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CB MAGAZINE

"Since 1961"

JANUARY, 1978

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The "Citizens Band" Magazine
serving the user of two-way radio.

CB AND THE LAW

- **Court Rules On Virginia Radar Detection Case.**
- **Linear Maker Convicted.**
- **Lawyers Discuss Antennas.**

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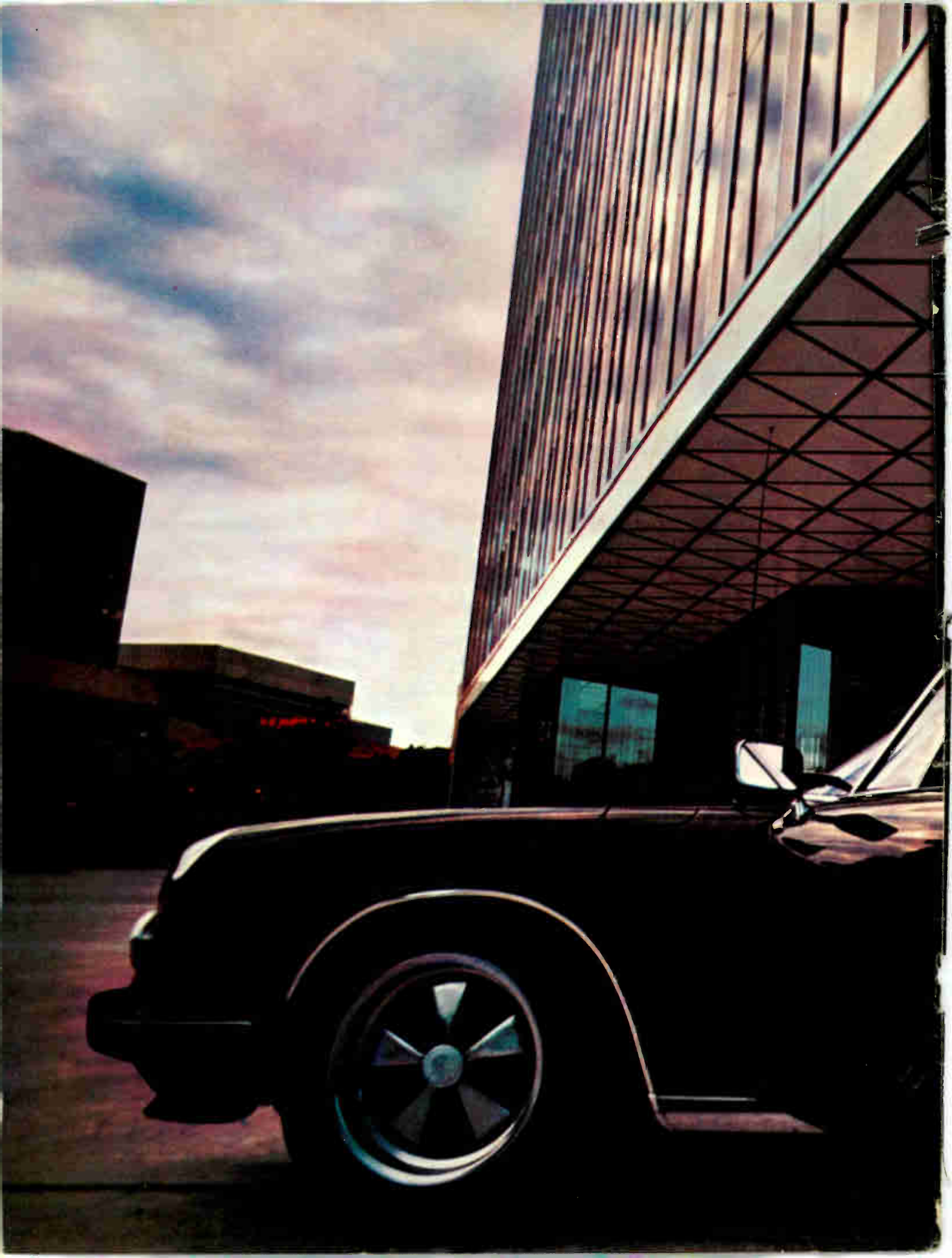

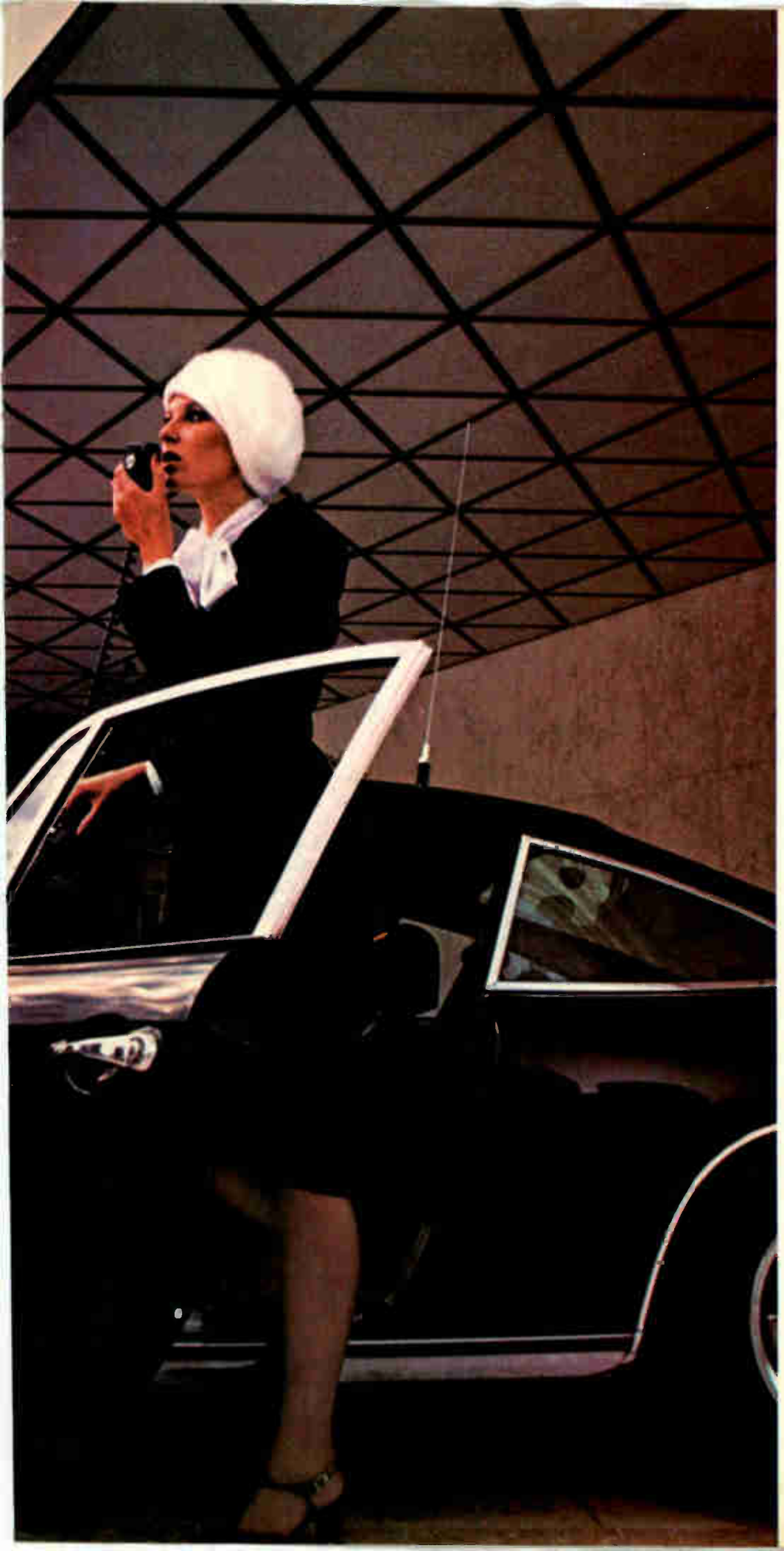

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Compiled by CB MAGAZINE's Washington Bureau

CB INDUSTRY SAYS NEW STANDARDS TOO TIGHT

The people who make citizens band radio equipment told the Federal Communications Commission in late October that a further tightening of transmitter standards, at least to the degree that the agency has proposed, could economically restrict the public's ability to own CB equipment. They charged that the extreme measures planned by the Commission are not justified from a television interference standpoint.

The CB manufacturers feel that some further tightening of the standards (on spurious and harmonic emissions of the transmitters) is possible without skyrocketing the prices of the equipment, if enough time is allowed. The Electronic Industries Association's Citizens Radio Section said the industry has not achieved the technical breakthroughs to go as far as the FCC is proposing, if the equipment is to be available at reasonable cost.

The group offered the Commission some recommendations which it feels represent a realistic and equitable resolution to the tightening of the emission standards. It said, however, that the fact remains that no significant decrease in reported cases of interference to television will occur until the illegal use of power amplifiers is terminated. Improvement beyond that, EIA said, must await the retirement from service of the many millions of citizens band transceivers built to earlier standards, and the even greater number of television receivers which cannot properly reject unwanted radio signals.

The manufacturers asked that they be given a year-and-a-half after the FCC adopts the new tighter standards to develop new equipment and have it type-accepted by the Commission, and another year before they have to stop shipping equipment which does not meet the new standards.

Class E Service Out

Once and for all, the FCC has officially closed the book on its 1973 proposal to set up a new Class E Citizens Radio Service on frequencies in the 224-225 MHz band, which are now being used by radio amateurs and federal government radio location services.

The Commission pointed out that there was no consensus of opinion in the several thousand comments it received on the Class E proposals. While both equipment manufacturers and prospective users of the proposed service generally supported the concept, the FCC said, they disagreed on its specific characteristics.

Much of the disagreement involved the potential for interference to VHF television, and the actual effectiveness of using the 224-225 MHz band for a CB-type service.

Developments during the past couple of years, including the conclusion of the FCC's Personal Radio Planning Group that other frequencies, as well as the 220-225 MHz band, should be considered for a personal radio service, the Commission said, have made the original Class E proposals obsolete.

Officially terminating the case, the Commission said it will consider the issue of a new personal radio service in some future rulemaking.

Linear Amplifier

The FCC has put together a pair of highly controversial proposals and set them up for oral argument on December 1, at which interested parties can appear before the FCC Commissioners themselves and debate the issues, after which the Commissioners will make their decisions.

One of the cases proposes to ban completely the marketing of external radio frequency amplifiers (linears) that are capable of operation in the 24-35 MHz band. The other would require type-acceptance of equipment marketed for use in the amateur radio service.

Power

The FCC has flatly informed the citizens band radio community that it will not be authorizing CB rule waivers to any person or organization, including police departments to allow use of higher transmitter power than specified in the Commission's rules. The maximum allowable output power, it noted, is 4 watts for AM transmitters, and 12 watts peak envelope power for single sideband transmitters.

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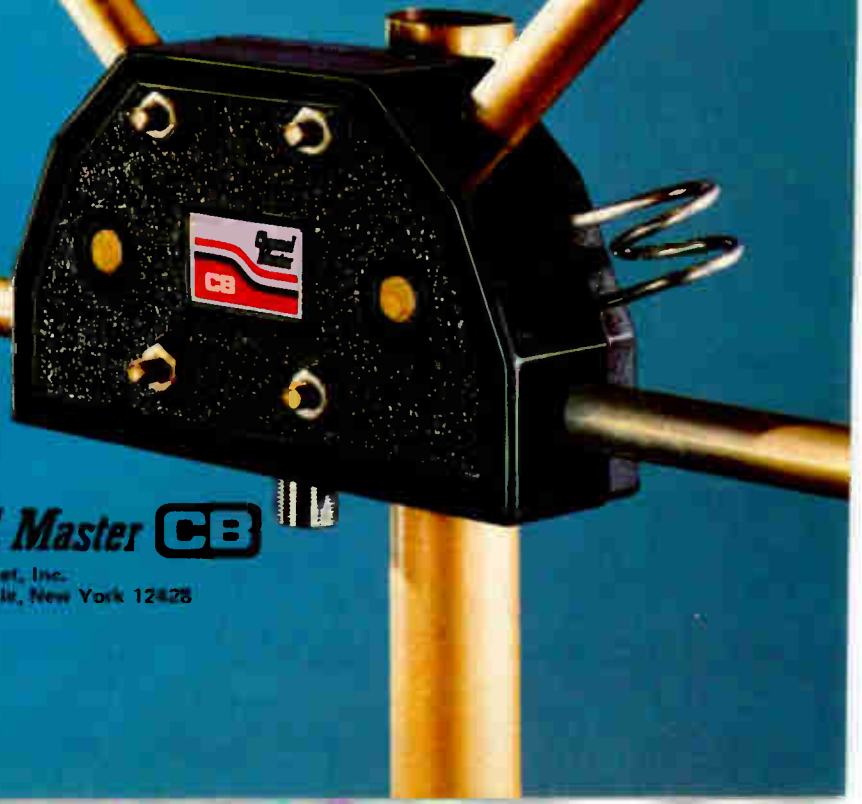

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CB MAGAZINE
Since 1961

THE NATION'S NUMBER ONE CITIZENS BAND PUBLICATION
SERVING TWO-WAY RADIO

VOLUME 14/NUMBER 11/JANUARY, 1978

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TECHNICAL ARTICLES

DEPARTMENTS

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Since 1961

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Editor's Desk

Now's The Time To Buy CB

The FCC expanded the Citizens Band from 23 to 40 channels effective January 1, 1977. Although the expansion was announced in July, 1976, use of the additional 17 channels was forbidden until the January date.

Some in the industry felt that the supply of 40-channel sets would not keep pace with the demand, following the January 1st deadline. Not so.

Production of the new 40's soon filled the distribution pipelines; sales of the new models were severely hampered by the millions of 23-channel sets that were immediately offered at discount prices to clear inventories. That, too, is about to cease, with the FCC having ruled that sale of 23-channel sets must cease by January 1, 1978.

Why buy the 40-channel unit, rather than the 23, CBers have asked. First, the 40-channel sets must meet tighter technical standards than the older 23-channel units. The new sets, type-accepted after September 10, 1976, are less likely to cause interference to television reception due to harmonic radiation. Approximately 1,400 40-channel models have now been tested at the FCC Laboratory for compliance with the tighter technical standards. Not all passed these tests; those that did not may not be offered for sale.

Despite the sale of millions of 23-channel CBs during 1977, millions of 40-channel sets have also been sold. But what has happened to them? Monitoring the new channels (24 through 40) in most areas, there is only occasional activity. In San Diego, for example, there are said to be more than 100,000 CB licenses operating over 200,000 transceivers; the 17 new channels are strangely quiet. Channel 30 is fairly active, as are some of the 'upper five' (36-40) most widely used by the sidebanders.

Why those millions who bought the new 40-channel sets are not taking advantage of the 17 new channels is a mystery. Business users, who had abandoned all hope of communicating on the original 23 when the flood of new CBers hit, have been strangely absent. Yesterday's Ma and Pa CBers ("John, on your way home . . .") appear on the new channels, but they are most active during morning and evening 'drive times.' Even club CBers, who in the past have settled on a given channel to rachetjaw, do not appear to have made the most of these open channels. And use of the higher channels for communications during emergencies has apparently not come into wide use, as would have been supposed.

Only the sidebanders are consistent in their use of the added channels, and in very limited numbers, at that. So, why wait? Join these limited numbers on the 17 added channels — 24 through 35 on AM and 36 through 40 on the sidebands. There are a lot of friendly CBers out there to talk to; many are the same people you used to talk to on 1 through 23!

Leo Sands

Letters to the Editor

Address all Letters to: Editor, CB MAGAZINE, 531 North Ann Arbor, Oklahoma City, Oklahoma 73127.

SHORT WAVE LISTENING

In a recent issue of **CB MAGAZINE** I read about the interest of KXJ-3187 in SWL (short wave listening) DX (long distance). I am also a DX listener. My receiver is a general coverage Realistic DX-160 teamed up with a 75-foot copper wire antenna. I can receive all seven continents. I hope you will find space in your magazine to print articles on SWL in the future.

Chuck Carman, Jr., KGK-3159
St. Petersburg, Florida

CANADIAN PERMIT

I was interested in your answer to the question, "Does CBer Need Canadian Permit?" Last year I wrote to the address you gave and got no answer, so I wrote directly to the Northwest Mounted Police Sergeant that gave you such an interesting story on his outfit and CB in Canada. He replied in a very friendly way and advised that if I did not get my permit back in time, I could go ahead and would get cleared "at the gate" to travel to the next station that issued permits. But, through his effots, I got an application and filled it in. Within a week I got my Canadian Permit (which was dated to expire when my U.S. license expired). I carefully placed the permit in a plastic holder, along with my U.S. license and headed for Canada. "At the Gate" I was met with the words, "Where do you live?". I answered with my city and state and she said, "You may go ahead." I then asked her if she would like to see my CB license and permit and she shook her head, "No." Wasted effort? I think not. I will carry it with me again when I cross the line this year.

Loren Carlberg, KTX-9654
Muskogee, Oklahoma

MR. CARLBERG: So that other readers won't be misled, we would like to add the comment that the Canadian Customs/Immigration people at the border are not concerned with radio rules enforcement. You may take your CB into Canada, but if you use it in Canada without a Tourist Radio Permit, you might find yourself in trouble.

IT HERTZ

The letter from J. L. Yaus in your October issue about "more about Hertz and cycles" taking exception to your conception that Hertz and cycles per second are synonymous, is in error. Cycles can be any regularly recurring event. However, CPS is a very definite term and according to Mr. Webster, Hertz (although a man's name) is used to describe frequency in cycles per second. So, Mr. Editor, take a bow, you were correct.

Rupert R. Monahan, KAAC-8254
Tabb, Virginia

WANTS TO JOIN SSB CLUB

I would like to join an SSB club. Perhaps club officers reading this will contact me.

Mrs. Sandi Richard, KAFV-4536
501 West D. St.
Iron Mountain, Michigan 49801

GROWN UP CHILDREN

In Southern Maryland the CB channels are crowded and you can hardly talk. I'm a teenager (16) and when I hear grown ups acting like babies and teenagers too, I feel kind of upset because they are the ones that are supposed to set examples for the kids.

Jim Murphy, KSH-6597
Clinton, Maryland

QSL CARD EXCHANGE

I would like to exchange QSL cards with other CBers. I have been in CB for 14 years.

Harrison Cunningham, KKB-3757
24 Crosby St.
Augusta, Maine 04330

CB COURTESY

As an interested member of our infamous CB community for five years, I feel that common sense and courtesy are key ingredients to better CB communications. But, there is yet another important factor concerning CB use. Parents should instruct their children on correct CB procedures. How many times have you heard children playing music over the air waves, using foul language, or keying up over other CBers as a "joke"? CB is great if used properly, but because of a few people, CB has earned a bad reputation as far as courtesy is concerned. I will always try to be courteous and polite while talking on my CB station. As the old saying goes "Courtesy is Contagious."

Gary Balanesi, KJC-9238
Daly City, California

FCC ANSWERS ACCUSER

In your October 1977 issue, you printed a "Letter to the Editor" concerning this Commission's recent enforcement effort in the Baltimore area. The letter was from one of your subscribers in Gamaliel, Arkansas. The subscriber appears to be the victim of receiving some incorrect information.

All of the equipment was actually seized by United States Marshalls acting under the authority of Search and Seizure Warrants properly issued by a United States Magistrate. Although specific pieces of seized equipment may be legal when used properly, the equipment was seized on the basis as being used in an illegal fashion. The final disposition of equipment rests with the Federal Court, not the FCC.

C. Phyll Horne
Chief, Field Operations Bureau
Federal Communications Commission

INDOOR ANTENNA WORKS

After I had my CB set and Hustler Homing Pigeon antenna tuned, my results are 3 to 5 mile range. This indoor antenna is the answer for

[continued on page 10]

The Cobra 50XLR CB has it all. AM/FM Stereo. Cassette. And CB. All in one compact unit. All engineered to bring you the same loud and clear sound Cobra is famous for.

The remote mike houses the channel selector, squelch control, and channel indicator. So all you need for talking CB is right there in your hand. The cassette player features through the dial loading and four-way fader control.

Because they're only five inches deep, there's a Cobra in-dash radio to fit almost any car with little or no modification to the dash. This feature, plus the step-by-step Installation Manual and Universal Installation Kit makes them the easiest in-dash radios to install. And our Nationwide network of Authorized Service Centers makes them the easiest to service.

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those of us who are not allowed an outside antenna. I am located in an apartment about a mile north of I-70 and about three miles south of 465. I receive and transmit five miles or so and I am satisfied with the pole antenna.
Harry R. Kinsler, KAIA-4346
Indianapolis, Indiana

CB SET I.D.

I would like to plead with CB owners to NOT use their Social Security number for identification on their CB radios, but instead to use their driver's license number as identification, and have it engraved on the frame or chassis of the radio as well as on any other items of value that they don't want to "give away" to thieves. If you have ever tried to trace someone through their Social Security number you will find that it takes considerable time, if ever, to beat your way through the governmental "red tape," even for a law enforcement agency. On the other hand, all enforcement agencies have immediate access to records of every licensed driver in the U.S. and most foreign countries through radio and teletypes. In most states, as here in California, an unlicensed driver or a juvenile may obtain an I.D. card that is similar to a driver's license and bears the same numerical sequence, for the identification of an individual. Therefore, the law can find the owner of a lost or stolen CB radio, even on weekends, when you can't get Social Security information.

We, here in North Highlands, have been pushing this idea, in cooperation with our county sheriff for some time now. And it makes their job a little bit easier, too. Your local police will do all they can to help you, but you have to help them also.
Hal Smith, Crime Prevention Committee
Chamber of Commerce,
North Highlands, California

CB IN GERMANY

We're stationed in Bamberg, Germany. CB radio is really great here. The CBers are friendly and it's really an experience to just turn to another channel and hear Germans talk. We receive **CB MAGAZINE** every month. It's a little hard here to obtain certain brands of CB radios and accessories, but **CB MAGAZINE** has helped us and other CBers to be able to order from dealers in the States through your ads. We enjoy both your articles and the ads.
SP/5 and Mrs. James L. Varner
APO New York

GOOD SAMARITAN

I would like to share this experience with fellow CBers. I recently installed a base station and was scanning the channels when I heard a CBer calling for assistance. When he failed to get a response from anyone, I answered his call.

He had just recently moved into the area from out of state and was stranded and out of gas. After several attempts to get a service station to assist him, I decided to take him some gasoline myself. I took him the gasoline and then went to the grocery store. When I came out of the store, there was an envelope under my windshield wiper. It contained a letter of appreciation plus a ten dollar bill. I would like to say thank you "*Golden Boy.*" The note would have been sufficient.
Dewey Villines, KSY-5213,
Kansas City, Missouri)
MR. VILLINES: Good "Samaritans" are sometimes stick-up victims in such situations. It is safer to get on the land line and call the highway patrol to assist.

10 CODES

In regard to your editorial (October 1977), "10-Codes, A Tower of Babel?" I agree with you wholeheartedly. The 10-codes are very confusing especially to new CBers. Not only do the codes vary from one another, but some have two different 10-codes within the same set meaning the same thing.
Lorene Herzberg,
Oroville, California

Model HP-27

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News Briefs

GERMANY CRACKS DOWN ON UNLICENSED CBers

WEST GERMANY — The word's out from the 5th Signal Command in Worms, Germany, that the West Germans are intensifying efforts to round up illegal CBers, and members of the U. S. Armed Forces are getting caught in the noose.

Improper use of sets has interfered with radio and TV reception and hampered emergency communications in West Germany, and the Deutsche Bundepost (responsible for licensing and control) has been ordered to crack down on violators.

Most frequent violations by Americans are failure to properly modify equipment; operating American-made rigs as base stations; operating on unauthorized frequencies; failure to pay monthly license fees; and using CBs for military purposes.

In addition to raids on military compounds, the DBP officials have begun spot-checking automobiles with CB antennas and demanding a valid Low Power Radiotelephone License issued by Germany. If the owner of the set can't produce the license, his equipment may be impounded.

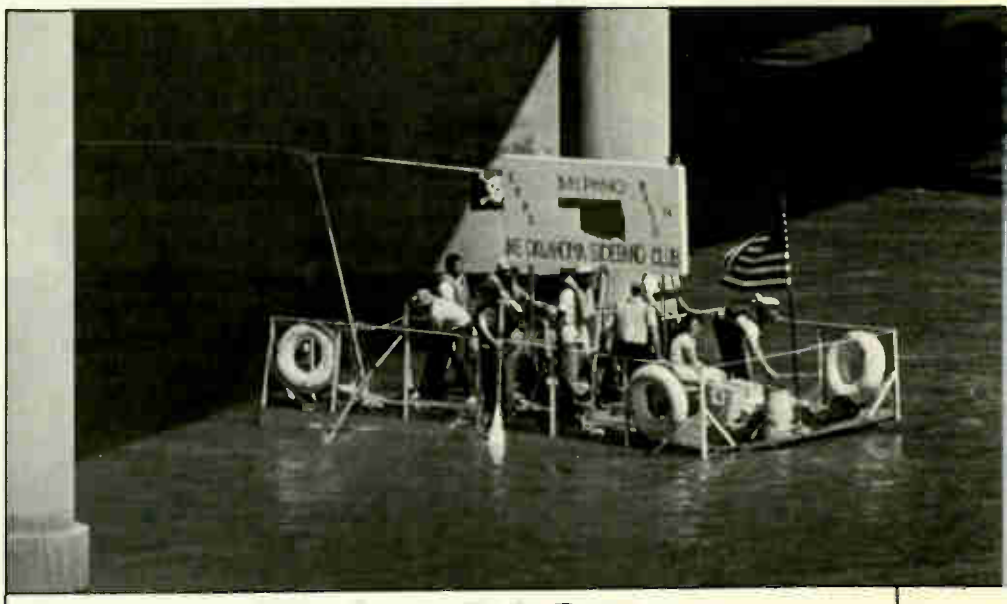
After the American CBer has obtained a German license (either by buying German equipment or by using a Federal Communications Commission approved American set and applying through the Army) he must meet additional requirements to stay within the law.

CB owners must pay a monthly license fee, about $2.25 for a mobile unit and $7 for a base. The CB may not be attached to public telephone equipment; obscene language or coded messages are forbidden; transmissions are limited to Germany and are forbidden on transport routes to West Berlin; and transmission is restricted to Channels 4 through 15.

DBP officials cruise highways and residential streets in orange VW vans, equipped with ultra-sensitive antennas. Equipment inside can monitor all frequencies and two vans can pinpoint a set's location in 20 seconds.

FCC CRACKS DOWN ON 285 CBers

WASHINGTON — The FCC recently closed down approximately 285 illegal CB radio operations in a massive four-day, nationwide crackdown. One hundred agents of the FCC's Field Operations Bureau took part in the strikes that affected operations in 30 different areas. "Most of the illegal operations involved operating . . . on an unauthorized frequency," C. Phyll Horne, chief of field operations reported. Other violations noted included overpowered operation, talking excessive distances (skip) and failure to properly identify the station. Areas in which the crackdown occurred ranged from Anchorage, Alaska to Hawaii and Puerto Rico.



The Great Raft Race

OKLAHOMA — The Northeast Oklahoma Sidebanders' Club took to the water September 11 as part of Tulsa's KRMG Radio Great Raft Race. Postponed twice, the race had been scheduled for Labor Day, but was rained out. Fifth in the annual series, it was in contrast to the first race held on the Arkansas River, when water released from upstream (the Keystone Dam) proved late in arriving. Local REACT members and Ham communicators aided in traffic control and water safety as 10,000 spectators watched the 450 rafts make the five-hour voyage.

PHOENIX POLICE RECEIVE CB FUNDS

PHOENIX, ARIZONA — Police here have been granted funds to purchase 20 mobile CB units and five base stations. A mobile will be placed in a police car in each squad area of the city. The radios, funded through an agreement between the Phoenix City Council and the Office of Highway Safety of the Arizona Department of Transportation, are expected to eliminate time-consuming telephone calls and rebroadcasting over police frequencies.

UNCLE CHARLIE REVOKES LICENSES

WASHINGTON — Leaders of three state or national CB organizations have lost, or face losing their licenses. Charging illegal use of equipment and channels, the FCC has denied license renewals for leaders of the HF (high-frequency) International and the American Federation of CBers. The FCC has now ordered Ellsworth L. Wells, reportedly a leader of the "Whiskey" Chapter of the State of Florida Sidebanders Association, to show

[continued on page 15]

We're changing the world of sound.

Man has always had an ear for new experiences.

From the distant thunder of the sea in an ornate shell. . .to the advanced communications systems of today.

Now Palomar Electronics introduces the SSB-2900. A 40 Channel AM/Single Sideband 2-way radio that is the most advanced C.B. you can buy. Send for a free data sheet. . .or see it at your nearby dealer. Check the specs. . .compare performance with any other 2-way radio. . .and you'll see why Palomar Electronics calls the SSB-2900 the "State of the art. . . future tense".

It's the best C.B. around, for those with a real ear for it.

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Send for a Spec Sheet on the Palomar SSB-2900 and receive this beautiful 4-color 22"x30" poster . . . FREE!

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News Briefs [cont'd]

cause why his license should not be revoked. Wells' case is reportedly a continuation of the FCC search for people who do not stay within the legal 40 channels.

OREGON REACT SEEKS TO AID BOATERS

CLACKAMAS, OREGON — Despite Coast Guard warnings for boaters not to depend on CB, Bob Boardwell of the Clackamas REACT wants boaters to monitor Channel 9 to improve emergency aid for boaters. "We're not in competition with anyone," Boardwell said. "We just want to be there when someone needs help."

CBers AIDING WAR ON ARSON

BUFFALO, NEW YORK — The Arson Awareness Program here is being aided by CBers. While posters and stickers around town and on fire alarm boxes encourage citizens to report suspected arsonists on an arson hotline, roving CBers are also patrolling for the criminals. Fire Investigator Robert Howard said a kid thinking of torching a place will look over his shoulder and wonder if the CBer driving by is watching. The all-volunteer program is patterned after a federal program in Seattle, Washington.

REACT, POLICE SPLIT

AUSTIN, TEXAS — Police here, after a dispute with local REACT members, reportedly are establishing their own Channel 9 monitoring program. Meanwhile, the Travis County REACT continues to monitor the channel from home bases, while seeking city funds to replace its former headquarters in the police station basement.

Police, however, also are seeking money for their "Operation Assist." They seek volunteers to monitor the emergency channel.

REACT monitors reportedly resumed monitoring from their homes after charging police were uncooperative and made REACT members feel unwelcome.

NEW CB RULES AVAILABLE

WASHINGTON, D.C. — The new edition of the Citizens Band (CB) Radio Service is now available from the Government Printing Office for $1. The FCC said the newly published booklet is Subpart D of Part 95, which contains only the CB regulations. The Commission also pointed out that the Rules were amended to state that CB licensees must have a current copy of Subpart D, but that they do not need to have the remainder of Part 95. The new edition can be ordered for $1 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Stock number for ordering is 004-000-00342-0.

ONCE UPON A TIME

OKLAHOMA CITY, OKLAHOMA — The author of "Once Upon A Time A Princess With A CB Radio," which appeared in the November issue of **CB**, was incorrectly reported as Eleanor Johnson. This should have been Eleanor Nelson, of the *Suburban Tribune*. We're sorry.

PCF IS 'ON THE AIR'

The Personal Communications Foundation (PCF) has been lifted off the drawing board, is actually in operation, and helping Hams, CBers and their attorneys. The PCF is a nonprofit, tax-exempt foundation organized expressly to serve as a central clearinghouse of information and research in the area of personal communications law. The PCF is the only organization of its kind because personal communications law is not yet formally recognized as a legal specialization. This is true although statistics indicate that in 1976 alone there were 7,000 legal matters pending involving all aspects of personal communications.

The cost of litigating such a specialized lawsuit can be in excess of $10,000. Approximately 40 percent of that cost represents time devoted to research. An attorney with access to the PCF's specialized personal communications library of briefs, cases and in-depth studies can eliminate much research time and consequently reduce litigation costs. Further, because most attorneys are not familiar with the nuances of personal communications law, an

[continued next page]

News Briefs [cont'd]

attorney using PCF materials can better represent his client.

PCF is controlled by a 24 member Board of Trustees. Each Trustee is either a practicing attorney or law school professor. The Trustees hold amateur radio, citizens band and first and second class commercial licenses.

The PCF office has recently been relocated to 10960 Wilshire Blvd., Suite 1504, Los Angeles, California, 90024. The move was made to facilitate administration of the PCF by its newly elected president, Kenneth S. Widelitz, a Los Angeles attorney. All inquiries should be sent to the PCF at the above address.

FCC OKAYS MORE 40's

WASHINGTON, D.C. — Almost 1,400 40-Channel CB sets are reported to have been tested by the FCC since September 10, 1976. About 20 percent of the CB sets recently submitted to the FCC laboratory for testing failed to pass the tests.

CB ON TWA

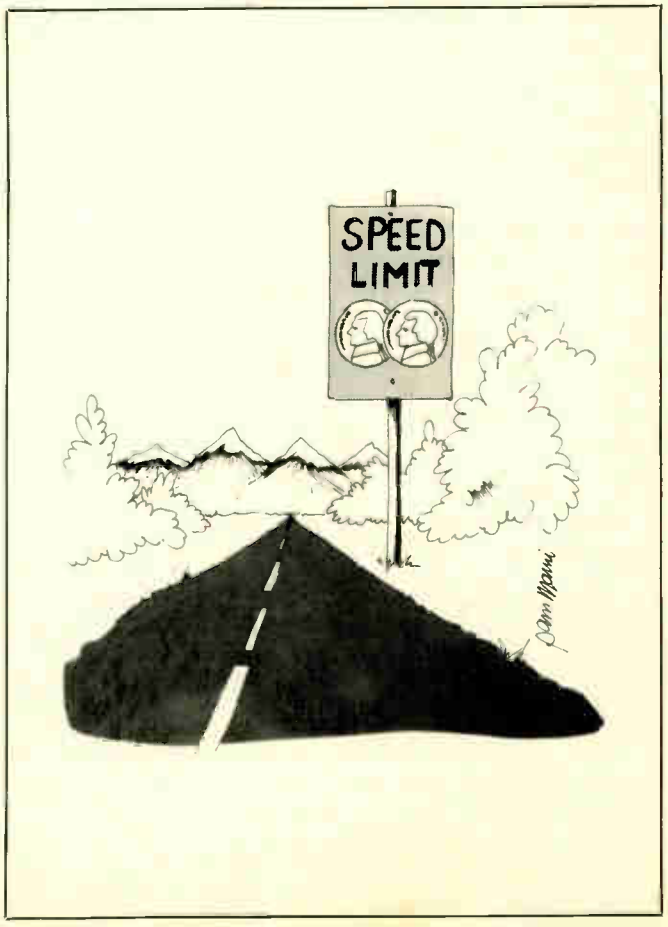
WASHINGTON, D.C. — An interview with John Sodolski, vice-president of the Communications Division of the Electronic Industries Association, about CB radio, is scheduled for playback on the business portion of the audio entertainment program of the TWA In-Flight Radio Service.

