served November 10, 1976, by U.S. Marshals from Montgomery, Ala., who were accompanied by FCC agents, resulted in the seizure of a number of transmitters, receivers and radio frequency power (linear) amplifiers.

The Communications Act provides a maxmium penalty of $10,000 fine and/or one year imprisonment for operators of unlicensed stations and a $500 per day maximum penalty for operators of licensed stations who operate in violation of FCC regulations.

UNLICENSED OPERATIONS

The Commission announced that the number of unlicensed CB radio operations is decreasing, which indicates a desire by the majority of users to comply with FCC licensing requirements.

A special survey of 773 fixed and mobile CB stations conducted September 18 by the FCC's Field Operations Bureau (FOB) indicated that 10 percent were unlicensed. In Fiscal Year 1974, however, the number of unlicensed CB operations hit a peak of 34 percent.

RADIO THEFTS

The FCC receives many complaints from CB licensees concerning stolen CB equipment. CB equipment thefts should be reported to the local police, not to the Federal Communications Commission.

The Commission has acted to assist public and law enforcement officers to recover stolen CB radios by requiring that manufacturers engrave serial numbers on all new 40 channel CB sets.

The Commission anticipates that the introduction of new 40 channel CB radios may increase CB radio theft. In order to prevent such thefts, a CB radio owner should consider removing the radio when his vehicle is unattended. If this is not convenient, a CB owner might consider installing a vehicle protection alarm.

APPLICATION AND LICENSE STATISTICS, OCTOBER, 1976

Applications received during the month	314,682
Total licenses issued during the month	297,340
New licenses issued during the month	292,985
Licensed stations at the end of the month	7,101,776

ERECTING ANTENNAS CAN CAUSE DEATH AND INJURY

The FCC has been advised by the Consumer Product Safety Commission that during the years 1973-1976 there were over 200 reported electrocution deaths, resulting from inexperienced persons mounting antnenas on metal masts or poles which came in contact with power lines. The FCC recommends that if a CB user plans to mount a CB antenna on any fixed structure, professional guidance and assistance should be obtained, such as from local power companies and antenna equipment dealers. Any persons erecting or adjusting antennas should use extreme caution when working near power lines, especially on windy days.

REVOKED

The Commission, by its Safety and Special Radio Services Bureau ordered the following license be revoked, for violation of Section 1.89 of the rules by failing to respond to official communications:

Chula Vista, Calif., Del Baker Towing, KXB-1565.

SHOW CAUSE NOTICES

The Commission, by its Safety and Special Radio Services Bureau ordered the following licensees to show cause why their licenses should not be revoked for violation of Section 1.89 of the rules by failing to respond to official communications.

Nome, Alaska, Alaska Cab Company, KEY-7121.

Kansas City, Missouri, Dennis P. Paice, KTV-2657.

Saint Joseph, Missouri, Beverly A. Beckwith, KJL-9765.

CHARGES DISMISSED, SET ASIDE, ETC.

Fort Worth, Tex., Marvin L. Searcy, KDZ-4198.

Paramus, New Jersey, Richard P. Bracciodieta, KHT-2405.

Santa Clara, Calif., Eddie Herro, KXK-2727.

Baltimore, Maryland, George E. Deaver, Sr., KYY-0318.

Plainfield, N.J., Judkins Colonial Home, KAB-0712.

The Commission, by its Field Supervisors, on behalf of the Safety and Special Radio Services Bureau, issued Notices of Apparent Liability to Monetary Forfeiture to the following radio station licensees for willful violation of various sections contained in Part 95 or a repeated violation of Section 1.89 of the Commission's Rules:

Coral Gables, Fla., Robert Berrellez, $100, KIB-3361.

Fort Lauderdale, Florida

Richard M. Gale, $150, KJB-3675.

Raymond J. Gruber, $150, KQO-0863.

Woodruff E. Maupon, $50, KNM-3481.

Keith A. Schunert, $50, KPJ-3259.

Hallandale, Fla., David M. Withrow, $150, KLP-2288.

Hialeah, Fla., Lawrence A. Fantozzi, $150, KMD-9801.

Hollywood, Florida

Janis E. Alderson, $100, KLC-2619.

Charlton H. Blocker, $100, KEI-9706.

Branch and Abernathy Office Service, $100, KAAX-0384.

Drew W. Causey, $100, KLG-1485.

Colin J. Condon, $50, KYR-0762.

Arthur S. Courter, $100, KZD-1485.

Janace Ellis, $150, KWU-8287.

Donald A. Gavagni, $100, KOE-1442.

Ralph F. Mariano, $50, KBV-9424.

James S. Speer, $100, KXQ-7219.

Miami, Florida

Roland G. Haines, $50, KTP-1034.

Severn T. Wallis, $50, KMS-9473.

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Miramar, Florida
Neil Caraway, $150, KJH-7110.
Manuel J. Henrick, $100, KNR-0615.

N. Miami Beach, Florida
James H. Alford, $150, KHF-2987.
Milton Mamber, $50, KMM-33179.
Emil Pagola, $50, KFK-8653.
Kurt A. Phillips, $50, KABL-4726.

Plantation, Florida
Jacqueline L. Mancinelli, $100, KZR-1890.
William S. Robinson, $100, KJU-9423.

W. Hollywood, Fla., Robert A. Bowers, $100, KQV-3770.

Phoenix, Ariz., Robert T. Myers, $100, KQK-2500.

Beaverton, Ore., Thomas J. Fohl, $100, KFW-0633.

Gresham, Ore., Charles H. Elder, $100, KEN-8320.

Portland, Oregon
Frederic A. Bot, $100, KFZ-9602.
Howard W. Browning, $50, KIR-4211.
Dennis P. Danielson, $100, KLM-0434.
Jim Delano, $50, KGG-5123.
George A. Hall, $150, KFC-4474.
Tracy A. Ditmars, $100, KVE-0481.
Robert W. Donshue, $100, KXT-8217.
Bobby L. Gillian, $150, KFA-0251.
James E. Hankins, $50, KPB-4417.
Raleigh Hills Locksmith, $100, KOM-8561.
Jerry C. Marcus, $100, KKL-9399.
Robert M. McGilvary, $100, KLM-4510.
Dale Russel, Jr., $100, KPC-1604.
Donald E. Siemssen, $100, KGG-1291.
La Verne E. Thompson, $100, KBN-1915.
Andy Davidson Trucking, $100, KBD-7824.
Wilson's Refrigeration Repair, $50, KKN-8209.
Gary R. Worthington, $50, KDG-5273.

Tigard, Ore., Walter L. Otto, $100, KJR-4148.

Spokane, Wash., John H. DeLange, $50, KJD-99207.

Vancouver, Washington
Donald C. Curry, $100, KGN-1888.
James S. Dickerson, $100, KOT-2896.
William L. Landis, $100, KJU-9618.
Herbert J. Ledbetter, $100, KCC-9252.
Robert A. Maxwell, $100, KFG-8448.
Jack M. Pollard, $100, KHW-8218.
Gerald M. Walsh, $50, KLC-0536.

S. San Francisco, Calif., Richard A. Marlowe, $150, KEF-1954.

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Goshen, Ind., Alvin L. Ottman, $50, KMH-0040.
Cleveland, Ohio, Robert D. Lovas, $50, KJM-4459.
Lake Oswego, Ore., Benjamin E. Thompson, $100, KIR-3241.
Philadelphia, Pa., Paul E. Graeser, $50, KZG-5813.
Jackson, N.J., Edward J. Isdanovich, $50, KVA-3729.
Levittown, Pa., Joseph E. Morrison, $50, KTM-5565.
Caguas, P. R., Julio Torres, $50, KET-3715.
Manati, Puerto Rico
Ramon Freytes Castro, $100, KSW-3111.
Freddie Ocasio Cortes, $50, KACO-2057.
Ponce, P.R., Roberto J. Marguez, $150, KABA-8422.
Vega Baja, P.R., Jaime Figueroa, $50, KDI-0821.
Pocatello, Idaho, Charles K. Burke, Jr., $50, KWN-1786.
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Amigo Flooring Co., $50, KMF-5272.
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Corpus Christi, Texas
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Dallas Tex., Warren F. Alcott, $50, KOR-5502.
Galveston, Texas
Terry D. Clark, $50, KPZ-0782.
Jay C. Heichelmein, $100, KNV-3697.
Harlingon, Tex., Lawrence C. Berry, $50, KYW-1479.
Washington, D.C.
Raymond F. Hamilton, $50, KADB-7669.
Robert F. Pringle, $50, KXT-8940.
Baltimore, Md., Leslie W. Walter, $50, KYD-4294.
Glen Burnie, Md., William Griffin, $50, KADT-6133.
West Newton, Pa., Robert L. Koontz, $50, KNM-6498.
Greenville, Pa., Samuel P. Genovesi, $50, KIT-4613.
Warminster, Pa., Lowell H. Marxham, Jr., $50, KLO-7000.
Naguabo, P.R., Emiliano Lebron Morales, $50, KAAC-7411.
Great Falls, Montana
Robert A. Armstrong, $100, KRA-59401.
Jerry L. Christianson, $50, KIM-0149.
Rex E. Cowie, $50, KAAR-0472.
James R. Frye, $100, KZR-0808.
Jay J. Plant $150, KWV-1229
Russell J. Wick, $100, KSA-1402.
Minot, N.D., Thomas L. Rage, $100, KWW-8786.
Des Moines, Iowa, South Town Day Care Center, $50, KAAX-2200.
Spencer, Iowa, WilliamJ L. Mingo, $50, KOA-9686.
Hays, Kan., Rober Barman, $50, KSC-8641.
Kinsley, Kan., Eldon W. Unruh, $50, KMA-8985.
Schoenchen, Kan., James F. Picklesimer, $50, KZT-0282.
Burlington, N.J., Paul J. O'Brien, $50, KTZ-1091.
Spokane, Washington
Gerald P. Duft, $100, KJV-6359.
Andrew J. Ehlis, $150, KGB-5008.
Kevin Getchell, $100, KKG-99208.
Dexter, Iowa, William A. Stephens, $50, KDF-2830.
Iowa City, Iowa, Rolland R. Ostrander, $50, KKG-4538.
New Virginia, Iowa, Mary L. Douglas, $50, KAAH-9682.
Harlingen, Tex., Roy G. Robinson, $50, KABU-1185. *(continued)*

. . . Use S9 READER SERVICE.

