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JUNE, 1977
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The "Citizens Band" Magazine serving the user of two-way radio.

SPECIAL — CB's Good Buddy System: It's Bringing Americans Together Again.

**How To Get NEAR
Moving In Your State**

CB On A Wild Horse Round-Up

**War In The Osage Hills:
Pumpers vs Oil Outlaws**

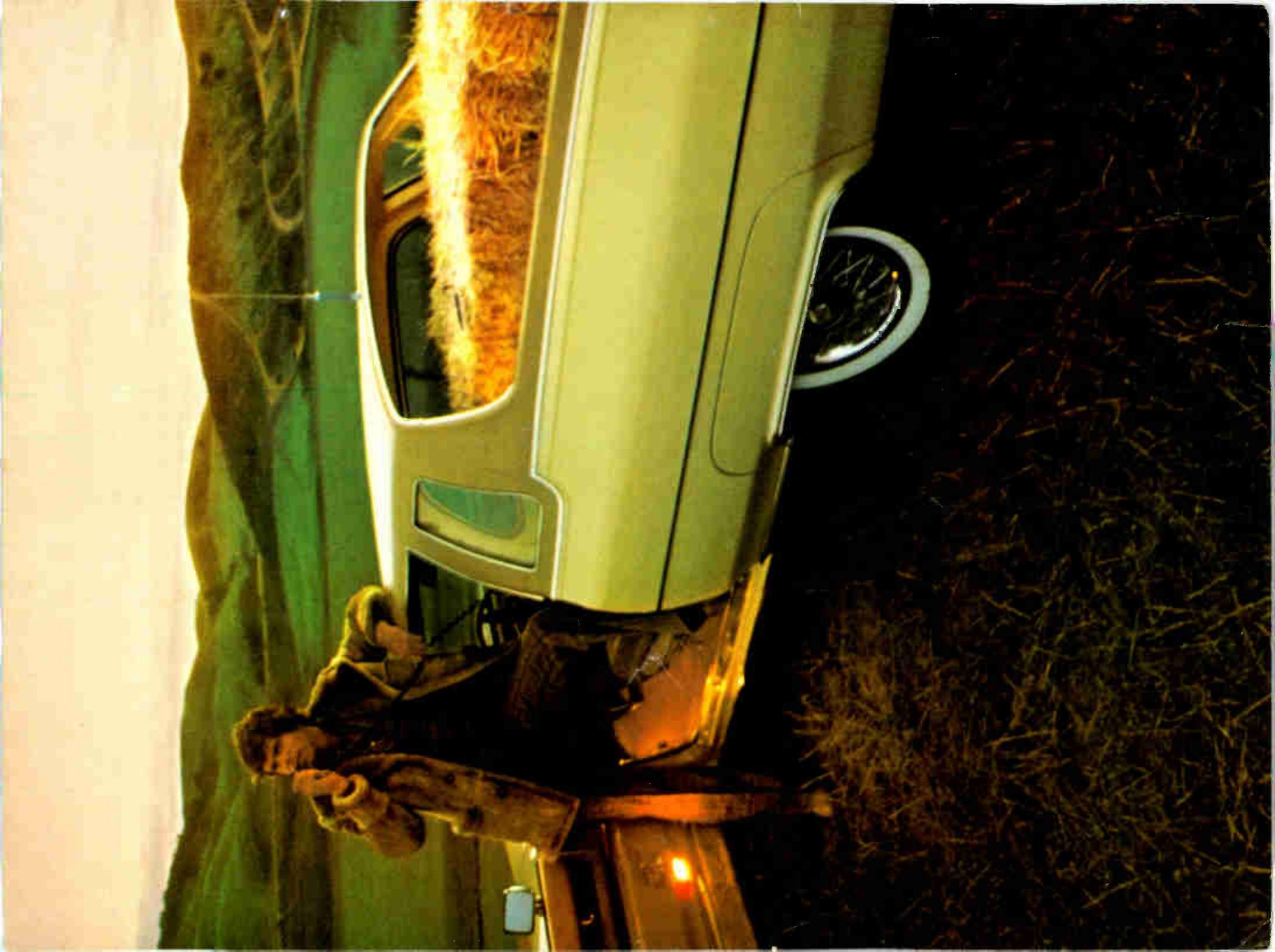
**The Facts About
Radio Interference:
CB's Not Guilty.**

**The Heart Of Your CB:
Phase Lock Loop**



**Sparkomatic's 5100:
High Style Breaks Into CB.**







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CBers 'Clout' Growing

From Washington, things look pretty good right now for the law-abiding CBER, and look to get steadily better.

CB radio users never had it so good. There are more of us than you can shake a stick at. CB radio units are available in many price ranges and choice of equipment is tremendous. It's easier and quicker than ever before to get a license from the Federal Communications Commission — and the license at present doesn't cost anything. Practically everybody in the country knows that CB can do — and in fact is doing — a world of good. There are more local clubs to join than ever before and, by and large, the clubs are offering more and more activities for their members.

In short, anybody who stays within the FCC's few simple, operating guidelines can have a ball and with a minimum of personal effort can also contribute importantly to the common good of the country, in a variety of public service activities.

What's coming next? Some equipment manufacturers, to be sure, had some troubles in disposing of their 23-channel inventories, and we can sympathize with them, and wish them good luck. We need healthy manufacturers and healthy dealers and distributors. But from the standpoint of the CB-using public, certainly, we can't see anything immediately ahead to cloud the present sunny outlook for the law-abiding CBER.

LINEAR AMPLIFIERS

Legislation takes time. However on a much faster schedule is a new effort by the FCC to wipe out linear amplifiers from the CB field. The new move — in FCC Docket 21116 — would prohibit the marketing of external radio frequency amplifiers capable of operation on any frequency between 24 and 35 MHz, which comfortably covers the 27 MHz CB frequencies.

The Commission acknowledges that the step it took in 1974, which banned the marketing of amplifiers in the CB service alone has not solved the problem, since as soon as those rules went into effect, "broadband linears" ostensibly produced for the 10-meter amateur radio band flooded the sales channels into the CB service.

The FCC is determined to enforce the

new program to the hilt and any CBER trying to boost his power illegally is going to be running the risk of a pretty heavy penalty — some jail terms have already been handed out, in addition to stiff monetary fines.

The Commission is receiving comments on its new proposals, and despite expected protests from some of the amateurs, will probably be putting the new rules into effect by this summer. The agency has apologized to the amateur radio community for what it feels is a necessary step to get rid of the CB linears once and for all, but it figures that the amateurs have enough electronic savvy to build their own, legitimate amplifiers, and, under its proposals, would permit them to continue to do so.

STATION IDENTIFICATION

One change that might be coming for CBers, along with other types of two-way mobile radio users, would permit the use of automatic Morse code identification, on an optional basis. The FCC had proposed a mandatory "automatic transmitter identification system" (ATIS) to be built into the radio equipment in early 1975; that's not what it's talking about now, although it says it still regards that as "the ideal long-term solution," and is going to keep working on it. What the Commission is proposing now, as "an interim measure affording licensees a convenient means of resolving their station identification problems until an acceptable form of ATIS can be developed," it explains, would cost only about one-fourth as much as its original proposal and yet could "result in station identification by licensees who now identify infrequently, or not at all."

One thing that has to be considered with respect to its new proposal, the Commission points out, is "the anticipated impact of Morse code identification on licensees unfamiliar with it and, especially in the CB service, their ability to identify co-channel users causing them interference." Part of the plan would be to slightly relax the present interval requirements for identification in the CB service.

The proposed new rule would require that "all communications must be identified by the station call sign during each series of transmissions, but at least at intervals not to exceed 10 minutes." The present CB rule calls for station identification at the beginning and end of each transmission or series of transmissions, but at least at intervals not to exceed ten minutes. There are some technical aspects of the proposals on which comments are to be filed with the Commission.

LICENSE FEES

Two influential members of Congress — Senate Communications Subcommittee Chairman Ernest Hollings, of South Carolina and House Communications Subcommittee Chairman Lionel Van Deerlin, of California, have asked the U.S. General Accounting Office to come up with recommendations for a program under which the FCC could reinstitute its "fee" program. The fee program was discontinued by the Commission at the beginning of 1977 after the U.S. Court of Appeals had declared the present schedules invalid. The members of Congress also suggested that the FCC appeal the lower court's decision before making any refunds. CB

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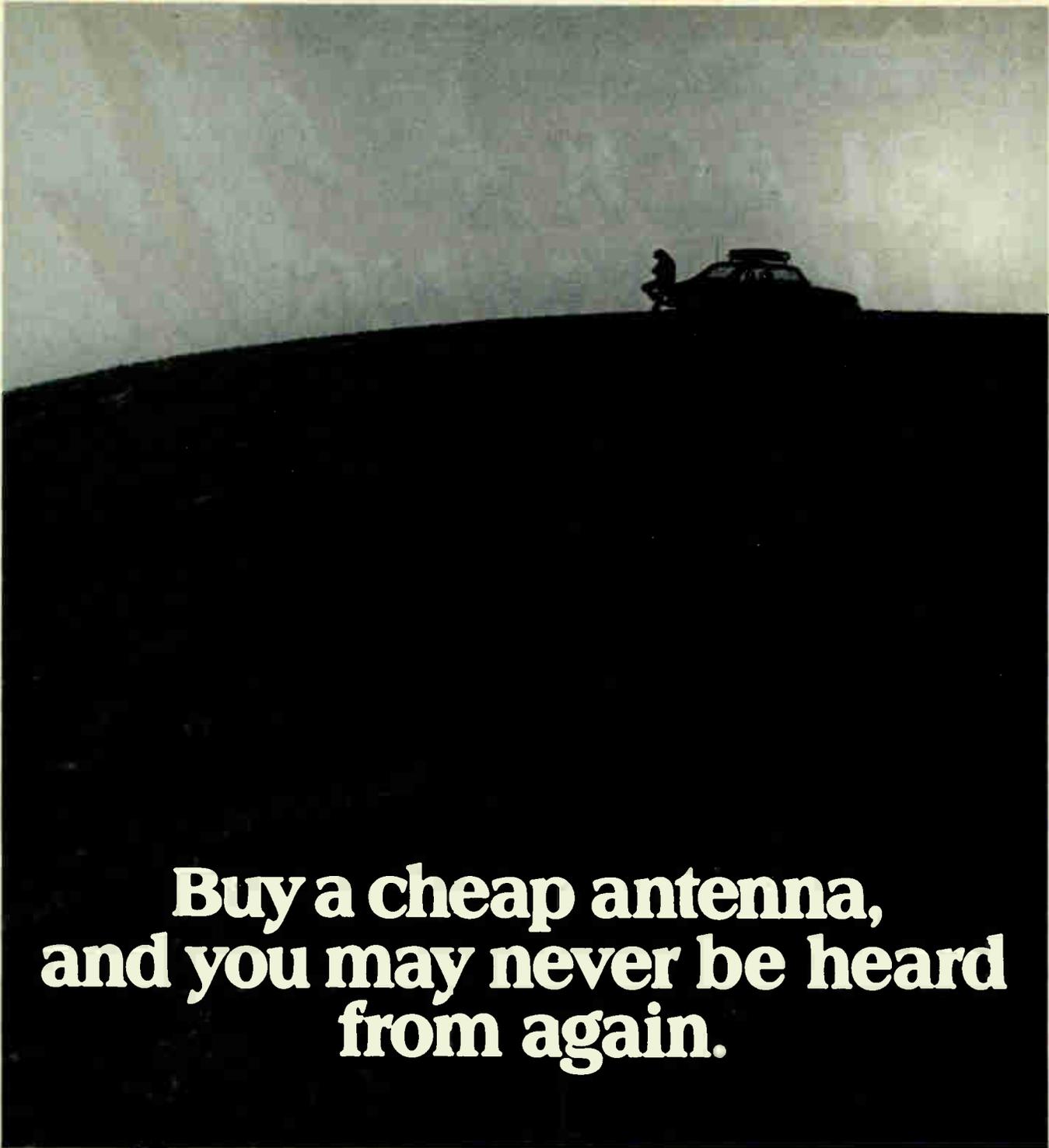
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SERVING TWO-WAY RADIO**