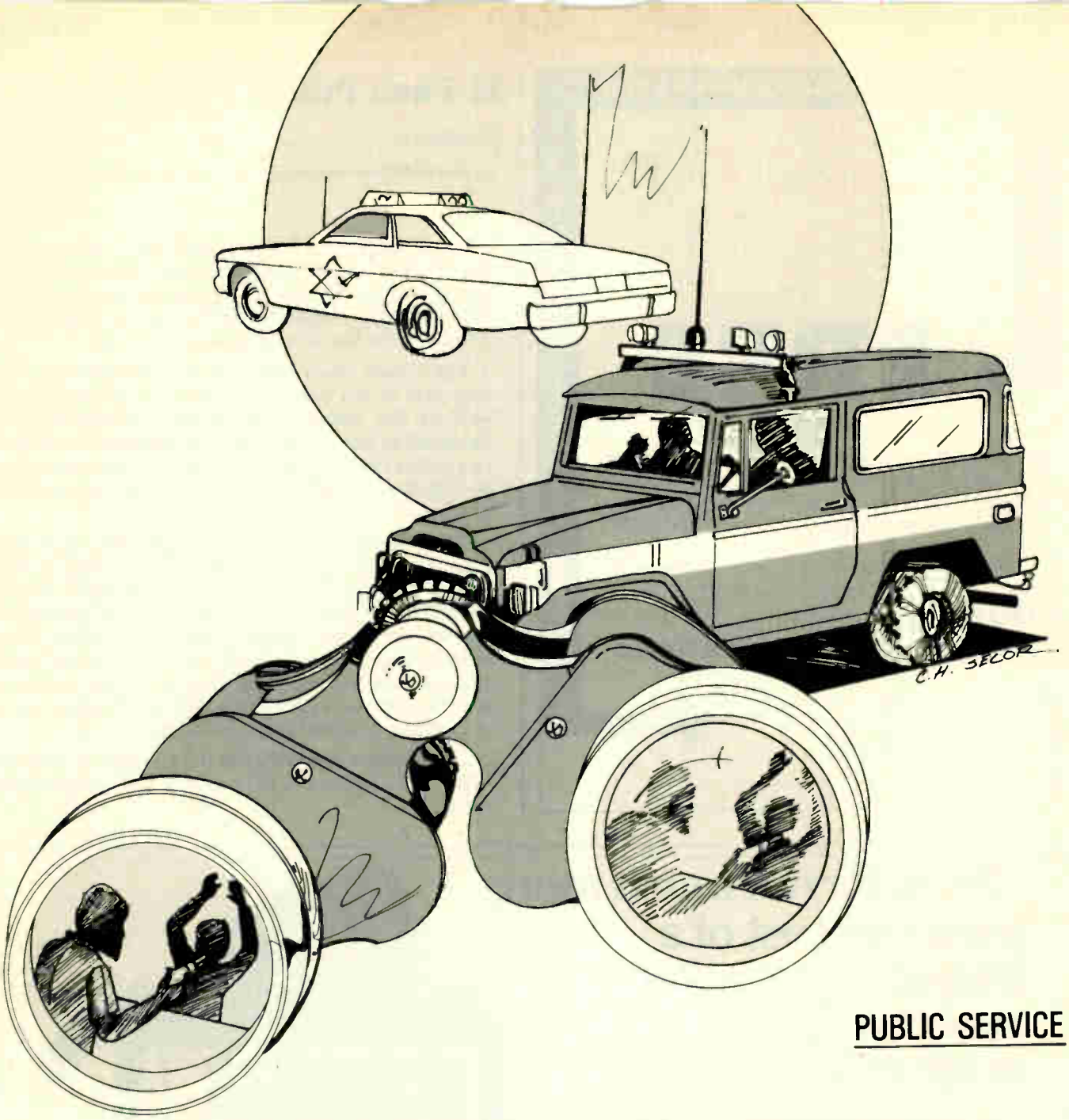
FCC SLIDE SHOW AVAILABLE

WASHINGTON, D.C. — The FCC has produced a 10-minute cartoon slide-and-sound show about Citizens Band rules. The title is "10-4 Uncle Charlie." It's available for purchase by clubs, associations, schools and others interested in CB radio. The special CB presentation was developed by the FCC's Field Operations Bureau to explain, in an entertaining format, the CB rules and their importance as thousands more operators go on the air every month. Viewers will meet such CBers as *Rhinestone Cowboy, Earthmama, Bucketmouth* and others.

The program includes 72 slides, a 10-minute audio tape cassette, a script and a question-and-answer sheet. The Q & A sheet is designed to answer most questions CBers are asking. "We have shown the slide program to several CB clubs around the country as a part of our education effort," said Phyll Horne, chief of the FCC Field Operations Bureau. "Their favorable response prompted us to arrange to sell the package so more CBers could see it."

The slide show package costs $15. It can be purchased by writing to: National Audiovisual Center, GSA Order Section, Washington, D. C. 20409. Make check or money order payable to the National Archives Trust Fund.





PUBLIC SERVICE

CBers Make Believers Of El Paso Police

By C. S. Milton

In spite of official suspicion and a host of other problems that build up around any volunteer crime fighting organization, a tightly knit band of CBers in El Paso, Texas, have made believers of the local law enforcement officers and helped bring a degree of tranquility to their area.

In the fall of 1975, ten families met to discuss what they could do about increasing thefts in their area. The couples, all owners of CBs, had driven around northeast El Paso looking for their stolen CBs, bikes and automobiles, and had found evidence that stolen vehicles were being taken to the desert to be stripped and burned. Increased investigation resulted in the CBers actually seeing a vehicle burned, although the culprits flew the scene before their license number could be obtained for the police.

By using extreme care in always informing the police whenever evidence of wrongdoing is uncovered, the group has been able to overcome the

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El Paso Police . . .

[*continued*]

original suspicion of law enforcement officers that the CBers would turn into a vigilante group. Now the police realize that the group merely want to act as observers and reporters and have no intention of infringing in the law enforcement area.

The CBers have won the full cooperation and approval of the police and sheriffs of the area, as well as the appreciation of the community. This recognition has enabled them to install CB radios in two police cars and a CB unit in a police substation, so that the "citizen's committee" can keep in close touch with the "law."

"It's like having an extra set of eyes and ears when they are out patrolling," says Sergeant Jack Babbit, speaking of the El Paso Citizens Patrol Association. "They have proven to be very effective and we, the police, are glad they are out there. They have detected three cases of arson, helped us break up an armed robbery, tipped us off to car prowlers and, in general, made people that are thinking about committing a crime more cautious."

Sgt. Babbit's remark gave the CBers a nickname, "The Eyes and Ears of El Paso.' They live up to their name.

Rev. Elvin Black, a former president of the "Eyes and Ears," said: "We try to keep an eye on things and call the police when they are needed. Friday and Saturday nights are the busiest; there may be 20 units out those nights. There may be other nights when there is not much doing. Although I have not been able to get an accurate reading on crime reduction in our area, I believe we are a crime deterrent."

The original ten-family group has now grown to include 125 members who take their job as a civil patrol seriously. The group meets each month and members are expected to be at the meetings. Each member must be cleared by the police. He must give 12 hours a month on patrol, furnish his own vehicle, gasoline and out-of-pocket expenses. There are no uniforms or badges worn, and no weapons are carried. The rules of the club are strict: "No patroller is to attempt to stop, arrest, detain any person or vehicles; each patroller is to keep the control station informed of his status; there are to be no one man patrols; radio silence is to be kept at all times unless transmissions are required for the operation of the patrol; no alcoholic beverages are to be consumed four hours prior to or during the patrol; no pursuit in violation of speed laws is allowed and all traffic signs and laws are to be obeyed.

Some of the Association members may just have a car or truck, a CB, a police scanner and a flashlight. Others — particularly owners of four-wheel-drive vehicles — may have search lights, flares, tow chains and jumper cables and a winch. Obviously, the group seek to help motorists in need as well as find possible law violators.

And the results? Last spring the patrols were making their rounds when one member began following a car that was being driven in an erratic manner. The CBer called control, reporting he was going to follow a driver who might wind up in trouble. Shortly after this, the automobile went into a skid and turned over. The patroller immediately called control to get the police and an ambulance. A listening sergeant heard the call and within minutes help was on the scene.

Although the driver of the wrecked automobile was hemorrhaging internally, the prompt arrival of emergency assistance saved the man's life, and he later publicly thanked the Association for "being a life saver."

Three times the "Eyes and Ears" have been called to help in searches for lost children. A call from the sheriff's department resulted in 64 Association members joining a fire fighting crew that battled blazes on Franklin Mountain that summer. An observant patrol unit was able to get the police to the scene of an attempted rape and had the satisfaction of seeing the would-be rapist placed under arrest.

An observant patroller saw three men acting in a suspicious manner and kept his eyes on them as they entered a store. When the CBer saw one of the men pull a gun he made the necessary call to control. As the thieves ran from the building, the CBers followed, relaying their position to the police. "If the guys had sped away from me," he remarked later, "I would just have had to let them go since our Association rules prohibit us from chasing suspects." Due to his report, however, the police arrested the suspects within 20 minutes of the robbery.

El Paso, like all other parts of the country, has its share of turbulent weather. Again the "Eyes and Ears" have proved their worth. In a violent rain storm the Association members and the police rescued 50 cars and their occupants in two hour's time.

When a record snowfall fell on El Paso, the CBers coordinated calls for help, contacted wreckers, helped direct traffic at accidents, took home stranded drivers and helped pull snowbound vehicles. Many Association members worked around the clock, with the control station staying open as long as the group was active.

A "typical evening" for Association members could include pushing cars out of traffic, jumping dead batteries, patrolling the desert, rescuing romantic drivers who drive up to the top of the hills for privacy — and then find themselves on "high center."

After each "assist," the Association member hands the person they have helped a card that reads: "You have been assisted by the El Paso Citizens Patrol Association." Then the "Eyes and Ears" continue on patrol.

West Marion

HELP! is a regular feature presenting incidents or case histories on persons who give their time, talents and resources to help others. **CB MAGAZINE** will pay $50 for all incidents or case histories suggested to us by our readers. The editors require (a) a detailed account of the event (or operation); (b) supporting data to authenticate the story, such as newspaper clips, commendations, etc.; (c) names and addresses of those involved. **Send to:** HELP! Editor, **CB MAGAZINE**, 531 North Ann Arbor, Oklahoma City, OK 73127.

By Steve Patrick

Fire Chief Dean Ross grimly drove his fire truck with its 1,700 gallon water tank ahead of the blaze which was already burning out of control in this forest area of central Florida. Only 20 minutes before, the call for help had come into the fire station from a Marion county resident.

"He said he was trying to burn off his lot and it just got away," repeated Dennis Ganon, emergency medical officer for Marion County. "He didn't have a permit; he hadn't asked for help anything. And he seemed surprised that it had gotten out of hand. He said the flames just started leaping!"

Fire Chief Ross and his men began fighting the flames at the parameter around the homes in the fire-threatened area, they found they were no match for the

Volunteers Fight Flaming Forest

flaming blaze which already had consumed four acres of forest land.

The Florida Forestry Service Firefighters, coming from Ocala, 25 miles away, hadn't had time to get to Marion County with their bulldozers, so Chief Ross was trying to fight the fire with his

own equipment. It wasn't doing the trick.

"There were major problems," reports Chief Ross. "As the fire intensified and threatened more land and buildings, I couldn't even communicate with my base station, let alone the other units in the field."

Because small town budgets stretch only so far, local officials in Marion ounty had helped keep the budget for the West Marion Volunteer Fire Department in line by opting for CB radio equipment in department vehicles, rather than FM. Although the larger fire and police departments are now using more sophisticated VHF or UHF equipment, it is not unusual for small town departments to rely solely on CB for their radio communications. In many cases it fills the bill, but it had never been a reliable communication system for the West Marion County Fire Department.

Now, trying to reach other units fighting the same forest fire, Chief Ross found that, as usual, due to interference and skip he could not communicate with his base station. "At times I could not even reach other emergency vehicles at the fire. Radio communications were so bad that from one block to the next I couldn't get through to them," remembers the fire chief.

Dispatcher Sam Noyce was at the fire; his wife (*Big Mama*) was at their home base station trying to reach him. Having little success, she quickly turned to the county's popular chatter channel. That's when Brian Collins heard the call.

"I picked it up on 14," Collins says. "*Big Mama* asked if I'd help." This wasn't the first time the department had asked Collins for his radio-assistance. "So many people say I'm the strongest one out in these parts."

In this tree-filled area, CB radios sometimes met their match in the tall pines which seemed to play havoc with regular CB communication. But Collins had a 40-foot antenna at his home base station, and it rose some five feet above the tallest pine. When interference blocked police and fire department communication, Collins and his 40-foot antenna were called on for yeoman duty.

By the time the Forestry Service bulldozers had arrived, Chief Ross (with the help of Collins) had called for assistance from the two neighboring volunteer departments, Rainbow Lakes Estates and Dunnellon.

By now, the fire had spread to more than 40 acres, jumped U.S. Highway 41 and some railroad tracks and was threatening a subdivision with more than 50 homes. Sheriff's deputies were called to guide traffic on the high-

[*continued next page*]

The Touch by Regency is the first fully synthesized, 16 channel scanner to put over 15,000 radio frequencies at the command of a fingertip.

It not only opens you up to a whole new world of action, it gives you plenty of features to play with as well.

For example, The Touch will never allow you to miss a severe weather warning. No matter what frequency you're tuned to. Simply set Channel 16 to the National Weather Service alert mode, if available in your area. The Touch automatically cuts into any severe weather broadcast.

In other words, it'll interrupt a raging fire to bring you news of a threatening tornado.

Here's another overriding feature. The Touch lets you set up Channel 1 as a priority receiver; and it samples that frequency every 1.2 seconds. So you won't miss any calls on your favorite channel.

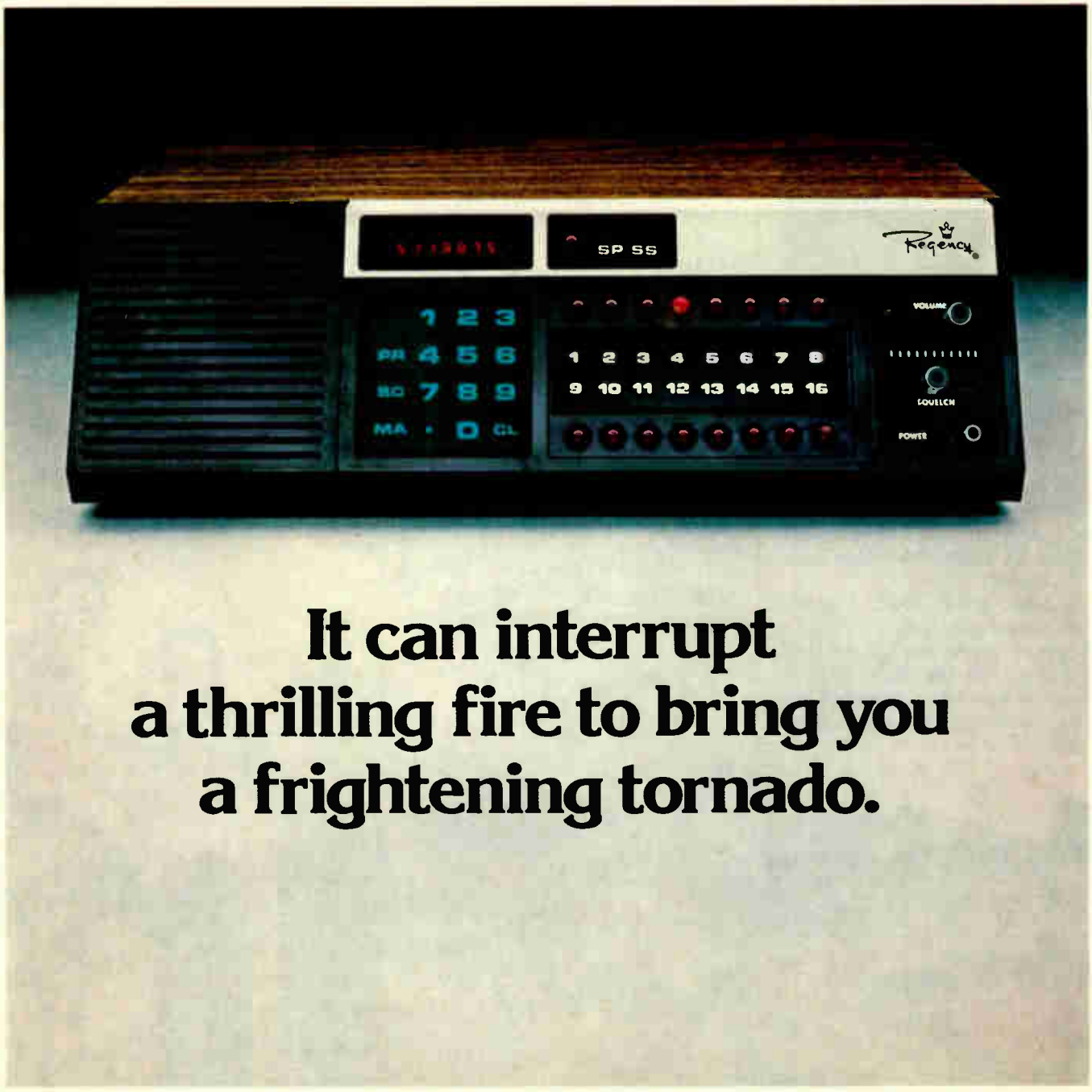
Other points: there's no complicated programming to do. No crystals to buy. Simply tap out the frequency number you want, and you're there.

Or scan for action on your 16 possible stored frequencies by merely touching SC. Or search for the unknown by tapping SS. It's that easy.

And when you find new action, The Touch tells you exactly what you've found in the LED display.

The Touch by Regency. See it at your dealer's.

The Touch by Regency.
The Ultimate Scanner.



It can interrupt a thrilling fire to bring you a frightening tornado.

Flaming Forest . . .

[continued]

way through the smoke and to avoid the fire fighters darting back and forth across the road.

All these instructions and many more were relayed from Chief Ross and his men to *Big Mama* on dispatch by the "*Central Florida Road Runner*," Brian Collins. Working from his base station, Collins monitored Channel 21 for almost six hours, relaying signals among the fire fighters and to and from the West Marion dispatch.

Complicating matters were 20 to 30 knot winds that constantly shifted directions. "You had to be every place because of that wind," says Noyce. "As fast as we'd go over and water down one house, we'd get a call from across the highway that there was another house in danger. Really, a grass fire or forest fire is much worse than a house fire because you can be trapped right in the middle. You can lose your engine; you can lose your people. We almost lost a truck in this fire. One of our engines suffered a broken axle."

"He said he was trying to burn off his lot and it just got away."

None of the five West Marion vehicles operating that day were built for offroad use, but, says Noyce, "we take what equipment we can get, and we have to get in and do the job whether it's on the road or not."

Noyce and his fellow fire fighters had nothing but praise for the Forestry Service. "They go into that stuff till you can't even see them. They're right in the thick of the smoke without masks or anything else."

While driving the biggest truck, Chief Ross was injured trying to maneuver along the edge of the blaze. "I've got people working off the back of the truck spraying water," recalls the chief, "and we were making passes through these woods and were within 50 feet of being out in the clear when a limb caught on the truck mirror, snapped back and caught me in the eye. I was able to get the truck out of the woods and shut down. I got a bandage put on it, and we were still on the fire for probably another hour."

Meanwhile, the chief's 19 personnel on the scene, and another 40 or more from other departments, continued to battle the flames.

"The CB was really a big help to us," points out Noyce. "We'd get a call on the radio and have to race across to the other end. Then we'd be called back again." But there was another side to the situation that Noyce also talks about. "Unfortunately, some of our so-called good buddies have absolutely no respect for a 10-33 or a Signal 25. They'll just walk all over you."

"When I was working the fire," Collins recalls of his day-long stint on the radio, "some guy in Minnesota kept on blasting away. I told him we had a 10-33. He comes back to his buddy saying, 'Some guy who calls himself *Central Florida Road Runner* is telling me to get off the air. I think we'd better abide by it.' "

The flames were under control at 4:30 p.m., but Collins stayed at his radio another hour to help keep communications humming between the emergency vehicles still making their way through the 80 burned-out acres that had previously been Florida woodland. The West Marion County Volunteers and the men of the Forestry Service had combined their efforts to halt the blazing inferno. All structures in the area were saved and there were no serious injuries.

Collins, Chief Ross said, "did a terrific job. He was the only one who could get back to my dispatcher at the base. No one else could even be heard." In a letter from Chief Ross recommending Collins for the Midland Corporation's "Good Buddy Award," he termed Collins' assistance invaluable. "We sincerely believe that without his help, homes and lives would have been seriously jeopardized."

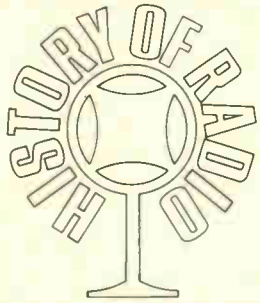
Ross recalls that hours after the fire when he was able to personally thank Collins, he replied, "Anytime I can help, just call on me." Brian Collins received his Good Buddy Award for "outstanding beneficial public service through the use of a Citizen's Band radio."

It was shortly after this fire that Chief Ross managed to convince the volunteer department's directors that the problems they were having with their CBs for emergency communication justified spending the money to equip themselves with FM transceivers. "We still use CB as a back-up system — most of our fire fighters have CBs in their cars — but all the trucks and the base are now using FM equipment. And that, believe me, is a Godsend," says Ross.

Although Brian Collins' help is seldom needed these days to relay emergency messages from the police or fire departments of West Marion County, he still monitors Channels 14 and 21 "almost every day" to be of help for emergencies that develop in local traffic. Just recently he came to the aid of a CBer who had had a heart attack. He was dying and needed help immediately, and Collins found it for him. "I'll continue to monitor the channels," says Collins. "I just like to help people."

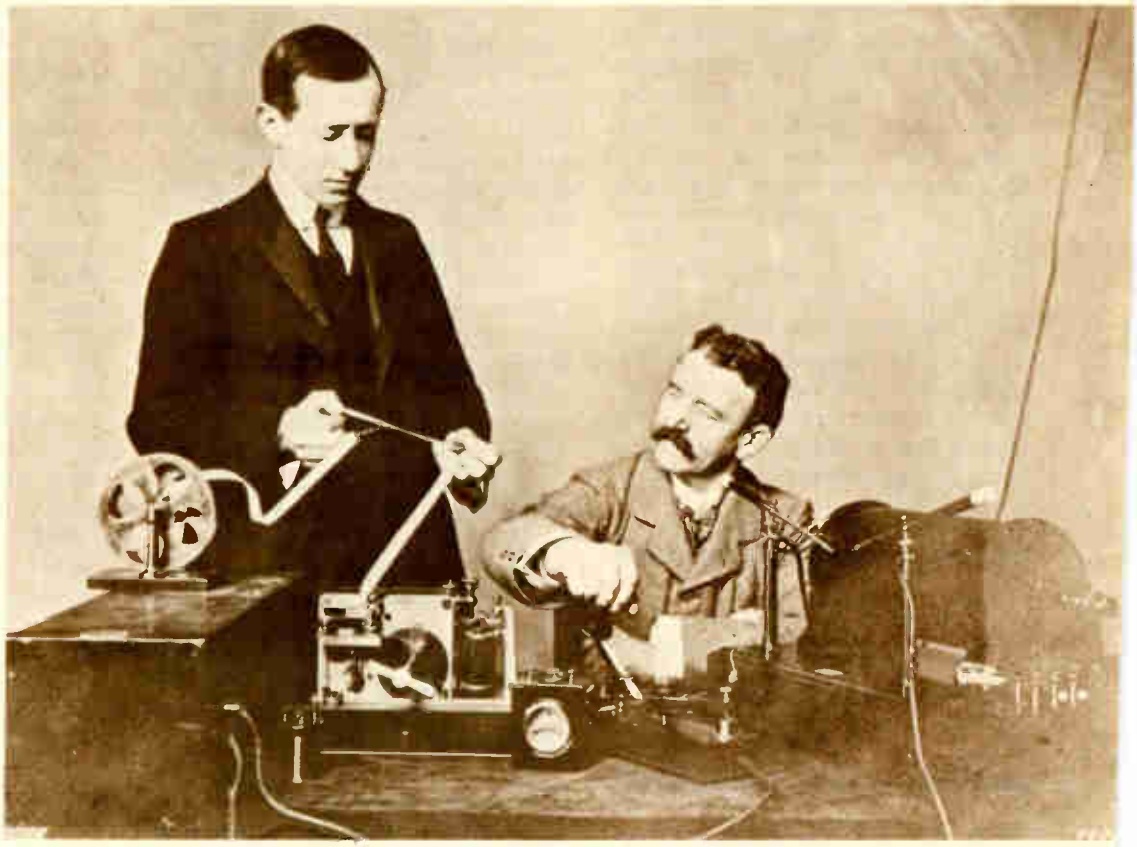
"See! Wasn't that easy! I knew trying to use the radio would bring them right home."

Live TV from any spot on earth, microwave ovens, CB radio, it all began one hot summer night eighty-



Part 1 — The Pioneers

Editor's Note: CB Magazine introduces a series of vignettes on the pioneers who developed radio — and all its spin-off applications. This series was prepared exclusively for CB Magazine via interviews with many survivors of that era at the turn-of-the-century when man's knowledge of the airwaves suddenly exploded in one discovery after another in rapid fire order. The author is a distinguished investigative reporter and was the member of a team of writers which was awarded a Pultizer Prize for work in uncovering the trail of drugs smuggled into the United States from Mexico.



By 1900, Marconi had convinced the London Post Office it should back him in radio's first commercial venture — wireless telegrams to lightships to help warn mariners of approaching storms.

Culver Pictures, In

radar, space talk, three years ago.

HOW MARCONI CHANGED THE WORLD

By Pete Bowles

It was 1923, and Jack R. Poppele, a former World War I wireless operator and New York radio pioneer, was meeting the man who made it all possible, Guglielmo Marconi, the "Father of Wireless."

At the time, the 25-year-old chief engineer of New York's radio station WOR was not overly excited about his visit with the dapper Italian inventor who had become world famous since discovering in 1894 that he could send "wireless telegraph" messages over electromagnetic waves. "When you do those things you don't look at them with a great deal of excitement at the time they happen," Poppele, 79, recently told **CB MAGAZINE** of his meeting with Marconi 54 years ago. "The deeds of men live beyond them. It was only later that I fully realized that I had met a great man of history."

Poppele, a former director of the Voice of America (1953-1956) who now heads a closed-circuit television systems company in Clifton, New Jersey, was introduced to Marconi by the late David Sarnoff, former manager of the commercial department of the Marconi Wireless Telegraph Company's office in Manhattan and president of the Radio Corporation of America, which was formed partly to acquire Marconi's United States interests. (As a 21-year-old Marconi operator, Sarnoff, on April 14, 1912, was operating a newly-installed wireless station on the roof of Wanamaker's Department Store when he picked up the message: "SOS — SS Titanic ran into iceberg — sinking fast." For 72 hours he stayed at his post, taking every message that came in about the distressed ship. Marconi had been invited to sail on the maiden voyage of the Titanic but, because of pressing business, had sailed to New York three days earlier and was on shore to receive word of the messages young Sarnoff had picked up on the wireless system invented by Marconi.)

Poppele recalled that Marconi was "a modest man with a high degree of humility," adding: "It was hard in speaking to him to evoke from him what he was doing and what his accomplishments were. He was not a person to say, 'I did this or I did that.' He was one of the first users of that pronoun that Lindberg used later on when he said, 'We made it.' Marconi kept saying, 'We tried this, and we tried that.' I said, 'Signor, who is we?' He said, 'Well, I have to think of a thing, and then I have the men to put it together. So it is **we**.' "

"That impressed me," continued Poppele. "Marconi was a very impressionistic man. He made an impression upon people long after you left him, with his humility." Poppele quickly arranged for Marconi to appear on a broadcast at WOR, which then maintained its studios and transmitter at a department store in Newark, New Jersey. "On the day I had arranged to have Marconi on WOR to talk about some of his devices and developments in radio, he sent word over to say he had to return to Europe. So we never did get to have Marconi speak over the air. Unfortunately, we had no recording systems in those days so we could not record it in advance."

Years before he met Marconi, Poppele was an expert on the equipment which carried Marconi's name. A student of the Marconi Wireless School in New York in 1914-15, Poppele was a Marconi wireless operator during World War I on commercial vessels which carried troops, fuel

[continued next page]

and military equipment to Europe. "The telegrams we sent were called Marconigrams. It was all Marconi, because he had developed it. Of course, somebody had to do it. And he did, and God bless him, he deserved the credit for it." Poppele recalled that at the outbreak of the war, the British cut Germany's transatlantic telephone cables, forcing the enemy to use the airwaves exclusively. Marconi operators managed to intercept all the German radio messages sent out during the war. "You can't cut the cable on the wireless," noted Poppele.

The man who invented the wireless was born April 25, 1874, the second son of a wealthy Bologna landowner — and his second wife, the daughter of an Irish whisky distiller. From an early age, Marconi displayed an original and inventive mind. As a teenager, he had read about Heinrich R. Hertz' work with electromagnetic waves and Ben Franklin's experiments with electricity. While his father felt Marconi's experiments were a waste of time, his mother encouraged him to continue with his work, giving him the run of the top floor of the family's country residence. It was only natural that he called on his mother to witness his first successful experiment with the wireless.

On a summer night in 1894, the 20-year-old Marconi woke his mother in the middle of the night and led her up three flights of stone steps to his laboratory. The room was filled with all sorts of jars and instruments, including a battery-powered "exciter" that would cause a spark to leap across the gap between two ball electrodes. As his mother watched, Marconi tapped a telegraph key delicately with one finger. From the far end of the long room came the gentle sound of a ringing bell. Between the "exciter" transmitter and the bell lay nothing but air.

Marconi quickly discovered that increased transmission distance could be obtained with large antennas and by 1895, he could transmit a distance of 1.5 miles, the length of the family estate. At about the same time, he conceived of "wireless telegraph" communication through keying the transmitter in telegraph code.

Unable to interest the Italian government in the practical potentialities of his work, Marconi moved to London in 1896. Britain was then the center of a great empire and the workshop of the world, possessing the world's largest mercantile fleet and the mightiest Navy. It was in shipping that Marconi saw his best chance for his new form of communication.

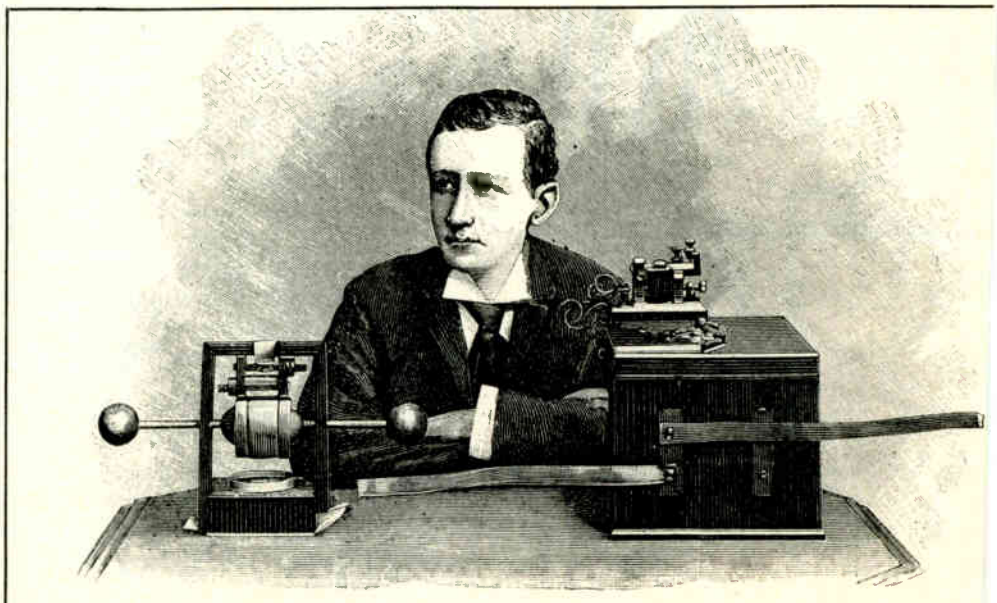
His entry into England was hardly auspicious. An overzealous customs officer, mystified by Marconi's trunk of jars, bells and induction coils, investigated it so thoroughly that the transmitter and receiving apparatus arrived in London broken and useless. After hastily making repairs, Marconi, with the help of a cousin, began his experiments from the roof of a London post office.

Later, describing his experiments in 1896 on the Salisbury Plain, near the ancient Stonehenge, Marconi recalled: "The calm of my life ended then." Using kites and poles, Marconi sent signals to receiving apparatus he had placed on a hand-drawn military cart, first for a distance of 100 yards, then a mile and a quarter and finally to nine miles. Today's citizen band radio enthusiasts can well appreciate the complaints sparked by Marconi's experiments. One woman wrote him that his waves made her feet tickle.

On July 2, 1897, the London Patent Office granted Marconi the world's first patent for wireless telegraphy — Patent No. 12039 for "Improvements in Transmitting Electrical Impulses and Signals Therefor." In his patent papers Marconi gave this description of his invention: "According to this invention, electrical actions or manifestations are transmitted through the air, earth or water, by means of electric oscillations of high frequency."

A stalwart supporter of Marconi in England, William Preece, often found himself in the

Marconi is shown with his "apparatus for telegraphing without wires" in a drawing from a London newspaper. The story, run in July, 1897, announced the young Italian had just received the world's first patent for a radio device.



WILLIAM MARCONI, INVENTOR OF THE APPARATUS FOR TELEGRAPHING WITHOUT WIRES.

position of defending Marconi's experiments. Refuting the contention of the time that Marconi had contributed nothing new to the world of electromagnetic transmission, Preece told an 1897 audience of scientists: "Columbus did not invent the egg, but he showed us how to make it stand on end, and Marconi has produced a new electric eye, more delicate than any known instrument and a new system of telegraphy that will reach places hereto inaccessible."

How soon Preece's prediction came true! By 1900, Marconi had increased his signaling distance to 190 miles. The London Post Office, which was greatly concerned with the problem of how to get word of approaching storms to lightships to prevent shipwrecks, immediately sought Marconi's help in developing transatlantic transmission.

In 1900, Marconi and his Marconi Wireless Telegraph Co. Ltd. built a powerful transmitter at Cornwall, England, and a large receiving antenna on Cape Cod, Massachusetts. When the Cape Cod antenna blew down in 1901, Marconi, anxious to forestall any competitors, sailed for Newfoundland where, using a kite-borne antenna and a carbon-on-steel detector with a telephone receiver, he received the first transatlantic wireless communication — the three dots signifying the letter "S."

The reception of radio signals across the Atlantic Ocean created a worldwide sensation and made Marconi world famous almost overnight. He was awarded the Nobel Prize for Physics in 1909. He later worked on the development of shortwave wireless communication, which constitutes the basis of nearly all modern long-distance radio.

Marconi spent much of his later years managing his companies, which by 1914 held a commanding position in British and American Maritime Radio Service. From 1921 on, Marconi used his steam yacht "Elettra" as a home, laboratory and mobile receiving station for radio experiments. In 1927, following a series of discoveries made by radio amateurs that indicated the feasibility of establishing a 10,000-mile shortwave communications network, Marconi's company completed a globe-girdling system of shortwave beam stations.

His experiments in the early 1930's with still high frequencies — microwaves — proved to be among Marconi's last major contributions. After years of experiments from his yacht, he discovered that microwaves could be received at a point much farther below the optical horizon than had been predicted by any theory. He called the employment of microwaves "a new economical means of reliable radio communication, free from electrical disturbances, eminently suitable for use between islands and the mainland or between other places separated by moderate distances." He pointed out that the new system was unaffected by fog and offered a high degree of secrecy by reason of its sharp directive quality.

After delivering a speech on the applications of microwave in 1934, Marconi suffered the first of a series of serious heart attacks. Refusing to rest between the bouts and continuing to work on "echo" experiments that later led to the discovery of radar, Marconi died July 20, 1937.

The next evening thousands of mourners followed his coffin at a state funeral in Rome. The Italian radio services observed a five-minute radio silence. In Britain, operators and engineers of the Post Office kept their wireless machines quiet for two minutes. The BBC stations, likewise, fell silent and throughout the British empire Marconi's shortwave beam stations handled no traffic. The radio silence which Marconi had interrupted 43 years earlier had momentarily returned again at his passing. CB

Citizens Band Moves Into National Parks —Slowly

Ranger Technician John Hollingsworth directs assistance for accident victims on the Natchez Trace Parkway, south of Jackson, Mississippi. Through use of the CB, he not only cut his own arrival time on the scene significantly, but was able to inform parkway headquarters in Tupelo, Mississippi, quickly by repeating the call over his park service radio.

Despite examples of benefits, park officials are reluctant to embrace CB.

Text and Photos
By Robert R. Mercer

(Editor's Note: While CB radio is being utilized on a wide scale basis, other government agencies have been slow to plug into this communications revolution. The U. S. Coast Guard, for instance, only began to monitor the Channel 9 emergency channel recently. While not officially opposed to CB, officials of the National Park Service haven't integrated CB into its communications. This article explores the ways CB can be of benefit in our large parks. CBers near these facilities may wish to contact local park officials to aid the better use of this valuable tool.)

"*Radar Ranger*, if you can hear me you've got an accident." The message comes as a surprise to John Hollingsworth, who has been listening to the Smokey reports of commuters spread up and down the Natchez Trace Parkway since he pulled his range patrol car out of Rocky Springs Campground.

The voice gives the mile marker, but it is garbled. Hollingsworth reaches for the mike on his CB and asks the man to repeat the message. At the same moment, he switches on lights and siren and speeds in the direction of the call. The repeated transmission gives the mile marker as a mile farther up the Trace, than the first message indicated, but Hollingsworth is still on the scene in under three minutes. He has relayed the information over the government radio, and it is just being broadcast by the Tupelo dispatcher as Hollingsworth steps out of his car.

A mechanical failure had caused a college professor's car to go out of control, sending the auto into the woods where it clipped six-inch pines and slammed sideways into a three-foot diameter tree.