Houston, Texas
Edward A. Stallman, $100, KTC-1541.
Larry R. Brecheison, $50, KYM-1470.
Meryl Preston Hunter, II, $100, KMH-77047.
David F. Smith, $50, KTS-1345.
Kingsville, Tex., Delores M. Aday, $50, KRU-3730.
McAllen, Tex., James M. Scribner, $100, KRK-7814.
Mercedes, Texas
Odilin Saenz, $50, KRI-5390.
Serg's Fried Chicken, $50, KIG-3418.
Pharr, Tex., Jaime, Luna, $50, KFH-4776.
San Bernadino, Tex., A to Z Brake Service, $50, KMR-3571.
San Benito, Texas
John L. Billue, $50, KXW-5765.
Rudolf P. Carey, $50, KHT-9076.
Carl Gentry, $50, KADO-4736.
Virginia Beach, Va., James A. Alexander, Jr., $100, KGT-3592.
Seattle, Wash., Louis R. Snyder, $100, KHW-1193.
Lubbock, Texas
Shelby W. Jones, $50, KNF-3737.
Michael G. Keeney, $100, KYU-6284.
Harold J. Lindley, $50, KTX-6875.
Horace McMahan, $50, KGM-4323.
Leonard R. Mantooth, $50, KWG-9283.
Neil Molsbee, $50, KJK-5078.
Joan Nash, $50, KAAO-4966.
Mark A. Neagle, $50, KXP-0034.
Randall J. Owens, $50, KBD-8937.
Johnny L. Parr, $50, KXQ-7440.
John T. Rainwater, $50, KJM-1115.
Young Sales, $50, KMR-2643.
Luther W. Scoggins, $100, KYJ-9164.
Henry E. White, $100, KJV-8530.
Charles S. Williams, $50, KRQ-4767.
Imojean Wood, $50, KCL-8380.
Slaton, Tex., Allen D. Cline, $200, KTL-6151.
Livermore, California
Richard O. Wood, $100, KCQ-5446.
Bill J. Zearing, $100, KYO-6296.
Daly City, Calif., Roy Kerobi, $100, KFF-0556.
Redwood City, Calif., Tom Kent Auto, $150, KHI-9631.
Vallejo, Calif., Marion G. Ricks, $100, KAAJ-6861.
Ft. Myers, Fla., Thomas A. Goerner, $50, KACA-8168.
N. Ft. Myers, Fla., Carl V. Gibson, $50, KTC-3544.
Pinellas Park, Fla., Linda D. Crighton, $50, KWL-7844.
Port Charlotte, Fla., Johnny Crews Ford, Inc., $50, KYN-8188.
Pineville, N.C., Carl E. Eaton III, $50, KCJ-5475.

The Commission, by its Safety and Special Radio Services Bureau sent no-

tices of apparent liability for monetary forfeiture to the following licensees for violation of Section 95.95(c) of the rules by failing to identify radio station by the assigned call sign.

Winter Springs, Fla., Vicki C. Baker, $50, KWX-7852.

John C. Espey, $100, KHP-1603.

Orlando, Fla., Condy L. Alley, Jr., $150, KEB-9976. For violation of various sections of Part 95 of the rules including Section 95.95(c) by failing to identify radio station by the assigned call sign.

Winter Park, Fla., Richard A. Phillips, $150, KMW-6755. For violation of various sections of Part 95 of the Commission's rules including Section 95.55(c)(2) by operating radio station with transmitting equipment not authorized by the Commission.

Orlando, Fla., John T. Hall, $100, KLE-4010. For violation of Section 95.95 (c) of the rules by failing to identify radio station by the assigned call sign and Section 95.43 of the rules by operating radio station with power in excess of that authorized.

Eugene, Oregon, Johnson Sales Co., $100, KQB-9871. For willful violation of Section 95.95(c) of the rules for failure to identify subject radio station by the assigned call sign.

Salem, Oregon, Virgil E. Sly, $100, KCS-1589. For willful violation of Section 95.95(c) of the rules for failure to identify subject radio station by the assigned call sign.

Louisville, Ky., Howard L. Bagley, $150, KTH-7857. For violation of various sections of Part 95 of the rules including Section 95.95(c) by failing to identify radio station by the assigned call sign.

Louisville, Ky., Jerry W. Porter, $50, KEO-5931. For violation of Section 95.95(c) of the rules by failing to identify radio station by the assigned call sign.

Kearny, N.J., Richard C. Pierce, $50, licensee of Citizens radio station KRP-07032 (Temporary). For violation of Section 95.95(c) of the rules by failing to identify radio station by the assigned call sign.

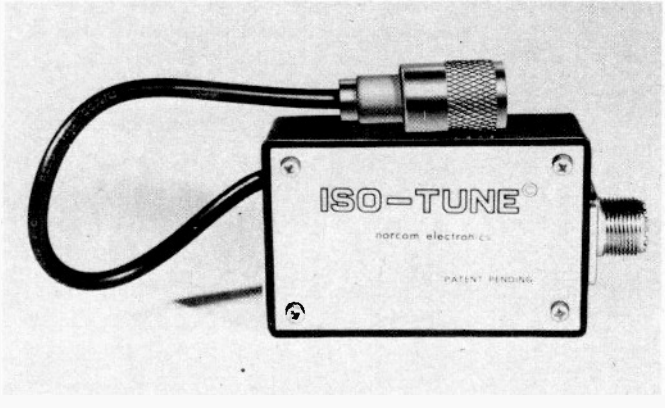
Orlando, Fla., Louis A. Floyd, $150, KQM-9364. For violation of various sections of Part 95 of the Commission's rules including Section 95.41 (d) by operating radio station on a frequency not authorized by the Commission for use by such station.

Winter Park, Fla., Bernard E. Trager, $200, KJG-7245. For violation of various sections of Part 95 of the rules including Section 95.44 by operating radio station with transmitting equipment not authorized by the Commission.

concepts only recently found in professional aircraft weather radar and police radar equipment. These new innovations insure the unit will be reliable and ultra-stable in operation even when subjected to the large temperature and input voltage variations commonly found in an automotive environment. High selectivity RF filtering eliminates any possible interference from CB transceivers and high power broadcast transmitters.

Operation of the Beartector PR-7 is quite simple with the volume and squelch controls adjusted just like on a CB transceiver. When a radar signal is received, the squelch breaks, a clear audio warning tone is heard and the bright front panel light flashes on. The light remains bright even in direct sunlight and the tone volume is sufficient to command instant attention.

The unit is 4½" x 6" x 3½", requires a minimum of current and is powered from either plus or minus twelve volts. Installation involves simply placing the unit on the dash of the vehicle with self-adhesive pads and then plugging the power cord into the cigarette lighter. To guard against possible theft, the Velcro pads allow instant mounting and removal of the unit for temporary storage in the trunk or other safe place. The unit carries a full ninety day parts and labor warranty and will be sold through CB and electronics dealers and distributors nationwide.



CB ANTENNA TUNER

Designed primarily for mobile use, although it can be used for the single antenna base operation, is an ingenious new device that is placed in-line for optimum and safe single or co-phased CB antenna operation, announces Norcom Electronics Inc., a Division of Ideas Inc., Northfield, Ohio.

Known as the ISI-TUNE Antenna Tuner, it is possibly the simplest and most efficient device yet for obtaining 1:1 SWR readings, regardless of coax length. In fact, the manufacturer recommends using the shortest coax possible to eliminate unnecessary costs and clutter. The new ISO-TUNE Antenna Tuner is so simple it's difficult to believe it does such a great job, states the manufacturer. Instead of the coax going directly to the transceiver or antenna matcher, the ISO-TUNE tuner is placed in-line and is adjustable similar to a matcher. However, a matcher actually raises and lowers resistive force which in turn raises or lowers the SWR. With an ISO-TUNE Antenna Tuner, there are no direct internal contacts, performance is accomplished with an adjustable conductive field. Thus, there's no fear of burning out finals due to excessive SWR or coax shorts.

ISO-TUNE Antenna Tuners can be installed and calibrated in a matter of minutes to provide the optimum in transmit and receive power. They also perform as TVI filters and they are also claimed to eliminate unwanted coax signal radiation to provide the cleanest and most intelligible signal possible. ISO-TUNE Antenna Tuners are complete with tuning box with PL-258 connector, a short length of coax with a PL-259 connector on the end. To use, it is merely placed in-line nearest the antenna lead and set with the aid of a SWR meter. In most cases, even with co-phased systems, a flat 1:1 SWR can be obtained across all 11 meter frequencies. Unit size is only 3⅞" by 2½" by 1⅛" with a 7½" coax lead which includes a PL-259 connector. Weight is only 5 ounces each. Suggested retail price is $29.95.

For details, contact Norcom Electronics, Inc., P.O. Box 332 Northfield, Ohio 44067.