VOLUME 14 / NUMBER 5 / JUNE, 1977

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A Declaration of Independence for British CBers

CB radio has had great impact on the peoples of the United States and Canada. Millions of strangers have become "good buddies" because of CB radio. The right of the people to communicate with each other via two-way radio is one of the "freedoms" we enjoy. But that same freedom is not enjoyed in all countries, only a few. In some countries, governments seem to be afraid to let their people communicate with each other. They fear, if the use of CB radio is permitted, that the people might use it to overthrow or undermine the government. Nonsense. Government officials could listen in on the CB channels to learn who are subversives. Nevertheless, many governments oppose the use of two-way radio by the public.

Many governments overlook the economic advantages of permitting the use of CB radio. If permitted, the government would increase its revenue through collecting import duties. Merchants would earn a profit by selling CB equipment. People would be employed to sell, install and service CB equipment.

At the present time, groups in Australia and the United Kingdom (England, Scotland and Northern Ireland) are campaigning for the establishment of a citizens band.

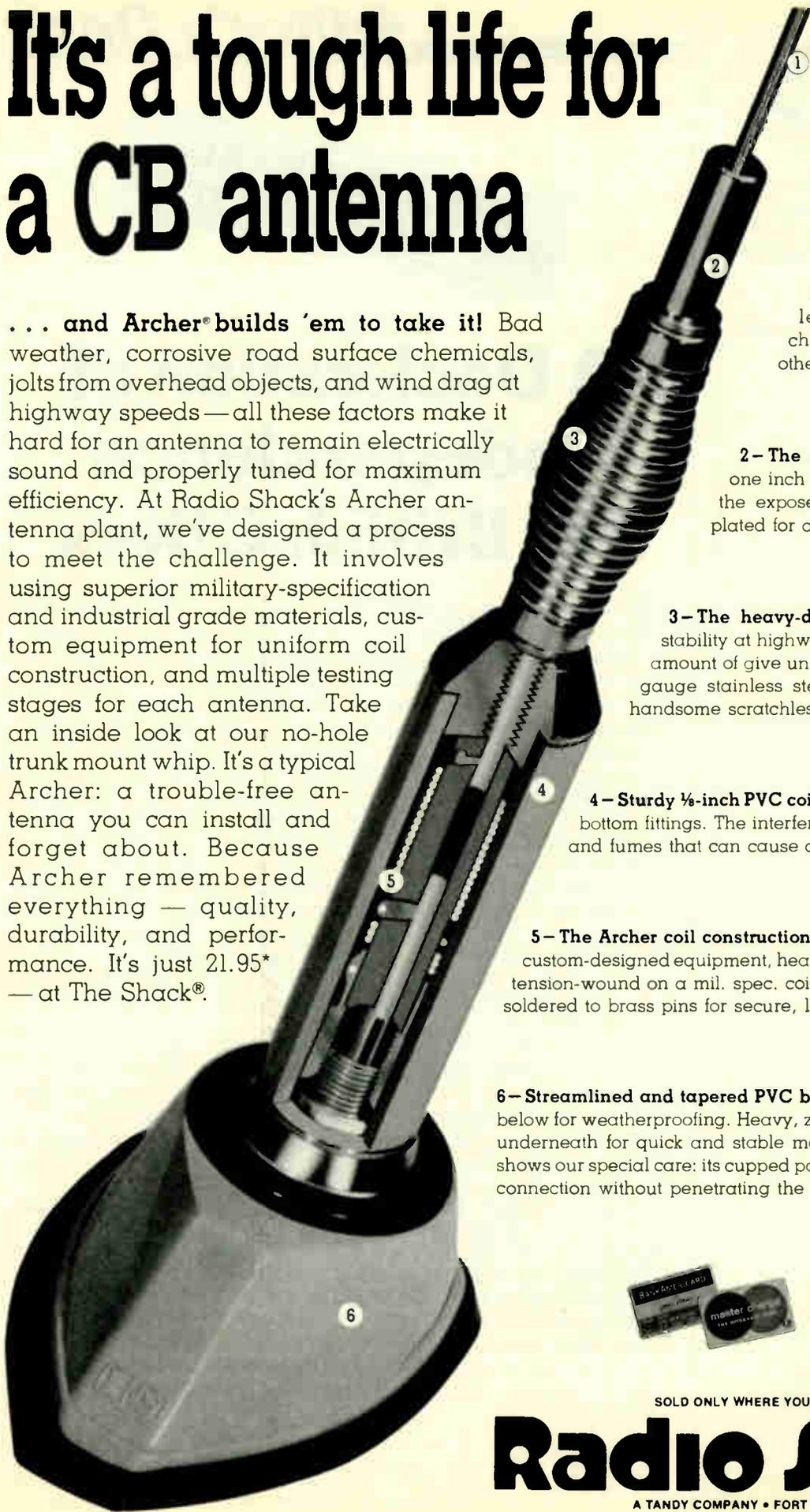
One of the groups campaigning for CB in England is the Citizen Band Association. The organization circulates leaflets with such headlines as "Citizens Band for Truckers" and "Why Have CB Radio?". The latter gives detailed explanations of the benefits of CB radio . . . It Helps the Isolated, It Helps the Motorists, It Helps the Police, It Helps Small Business, It Helps the Family, It Helps Sportsmen, and It Helps Everyone.

Another British group, the United Kingdom Citizens Band Campaign, is circulating a "Petition to Allow Citizens Band Radio." The petition form carries the following preamble: "Wherefore your Petitioners pray that the House of Commons do introduce a Bill to establish Citizens Band Radio in the United Kingdom and Amend such Acts of Parliament as might presently prevent Citizens Band Radio from being introduced in the United Kingdom."

We hope the Australian and British groups, as well as groups in other countries, will be successful. "Let freedom ring — everywhere!"

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Letters to the Editor

Address all Letters to the Editor to: Editor, CB Magazine, 250 Park Ave., Suite 509, New York, NY 10017.

WOMAN READER VALUES CB

Just wanted to tell someone that for months I considered my husband's CB radio an expensive playtoy. It was something that made a lot of noise and could be distracting. However, one night this winter, I was returning quite late from visiting a friend in the hospital, and was alone in the car. On three different occasions the same car with three men in it pulled up beside me and then dropped back. There was no traffic and I did begin to feel frantic. So, the next time they pulled up to my car, I picked up the mike and acted as if I was talking. They quickly pulled away and I never saw them again. That night, the expensive playtoy became the loveliest "security blanket" I have ever seen. I would not have known what to do with the mike if I really had to use it, but I know now how to contact REACT and get help on the way. Sandra Shanks, KZU-8718 Hampton, Virginia

THANKS, 'WHITE HATTER'

Your publication is a regular part of our weekly 2 hour CB talk show, 10 a.m. to noon Saturdays, on KWBZ (1150, Englewood, CO). We refer to articles in your book, which we find very well done. Keep up the good work and maybe all our efforts will make CB radio better and perhaps more useful to our communities. The White Hatter (Bud Hall), Englewood, Colorado.

TRUCKERS AND SECURITY

I want to thank those 18-wheelers on the highways who are making the roads safer and better. Not only do they move the loads which keep America going but also protect the motorists with CB. I would also like to thank the four-wheelers for their cooperation on CB. Out here in
JUNE, 1977

New Mexico and Arizona, there are more CBers than one would guess. I live in a town with a population of approximately 450 people. But there are enough CBers to start a CB club. We just established ours and find the information in your magazine beneficial.

David Davis, KYW-4539
Fort Defiance, Arizona

NEW YORK MOTORCYCLIST ADDS CB

I have a Pearce-Simpson Tiger 23C installed on my motorcycle, and use a single Hustler mirror mount center-loaded antenna on a bracket behind the license plate. I ran the coax down under the motor, up through the forks and to the radio. There are two speakers inside my helmet which enable me to talk with my daughter on base when I go to Watertown (22 miles from my base). The covers over the speakers are valve covers from a Sloan Flushometer Valve for a toilet in public buildings. I have put over 2,500 miles on this since it was installed and have had no trouble with it.

Nick Derouin, KIW-6647
Chaumont, New York

READER APPRECIATES FICTION

The article in the March '77 issue of **CB MAGAZINE** "This Is Lazarus — Clear," by William Angus Davidson, is in my opinion an excellent addition to the format. I would like to see more of Mr. Davidson's work. Yours is a fine magazine and I look forward to each copy.