The crash badly battered the professor and bloodied the mouth of his sister, the only passenger in the car. The petite sister had already pulled her injured brother from behind the wheel and out into the clearing the car has created. Other drivers, who only moments before were hoping to avoid Smokey, are grateful to have him arrive and relieve them of the responsibility of tending the injured.

Hollingsworth dispatches one spectator for his first aid kit, while he drafts another to obtain vital information from the sister, so next of kin can be notified. Once the professor is bandaged, Hollingsworth decides to take the man in his patrol car to the hospital, rather than wait for an

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CB In National Parks . . .

[continued]

ambulance to travel the 25 miles south from Jackson, Mississippi, which means the victim will be there in half the time. The commuters gently pick up the professor and lay him in the patrol car. Others collect the couple's personal belongings.

Less than 10 minutes after the accident, even before any other parkway unit has arrived, Hollingsworth is heading for the hospital, slowing only for people who don't know to pull over for emergency vehicles.

Hollingsworth is a National Parks Ranger. He violated a park department rule by using his CB microphone to clarify the location of the wreck. Patrol units are not authorized to broadcast over CB, though they can monitor. The chief park ranger on the unique National Parks Trace from Natchez to Nashville, David L. Tomlinson, would prefer all microphones were removed from the cars to stop any accusations of entrapment by his rangers. But he's a pragmatic man, and the CBs are strictly personal gear.

Hollingsworth, though called a ranger, is actually a technician. The official title of ranger is reserved for the cream of the service, with many more years than Hollingsworth's six.

Sitting on the steps of his family's home in the Rocky Springs' woods, he says he only recently began to accept CB. "I originally thought it was a bad thing. But after living with it for eight months, I think they're 75 percent for good and valid communications and 25 percent for speeders."

His first experience with CB was at Big Bend National Park in Texas. Slightly smaller than the state of Rhode Island, and 70 miles from the nearest town, that rugged park counts its population in jackrabbits and antelope, rather than people. Park concessionaires introduced CB to the park in an attempt to cover the great expanse which has few telephones.

Lake St. George in July.

Hollingsworth was converted to CB during the rescue of climbers on one of Big Bend's sheer cliffs. They had lowered a member of their party to fetch water from the river below. He did not return.

A ranger happening on the scene the next morning could only hear the word "nineteen" being shouted by the climbers still on the cliff. He backtracked many miles to find a concessionaire who could talk to the climbers' walkie-talkie. The climbers spoke to the concessionaire, who was on the telephone to the park service, who in turn talked to the ranger on the scene via park service radio. The missing climber was dead when they found him, having fallen during his descent.

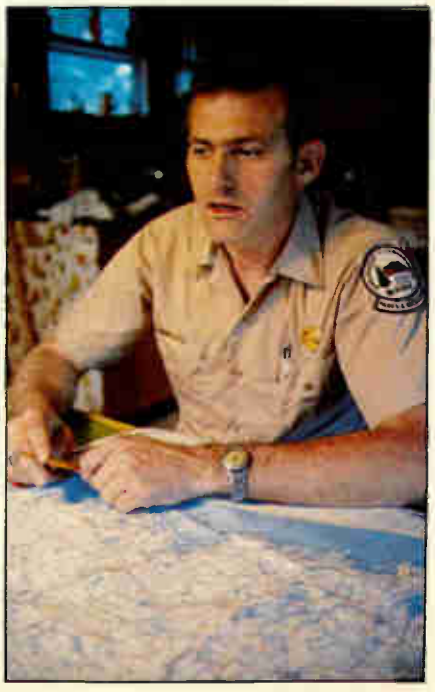
Several seasons later, Big Bend Chief Ranger Jim Liles reports he knows of no ranger in the park using CB in a park vehicle. However, between the concessionaires, park employees and visitors, "We always have a pretty good flow of information coming in on them."

Despite the Big Bend incident, reports of hikers using CB units are scarce. Senior Park Technician George Brown, a ranger on Isle Royal National Park, says the number of CBs on the isolated Lake Superior island are "zilch." That is partly because there are no motor vehicles on the island. Locomotion is strictly by foot over the almost 850 square miles of forest, populated by moose, wolves, beaver, muskrat and weasel.

Because it is 20 miles from the Canadian and Minnesota shores, only boats over 20 feet, which normally have marine radios, reach the Isle Royal Park. The rangers have felt no need to investigate CBs.

However, Brown, noting most rangers have them in their

Bill Cleaves, Maine's District E supervisor of state parks, maps out his territory, which requires 1,006 miles of driving over five days to inspect. He uses CB both for traveling and for contacting park managers who use CB as their "official" radio.



personal cars, says, "I don't think the use of the CB portable has quite reached its peak, yet." He expects to see more in wilderness areas. He explains since a walkie-talkie would be purchased after the car mobile and the base, most people are not ready to invest in a third radio this soon.

Being one of only two national parks designed around the car, (the other is the Blue Ridge Parkway from South Carolina to Washington, D. C.), the Natchez Trace Parkway appears to have the most rangers using CB in official vehicles. But even though they know the CB's value, rangers like Chief Tomlinson remember the many false reports while noting the patrol car already has too much gear cluttering it up. "I think the use of it has been very unprofessional," Tomlinson says after monitoring tourists. "I've heard everything from propositions to gibberish."

Although the Parkway is primarily a historic/scenic drive along the route of America's oldest highway (**CB MAGAZINE**, July, 1977), the Mississippi legislature decreed it would also be built for commuters who live in rural areas but work in Jackson.

For those Tomlinson has heard organizing convoys on the parkway, Hollingsworth has a statistical surprise. While only one-fifth of the vehicles on the Trace have CB, one third of the tickets go to CBers. He also is giving more tickets these days. "I think I catch more of them with CB than without it because I know what they know as soon as they know it, and I can adjust my action accordingly."

As for radar detectors, he busted one Fuzzbuster six times before its owner broke the speeding habit. "There are ways of doing it, if you really want to get them." Blind curves even the odds. When the dog barks, the radar already has its number, and if its over 60, the driver gets a ticket; between 50 and 60, it's a warning.

"I've learned to recognize the high speeders," Hollingsworth says. They give themselves away by asking for Smokey reports. It's just a matter of waiting for them. However, he has been fooled by several old couples driving the Trace, who give and take Smokey reports while doing the legal 50.

Tomlinson is critical of citizens who give Smokey reports. "When they work to the detriment of good law enforcement, they work to the detriment of their fellow motorists."

The fact that there is a speeding problem on the Trace reflects the problem the public has in accepting the idea that this is a park, not a highway. But Tomlinson acknowledges, "If you go from Tupelo to Jackson, you're a fool if you don't take the Parkway."

In some parks, the CB is the only communications system rangers use. Bill Cleaves, Maine's District E Supervisor of Parks, says radios have been a part of their operation for about five years. Arthur Ashmore, manager of Cobscook Bay State Park, Cleaves recalls, found CB "just

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The prospect for further, hard-line Government legislation and/or Federal Communications Commission regulation in the CB and Ham radio fields moved a long step nearer in a recent trial and conviction of an illegal linear amplifier manufacturer in U.S. Federal (District) Court in Los Angeles.

The Government urged and got a heavy penalty for the violator, telling U.S. District Judge Laughlin E. Waters it wants to put CB operators and their suppliers on notice that it definitely means business in curbing CB over-amplification, which it said has become perhaps the FCC's No. 1 enforcement problem.

Linear Manufacturer Tried and Convicted

Park sentenced to $3,000 fine, five year probation, 200 hours "community service" a year. Will not appeal, attorney says.

By James Redfern

The blow fell on a naturalized U.S. Citizen, Il Young Park, 44, of Los Angeles, but its reverberations are likely to be heard throughout the CB and Ham radio worlds.

Park was fined $3,000 and placed on five years probation — with the added condition that he serve 200 hours "voluntary" community service work per year — after being convicted on two counts of selling illegal amplifiers that he admitted manufacturing at his Santa Monica Blvd. outlet. It was the first conviction in this country of a manufacturer of illegal amplifiers, and signals a shift in FCC enforcement emphasis. Park's attorney said there will be no appeal.

In California, the conviction and heavy sentence set off alarm bells throughout the CB and Ham radio worlds.

Assistant U.S. Attorney Douglas Lofgren, who prosecuted the Government's case, said his office immediately received inquiries from owners of electronics outlets who expressed uncertainty as to their legal liabilities in the sale of amplifiers which can be used illegally by CB operators.

"When word got out he had been convicted, there was a flood of calls in San Francisco as well as here (Los Angeles)," Lofgren said. "They are very much concerned about the type of equipment they are selling. I don't know whether they are just being doubly cautious or what, but the response indicates a great deal of interest in this whole area."

With good reason, the FCC notes. Complaints of CB over-amplification are coming in at record rates, with no end in sight. In a recent 31-city crackdown, the FCC nailed 279 violators of regulations in all areas governing CB radio use. Many were for using illegal channels or other violations, but a heavy toll was taken of CBers using illegal power amplifiers. The agency is moving to revoke the licenses of repeat violators — those caught just the second time.

And the FCC has apparently decided to go after the source, the manufacturers and sellers — hence the heavy penalty against Park. But that is just the tip of the iceberg, all parties in the case agree. Probably what lies ahead is much stricter Federal regulation.

Lofgren, FCC investigator J. R. Zoulek, who, along with FCC District Engineer-in-Charge Larry Guy, handled the Park case for the Government, and Park's attorney, Allan A. Sigel of Los Angeles, were in virtual agreement on one point: Park's conviction points up an increasingly clear and troublesome paradox in current Government regulations governing the manufacture and sale of amplifiers that can be used illegally by CB operators.

Sigel feels his client was unfairly chosen as an example by the Government in an effort that in no way succeeds in its in-

tention: to inhibit sale and use of amplifiers used illegally by CBers.

"Everyone is aware that the FCC has not cured the problem," Sigel said, stating further that he was speaking for himself as an attorney, not for Park. "Units are still being manufactured — legally — and then used — illegally — with CB radios. They ostensibly qualify as legal units because they have additional channels which purportedly qualify them for legitimate ham use."

That is exactly the problem, both Lofgren and Zoulek agree. Neither would venture a guess what the solution might eventually be, except that it would probably have to come from Washington in the form of additional legislation or FCC regulation.

"It's crazy," Lofgren said. "The law says you can't sell them (the amplifiers) for CB use, but you can sell them for amateur radio (Ham) use. And they can be used, but illegally, with CB radios. It's a mess."

From a practical standpoint, all parties in the Park case agree, Park's error was in manufacturing and selling amplifiers that could be used on CB, but not amateur radio bands. In doing so, he could offer CB operators less expensive amplifiers but he was in clear violation of the law.

From January 24, 1975, it has been illegal to "market" an amplifier that operates in the range of 24 to 35 MHz — with an important exception: such an amplifier is legal if it will work at the ham radio frequencies of 28, 21, 14 and 7 MHz. Park's amplifiers were designed to operate only in the CB range, 26.965 to 27.405 MHz; cheaper, equally effective for CB radios — but definitely against the law. To stay within the law as it presently stands, the amplifier must meet Ham frequency standards, including that 28-MHz frequency that falls conveniently close enough to the CB range to amplify CB radios.

Both FCC Investigator Zoulek and Assistant U.S. Attorney Lofgren admit that the present law, with its loophole for amplifiers that will cover Ham bands, is an invitation to lawbreakers. They say it is clearly inadequate to combat the almost exponential increase in CB radio amplification abuse. Zoulek said his FCC district, No. 11, which covers Southern California, Arizona and Clark County (Las Vegas), Nevada, receives some 6,000 complaints a year regarding CB radio use — the great majority deriving from illegal amplification.

"The No. 1 headache is interference with TV and electronic home entertainment equipment, such as hi-fi sets," Zoulek said. "That's where we get the most complaints. Now, if you're dealing with one amplifier that wipes out a neighborhood, that is one thing. But here (with Park) we were dealing with a lot more than one amplifier. The manufacture and sale of these amplifiers is an entirely different matter."

The FCC has apparently decided to go after the source, the manufacturers and sellers.

The problem is often more serious then ruining someone's living room NFL game, Lofgren added.

"These amplifiers also interfere with all sorts of public service radio communications systems," he said. "Aviation. Police. Fire departments. It's an immense problem. The FCC estimates there are probably half as many illegal amplifiers in use as there are licensed CB operators."

The level of CB abuse is causing a shift in Government enforcement efforts from the lone CB violator to those furnishing him with the means of violating the law, Lofgren explained. Park's conviction and penalty emphasize that shift.

"The primary reason (for the prosecution of Park and the Government's urging of an example-setting penalty) was that this man was manufacturing these illegal amplifiers," Lofgren said. "The problem is how to stop the abuse. Do you go after the individuals using the amplifiers or after the people selling them?

"If you go after the people in the money end of it, you have much greater impact. We have decided to concentrate on the manufacturer, and in this case (Park's), the manufacturer was also the seller."

"Nonsense," says Attorney Sigel.

He contends that the present law is hopelessly inadequate to its purpose — and that Park was essentially a victim of the Government's effort to make an impossible law work.

"Mr. Park was admittedly confused as to the law," he said. "There had been a recent change (1975). He believed that the admonition on the back of the unit — that it couldn't be used legally for CB radio — was sufficient to meet the law.

"In that assumption, he was wrong. But this is a regulation obviously impossible to enforce. The U.S. Attorney asked Park in cross examination if he would sell a legal unit if he knew it was for CB use. I objected, and the judge upheld the objection.

"It's like asking someone you sell a gun to if they are going to use it to commit a crime. It's impossible, and absolute enforcement would require the manufacturer to obtain a promise from each purchaser that he would not use the unit on CB channels."

(Zoulek said he could not estimate the percentage of amplifiers being used with CB radios which are illegal **per se** — that is, designed specifically for CB use, as Park's were. Further, he acknowledged that only the manufacturer's specifications sheet would show what frequencies an amplifier would operate on — and, beyond that, the specifications sheets could be falsified.)

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Linear Manufacturer . . .

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"The Government acknowledged there are various abuses of the law — that it is rampant — and that they intended strict enforcement," Sigel said. The Government, in its argument, said they wanted Park's case to be an example to other violators of the law.

"But there's no doubt that today they are still selling these units (legal amplifiers for Ham radios) and the problem continues undiminished. Whatever must be done to correct the abuses remains to be legislated."

He obviously would get no argument from either Assistant U. S. Attorney Lofgren or FCC Investigator Zoulek. CB

Excerpt From Part Two, FCC Rules and Regulations

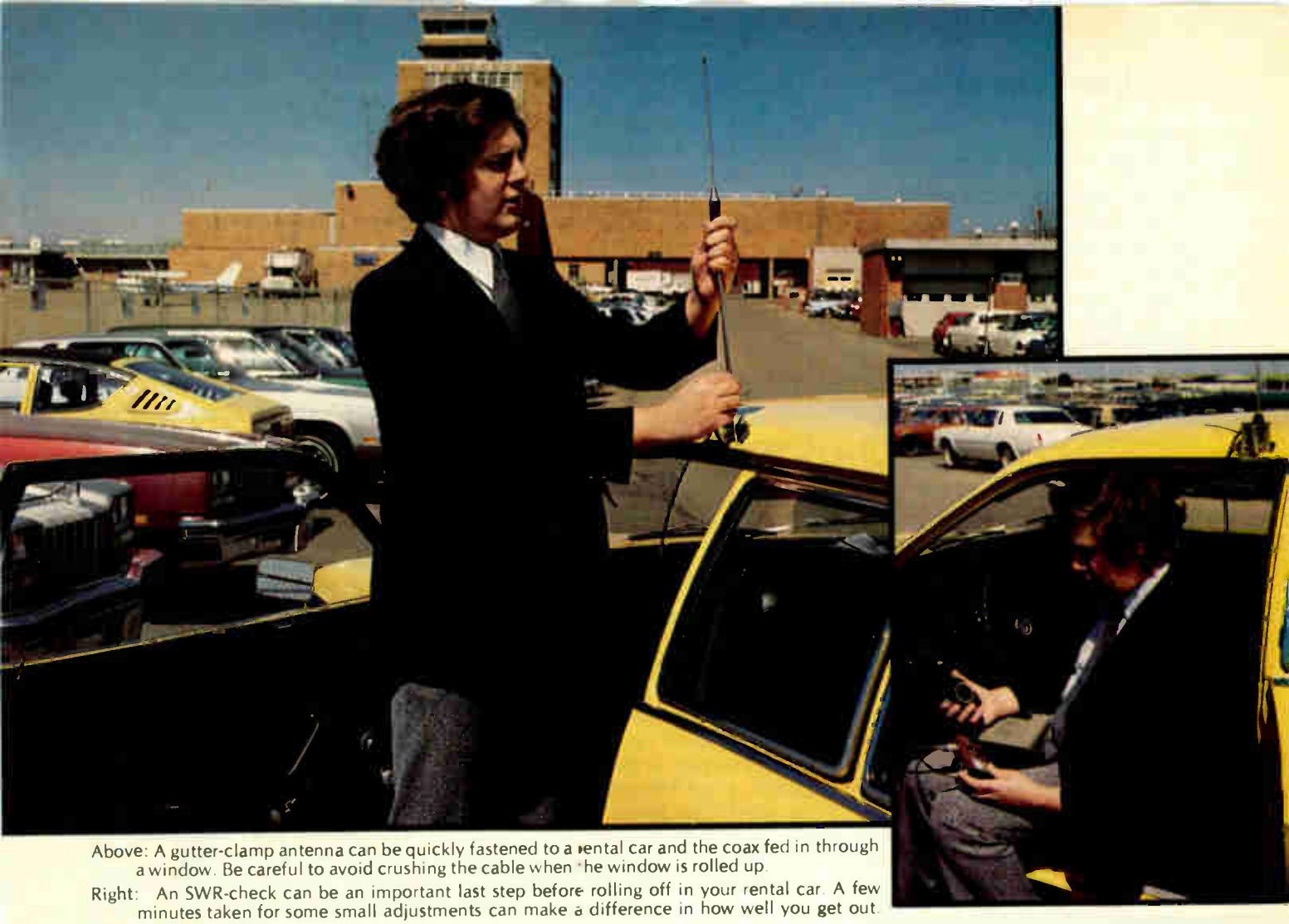
2.815 EXTERNAL RADIO FREQUENCY POWER AMPLIFIERS.

(a) As used in this Part, an external radio frequency power amplifier is any device which, (1) when used in conjunction with a radio transmitter as a signal source is capable of amplification of that signal, and (2) is not an integral part of a radio transmitter as manufactured.

(b) After January 23, 1975 no person shall sell or lease, or offer for sale or lease (including advertising for sale or lease) or import, ship or distribute for the purpose of selling or leasing or offering for sale or lease, any external radio frequency power amplifier capable of use with a transmitter operated on any frequency or frequencies between 24.00 MHz and 35.00 MHz. Type accepted external radio frequency power amplifiers as defined herein may not be marketed after August 12, 1975.

(c) The proscription in paragraph (b) of this section shall not apply in the case of any external radio frequency power amplifier capable of use with a transmitter in the amateur frequency bands 28.00-29.70 MHz if the amplifier is an integral part of a unit or device having incorporated therein power amplification capability in the bands 7000-7300 kHz, 14,000-14,350 kHz and 21.00-21.45 MHz.

(d) The proscription in paragraph (b) of this section shall not apply in the marketing to another licensed amateur radio operator of any single-band external radio frequency power amplifier fabricated in not more than one unit of the same model by any licensed amateur radio operator, whose license affords him the privilege of operating on amateur frequencies between 1.80 and 29.00 MHz, for his own personal use at his licensed amateur radio station.



Above: A gutter-clamp antenna can be quickly fastened to a rental car and the coax fed in through a window. Be careful to avoid crushing the cable when the window is rolled up.

Right: An SWR-check can be an important last step before rolling off in your rental car. A few minutes taken for some small adjustments can make a difference in how well you get out.

CB For The Airline Traveler

By David Busch, KNP-0370

One of the first things new CB radio users discover is that they've developed a strange malady: they're quite uncomfortable driving any car not equipped with a two-way radio. For business travelers who frequently fly to their destination, and then rent a car, this lack of ears can be especially irksome. In addition, more and more vacationers are finding that flying to their leisure spot means they've left their radio back in the family sedan.

In this day and age of slide mounts and removable antennas, the CB radio — except for dash-installed models — is no longer a permanent installation. Since the rig is so portable anyway, a little advance planning lets the traveler take his radio with him on airplane trips as well.

Receiver or Transceiver?

Airline travelers willing to do nothing more than listen to road reports in their rental car can probably get by with some sort of receive-only setup. One of the many available visor-clip receivers, powered by a 9-volt battery — can serve well in a compact, easily transportable package. Most of these use simple circuitry that receives all 40 channels simultaneously, but their sensitivity is so limited that most of what they pick up — on the open road — will be from the highway channels. This type of receiver would be a poor choice for in-town use. The performance of even these simple devices can be improved by connecting to a gutter mount clip-on antenna.

"Carrying along a complete CB unit does have distinct advantages."

CB converters, which allow reception of CB signals through an AM car radio can also be used in rental cars. It takes only a few minutes at the airport to reach up under the dash and plug the unit

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Airline Traveler . . .

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into the antenna and power. The tuning dial of the AM radio does let the user choose the channel to be monitored. Some of the more sophisticated CB converters have a channel selector dial that enables jumping from frequency to frequency as quickly and accurately as with your regular CB rig. In short, converters offer receive-only capability, in a very compact and simple package. Some range is sacrificed, and ignition noise or other interference is likely to be greater than with a transceiver.

Carrying along a complete CB unit does have distinct advantages. Most who use converters or receivers will find the road information gained is valuable — a lot better than nothing — but they yearn to be able to talk as well. Most professional travelers shy away from using the highway channels for idle chatter, but there are times when you are the first, or only, driver to spot a road hazard, or impending speed trap. Getting on the air suddenly takes a new priority. And should you run out of gas on a lonely highway, not being able to reach for a microphone can be distressing to say the least.

Most CB outfits will fit into an attache case, or another piece of carry on luggage.

A hand-held transceiver can be purchased to serve double-duty on camping trips or around the home. A hand-held radio that has the provision for external antenna and microphone will be the most convenient to use. Even so, unless it has a "push to talk" switching circuit through the extension mike, you'll still have to activate a switch on the unit itself each time you want to talk.

A 40-channel "standard" mobile is better than a hand-held from a convenience standpoint. Look for one with a scratch-resistant case. A good choice would have an all-around plastic housing, with no openings other than that for the speaker. Rounded corners are preferable to sharp ones for heavy traveling.

Antenna

Even if you already own a removable antenna for your personal car, you'll probably want an extra one for trips. And keep in mind that the big whips, and other super-efficient antennas are just not well suited for traveling. Give up a bit of range, and use either a 24-inch magnetic mount, or an 18-inch gutter mount antenna. The latter, especially a center-loaded unit, is very compact. It breaks down into three pieces, and can be fitted in any briefcase or camera case with no trouble.

Frequent car renters will probably wind up with a large variety of makes and models, and not all of them have a standard rain gutter. Certain Novas, Vegas, and the various GM versions thereof, are bad in this area. In a pinch, try clipping the antenna on those little slots in the hood, just ahead of the windshield wipers. This will usually provide a secure mounting, even if the antenna cants a bit.

Magnetic mount antennas can be placed anywhere you want on the car — some models even work on vinyl roofs — but usually don't break down into small enough pieces to be packed in carry-on luggage.

It would probably be wise to carry an SWR meter, even though it means an extra gadget to pack. It's extremely difficult to reassemble an antenna and install it on a new car without raising the SWR a bit. A few minor adjustments are well worth the couple extra minutes it takes.

TIP: Carry an empty film can to keep a small antenna hex wrench (if needed), and some fuses. The proximity of a CB shop is inversely proportional to your immediate need for these tiny items: Murphy's Corollary #40.

Power: How to Get it, How to Use It

Connecting a CB to a power source in a strange automobile is the trickiest part of CB traveling. Again, advance planning is the key. First, wire a good, sturdy plug of some sort onto the power wires of your CB. Most users who have been in the habit of removing their units from their cars frequently have probably already done this. A common household plug is bulky, but easy to attach and repair, and will hold up well under heavy use.

Several other safety tips: it goes without saying, but always wire the device you are providing with power with the male plug, to fit a female plug coming from your power source. This lets you avoid having exposed "hot" prongs, just as important with 12-volt DC sources as house current. In addition, you might want to include an in-line fuse in your adapter cord. If something goes wrong (your wires come loose from the connector, or you step on the cord with golf spikes) that fuse will blow, instead of one in your rental car.

Two adapter cords should be built. One should have a female connector at one end, and a cigar lighter plug on the other. Most rental cars will have cigar lighters. Plug in, and the CB is ready to fire up.

It's not uncommon for rental compact and sub-compact cars to

Transceiver or receiver? Both have advantages. CB Seeker, left, has its own power source, and monitors all 40 channels at once. But a full-fledged mobile allows you to talk as well as listen.

The first use of a CB in a rental car might be to ask for directions to a motel, or other destination.

come with no lighter. For this, the second adapter cord with alligator clips at its nether end, will allow you to get power. Fasten one clip, which has been properly labeled with a piece of red tape, onto a fuse or other hot wire in the rental car. The other clip should be fastened to a good ground connection — part of a metal dash, or the shaft of a heater switch, for example.

Some rental cars have their fuses scattered all over, or in some unfamiliar location that is not easy to find. Use a pen-knife and strip some insulation away from a hot wire leading to, for example, the radio, and clip onto that. Be considerate and wrap some electrical tape around the injured wire before you turn the car in.

How To Carry The Gear

Most traveling CB gear will fit inside a briefcase or other carry-on piece of luggage, such as a camera bag, large purse, or overnight case. Airline security personnel will usually ask to see the case after its been x-rayed. They'll spot the wires and such, and want to confirm that it is a CB, but there will be no trouble carrying it on board the plane. This will let you protect it from rough treatment at the hands of the baggage men. Or, pack antenna, power cords, SWR meter in checked luggage and keep only the CB with you.

If you must pack a radio in a suitcase, wrap it securely in soft clothing and make sure it won't slide around inside the luggage. Modern solid state radios can take a few slight jolts from loading and unloading. After all, it won't really be any worse for the unit than the potholes the average CBer drives over every day.

CB in the Motel

Many CB travelers take their radios out of their cars and right into the motel with them — both to protect themselves from rip-offs, as well as to get some extra use from their transceivers.

A regulated power supply and an apartment-style antenna can get the traveler on the air, even from the privacy of his motel room. Range might be limited, but then again, a room on the 19th floor of a high-rise motel could help bring in signals from the next county. Some businessmen use their radios from their motel rooms to get directions before starting out for an appointment. They can take their time and draw a map that will lead them hence without a pause.

Recently, one avid airways CBer was late for an appointment with a salesman he had never met. They were both due at the location of a potential customer. On impulse, the visitor got on his radio, and shouted for the salesman by name, on the chance that he had a CB in his car. He did, and was converging on the meeting spot by a different route a few miles away — also late. They both laughed over that one, but gained a new respect for the usefulness of the CB radio for the traveler. CB

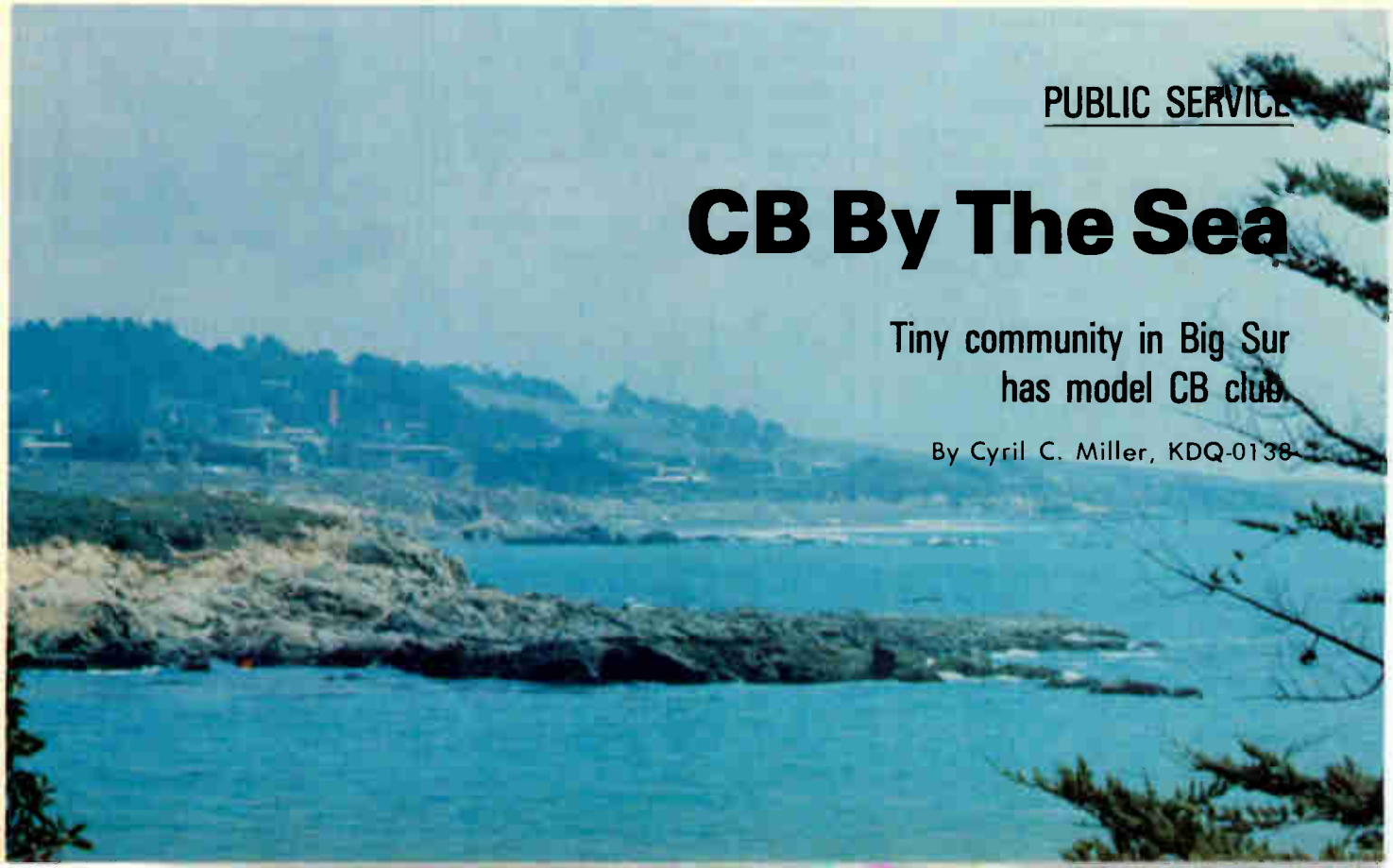
Adaptor cords are the key to getting power in strange cars. A cigar-lighter adapter, as well as a set of alligator clips insure the availability of DC power in any car.

PUBLIC SERVICE

CB By The Sea

Tiny community in Big Sur has model CB club

By Cyril C. Miller, KDQ-0138



"Mayday— Mayday— Mayday"

The night was dark and foreboding. Visibility was zero. In a dense fog and having "lost" its compass, a vessel floundered off the rocky California coast, its position and course unknown. "Mayday."

As was his custom before retiring, Ken Well, vice president of the Cambria CB Club, was checking the airways and his scanner had locked onto the Coast Guard station in San Francisco which was trying to establish reliable radio communications with the distressed vessel. Although unable to hear the Mayday call, Ken knew instinctively what was going on. Switching the scanner to his large rotary beam antenna, he was able to hear the frantic call for help. By carefully positioning the rotary beam for maximum signal strength, Ken was able to determine the direction to the vessel. He also knew from experience that his receiving equipment had a maximum range of about 30 or 40 miles, so the vessel must be nearby.

Calling the Coast Guard by land line, he said, "I don't know if this is important to you" — and offered his help which was gratefully received. The Coast Guard then asked him to "pinpoint" the location of the vessel as best he could. Calling him back later, the Coast Guard said a search plane located the helpless ship within five miles of the point he had indicated and expressed their thanks. The ordeal was over.

Charming and rustic, Cambria Village is nestled in a forest of tall Monterey pines, its western boundary the blue Pacific, is a few miles south of San Simeon (Hearst Castle) area and roughly 35 miles north of Paso Robles. Pacific Coast Highway 1 traverses its western boundary and Route 46, about four miles to the south, connects U.S. 101 to Highway 1.

Unincorporated, Cambria has no police force and must depend on the county sheriff department at San Luis Obispo for law enforcement. In an emergency, the delay in getting help from this source could be catastrophic because of the distance, dispatching procedures and the necessity of using land line communications. In addition, the village has to rely largely on its own citizenry for fire and disaster control.

Walter Fitzhugh, Ken Well and other Cambria residents knew that a good, well-organized CB communications network could alleviate many of these problems and invited 30 local citizens to a meeting to consider the matter. Much to their surprise, all 30 enthusiastically responded, and in February 1976, the present Valley of the Pines CB Club was founded. The club has continued to grow rapidly.

Complete dedication to the FCC rules and regulations has enabled this club to demonstrate that the application of these rules in no way inhibits the effective operation of CB in the community. In fact just the opposite is true. The channels have been uncluttered and readily available. Dedication to these rules and to the solution of problems in the community as well as the surrounding area has brought some surprising and gratifying results. This club may very well be a model for others to emulate.

Due to its proximity to the Pacific Ocean, incidents where CB club members have been effective in helping seafaring people with their distress problems occur frequently, the item cited at the beginning of this article by no means being an

isolated case. During periods when heavy winds or storm conditions are prevalent along the coast, there are many calls for help originating from troubled vessels. The Coast Guard does not normally monitor CB channels, yet there are times when these distress calls are sent over CB.

In one instance there was a disabled sailing vessel that was taking on water and an aircraft capable of monitoring the distress signals via CB was attempting to maintain contact between the craft and the Monterey Coast Guard station. Since the plane was running low on fuel, another was sent out to take its place. However, the second plane had no CB equipment aboard so the Cambria club took over passing the word along by land line to the Monterey Coast Guard station which in turn relayed the information to the plane. Shortly thereafter a Coast Guard vessel made visual contact with the troubled craft which was then given the required assistance.

At another time a coastwise vessel was in trouble and had lost the use of all its communication equipment. Fortunately, one of the officers on board had his personal CB transceiver with him and was able to inform them of their problem. Again, the club members got in touch with the Coast Guard by land line and the ship received the necessary help.

Occasionally the club members are called on to help in less exciting ways like the time they received a call from a commercial albacore boat which had run out of butane fuel required to operate its radar equipment power generator. A CB club member drove down to meet a deckhand at the dock, took him and his empty butane container to the filling station, and returned him to his ship which promptly put to sea for more albacore fishing.

In order to cope most effectively with emergency situations, the CB club frequently invites technical specialists, law enforcement, forestry, disaster and highway personnel to address their meeting on items of interest in their particular fields.

When a highway patrol representative came to address the club, he first flatly stated that he was not interested in CB and that he felt CB and its advocates were a nuisance and he would have nothing to do with either. However, he remained in the meeting and became so infused

Cambria has no police nor formal fire department; concerned citizens invited 30 CBers to consider forming a network. To their surprise, all 30 showed up.

with the sincerity and dedication of the members that he finally had a CB installed in his car. The highway patrol is now effectively using the club as an assist in highway related situations.

CB club members are also interested in helping motorists with CB "Break 23" for assistance. The club monitors this channel nearly 24 hours each day. Calls for emergency gas and oil are frequent because the local service stations close early. If possible, these requests are relayed to the California Automobile Association. At other times, club members may deliver gas or oil personally.

CB motorists who seek "Smokey" reports are quickly discouraged. There is a record of only one such request being received in the last several months. The club member simply answered, "Smokey? Who is Smokey? Never heard of him!"

Walter Fitzhugh states that in his entire experience in the Cambria area there has never been a time when a requested 10-33 break was ignored. However, in traveling the highway between San Luis Obispo and Morro Bay one day, one of the Cambria CBers who is also a member of the fire department, was the first on the scene of a serious automobile accident. He immediately began first aid while his wife got on CB and asked for highway patrol assistance. Her emergency call for a clear channel was ignored by two parties using the channel for idle chit-chat and reluctant to give it up.

The wife came back with additional authority in her voice, demanded the channel and explained that a very serious accident had occurred resulting in serious injuries whereupon the channel was cleared. The club, after being notified by CB, requested an ambulance and highway patrol assistance which arrived shortly thereafter.

CB club members are instructed in the necessity of briefly and accurately reporting details of highway accidents and have been given a set of written rules for this procedure. These include:

1. **Type of Accident/Incident:** Injuries? Ambulance needed? Road blocked? Partially? Number of vehicles involved; Drunk driver/hit and run; hazardous stalled vehicle; utility pole involved?