MONITOR LETS YOU LISTEN WHILE YOU TALK

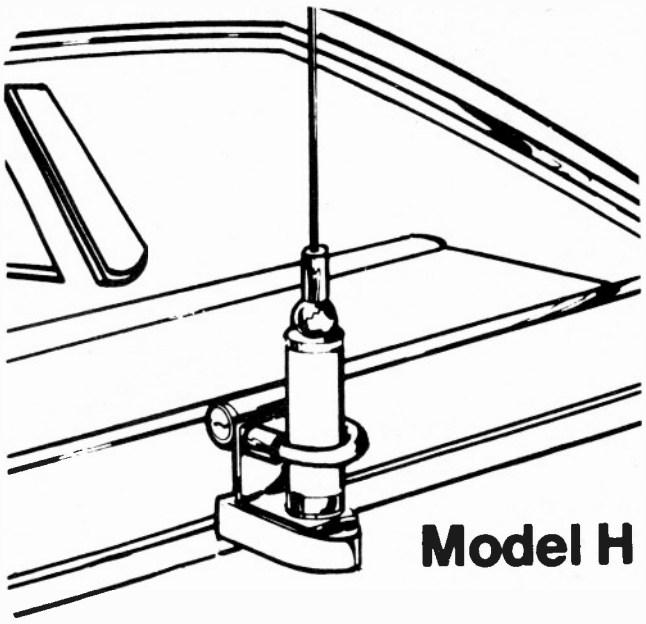
You won't have to wonder whether or not your signal is getting out when you use The Magitran Company's CB 10-43 Radio Check Monitor. The CB 10-43 is a self contained (including earphone) receiver that picks up your actual "off-the-air" transmissions.

More than just a monitor, the CB 10-43 also lets you know if your signal is being modulated properly. The built-in meter lets you read relative transceiver power output and percentage of modulation. It can even be used to measure and plot antenna radiated "Polar" pattern, so you can tune your antenna for optimum performance.

The CB 10-43 operates on a low-cost 9-volt battery and can be used inside your vehicle or some distance away. Operation is on all 40 channels without the need for tuning.

Suggested retail price for the CB 10-43 is $39.95.

Contact Magitran Co., 311 East Park, Moonachie, N.J. 07074.



ANTI-THEFT ANTENNA LOCK

"Tenna-loc", a unique new product development said to provide maximum anti-theft protection for CB mobile antennas, has been introduced by the Consumer Products Division of Vernitron Corporation, a leading manufacturer of medical electronic instruments as well as computer and communications equipment, of Great Neck, New York.

"Tenna-loc" is available in a choice of models to fit most antenna styles, domestic and imported, reports Vernitron, and represents a positive protective device which allows CB mobile antennas to remain intact and in place, year round, and in all kinds of weather.

The company claims that "Tenna-loc" retails for less than $12 and features a turn-proof locking stud that is integrated into a specially notched, U-shaped locking bolt. It features an extra heavy-duty, chrome-plated holding bracket designed to conform to individual antenna styles as well as a 5 tumbler, corrosion-resistant, key lock which mates with the special, notched U-bolt. An additional convenience offered with "Tenna-loc" is its electro-polished stainless steel replacement cup which is used, where needed, to facilitate quick, easy installation.

Vernitron says that "Tenna-loc" is designed to maintain SWR efficiency of the antenna and that all of the metal components utilized are chrome-plated to automotive specifications. The product may be removed, where desired, for car wash or long term storage. But no need to remove an antenna every time you park. You don't have to go into the rain, snow or biting cold in order to temporarily protect your antenna. What's more 'Tenna-loc' permits the user to mount an antenna at the center of the car to avoid any directional receiving problems. The anti-theft antenna lock is also supplied with a special adhesive substance which will permanently bond any component parts such as the antenna spring and ball joints which may be located, depending upon make and model, between the antenna coil and antenna whip.

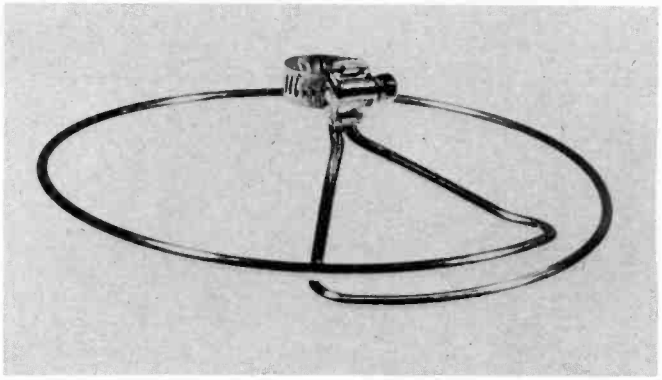
"Tenna-loc" is offered in convenient shrink wrapped, multi-color, self-service packages and is being made available through major distributor and dealer organizations.

RADAR DETECTOR TEST SET

Prime Electronics, Inc., 8605 Quivira Road, Lenexa, Kansas, announced the introduction of the PR-7 hand held test set for radar detectors. Capable of thoroughly testing and demonstrating all radar detectors on the market today, it is styled after the Beartector PR-7 extended range radar detector also manufactured by Prime Electronics. Besides providing the test equipment ability to service radar detectors, the PR-7 test set will dramatically demonstrate the effectiveness of a radar detector to a prospective customer. It will also prove the correct (or incorrect) operation of an already purchased radar detector to a customer who, for some reason, thinks his unit is defective or low in sensitivity. Exchange and return to the factory of radar detectors that actually have nothing wrong with them is expensive in both lost profit and customer dissatisfaction. A PR-7 test set should pay for itself in a very short time.

Operation of the PR-7 test set is quite simple with a low power X Band signal emitted by pressing the trigger button located in the pistol grip handle. The unit is self contained, light weight and internally powered by an easily replaceable 9 volt transistor battery. Output range is calculated as a direct ratio with 50 paces simulating ½ mile and 100 paces simulating one mile of a typical moving or fixed speed radar.

The PR-7 test set, classified and offered as a repair shop signal generator, requires no license to operate. The unit carries a ninety day parts and labor warranty and is being purchased by dealers, distributors and service shops nationwide. Dealer cost is $149.95.



THE ZING RING

A new antenna accessory, the Zing Ring (cat. #1114) has been introduced by Gold Line Connector.

A Gold Line spokesman commented that the Zing Ring can improve a CB antenna's performance by providing a 360° launching pad for the signal. In order to launch a signal properly, a mobile antenna should be mounted over the metal surface of the vehicle such as with the centered roof mount or a centered trunk lid mount. The metal of the vehicle acts as the primary ground plane, establishing the radiation strength and pattern.

A gutter, mirror or bumper mounted antenna is not centered and does not offer these necessary performance features. Without a 360° primary ground plane, the signal has a lop-sided and weak radiation pattern in certain directions.

The #1114 Zing Ring provided this 360° primary ground plane and centering effect to enhance the omni-directional radiation pattern.

The Zing Ring not only zips up the signal but, it also reduces antenna vibration and whiplashing caused by vehicle motion or wind.

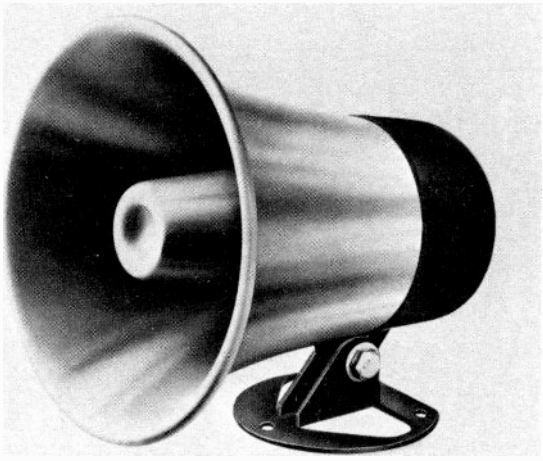
For further details, contact: Charles Brainard, Gold Line Connector, Inc., P.O. Box 893, East Norwalk, CT 06855. (203) 853-1211.

IN-LINE CB PERFORMANCE INDICATOR

CiBco, the new product and R & D division of Southwest Factories, Inc., has announced production on two in-line indicators that monitor the performance of an antenna—transceiver system. The CPi I model monitors transmission only. A green light emitting diode glows when 3.5 watts or more is being transmitted. The CPi II not only indicates proper transmission, but IMPROPER SWR by energizing a red

L.E.D. when reflected power exceeds 1.8 to 1 ratios. CPi in CiBo language is explained as Constant Performance Indicator and can be read anytime the CB mike is engaged. The CPi's are light in weight, only 5⅝" wide x 1⅛" high and 1½" deep, and are easily secured to the CB set, above or below, or fastened under the vehicle dash by adhesive strips supplied with the units. Installation is quite simple . . . the PL259 to the transceiver is re-located to the receptacle on the CPi and the 18" cable and PL259 from the CPi is fastened to the transceiver.

Patent is pending. Further information may be sought by contacting Mr. Joyner, Southwest Factories, Inc., CiBo Division, P.O. Box 12279, Oklahoma City, Oklahoma 73112.



GOOD-BYE ELECTRIC MOTORS

Kolin Industries has eliminated the electric motor normally required in sirens. The manufacturer states their alarm kits use different sirens than most kits available today. The sirens are special electronic type. They are unlike other units since they work on a different principle. Electric motors are not used. There is no rotor for producing sound. The sirens are claimed to be more reliable because they have completely eliminated moving parts.

The siren uses special solid state circuitry, driving a weather-proof speaker to create the automatic rise and fall sound, similar to modern emergency vehicles.

Since electric motors aren't used, the EARSPLITTER sirens drain twenty times less power from the standard vehicle battery. They are waterproof and can be exposed to inclement weather.

Kolin Industries is presently using the new type sirens on its full line of CB and vehicle alarms.

They are available in different sound outputs, including a unit reported to be audible at one mile in still air.

Contact: Kolin Industries, 59 W. Pondfeld Rd., Bronxville, NY 10708.

KHEK 1639 "TEDDY BEAR"

CBers GET YOURSELF SOME RECOGNITION!