C. E. Robinette, KIV-0501
Warrior, Alabama.

CB HELPS ALLEVIATE GIRL'S PAIN

On my way to work in Wilmington, Delaware, the car preceding me into our parking garage had the misfortune of

having a 5-year-old little girl dart in front of her. The youngster was knocked to the ground and was unable to get up, screaming with pain in her leg. I called out an emergency on Channel 9. REACT relayed the message to the Wilmington Fire Medics. In 3-1/2 minutes we had police, medics and an ambulance on the scene. Wilmer W. Riley, KAFZ-0085 Norristown, Pennsylvania

READER QUESTIONS TREATMENT BY FCC

I have received your publication for over a year and have been into CB since May of 1975. I enjoy your magazine and have taken pride in operating my station in a courteous and responsible manner. I was amazed at the low number of "Notice of apparent liability and violations" issued during 1976 quoted in "CB Interviews Top FCC Enforcer" (December 1976 issue). It is a source of personal aggravation and dissatisfaction with **partial** FCC enforcement procedures afforded my station. After my requests for reconsideration were repeatedly refused by form letter, I paid my forfeiture, which I feel was grossly unjustified. No amount of slanted publicity will help promote the image of the FCC as long as they fail to use common sense, fair penalties and impartiality in the issuing of violation notices and the settlement of the problems involved. William C. Orr, KWS-0105 Lincoln, Nebraska

CBer WANTS SERIAL NUMBERS ON FRONT OF SET

The manufacturers of CB radios could make a significant contribution to the prevention of CB radio thefts. They could conspicuously engrave serial numbers of the radios on the face, instead of the back, where it must

be removed from the car before the number is seen. I personally would consider this an important feature to look for in buying a CB radio.

Eugene L. Wood, KYM-9422
Albuquerque, New Mexico

SERVICE CHARGE TOO HIGH

In regard to the letter from Mrs. Edrich of Madison, SD, in your August issue, I was shocked to read about the charges for their CB repair. I charge \$12 per hour. Nevertheless that bill should have been in the neighborhood of \$19.50, which leaves a ripoff of about \$22. If I were your husband, Mrs. Edrich, I'd get some money back. Who ever heard of a fuse costing \$6 and the replacement of it \$4.50? We have an excellent reputation here and most of our business is word-of-mouth by veteran CBers. This is important because, with the flood of new CBers, the new ones can't possibly know reliable shops. I stand behind my work and I hate to see ripoffs like this one. All repair shops, both good and bad, suffer from this type of conduct. Next time ask a CBER that's been in the area for six or seven years.

Jeff Jones
Electronic Services
Lancaster, California

NEED EXISTS FOR CB IN MINISTRY

As a recent subscriber and a long time reader of CB MAGAZINE, I have to say that your magazine seems to be one of the best and most authoritative on the market. In the past couple of years, many new magazines have sprung up, trying to capitalize on the boom, but most of them have the same old information. Most of their copy could be found in AP press releases and Part 95. Much of their info is outdated. Yours is not. Thank you for your accuracy.

I was wondering if it has been brought to your attention that

many Christians and church groups are finding ways to use CB as a tool in their ministries. I detect this as a movement in some places — a favorable response rather than a multiplication of TVI complaints. There are some Christian CB clubs springing up. The Christian CBers I know are using their radios as a means to gain a wider circle of friends and by gaining the friendship of the CB public, they are also making friends for Jesus. For some, such as myself, this has been a new and innovative approach to the Christian ministry.

Thomas Howe, KZN-7895
Golden Gate Baptist Seminary
Mill Valley, California

MOBILE ANTENNA WORKS ON HIS BOAT

In your September issue under "Questions and Answers" you state "do not use an automotive antenna." I own a fiberglass 15-foot boat on which I have installed a CB set. I am using a regular center-loaded automotive antenna because I just happened to have one on hand. For a ground (plane) I am using a #14 bare wire running the entire length under the boat. I get excellent results. We live on the shore of Lake Cumberland, which has many deep and narrow channels and inlets. Never have I been completely isolated from receiving or able to get a reply from my own broadcast.

A. C. Good, KDD-6202
Monticello, Kentucky

COAST GUARD DOES EXCELLENT JOB

I feel that I must rebut Warren S. Gibon's (KTQ-5587) letter to the editor in the September issue stating his unhappiness with the use of VHF marine radio in contacting the Coast Guard. I live on the central coast of Oregon and monitor on the VHF marine band. I have heard as far north as Neah Bay, Washington and

south (due to the terrain) to Coos Bay, Oregon. I have nothing but the highest praise for the Coast Guard. They receive many calls and handle them most efficiently. CB is also satisfactory, with the exception of having to go through a third party, as the Coast Guard does not monitor CB. Of course with either radio much depends on the caller. I heard a skipper of a small boat with a dead motor who only had CB and got a base station on shore. The base in turn called the Coast Guard. The skipper was in fog and confused as to his location and sent the Coast Guard in the wrong direction. The boat was found later by a commercial fishing boat who contacted the Coast Guard on VHF immediately and gave them the boat's correct location. Within a short time the Coast Guard was on the scene and towing. So believe me, I think the Coast Guard does a great job. I also believe that both CB and VHF are good.

Floyd C. Bunch, KHW-0749
Yachats, Oregon

FUEL INJECTOR INTERFERENCE

Regarding the man who has a problem with his SAAB - 99 fuel injection, his problem is caused by RF feedback into the electronic circuitry. An easy solution is to jumper the power supply to the control module with an 0.1 uF wafer capacitor. This will work, as well for people who have electronic thermostats for temperature control in the car. An 0.01-uF disc capacitor from power supply to ground will effectively shunt the RF away from the electronic circuitry without affecting the operation of the units. This was quite a problem on my own car until a helpful hand told me what to do. Now it works like a charm.

Robert L. Brickhouse,
Fort Lauderdale, Florida

The 40-channel Cobra 29XLR. From the sleek brushed chrome face to the matte black housing, it's a beauty. But its beauty is more than skin deep. Because inside, this CB has the guts to pack a powerful punch.

The illuminated 3-in-1 meter tells you exactly how much power you're pushing out. And pulling in. It also measures the system's efficiency with an SWR check. In short, this Cobra's meter lets you keep an eye on your ears.

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and Delta Tuning for clearer reception.

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'RUBBER DUCK' CITES ANTENNA DANGERS

OMAHA, NEBRASKA — The RUBBER DUCK himself, C. W. McCall, has taped a radio spot promoting CB antenna safety. The commercial, done in CB lingo, was cut as a public service at the request of Omaha Public Power District as a means of communicating to CB buffs the dangers associated with installing CB antennas near power lines. The radio message also encourages proper grounding and other safety procedures.

LINEAR SELLER INDICTED

LOS ANGELES — A Los Angeles man has been indicted by a Federal Grand Jury charged with sale of illegal radio frequency power amplifiers. Assistant U.S. Attorney Douglas W. Lofgren, who presented the case to the grand jury, pointed out the action is "one of the first indictments in the country" returned against the seller of the (linear) amplifiers. Conviction will subject the seller to a maximum penalty on each count of a \$10,000 fine and one year in prison. [Industrial Communications].

'BIG NOSE' HAS EARS

JACKSONVILLE, FLORIDA — Nine year old Hugo, whose handle is "BIG NOSE," was presented to comedian Bob Hope by the mayor of Jacksonville, in gratitude for Hope's 'charitable activities' in that city. The 3,500-pound elephant's foster home is the Jacksonville zoo, where his trainers have adapted his voice commands to the CB radio attached to his collar. Zoo officials report Hugo responds well to the spoken commands emanating from the unit, positioned with its antenna behind one massive ear. The elephant can even distinguish between the voices of his two trainers, it is reported. (How

JUNE, 1977

Explosion!

Quick-Thinking Channel 9 Monitors Keep CBers Aware of Extreme Danger As Blast Rocks Community.

By Ken McNatt

PHOTO BY RICHARD O. WRIGHT



On Sunday, February 20, 1977 at 7:45 p.m., the first of two railroad tank cars carrying LP gas exploded in a flash of fire and fury which lighted the north Dallas sky like the sun and created a sonic-boom-like shock wave that shook the surrounding area for more than ten miles. Airline pilots approaching Dallas-Fort Worth Airport reported seeing the brilliant flash from 150 miles out. Shortly after 8:00 o'clock, the second tank car erupted in a blast which launched 100 tons of steel into the air, like a tin can on a firecracker. Quick reactions by Dallas County REACT and the Garland Police Monitor, helped keep CBers posted and away from the ever present danger of other explosions.

"What was it?"

"I don't know. Someone said a 747 just crashed over in Garland."

Those were the last intelligible words I heard on Channel 19. After that, Channel 19 was utter chaos! Minutes after the first explosion, I switched to Channel 9. Already, Channel 9 was congested with hundreds of CBers all asking the same question. Calmly, a REACT monitor was asking everyone to

Only minutes after the first explosion, a second tank car filled with LP gas erupted with a force that launched 100 tons of steel into the air, showering the surrounding area with flaming bits of metal.

please clear the channel for emergency traffic. "As soon as we have something to report, we will make an announcement."

Traffic was beginning to stack-up on LBJ Freeway, the Interstate loop around Dallas. It seemed that they came from everywhere — thousands of cars jamming the freeway and all main arteries of west Garland and north Dallas. We were all looking at a huge orange ball, billowing atop an enormous column of red flame. Everyone wanted to know. What happened?

Finally another calm voice came over the radio. "This is the Garland Police Monitor. There has been a train derailment and explosion west of Garland. It appears to be in Dallas. We will attempt to keep you advised of all developments as we know them on Channel 3. Please keep Channel 9 clear for possible emergency traffic directed to REACT."

[continued on next page]

does one refer to a 3,500-pound elephant as "BIG NOSE" — diplomatically?)

ELECTRIC SHOCK KILLS CBer

CANONSBURG, PENNSYLVANIA — Still another CBer has lost his life in process of installing a CB antenna. Nick Bardos, 18, reportedly died hours after admission to a local hospital, following contact with high tension lines through the wire he was holding. He had been installing an antenna at a friends home, it was reported.

COAST GUARD OBJECTS TO CB APPLICATION

SOMEWHERE-ON-THE-COAST — An application to remote control a CB radio station on a seaside high building to assist and inform boaters who have only CB radio facilities was filed in 1973. The application was supported by

letters from Civil Defense, local Coast Guard and action was requested several times, the applicant said.

He also said it was discovered that the U.S. Coast Guard office in Washington had objected to the application and the FCC had held up action until, and if, the Coast Guard withdrew its objection.

The applicant told the FCC he would maintain facilities for direct radio communication with the U.S. Coast Guard on 156.8 MHz and 2182 kHz through his existing limited coast station.

The proposed CB facility, he said, would be used for the purposes of: Providing assistance to boaters; locating overdue boats; relaying calls for assistance; relaying instructions from the U.S. Coast Guard (coordinating shooting and spotting of flares, spotting the blue strobe lights, anchoring instructions, etc.) and providing severe weather information.