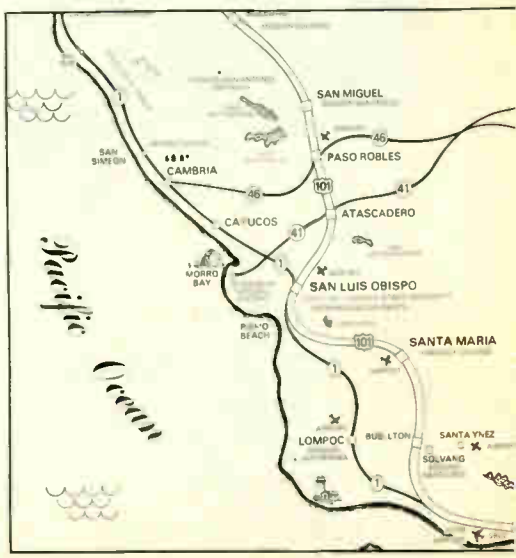
2. **Location:** Highway/freeway route number; direction; lane; nearest intersection; overcrossing; ramp, etc.; street address and nearest intersection.

3. **Drunk/Reckless/Speed:** Location last observed; direction of travel; time element; vehicle description — (color, year, make, body style, license); description driver/passenger.

4. **Reporting Party/Witness:** Name/address, CB call sign, handle.

Club members are also aware they must make sure that proper help is on the way and that the situation is understood by the proper authorities. The following incident points up the importance.

[continued next page]



CB by the Sea

[continued]

A CB member came upon a serious accident and gave the required information to the club which passed it along to the Highway Patrol by landline. Shortly thereafter, the club had another call requesting assistance at a second serious accident, this time involving two cars and a motorcycle. Upon being notified by landline the Highway Patrol insisted it had already dispatched a car to the scene. It took some effort on the part of the club member to convince the Highway Patrol that a second serious accident had occurred within three miles of the first. If the club member had not been insistent, it would be difficult to predict the results because of the serious nature of the injuries sustained.

Countless other examples could be given of the activities of club members in assisting the Highway Patrol and motorists with their problems. They are too numerous to be covered. Other community responsibilities of equal or perhaps greater importance have been willingly accepted by the club.

When speaking of the value of CB, Robert Cullen, veteran fireman and chief of the Cambria Fire Department, had this to say: "First, you must understand this is a volunteer fire department and that is the reason CB is and can continue to be very valuable to us. We have a regular fire department frequency which is available only on our three pieces of fire equipment. However, being a volunteer fire department, we are usually away from the firehouse and during the daylight hours, the firemen are out working away from their homes. If they hear the sirens come on, they automatically turn on their CB radios and get information about and the location of the fire.

"Depending on where they happen to be at the time, they can report to the firehouse or go directly to the fire, and really, I don't see how we could get along without CB. We are having a lot of trouble with our own fire communication system, and, as far as this fire department is concerned, it just can't do the job. We are striving to improve it but, until we do, CB is practically indispensible. It really does the job.

"I have volunteer dispatchers — the wives of three firemen. One dispatcher, whom I call my CB dispatcher, transmits the necessary information over Channel 23. We always monitor Channel 23. As soon as possible, we clear that channel and ask the firemen to go to 3 or 7 or one of the others." (And in this respect, CBers in the Cambria area are very careful not to tie up any of the channels used for business if it can be avoided.) In this area, Channel 2 is reserved for business, 5 for AAA towing, 13 for off-coast boats and 23 for emergency service."

The fire chief continued: "CB was extremely useful for communications in April 1976 when a heavy wind and rain storm hit the area, uprooting 50 large trees, breaking power and telephone lines and starting six major fires. During this time the only possible communication was via the CB network."

When the present club was organized, bylaws were adopted stating that the club members would report to the fire chief in case of extreme emergency and carry out his instructions, thereby negating confusion and

Fire Chief Robert Cullen and mascot "Sparky" keep each other company most of the time since Cambria's fire fighters are volunteers. Cullen says the community couldn't get along without CB and remain as safe as it is.

maintaining orderly procedure.

Of the 23 volunteer firemen, 21 have CB radios in their cars. The chief indicated the reason the CB net is so effective is that all the people involved are anxious to help each other and continued — "All my firemen are thoroughly trained in first aid and in cardiopulmonary resuscitation. In Cambria, many people are retired and there is always the possibility of a need for my volunteers. Having so many well-trained people in this town, all or nearly all of whom have CB radios, makes CB an invaluable asset. At any time we could have three or four men trained in CPR available immediately and I am sure Cambria is blessed by their presence."

Without exception, the entire Cambria populace is dedicated to the curbing of violence, vandalism and other unlawful acts. If a stranger stops at some house to visit friends or relatives and finds they are not at home, he needn't be surprised if some neighbor rushes over to ask his name, his business, etc. If his answers seem unsatisfactory, the neighbor is likely to call the sheriff who will carry the interrogation further. Although not formal police officers, CB club members are vitally concerned with local law enforcement.

One night recently, Walter Fitzhugh received a call from a witness who stated vandals were destroying property. When he arrived in the area he discovered two teenagers tearing up street signs and throwing them into their pickup. Walter put in a CB call for assistance and asked that the sheriff be notified. What happened thereafter is best explained by one of the teenagers.

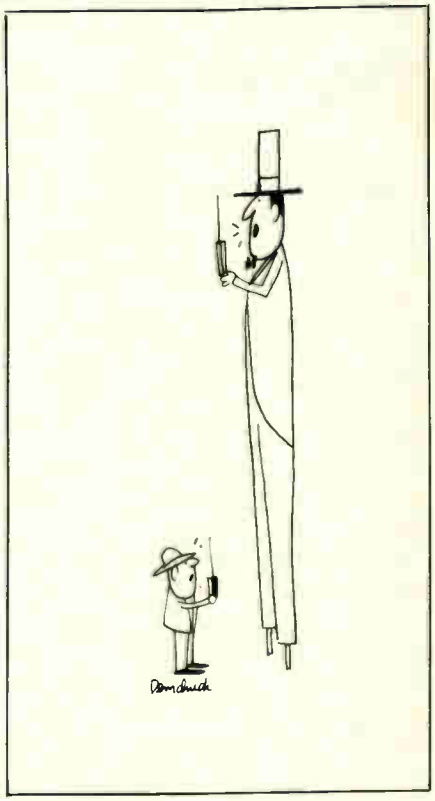
"We had gathered a load of signs when we saw Fitzhugh drive up in his pickup. We figured we could shake one pickup and took off, throwing the signs overboard as we went. Suddenly we were surrounded by pickups, all with CB antennas and knew we couldn't get away from all those CBers. One jumped out and started taking pictures of my pickup. I was never so sick in all my life."

The young people were detained 40 minutes until the sheriff drove up to take charge, remarking to the CBers: "If we had as many units as you have, we could be as efficient as you are."

One club member recalls another incident. "A kid from another town, with a CB radio in his car, allegedly ran people off the town's main street with a pa speaker, hollering obscenities on the street. He had run an older person off the road by my house. We engaged in CB communication with him. We then found out where he was going and notified the sheriff's department. They advised us to call the Highway Patrol. The Highway Patrol agreed to send out a unit from Morro Bay and asked the CBers to keep track of the vehicle. I got my wife on the phone and I monitored the CB radio. Six of us started out after him, keeping the Highway Patrol advised of his whereabouts. They apprehended him at nearby Deer Creek.

Chief Cullen: "When the volunteer firemen hear the sirens, they automatically turn on their CB's to get the location of the fire."

"That was the night one of our CBers told a funny little story about how he got so mad at the Sheriff's Department for not sending out a patrol unit to help apprehend this guy that he decided to talk to the watch commander. I guess he chewed him up one side and down the other for not doing something to help. Finally the sheriff's officer showed up and the CBer said, "You know I am going to call the watch commander and apologize for chewing him out like that because I really feel bad about it now." The officer turned to him and said, "Well, I am the watch commander." The watch commander wasn't mad at him because after they identified the kids, they discovered they had reports on them concerning a shooting in Atascadero where they scared the Cal-Trans guys half to death. They never found the gun used in the incident, but found empty cartridges in the kids' car. They were doing more than just having a little fun." CB



Circuit Court Rules On Virginia Radar Detector Case

Trucker deprived of "right to due process."

The first crack in Virginia's so-called anti-Fuzzbuster law has appeared, with the decision by a circuit court judge that Section 198.1 of the state Motor Vehicle Code places an undue burden of proof on defendants accused of owning radar detectors.

Ruling September 23 in the case of Commonwealth vs. Donald Eames, Franklin County Circuit Judge A. A. Davis III rendered a bench opinion that the language of the law deprived Eames of his right to due process by creating an unconstitutional presumption of guilt. The decision effectively strikes down the law in the southwestern Virginia county, and establishes a precedent decision to be used in other state courts. Commonwealth vs. Eames now becomes a cornerstone in the appeal being presented to the Virginia Supreme Court.

Eames was arrested when he was stopped by a state trooper who observed him slowing down in advance of a radar trap. Eames, a trucker for a prefabricated housing manufacturer, told the trooper he was driving in tandem with a second trucker, and that he had slowed down only to permit the second truck to catch up to him.

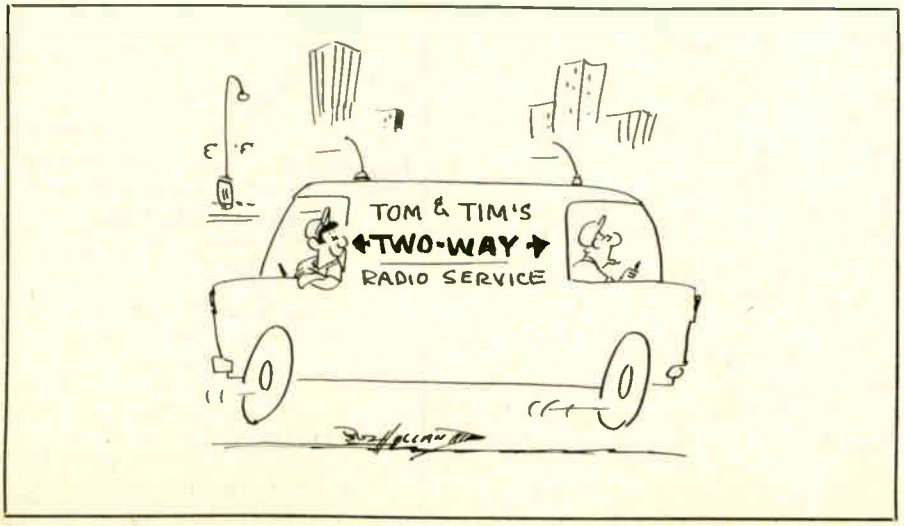
The trooper then shined a flashlight into the truck cab. Failing to spot a radar detector, he ordered the trucker to open a suitcase in the cab. Eames complied, and in it was a Fuzzbuster. Eames was arrested for possession of the unit, and was forced to post $125 bond and forfeit the unit.

In his court arguments, attorney Henry Foresman stated that the trooper lacked any reason to pull the truck over other than a search for a radar detector which might or might not have been in the truck. "Eames' arrest demonstrates that every truck passing through Virginia is under suspicion by the state police," Foresman said. He then argued that the search and detainment were unreasonable, and deprived Eames of his right to due process.

In his verbal opinion, Circuit Judge Davis said any statute which requires that an accused person must prove his innocence must fall. He then acquitted Eames of the charge, which precludes any appeal by the commonwealth. Attorney Foresman interprets the decision as striking down the section of 198.1 which states that a policeman "need not prove that the unit was operable or being operated" at the time of seizure.

Previous acquittals, Foresman noted, have been made on technical grounds, primarily that the state has not proved that the device seized is a radar detector. In the most celebrated case of its kind, a North Carolina trucker was arrested for possession of a cardboard box which resembled a radar detector.

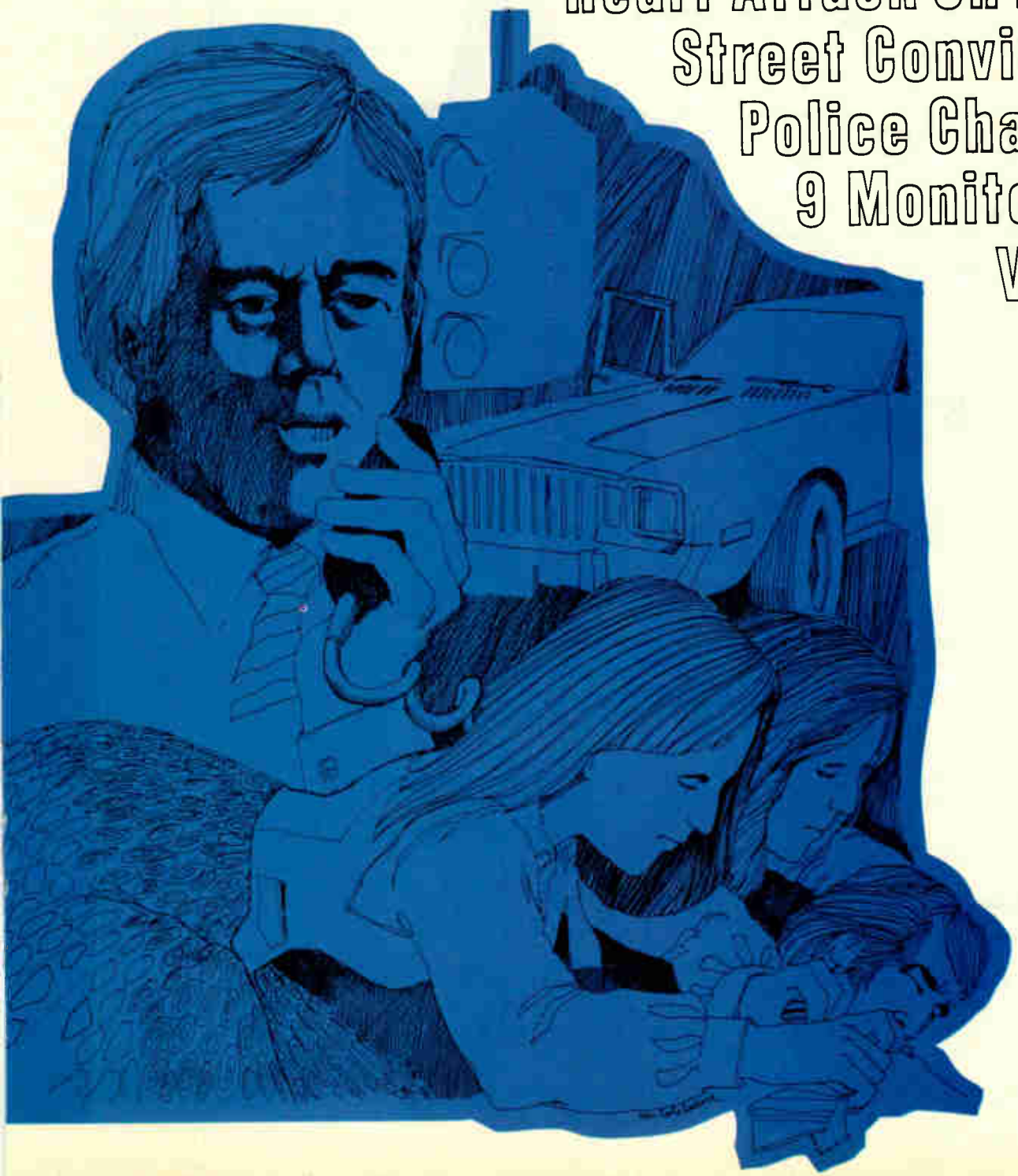
In Franklin County, a spokesman for the area barracks of the Virginia State Police said that pending a clarification from Patrol headquarters in Richmond, troopers would continue to arrest motorists who use radar detectors.



By Henry H. Wasserburger

Madison P.D. dispatcher handles first call within hour after installation of base station.

Heart Attack On Main Street Convinces Police Channel 9 Monitoring Vital.



"I didn't feel like I did anything special. It was nothing. I'm sure that anyone would have done the same thing." That was the reaction of Dave "BLUEBEARD" Ausmus, a 27-year-old shipping clerk from Madison, New Jersey, after he put out an emergency call on his CB last November 16.

It was about 10 p.m. on a cold, but clear, Tuesday evening when Dave stopped his van behind a

[continued on page 46]

This Antenna is guaranteed clearer than any other

K40 no other antenna can claim all these features!

1 RADIUSED 180° TIP provides static dissipation without requiring ball. No ball loss—ever!

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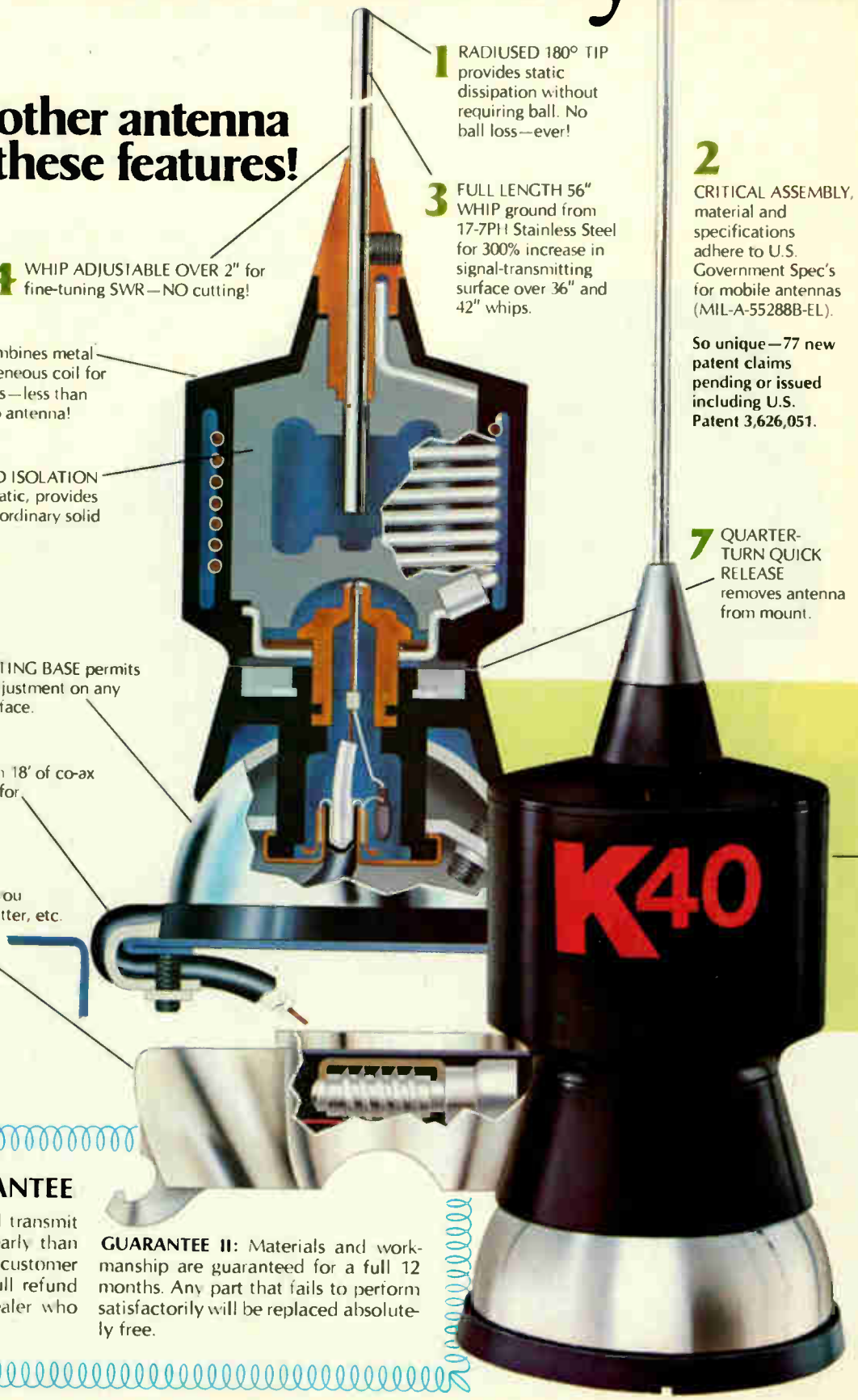

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GUARANTEE I: The K-40 will transmit farther and receive more clearly than the antenna it replaces or the customer will receive a prompt and full refund from the Registered K-40 Dealer who installed and tuned it.

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to transmit farther and mobile CB Antenna made!*

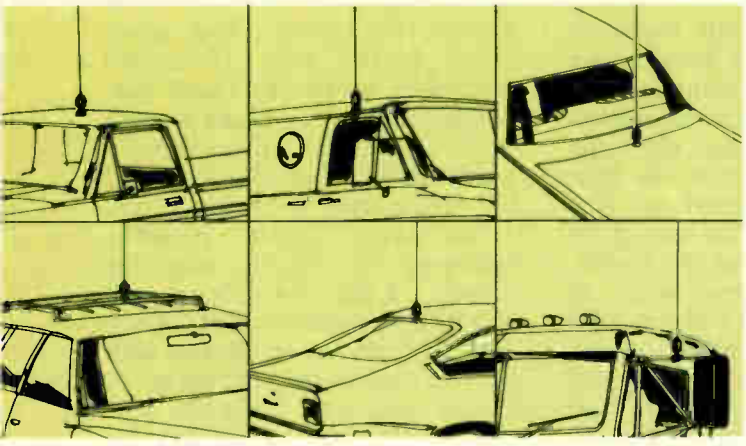
$38.50 buys all this performance...
and wait'll you see it transmit!

Guaranteed more power! *This claim is made because we've tested it with hundreds of CB'ers in all fifty states for over one year! The K-40 was *conceived* in the Research Department of one of America's most innovative engineering companies...then *perfected* in the research labs of one of America's most respected universities and *proved* in actual use by 771 experienced CB'ers with 23 & 40 channel radios.

30% increase! *Average performance rated (VSWR and Efficiency combined) 30.5% better than all other brands tested, including Antenna Specialists, Avanti, Hy-Gain, Shakespeare, Turner, Newtronics, etc.

Equals full-length whip! The all-new K-40 was designed to equal or exceed the performance of a full-length whip—guaranteed to out-perform all other mobile antennas!

And it mounts anywhere!



See your Local CB Dealer for a demonstration.

Here is what those CB'ers actually said:

K-40 vs. ANTENNA SPECIALISTS
"I'm a truck driver and I've been a CB'er for ten years. Compared to my Model M-410, "Big Momma," I recorded a 40% to 50% increase in transmission distance, clearer reception and a lower SWR by 20%. Frankly, the K-40 is the best antenna I've tried so far—over Antenna Specialists, Francis, Shakespeare, Hustler, Avanti—I tried them all."
John H. Collett, 207 McFee, Bastrop, Louisiana

K-40 vs. NEWTRONICS
"Compared to my XBLT-4, the K-40 can consistently transmit 40% further and the reception was better. I compared the two antennas using my Cobra Model #138 which has 69 channels. Quality is very good. I'd say the K-40 is the perfect way to complete any CB system."
Jerome R. Browne, 7800 S. Linder, Burbank, Illinois

K-40 vs. HY-GAIN
"I own a Volkswagen dealership and I've been a CB'er for over 12 years. I operate a TRAM XL5 with a Hy-Gain HELL CAT antenna that I've owned for over a year. The K-40 was better in reception with a measured SWR of 1.2. The K-40 was 20% better than the HELL CAT and transmitted 50% further."
Dale A. Dayden, 14 Barbara Dale Lane, Annapolis, Maryland

K-40 vs. FIBERGLASS
"I replaced my Francis with the K-40 and greatly improved my reception. The transmission was excellent, about a 30% improvement over my Francis. I talked well over 45 miles to an Astro Beam base. K-40's SWR of 1.1 was 10 to 20% better than my Francis!"
H. Ganse, 1964 Mt. Zion Road, York, Pennsylvania

K-40 vs. DUAL-ANTENNAS
"My twin Hustlers do not perform as well as the K-40. I got an improved performance on reception and about a 30% increase in transmit distance using the K-40. I've been a CB'er for 17 years, and I'd say it's superior to any other antennas."
James L. Andrews, P.O. Box 1509, Titusville, Florida

K-40 vs. WHIPS
"I'd rate the K-40 superior, although the transmission and reception of the K-40, compared to my 102" Antenna Specialist whip, was just about identical. I was able to tune the K-40 lower than my 102" whip. I think the K-40 is one of the best looking antennas on the market and overall, I'd rate the performance about as good as my 102" whip."
Daniel A. Rohlf, R.R. #2, Box 88, Binford, North Dakota

K40 American Antenna, 1945 South Street, Elgin, Illinois 60120

An All American Product from an All-American Company

[continued from page 43]

station wagon at a red light on Main St. in Madison. In the first car at the light, Joseph Tremallo, a long-time employee of a large pharmaceutical company, and his wife Anna were on their way home to nearby Morristown. The light changed but the Tremallo car didn't move, Joseph Tremallo was slumped over the wheel, unconscious.

Ausmus didn't immediately realize that something might be wrong. "I was only one car behind the Tremallo's when the light changed. When their car didn't move, I saw the woman in front of me jump out and run up to it. She opened the driver's door and Tremallo fell out onto the street. I wasn't sure what was wrong with him, but I knew he was in trouble and needed help."

Joseph Tremallo had gone into cardiac arrest. He had no heartbeat and wasn't breathing. "He's my husband!" yelled Anna Tremallo frantically. "It's his heart! He has heart trouble."

As the young woman attempted to revive Tremallo, Dave clicked his CB to Channel 9 and started yelling, "Mayday! Mayday!" Madison Police heard him. "I was really surprised when this guy came on and said that he was Madison P.D. and asked if he could help me. I had hoped to reach a REACT station. I didn't even know that Madison Police had a CB." Dave had good reason to be surprised. The police department's CB had just been installed earlier that day. His urgent request for help was the first call the department had received.

"Other police departments have done the same thing," commented Madison Police Lt. Frank Stricchiola, who was working the dispatch desk the night the call came in. "Sometimes citizens see more than the police department and are able to contact us with an emergency. The installation of our CB really paid off. This was our first emergency call and together we were able to save someone's life."

Thanks to Ausmus' quick action, Madison Police Sgt. Joseph Bocchino and Patrolman Richard Miscia rolled in on the call, followed closely by the Madison Volunteer Ambulance Corps. There wasn't any time to waste. "In a case like that," one ambulance volunteer explained, "where there was cardiac arrest and no heartbeat, we had from 4 to 6 minutes to save him. I would say that we arrived in less than a minute after the call came in. That was vital. We immediately started CPR (cardiovascular resuscitation) and mouth-to-mouth. Timing was also important. You had to have the right number of compressions (the pushing down with the heel of the hand on the chest of the victim, just below his breastbone, to stimulate the heart) and the right pressure. We usually switch people because it is so tiring and strenuous. We weren't that concerned with moving him or getting him to the hospital quickly, unless he stabilized, it didn't matter. The CBer's call allowed us to get to him in time. Fortunately, Mr. Tremallo responded to our efforts."

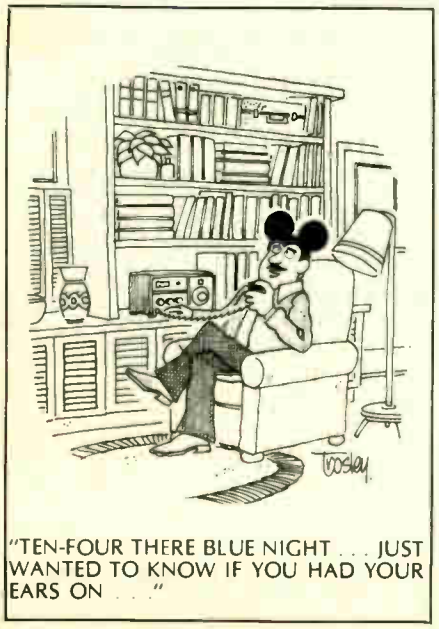
Anna Tremallo related what happened inside their car. "We stopped for the red light, but when the light changed, Joe seemed to pull the car along the side of the road. That's when I looked over and saw him slumping over the wheel. He had suffered a heart attack several years ago and we always carry his medicine. But this time I couldn't revive him.

"The next few minutes were like a scene from the television show, 'Emergency.' Some woman was pulling Joe from the car and working on him, trying to revive him. Then a young man appeared next to the car and told me he would contact the police on his CB. If it weren't for the Madison Police and the Volunteer Ambulance Corps," she continued, "Joe wouldn't be here."

Mrs. Tremallo wanted to ride with her husband to the hospital in the ambulance, but she didn't know what to do with their car, which was still in the middle of Main St. The young woman from the station wagon came to her rescue again. "For some reason I gave the woman, whom I still don't know, the keys to the car. She said that she would park and lock it for me. I figured anyone who would try to save my husband was as reliable as anyone I'd ever meet. The only trouble now is I don't know whom to thank. I have no idea who the woman was." The young lady's identity has remained a mystery. Though the incident received much publicity in the local papers, the woman has never come forth. Mrs. Tremallo wanted to personally thank her, but apparently the young woman was content to remain anonymous and not be recognized for taking part in saving a life.

Similarly, Dave Ausmus remained a mystery man for awhile. "I just went home and didn't think anything of it," Dave said modestly as he played with his two dogs in his apartment. "I stayed until Mr. Tremallo was taken to the hospital, he was the important thing there, not me. There was quite a crowd watching and I was just part of it. I'm sure that I did just what any other CBer would have done. CBers are helping people in trouble all the time. Until I saw the paper the next day, I never gave it another thought."

Through the work of his neighbor and the New Jersey Inter-County REACT, Ausmus was identified and duly recognized for his actions. Inter-County REACT, which serves five counties in the area, in cooperation with nine



"TEN-FOUR THERE BLUE NIGHT . . . JUST WANTED TO KNOW IF YOU HAD YOUR EARS ON . . ."

police departments, presented him with a special service award; the local paper ran a feature article on him.

It would be nice at this point to be able to end the story with ". . . and they all lived happily ever after." But this was not a fairy tale, nor a make-believe story for children. Unfortunately, it was a real-life crisis with real-life people.

Mr. Tremallo was taken to Morristown Memorial Hospital that night, where he remained in fair condition for two days. In order to receive more specialized care, he was moved to Cornell Medical Center in New York City, but early on Friday, November 19, he suffered another heart attack and died. Joseph Tremallo was fifty-four.

"The second attack was just too much strain on him," Mrs. Tremallo said. "But I still want to thank those people who helped him live another two days. Without them I wouldn't have known what to do. It's wonderful to know there are people like them. People who are concerned."

In the months that have passed since her husband's death, however, even a kind, patient woman like Mrs. Tremallo can be intruded upon to the point of excess. She has simply tried to put her life back together and raise her three children. The memory has become too painful, aggravated by people who won't let her forget. She no longer wishes to talk about the incident, preferring to let it slip into the past. "I've just had enough," she said recently. Her voice was warm and apologetic, grateful but resolute. "I just can't talk about it anymore. Please. Not anymore." After a brief silence, she added: "The local papers made such a big deal out of it and they got it all wrong. They just made things worse. It's just too painful."

Dave Ausmus also found the publicity disruptive. A misquote in the same paper caused him problems at work, and every time he would use his "handle" on his CB, it seemed like every CBer wanted to know if he was the same "BLUEBEARD." It became annoying and he soon stopped using his unit. This, coupled with the problem of finding a set to work properly in his van, forced Dave to sell his rig. He is now considering a CB for his motorcycle.

But there have been many positive results from the incident. Madison Township, an affluent, suburban community, is firmly committed to the use of CBs as an aid to law enforcement and citizen involvement. At all major entrances into Madison, signs are posted notifying drivers that Channel 9 is monitored by the police. "At last count I think there were eight of them," smiled Madison Deputy Police Chief Frank Dascoll, referring to the fact that the signs often become souvenirs. "We've always been in favor of CBs. I suppose that in some departments there has been some initial resistance. But not here. For some time now many of our officers have been CBers. There was no resistance within the department, no selling to be done. It was just a matter of finding the money in our budget for the set up.

"We're always looking for ways to improve our communication with the public," continued Deputy Chief Dascoll, a twenty year veteran of the force and a former detective in the department. "CBs have definitely been a help. We acknowledge about 24 CB calls a week. At least a third are of a potentially serious nature. For instance, we had a call from a passing motorist that a man was walking down the middle of the highway. Well, the guy was just under the weather a little and we helped him home. I know it might not sound like much, but we may have saved that man's life."

Lt. Stricchiola added his approval to the department's use of CB. "There are a lot of nice people out there. People who really care about others."

Mrs. Tremallo expressed her grateful sentiments when she said, "I just can't imagine what would have happened if all those people hadn't appeared out of nowhere."

Those people who appeared out of nowhere were Dave Ausmus, who didn't feel like he did anything special. And, an anonymous young lady in a station wagon. CB

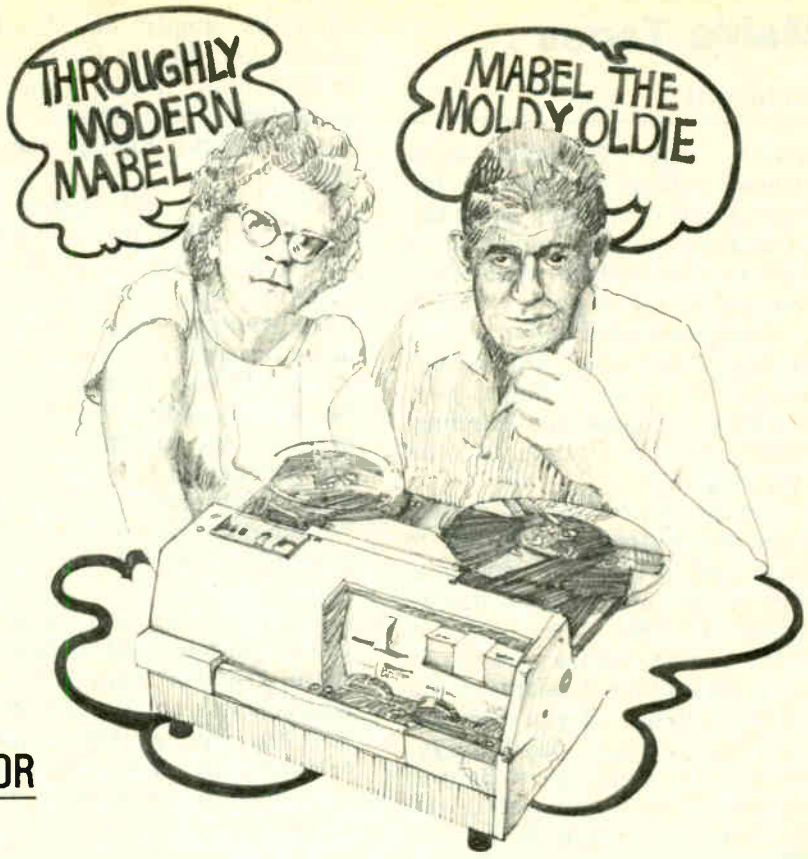
"Boom."

Texas Has The Most Licensed CBers

Famous for their boast of having the biggest of everything, Texans can now claim to lead all other states in the number of licensed CB operators. Texas had 931,365 of the 11,127,695 CB licensees in the United States, or more than 8 percent of the total, on August 1st, 1977. Based on an average of two CB units per license, this indicates there are 1,862,730 licensed CBs in Texas. California was second with 674,494 CB licensees, followed by Ohio with 641,999.

During the January through July period, the number of CB licensees increased by 3,288,692 (an average of 469,813 per month). The totals by states and U.S. possessions follow:

Alabama	215,215	Montana	48,132
Alaska	31,409	North Carolina	326,019
Arizona	118,543	New Hampshire	48,756
Arkansas	143,422	New Jersey	288,354
California	674,494	New York	563,193
Colorado	151,662	North Dakota	50,080
Connecticut	123,914	Nebraska	120,038
District of Columbia	14,331	Nevada	34,079
Delaware	31,233	New Mexico	72,271
Florida	467,118	Ohio	641,999
Georgia	281,143	Oklahoma	213,909
Guam	1,230	Oregon	122,582
Hawaii	15,201	Puerto Rico	19,209
Idaho	50,953	Pennsylvania	560,987
Illinois	557,249	Rhode Island	28,436
Indiana	337,796	South Carolina	159,727
Iowa	216,797	South Dakota	55,462
Kansas	175,728	Tennessee	249,975
Kentucky	209,980	Texas	931,365
Louisiana	215,843	Utah	52,365
Massachusetts	193,123	Virgin Islands	849
Maryland	214,197	Virginia	309,330
Maine	63,707	Vermont	27,252
Michigan	503,830	West Virginia	140,584
Minnesota	191,973	Washington	168,534
Mississippi	125,570	Wisconsin	215,778
Missouri	318,165	Wyoming	34,694



CB HUMOR

The Mabel Tapes

[**Editor's Note:** *"Mabel" is the creation of writer Betty Davis [KSR-7435] who, we feel, has the freshest style since Erma Bombeck. These are three "tapes" Mrs. Davis claims she made of her friend Mabel. Mabel, you'll soon find out, has an opinion for everybody on everything.*]

Tape No. 1: "I Told You, But You Didn't Have Your Ears On."