You're tooling down old Interstate 99 with your ears on and your C.B. set cocked and out of nowhere a foxy lady in a white 'vette beckos: "Hey, there Outrigger in the Green Vega, how about coffee at the next exit?"

Your dreams come true, good buddy, with something like a little old portable window plaque that states your handle and call letters. The 3X9 acrylic plaque is handengraved and can adhere to the inside of your rear window. The distinctive plaques are available in black, green, red, white, and blue. $7.95 plus $1.00 for fast handling.

For more information contact: PinPoint Mailing, 150 East Hartsdale Ave., Hartsdale, NY 10530 or call (914) 723-1748.

NEW MAGNETIC MOUNT CB ANTENNA

A mobile CB antenna that can be mounted instantly on flat metal surfaces without drilling holes or marring paint is now in production at the JFD Electronics Corporation.

The new model 10-MM grips tightly even at high speeds as a result of its powerful ceramic magnet. Yet the 10-MM can be removed quickly despite its magnetic grip when the radio is not in use. This helps deter theft by removing entirely from view the antenna which signifies presence of a CB radio. *(continued)*

The Sonar FS-2340 CB base station is, perhaps, the world's only limited-edition citizens band radio. We build fewer than 10,000 of these extraordinary pieces of professional communications equipment each year.

That's because each unit is painstakingly assembled by our highly-skilled technicians to the most exacting specifications in the industry. With the same hand-crafted care and attention for which Sonar has been famous, for over thirty-five years.

Only the finest available components go into the 2340's sophisticated circuitry.

The 2340 can field even the weakest signal. It will zero-in on any of its forty channels with unparalleled reception. Without adjacent-channel spill-over

Its extremely high audio output will come through loud and clear in even the most noisy environments.

And its unique 12-tube design makes it the most rugged, long-lasting CB radio on the market (in fact, 99% of all Sonar FS-model CB's sold since 1964 are still on the air today.)

Which is why so many discriminating CB'ers throughout the country use Sonar CB's as their base stations.

To learn more about this exceptional citizens band radio, contact your professional communications dealer. Or write us directly.

Like the finest automobile, you can expect to pay more for the opportunity of owning a Sonar FS-2340.

But it's a small price to pay for what is, quite possibly, the best CB radio the world will ever know.

SONAR MAKES ITS CB RADIOS LIKE ROLLS ROYCE MAKES ITS CARS.

Sonar Radio Corporation, 73 Wortman Ave., Brooklyn, New York 11207, (212) 649-8000

Other 10-MM features include: a precision-wound permanently sealed copper wire base loading coil that provides a typical VSWR of less than 1.3 to 1 for optimum transmission and reception of CB 26.8-27.4 MHz frequencies; corrosion-proof, high strength 37" solid stainless steel radiator whip; heavy duty stainless steel shock spring; heavy gauge ABS cup that can never rust, corrode or stain; chromed brass screw machined parts; tough high dielectric nylon insulation for low loss performance; and 18-ft. 95% copper-shielded RG58/U coaxial cable sweep-tested to assure maximum signal transfer, with factory-assembled PL259 connector.

The antenna is handsomely skin-packaged for self-merchandising pegboard display sales. Suggested list is $33.00. For brochure contact: JFD Electronics Corporation, Pine Tree Road, Oxford, NC 27565.

NEW CHANNEL MASTER "TRAPPER" TVI FILTERS END CB-CAUSED TV INTERFERENCE

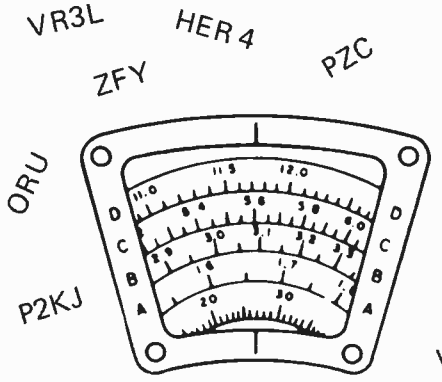
Channel Master has announced the introduction of the "Trapper" line of low-pass TVI filters, which effectively screen out television interference while passing the CB frequencies, thus eliminating undesirable harmonically-induced TV interference.

Two models are available, either of which can be used on mobile transceivers or base station units. Both models have metal housing for improved shielding and are easy to mount and to connect.

"Trapper 45" is a compact low-pass TVI filter designed for average situations. Attenuation is 45 db at 54 MHz, and 40 db at 81 MHz. Model 5271, suggested retail, $9.95.

"Trapper 100," super strength, low-pass TVI filter. Designed for severe interference problems. Attenuates 100 db at 54 MHz, and 75 db at 81 MHz. Model 5272, suggested retail, $14.95.

Contact Channel Master, Ellenville, N.Y. 12428.



DX Korner

Send SWL reports to:
Don Jensen
c/o CB Radio/S9 Magazine
14 Vanderventer Ave.
Port Washington, NY 11050

YOU'VE been asking . . .

What kind of shortwave receiver should I buy? What features should I look for? How much should I pay?

Good questions all! They suggest a growing number of S-9 readers who cut their teeth on CB are now discovering there are other aspects of this radio hobby that are just as fascinating . . . including DXing!

And so, according to the mail received here in DX Korner, many of you are interested in buying a receiver for SWLing.

Very basically there are two types of receivers used by SWLs. One is the multi-band portable. The other is the so-called communications receiver.

The multi-band portable is just that. It is a portable receiver, meaning it is lightweight, small, battery-powered and has its own built-in whip-type antenna. Multi-band means that several segments of the radio spectrum can be tuned; sometimes several transmission modes, usually amplitude modulation (AM) and frequency modulation (FM) can be received.

Some multi-band portables tune the regular AM broadcast band, 540-1600 kHz, plus one or several shortwave bands; perhaps the FM broadcast band or the several VHF public service bands are included.

Price-wise, it is possible to buy this sort of receiver for as little as $25 or $30, but a more realistic bottom-line price is $50. The price can range up to around $300, though I have seen one rather astounding Japanese portable priced at about $2,500!

A communications receiver, on the other hand, is primarily designed for receiving the shortwave frequencies. While some can be operated on batteries, essentially they are not designed for portable use and don't have built-in whip antennas. They have special features intended to overcome the specific problems encountered by the SWL.

Prices for a communications-type receiver can be considered to begin at about $150. A second level of newly designed receivers of this sort can be found priced between $250 and $300. A professional-class of communications receivers makes up a third level in the $500 to $700 range. And then there is an out-of-sight price range above that that can top $4,000!

Why buy one receiver and not another? What should you look for when shopping for a rig?

Price, clearly, is one important—perhaps the most important—factor for most of us! A shortwave receiver doesn't go for pennies. The initial outlay of cash can be considerable but consider it a long term investment in a fascinating hobby. With proper attention and care, periodic replacement of tubes(if it uses them in this solid-state age), a reallignment when that's called for, there's no reason why your receiver shouldn't be perking away like new a decade hence. (Here in the DX Korner I use a "hot" '60's vintage tube model by choice.) And a $300 receiver's cost spread over a ten to fifteen year span of listening enjoyment brings that "per-year" cost way down.

Because price, the initial outlay, is a factor, many beginning SWLs choose a multi-band portable. Other reasons for doing so are the portability factor—you're on the go and want to take your SWLing with you—and the choice of several types of listening, SW, FM, the police action bands on very high frequency (VHF) and ultra high frequency (UHF).

But it you have the money to spend; if you believe you have more than just a passing fancy for shortwave listening, you should really consider a communications type receiver. They are specialized sets primarily intended for shortwave reception and designed, to varying degrees, to overcome the problems inherent in SWLing.

Lets look at the three basic problems facing a SWL and how various types of receivers attempt to cure them.

*There are many strong easily heard SW signals, but many more weak ones. Any receiver will bring in the strong signals, the so-called international broadcasters. But the more sensitive a receiver, the more of the weaker, lower powered shortwave voices of the world you'll hear, all other factors being equal.

One way to obtain sensitivity in a receiver is with a tuned radio frequency (RF) amplifier stage. Except for the budget units, most communications receivers have an RF stage in their design.

A preselector can improve a receiver's sensitivity. It isn't until you get into the $250-plus designs that you begin to find preselector units built into a receiver.

*In order to know where you're tuning—to find a station known to be operating on a certain frequency, or to find again a station you heard yesterday—you must have a receiver with reasonably good frequency readout.

Frequency readout is never a problem for a CBer. Changing frequency is simply a matter of switching from one pre-tuned frequency to another, designated as channels. For most listeners to the regular AM radio band, frequency isn't worth worrying about. There are, perhaps, a half dozen or so local area stations you listen to regularly. They are heard easily, with loud and clear signals. You know, roughly, the section of the dial where you'll find them. Tune to that general vicinity and, when they come blasting in, you peak the tuning by ear.

It is, however, a different matter when it comes to shortwave. Bands are crowded, stations are located "close to each other" on the dial. A few powerful outlets can be "tuned by ear," but for the most part it is necessary to know, at least to within 5 to 10 kHz, where you're really tuning.

This is virtually impossible with the inexpe portable type receivers. You must, for all practica poses, tune at random for whatever you happen tc It is very difficult to look for a specific station on a specific frequency.

Because of recent design breakthroughs, in some Japanese-made portables in the $150 class, frequency readout to about 10 kilohertz or a bit better is possible. Newer communications receivers in the $250-300 category provide rather good frequency readout directly. Older designs in communications receivers allow decent frequency readout but it is not direct and is a bit more cumbersome. When you pay $500 or more you can expect to get a receiver that will allow you to directly read out a frequency to at least one kilohertz accuracy and, often, better.

* A receiver with good sensitivity allows you to hear a lot of stations on SW. The real trick, however, is to be able to hear them one at a time.