NEW FCC FACILITY

CINCINNATI, OHIO — A new FCC Field Operations Bureau facility opened here recently at 8620 Winton Road. Telephone is 503/521-1790.

SANTIAGO COMMUNICATIONS TEAM AIDS SEARCH FOR AGED MAN

SANTA ANA, CALIFORNIA — Throughout the night of January 16th, the Santiago Communications Team assisted the Irvine, California, police department in its search for a 93-year-old man who had wandered away from home. At 8 a.m. the following morning the man was found asleep beneath a tree, more than 6 miles distant from home, none the worse for his experience.

A letter of commendation from the Irvine Police Department read, in part, " — Again, I wish to commend you and your group. Not only was your assistance to us valuable, but it served also to enhance the image of citizens band radio operators in this area"

U.S. MAGISTRATE CONVICTS TWO FOR CB ABUSES

HOUSTON, TEXAS — Two Houston CBers were convicted by U.S. Magistrate Norman W. Black on a total of 22 misdemeanor counts including excess power use, communication over the legal 150-mile limit, over-height antenna, and use of 10,000 watts RF amplifier. One defendant "at no time used call letters and used power to walk on other channel occupants." FCC Engineer-In-Charge Daniel A. Cantrell said his office would continue to investigate the abuse of the airways, which might result in more cases being brought to court.

Explosion!

[continued from previous page]

Most of us were interested in the explosion and went to Channel 3. All through the night the Garland Police Monitor kept CBers posted on the development and advised everyone to stay away from the area. The derailed train also contained cars of potentially deadly vinyl chloride. By working hand-in-hand with Dallas County REACT, Channel 9 traffic was kept to a minimum, allowing REACT to handle other emergency calls throughout the city.

Keeping people away was the order of the night for these Channel 9 monitors. The accident happened only a quarter mile away from several major streets and highways. Sightseers and thrill-seekers were not en masse. Several amateur radio operators (2 meter) helped with road closings by setting-up roadblocks and directing traffic. To the

surprise of some, even a Dallas Police helicopter pilot was broadcasting on 2 meter from his vantagepoint. It was a night for radio of all classes.

Investigators say the explosion was caused by a derailment which forced a drawbar to puncture a tank. Spewing gas was ignited from sparks of the dragging wheel. Miraculously, no one was seriously injured, however the train crew was hospitalized for observation. A day school for children was virtually ripped apart by the force of the blast and a public mini-warehouse received extensive fire damage. Local officials were quick to point out that if the blast had occurred 12 hours later or a mile down the track in either direction, it could have been the worst disaster in Dallas history.

CB's Good Buddy System

How it's helping bring Americans
back together again

By William B. Roberts,
Consulting Editor

"10-Fir, Good Buddy." That's the stock phrase used by night club and TV comics; by the bright sophisticated columnists of the mass media to characterize the average CBer.

In many cases, it is used by these commentators as a put-down.

They are implying that most CBers are red-necked, under-educated slobs whose only kick in life is ratchet jawing, breaking speed limits and dreaming up those colorful, ingenious puns for the "Slanguage" dictionaries.

But with as many as 20 million CB users nationwide, this brand new mass communications medium cannot be limited to a single type, or class, of people. The "Good Buddies" come from every walk of life; every occupation; every economic and ethnic strata.

It might seem that all they have in common is a short-range transceiver. However, there's more, much more. Despite the attention paid to "New Wave" thinkers, who have proclaimed a new era in moral values, most Americans haven't changed much since those days prior to 1960, when the nation believed, and felt, it was united. Americans may have been told their nation was becoming divided; that their striving for material wealth had destroyed their sense of compassion; that the institutions of God, country and family were obsolete in a fast-moving industrial society — they may have been told all these things, but CB radio is proving they didn't believe it.

While it appeared to critics of the American scene we were no longer interested in helping one another; to be our brother's keeper, most Americans were frustrated because there didn't seem to be a way they really could help solve the problems and ills of society around them. The nation had indeed gone through significant changes which tended to isolate people from one another — big government, big cities, big business, big schools — everything scaled too big for the individual.

Citizen Band is changing all that — suddenly it's possible for the individual to save a life or even save a city. It is possible for a single person to fight crime or to help his fellow man in thousands of significant ways.

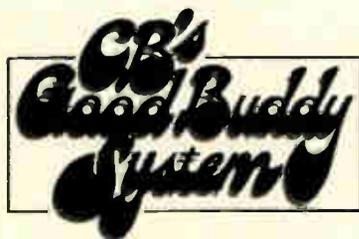
So one might say CB is creating a new American system — The Good Buddy system. It is a system uniquely American, incorporating the values and beliefs handed down through the 300 years of generations who have inhabited this continent, yet a system ideally suited to our fast-moving electric age.

In recent months, CB MAGAZINE has been following the Good Buddy System. It pops up everywhere; it touches millions of lives. It has helped the Northeast through a crippling blizzard and it has saved thousands of lives and untold dollars in property damages.

To illustrate the Good Buddy System, we have chosen the following five incidents. They uniquely illustrate the power and potential of this phenomenon which is indeed bringing Americans together again.



Smokey Killers Nabbed Through CB; Motorists Drive 'Double Nickels'



On the pot-holed blacktop of Oklahoma's Turner Turnpike, trucker J. C. Pemberton pushed up his sunglasses and touched the volume of his suitcase-mounted CB.

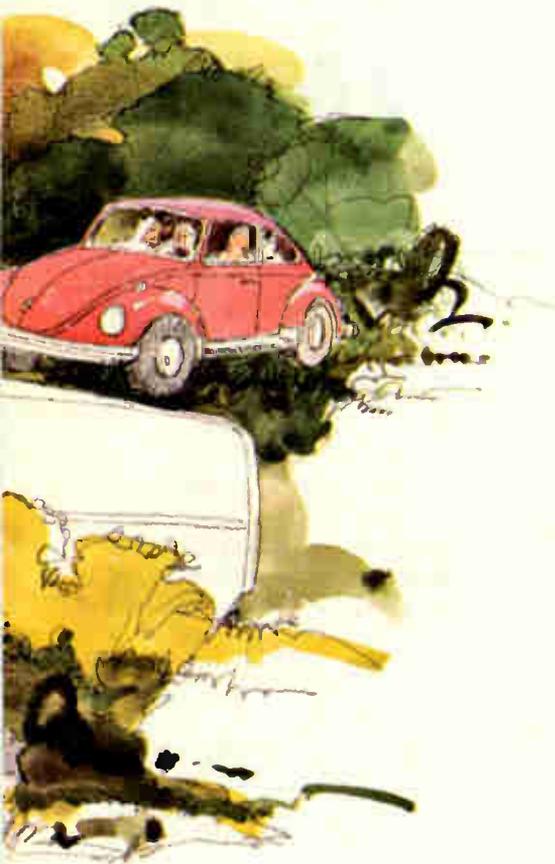
The glasses only partially blocked out the piercing evening sunlight of April 4. The radio didn't begin to drown out the diesel cab-over's monotonous clamor.

As Pemberton gripped the wheel, his neck was tight, his

stomach churning from 20 hours out of Columbus, Ohio, atop eighteen tires bouncing on every patch in the pavement.

"Breaker one-niner," crackled a tourist on Channel 19. "Mercy sakes, we got us a Smokey the Bear just past that there mile 58. He's westbound and, boy howdy, after a buncha hippies inna Volkswagen."

The radio garbled, but the westbound Pemberton involuntarily checked his speed-



ometer. The reported pursuit was occurring two miles ahead.

"Breaker — what's the 40 — Smokey report?" buzzed the radio, full of radio-testers walking over each other.

Pemberton turned down his radio's volume and rumbled past the Bristow exit.

He was an easy hour and a half away from Oklahoma City — his "home 20."

His dusty throat ached for a tall, cool beer that he knew waited.

He crested a hill just past mile marker 59.

On the shoulder flashed the red and blue lights of an Oklahoma Highway Patrol cruiser.

Unconsciously, Pemberton slowed again.

A middle-aged Patrolman named Larry Crabtree casually approached a red Volkswagen with Missouri plates. Crabtree

paused and copied the bug's tag number.

Only two hours earlier, Crabtree, 43, had paused at a turnpike wrecker-driver's funeral.

"You know," the uniformed trooper had said to a mutual friend after the ceremony. "It's good to know a friend like him will be waiting for me in Heaven."

Pemberton's rig pulled into the middle lane.

The trucker didn't glance twice at the ancient, little, stopped Volkswagen. Inside waited four long-haired, T-shirted runaways and a 25-year-old hitchhiker — none headed anywhere in particular.

Minutes before, Patrolman Crabtree had spun around in the turnpike median, responding to a report of a recklessly-driven, red Volkswagen full of youngsters.

The dispatcher said they were under "apparent influence" of drugs or alcohol.

At a pike service station, such a little car had jumped a curb, narrowly missing an attendant.

Trucker Pemberton watched the two parked cars in his rear-view mirror and shook his head in sympathy for the driver apparently in line for a traffic ticket.

Pemberton signalled to no one in particular and began to return to the turnpike's outside lane.

And, in his rear-view mirror, suddenly witnessed a butchery

about which he will now hardly speak:

Crabtree walked up to the stopped car.

A gun barrel thrust out the Volkswagen window.

The stunned brown-uniformed state trooper clutched for his service revolver.

A red flash belched death into his chest — point-blank.

Patrolman Larry Crabtree — father of three boys, addicted new golfer, softspoken Southern Baptist — jerked over in mindless pain and collapsed half-on, half-off the turnpike shoulder.

He struggled, then didn't move.

Blood flooded the grey gravel.

The Volkswagen roared to life and careened onto the roadway.

And grabbing his truck's Citizens Band radio mike, J. C. Pemberton screamed the only words that came:

"Mayday, Mayday, Mayday!"

The Volkswagen — doing a cautious 55 mph — overtook the diesel.

Pemberton's first impulse was to run the little car off the road. He gripped his microphone.

But the inner calm of the long-haul solo trucker prevailed. J. C. Pemberton began telling the world what he'd just seen.

He let the Volkswagen pass. Nonchalantly, he tailed it.

Over the radio, he carefully repeated the car's tag numbers, described the occupants, noted the mileposts at which a .410,

Smokey Killers . . .

[continued]

then a .30-.30 rifle, a revolver and a box of shells were hurled into the right-of-way.

And he pleaded for any base station listening to call authorities — for any mobile units to relay his and the Volkswagen's 10-20.