"If you'd listened to me three years ago, George, we'd be rich by now.

"Didn't I tell you to ask the stockbroker about Johnson, Royce, Pearce-Simpson? Didn't I? And what did you do? You bought municipal bonds! New York is going broke, Boston is rocking, and Chicago will probably hit the skids, too, without Mayor Daley to keep it going.

"I knew the CB boom was coming. I knew it when I began to see more Hustlers on the trunks of Oldsmobiles than 108-inch whips on the bumpers of souped-up jalopies. Once you get the upper-income bunch interested, you've got a market.

"Sure, I know the truckers started it, and no one expected a CB buying binge just to listen in on truckers' conversations. But you didn't see the rest of it. You didn't see any farther than the end of your nose!

"CB radio is the best thing to come along since the telephone party line. Remember how we ran to the phone when we heard three shorts and a long? Mrs.

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Mable Tapes . . .

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Jenkins' ring. Probably Mrs. Forbush calling. They'd talk for hours. Knew everything going on. Better than the newspaper. A lot of the Jenkins-Forbush stuff never even got in the paper!

"Sometimes we'd holler in with an item of our own. 'Oh, is that you, Mrs. Hornin?' they'd say. 'We knew someone was listening. Heard Stella Dallas in the background.'

"Those were great times. When we retired and moved to town and the phone company gave us this private line, it sure spoiled the fun.

"It's human nature to want to reach out and touch people, to be a part of things. If you'd known anything about psychology, George, you could have figured out that CB is the answer to all this loneliness people feel — all this isolation. You ought to read more, George, then you'd be aware of things, the way I am.

"You don't think psychology has anything to do with the popularity of CB? Where have you been! It has everything to do with it.

"On our vacation trip last summer, remember the cars with CB antennas who tried to hail us on the radio? 'Red-over-white Monte Carlo, have you got your ears on?' Or we'd meet a car, and someone would shout, 'Hey, southbound Monte Carlo, we're tryin'!' and, 'We're tryin' one more time.' And finally, 'Southbound Monte Carlo, one last time.'

"You never did answer. Just sat there, driving and staring straight ahead. Well, not everyone acts that way. Some folks want to get in there and make friends as they drive along.

"That's why people want CB. So they can keep in touch — right out there on the highway. That's the psychology of CB radio that could have made us a mint!

"What's that? I wouldn't let you talk on the CB one time you wanted to?

"You mean that southern-voiced gal who kept calling, 'Hey there, travelin' man.'? The one who kept asking, 'What's your 10-20?' and saying, 'You've got the Midnight Lady here.'? Believe me, George, that voice didn't belong to any lady!

"Hush up, George. We're talking about the psychology of why people want to buy CB.

"Now take the psychology of cops-and-robbers. Yes, cops and robbers! Why do you think Adam 12 is still in reruns? Do you think people watch Kojak for his bald head? No sir, it's that good-guy-bad-guy stuff.

"Good-guy-bad-girl stuff? Stop snickering, George.' And don't change the subject.

"Car drivers with CB tried to outwit the picture-taker at first. It was sort of a game. But now they report crazy drivers and drunks and speeders. The police have come to realize CBers romanticize about law enforcement and would like to be a part of it. That's why patrol cars have CBs in them. The police know about psychology: Get the drivers on your side!

"You don't think civilians do much reporting? Don't kid yourself! I've seen these drivers with CBs watching every move I make. I keep wondering what I'm doing wrong that they'll report to the cops.

"They do so, watch! I heard one of them say on Channel 19, 'There's a little old broad at the intersection in a white Monte Carlo who just sits there, afraid to get out in traffic!'

"Well, I heard it, George.

"But to get back to psychology. How about the psychology of the handle? When you're out on the highway, alone in your car, you can assume any personality you want. It's 'projection' the psychologists say. Projection, George. You project whatever kind of person you would like to be or think you are, by the handle you choose.

"Our insurance agent, for instance, calls himself Big Bob and he's only 5'2." And Elaine Colson uses the handle Sleeping Beauty and she's homely as a mud fence. People like pretending to be something they're not.

"If you'd paid more attention to psychology, George, we'd be on easy street today. I tried to tell you, but you wouldn't listen. Didn't have your ears on. Your handle should be Municipal Bond Moron, that's what!

"Don't mumble, George.

"Ratchet jaw! Mabel the Mouth! Well, that tears it! Give me that newspaper!

"American stock Exchange . . . New York Stock Exchange . . . over the counter . . . I'm going to get in on the ground floor for once. Bearcat, Fanon, Palomar . . . I'll make us a fortune!

"Police scanners are where it's at today, George. It's the psychology of wanting to be in-the-know. To be privy to information not everyone has. Yes, even to watch for a stolen car reported by state troopers.

"I know about the legal status of scanners in some states, George. But when the police find out how helpful we scanner-watchers can be, they'll give everyone the green light to own one.

"Take my word for it, George. If we buy into scanner stocks, we're going to be right up there with the Rockefellers.

"You don't think scanner stock is a good investment! What will I use for money!

"I'll use my half of the cash from our municipal bonds that you're going to sell tomorrow! That's what I'll use!

"And when Happy and Nels invite me to a fancy dinner at their house, you can stay right here and eat your words for supper!"

Tape No. 2: "I Noticed I Was CBing Only With My Son."

This recording, unlike the first, was obtained with Mabel's full knowledge and complete cooperation . . . well, more or less complete cooperation.

"What do you mean, the folks at **CB MAGAZINE** heard me talking about CB radio?

"They heard me talking to George? How'd they do that?

"You recorded it! For crying out loud! What ever happened to privacy?

"Of course, I'm upset! Important men in big oval offices are upset when they find out they've been recorded! Why shouldn't I be upset?

"Uh . . . what exactly did I . . . uh . . . say in that recording?

"Nothing of an embarrassing nature. No expletives. Nothing to be deleted. I'm glad to hear that!

"No 18 1/2 minute gaps, either. Well, George will tell you I don't usually leave many gaps in my conversations.

"You say they heard me telling my husband George to sell our municipal bonds and buy police-scanner stock. And did we do it? Of course, we did! George doesn't listen to E. F. Hutton anymore — he listens to me!

"We bought into Fuzzbuster, too. And we're financing a high school kid who builds scanner decoders in his folk's garage.

"No. I don't think the buying public is out to get the jump on Bears and Mounties. It's just that this is the age of electronics, and people want all the gadgets they can get their hands on.

"George and I will make a mint! Especially from that kid in the garage. He just uses a little circuit board, a couple of wires, and a piece of tin bent into a box. And he sells them for 35 bucks. Talk about profit margin!

"But you didn't tell me why **CB MAGAZINE** was snooping through transcripts of my discussion with George.

"They do? Just a minute — I have to tell that to George . . .

"George! George! Guess what? **CB MAGAZINE** wants to hear my opinions about CB radio. What's that, George . . . ?

"George says he's glad someone else will have to listen to my opinions for a while.

"So. What do you want to know? Go ahead. Shoot.

"For starters you'd like my full name. Are you recording this?

"You are? No name, then. Absolutely not! How do I know the things I say won't be misquoted — distorted — written up in the *Washington Post*? I could be very sorry I ever let a tape be made!

"We'll split the magazine's payment? Well . . . hmmm. Fifty-fifty, you say. Right down the middle. OK. For half the profit, I'll give you half a name. Mabel. That's all.

"Do I have a handle, then? No, I haven't thought of one that just hits the nail on the head. A really good handle should instantly call to mind qualities of soul — suggest the very essence of what is truly 'you.'

"I considered '*Mabel of Morning Mists*' — something romantic and soul suggesting — but George said that name already belonged to a purebred Holstein.

"And I thought of '*Mad-Cap Mabel*' and "*Thoroughly Modern Mabel*' — I consider myself upbeat and with-it. But George put a damper on everything I came up with. Just sat there, giggling and suggesting names like '*Mabel the Moldy Oldie.*'

"So . . . I kept on using call letters. No one ever remembered them, though. No one ever called me back.

"Remember how it was in the 60's, when we shared the channels with the milkman, the plumber, the TV service guy? Kept a list of call signs and stand-by channels, just like phone numbers. Got on the CB, tuned to 11, 7 or whatever, and told the Willow Farms man to bring an extra quart of skimmed.

"Anyway, with my using call letters, pretty soon I noticed I was CBing only with my son. When he'd call me, he'd say, 'We're lookin' for that one white Monte Carlo.' And when I wanted him, I'd say, 'Red Mustang, you by the channel?' He didn't even remember his own call letters! Nobody remembers call letters anymore.

"Then he got into sideband, and I became just a listener.

"Sure, I felt lonesome and left out. Everyone was having so much fun with names and talking to one another.

"For a while there I hoped that . . . well . . . you know . . . someone else might pin-on a name. It happens sometimes. Someone tacks a handle on you and it sticks.

"I was following this Chevy station wagon one day, and it was chock-full of teenagers hanging out the windows and waving. I pulled up beside them at the stop light. They looked like a friendly bunch of kids, so I smiled and waved back. 'Have you got your CB on?' one of them yelled. 'What's your handle? Don't I know you from somewhere?'

"I thought, 'Hey, maybe this nice young man will mention something I can use for a name.'

"Do you know what he said? He said, 'You look like my grandmother.'!

"I just put my head down and wished the light would change to

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Mable Tapes . . .

[continued]

green. I didn't look for an essence-type handle after that.

"Yeah, my feelings were hurt . . . some. Who wants to look like a teenager's grandmother?

"Do I think old CBers find it difficult to adjust to the CB phenomenon? Who's an OLD CBer!

"Oh, you mean those who've been in CB for several years. Yes, it's hard to adjust to the New CB — like adjusting to 18 wheels rolling over your chest!

"But I suppose it will all smooth out one of these days — when all those new radio owners get past the thrill of requesting a 10-36.

"Enough for your column already? How about another cup of coffee?

"Have to get back to your typewriter. We could wake up George and play a little rummy . . .

"Well, if you really have to go.

"Say, do I get to decide which of these tapes are released for publication?

"Why not? They were taped right here in my own home. They should belong to me. I should have the say-so about which ones are made available to the public.

"Do you think I want just anything I might have said bandied about in bars and living rooms? Hey, come back here with those tapes . . . !"

Tape No. 3: "CBers Come In All Sizes, Shapes And Sexes . . . Well, Only Two Sexes."

Crouching in the shrubbery under Mabel's kitchen window is uncomfortable and damp, but Mabel was resistant to another taped interview. So-o-o-o, your reporter . . .

"Some more coffee, George? Another slice of Sara Lee?

"Well, don't say I didn't ask. Did you see what it says here in the newspaper, George? It says a survey commissioned by *Time* magazine shows that the typical CBer is about 39 years old, earns around $19,400, and he's married and male. Do you believe that, George?

"Well, I don't believe it. Who do they talk to anyway? No *Time* survey fellow came around here asking me questions!

"What do you mean, a survey-taker would have to have rubber ears if he asked me a question? They want the facts, don't they? I could tell them a thing or two about typical CBers!

"Like that 'male' business — I'm not a male am I?

"You're male. Well, of course you are, but you never talk on the CB. That just goes to show their figures are all out of kilter.

"And that 39-year-old-male-and-married stuff. What's so newsy about that? A 39-year-old male who isn't married would be a rare bird — not to mention suspect.

"The salary thing? I don't know about that. With this rampant inflation, who knows anything about salaries anymore?

"You're surprised there's something I don't know anything about? You sure are grouchy this morning, George. Just jab at everything I say.

"Do you know what else it says here, George? It says another survey made by the Axiom Market Research Bureau says CB owners are four times more likely to read *Hustler* magazine than the average person.

"Oh, you wouldn't either! — read *Hustler* if you could get your hands on it. You're too old for that, George.

"So what if you feel only 39! Forget it, George.

"Anyway, I don't think the average CBer wants to read *Hustler* magazine. *Hustler* magazine and Hustler antennas don't have anything in common!

"They have the close inspection of interested CBers in common! Shut up, George!

"I'll tell you what I think of this typical CBer stuff! It's a lot of hogwash. That's what! There isn't any typical CBer. They come in all sizes, shapes, ages, sexes . . . well, only two sexes, I guess.

"Was *First Mama* a typical CBer? Of course not! How many CBers are presidents' wives? And cops. A lot of them have CB radios in their patrol cars. Are they typical CBers?

"Well . . . yeah . . . they might read *Hustler*.

"But what about the farmers on Channel 8 and the kids on Channel 14. Where do they fit into this picture of a 39-year-old, married, *Hustler*-reading CBer?

"George! Those farmers aren't going to read *Hustler* out there in the field while they drive the tractor. They could plow up their whole corn crop if their attention wandered.

"Sure, I know some CBers have only one thing on their mind. Like that guy I heard one day who was talking to two young girls. He kept asking them what they looked like and how old they were. He sure was anxious to find out if they were over 18!

"And I heard a fellow talking to a girl on Channel 11 one time. She was giggling and laughing at everything he said, until he told her that someone up on 20 had said she was 'easy.' She said, 'Is that so! I'm gone!' and she tore up to Channel 20 and started raising cain with everyone there.

"Of course, I followed her up to 20. I didn't want to miss anything.

"Then there was the friendly-sounding girl who called, 'Break one-nine for an 18-wheeler.' About four guys yelled in, 'You got an 18-wheeler.' '18-wheeler here.' '18-wheeler at your service.' And 'Here's another 18-wheeler.'

"She came back, 'One at a time, fellas.' Then this smooth-as-silk gent comes on, 'That break for an 18-wheeler — what can I do for you?' And she sort of drawls, 'I'm lookin' for a good time.'

"Did they get together? Stop

panting, George. How do I know? About that time I got to the grocery store. You can't sit there in the parking lot listening to your CB. People walking by night think you were one of those voyeurs or something.

"Never mind what a voyeur is.

"But those are the raunchy ones, George. There are other kinds of CBers out there. Did I tell you about the old guy who stopped in at Dickson Electronics the other days?

"That nice dark-haired young man who works there told me about it. He said this old party tottered in to the store, propped himself up against the counter, and said, 'Sonny, what is this Cee Bee?'

"Dave said he could hardly keep from laughing while he explained to the old fellow what a CB was good for, taught him how to work it, and helped him fill out his license application.

"Dave said they installed the radio and antenna right there at the store and the old geezer drove away, shouting, 'Break one-nine. You got the one and only *Polka Stompin' Papa* here!

"It just goes to prove there are all kinds of CBers, George. No typical ones. No average ones. Just CBers.

"And did I tell you about the young couple I heard who were making up after a fight? She sounded so kind of blue. And he was telling her everything was all right. And he was asking her if she was still there and was she still listening. She'd answer in this little tiny voice. Like she was crying, maybe.

"Finally, he said, 'I . . . L . . . Y . . .,' and he waited. When she didn't answer, he said, 'You know what I mean, don't you? What I told you this morning.' Then she said, 'I know.' And she sounded so happy.

"Do you know what, George? I just shut the radio off, then and there. It was a private conversation, and it shouldn't have been overheard.

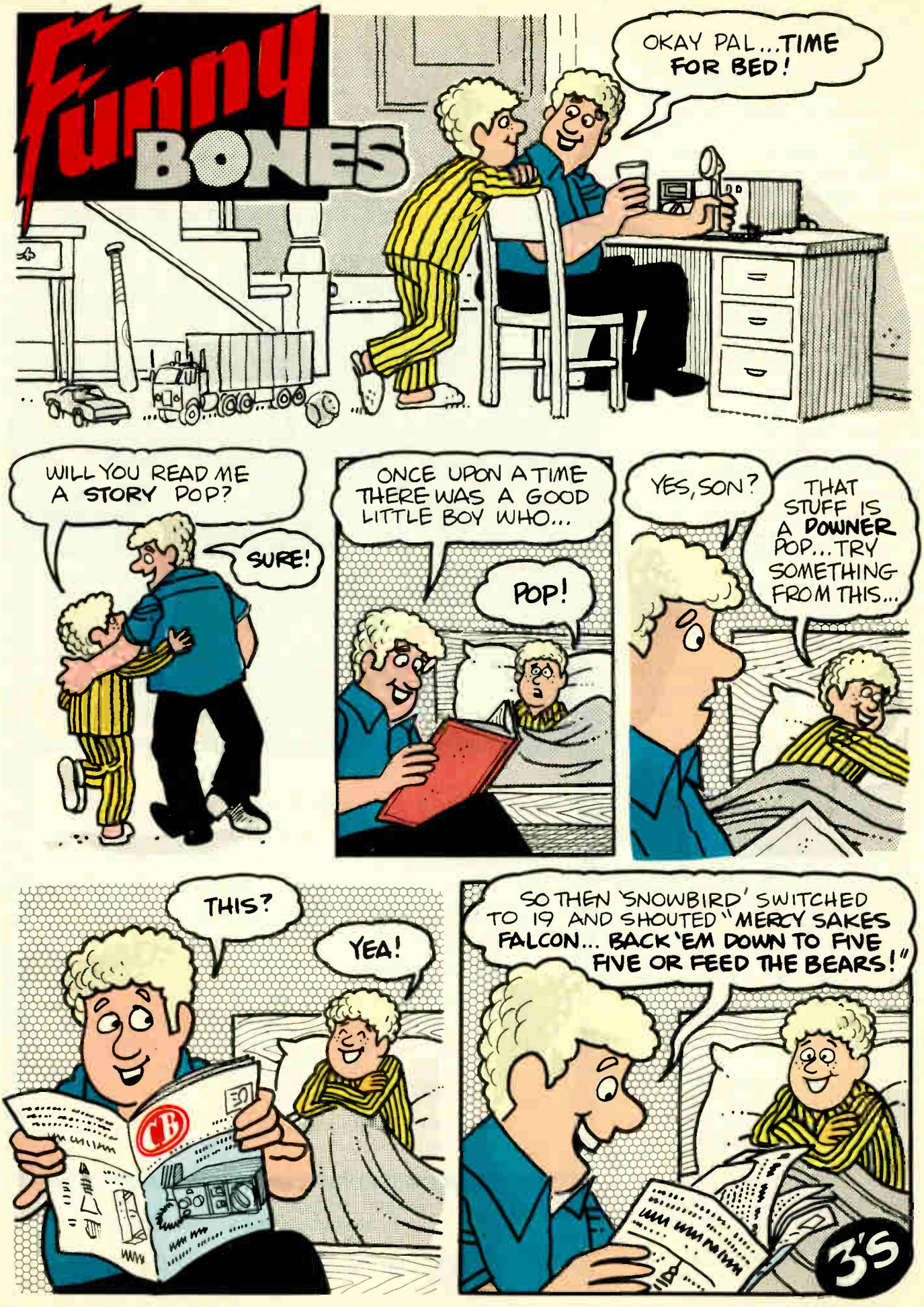
"You didn't think I'd lay my ears aside for anything? That's mean, George. I have feelings. I have a heart.

"Sure, I listen a lot. And listeners are CBers, too. Part of that typical CB bunch that isn't really very typical.

"There's a whole world of CBers out there, George. Good ones, bad ones. Smart ones. Dumb ones. Peppy. Dull. Laughing. Crying. Some good-looking. Some ugly. Male and female. Every kind of person you can imagine. No two alike. Typical! My foot!

"George . . . where're you going?

"Out to the car to see if you can raise a peppy, good-looking female CBer! George, get back in the house this instant! GEORGE!!!" CB


Funny BONES
OKAY PAL...TIME FOR BED!
WILL YOU READ ME A STORY POP?
SURE!
ONCE UPON A TIME THERE WAS A GOOD LITTLE BOY WHO...
POP!
YES, SON?
THAT STUFF IS A DOWNER POP...TRY SOMETHING FROM THIS...
THIS?
YEA!
CB
SO THEN 'SNOWBIRD' SWITCHED TO 19 AND SHOUTED "MERCY SAKES FALCON... BACK 'EM DOWN TO FIVE FIVE OR FEED THE BEARS!"
3'S

THAT'S A BIG 10-4

Above the knob, my whip is gone.
Who took it, I can't say.
But to the bum who snitched it,
My wishes wend his way.

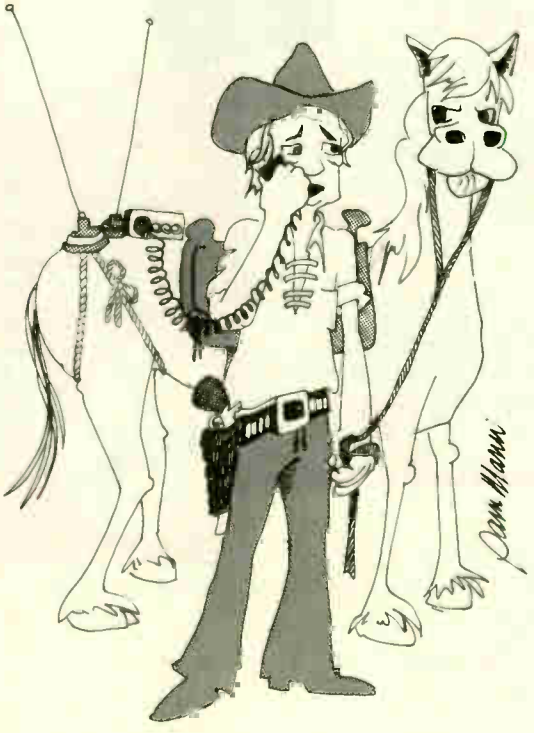
May you be the Smokey's target,
Good bear-bait every day.
Your ante from the things you steal
Will slowly shrink away.

May peanut butter fill your ears,
Cross channel wipe you out.
May you never get a copy
No matter how you shout.

May your every word be stepped on
When you mutter "Mercy sake."
And may you plead forever —
And never get a break!!!

Leta Fulmer
Amazonia, Missouri

"A girl? I was hoping for a boy to help me put up a base antenna"



". . . negatory, gonna have trouble with my mobile carrier, he's not too happy with the ears, mercy."

"Lady, when I said lay it over, I meant pull you car over to the side of the road."

4 GOOD NUMBERS FOR CBers

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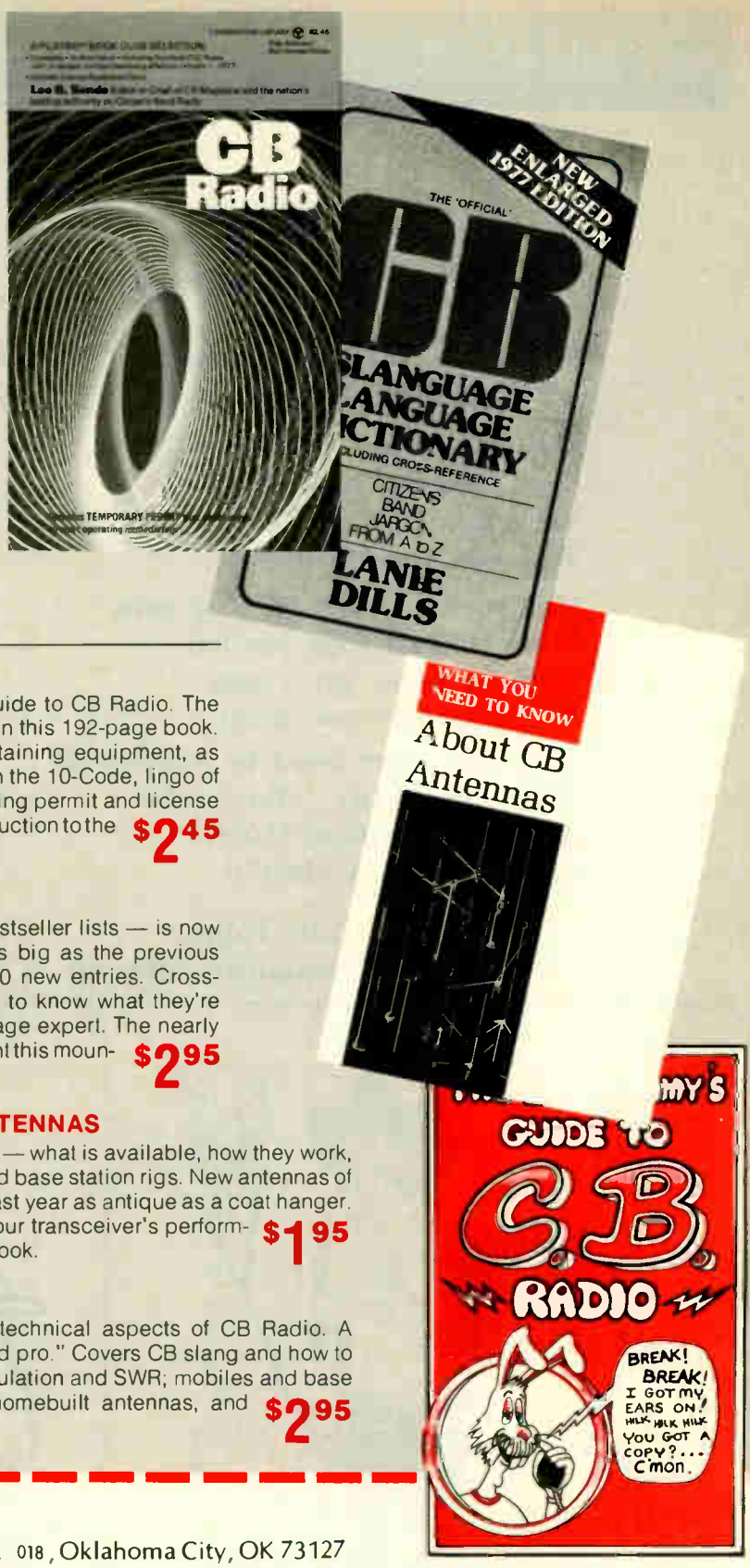
All the "How-to-do-its" from Buying to Jaw Jacking to Improving Rig Performance



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Spurious Radiation. What Causes It and How Is It Controlled?

By Leo G. Sands, KXB-5065

To minimize the interference-causing potential of CB transceivers, the FCC has established new technical standards for spurious emissions and spurious radiation from both CB transmitters and receivers. These new standards were to be met by all CB sets type-accepted after September 10, 1976.

A spurious signal is one that is not supposed to be there. When an AM transmitter is set to Channel 1, for example, it should emit and radiate only a carrier signal at 26.965 MHz when not modulated. When modulated by a voice signal containing frequencies up to 2500 Hz, it should emit and radiate the carrier plus two sidebands. The upper sideband should extend up to 26.9675 MHz, and the lower down to 26.9625 MHz. The band occupancy at the signal is 5 kHz (5000 Hz).

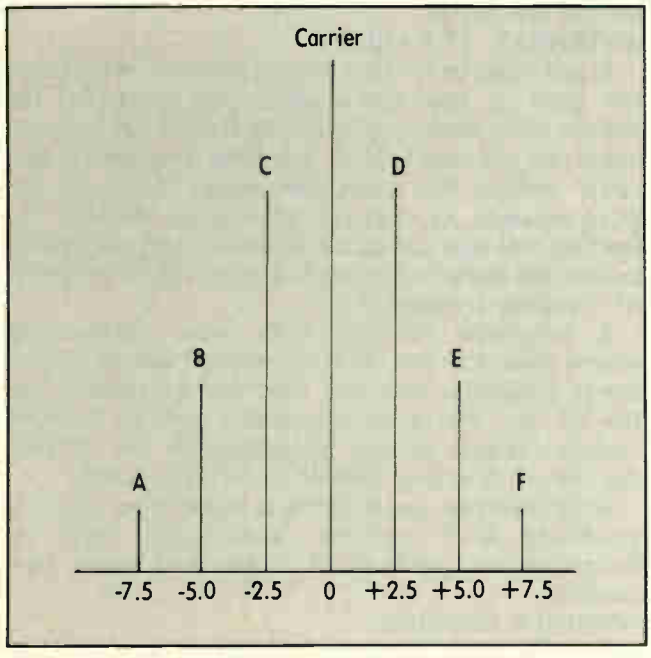

Figure 1. Band occupancy of a tone-modulated CB signal (not to scale in amplitude). C and D are the wanted sidebands that convey the intelligence. A, B, E and F are the unwanted sidebands that waste the available power.

That's the ideal condition. But, it is not attainable in this real world. When you modulate a 26.965 MHz signal with a 200-Hz test zone in a lab and observe the transmitter output signal with a spectrum analyzer, you should see the carrier and the upper sideband 2.5 kHz above the carrier and the lower sideband 2.5 kHz below the carrier. But, you will also see sidebands at ± 5 kHz and ± 7.5 kHz of the carrier as shown in Figure 1. (You might also see sidebands at ± 10 kHz of the carrier.)

SPLATTER

These unwanted sidebands are harmonics of the 2500-Hz modulating frequency. These harmonics are generated because of distortion in the modulator and modulated stage (final RF power amplifier). The amplitude of the unwanted sidebands must be kept low to prevent splatter on adjacent channels.

When a power mike is used improperly, with gain set too high, distortion is increased and the amplitude and number of unwanted sidebands are increased. Instead of increasing "talk power" where it is wanted — with ± 2.5 kHz of the carrier — some of the added power is wasted as interference-causing splatter.

The FCC requires new CB transmitters to contain a built-in modulation limiter that automatically prevents modulation from exceeding 100 percent. But, when the modulator is overdriven by an improperly adjusted power mike, distortion increases which in turn increases splatter.

HARMONICS

Under ideal conditions, a CB transmitter set to Channel 1 should emit only a 26.965 MHz carrier signal when not modulated. But, under practical conditions, it also emits harmonics (multiples) of 26.965 MHz. The second harmonic at 53.93 MHz can cause interference to reception of television Channel 2, and the third harmonic at 80.895 MHz can interfere with television Channel 5. The FCC requires that these harmonics be attenuated by at

[continued next page]

Spurious Radiation . . .

[continued]

least 60 dB (1 million times) below the carrier frequency power level. The FCC has proposed increasing the attenuation requirement to 100 dB (10 billion times).

These harmonics are generated by distortion in the RF amplifier circuits. They are attenuated by filters inserted between the transmitter output stage and the antenna connector.

OSCILLATOR RADIATION

A typical 23-channel CB set with a 14 crystal heterodyne-type frequency synthesizer has two oscillators. These generate two signals simultaneously when transmitting, one in the 10-MHz region and one in the 37-MHz region. (See Figure 2.) The outputs of the oscillators are fed to a mixer (frequency converter) that is tuned to be resonant over the 27-MHz band. The tuned circuits of the mixer and succeeding stages attenuate the 10-MHz and 37-MHz signals but not totally. In a 23- or 40-channel CB set using a PLL synthesizer, two oscillators also operate simultaneously when transmitting.

Since these unwanted signals, and their harmonics can get through to the antenna, the FCC tests all new sets submitted for type-acceptance for spurious emissions (at the antenna terminal) within the 25-1000 MHz range.

In the receive mode, at least one oscillator operates, but at a frequency not within the 27-MHz band. To determine that the receiver does not feed excessively strong spurious signals to the antenna connector, the FCC also measures the level of these signals. The level of receiver emissions must not exceed 2 nanowatts. The FCC has proposed a 0.2 nanowatt limit in the future.

CABINET RADIATION

Even if the works of a CB set are contained in a metal box, spurious signals can be radiated by or through the box, and by the power cable and external speaker and PA speaker cables which can act as antennas.

The transmitter is tested by connecting a non-radiating dummy load to the antenna terminal. The

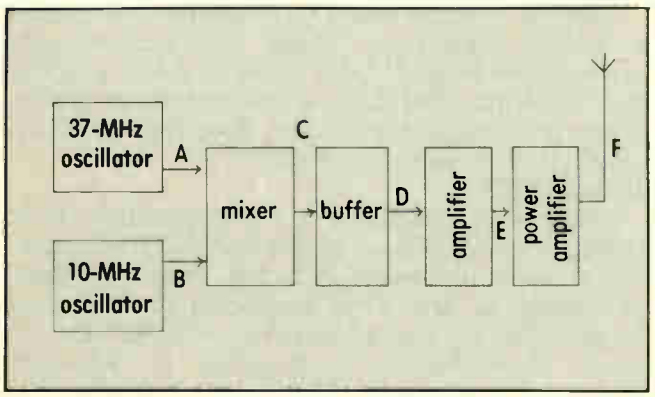

Figure 2. Simplified block diagram of a typical 23-channel CB transmitter. Signals A (37 MHz) and B (10 MHz) are fed to the mixer where the 27-MHz difference beat frequency is generated. Under ideal conditions, the signals at C, D, E and F should consist only of a 27-MHz signal.

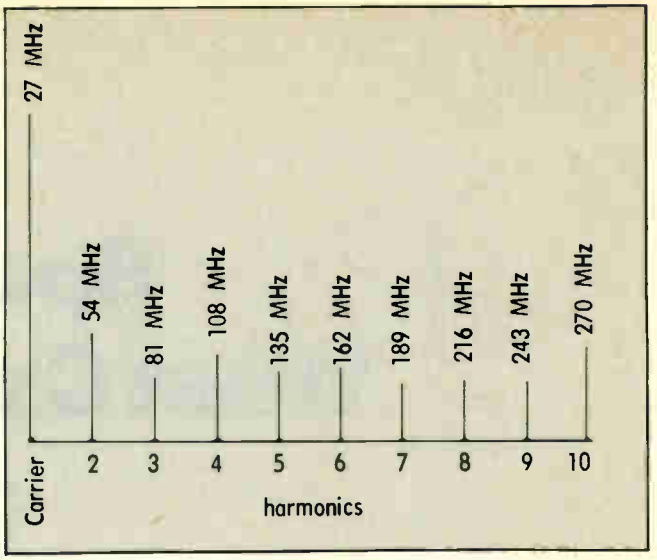

Figure 3. Relationship of 27-MHz carrier and its harmonics (not to scale in amplitude). The second harmonic can interfere with TV channel 2, the third with channel 5/6, the seventh with channel 9 and the eighth with channel 13.

level of radiated spurious signals is measured with a tunable field intensity meter (FIM), or spectrum analyzer connected to a pickup antenna. The measurements are made at a distance of 100 feet (or 30 meters). When measured at a shorter distance, the level of 100 feet is calculated.

Receiver radiation is also measured in the same manner, with and without accessory cables connected. Allowable cabinet radiation at a distance of 3 meters is 5 microvolts per meter.

The level of a radiated spurious signal can be increased by a strip of metal on a printed circuit board, for example, when it is resonant at a spurious frequency. In at least one case, it was found that spurious signals were radiated through the hole into which the S/RF meter was installed. The problem was cured by installing metal shielding behind the meter.

ANTENNAS AT FAULT

It has been found that some antennas accentuate the level of spurious signals. For example, the bottom whip section of a center-loaded CB antenna could be resonant at a spurious frequency and could radiate the unwanted signal. Although the total antenna is resonant at around 27-MHz, the loading coil can act as an RF choke and effectively isolate the lower whip section so it will be resonant at a higher frequency.

A television antenna. with loose connections where elements can be secured.can act as a harmonic generator and can feed the harmonics into the TV set. The poor connection acts as a diode rectifier which causes harmonics of the 27-MHz carrier or spurious signals to be generated.

A CB antenna, particularly a beam type, can also generate and radiate harmonics and intermodulation products if it has any loose connections.

SPURIOUS SOURCES

Any electronic device containing an oscillator can be a source of spurious signals. Early TV sets were

[continued on page 60]

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Spurious Radiation . . .

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notorious for their interference-causing potential. The super-regenerative detector used in most Part 15 (low power, unlicensed) walkie-talkies generates hash that can interfere with CB communications.

A CB transceiver contains two or more oscillators, each of which generates a wanted signal, and which, by themselves or in combination with other circuits, also generate unwanted signals. Harmonics of the wanted signals, intermodulation products of two or more signals, and their harmonics, can be radiated and cause interference to communications and broadcast reception. When the wanted oscillator signals are not within the 27-MHz band, they can be considered as spurious signals if radiated.

DON'T BELIEVE RUMORS

Rumors being circulated about 40-channel CB sets are simply not true. It is not true that the new sets put out only 2.5 watts because of the inclusion of filters to minimize spurious emissions. If type-accepted at 4 watts, a set had better put out close to 4 watts to pass the tests. Nor is it true that the new sets have lower modulation capability because of the inclusion of a modulation limiter. Modulation in excess of 100 percent doesn't improve your signal. It causes splatter. While the new FCC technical standards may actually sound too strict, adherence by CB manufacturers ensures the user getting a better product. CB

CB AND LAW

Antennas and the Law

Local ordinances and CC &R's (Convenants, Conditions and Restrictions) are taking an increasing toll of both CB and Amateur antenna installations.