The quality that allows this is receiver selectivity, perhaps the most important factor to the SWL. Bands are crowded with signals. On the simplist sort of receiver, many weaker signals are obscured by a handful of strong voices on a band. The better selectivity a receiver has, the better it is able to sort out all these signals.

Let's say there are, at a given time, ten different signals, of varying strengths, between 9,600 and 9,650 kHz. The most powerful outlet, in our example, is on

DX KORNER *(continued)*

9,625 kHz. With an inexpensive receiver with poor to mediocre selectivity, the strong signal splashes all the way from 9,600 to 9,650 kHz, making it virtually impossible to receive the other nine stations.

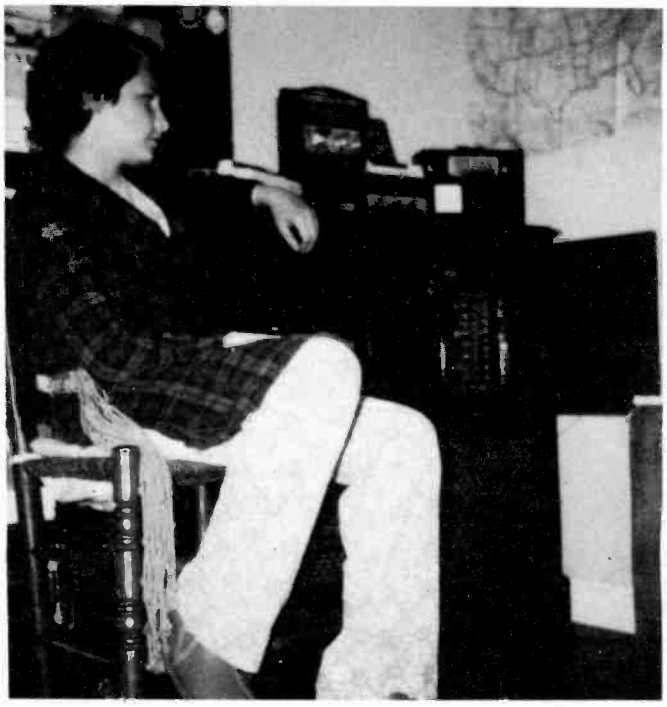
With a top flight set with excellent selectivity, you should hear all the stations; with some interference but still intelligible nearer 9,625 kHz, with little difficulty the further you go from that frequency.

To a great extent, when you pay more for a shortwave receiver, you are paying for improved selectivity.

Selectivity is obtained in a number of ways. A superheterodyne receiver uses an intermediate frequency (IF) amplifier to produce basic selectivity. A double or triple conversion receiver with multiple IF stages will provide better selectivity. There are several types of filters, crystal, ceramic and mechanical, which serve as "signal gates" to shave off the unwanted interferences on either side of the desired frequency. Some receivers use a tunable "notch" that can be tuned to null out particularly annoying interferences. These design factors are often used in combination to improve selectivity. And, they add to the cost of a receiver.

These, then, sensitivity, frequency readout and selectivity are the important considerations when you look for a SWL receiver. Since, money will usually be an important consideration, you will try to maximize the features within the price bracket you choose.

There are a limited number of receiver kits on the market which might prove to be the answer to your particular set of circumstances. Basically you can get more for your money with a kit because you provide the construction labor that otherwise must be paid for by the receiver manufacturer. A kit can be a good buy



Here is young Scott Freiman of Lakewood, NJ ready for a nighttime DX session.

if the finished product of your handiwork contains those receiver features you feel you really want.

Another way to save money is by keeping you eyes open for a used communications receiver of an earlier vintage. Some real buys are possible. But some used receivers, because of the way they have been treated or because they never were especially good rigs even when new, are dogs. So it is a case of caveat emptor—let the buyer beware. On the used market there are buys to be had. You can also get stung badly.

WHAT'S NEW?

Word from Gerry E. Wood, DX editor of "DX Corner" (hmm, there's another "korner" heard from), the weekly broadcast for SWLs aired by South Africa's Radio RSA, about a contest for listeners. A DX quiz question is presented during the "DX Corner" program on Saturdays. You can hear the English language schedule of Radio RSA on 9,585 kHz between 2230 and 2320 GMT. The writer of the first correct answer to the question will receive an LP recording. Radio RSA's address is P.O. Box 4559, 2000 Johannesburg, South Africa.

Want to learn Hebrew by Radio? Hebrew Language lessons began on Israel's shortwave outlet last fall. Because the Israel Broadcasting Authority has been known to change its frequencies quite often, I'd suggest you drop a note to the IBA, Box 204, Cheltenham, PA 19012, for a schedule and free script of the language lesson program.

IN THE MAILBOX

From Jon Whiteman, Corpus Christi, TX, a question that I often receive here in the "DX Korner."

"How," asks Jon, "do you get those DX cards from the stations you listen to?"

Okay, Jon, first off, most listeners call them QSL cards or verifications. They are sent by many stations to verify or confirm correct reports of reception. Basically, these are the steps:

(1) Hear a station.

(2) Take notes on the programs you hear and the conditions of reception.

(3) Write a letter to the station, reporting your reception. To prove that you actually did hear the station, you must include careful details of the programs you heard. Also tell the station when you heard it, date and time in Greenwich Mean Time, and the frequency tuned. Include a report on the conditions of the reception; in other words, how well was the signal coming through. Finally, politely request a confirmation orm verification of your report. If writing to a major station probably no return postage is necessary. If you are writting to a smaller station, it is wise to include one or more International Reply Coupons (available for 42 cents at your post office) to prepay the postage costs of the station's reply to you.

(4) Wait patiently. A reply from a station overseas can take from a few weeks to many months.

That is a bit of an oversimplification, but it w you started on the QSL card collecting route.

Oh, by the way, to answer the question of John Marcos, San Angelo, TX there are several sources for station addresses. One of the best is the annual *World Radio TV Handbook*, available from several sources, including Gilfer Associates, Inc., Box 239, Park Ridge, NJ 07656. The price is $10.95.

DOWN THE DIAL

FINLAND—Radio Finland again has its North American transmission on the air at 0330 GMT on 6,120, 11,755, 15,110 kHz. Or try the latter two frequencies at 1330 or 1430 GMT, or at 2000 GMT on 9550 kHz.

INDONESIA—The foreign service from Jakarta, the Voice of Indonesia can be heard with its English language program at 1400 GMT on the frequency of 11,789 kHz.

DENMARK – Radio/Denmark isn't reported that often, probably because the station has no regular programs in English and because only one frequency is in use at any given time. But Radio Denmark does have occasional English language identification announcements on the half hour between 1530 and 1730 GMT on 15,165 kHz.

CB Usage Tips From S9

(CUT OUT & PLACE AT OPERATING POSITION)

Preferred & Designated Channels
Channel 8 Agricultural operations
Channel 9 Emergencies only
Channel 13 Maritime
Channel 16 Single Sideband only
Channel 18 Single Sideband only
Channel 19 Trucks/Vehicles in transit*
Channels 36 thru 40 Single Sideband Only

*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.

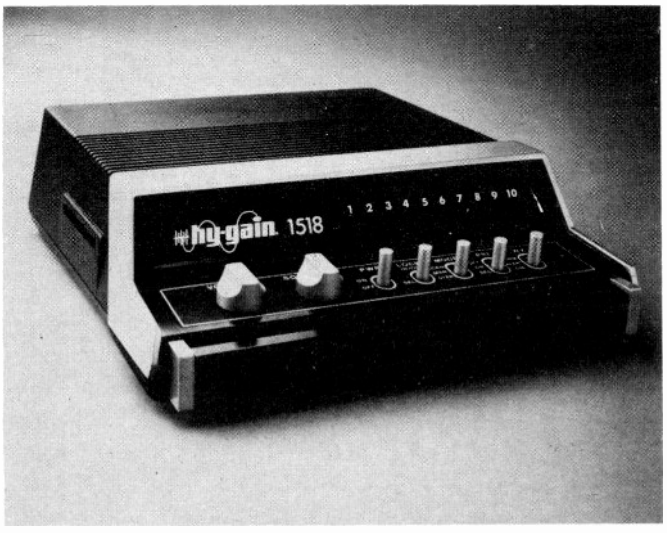
Stations using power mikes should be cautious that their audio levels are set to a level which will not cause voice distortion, over modulation, or splashover on adjacent channels.

Single Sideband stations generally operate on Channels 16, 18, 36, 37, 38, 39, and 40, 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.

For Information About Our Advertisers . . .

The Monitor Post

by Rick Maslau, KNY2GL



10 BAND MONITOR WITH ELECTRONIC LOCKOUT

The Hy-Gain 1518 scanning monitor combines futuristic technology with striking styling for monitoring of local PSB transmissions.

There are 10 electronically programmed RF bands ranging from 30.0 MHz to 520.0 MHz covering VHF Low, VHF High and UHF programmable frequencies. Weather alert fixed priority on channel one provides for immediate and continuous automatic weather information. And selectable priority (second priority) allows switching to any other channel when the scanner is not operating in priority one.

Electronic channel lockout eliminates individual lockout switches allowing the need for a modest 5 toggle switch configuration. Any channel may be reactivated by manually selecting the desired channel and depressing the lockout-select/reject switch.

There's LED channel scan indicator, memory battery to preserve programmed channels in the event of power failure, quick scan to by-pass locked out channels, external audio jack, and internal or external antenna operations.

A 117VAC w/charger adapter, 6AA batteries and 9V memory battery are supplied. The Hy-Gain 1518 is available at $139.95 manufacturer's suggested retail price.

MOTOROLA NEW SCRAMBLER

Motorola's Digital Voice Protection System was designed to insure two-way radio communications with a high level of security. This system is currently being used by government agencies and law enforcement units outside of the United States.