The bug continued down the turnpike, unhurried at 55 mph.

"I guess he didn't want to attract any attention," remembers Pemberton now.

The truck shadowed the bug for 14 miles before the first Oklahoma lawmen intercepted — radios blaring Pemberton's broadcasts, their big, emission-controlled Pontiacs trembling as speedometers paused at 120.

The first black-and-white Highway Patrol unit "made a U-turn right between me and the Volkswagen" remembers Pemberton.

The bug hesitated, then pulled onto the shoulder.

The Patrol car overtook it, arched into a screeching turn-around that put it astride the median —

And a flushed, brown-uniformed turnpike trooper jerked out a pump shotgun and aimed it across the hood of his unit.

Pemberton shut his rig down half a football field away from the action.

"That trooper looked like he meant business," the trucker whispers now. "He made them sprawl out on the ground —"

Within minutes, a Creek County deputy out of nearby Sapulpa and six other Oklahoma Highway Patrol cars skidded up — county troopers, supervisors from Tulsa . . .

And quickly it was over. Alleged killer Monte Lee Eddings, 16, his runaway sister Rhonda Eddings, 14, two under-age youngsters that authorities have refused to identify and hitchhiker Timothy Wayne Thomas, 25, were in custody.

Traffic on the turnpike began moving as usual.

"Then, the troopers came over to me — a whole bunch of them,"

[Continued on page 26]

Truckers 'Ferry' Worried Wife 1,700 Miles Home



Since their retirement almost two years ago, John and Rose Ella Gragg logged a lot of miles in their home: up through Alaska, down to Florida, twice across the U.S. and Canada. It was now December and they looked forward to spending Christmas in their comfortable San Rafael, California, home with their daughter and family from Louisiana. The couple had gone all out to make sure their little grandson would long remember this holiday. The gifts were piled high under the tree, the turkey was ordered and a surprise visit from Santa was in the works. Then the long distance call came: a change in their son-in-law's job now made him unable to travel to California. Could John and Rose possibly make it to Shreveport? Neither felt too excited at the prospect of traveling so far again so soon, especially since John was feeling ill — the effects of a recent swine flu inoculation, he guessed.

"But Christmas is for kids," Rose Ella says. "So, with mixed feelings, we decided to load up our little Datsun and hit the road again — just six days before Christmas." Because of the sudden change in plans, John had no time to convert the motor home's CB radio to the Datsun or to repair the car's own malfunctioning radio.

The morning of their departure dawned warm and sunny. The rest of the country was about to be bombarded by murderous cold and storms.

The weather and John's health worsened with every mile. By the second night John was having trouble catching his breath and his shirt dripped perspiration.

The swine flu, itself, couldn't be any worse than the effects of the shot, John tried joking. He had never felt like this before. With Rose Ella piloting the little yellow subcompact through the winds and sleet, the couple managed to make Shreveport by Christmas Eve.

John's health deteriorated. "Before dawn on December 26 we literally dumped our clothes and gifts back into the car and took off," Rose says. "We didn't know what was wrong with John but it was certainly clear that we had to get home — quick. The terrible winds didn't let up but we still made Abilene, Texas, that first night. I gave John two alternatives: the hospital in Abilene or Oklahoma City where we're originally from and where my cousin is a physician. He decided on Oklahoma City, so at 3 a.m. we left the warm motel and started out again.

My cousin opened his front door, took one look at John and drove him straight to the hospital. Then, for the first time we found out that John was suffering from something much more serious than swine flu: congestive heart failure." The doctors need not have bothered adding that John was in no shape to drive home.

On New Year's Day Rose Ella Gragg started back alone. They had it timed so she'd be at the airport in California to meet her husband three days later. She managed to make it back through Abilene to a Big Springs motel by dark and quickly dropped into an uneasy sleep.

"The next morning on the highway I noticed huge chunks of ice that had fallen off trucks. I

[continued on page 20]

Is there an answer to the almost routine assaults, rapes, purse snatchings and muggings plaguing many cities?

In Washington, D.C., there's an effort underway to multiply the eyes and ears of the police force. Persons attacked have a good chance of receiving help within seconds, because the crime may be seen by one of 1,500 cab drivers who are part of the Civilian Radio Alert.

The program was implemented by the D.C. police department after Sgt. Ernestine Johnson, a D.C. police-woman for over 22 years, got the go sign for a similar operation she had read about.

Civilian Radio Alert involves radio equipped vehicles owned and operated by some 60 cab companies and associations in the 67-square mile District of Columbia, plus some suburbs. William Wright, president of the Capitol Cab Association, said that D.C. has a total of 9,000 cabs and 12,000 drivers.

Wright, after being contacted by Johnson (who is with the police community relations department), came up with cooperation and cash in the amount of \$1,000 to kick off the citizen-cabbie-police combined effort.

Johnson designed and has printed do's and don'ts for the CRA, along with decals which are prominently displayed on participating cabs . . . and cars of civilian CBers who have also joined the efforts.

It works like this: cab drivers, or others, who note a crime in progress report immediately the type of crime and the location. The program isn't confined to CB equipped cars, but the air ways are the most practical method of making it effective. After radio contact, the cab dispatcher or a Channel 9 monitor, calls the emergency 911 telephone number and relays the information. Within literally seconds

(certainly not longer than minutes), one of the mobile D.C. police units is enroute.

Bank robbers, plus personal assault criminals, have been speedily captured through the Civilian Radio Alert.

Purpose of the program is to foster improved relations between the police, the community and the cab owner-drivers, Johnson pointed out and from first reactions, the goal is exceeding fondest expectations.

Although there has been no formal evaluation of results, CRA is recorded as playing an important role in several apprehensions. Johnson said a study is being made to open the organization to other CBers interested in helping their fellow citizens in time of distress.

Asked by **CB MAGAZINE** how the program was received by the cab drivers, Johnson admitted there was some element of apprehension at first.

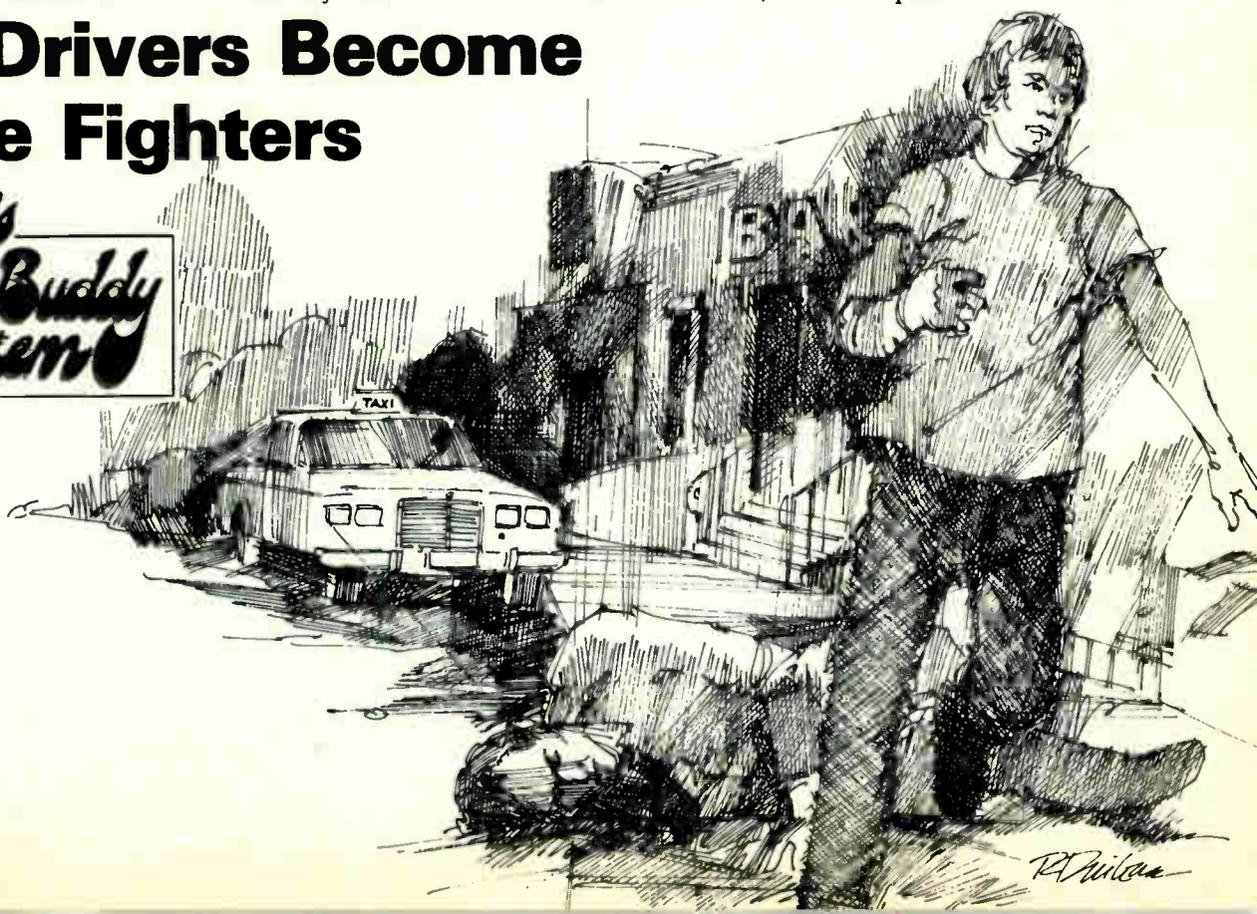
"But when they saw the newspaper accounts and heard the radio coverage, they came right on in," she said.

As detailed in a pamphlet, the purpose of the program "is to solicit citizen involvement in our crime reduction efforts by capitalizing upon all the available resources our community has to offer."

Goals are to:

- Deter, prevent and reduce crime by direct citizen involvement.
- Improve time response for emergency service such as ambulance, fire and police.

Cab Drivers Become Crime Fighters



RT Wilson

Worried Wife . . .

[continued]

wanted to find out where those trucks had been and stay very clear of that area," Mrs. Gragg explains. "Anyway, I've travelled enough to know that when you want to find out what lies ahead, you either get on your CB radio or ask the folks at a truck stop."

Breakfast at a truck stop outside Big Springs revealed the worst: the ice came from U.S. 66 — the quickest route back to California. "I told some of the truckers my problem and that I had to get home as soon as possible to meet my husband. They said the only thing to do would be to take the southern route clear down to El Paso and then up through Tucson — quite a bit out of my way. I thanked them and started out." Nothing else was said.