At the recent Personal Communications Foundation seminar in "Personal Communications and the Law" in Los Angeles, Kenneth Widelitz, president of PCF, pointed out that, except for the FCC, the law sees no differences between a CB antenna and a ham antenna. A legal precedent established in an antenna case against a CBer will affect a ham living in the same jurisdiction and vice versa. That is because of the legal doctrine of Stare Decisis which requires courts to follow prior analogous decisions of higher courts in the same jurisdiction. Widelitz called for CBers and hams to cooperate in fighting restrictive zoning laws and other personal communications legal battles.

Jon Gallo's paper on "Legal Implications in the Erection of an Antenna and Tower" discussed the various types of land use restrictions which regulate the personal communications user's right to erect antenna systems at his home. Gallo mentioned that there are three types of restrictions; local zoning ordinances and building codes passed by local government and private deed restrictions, often referred to as covenants, conditions and restrictions (CC&Rs), usually created by real estate developers or homeowners' associations. Gallo indicated that CC&Rs can be more restrictive than zoning ordinances because the due process requirements of the 14th Amendment to the Constitution do not apply to such private contractual types of agreements.

Gallo, in enumerating the issues involved in determining the legality of a zoning ordinance, mentioned the First Amendment rights of freedom of speech, the extent to which the Federal government has preempted the field via the Communications Act of 1934 and the role which aesthetics may play in regulating antenna height.

Carl Markov who spoke on "TVI/RFI and Nuisance," stated that such interference has been construed to be a nuisance under codes which define nuisance as "Anything which . . . interferes with the comfortable enjoyment of life or property . . ." That is true notwithstanding the fact that the problem is usually caused by the inadequate shielding of the complaining parties' radio or TV. Markov explained how neighbors of hams and CBers use the legal process to obtain injunctions prohibiting the ham or CBer from operating. The audience was outraged to hear that such injunctions can be obtained with no prior notice whatsoever to the personal communications user.

Fred Lawson cited actual case histories of antenna zoning and TVI/RFI matters on which he had worked. He mentioned the plight of the Arizona CBer who had a $48,000 judgment entered against him in a TVI case, which judgment forced the CBer into bankruptcy. He discussed at length the criminal misdemeanor case of City of Cerritos, California vs. Schroeder, in which a ham is being prosecuted for violation of a zoning ordinance. In that case, now before the California Court of Appeals, a PCF special study on the issue of Federal preemption was used for the first time. Lawson was hopeful that a favorable precedent would eventually be handed down by the California Supreme Court.

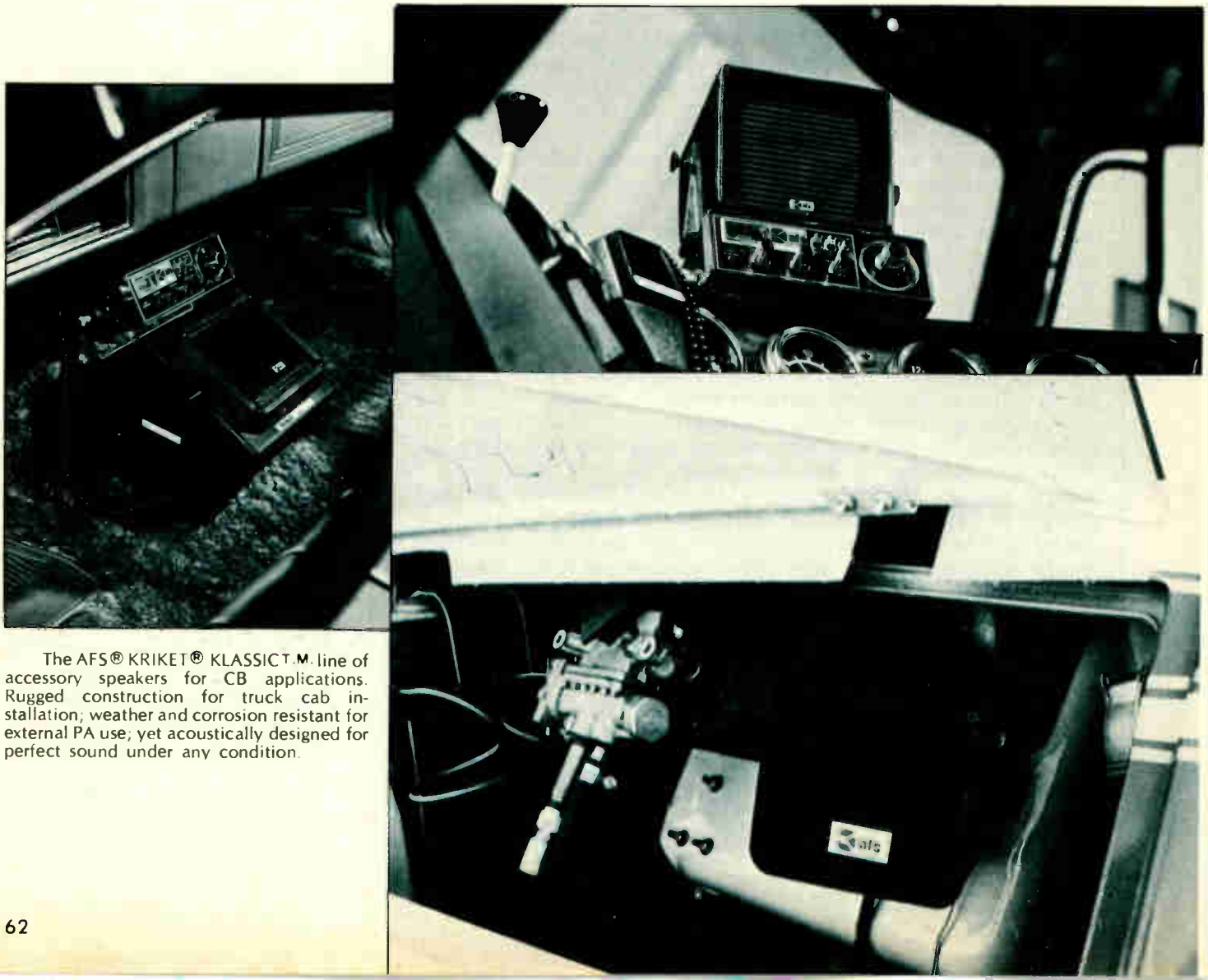
KRIKET® Speakers Make Terrific Christmas Gifts!

As usual when Christmas time rolls around there will be those special friends who seem to have everything. But, do they have the best of everything?

In terms of their CB operation, probably not without some kind of external speaker. An external speaker, quite simply, is one accessory you can add to any CB to improve the user's enjoyment.

The reason is simple. Look at the average CB set — and there are more than 25 million in use today. Only about 5 million have external speakers. The speaker in the CB is small, about the size of a half dollar. And, it's pointed down ito the floorboard, or up under the dashboard.

In speakers, bigger usually is



The AFS® KRIKET® KLASSICT.M. line of accessory speakers for CB applications. Rugged construction for truck cab installation; weather and corrosion resistant for external PA use; yet acoustically designed for perfect sound under any condition.

better, and the sound quality coming from that small speaker in the CB is simply of much poorer quality than that delivered by a 3" to 5" speaker, the kind used in most external speaker configurations.

Secondly, it's a well known principle of physics that sound waves are heard best when radiated directly to the listener. Aim a speaker into the floorboard, and the sound must reflect off the floor and up to the listener. Soft surfaces such as carpeting, absorb high frequencies making them extremely hard to hear.

Another principle of sound physics is that you can't discern intelligible speech from just plain noise unless you hear the consonant sounds. These are in the 1000 Hz to 5000 Hz band — or high frequency end of the human speech spectrum. And boy, do those high frequency sounds take a beating in the cab of a truck or interior of a car, van or recreational vehicle.

So, a great deal of intelligible speech can be heard significantly better, if an external speaker is properly mounted and aimed directly at the listener. Acoustic Fiber Sound Systems, Inc. (AFS) makes an extremely broad line of external speakers. What's more, about one out of every two external speakers purchased across the country is reported to be an AFS®/KRIKET® speaker.

Back in 1975, when the CB boom began, AFS engineers researched the interiors of a variety of vehicles and created first the Model 3035, designed to mount anywhere in the inside of the passenger compartment. It's bracket permits 180-degree rotation, meaning no matter where it is mounted, it can be aimed directly at the listener.

The second application created was in connection with base station use, where a quality 5-inch speaker was housed in an attractive case. The Model 3055 speaker's acoustic design filters out a great deal of the static caused by too many non-synchronous simultaneous transmissions on the same voice frequency, thus creating a substantial hearing improvement for the big business user, to the most discriminating hobbyist.

People who jobs take them into the back country and away from their vehicles have found an external speaker particularly helpful, like the AFS®/KRIKET® Model 3045. Weatherproof and salt-water proof, this speaker is as at home on an all-terrain vehicle as an ocean-going yacht. It permits monitoring your CB while away from it; it also makes an excellent hailer on a boat.

An attractive complement to the in-dash CB/AM-FM radio units becoming more and more popular today is the flush mount, Model 3065 speaker. It works particularly well in vans and recreational vehicles.

Said to be the most popular CB external speaker on the market today, the AFS®/KRIKET® KAMEL® hump mount speaker, Model 3085, is designed particularly for the person who spends a lot of time in the car, yet must leave it frequently to make calls. The CB mounts on the KAMEL® speaker, and the speaker fits snugly on the transmission hump. To remove it, simply unplug power and antenna leads, pick up the speaker, CB and all, and place it in your trunk, for maximum security. It's so easy, you'll do it! Or, that special person you plan to give it to this Christmas will do it.

Another thing people like awfully well about the KAMEL® hump mount speaker is the way the CB rests on it, facing the driver at a 45-degree angle, with the speaker knobs easy to reach, and the dials easy to see. This makes for much safer, more convenient CB operation while driving. And, the KAMEL® hump mount speaker gives your car interior that highly sophisticated console look that most people find extraordinarily satisfying.

AFS concentrates on making speakers. Accordingly, isn't it logical that theirs would achieve excellence in acoustic design and quality? You better believe it.

And, so while it is true that that special person on your Christmas list may indeed have speakers in his car, truck or van, you can be assured of giving an important gift that will be much appreciated in replacement of existing equipment, when you present a KRIKET® speaker. KRIKET® speakers are quality built to stand the test of time. A product of Acoustic Fiber Sound Systems, Inc., P. O. Box 50829, Indianapolis, IN 46250.

Clipping and Compression of Audio Signals In Your CB Radio

Audio processing to increase the power contained in the sidebands of an AM signal – improves intelligibility under poor signal conditions.

By Theodore J. Cohen, KFD-2459

With an ever increasing number of communicators now operating on the citizens band, it is becoming more and more difficult, on some channels, to communicate effectively. In some cases, the cacophony of heterodynes and voices makes copy all but impossible except for the few stations which may be located near you. It should come as no surprise, therefore, that to improve their capability to override such interference, many CBers now legally employ various techniques to boost their "talk power," or in effect, to give their audio more "punch." These techniques can be lumped under the general heading of "audio processing." More specifically, audio processing can be used to increase the power contained in the sidebands of an AM signal — where the audio signal resides — and hence, to improve intelligibility under poor signal conditions.

Basically, two audio processing methods are employed to increase a signal's "talk power": clipping and compression. Let's examine these methods in more detail. First, however, a few observations are in order regarding the characteristics of the human voice.

CHARACTERISTICS OF THE HUMAN VOICE

The human voice generally lies in the band of frequencies from 300 to 3000 Hz. While most of the information is conveyed at frequencies in the middle and upper portions of a given person's speech band, signals at the lower voice frequencies are more powerful. Thus, waveforms of the human voice show low-frequency peaks of short duration which are significantly higher in amplitude than is the average level of the signal. In fact, the average power in the human voice represents only about 25% of the power contained in voice peaks. This necessarily limits the percentage of modulation which can be employed in a transmitter to a relatively low value; any attempt to raise the modulation percentage for unaltered voice signals (as, for example, by yelling into the microphone) will cause the peaks in the audio signal to be "clipped" off. This will not only make the signal less intelligible, but it will also produce splatter in adjacent channels.

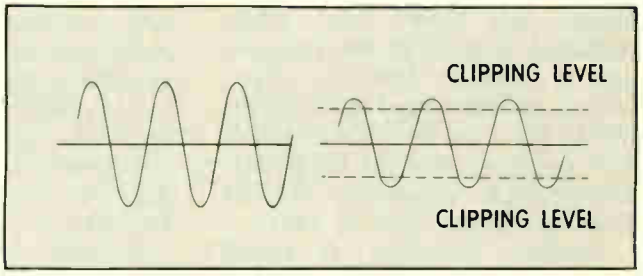


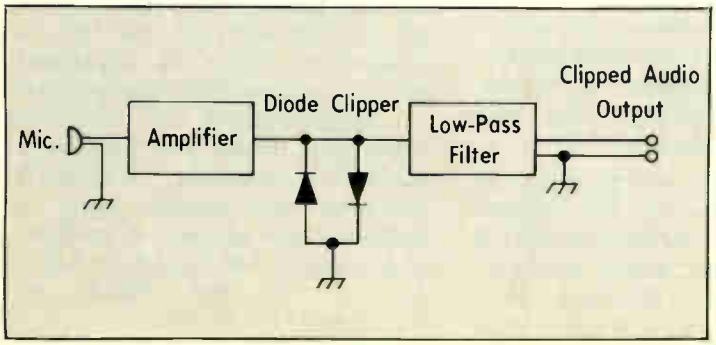
Figure 2. Unaltered and Clipped Waveforms

It seems obvious, then, that if the percentage of modulation is to be increased, something must be done to the speech waveform such that the ratio of average-to-peak power is increased. One way in which this can be accomplished is through the use of speech clippers.

CLIPPERS

Speech clipping is probably the simplest form of audio processing which can be employed to give a worthwhile improvement in the modulation percentage. To understand how this technique works, consider the block diagram shown in Figure 1. Here, the speech signal produced by the microphone is first amplified, and is clipped by a pair of diodes (see: Solid State Devices and How They Work . . . The Diode, **CB MAGAZINE**, October 1977) connected as shown. These diodes, which conduct at voltages in the range from 0.5 to 0.7 volt, clip the positive and negative peaks in the voice waveform. Put another way, if the signal being processed in a sinewave (which would result if the audio input

Figure 1. Block Diagram of a Speech Clipper



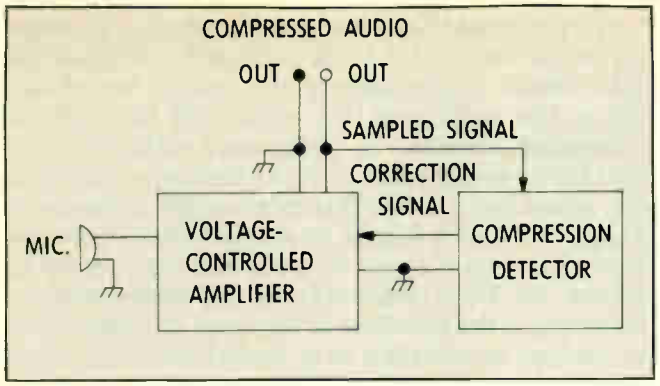


Figure 3. Block Diagram of an Audio Compressor

signal consisted of a pure tone; see Figure 2A), the clipped signal would resemble a square wave (see Figure 2B).

From this example, one can readily see that a clipped signal has a higher ratio of average power to peak power. Unfortunately, because of the way in which the waveform has been modified, the clipped signal also has a high level of spurious distortion products which can cause splatter. Some of these distortion products can be filtered from the processed audio signal using resistance-capacitance (RC) low pass filters which have high attenuation at frequencies greater than about 3000 Hz. However, most of the distortion products are harmonics of the lower, more powerful audio frequencies, and so, they fall in the desired transmission band of the audio signal. This being the case, clipped audio signals are often characterized by their having a "mushy" sound.

Since clipping has been shown to be a less-than-satisfactory method for increasing the ratio of average-to-peak power in an audio signal, we are led to try another method. In particular, compression is found to yield a lower level of distortion products while still providing a most acceptable improvement in the average-to-peak power ratio.

COMPRESSION

As you might imagine from the name, speech or volume compressors, as they are sometimes called, alter an audio signal by compressing the waveform peaks. That is, low amplitude signals pass through the system with slight attenuation, while high amplitude signals are reduced in proportion to the strength of these signals. In this way, the average-to-peak ratio of the audio signal is increased while distortion products, which are so evident in the case of a clipped signal, are minimized.

Figure 3 is a block diagram of a simple speech compressor. As seen, this device consists of two major sections: a voltage-controlled amplifier and a compression detector. In operation, the compression detector samples the output of the voltage-controlled amplifier. For low amplitude signals, the compressor acts as a linear amplifier. However, as the output signal increases in strength beyond a specified threshold level, a correction signal, which is generated in the compression detector, is fed back to the amplifier.

[continued next page]

Clipping and Compressing . . .

[continued from page 65]

This correction signal reduces the gain of the amplifier, and hence, the strength of the output signal. In this way, peaks in the waveform of the audio output signal are reduced. The results of threshold compression can be seen in Figure 4. Here, the peaks in the audio waveform have been gently "rolled off," and as such, the altered signal contains fewer distortion products than would a clipped signal. Some distortion products are present, however, and as such, this compressor would have to be used with a low-pass filter in order to reduce further any high frequency (<3000 Hz) components in the waveform. Even so, some splatter would still be observed with a threshold compressor.

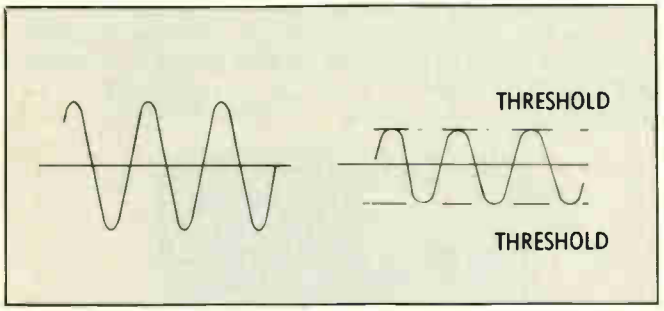


Figure 4 Unaltered and Compressed Waveforms

"Oh, Oh. Wall to wall bears."

A more preferred technique for altering an audio signal before it is fed to the transmitter involves the logarithmic compression of the speech waveform. Using this technique, the output of the voltage-controlled amplifier is continually changed such that signal compression is logarithmically related to the signal input level. This relationship is shown in Figure 5A, and it results in a relationship between input and output signal levels of the type shown in Figure 5B. More important to the communicator, however, is the fact that in the case of a sinewave, the output waveform is very similar in shape to the input waveform. This demonstrates that the logarithmic compressor does indeed exhibit low characteristics. As for complex voice signals, a properly-adjusted logarithmic speech compressor can significantly reduce waveform peaks, and when used with a low-pass filter, can best minimize the distortion products which produce splatter and adjacent channel interference.

SUMMARY

In this article we have reviewed two types of devices which can be used to increase the average-to-peak power ratio of an audio waveform: clippers and compressors. It was shown that speech clippers generate spurious products which, despite the use

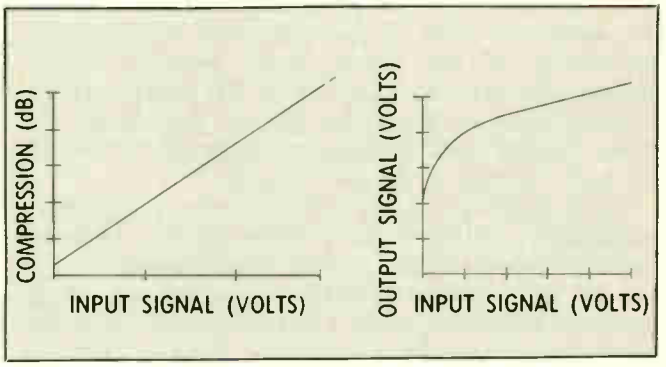
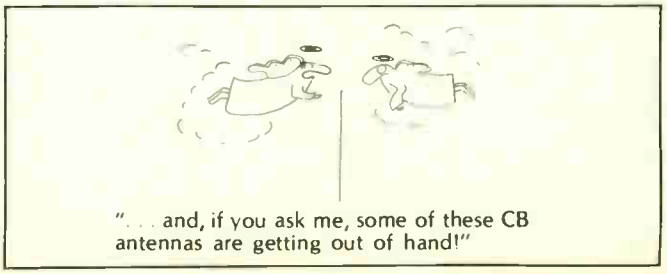


Figure 5. Characteristics of a Logarithmic Speech Compressor

of low-pass filters, produce splatter and adjacent channel interference. While some improvement can be had through the use of threshold-type speech compressors, a better method for processing audio signals involves the use of a properly adjusted, logarithmic speech compressor. Through the use of such a device, the improvement gained in the average-to-peak power ratio is more than sufficient to permit effective communications under low signal-to-noise and low signal-to-interference conditions . . . and to do so with a minimum of splatter and adjacent channel interference. CB



". . . and, if you ask me, some of these CB antennas are getting out of hand!"

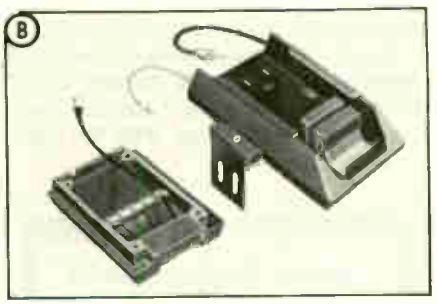
SPECIAL NOTICE

Some of the CB products described in CB Scope, in product reports, in articles or advertisements, may not be offered for sale or lease, or sold or leased until FCC approval has been granted. Publication of information on these products may sometimes occur, however, before grant of FCC approval.

BASE ANTENNA (A)

The Hustler "Super Swamper" Model 27-TD delivers up to 25% greater range than comparable outdoor base antennas, according to the manufacturer. The new antenna is designed for extra-long-distance two-way base communication on 23 or 40 channel CB, AM or SSB. Power gain is greater than 4.25 dB compared to a 1/4 wave ground plane. The 0.64 wavelength plus full size, 1/4 wave radials puts the majority of the signal out where the CBer wants it at a low angle toward the horizon, not up toward the sky. A sealed RF power step-up transformer, DC grounded for lightning protection and static drain off, provides peak performance. SWR of the "Super Swamper" is 1.15:1 at resonance and 1.5:1, or better, over the entire 40-channel citizens band.

Height of the radiating element of the Swamper is 22-3/4 feet and the three 1/4 wave radials measure 108 inches each. The antenna is constructed from heavy duty weatherproof materials to assure problem-free outdoor antenna installations. The antenna is designed for quick and easy assembly and installation. It mounts to a vertical support up to 1-3/4" OD. For more information, write **New-Tronics Corporation**, Marketing Department, 15800 Commerce Park Drive, Brookpark, OH 44142 or use **SPEDE No. 018-1**.



SLIDE MOUNT (B)

Super Slide is a slide mount for mobile CB rigs. Crafted in tough black plastic, the Super Slide looks attractive whether the radio is in or out. There are no exposed contacts. It has a fully shielded antenna connector. The power and speaker circuits use high quality pin-and-socket connectors. Laboratory test reports state that no detectable increase in SWR is caused by the Super Slide's coaxial antenna connector. All contacts are protected against damage, corrosion and shorting. Since connector bodies are molded in one piece with the slide — not riveted on — alignment is perfect and permanent. Pins and sockets are arranged so no power reaches the radio until all other contacts are fully engaged, thus eliminating the problem of final stage burn outs. No adapter brackets are needed. There is a phone plug to the extension speaker jack and a PL-259 connector to the antenna output. Power and ground connect to screw terminals — no splicing or crimp connectors. Battery and ground leads, as well as extension speaker, (if used), are connected to screw terminals in an enclosed junction box. For further information, write **Gamber-Johnson Inc.**, 801 Francis St., Stevens Point, WI 54481, or use **SPEDE No. 018-2**.

CO-PHASED ANTENNA SYSTEM (C)

Designed especially for trucks, motor homes and other recreational vehicles, and to work on all 40 channels, the Avanti AV-529 CB antenna system consists of two 4-ft. fiberglass Avanti Racer antennas in co-phased arrangement, and mounted to outside rear view mirrors. According to the manufacturer, this arrangement increases performance approximately 25% over a single roof-mounted antenna, and minimizes the problem of a skewed or shifted radiation pattern. The mounting assembly fits most mirror bracket arrangements including west coast types. It is readily removable for easy transfer to another vehicle if desired. The co-phasing harness, completely factory tested, connects quickly and easily to the mirror mounts. For more information, write **Avanti Research & Development, Inc.**, 340 Stewart Avenue, Addison, IL 60101, or use **SPEDE No. 018-3.**

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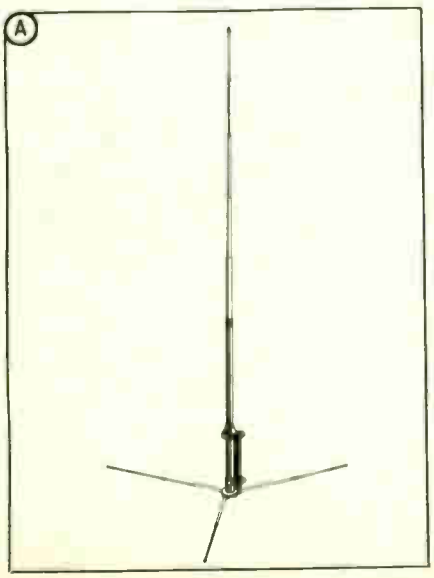

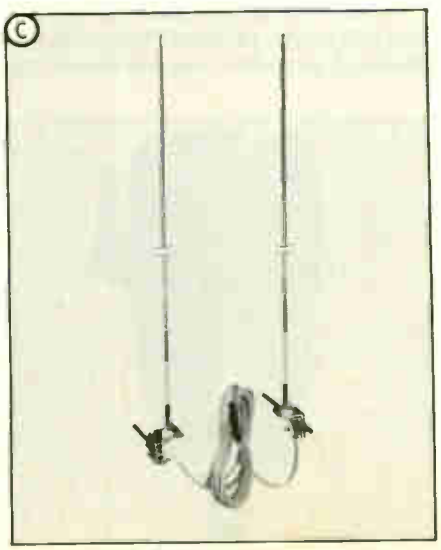

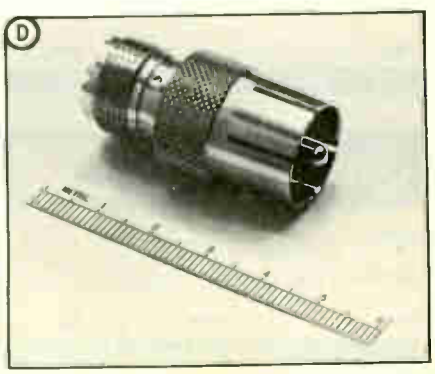

MORE INFO?

Want more information on these CB SCOPE items? Use the SPEDE COUPONS below - one Spede Number per coupon, and mail the coupons to CB MAGAZINE READER SERVICE, 531 NORTH ANN ARBOR, OKLAHOMA CITY, OK 73127, within 60 days of the publication date of this issue of CB Magazine. Your complete mailing address must appear on each SPEDE COUPON, which will serve as address label to mail you literature! For information regarding any of our advertisers please write them directly, and tell them you saw their ad in CB Magazine, giving issue and page number.

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CB Scope (cont'd)

"UHF" TYPE CABLE JACK (D)

A universal "push-on adapter" that converts any PL-259 type coaxial antenna plug to a quick-disconnect connector to aid in preventing theft of mobile transceivers is available from Amphenol. The 83-5SPA UHF Push-On Adapter requires no change to either the transceiver or existing PL-259 connector. To use, the PL-259 is simply threaded onto the adapter, and the adapter is then ready to be slipped on and off the rig's SO-239 receptacle.

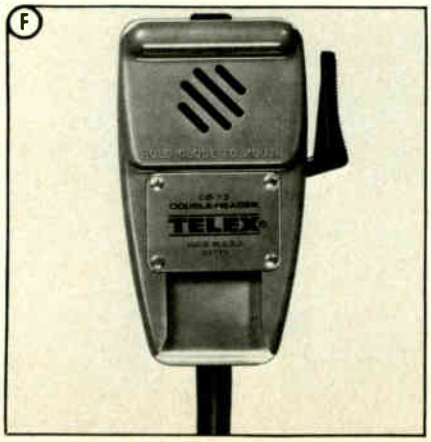
For more information, write RF Operations, **Amphenol North America Division**, Bunker Ramo Corporation, 33 East Franklin Street, Danbury, CT 06810, or use **SPEDE No. 018-4.**

(E)

NOISE FILTER (E)

An illustrated product sheet on the new CBFT315D ignition coil/point filter details the problem of transceiver noise interference, the functioning of the filter, the filter ratings, and installation features (it fits both domestic and imported vehicles). For more information, write, Douglas W. Graham, **Cornell-Dubilier Electronics**, 150 Avenue L, Newark, NJ 07101, or use **SPEDE No. 018-5.**

(F)



POWER MIKE (F)

The CB-73 Double-Header, a hand mike, has a built-in battery-powered IC amplifier with variable gain control. The user can "tune" the mike to his CB radio for optimum talk-power at normal speech and avoid distorted transmissions and overmodulation. The special feature is selectable noise cancellation. Properly used, a noise cancelling microphone favors the voice making clear transmissions possible even in a moving vehicle where wind, traffic, road and engine noise affect transmission quality. To take full advantage of noise cancellation, it is necessary to talk directly into the mike opening with the mike very close to the lips. But the Telex CB-73 can also be used as a standard power mike at some distance from the mouth. A switch at the top of the mike lets the user instantly select the desired transmission mode. The front name plate of the CB-73 also serves as a hanger bracket so the user can pick up and key the mike for transmission in one easy, natural hand motion and avoid fumbling or juggling the mike while driving. A conventional rear bracket is also provided. For more information, write **Telex**, 9600 Aldrich Avenue, So., Minneapolis, MN 55420, or use **SPEDE No. 018-6.**

(G)

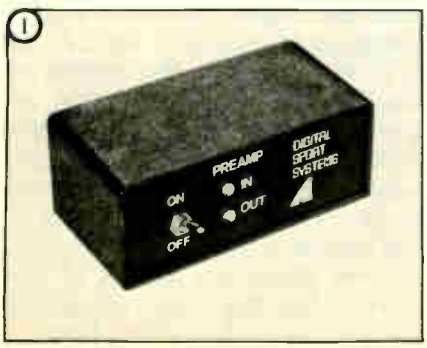
PORTABLE POWER PACK (G)

A new power pack turns mobile CBs into completely portable CBs. The CBC power pack operates on a solid electrolyte battery which is rechargeable and requires no other maintenance. Power pack includes an auto DC charger, 12 volt battery pack and a portable antenna input. Entire battery pack weighs 6

pounds, and provides a wide shoulder strap for carrying. Pack operates on battery pack for up to 8 hours before recharging; used in an auto, it may be operated on a gutter or magnetic mount antenna which is removed when the car is unattended. May also be operated as a base station with an AC adapter/charger and ground plane antenna. Basic price of the power pack includes rechargeable battery pack with shoulder strap and required connections. AC adapter/charger and break-apart portable antenna are optional. For more information, write **SKS Enterprises**, 11207 Bos Street, Cerrito, CA 90701 or use **SPEDE No. 018-7.**

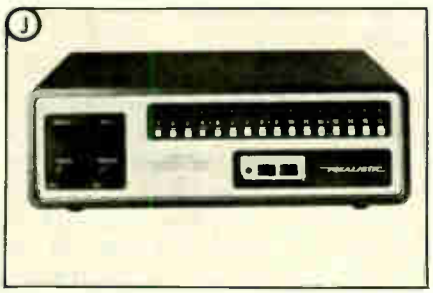
POWER SUPPLY (H)

A 13.6 volt DC power supply, the CPI Model PS-5 is capable of handling the requirement of both 23- and 40-channel AM and SSB units. Rated at 5 amps continuous, it is said to deliver its full 13.6 volts under all conditions. The Model PS-5 features short circuit protection, heavy gauge aluminum case and a full, one-year warranty. For more information, write **Communications Power, Inc.**, 2407 Charleston Road, Mountain View, CA 94043, or use **SPEDE No. 018-8.**



PREAMPLIFIER (I)

The Model 3000 RF-Preamplifier is designed to bring in far away signals while allowing only 1.5 dB noise gain. It features positive or negative ground, 2-MHz bandwidth and dual MOSFET design, as well as DC polarity protection. For more information, write **Digital Sport Systems**, P. O. Box 337, West Liberty, IA 52776, or use **SPEDE No. 018-9.**



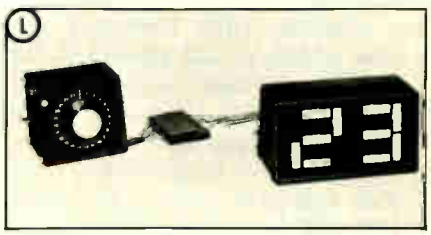
PROGRAMMABLE SCANNER (J)

There are no extra crystals to buy with Radio Shack's new five-band, 16-channel programmable scanning monitor receiver. The Realistic COMP-100 programmable Memory Scanning Receiver provides access to over 20,000 frequencies used by GMRS, police, fire and emergency services, utilities, business, weather radiotelephone and other communications users. Two keys — PROGRAM and ENTER, control the programming function. In the program mode, the 16 LED channel indicators and lockout buttons let you change or check stored frequencies. A code book is included with the scanner that shows how to program in the desired frequencies. Coverage includes: VHF-Lo (30-40 MHz), VHF-Hi 30-40 MHz), VHF-Hi (150-172 MHz), UHF-Lo (450-470 MHz), UHF-Mid (470-490 MHz) and UHF-Hi (490-512 MHz). The receiver, complete with code book, mobile mounting bracket and power cables for 120 VAC and 12 VDC negative ground, is available from any Radio Shack Store, nationwide. For more information, write c/o H.L. Siegel, **Radio Shack**, 2617 West Seventh Street, Ft. Worth, TX 76107.

CB TEST METER (K)

Mura Model CBM-30 CB meter, a twin meter unit, has separate power and SWR scales permitting the CBer to simultaneously monitor RF output power and SWR. The meters

are sensitive d'Arsonval types. The SWR scale has a range extending from 1:1 to 10:1. The CBM-30 can be permanently installed between the cable and the input to the transceiver with minimum insertion loss. By having a permanent installation, the CBer can constantly monitor power and SWR to make sure that the transceiver/antenna combination always supply optimum RF power output. Since the CBM-30 is equipped with rubber feet, it can also be used for bench testing. No switching is required and both meter pointers are controlled by a continuously variable knob on the front panel. Calibration marks permit the user to return to any previously determined setting. For more information, write Edwin Weisel Jr., vice-president sales, **Mura Corporation**, Westbury, NY 11590, or use **SPEDE No. 018-11.**



CB BILLBOARD (L)

A new CB accessory features a digital display for 23 CB channel numbers. The CB "Billboard" channel advertiser will indicate the selected channel in bright 2" tall, digital-type numerals — highly visible day or night. By "advertising" the channel being monitored in this way, the mobile CB operator invites contact by other CB users on the road. It is especially practical where regular channels of contact are overcrowded. The "Billboard" package comes complete with digital display box, flat-lying cable, connector, control box, mounting brackets, mounting hardware, and installation instructions. The digital display mounts easily in the back window or any readily visible location. The control box, installed next to the CB radio, turns the "Billboard" on or off and selects the channel number to be displayed. For more information, write **Controls/inc.**, P.O. Box 522, Consumer Sales, Dept. 17, Logansport, IN 46947, or use **SPEDE No. 018-12.** CB

The Pizza Pan Antenna

Here is a do-it-yourself project that will result in better monitoring of the UHF bands – including GMRS.

By Ray Newhall, KWI-6010

A few months ago one of **CB MAGAZINE's** readers inquired how he could construct a good general-purpose scanner antenna. This article describes one which I have used successfully for several months. Because of its small size and sturdy construction it is suitable for mounting nearly anywhere, even ten feet above the topmost branches of your favorite tree.

Actually, I happened on it quite by accident while searching for an efficient UHF receiving antenna which would attenuate the LO/VHF signals which were overloading my scanner's front end and causing severe imaging on the UHF/FM band. At the time, I was trying to monitor the eight GMRS (Class A CB) frequencies in my area in preparation for filing a GMRS license application. For monitoring UHF, and for that matter the HI/VHF band, it is essential that you raise the receiving antenna as high as possible above the surrounding terrain and foliage. I needed a small, light antenna which I could readily mount above the tops of the trees. I concluded that the smallest antenna and the easiest antenna to construct would be a ground plane mounted atop a 20-foot pipe section.