The Motorola Digital Voice Protection System is expected to generate a lot of interest because it offers police departments the highest security level possible among commercially-available voice scramblers. While less-sophisticated analog scramblers have been marketed for several years, they are easily decoded.

Motorola's Digital Voice Protection System provides a high level of security with virtually no chance of unauthorized monitoring.

Motorola's Digital Voice Protection System utilizes Motorola's MICOR mobile, base and repeater stations, along with the advanced Motorola MX-300 Series "Handie-Talkie" portable two-way radios.

800 MHz NEWS

The new Motorola 800 MHz two-way radio communications package is being offered in response to an earlier Federal Communications Commission decision to allocate 115 MHz of spectrum within the 806–94/ MHz band to land mobile radio service.

The allotment is intended to provide public service agencies such as police and fire departments with relief from the channel congestion which exists in many urban areas. The allocation also permits public safety agencies to add needed new services such as data communications to existing systems without overloading the present communications channels.

Being offered in the 800 MHz spectrum is the Motorola MICOR Mobile Two-Way Communications System, Control Stations, Base Stations, and Repeaters, Base Station Duplexers, and High Gain Base Station Antennas.

For further information on Motorola's products, contact Barbara Bennett, Marketing Services Motorola Communications and Electronics, Inc., 1301 E. Algonquin Road, Schaumburg, Illinois 60196.

(continued)

GLOBE INTRODUCES SCANNER

A mobile scanning receiver, capable of monitoring both Hi-Band and Lo-Band as well as a maximum of 16 channel, is Globe Electronics newest unit.

The two bands of the Globe 9700 Scanner (18-9700) accommodate 16 standard crystals, providing you with eight Lo-Band or eight Hi-Band channels, or any combination of the two. A convenient band selection switch allows instant and safe band switching while the scanner is in operation.

Other features include a 3-way scanning switch with an automatic, manual or delay setting, as well as a selector button to allow instant channel selection during manual scanning. The dual superheterodyne scanner also features a squelch control and easy to read LED channel indicators.

The Globe 9700 Scanner may be operated from either AC/DC supply and comes complete with AC/DC Power Cords, Mounting Bracket, Antenna and hardware, less crystals. It is 100% solid state and UL listed.

Globe Electronics, Division of Hydrometals, Inc. 400 S. Wyman, Rockford, IL 61101.

FIRST FULLY SYNTHESIZED AIRBORNE VHF/FM RADIO

The new Motorola SYNCOM-10 VHF/FM Two-way radio makes it possible for government and public service band radio users to instantly select any frequency they need in the range of 150 to 174 MHz.

Nine thousand five hundred ninety-eight channels, with 2.5 kHz spacing, are available by simply tuning the desired frequency on a thumbwheel selector. An electronic digital readout gives positive indication of the frequency in use, whether transmitting or receiving. Frequency synthesis is the basic design feature which allows the large number of channels to be selected so rapidly.

Primarily designed for aircraft installation, the radio's

For Information About Our Advertisers . . .

lightweight ruggedized construction makes it ideally suited for many other applications such as communications vans and ground stations. It is particularly useful for emergency missions which sometimes require up to 50 different channels. This new transceiver has been operationally tested for use in coordinating spotter planes, slurry aircraft, and groundbased units during large fires.

The SYNCOM-10 features pre-selection of up to 8 channels and built-in 2-channel guard receiver. Selection of simplex or half-duplex/split frequency operation is an important feature of this new unit.

Other important features include excellent receiver intermodulation and selectivity, all-solid-state design, 12- or 24-volt DC operation, night lighted controls, 10-watt output power, and standard 1/2 ATR mounting for aircraft installation.

DUPLEX PARAMEDIC PORTABLE RADIO

A new EMS (Emergency Medical Services) full duplex/multiplex portable radio was recently introduced to aid the paramedic with crucial lifesaving communications. The APCOR Radio is the smallest and lightest EMS duplex portable available today. Weighing only 13 pounds, the unit can be carried to the scene of the emergency to aid the stricken patient.

Duplex/multiplex operation is featured, providing simultaneous transmission of ECG and voice from the site of the patient back to the hospital. Capable of two-way repeat, this 8 transmit/10 receive unit has the flexibility to work with most EMS systems. A full two watts of audio power, extended range via vehicular repeaters, one full hour of continuous operation, one hour rechargable battery, Private-Line squelch encode/decode capability, and reliable plug-in hybrid modules, are other features of the APCOR radio.

For further information, write Barbara Bennett, Marketing Services, Motorola Communications and Electronics, Inc., 1301 E. Algonquin Road, Schaumburg, Illinois 60196. *(continued)*

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.

After all, could the price be better?

ELECTRONIC FLEAMARKET
14 Vanderventer Avenue
Port Washington, NY 11050

Please run the classified ad listed below in the first available issue:

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* * *

Name _____

Address _____

City _____

State _____ Zip _____

HAVE YOU MADE CONTACT WITH THE S9 STAFFERS "ON THE CHANNELS?"

NAME	HANDLE	PRIMARY CHANNELS
Tom Kneitel	Tomcat SSB13, KW146 CLI73	10, 12, 19 16L, 18U
Lori Ressa	Loreli	12, 19
S.R. Cowan	Gramps	19
Richard Cowan	Trainman	13, 16L, 19
Cary Cowan	Green Dragon Sleeping Beauty	12, 17, 19
Marc Gilman	Deacon CLI34, KW339 SSB30	12 16L
Gordon West	California Dreamer	9, 16L
Gary Deckelnick	Baby Bull	7, 19
Bill Sanders	SSB295, CLI1849 KW5304	16L, 18U
Hal Keith	Flasher	12
Pat Hartman	Six Pack	4
S9 Office Station	Deadline Base KW4405 SSB250	8 16L, 18U

HOW 'BOUT IT? GIVE US A SHOUT!

VA. POLICE TO USE FOUR HIGHWAY MAINTENANCE FREQUENCIES

The FCC has granted the Commonwealth of Virginia rule waivers to allow the assignment of four Highway Maintenance Radio Service frequencies for use in Virginia's planned state police communications system.

The FCC said the Highway Maintenance frequencies selected—158.985, 159.000, 159.135 and 159.165 MHz—could be used in Virginia without causing interference to existing stations in that state or in adjoining states, with one possible exception.

That exception, it noted, would be the frequency 159.135 MHz, which now is used in Westminster County, Md. To avoid interference, the Commission said, the Commonwealth of Virginia has proposed to use a directional antenna and thus minimize the signal in the direction of Westminster County.

Since co-channel stations on the remaining frequencies are located at distances of 150 miles or more, the Commission said co-channel interference was not anticipated.

While recognizing that this action will reduce the number of Highway Maintenance frequencies in the area and may cause some interference to Westminster County, even with the use of a direction antenna, the Commission said these disadvantages had been weighed against the need of the Commonwealth of Virginia to expand and modernize its state police communication system. Furthermore, it said in spite of a diligent search, sufficient frequencies for the state's police communication system could not be cleared from those available under the rules.

The Commission pointed out there had been no showing that the four selected frequencies would be needed in the foreseeable future for any specific planned Highway Maintenance communications system. Therefore, it found that waiver was appropriate and justified.

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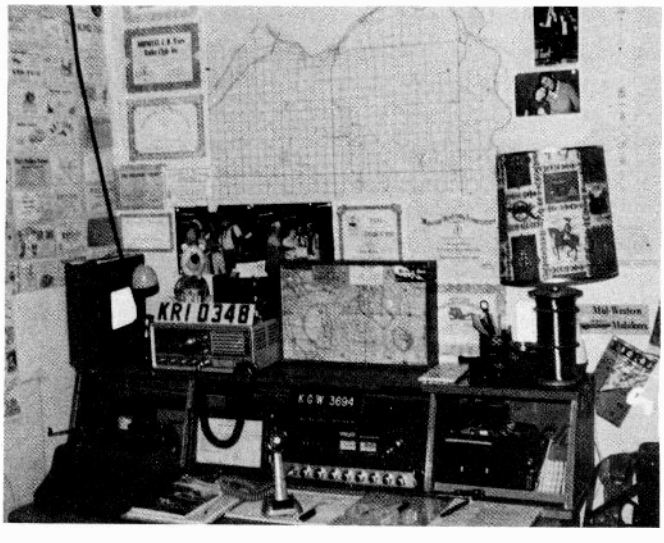
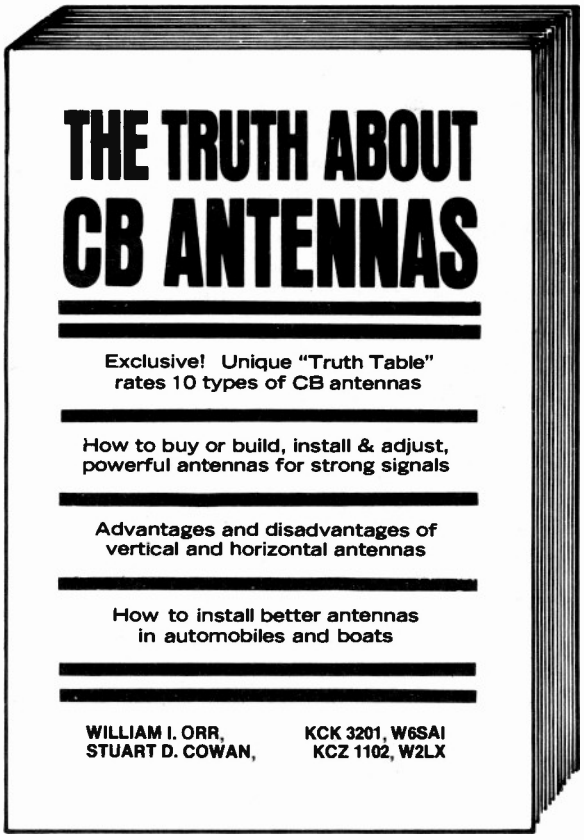


Kris Kringle describes his operating position as "nice, compact, and cozy." We agree. Kris hails from Plattsmouth, Nebraska. (Kris' real name is Jackson).