Ice-heavy winds shoved the little car across the nearly deserted road. Rose guessed everyone was warm at home

enjoying the last of the holidays — everyone except the pilots of those monstrous 18-wheelers. She worried about making it back on time to meet John, or if she would make it home at all. If only the crackling on the radio would cease long enough to catch a weather report.

Mrs. Gragg imagined the charcoal-colored ribbon of highway circling the earth with enough slack for a bow. At least the high refrigerated trailer now passing would block the monotonous view ahead. She did not notice the second semi roaring up behind until its unblinking glass eyes and grinning metal teeth engulfed her rear view mirror. She slowed the small car and veered slightly toward the shoulder. It slowed too. She pressed forward again. So did the monster. The cat and mouse game continued: each time the Datsun slowed, the unseen driver blinked his lights and slowed too. Memories of some late night TV thriller popped up and Rose Ella laughed at her imagination, thinking, "He doesn't know I'm a

grandmother." Still, she wished she could transform the sleeping poodle beside her into a snarling Doberman Pinscher.

Rose Ella decided to try to get away by passing the truck ahead but it immediately sped up when she flipped on her turn signal. "I felt like a bug about to be squashed. I didn't know what those drivers were up to, but it was clear that on this lonely highway, they were the boss and I couldn't do a thing about it. So, I decided to get rid of all those silly thoughts and put my mind back on getting home to my sick husband."

The lead truck kept a steady pace while the rig behind maintained the Datsun's speed. Rose relaxed slightly.

A wind-battered diesel station came into view and the front truck signaled a turn. With surprise, Rose Ella experienced a small sense of disappointment — she was growing used to having the huge escort and, besides, driving was much easier huddled in the vacuum created by those two towering rigs. But almost

Cab Drivers . . .

[continued from page 19]

— Make citizens aware of their responsibility toward controlling crime.

— Make Washington a safer city to live, visit and work.

Things participants are to report: crimes in progress; a need for an ambulance; fires; accidents; traffic light malfunctions and "unusual" circumstances.

Communications procedures followed include: use of the phonetic alphabet; providing the precise location; a statement of whether crime is in progress; information on the kind of service needed. All pertinent information is written down.

Things **NOT** done are simple: Never attempt to apprehend. Observe and report only.

That's what Joseph L. Plater, a 10-year D.C. cab driver did when he picked up a report of a hit and run accident. The description of the car and tag number was broadcast and Plater, who drives for Capitol Cab, noticed the vehicle in the city's northwest section.

He radioed his dispatcher, who in turn passed the information to the police. Soon, while Plater followed the suspect vehicle, two police units made the nab. Another time Plater, a CBer for over three years, discovered a single-car, single-victim accident.

"Man, he (the wreck victim) was really messed up," Plater told **CB MAGAZINE**. "I broke on Channel 9 and reported the incident and help was soon there."

Plater is just one of the many participants in the D.C. CRA and he was selected at random — by chance — to be interviewed by **CB MAGAZINE**. The writer was making a trip from Capitol Hill to downtown Washington and noticed the CB-rigged Capitol Cab. His unit number was logged as was his handle, "BROADWAY JOE," and a close proximation of his call sign (just a few digits off).

Through Capitol Cab Association President Wright, we tracked down "BROADWAY JOE" to arrange to learn from the driver's standpoint about Civilian Radio Alert. The chance selection of "BROADWAY JOE" proved to be ideal.

In addition to his above credentials, Plater also is a reserve police officer, helps with the DCPD Fourth District (Georgia Avenue) and has a base station at home. "BROADWAY JOE" (KSX-0378) a native of southern Maryland, has been a resident of D.C. since 1956.

Plater still has a nearly four-year-old Lafayette mobile that comes in with max pounds. His base station is a Navajo and he uses a Star Fire antenna. "BROADWAY JOE," who admits to being 'sorta' a football fan, says he is studying about buying a 40-channel unit.

How do the drivers feel about CRA and why have they joined Civilian Radio Alert?

"BROADWAY JOE" said it's because they want to help people. "We're glad to help . . . to give a helping hand." "BROADWAY JOE" said that he was a member of a social club and most of the members had joined the Civilian Radio Alert.

CHARLES M. COOPER

immediately the second rig eased up taking its brother's place. Rose's bewilderment increased a few miles later when still another 18-wheeler pulled in behind her and refused to pass.

Suddenly it dawned that there just might be a purpose behind their actions. "Could I be in convoy?" she wondered. But how could these unseen drivers possibly know about this lone woman and where she was headed in such a hurry?

The trucks continued their pattern: when the leader turned off the truck following immediately pulled ahead and was quickly replaced by another. "Those boys really roll," Rose Ella laughs. "We're not talking about going 55."

At last, El Paso's lights beckoned up ahead. It had been a long day and Rose Ella was ready for dinner and a warm bed but her escorts showed no sign of turning off — and John would soon be in California. "If they're game, then so am I," she thought. They made Tucson, Arizona before dawn. She blinked a meager thanks and turned off to find a motel. Rose Ella Gragg was too tired to even think about what had happened that day.

That mysterious internal alarm buzzed at 5 a.m., signaling the start of another long day. But first Rose would arm herself with the necessary highway ammunition: strong coffee and a good breakfast. A young trucker watched her enter the small, nearly deserted cafe. "You're Rose Ella from California," he stated.

Yesterday's amazing events suddenly came rushing back. Yes, she was indeed in convoy, the man laughed. The word had quickly traveled over the truckmen's communication network (Channel 17) that Rose Ella Gragg had a good reason to get back to California fast. And a lone woman in a bright yellow Datsun was easily spotted because few casual travelers ventured out in weather like this.

He told her she would save a lot of time by skirting Los Angeles and taking Highway 97 from Blythe to Needles. He added that her convoy would likely leave her at Blythe because most trucks

head into Los Angeles with their cargo.

Sure enough, a few minutes after Rose Ella started driving she was met by two 18-wheelers. "I really felt confident with them," she recalls. "To those boys, time is money and I tried my darndest not to hold them back."

The young trucker was right — Rose's convoy signaled goodbye when she reached Blythe and turned off. "There was nothing out there but 100 miles of howling wind and blowing sand. I really missed those giant rigs. But the minute I reached Needles I was picked up again and brought right to Mohave."

Two of the passes at Mohave were already closed. "I was really tired by this time but if those boys were willing to take me, then I was willing to go. In those winds and blowing snow, I never could have made it without them," she explains.

Bakersfield was a welcome sight. The Datsun's mud-caked lights blinked farewell. Rose Ella called home: John had arrived that afternoon and was feeling much better. "But how are you doing?" he asked. Tales of the terrible storms dominated the

news reports. His wife just laughed — the trip was a breeze, no problems at all. She would see him tomorrow.

Like a routine, the trucks picked her up the next morning. They stayed with her all the way through Oakland — less than 20 miles from her front door.

Slightly over two days after she asked a few truckers for some simple information, Rose Ella Gragg was safely back home with her husband. "It was quite an experience," she states. "I never could have made it so fast, so surely or so safely without them. But I do have one regret: I never saw any of their faces. I don't know whether the drivers of those dozen-or-so trucks were pink, black, brown, yellow or what. They were so far up and I was so low. All I ever saw or heard were their lights and horns."

Nancee Tavares

Tippy Toes Captures Georgia Hearts



The cars were lined up along Highway 41 in Smyrna, Georgia, their CB antennas banded in black. As the flower-laden hearse rolled by with its Smyrna and Cobb County police escorts, the CBers came to a crisp attention. It was their farewell salute to their good buddy Tippy Toes.

This is a story of people — first a small flurry of CBers, then the citizens and departments of a small city and finally an avalanche of people nationwide; people who heard about a little girl with a killer disease, took her to their hearts and created for her what she eventually was to call a miracle.

They looked at that little girl, those people, many of whom had children of their own and said, "There but for the grace of God . . ." And the thought made them dig into their pockets for dollars and dimes. Because, in most

'Tippy Toes' . . .

[continued]

cases, they didn't know of any other way to help. After all — a 12 year old child!

Those who knew the parents, Brenda and Roger Myers, long and active members of the community, could think of other ways to help, of course. Food, when the little girl was sick, help with the other children, visits when the family was up to it.

As one said, "If you knew that family you just wanted to help. They are such fine, good people."

It all started the spring of 1976 when the little girl, Terri, was 11. After weeks of progressively debilitating pain, which finally put her in the hospital, tests discovered a deep back tumor, and she was diagnosed as having rhabdomyosarcoma, a rare type of cancer that affects the muscles and ligaments.

Even before she left the hospital after the operation for removal of the tumor, Terri began receiving radiation and chemotherapy treatments. She was in the hospital for three weeks at that time.

Nine days later she had to return to the hospital because the treatments had dehydrated and sickened her. She was there seven weeks that time.

Those first bouts in the hospital were only the beginning of a series. The family began living from one to the other, holding their breath in between. It was an exhausting and heart-breaking time.

Over the summer, life resumed in a partially normal fashion — at least for the children.

Terri studied with a favorite teacher to catch up on the school work she had missed, the family of five took several trips, an activity dear to Terri's heart and they spent many hours together "just enjoying."

Last fall Terri started back to school with her regular class, thanks to the tutoring and she even rejoined several extra-curricular activities.

The respite didn't last long. The pain started again, the sickness, the long, wakeful nights.

It was to help pass the endless night hours that Terri's grandparents decided for Christmas to get her a CB radio to put in the car. Being able to take a drive in

the evenings and talk on the radio might divert her, they thought. It tickles Terri's fancy to think of being able to "talk country" on one of those little gismos, anyway, and she was excited about the idea.

And that's when the CBers came into the picture.

With the gift radio, Terri's mom, Brenda, went to a local CB shop to have it installed. While she was waiting, the owner, making small talk, started "talking CB." He discovered Brenda didn't know much about it.

"I'm not a CBer. The set is for my daughter," she told him, explaining the situation with Terri.

"Well, sir," the owner of the shop says, "It got to me real bad, that child's story. I thought about it for two or three days. I couldn't sleep."

His store is not large, he is not a rich man, but finally, he says, he simply had to install a base set for the little girl who was keeping him awake nights.

Several of his own children close to Terri's age carried the gift-wrapped set to her house, where it was installed.

Poem to 'Tippy Toes'

After service station owner Jack Clark hosted a CB Coffee Break for Tippy Toes, which attracted 2,000 people, he was moved to help form the Tippy Toes CB Club and write this poem. The club is designed to keep the spirit of help exhibited to Terri Myers going for the benefit of others in northern Georgia who may need aid from their neighbors.