By applying the half-wavelength formula, modified to match a 75-ohm antenna lead-in, it was evident that a three-quarter wavelength ground plane would serve the purpose nicely:

1/4 wavelength in inches =

$$\frac{5905}{f\ (MHz)} \times C$$

where C is a factor to adjust the impedence match to a 75 ohm line. The value of C is 0.6 for this case.

It works out that the length of a three-quarter wavelength radiator for 462 MHz should be about 23 inches in length. A solid metal disk from 12 to 15 inches in diameter would be sufficient to provide a ground plane at its base. Another calculation assured me that the same 23-inch vertical radiator would serve as a quarter-wave ground plane for the HI/VHF frequencies. It would resonate at about 156 MHz, which lies just below the VHF/FM Marine frequencies, which I also monitor.

"For monitoring UHF, it is essential that you raise the receiving antenna as high as possible above surrounding terrain and foliage."

You will note in the above formula that the antenna is matched to a 75-ohm line. This impedance was selected so that RG-59/U could be used as a feed line to keep antenna cost as low as possible and minimize line-loss. RG-8/U would keep the loss down to about 4.5 dB but would be more expensive. The less expensive 50-ohm coaxial cable, RG-58/U would yield a loss of about 12 dB. The RG-59 (75-ohm) cable yields a loss of about 7.5 dB per 100 feet at 460 MHz. This was of some concern because I needed at least 100 feet to reach from the treetop to my living room.

Another important consideration in selection of coax is its quality. Some cable which provides excellent results at VHF frequencies does not work too well in the UHF region. Examine the braid before you buy. Select coax which has a dense covering of braid with wires packed closely together to provide maximum shielding. UHF frequencies tend to leave the conductor and are lost into space. Lower losses are experienced when they can be contained within the shield. UHF coax connectors should be used. I selected 1-inch pipe as a supporting mast because a PL-259 coax connector will slip inside of it (any larger pipe would be too heavy).

CONSTRUCTION

The PL-259 UHF plug should be installed initially on one end of the RG-59 cable and tested with a multimeter to be sure there are no shorts or open circuits in the cable. A CH-239 UHF chassis connector should be used to mate with the PL-259. The initial step of assembly is to attach the 24" by 1/8" brass rod to the tongue of the CH-239 female connector, on the **opposite end** from the threads. You may find it convenient to file one end of the rod so that it slips into the recess of the tongue. You should also clean and tin about two inches of the rod on the filed end. Wipe off most of the solder, leaving only a

thin tinning layer on the rod. Now slip a 1-1/2" sleeve of 1/8" copper tubing over the rod, flush with the tinned end. Sweatsolder the tubing to the rod. Then, heating only the lower end, push the rod and the sleeving firmly onto the tongue of the CH-239. You may wish to make a simple jig to help you line up the rod with the connector so that the rod will stand vertically when the antenna is assembled. Be careful to heat the rod sufficiently to allow solder to flow into the tongue, but not enough to burn the coaxial insulator. This step is the most critical one you'll encounter. If you mess it up (you won't), use another connector and do it properly.

I reinforced the physical strength of my antenna by slipping 5/8" plastic tubing over the rod and the connector and pouring in about 1" of epoxy encapsulating compound around the base of the rod. This also serves to weatherproof the insulation on the connector. After the epoxy has hardened you can trim off the excess tubing for appearance and to prevent water from collecting. Now measure 23" from the edge of the shoulder on the connector nearest the threads along the rod and cut it off at this point. You should install the static ball at this end of the rod, and it may be necessary to trim off another bit of the rod to make the overall length 23 inches. If you have the equipment, you may cut threads on the rod and the static ball, and screw them together. Otherwise, you may wish to drill the static ball to fit snugly over the end of the rod and sweat-solder them. Once this is done you can set this assembly aside.

The metal disk for the ground plane can be made of copper, aluminum, steel, or any other metal which is rigid enough to withstand heavy winds. Cold-rolled copper or aluminum is best. I used a large aluminum pizza pan and cut the largest circle I could get out of the material! It should be at least 12 inches in diameter, but probably not more than 18" in diameter because it would offer too much wind resistance and be heavier. My disk is 15" across. I cut it out with household shears, drilled a center hole and rigged it on a drill arbor. I was able to rotate it on a drill press to file it round. I then punched a 5/8" hole in the center, sizing it to accept the threaded end of the CH-239. The

"... the length of a three-quarter wavelength radiator for 462 MHz should be about 23 inches."

next step was to mount a 1" pipe flange on one side, **carefully centered** on the 5/8" hole. The tolerance here is quite close because when the antenna is assembled and a PL-259 mated to the CH-239, the whole unit must fit inside a 1" pipe when screwed into the pipe flange.

Final assembly of the antenna consists of slipping the CH-239 connector into the hole in the disk by inserting the threaded end from the side away from the flange, and fastening it securely in place with the retaining nut which came with the CH-239. The PL-259 may also be connected securely at this point, with the cable coiled and tied.

The antenna is now completed except for protection from the weather. It should be thoroughly cleaned to remove all grease, primed and painted. You might want to take it to your local body shop to have it sprayed and

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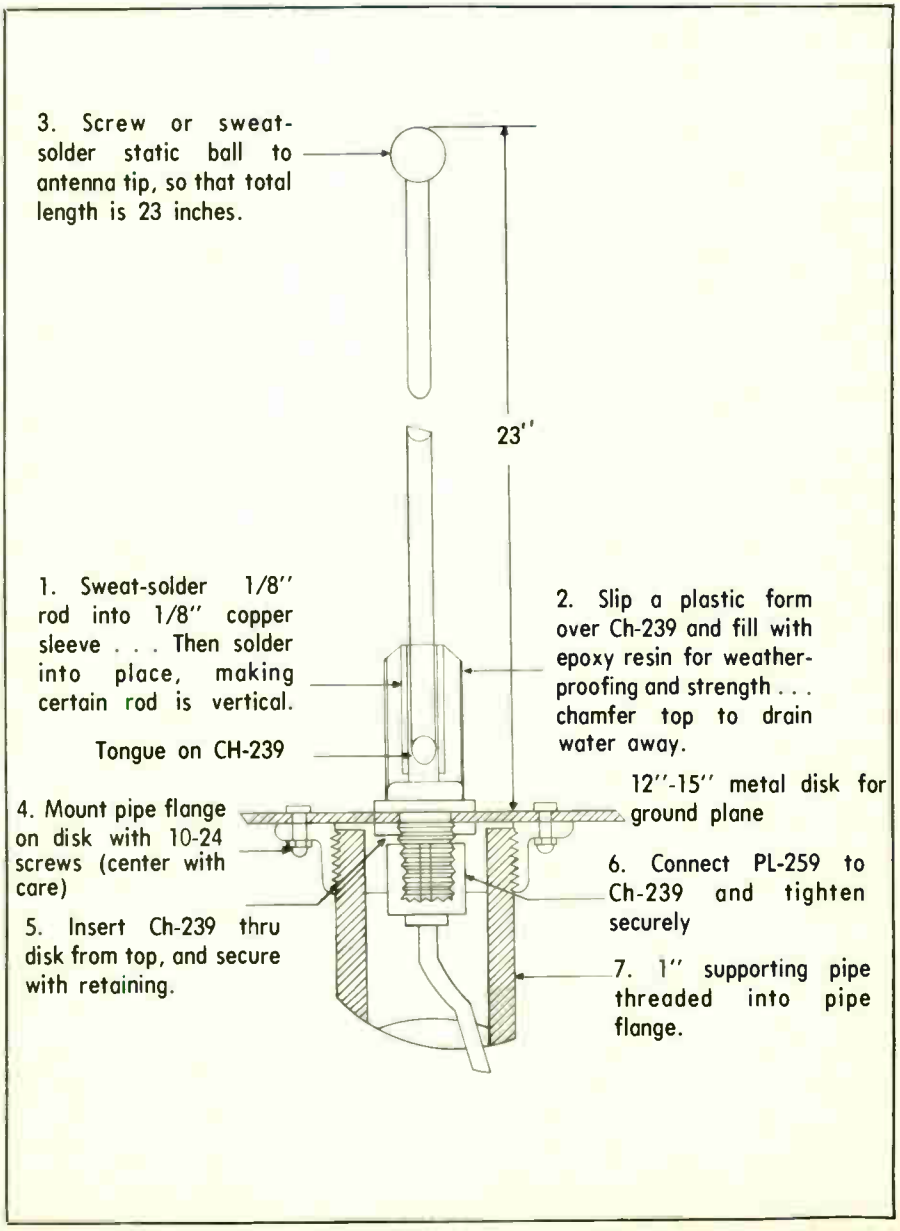


'Pizza Pan' Antenna . . .

[continued]

baked with automotive lacquer. Once the finish is dry it is ready for installation.

INSTALLATION

I have found that the most successful way to mount a pipe vertically in a tree is to use two large screw eyes. The eye should be big enough for the pipe to pass through it, and the screw long enough to penetrate firmly into the tree. I found these in a local hardware store. The first time up the tree will be the hardest, but it won't be the only time. When you get to the top, locate the highest point along the trunk which is thick enough to support a screw eye and the weight of the assembly, and another point about five to six feet below it where the second screw eye can be inserted so that the eyes line up vertically (see diagram). Once the top eye has been inserted, a plumb-bob can be used to locate the exact position for the lower eye. Align them carefully, because this will determine how straight your antenna pole stands. Once installed, measure the distance between the eyes. You'll need to know that later. It may be necessary to prune some foliage from the treetop to provide a clear area directly over the two eyes you have installed. The 20 foot pipe should protrude well above the top of the tree.

Now you can climb down again and prepare the antenna to be lifted into position, but before you do come down it might be advisable to throw a stout line over a limb above the top eye, if possible. You will find this line very handy while boosting the heavy pipe into position. You can bring both ends of the line down along the trunk to the ground to form a crude pulley to secure the pipe in position as you climb up with it.

Once on the ground again, uncoil the coaxial cable and thread the loose end through the pipe **from the threaded end**. You may wish to drop a lead-line through first with a nail as a weight, pulling the cable through after the lead line. Pull all the cable through until the PL-259 can be inserted into the threaded end of the pipe and the pipe screwed into the pipe flange (if it is off-center and doesn't fit, don't say I didn't warn you). Use wrenches to tighten the flange firmly onto the pipe.

Measure from the bottom end of the pipe a length equal to the distance between the eyes plus six inches, and drill a 1/4" hole through the pipe diameter at that point. Insert a 3" carriage bolt and secure it with a nut. Be careful not to nick the cable with the drill bit as you pass it through. Now drill a second hole near the bottom end of the pipe the exact distance between the two eyes. Tie one end of your rope around the pipe in a couple of half-hitches about a third of the way from the antenna end, and stand the pipe against the tree to follow in the path of the rope. Now the fun begins . . . you will probably need help getting the pipe to the top of the tree.

Have your friend on the ground keep the rope taut as you climb the tree once more, boosting the antenna assembly along with you. Be sure to lead the pipe along the same path as the rope passes between limbs and be careful not to snag the antenna structure on a limb as you pass it. When you get to the top once more you should secure the pipe in place while you thread the loose end of the coax from the top down through the two eyes. Carefully boost the pipe into position so that the bottom end can be guided through the top eye and dropped gently into place through the bottom eye, so that the carriage bolt rests on the top screw eye. Now relax — the worst is over. You can release the line and make final adjustments. Pass another carriage bolt through the lower hole so that some weight is shared by the lower eye. You may want to wire or tape the pipe firmly into place so that it cannot be shaken loose by heavy winds.

The feed coax should be led down the tree trunk and fastened loosely in place. Remember that the tree may grow several feet in a year and you must allow for it. You should tape the cable at the point where it leaves the bottom of the pipe to prevent chafing against the rough edge by the winds. All that is left now is to get safely out of the tree, fish your cable into your livingroom, and install another connector to the match the input socket of your scanner.

When I plugged my new mini-plane antenna into my scanner, I was pleasantly surprised. Reception was excellent on all bands up to 512 MHz, as far as my scanner will reach. All signs of imaging had disappeared from the UHF bands and I could hear all VHF/FM Marine Coast Guard stations from Cape Cod to Cape May. There was some attenuation on LO/VHF, but this was an advantage because these stations had previously caused front end overload and were often distorted. Response appeared to be flatter across the entire spectrum from 30 MHz to 512 MHz. CB

Parts List for the 'Pizza Pan' Antenna

- 1 CH-239 UHF coaxial chassis connector
- 1 PL-259 UHF coaxial cable connector
- 1 Antenna connector to mate with scanner antenna input jack
- 1 Brass rod (1/8" X 24")
- 1 Copper tubing (1/8" X 1 1/2")
- 1 Static ball (about 1/4" sphere)
- 1 5/8" X 1 1/2" plastic tubing for form
- 1 1" galvanized pipe flange
- 4 10-24 X 1/2" Cap screws with locknuts
- 2 1/4" X 3" Carriage bolts with locknuts
- 2 large screw eyes (see text)
- 1 20' X 1" galvanized pipe, threaded on one end
- Sheet metal to form 12" to 15" disk (see text)
- RG-59/U Coaxial cable . . . enough to reach from antenna to scanner in a single piece (get extra)
- Encapsulating resin (enough to fill form
- Plastic electrician's tape
- Lacquer for protective coating (see text)

Questions and Answers

While we would like to, CB MAGAZINE cannot reply to questions by mail, because of the volume received. The most interesting questions and their answers will be published as space permits. Send questions to CB MAGAZINE, Editorial Offices, 531 N. Ann Arbor, Oklahoma City, Okla. 73127.

WHOLESALE PRICES

Q. I would like to ask the CB distributors that advertise in your magazine why they take such pains to make sure that their price lists for gear are seen only by dealers. It appears that this system is set up for the sole purpose of soaking the customer for as much as they can get, often called "suggested retail price." To them, "wholesale to the consumer" is the dirtiest of words. Therefore, they must all stick together (under the disguise of CEDA) lest their profit margin shrink to a mere 20 percent.
(D.L.W., Melbourne, Florida)

A. With the CB price cutting, at the retail level, so rampant at the present time, many dealers make no profit, suffer a loss or go out of business as a result. Wholesale prices of CB equipment depend upon the "quantity" a dealer purchases at one time. When you shop for a new car, you will find a price sticker on one of the windows. The prices noted are retail. The dealer does not reveal his wholesale prices. Does your grocer show the wholesale price or the retail price when you go to the market? You can be sure that your druggist does not put the wholesale price of prescriptions for viewing by the public. If a CB dealer buys a CB set for $75 and sells it for $100, he does not make a profit of $25. He has overhead to pay, salaries and other costs. He is lucky if he ends up making $10 on a sale. If you were a CB dealer, would you display your wholesale prices?

900 MHz BAND

Q. I recently read an article on the problems of sunspots and the increasing problem of interference on the Citizens Band. It said the only solution was to move the band into the 900-MHz area which would give the CBers 400 or so channels to modulate on and no skip to listen to. I would like to know what the possibility of this "plan" is. Does it look like it could be done in the near future? Would the new equipment be more expensive? Would the wattage be the same, and what would happen to the old AM band. (John Branin, Ossipee, New Hampshire)

A. There are no plans to abandon the existing Citizens Band. The FCC is thinking about "adding" a new personal-use band at 900 MHz, but not immediately. Power limit might be as great as 100 watts. Equipment costs now would be high, but could be expected to drop as demand and competition developed. There's no skip problem on the 462-MHz GMRS channels which are available now.

SELCAL

Q. With reference to your article SELCAL and the statement "CB Joins the Crowd," I am a little confused. Way back in the very early 60's, I had a mobile and base both operating, as I remember, on Lafayette equipment. Each had a piece of ancillary equipment called PRIVA COMM that enabled the "better half" on the base to be made aware by light and/or buzzer that her mobile was trying to make contact. This worked both ways (base-to-mobile) also. Your article implies that this is a new feature. Stripped of all the technical terms about encoders, single-tone, multi-tone, etc., what is the difference between the old PRIVA COMM and SELCAL? Best wishes to the magazine and Woody (the guy who loans it to me).
(Sid Farley, Pasco, Washington)

A. SELCAL is a catch-all term for "selective calling," of which there are numerous types including audible tone burst, continuous subaudible tone(s), dual-tone multifrequency (DTMF), dial pulse and digital. The old types generally use audible tone burst or a continuous subaudible tone or combination of tones. Some make use of vibrating reed relays as filters. Newer types are all solid state and some use active (electronic) filters. There are many new SELCAL developments. We plan to publish reports on those that are applicable to CB.

WANTS ADDRESS

Q. The September 1976 issue of **CB MAGAZINE** has an article titled "CB and Vehicle Electrical Systems." There is a picture of a battery check monitor made by Electronics Specialists. Can you tell me where I can get information on the battery check monitor? (D.H.W., Kingston, Pennsylvania)

A. Write to Electronic Specialists, PO Box 122, Natick, Massachusetts 01760.

UP OR DOWN?

Q. In the October 1977 issue of **CB MAGAZINE**, a question was asked concerning the cause of "DOWNWARD MODULATION" in AM transmitters. The answer was quite correct as to the cause and the cure. However, the question still confronting me is how a person determines, for sure, that downward modulation actually exists. My experience has been that one type of output indicator might show a downward modulation, whereas another type of output indicating instrument might show that output power increases when modulation is applied. For instance, at my base station, when transmitting, the S/RF meter definitely indicates an increase in output power when modulation is applied. A "home-brewed" power sensor for CB,which I built, also gives a decided indication of increase in power output with modulation applied. On the other hand, when using my SWR meter with switch set to FWD position as a relative power output meter, a definite indication of downward modulation is observed. I also have a combination SWR, Power, Modulation, and RF Field Strength meter. When it is used with the function switch set to the power position the meter indicates downward modulation. Furthermore, when making on-the-air checks with other CB operators,I am quite often told that their "S" meter needle deflects downward when I talk into the mike. Therefore, after using all these instruments and methods for checking for downward modulation

[continued next page]

Q and A (cont'd)

and getting conflicting indications, I am still left wondering whether downward modulation exists or not. And, what instrument should I believe to be giving the correct indication? I would like to be informed of a fool-proof method of checking for downward modulation. (Mack Baxter, KGR-2513, Marble Falls, Texas.)

A. Both upward and downward modulation exist when an AM transmitter is modulated. The upward swings increase the output power and the downward swings decrease it. When both are equal, output power is increased 50 percent when modulation is 100 percent. But, when downward modulation is significantly greater than positive modulation, output power is decreased. The objective is to get maximum "talk power" which is attained when modulation is symmetrical and reaches (but does not exceed) 100 percent on peaks. To determine the modulation characteristics of your rig, take it to a "pro" and have the modulation measured with an oscilloscope. The scope will display the peaks (upward) and dips (downward).

RUSTY ANTENNAS

Q. I have installed a dual antenna system on my car. The antennas are rusting. Can they be painted with aluminum or chrome paint without degrading the performance of the antennas? (Maurice F. Hamblett, Venice, Florida)

A. You should not paint your antennas. Just use steel wool to clean off the rust and then apply household type wax. Better yet, buy new antennas that won't rust.

SIDEBAND CHANNEL

Q. On sideband, can you go to any channel or do you have to stay on the designated channel for your area? My friend says "yes" but I don't think you will. Which is it? (Tim Leithner, KARC-9450, Depew, New York)

A. Your friend is wrong. There are no officially designated SSB CB channels anywhere. In some areas, however, some self-appointed CBers or CB groups have designated certain channels for SSB use, but compliance with their mandates is purely voluntary.

NEGATIVE SWR

Q. I would like to know if it is possible to have a negative SWR. I have asked several people and have received several different answers. I don't see how it could be negative, but what do you think? (J.C., KQV-6593, Eugene, Oregon)

A. Sound like perpetual motion — something for nothing.

ANTENNA HEIGHT IN QUESTION

Q. What is the height limitation for an omnidirectional antenna on the roof of a two story house? And what is the maximum output on the new 40-channel sets? I heard it was not more than 3 watts RF output. (Brian E. Thomas, KMC-8597, Elwood, New York)

A. The antenna may extend up to 20 feet above the roof of a building of any height. The output power limit for the new 40-channel sets is 4 watts, the same as for 23-channel sets.

WANTS CBER'S HANDLES

Q. I have written several notes to CB companies and have received no answer. My friends tell me I can get a list of the CBers and their handles. I would like to get a list if I can. Do I have to have a certain mobile number like some CBers use? (Mrs. Nancy Beron, Lehigh, Nebraska)

A. Can you imagine anyone publishing a list of the names of more than 7 million CB licensees? We can't. In regard to handles you might write to a handle registry company. You might be able to get a registered handle list if you register yours. In regard to mobile unit numbers, it only makes sense if you have a lot of mobiles. Use of unit numbers is optional. But use of your call sign is required by the rules.

MOBILE HOME ANTENNA

Q. I recently moved into a mobile home park and am having trouble mounting my base antenna. I am not permitted to put up a tower on the rented lot, and I have been told that the aluminum siding on the trailer would not support an antenna mast of any reasonable height. Any idea for mounting would be greatly ap-

preciated. (Daniel Charles Ritter, KSW-2622, Breinigsville, Pennsylvania)

A. You could drive a sturdy pipe into the ground alongside your mobile home to use as a self-standing antenna mast. The antenna should be a lightweight one. Even if you install the antenna so it only clears the roof of the mobile home, it will be a lot better than no antenna at all.

CHANNEL 11 USE

Q. Volunteer fire departments, local businesses, and the ALERT team, of which I am a member, use Channel 11 here for communication. Ever since the FCC took away Channel 11 as a call channel, we've had the problem of school kids and others using the channel for conversations. We've asked them to please use another channel but they ignore us, curse at us, and tell us they don't have to move. We would like to keep Channel 11 clear for all these agencies in case of emergencies. Is there anything we can do? (Doug Orr, KBD-1087, El Paso, Texas)

A. No. If you filed a petition to have Channel 11 reserved for special uses, it is doubtful that it would be granted because such a new rule would be very difficult to enforce. Sorry about that.

SEPARATE LICENSE

Q. My wife (*Mama Shark*) lives in Cadillac, Michigan. Is it true that she must get a separate license for herself? We are 200 miles apart. (Jim Mitchell, *Papa Shark*, Warren, Michigan)

A. If your wife normally lives with you, she could operate under your license. Since she doesn't, she will need her own license. She should file FCC Form 505 with the FCC to apply for a free license. And if she completes FCC Form 555-B (temporary permit), she can go on the air immediately. CB

'I Give Them The Weather, They Give Me The World.'

If you're driving on U. S. 71 near Anderson, Missouri, give the *"The West Texas Reject"* a hail - he's one of a group of the bravest folks around.

By William Childress, "*Ozark Chilly*"

"When they broke and rebroke his ankles because the bones were knitting together, you could hear him screaming all over the hospital. They couldn't give him anesthesia. The doctors said it would kill him. That's when we both found out you can't die from pain, that if anything, pain keeps you alive. It was the same when they drilled through his leg bones to set steel pins. They had three men on each side, holding him down. It was the only way it could be done, since he was so badly burned, and I stood outside in the hall, trembling and trying not to cry . . ."

The voice is "*Texas Bluebonnet's*," the handle of the slim, brownhaired wife of Thurman Arthur. She's describing the horror of her husband's first months in a burn hospital after an accident left him with third degree burns over 30 percent of his body.

Arthur himself listens quietly on this sunshiny day, resting in the wheelchair beside his CB radio. The chair has almost become his badge among the truckers he talks with. On Highway 71, just below the small hill his white house sits on, they see him, a shadowy figure with microphone in hand behind a picture window.

Most of them will never meet the "*West Texas Reject*" — Arthur's handle — face to face. But they know his voice well. He's the one they ask for road conditions.

"I give them the weather, but they give me the world," he says simply. "It's great to talk with these guys who travel to all these places."

Countless handicapped persons have found new outlets and new lives through their CB radios.

He's known from Nashville to Houston, this chatty man who thinks the world of truckers. A few know he is handicapped. Most don't. He doesn't make a big deal out of it. There are others worse off.

He and his wife live in a small house between Anderson and Neosho, Misouri, on a main truck route that serves the tri-state area of Oklahoma, Missouri, and Arkansas.

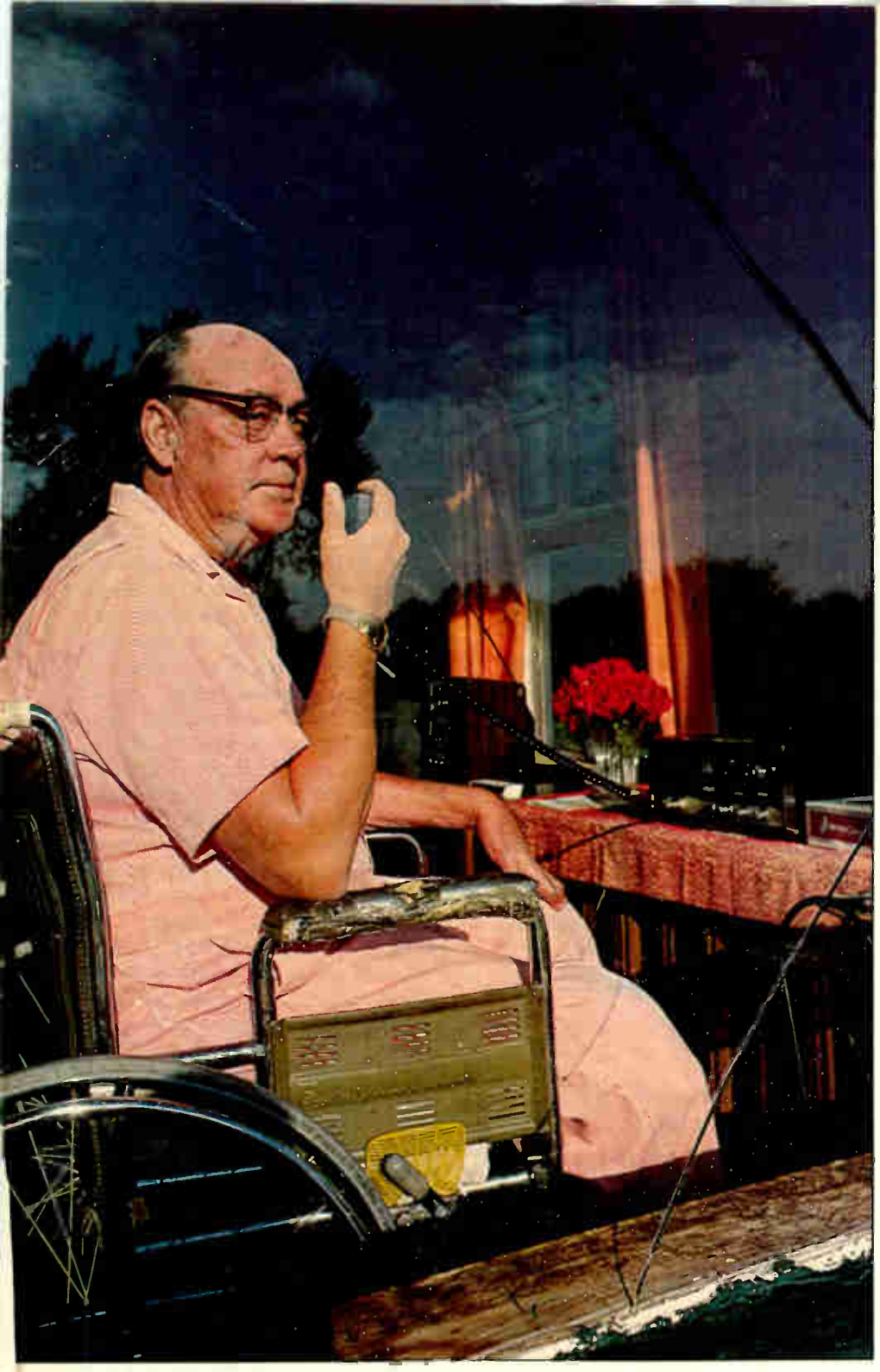
Through his CB radio, Arthur lives again in the world he left almost nine years ago after a freak accident submerged much of his body in scalding water for half an hour. Before that, he was one of the O.L. Olsen Company's best supervisors, a contractor building refineries all over the country. He stood six feet two and weighed 240 pounds. He still stands that tall, but on artificial legs. His weight has dropped to 215, which pleases him since he admits to an overweening fondness for "that Texas chili my wife makes."

Born in Texas in 1924, his dad was both sheriff and U.S. Marshal, who nonetheless still found time to sire three sons and seven daughters. "He had other jobs too," grins Arthur. "Had to, to feed all us kids."

He and Jerry have five children — three sons and two daughters — all grown and with children of their own. Both Jerry and Thurman look remarkably young to be grandparents.

Unless he raises a pantleg and shows you, it's impossible to detect his prosthetic legs. "I do great on level ground," he grins, "but if I run into a hill, I'm liable to go windmilling backward like a pair of runaway stilts!"

His sense of humor has stood him in good stead through three years of skin and bone grafts in burn hospitals from Louisiana to Texas. He began in New Orleans' Touro Hospital for burns, graduated to Galveston's Burn Center, and ended in the V.A. Hospital in Houston, Texas, where they amputated his legs. He had by then spent three years



in hospitals, and his once robust weight had dropped to an alarming 112 pounds. "I was a real sack of bones," he says cheerily. "I'd had so many needles stuck in me for feeding, that at one time, all my veins except one had collapsed."

Shortly after the last needle was removed, that vein collapsed also.

"But those doctors were absolutely fine," he recalls. "Especially Dr. William Pollack. I owe him my life. He developed a new treatment for burns while serving in Viet Nam as a surgeon, and without it, there wouldn't be as much of me here now as you see."

He and Jerry also have high praise for Drs. Stansky and Kramer of the Houston V.A. Hospital. "They're a pretty human bunch," he says, and Jerry adds: "They even collaborated in smuggling him home for a weekend now and then — although technically that made him AWOL!"

But one physician gets no praise from the Arthurs. He was the company doctor who, when Jerry discovered and rescued her scalded husband, snapped, "I'm going fishing. It probably isn't as bad as you make it sound, so just take him to a hospital."

Ironically, one of Thurman Arthur's supervisorial duties had been to send the doctor a $2,000 check each month.

"When the company found out what had happened, they fired him on the spot," he recalls. "What's more, all the other companies that used him fired him too!"

Remembering the day of the accident, November 2, 1969, brings a cloud to the face of "*Texas Bluebonnet.*" "I was getting ready to go out," she recalls, "and Thurman was in the bathroom. After a bit I heard gurgling sounds and thought he was brushing his teeth. But he had slipped in the bathtub, cracked his head, and as he fell unconscious, somehow struck the hot water tap with his knee."

"All those years in oil field construction," Arthur grins ruefully, "and I almost get killed in the bathroom."

"It was a dorm-type house in Paradis, where we were on a job," Jerry says. "The boiler was a big high-pressure job that heated water for all the buildings. The tub was old-fashioned too, deep, and on legs."

"I took quite a thump on the noggin," recalls Thurman.

Enough to keep him unconscious while scalding water splashed over his lower extremities for half an hour. His feet, lower legs, back, and left side were scalded. His left hand was also partially submerged, and today he has the use of the thumb only. The fingers had to be mostly debrided away by doctors.

"I kept hearing the water going, and gargling sounds,"

[*continued next page*]

"I Gave Them The . . . "

[*continued*]

Jerry continued. "Suddenly, I knew he was taking a long time to brush his teeth and I ran in. The room was filled with steam, and boiling water was flooding from the tap."

Jerry stands about five feet five and weighs 125, but she is strong. She flooded him with cold water and managed to pull him out of the tub. "When I lifted him up," she remembers, "the flesh of his feet sloughed off in the tub."

Meanwhile Thurman was regaining consciousness — and finding himself in a painful hell. Doctors agree there is no pain like the agony of seared flesh, and by the time Jerry got her tormented husband to the hospital, the doctor there took one look — and one listen — and shot him full of morphine.

"We can't do much for him here except pack him in ice," he said. "You'll have to take him to Touro."

Here is part of the admitting physician's report, some 20 days after Thurman Arthur was admitted to Touro on November 2, 1969, during which period he remained on the critical list: "By November 20 the eschar (burn scabs) had begun to separate slightly. The patient at this time was confused and sometimes hallucinatory. In addition, he had developed tachycardia (excessively fast heartbeat), and although these difficulties finally subsided, eschar separation, vital for grafting, was still extremely slow . . ."

Jerry stayed beside her husband, even sleeping in the hospital during those critical days. "He was delirious quite a bit," she recalls. "One time he had me fire his whole oil field crew — then hire them back minutes later!"

Many skin-grafts later, Arthur was discharged from the Touro facility and prepared for shipment to the Galveston Burn Center. It was Valentine's Day, 1970. In his stay, his leg bones had been drilled for strengthening by steel Steinmann pins — operations that had to be done with no anesthesia. Jerry recalls something else as well.

"On Christmas day, 1969, I saw a notice on the door of our room. A nurse came by, saw me crying, and asked, "Why Jerry, what's the matter?" and I said, "Take a look at this Christmas gift we just got," and showed her the notice. It said room rates were being raised ten percent, effective immediately."

They had been required to post $10,000 as a bond before being allowed to stay. During three years of treatment the Arthurs exhausted their life savings of $54,000 and all their medical insurance — well over $100,000 in all.

"If it hadn't been for the V.A.," Thurman says, "our goose would have been cooked for sure."

The police scanner near the CB suddenly crackles with the voice of a highway patrolman.

"That's *Blue Devil*," Thurman says excitedly. Grabbing his mike, he gets ready to pass along the information to truckers: Eight miles south, in Anderson, a youth with a suspended license has careened around a curve at high speed and hit a car head-on. A woman and a baby are seriously injured. The officer reads a list of past violations, including two DWI's. The youth is only 20.

"But the final spur was that CB set, . . . it told him in no uncertain terms, 'You aren't a shut-in any more.' "

A few minutes later, a cattle truck overturns, scattering cows on the highway. "A woman in a car hit a cow," Thurman says to all listening. "There are cattle all over the highway. The truck is on its side. The Missouri Highway Patrol is at the scene."

Truckers crackle back, glad of the information. Some of them know the *Reject*, chat briefly, then get off. Thurman Arthur pats his CB fondly. "I can't imagine being without this," he says. "It's my link to the world."

His brown eyes grow suddenly reflective. It's also a link with other shut-ins," he says soberly. "I'm not the only person who's handicapped. There are thousands and thousands, each doing his best in his own way. There's a guy in Pineville who's totally incapacitated from a crushed spine, with only his CB to bring him the world he can't see. And there's a paraplegic in Goodman . . ."

His voice trails off. The towns lie nearby, and though he may never meet either of the CBers he has just mentioned, it is easy to see that he thinks about them.

Countless handicapped persons have found new outlets and new lives through their CB radios. One example is Keith Russell, who patrolled the wild freeways around Washington, DC, in a specially equipped van. He was named Handicapped American of the Year in 1973. Even more spectacular is the courage of a young Californian, blind, deaf, and mute since the age of five. A "ham" radio enthusiast, he has taught himself a special code, and can now communicate with others around the world. So impressed was Packard-Bell of Santa Rosa, they hired him, even buying an Opticon (device to help the sightless "see") to help him learn.

"Communication is the greatest gift of mankind," says Arthur. "Without it, we're really alone — victims as well as prisoners of silence."

His wife nods assent. "And if it hadn't been for the 3's and 8's — a CB club in Anderson — Thurman might still be depressed and withdrawn, as he was when he left the hospital. That club was just wonderful. They came out here and gave us the CB and even put up an antenna. But then, lots of folks have been helpful and kind."

Thurman got his license on November 11, 1975, with the call letters KYN-5659. "He was on the darned thing all night!" Jerry laughs. "I couldn't even watch

"The West Texas Reject" with the second bravest person around — his wife, "Texas Bluebonnet"

television!" Now she, too, is a confirmed CBer, with a unit in her car.

The radio snorts static as a Nashville trucker gives *Texas Reject* a call. Arthur passes on information about roads, weather, accidents if any.

"10-4, *Reject*, see you in a few days." The trucker gives a blast on his air horn as he roars past on the highway below.

Anyone seeing Thurman now would never guess he was at the nadir of his life just three years ago. Following his transfer to the Galveston Burn Center and more months of grueling pain, he was sent to the V.A. Hospital in Houston. "We were on our last legs financially," Jerry recalls. "But the worst was yet to come. After many grafts and subsequent failures, they told us his legs would have to be amputated below the knees."

Depression is common in all burn cases. They are the most traumatic injuries. Amputation of one's legs comes next. It would be mid-1971 before Arthur snapped out of it enough to look forward once again to living.