New Handbook Reveals

THE TRUTH ABOUT CB ANTENNAS

$5.95
*(postpaid)

* Exclusive "Truth Table" gives actual Db gain from 10 types of CB antennas.
* 240 pages — 146 illustrations — 18 chapters.
* "A great CB Antenna Handbook!" - George R. Wood, KBI-3274 - W1SR, RCA.

Your CB antenna is the key to clear, reliable communications. Most CB antennas are improperly installed and adjusted. They do not work anywhere near peak efficiency. Moreover, to impress buyers a barrage of non-facts about inferior antennas is used by some antenna manufacturers to gain quick sales. Now, for the first time, this new Antenna Handbook exposes false claims and gives you a unique "Truth Table" so you can determine for yourself the true power gain of any CB antennas!

Book Division, Cowan Publishing Corp.
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Sirs:

Please send me.....copies of **THE TRUTH ABOUT CB ANTENNAS**

Name _____ (Please Print Clearly)

Street Address _____

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* Residents of N. Y. State include appropriate Sales Tax

THE MONITOR POST *(continued)*

As two last matters, the Commission noted there has been some question about the transmitter power proposed for some of the stations, particularly those near adjoining states, and that four of the proposed repeater stations are to be located within the "quiet zone" surrounding the National Radio Astronomy Observatory in Greenbank, W. Va., which has found two of the sites "are not feasible."

With respect to the power question, the FCC instructed its staff to explore the matter with the Commonwealth of Virginia and make any adjustments in power as might be appropriate. In addition, the Commission instructed the staff not to grant any licenses for sites within the "quiet zone" until coordination with the Observatory has been completed.

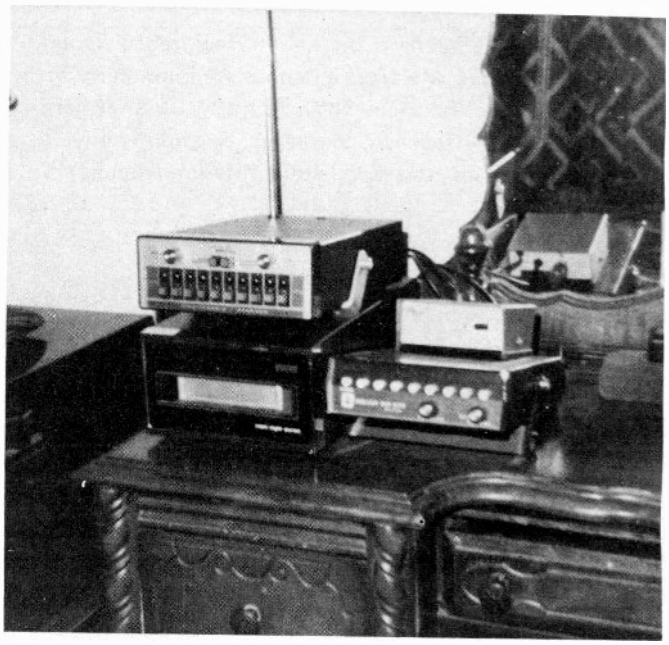
FIRE RADIO SERVICE FREQUENCIES

The FCC amended its rules by raising the power limitation on Fire Radio Service frequencies 33.42, 46.30 and 153.830 MHz from 3 watts to 10 watts output.

This action was proposed in a rulemaking notice adopted last July 7, in response to a petition by the International Municipal Signal Association.

In its rulemaking notice, the Commission noted that the three frequencies in question had been reserved for on-the-scene fire fighting communications only, resulting in the low 3 watt power limitation. However, it found that the scale of on-scene fire fighting operations had increased dramatically since the adoption of this limitation and in some instances where widely dispersed fire fighting units were involved 3 watts could not provide the coverage needed.

Based on the record in this proceeding, the FCC concluded that the public interest would be served by adopting the rule amendment as proposed.



Gary Hickerson's monitor post in Ft. Smith, Ark. is compact and effective. Regular coverage to Tulsa (125 miles away) can be obtained—however when the skip is in, Gary has heard Boston!

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 75 cents per word is made to all commercial advertisers or business organizations (minimum ad, $30.00). 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, ad 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.

CB'ERS: AVOID SUNSPOT BLACKOUT. Many more channels. More power. Uncrowded. More fun. Qualify! Copyrighted report tells why, where and what to do. $2.00 Moneyback guarantee. Alpha Research Consultants, Suite 125-S, 7715 Chevy Chase Dr., Austin, TX., 78752.

SPECIAL - 100 QSL IRC's, only $1.00. Tower -SQ, Drawer 10083, Charleston, S.C., 29411.

CB RADIOS, VHF/UHF monitors, crystals, antennas. All brands. Lowest pricing possible. Southland, PO Box 3591-F, Baytown, TX., 77520.

FCC TEST ANSWERS $10.00 any class. Specify, Dixie Tec, Box 8352, Savannah, GA., 31402.

NEW CHANNELS! Copywrited book details how to install sliders, increase power, add new channels to most new and old units. Many pages. $9.95. Tecom, Box 696, Welcome, N.C., 27374.

WANTED: Car telephones and mobile telephone parts, heads, cables etc. Greg Hyman, 87 Yonkers Ave., Yonkers, N.Y., 10701. 914-476-4330.

CALL SIGN AND HANDLE engraved on 1x3 plastic badge with pin/clutch. Choice of colors, all with white lettering - maplewood, green, red, black, blue, orange - $1.75. H & H Plastic Engravers, PO Box 6606, Pine Bluff, ARK., 71601.

DEALERS WANTED. Most major CB brands, scanners, Ham gear. Large inventory, low prices, fast courteous service. JRD Distributors, 131 Harbor Circle, New Orleans, LA., 70126., 504-241-8500.

GUARANTEED 100% QSL Cards with numbers only. Buddy packs to 100. Extras appreciated. KCO-2682, PO Box 8726, Boston, Mass. 02114.

SWAPPING QSL CARDS? Wallpaper your walls. Join the Carnival QSL Club of the world. Write for application. We have CB pins, patches, rosters and stamps. 1124 High Bluff, Dubuque, Iowa. 52001.

S—9 P.R. REPORTED PATCH, send $3.00 plus 25 cents postage to William Davidson, 26 Knight St., Glens Falls, N.Y. 12801.

ASSOCIATE MEMBERS WANTED to join American CB Radio Club. Receive attractive club buckle, membership card, permanent club ID number, 10-code, CB language, bumper sticker, etc. Associate membership only $8.00 a year-- mail check to: American CB Radio Club Inc., PO Box 321, Bronx, N.Y., 10469.

CAN WE HELP YOU with good Wholesale Prices. Most major brands CB radios, and accessories. Same day shipping. Send or call for price list. RRR Electronics, Inc., So. Bend, IND. 46628. 219-232-4688.

CALL SIGN Rubber Stamp, 1' high, $2.50. Call, name, address stamp, $3.00. Manufacturer, P.O. 506, Capitola, Calif., 95010.

CB BREAK "The Citizens Bander's Newspaper", published every 2 weeks. Get the news while it's "HOT"! FCC, Gadgets, Jamborees, Awards, New Products, Tests, Antenna, and more! $8.00 per year. CB Break, Box 378, Brackettville, TX., 78832. Call toll free: (800) 531-7156, Texas- call collect: (512) 563-2432.

ATTENTION All Tram, Browning, LTD, and Cobra owners. If you own a Tram Diamond 60 or D201 or Cobra 132 or 135 your radio is only operating on one half of its capabilities. To learn about 100% improvement on your radio write, B & R Electronics, PO Box 1241, Waynesboro, VA. 22980.

CB'ERS PROTECT YOUR Investment. Make your Rotating or Omni antennas Stay Up. New Support System will add needed wind protection and strength to your Mast and Tower. Detail plan copies for 10 and 15 ft. towers and do it yourself instructions, $9.95 each or both $18.50. Patent Pending. N.J. Res. add 5% Tax. RAM Home Improvement Corp. Box 1209, Toms River, N.J. 08753.

QSL's!...Sample Kit 25 cents. Immediate attention and courteous service. G.E. French, PO Box 101, Poestenkill, N.Y., 12140.

DELCO AM—FM Auto radios, original factory, for 65-70 Buick, Pontiac, Cadillac, $30.00. AM-FM stereo for 65-68 Cadillac- $70.00. A. Svirmic, 6601 S. Whipple, Chicago, 60629.

CB DEALERS- Send today for our price list, same day service. Reputable company in CB business for over 8 years. Over half-million dollar inventory. CB Distributors, Box 15883, Baton Rouge, LA. 70815.

ZANY CB BUMPER STICKERS!! No. 5005- CBers Do It With Frequency. No. 5006- Honk If You Love CB. No. 5007- We Brake For Beavers. $1.00 each. 3 for $2.50. Add 25 cents /order postage & handling. Write for club discounts. U.S. Publications Service, PO Box 34911, Dept S. Washington, D.C., 20034.

CB DEALERS- Send letterhead for complete wholesale catalogue on all communications equipment. Four Wheeler Communications, 10 New Scotland Ave., Albany, N.Y.,12208. 518-462-0202.

SMOKEY'S RADAR BUGGING YOU? Loaded with speeding tickets? Insurance gone up? We have the answer. H & B Enterprises, Box 477, Candler, N.C., 28715.