Jack Clark

The other night, I heard a voice,
from the big base in the sky,
saying, breaker please, for a ten-thirty-three,
will everyone stand by?

I have a ten-five message, for a little girl,
it's from number one control
to hear all o'er the world.

This small child is needed,
by the big base up above,
She was just on loan, for a little while,
to spread her joy and love.

The purpose of her time on earth,
was only just a start,
to bring us all much closer,
in our CB'ers hearts.

Let's remember her and spread some love
all across this land,
we'll miss you so, little Tippy-Toes,
as you join God's C-B band.

The Fina Man

One of the CBers then got on the air and told about Terri, saying "If you get a chance, call this little girl on Channel 19."

One of the CBers, a young woman, tells about her experience in meeting Terri. "I talked to her on the air a good bit before I went over to meet her. When I saw her, at first I was angry at fate. But I stayed composed. I talked and joked with her."

"As soon as I got back to my car I burst into tears. When I got home I kicked a tree. My first reaction was 'Why?' "

"But as I got to know Terri better, I began to come to the feeling that she was sent here for a special purpose." (Terri's mother also strongly feels this way.) "And later on, seeing how she united an entire city, I was sure of it."

"In the face of that little girl's courage, I finally decided My God! Who am I to ask why?"

Another CB friend said "That little girl's courage and faith just seemed to radiate from her. I think she was an angel. She was that special."

Tippy Toes' story (Tippy Toes was the handle Terri had chosen) began leaping over the CB channels. People from all over the country started writing and calling her. For Terri it was extremely gratifying that people would take the time to contact her.

Not too long after Christmas, her tenuous hold on health began to deteriorate rapidly.

When they realized it, several of the CB people said "wouldn't it be nice for her to meet some of these friends who have come to mean so much to her?"

A number of phone calls later, a location and plans were finalized for a coffee break in Terri's honor. "We told her mother that maybe 30 or 40 people might stop by and if Terri was up to it, she might like to meet them," the CBers say.

Over 2,000 people came by on that January 22 and 23 weekend!

Shortly thereafter, a special Tippy Toes CB Club was formed. As a result of the several meetings at city hall and calls to secure permits to hold the

[continued on next page]

'DEATH VALLEY CANARY' Gets Ears To Keep Her Independence



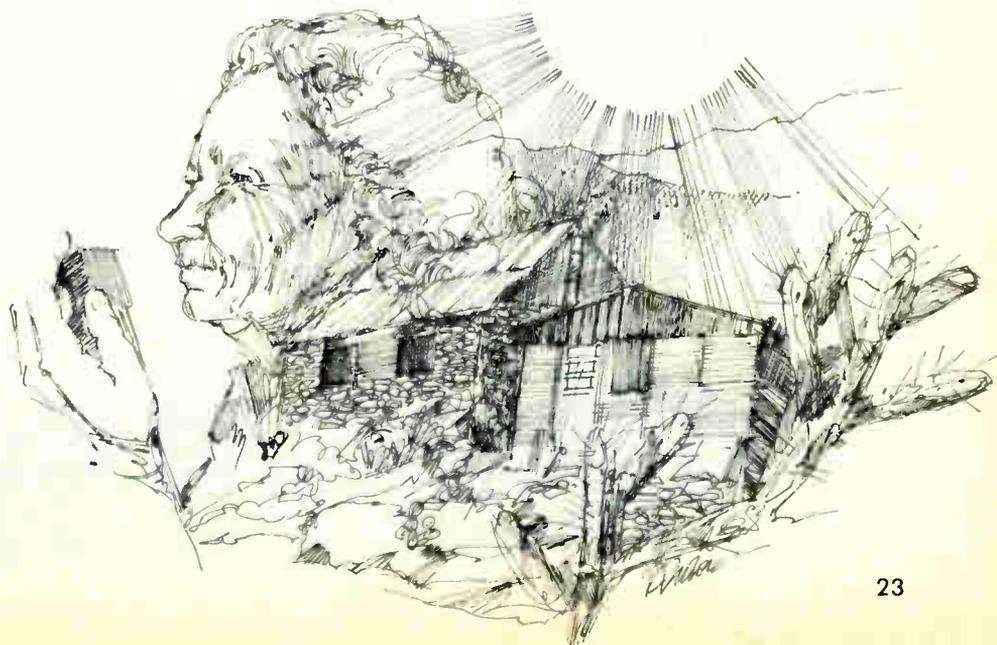
The name "Death Valley" conjures up pictures of an old feller out wandering the hills with his burro, chipping away at an occasional rock, looking for that big bonanza, that gleaming outcrop of silver or gold that will make him rich forever.

Well, Stella Andersen isn't a feller, doesn't have a burro and, at 72 years of age, doesn't wander up and down the hillsides — at least not as much as she used to do five or six years ago. But Stella is fiercely independent

and despite advancing age, she wanted to continue living almost alone in her 100-year-old stone cabin out in the remote southwest corner of Death Valley National Monument.

Since her husband, Clint, passed away a few years ago, Stella has lived in the cabin by herself except when her 12-year-old grandson Bobby is staying with her, with only the wild burro (descendants of those old-time prospectors' animals) as an occasional visitor for company. And because, on the good road into her place it takes about an hour and a half to drive the last 20 miles in a high-centered vehicle, visitors are not all that common. But Stella's the sort who wouldn't have it any other way.

It's beautiful in Striped Butte Valley. From the Andersen cabin on a clear day (and most days are



'Tippy Toes' . . .

[continued]

convoys and coffee breaks, the people down there began to get interested.

"She's one of our own," they said and started checking around to see how they could help.

When they found out about Terri's dream of going to California "to see the ocean and Disneyland," the wheels were set in motion and everyone got into the act. Every city department contributed. Everybody did something. Every individual or group with connections was pressed into service and within days a whirlwind trip for the by then, very sick little girl and her parents was arranged. Fund raising went on non-stop while she was gone.

At a day set aside in her honor on her return, Terri told about the trip. "We went over Disneyland and Marineland in a helicopter which took us to a studio where we met the Captain

and Tennile and the Welcome Back Kotter gang. Next day we had to leave, but I saw whales in the ocean. And the Lieutenant Governor of California gave me a plaque."

On that special Terri Myers Day, which 200 Smyrnans attended, city officials made her an honorary mayor, a sergeant in the police department, a member of the fire department.

President Carter's office sent a telegram, as did Georgia Governor George Busbee. A Georgia senator and Congressman called her. Lockheed Georgia officials invited her for a visit, she was made an honorary state trooper. Even Atlanta firms and groups, such as the Flames Hockey team, made various presentations. The day received extensive TV and press coverage.

It was this tremendous outpouring of love and caring that made Terri's last days better for her, Brenda and Roger say. (Terri died on February 25).

"The CBers were directly and indirectly responsible for a great

deal of the contacts that came to Terri during the last weeks of her life and we're extremely grateful." They are also grateful for the approximately \$3,000 raised by the CBers and city officials in Terri's behalf.

And the CBers didn't stop caring with Terri. They have arranged for the Tippy Toes Club to be ongoing. Members are continuing to hold special fund raising events, and the club is set up to help anyone in the local area who needs their help, but especially children with afflictions similar to Terri's.

A member of the Tippy Toes Club, attempting to explain why so many people did so much, said "Everything people did, it was done to help Terri. But in the process we ended up helping hundreds of people. Because everyone who gave so much as a penny felt better about himself."

"I feel that the basic trait to help is in every human being."

A lot of people displayed that basic trait in Terri's behalf.

Betty Thom

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From the people who bring you Marantz—the world's finest stereo systems—comes the Aircommand CB-640—the finest in 40-channel CB. With Aircommand you get over 25 years experience in outstanding 2-way communications products.

Full 6 Watts of audio power. Provides plenty of punch so your speaker cuts through freeway noise.

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Special emergency Channel 9 scan with exclusive Aircommand "beep" alert. No matter what channel you're on, a special Aircommand CB-640 circuit continuously and silently monitors Emergency Channel 9. When someone starts transmitting on Channel 9, a unique "beep" alerts you, so you can tune yourself in and give assistance.

Public address capability. The versatile Aircommand CB-640 public address package lets you (1.) Talk into the CB mike and out an exterior public address speaker. (2.) Attach a tape recorder to the auxiliary jack on the

'Canary'

[continued]

clear), there's a view of fold after fold of mountain ranges, from the Funeral Mountains along the east side of Death Valley to Mount Charleston, towering over Las Vegas, Nevada, more than 90 miles in a straight line away. There are cottonwood trees for shade, a good spring for water and a friend, who lives a few miles away at a mine, (on the bad road in) brings her mail and groceries.

But she does live alone now, and she can handle it because some friends in the little town of Trona, California, got together last summer, took up a collection and bought Stella a complete CB outfit: Radio, antenna and enough cable to connect the two. A few, with 4-wheel-drive vehicles, came out and spent the day installing it for her and on our next visit we helped her fill in the application for her FCC license and mailed it when we got back to town.

So now "DEATH VALLEY CANARY," KACC-5261, has ears.

And can talk. With the antenna up on a ridge beside her house, she can reach Shoshone, California, 60 road miles away and can talk to the truck drivers for a talc mine 15 miles down the canyon from her valley, as well as to people driving through the southern end of Death Valley itself. For power, she alternates between two automobile batteries sitting outside the cabin which are kept charged by the man who brings in her groceries.

CANARY can't reach her friends in Trona, to the west, because of the mountain bulking up behind her home, but at least they know now that she can "get out" in the event that she should need help for any reason, and she can now keep up with friends and events around Shoshone and Tecopa. Sometimes we can catch her on the air as we're coming into Shoshone on our way in to ask if she needs anything brought in from the grocery there — a great help, because if she sends

an order for anything out with us, it may be a month or more before we get back in with it.

If you visit Death Valley, the best places to give CANARY a shout from, are either coming down the grade off of Salisbury pass as you drive west out of Shoshone, or from the floor of the valley in the area of Shoreline Butte and the old Ashford Mill, about 50 miles south of Furnace Creek. She is usually "10-8" on Channel 21 when she has the set on and if a holler doesn't raise her, perhaps you'll hear from one of the talc truck drivers who can tell you how CANARY's doing up there at the foot of her mountain. But if you're there when she's "on" you'll hear a soft, feminine voice coming back at you with "This is CANARY. Go ahead."

George and Dottie Appleton,
KFU-2236

...You never heard it so good!!!