"By the time he got his final discharge in May, 1972," says Jerry, "he had mastered his new legs and was used to the wheelchair."

He's known from Nashville to Houston, this chatty man who thinks the world of truckers.

Long months of convalescence at home followed before Arthur's recovery was as complete as it would ever be.

"But the final spur was that CB set," vows his wife. "It told him in no uncertain terms, 'You're not a shut-in any more!"

They recall with wry grimaces two other incidents from that terrible day in 1969.

"While we were at the hospital," Jerry says, "somebody who knew what we had burglarized our house and cleaned us out. They took my coin collection, and Thurman's gun collection. He had guns in there that were so rare, they couldn't be priced. And my coins . . ."

Her voice trails off. Arthur says that a conservative estimate would put the loss well into the thousands. "So, in the end, all our best laid plans amounted to nothing — which is what we were worth when the whole thing was over with."

"On top of that," laughs Jerry, suddenly remembering, "our little grandaughter got scared at all the commotion and went and hid 'way back in a closet. We liked to've never found the little stinker!"

How To Diagnose Your Mobile CB Antenna Troubles

Nearly 40% of the CB units brought to our shop do not need transceiver repair. Quite often the trouble is in the antenna system.

By Ronald J. Rosen, KKD-4342
"*Sagittarius*," Owner
Intracom Inc., Big 3 Truck Plaza,
Edison, New Jersey

"No transmit" or "weak transmit" is perhaps the CBer's most common complaint. The first thing to be done is to check the antenna. Don't be fooled by the fact that you receive OK. Transmitting is a far more difficult trick than receiving, and many defective antenna systems will appear to function quite satisfactorily in the receive mode.

The first rule is: stop transmitting! Your CB transmitter may be feeding into an open circuit, and you stand an excellent chance of burning out the final (RF power) transistor. This causes an expensive and usually unnecessary repair. It is worth mentioning at this point that this is one of the differences between models of CB radios. An inexpensive CB might blow its final within seconds of having been keyed into an open circuit, superior transistors and occasional protective circuits found in the better models will withstand this type of abuse for longer intervals.

Knowing where the S/RF meter on your set usually reads when transmitting will help. A sudden extremely high or low reading while transmitting often indicates an antenna problem.

SWR stands for Standing Wave Ratio. You know that if it is too high (over 2.5:1), too much of your power will be soaked up in the line and never get out on the air. You know that 1.1:1 is just about perfect, and you should strive for that ideal in tuning your antenna. If the antenna was tuned long ago, why the meter? It is only used for tuning the antenna, right? Wrong! Fact is, most **defects** in the antenna will show up on an SWR check.

A nice piece of equipment for you to own at this point is an SWR meter. You will not require the accuracy of a professional instrument, and the average imported SWR/field strength meter that retails at around $15 should do quite nicely. For a few dollars more you can find one that will also read power output directly in watts, which makes it well worth the small difference. If possible, this meter should be left in the line at all times as a constant check on your antenna system. In the case of a mobile installation, some meters are designed for underdash mounting with this in mind. If your CB has a built-in SWR meter, so much the better.

We are assuming now that your antenna has been tuned and working satisfactorily for you up to the time of your problem. It is not likely to go out of tune like a piano (with the possible exception of a retracting electric antenna that might not consistently extend to it's proper height). An SWR reading of 4:1 or more does not **usually** indicate the need for a tuning adjustment. Many antennas have been ruined in an attempt to tune and compensate for an abnormally high reading caused by a defect.

Insert the SWR meter in the line, look for a channel around the center of the band with minimum activity like the good CBer you are, and key the microphone. Zap! The meter deflects way to the right, well in excess of normal. Let's take a look at that mobile antenna.

How is the coax cable? Chances are it won't develop an invisible defect along its length unless it has been slammed by a trunk lid or door. In this case, there will be a definite crimp in the jacket; the inner conductor may be ruptured or shorted to the braid at that point. If the crimp is near the end, a small piece may be cut off the cable and a new connection made at either the set or antenna end. (The length of the cable is not critical as is believed, except in the case of a co-phased

harness, and a few inches more or less should make very little difference.) If the crimp is midway, replace the cable. Coaxial cable cannot be successfully spliced without the use of coaxial connectors, which will probably cost you more than a new cable.

"Transmitting is a far more difficult trick than receiving and many defective antenna systems will appear to function quite satisfactorily in the receive mode . . ."

Assuming the cable looks OK check the PL-259 coaxial plug connecting the antenna line to the CB. Is there a tight fit between the back of your CB and the firewall? The antenna connector may be jammed into place, and the resultant sharp bend in the cable may have caused it to give way internally, particularly if it is the crimp-on type of connector favored by many antenna manufacturers. Replace with a good PL-259 and reducer, and add a right-angle adaptor known as an M359 connector.

If this looks good, go to the antenna end. In the case of a base-loaded trunk or roof-mount antenna, check your connections within the base adaptor (the part that the loading coil screws onto). Both the inner conductor and the braided shield must make good connections at this point, and the base adaptor must be securely grounded. The inner portion of this adaptor must be clean and free from corrosion, particularly the upright pin that makes connection with the center of the loading coil. A common cause of problems at this point is corrosion caused by water entering this adaptor when the antenna is removed for a car wash, or prevention of theft while parked. Eliminate future problems by capping this base with a plastic or rubber cap whenever the coil is removed. (If you have trouble obtaining a cap for this purpose, buy a rubber chair tip from your local hardware store.)

The remedy here is to clean the corrosion carefully from all surfaces. If it is too far gone, the base adaptor is available separately, but must fit properly. Check the bottom of the base loading coil. In addition to corrosion, trouble is often experienced with mating of the base-load coil and the base adaptor. If the adaptor pin is broken or missing, it too is available as a separate item, and merely screws into place.

If all looks good so far, make a final check of the cable. Beg, borrow or steal an ohmmeter and measure from the inner conductor to ground. A convenient place to do this is at the radio end across the PL-259 connector. This should read "open." Next, take a jumper wire and short out the other end, and meter again. Now, of course, you should read 'short.' Caution: remove the base loading coil before measuring the cable for short-circuit!

Many a would-be technician has triumphantly diagnosed a shorted cable and replaced the entire length, only to find it still indicates 'short'; many base-loaded designs utilize a shunt-type winding, which although presenting the correct impedance at radio frequencies looks like a dead short to an ohmmeter check.

If everything so far checks out and your meter still indicates a sky-high SWR, the only thing left is a defective loading coil. This too can be replaced, but be sure to purchase a new whip at the same time. If you do not obtain an exact replacement coil of the same make and model, chances are your old whip will not tune with your new coil. You will usually find it cheaper to purchase an entirely new antenna, and discard the cable and mount. There are also adaptors on the market that will convert your base adaptor to a 3/8" x 24 thread so that you may screw in a standard center or top-loaded short antenna whip.

So far we have discussed only base-loaded mobile antennas. The same common-sense remedies apply to center and top-loaded antennas, and mirror mounts. A common source of trouble here is a bad ground to the mirror, and corroded, shorted or open connections at the mount itself. Base station antennas have fewer parts to go wrong, the principal offenders being the coaxial connector at the base of the antenna, and missing or broken elements.

Back to square 1. You are faced with a weak or no-transmit situation, your antenna SWR is fine. Don't condemn the radio just yet. In the case of a mobile rig, check your positive and ground power connections. Remember your CB draws more current on transmit than on receive. Good clean connections are essential, and you should use at least 18 gauge wire if your power connection is to the fuseblock, heavier if you are running directly to your battery; the voltage drop increases with length.

If you use a slide mount, check the contacts; if they are the common copper "wiper" type, they may be oxidized. Clean them with fine emery paper or a pencil eraser. Pry the copper strips up gently in order to make good contact. It is unfortunate that probably hundreds of thousands of slide mounts manufactured for 8-track stereo use were converted to "CB slide mounts" simply by repackaging and connecting the antenna to the set via two of the unused copper wiper contacts.

This type of contact is not designed to pass radio frequencies and usually results in poor performance from the start. As the inevitable oxidization begins, the antenna signal sustains losses at this point, and as the contact worsens, an RF open circuit usually develops — and we learned previously what happens when a transmitter is keyed into an open antenna circuit! Protect that final — if you have this type of slide mount in your mobile rig, disconnect the antenna from it and take a few seconds when removing and replacing your CB to screw the antenna connector directly into the back of the set. Better yet, invest in the type of slide mount that is made for this purpose and utilizes pin type or BNC type fittings for the critical antenna connection. CE

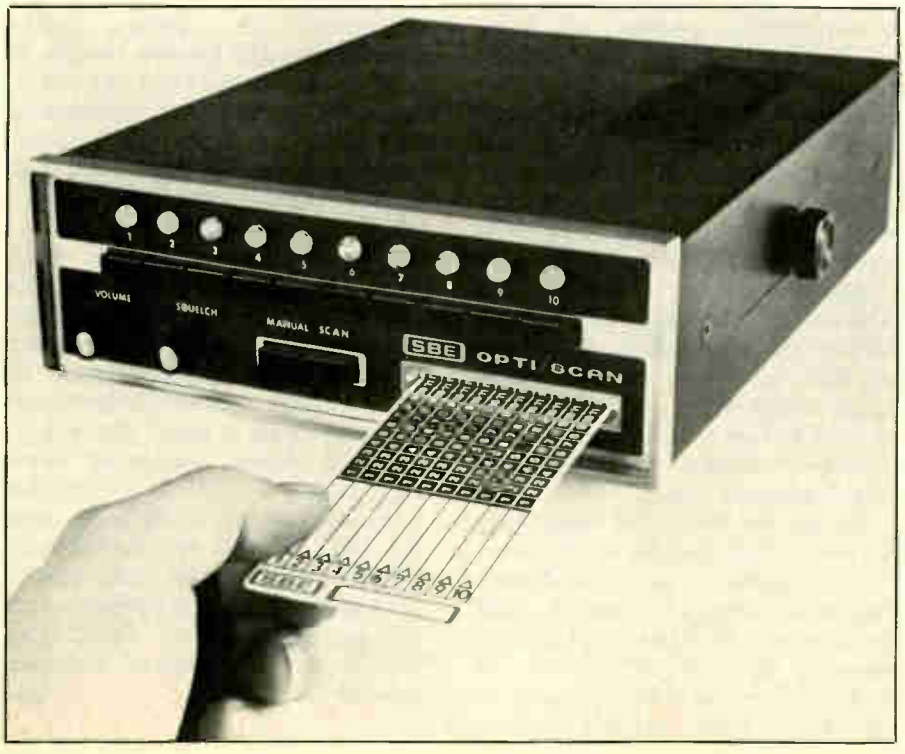
Monitoring The General Mobile Radio Service Channels

If CB doesn't quite fulfill your communications requirements, try the GRMS. But first, check the available channels with a monitor receiver.

By Jack Helmi

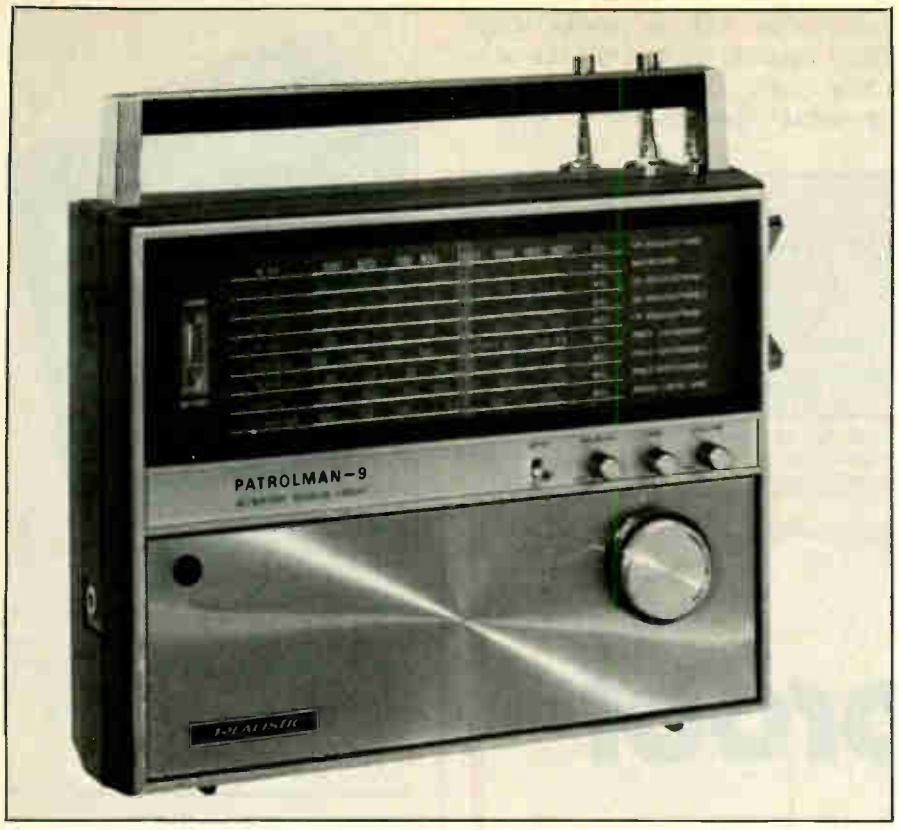
If you have a UHF/FM monitor receiver or plan to get one, you can have a lot of fun and learn a lot by listening in on the General Mobile Radio Service channels. These eight "paired" two-frequency personal communications channels, listed in Table 1, are currently occupied mainly by business users. However, it can be anticipated that these channels will soon be occupied by a great many personal users.

The Opti-Scan offers manual tuning, scans the 10 channels programmable through use of "plug-in" cards.



The GMRS (formerly Class A CB) channels are currently occupied by many business users because personal users had not taken advantage of this resource that was given to them by the FCC several years ago. The reasons why CBers did not rush to occupy these channels in the past were: (1) the relative high cost of equipment, (2) false information about range and (3) mainly because CBers were not aware of the availability of these channels.

The recent publicity given to the GMRS about its availability for personal communications has created concern on the part of business users who now occupy the GMRS channels. The California Mobile Radio Association recently said, "The prices of 450-MHz mobile equipment by several manufacturers have reached the point that the equipment is now desirable both from an economic and a practical standpoint to hundreds of thousands, if not millions, of present CB radio licensees." The organization consists of radio equipment suppliers whose members are concerned that the anticipated avalanche of personal users will render the GMRS channels



Nine broadcast bands are available on the Realistic Patrolman-9, including the GMRS channels which may be manually "tuned-in."

useless for continued business communication.

The many business users that currently occupy GMRS channels are eligible for licenses in the Business Radio Service, Special Industrial Radio Service or some other commercial land mobile radio service. New GMRS license applications from business firms are being returned by the FCC with an explanation that the GMRS channels are available for private personal use. It is being recommended that the applicant file an application in some other radio service whose channels are not available for personal communications.

When most of the business users get off the GMRS channels, it has been estimated that each channel could accommodate at least one repeater station in each local area and that each repeater station could serve up to 400 mobiles and control stations. In a given community, where there is a repeater for each of the eight channels, it is indicated that 3,200 mobiles could operate on the eight channels in the area. The same channels should be usable by other repeater stations located 20 to 40 miles distant without interference to one another.

CB MAGAZINE recently commissioned field editors to monitor the GMRS channels in New York City, Chicago, Cape Cod, San Diego, Palo Alto (California) and Everett (Washington).

Monitoring the GMRS channels in New York City over a period of years reveals that there was no evidence of personal communications activity, with one exception. It was reported that a single unlicensed GMRS station operator got his kicks by broadcasting music through an open repeater in New York City.

In San Diego, all of the GMRS channels are used for business communications. Communications traffic is quite heavy during business hours but almost nonexistent on weekends, except on two of the channels. In Palo Alto it was observed that five of the channels were heavily used and that three were relatively silent. In Everett, where the scanner antenna was pretty well shielded by hills, activity was heard only on one of the GMRS channels. In the Cape Cod area, nothing was heard on any of the GMRS channels.

MONITORING

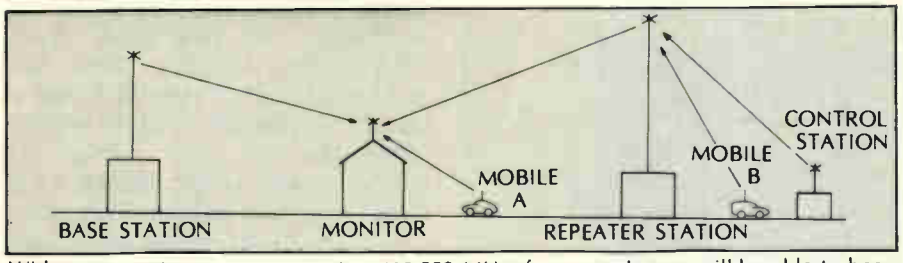
As noted in Table 1, there are eight frequencies available to both base stations and mobile units and eight frequencies that are available only to mobile units. Many, but not all, business users operate repeater stations that transmit on one of the base

[*continued next page*]

Electra's Bearcat 210 is programmable and provides keyboard entry to frequencies, including the GMRS channels.

Monitoring GRMS . . . [continued]

station frequencies, and a control station as well as mobile units that operate on one of the mobile - only frequencies. Some systems operate on a single-frequency simplex basis with both base stations and mobile units transmitting on the base station frequency.



With your monitor receiver tuned to 462.550 MHz, for example, you will be able to hear the base station and mobile unit A on a direct basis. You will also be able to hear mobile unit B and the control station through the repeater station.

Designed for use in the field, away from mobile communications, the Realistic Pocket-Scan may be used to monitor any four of the available GMRS channels.

You can monitor all of the GMRS channels with a tunable portable receiver such as Radio Shack's Patrolman-9 which covers nine bands. Using its built-in telescoping antenna, the 16 GMRS frequencies can be tuned in when the receiver is set for Public Service Band 3. When set to this band, the receiver is continuously tunable from 450 to 470 MHz. Most of the action will be found on the eight base station frequencies between 452.550 to 462.725 MHz. On these frequencies, you will hear base stations and the relayed signals of mobile units retransmitted by a repeater station.

More convenient to use however, is a scanning monitor receiver. If it uses crystals for each channel and is operable within the 460-470 MHz range, you can equip it with crystals for receiving on the eight base station channels listed in Table 1. Or, if it is of the programmable type that employs a synthesizer which does not require a crystal for each channel, the scanner can be set to receive on these eight base station channels. If it has 16-channel capacity, it can be

set to receive on the eight base station and the eight mobile-only channels. However, there's not much point to monitoring the mobile-only channels since receiving range will be quite short. When the receiver has greater than eight-channel capacity, eight channels can be used for monitoring GMRS channels and the remaining channels for monitoring other services.

RECEIVING RANGE

All of the popular scanners on the market have a short whip antenna that can be used for receiving. Much greater range can be achieved by using an outdoor antenna however. Range depends mainly upon the height and gain of your receiving antenna. If you double the height of your receiving antenna, range should increase by 1.28 times. Tripling the height of your antenna should increase range 1.5 times.

If you decide to monitor the GMRS channels, you will be able to note how rapidly and to what extent personal users occupy the GMRS channels. And if you are considering installing a GMRS system for your own use, by monitoring the channels, you will be able to get a better idea of what you can expect. CB

CB In National Parks . . .

[continued from page 31]

right for the range he needs there." Since then, Ashmore and his assistants at the 900-acre park have accumulated two mobiles, a base station and two hand sets.

Cleaves explains only district supervisors have official state radios. Yet the park managers and rangers need some type of radio system. Of Ashmore, Cleaves says, "You could follow him around all day and not find him." Even Cleaves has a CB along in his official vehicle so he can locate his rangers in the field.

Cleaves is responsible for five state parks in a 150 by 300 mile area in eastern Maine. The area, which includes both seacoast and mountains requires Cleaves to drive 1,000 miles to inspect his territory. He chuckles over state officials who ask for such a tour, not considering it takes five days to make the circuit.

The CB hand set has become a valuable link between the park gatehouse and lifeguards on at least one lake. Cleaves says one channel sets have proven to be a "reasonable cost" system which eliminates "taking a chance" on any handy tourist, who was formerly dispatched with emergency messages to the gatehouse 300 yards away.

Sitting in the kitchen of his house, which doubles as an office, Cleaves says the mountains of northern Maine have limited the use of CB in parks there. His home is in Liberty, Maine, about 30 miles from the Atlantic Ocean.

Below the forested ridge to which Cleaves' home clings is Lake St. George State Park, about two miles away. Park Manager Arthur K. Blood has been using CB since 1976. Before that, "We just got along the best way we could." That put a lot of miles on his vehicle and boots.

Admitting he became tired waiting for a state radio Cleaves' had requested ("He's had it in his budget the last five years."), Blood went to CB. He explains he purchased the radio for the convenience of the thing and financially I could afford one." He uses a slide mount to swap it between his park vehicle and private car.

Because he lives near the borderline between two phone districts, Blood says he's saved a lot of toll calls. His wife monitors the base station at their home/office. "We can get a 20 mile radius easy." He has even relayed calls via other CB bases to Augusta, almost 40 miles away. Snowmobiles invade the state parks in winter, and Blood has 25 miles of trails to maintain in his jurisdiction. His wife becomes nervous when he works late in the cold. "I'm definitely going to have CB in the snowmobile," Blood states.

While Cleaves still hopes to obtain state radios for park managers, his case may have been made more difficult as rangers went to CB. "They definitely save the state money."

About 50 miles away on the coast, rangers at the sea-side Acadia National Park have found CBs figuring in their work days more. While none use CBs in their official vehicles, many of their investigations and emergency calls come from the local REACT monitoring park visitors.

Other Rangers have been talking to tourists directly using CBs in their private cars. Naturalist Bill Townsend, a school teacher in northern Maine who works in the park each summer, has been heard directing more than one tourist at "confusion corner," an intersection which seems to disorientate even seasoned navigators. Other rangers report Townsend giving nature lectures over the radio, though he denies it. He did once propose having a CB information channel for park visitors, though nothing came of it. (Other national parks have lectures broadcast by low power AM sets which visitors monitor on AM car radios.)

While Townsend's radio interests have taken him into ham — and away from CB — Superintendent of Park Rangers Roy Stamey reports another ranger working under him uses CB as a telephone. While provided with park service radio equipment for official use, William Weidner is a summer resident of Isle Au Haut, an island off the coast of Maine which is part of Acadia National Park. With only 50 year-round residents on the 6,700-acre island, 70 percent of which is federally owned, no telephones reach across the seven miles of ocean between the island and Stonington, Maine, on the mainland.

Besides radio, mail boat provides the only other communications. When Weidner and the other 300 summer residents arrive, they use CB, too. Fire is the biggest concern on the island, and CB is how citizens spread the alarm this past summer.

But the CB has crept into the work routines of the ranger and

[continued next page]

CB In National Parks . . . [continued]

his two aides. When Mrs. Debbie Gorman conducted the daily nature hikes this past summer, she carried a portable CB. Weidman writes, "Due to the rugged nature of the trail and the wide variety of visitors (in) age and physical condition, we were constantly aware of the possibility of an injury. We relied on CB for communications between Mrs. Gorman and the rest of the island." With an average of 15 tourists on each hike, Weidner adds, "We were fortunate enough not to have any accidents."

They thought they did, however, when the Hurricane Unit of the Outward Bound School conducted a marathon race over Isle Au Haut trails. It appeared a runner was missing at the end of the race. But a check over the ranger's CB with the start of the course proved there had been a miscount of participants.

Superintendent of Park Rangers Roy Stamey reports there's one ranger who has found CB a necessity. Stationed to the south of Acadia National Park on Isle Au Haut, off Stonington, Maine, William Widener has no telephone. While he does have park radio equipment, its use is limited to official business. To alleviate his isolation, Widener reportedly resorts to CB.

For both Widener out in the Atlantic and Hollingsworth down on the Natchez Trace, the CB conceivably can mean life or death. However, Hollingsworth talks more about the everyday, rather than emergency use, of the radio. Listening to the travelers talk as they drive the parkway, the Radar Ranger says they are no longer vehicles, but instead "become human beings to me."

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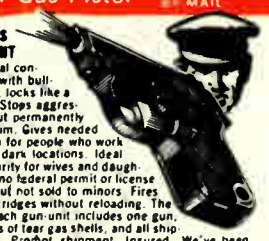

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November 19, MASSACHUSETTS. Event: Coffee Break & 8th Annual Turkey Raffle. **Sponsor:** Canal Standby Emergency CB Radio Club. **Place:** Knights of Columbus Hall, Rt. 6 & 28, Bourne, Massachusetts. **Time:** 3 p.m. to 9 p.m. **Events:** Prizes, Raffles, Refreshments. **For more information,** write: Beverly E. Ouellette, R.F.D. 3, Buzzards Bay, MA 02532. Or, call 617/295-1845.

November 27, MARYLAND. Event: CARA Ham Fest. **Sponsor:** Columbia Amateur Radio Association. **Place:** The Armory, Ellicott City, Maryland. Talk-in 147.99/39; 146.16/76; 146.52/52. **Time:** 8:30 a.m. to 3:30 p.m. **Events:** Ham & CB exhibit, Flea Market, Prizes, Refreshments. **Admission:** Tables $4.00. Adv. $3.00. Donation $2.00. **For more information,** write: CARA, P. O. Box 850, Columbia, MD 21044.

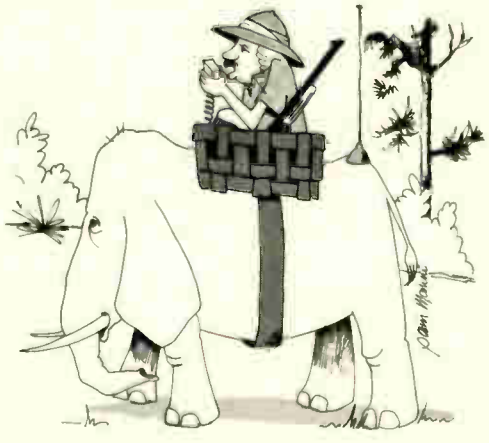
December 11, NORTH CAROLINA. Event: Jamboree. **Sponsor:** Marion North Carolina Radio Patrol. **Place:** Community Building, Marion, North Carolina. **For more information,** write: Marion North Carolina Radio Patrol, Route 3, Box 68, Marion, NC 28752.

December 17, WISCONSIN. Event: Christmas Dinner Dance. **Sponsor:** Surfside CB Club. **Place:** Muench's Supper Club, Alverno, Wisconsin. Monitor Channel 7. **Time:** Dinner — 6 p.m. to 8 p.m. Dance — 9 p.m. to 1 a.m. **Events:** Prizes, Free beer, Entertainment. **Admission:** $7.50 per person. **For more information,** write: Surfside CB Club, P.O. Box 1152, Manitowoc, WI 54220.

January 16, ILLINOIS. Event: Annual Roller Skating Party/Eyeball. **Sponsor:** Cicero-Berwyn Area Channel 12 CB Radio Club. **Place:** 9950 Joliet Road, Countryside, Illinois. **Events:** Prizes. **Admission:** $1.50 adult, $1.00 per child under 13. **For more information,** write: Channel 12 Club, P. O. Box 429, Berwyn, IL 60402. Or, call 312/484-6696.

February 18-19, ARIZONA. Event: 13th Annual CB Jamboree. **Sponsor:** Yuma CB Radio Association. **Place:** Yuma County Fairgrounds, Yuma, Arizona. **Events:** Prizes, Displays, Saturday night dance. **For more information,** write: Booth Committee, P.O. Box 5257, Yuma, AZ 85364.

February 25, MARYLAND. Event: 2nd Annual Jamboree. **Sponsor:** Glen Burnie Network SSB Club. **Place:** Blob's Park Dance Hall, Route 175, Ft. Meade, Maryland. **Time:** 11 a.m. to 5 p.m. **Events:** Displays, Prizes, Films. **For more information,** write: P.O. Box 43, Glen Burnie, MD 21061. Or, call Joe Pannuty, 301/987-5345.



"BREAK 19 FOR A WARDEN REPORT."

March 28-29, ONTARIO. Event: CB '78 Trade Show. **Place:** Constellation Hotel, 900 Dixon Rd., Rexdale, Ontario. **Time:** March 28 - 10 a.m. to 5 p.m., then re-open 7 p.m. to 9 p.m. March 29 - 10 a.m. to 6 p.m. **For more information,** write: CB '78 Show, c/o Walgram Publishing Limited, 2175 Sheppard Ave. E., Suite 106, Willowdale, Ontario M2J 1W8.

Discover a New Frontier in Personal Communications...

Introducing the A.R.F. 2001

Unique engineering contributions have established the A.R.F. 2001 in a class by itself.

7,500 transistors—24 integrated circuits, an equivalent of 7,500 transistors, creates an entirely new computer controlled CB Base Station.

IN THE TRANSMITTER—

SAM—Solid State Servo Amplitude Modulator—More than ten times the effective talk power of a conventional CB transmitter.

INTERFERENCE—A built-in 7-pole Elliptic filter suppresses television interfering signals. Your neighbor won't know you are on the air.

IN THE RECEIVER—

AMSIL—AM Silencing. While operating on side-band the AM signals may be squelched. You only hear the SSB Stations.

SELECTIVITY—A Dual IF amplifier incorporates two eight pole monolytic quartz filters, one for AM reception and an independent one for SSB reception, maximizing performance in both modes. The best of both worlds.

DUAL GATE MOS-FET RECEIVER—Engineered for high level signal handling, the receiver prevents desensitization from strong adjacent channels for unparalleled reception.

DELAYED AGC SYSTEM—This feature prevents deterioration of the receiver's noise figure at its sensitivity threshold for clearest reception from even the most distant transmitters. The best ears in town.

IN THE SYNTHESIZER...

COMPUTER PROCESSOR—Featuring a multiple function keyboard entry system. The A.R.F. 2001's built-in memory provides for ten pre-selectable channels which can be scanned automatically as a search receiver to read the mail. In the monitor mode, any channel selected may be monitored every eleven seconds.

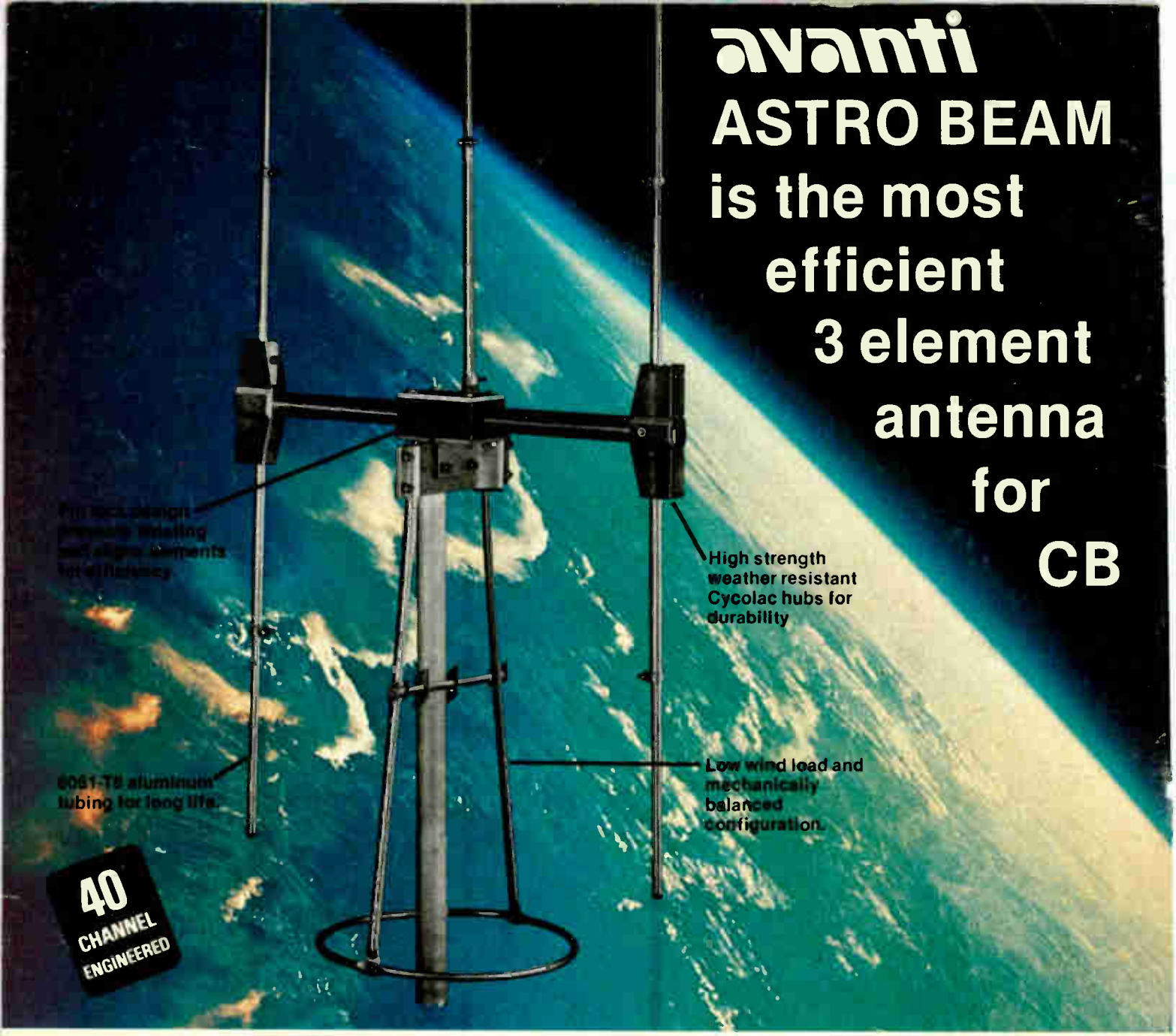
AUTOMATIC SCANNING FUNCTIONS—An automatic busy and open channel scan capability provides an automatic search for either an open or busy channel. Fast or slow scanning through all forty channels is a standard feature as is automatic monitoring of the recall channel.

OTHER FUNCTIONS—The A.R.F. 2001 also includes an ANTENNA SELECTOR SWITCH, LED CLOCK, PEAK INDICATING POWER/SRF METER, MODULATION METER, LAMP DIMMER, and a NOISE BLANKER as well as TALK BACK, PA EXTERNAL SPEAKER, TONE CONTROL, and STUDIO MODE INDICATOR. No expense has been spared in design and construction of the A.R.F. 2001.

The A.R.F. 2001 is designed and manufactured in the U.S.A. by A.R.F. Products, Inc., an American company founded in 1942, which pioneered in the development of ground and missileborne communications equipment for the military. A.R.F. brings thirty-five years of research and development experience to the creation and precision engineering of the A.R.F. 2001...the finest personal communications system available today. Ask your local CB dealer about the A.R.F. 2001 or contact the factory.

A.R.F. Products, Inc.
Gardner Road
Raton, New Mexico 87740
(505) 445-3666

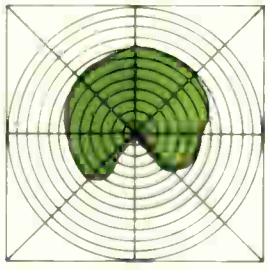
Patent Pending



CO-INDUCTIVE COUPLING IS THE KEY TO BETTER PERFORMANCE . . .

we started with another Avanti antenna — the Astro Plane (patented) — as a radiator, then added a reflector and a director to achieve the co-inductive beam configuration. The Astro Plane has more gain to begin with than a dipole which is commonly used as the radiator of a beam and it couples to the director and the reflector more efficiently. This close coupling results in an unprecedented 40 db front-to-back ratio.

A 40 db+ rejection means that if a signal is coming in at a certain strength and the ASTRO BEAM is turned around so that the back is toward the signal, the signal will drop 40 db or more*.



*The Actual Astro Beam Polar Plot Shows Signal at 41 db Power Level Reduced to Almost 0 db on Back of Antenna. Think of how you can cut out unwanted signals with this kind of rejection.

Forward gain of 11 db over an isotropic source is a means of rating the antenna's ability to increase, receive, and transmit signals. The point here is that the ASTRO BEAM has about 1 db more than the best 3 element beam currently on the market. This gain has the equivalent of multiplying your power about 12.5 times.

SPECIFICATIONS

Rejection — 40 db + front-to-back
Forward Gain — 11 db over an isotropic source
Impedance — 50-52 ohms
Boom Length — 10½ feet, Weight — 14 lbs.
Mode — Vertical Beam Wind Load Area — 2.6 sq. ft.
Light to Medium duty rotor needed
Turning Radius — 63 inches Power Multiplication — 12.6x
AV-150 $79.95

Avanti has a complete line of High Performance Mobile Antennas from $11.95 to $72.50.

avanti

Avanti Research & Development, Inc. 340 Stewart Avenue Addison, IL 60101

from the makers of the famous MOONRAKER