ATTENTION C.B. DEALERS: Having a hard time getting CB sets? We carry a full line, including Pearce-Simpson, Robyn, Browning, Johnson, Royce, Police Monitors, Crystals, New-Tronics, Antenna Specialists (E & S CB Sales & Service) R4, Winchester, IN. 47394. Phone 317-584-0343.

—NEW— CB CARD SWAP DIRECTORY Current updated listings of active swappers. Increase percentage of returns. Order includes your listing. Send your QSL, Call(s), name-handle and 10-20. $1.50 postpaid. California, $1.60. Harold A. Morgan, 801 South UI, Santa Ana, CAL., 92704.

MAIL—IN CB REPAIR: Write or call for procedures and flat-rate price schedule. Most radios in return mail within 48 hours. Communications Unlimited, PO Box 55, I-70 & US 42, London, Ohio 43140. 614-852-9446.

SUFFOLK COUNTY CB'ERS: Join Suffolk Emergency, a non-profit volunteer channel 9 monitoring organization looking for dedicated people to help fellow citizens in time of need. For more information on membership, send to: Suffolk Emergency Monitor Team, PO Box 91-X, Huntington Station, NY., 11746.

BEST PRICES- On Johnson, SBE, Tram, Browning, Midland, Antenna Specialist, Avanti, Antenna Inc., Shakespeare, Turner, Astatic, Mura, CDE, Para-Dynamics, Vanco, and Gold-Line. Write for free price list. CRS Communications, 1552 Central Park Avenue, Yonkers, N.Y., 10710.

CB'ers - WOULD YOU LIKE to be a "ham" and shoot legal skip world-wide on thousands of channels? Join ARC to learn how! Life Membership: $4.00 (or 25 cents brings info). American Radio Council, Box 1171-E, Garland, TX., 75041.

QSL CARDS— Something completely different! Nothing even close to it on the market! The "Cadillac" of QSL's! Samples: $1.00. Fully refundable with order. Mac's Shack: Box 1171-B, Garland, TX., 75041.

PERSONALIZED BADGES With name, Handle, Call Letters, only $1.50 Postpaid. Mac's Shack, Box 1171, Garland, Tx., 75041.

JOIN THE BROTHERHOOD OF CB'ERS a Nationwide organization. Equipment and handle registry, overnight accommodations, bi-monthly magazine published by us, ID Card, 5x7 wall card, bumpersticker and more. Complete membership $5.00 or free details. Box 461, New Haven, Connecticut, 06502.

CB RADIO SLIDING CAPABILITIES— Ham radio conversions to CB easily achieved using simple tools. Step by step illustrated instructions available. Details $1.00, refundable. Technical Publications, Box 649-S3, Milwaukee, WIS., 53201.

DEALERS WANTED: Profitable spare time business, best wholesale prices, CB radios/antennas/monitors/accessories. Central USA for best shipping. Send card or letterhead for price sheet. Sunridge Electronics, Inc., Rt. 2, Box 375 S, Hillsboro, MO., 63050.

MOBILE IGNITION SHIELDING provides more range with no noise. Available most engines in assembled or kit forms, plus many other suppression accessories. Free literature. Estes Engineering, 930 Marine Drive, Port Angeles, Wash., 98362.

MISSISSIPPI Communications Systems, 423 B Pass Road, Gulfport, Ms., 39501. If we don't already have it chances are we can get it CB, UHF, VHF, VHF Marine amplifiers, scanners, snoopers, ultrasonic burglar alarms, much, much, more. We communicate with you.

BE AN EMERGENCY CHANNEL 9 MONITOR! If you live in California, we invite you to join Cal-State Emergency Radio. For information and membership application, send self-addressed, stamped envelope to CSER, PO Box 1956-A, San Jose, CA., 95109.

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QSL CARDS— Top quality, reasonable prices, 12 colors, gloss-coated, custom made for you. Free Catalog. Write to CBC Club, Dept. S9, Box 703, Lexington, N.C., 27292.

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ADVERTISER'S INDEX

New Reader Service System

To speed information to you on products shown in S9 advertising a new computerized Reader Service system has been designed. For additional information on a particular ad in this issue, tear out the Reader Service postcard bound between pages 104 and 105, and circle the numbers on the card which correspond with the Reader Service numbers listed in the advertiser's index below. DON'T CIRCLE THE PAGE NUMBERS! Fill in your name and address, and mail. We'll have your information on the way in short order.

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The publisher of S9 accepts advertising from manufacturers, dealers and distributors who, in our opinion, offer readers a high level of quality in products and/or service. Wherever possible we attempt to publish additional information on these products in the form of technical equipment evaluation reports.

Readers should be aware that, at the present time, the CB radio market is drastically backordered in almost every product category, but especially so in transceivers and antennas. We wish to remind our readers that we carefully screen all potential advertisers. In the event that a company's products do not appear within our advertising pages, there's a strong likelihood that it has not passed our minimum standards.

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.

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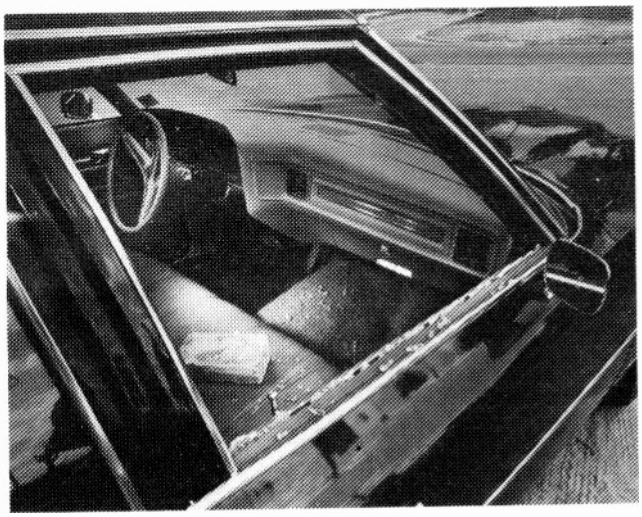

Becoming one of the MILLIONS . . . yes, MILLIONS of people who each year have their cars or trucks stolen or vandalized is not an uncommon occurrence these days. After joining this unfortunate group, I did a little research and found:

OVER ONE MILLION CARS ARE STOLEN EACH YEAR

- Many times this number are burglarized, resulting in BILLIONS of dollars worth of property losses to people like you and me.
- Houston, Texas has reported over 2,000 car break-ins in one month.
- Half of all reported crimes in the Pittsburgh area have been auto related.

After learning these startling statistics, my concern over getting ripped off **again** sent me searching for an automobile burglar alarm that 1) protected everything in and on my car, 2) was easily installed, 3) carried a guarantee and 4) didn't cost an arm and a leg.

BUT I COULDN'T FIND ONE! Every alarm I found was expensive, difficult to install, and offered only partial protection for my car. I was lost, until I found the CAR-COP alarm system.

THE CAR-COP SECURITY ALARM WAS JUST WHAT I WAS LOOKING FOR.

It was easily installed in 30 minutes with ordinary household tools and carries a two year guarantee against defects in parts and workmanship.

The alarm itself is a vibrational mechanism which is designed to go off when **any** part of your car or truck is tampered with. Unlike most alarms which are designed to go off after the vehicle is actually entered, the CAR-COP device activates as soon as a thief **begins** to bother your car, thereby preventing the damage caused by a forced entry. Now that's **full protection!**

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And the price? Only $19.95! That's right. Only $19.95 and you've got the **peace of mind** of knowing your car and its contents are no longer a "sitting duck" for any rip-off artist that comes along.

GUARANTEE

The people of Contemporary Security, Inc. are so proud of their CAR-COP alarm system, they are willing to back it with this money back guarantee: 30 DAY MONEY BACK GUARANTEE. If you are not completely satisfied with your new CAR-COP Security Alarm, return it to us within 30 days for a full refund of your purchase price. Contemporary Security, Inc., 229 Forestville Road, Raleigh, N.C. 27604.

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- COMBINATION SWR/RF POWER METER
- VARIABLE SQUELCH
- VARIABLE RF GAIN
- VARIABLE MIC GAIN
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- SWITCHABLE ANL
- CB/PA SWITCH
- EXTERNAL PA SPEAKER JACK
- REMOTE SPEAKER JACK
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- VARIABLE SQUELCH
- VARIABLE RF GAIN
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Model AV-101

Co-inductive design of this patented antenna gives longer, more noise free performance.

ASTRO PLANE has top radiation which means that your signal gets out from the highest part of your antenna. Your signal radiates about 15 feet higher than with other antennas which radiate near the bottom.

The **ASTRO PLANE** has a lower angle of radiation which makes more efficient use of the radiated signal by allowing it to hug the curvature of the earth instead of shooting your power up into the sky.

The **ASTRO PLANE** has 4.46 db gain over isotropic which gives you a stronger signal and better, clearer reception.

You'll get long lasting, trouble free performance because it is compact in design — without long drooping radials, without coils to burn or short out, and with direct ground construction to dissipate static charges and lightning.

The only omni-directional antenna that radiates from the top . . . not the bottom ● Stainless steel radials concentrate signal power on top ● Rigid heavy-duty aluminum tubing ● No long drooping radials to ice up or break off ● So unique it's backed by a U.S. Patent (Patent #3587109) ● No coils to burn out or detune ● Easy Assembly ● Lightweight — easy to install on simple pipe mast

Ordinary collinear or ground plane antenna signals are blocked . . . they radiate from the bottom.

ASTRO PLANE gets its signal over obstacles . . . It radiates from the top.

SPECIFICATIONS

Total Length—12 feet
Weight—4 lbs.
Power Gain—4.46 db
Impedance—50-52 ohms
Omnidirectional—needs no rotor
Vertical Polarity
Aircraft Quality Aluminum
SWR—Pre-tuned—Less than 1.2:1 on 23 CB Channels and will operate on expanded channels.

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