CB-640 rear panel, and boom your tape out through the same external speaker. (3.) Mix your voice from the CB microphone with the program material on the tape recorder. Both voice and tape sound at the same time through the external speaker. (4.) Beam your received signal through the external speaker.

Built-in standing wave ratio circuitry. Measures the efficiency of the antenna system for optimum performance.

Other outstanding features include: Delta fine tuning control, digital synthesizer with phase-locked loop,

automatic noise limiting switch, noise blanking switch, squelch control, RF gain control.

Also available: Aircommand CB-140; Aircommand CB-340. All 3 units bring you state-of-art design, flawless craftsmanship and day-in, day-out reliability. Try them out now at your Superscope Aircommand dealer.

TM **Aircommand** by **SUPERSCOPE.**



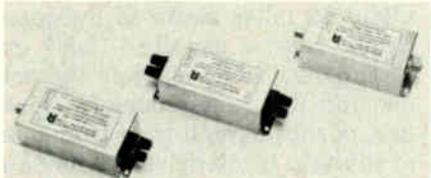
© 1977 Superscope, Inc., 20525 Nordhoff St., Chatsworth, CA 91311. Prices and models subject to change without notice.

New Filters

Eliminate Interference To TV & Audio Equipment



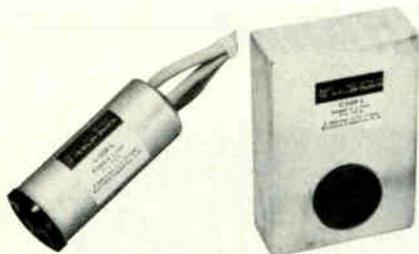
Low-Pass Filters eliminate or greatly reduce interference to TV channels 2 and 5 by CB or radio amateur station when installed in antenna lines of those transmitters. Input and output impedance 50 ohms. Insertion loss .3 db max.; VWSR 1.2:1. Attenuation greater than 75 db above 41 MHz. C-511-T: 25 W AM 50 W PEP SSB. C-514-T: 1000 W AM 2000 W PEP SSB.



High-Pass Filters, when installed in the antenna, eliminate or greatly reduce front end overload interference to TV or FM receivers caused by CB or amateur radio transmitters and other high frequency radio services. Filter attenuates signals below 40 MHz by a power factor greater than 1,000,000 to 1. Impedance C513-T1: 75/300 ohm; C-513-T2: 75/75 ohm; C-513-T3: 300/300 ohm.



Audio Interference Filters eliminate interference caused in your audio equipment by CB, radio amateur transmitters and other radio services. C-505-R installs in the input lines of audio equipment. Consists of 1 pair. C-506-R installs in speaker lines. Unit will take care of stereo speaker system.



AC PWR Line Filters eliminate or reduce interference to CB receivers, TV's and radios, and prevent CB radio signals from entering power line. C-508-L: 3-section LC filter, 3 A max. C-509-L: 5-section LC filter (for more severe interference), 5 A max.

For name of your nearest distributor, write to:



BELL INDUSTRIES
J. W. Miller Division
 19070 REYES AVE. ■ P.O. BOX 5825
 COMPTON, CALIFORNIA 90224

Smokey Killers . . .

[continued from page 18]

now remembers Pemberton. "They said thanks. They congratulated me for helping them."

The publicity-avoiding trucker shrugs, shaking his head. He fumbles with his sunglasses.

"I told them I was only doing what a fellow ought to."

Across the front of the modern chapel of Sapulpa, Oklahoma's First Baptist Church spread a wealth, but not a flamboyance of flowers.

Many were from CB clubs, mobile assistance groups — one from **CB MAGAZINE**.

Amid the flowers — flanking the bronze casket — in dismal silence stood a two-man trooper honor guard.

Outside — under a cloudy Good Friday sky — the street was clogged with law enforcement units from as near as Sapulpa Police Department and from as distant as Fort Smith, Arkansas's, Sheriff's office and the Missouri Highway Patrol.

The brown lawn of the church was filled with troopers, investigators, deputies, bearded narcotics officers in long hair with badges hanging from jacket pockets.

Motionless at the casket, the two guards stood in military ease, unblinking, expressionless — one young and mustached, the other's face lined with experience, his greying hair cropped short.

And out on the Turner Turnpike, CB mobile operators were driving with lights on, observing the 55 mph limit voluntarily — for they knew the pike patrol was at church, bidding farewell to a friend, a co-worker, one of Oklahoma's "Smokeys" killed in the line of duty.

It was the third day of such "double nickels" on the Turner. At rest stops, a collection for the widow and three sons was passing the \$1,000 mark.

Time passed slowly for those who came early to the funeral; oppressive silence was broken by the whispering and fidgeting of

small children too young to mourn.

Twenty minutes before 10 AM, a white-haired organist — wife of Sapulpa's District Attorney David Young — began a medley of anthems: Beyond the Sunset, the Old Rugged Cross, the Lord's Prayer . . .

Young stood dressed in black on the lawn with lawmen. Minutes after the ceremony, he would rush two blocks away to the county courthouse. There he would present the people's case at a hearing to certify as an adult, accused killer Monte Eddings, 16.

Quietly slipping into a pew at the front came Oklahoma's Governor David Boren, Lt. Governor George Nigh and Attorney General Larry Derryberry.

An electricity rippled through the still-growing crowd of 1,500 jammed into the chapel built for 900. All stood. The widow, three sons and mother of Larry Crabtree filed slowly to a pew at the front.

Assistant Pastor Gary Cook raised his voice to God "baring our souls to You with this sorrow we don't understand . . ."

After the crowd had passed the open bier, after the widow spent several private moments with the body, the casket was carried outside where, at attention, stood an estimated 1,200 lawmen from across Oklahoma, Arkansas, Kansas and Missouri. White-gloved honor guards from the Tulsa and Oklahoma City police departments and the Oklahoma Highway Patrol formed a corridor to the hearse.

It was a mile long procession that moved slowly 43 miles to Cleveland, Oklahoma, where the trooper was buried. Many had to return to posts, but 124 law enforcement units fell into the line, up State Highway 97, across the Turner Turnpike and along US 64.

And out of Larry Crabtree's Turner Turnpike, Channel 19 was respectfully silent.irate truckers chastised requesters of "Smokey reports." Base stations asked that "double nickels" be observed, that lights burn, that donations be left at the turnpike gates and rest stops.

Rob Kerby





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round out your CB installation with Robyn microphones and handy hardware.

Since your CB's performance is only as good as the antenna it's coupled to, Robyn makes a wide range of base and mobile CB antennas—all designed the right way, to provide you with full transmit and receive power. There's a Robyn antenna for virtually any vehicle and every budget.

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Whatever you buy—one of the many Robyn 40 channel CBs, a Robyn FM scanner, antenna or accessories—Robyn makes it right, so you know that you'll be receiving the extra value and satisfaction that Robyn has been giving people for more than 15 years.

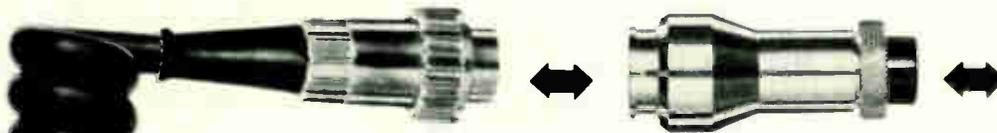


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How To Set Up NEAR In Your State

Long-sought communications system for motorists
is ready for local implementation.

By Charles M. Cooper, Washington Bureau

Envision a nationwide emergency radio network in which no CB-equipped motorist is ever out of transmitting range of a total emergency aid team.

Such a team will consist of CB public service volunteers; state and local law officers, Red Cross personnel and medical authorities — all tied together via the emerging "Help is NEAR" program being sponsored by the U.S. Department of Transportation (DOT).

NEAR (National Emergency Aid Radio) isn't a pie-in-the-sky scheme — it's here and now, with at least one state (Illinois) almost ready to move into implementation.

The idea of NEAR has been around for nearly a decade, mostly at the highway patrol level. In 1969, the Ohio Smokeys were the first to test a highway communications network with REACT. In recent years other states, notably Missouri, Mississippi, California and Delaware, have experimented with various CB-interface programs. Last year, the Maryland Highway Patrol initiated an extensive "Hotline" program which includes CBER training programs. The state of New York is presently conducting

a full-blown test of the NEAR concept under a grant from the federal DOT.

But NEAR won't spread nationwide unless CBERs in each state trigger it. "You've got to do your own lobbying in your own state," pointed out Coast Guard Captain Chuck Hahn, former head of NEAR. The present NEAR director, Coast Guard* Lt. Commander Joseph Bernard, explained state governors are now authorized to channel discretionary funds into NEAR programs — if they so desire.

But, "the governor decides how those funds are spent. If he wants emphasis on alcohol safety, he can cause the funds to be spent there," Bernard said. The NEAR director emphasized CBERs should not contact the federal agency, rather their own state officials (see accompanying directory).

How A NEAR Program Is Organized

A NEAR system can be funded with federal money after a state-level NEAR plan is developed. This must be accomplished by a NEAR Advisory Council consisting of persons who can speak for REACT-type groups, the Red Cross, American Auto Association, Civil Defense, public safety officials, etc. The plan must in large measure be dependent upon volunteer CB groups.

The governor can authorize his discretionary fund to buy CB equipment for state or local agencies; for training programs involving CB volunteers and government officials who will be involved; for public information programs and for costs of NEAR program administrators.

Part of the state NEAR plan must include systems for evaluating the program once it is begun. But Capt. Hahn emphasized the federal agency will not attempt to dictate the systems put into place at state levels. "We purposely left it loose. We have 50 states — what's good for California (one of the highest patrol density states) won't be workable in Arizona or parts of Texas," he pointed out.

NEAR officials told **CB MAGAZINE**, governors can essentially invest NEAR funds in anything they want, except expenses incurred by volunteers and volunteer organizations. But if radio monitoring equipment is bought for NEAR and placed in a state or local government facility, volunteers can man it. Or, the governor can add rooms on to existing buildings and turn them over to REACT-type volunteers for their use. Expenses in operating such facilities, such as heat and electricity, toll telephone calls and office supplies can be covered out of a governor's discretionary highway funds — so long as they are consumed in the monitoring program.

CBERs who desire to "lobby" their governors for support in getting their state going on a NEAR effort may wish to contact Gerald Reese at REACT, International (111 E. Wacker Drive, Chicago, Illinois 60601) for the persons in their own state who are already active in the effort. Reese said special REACT Councils have been begun in about half the states which are interfacing with other groups who must be involved in NEAR planning.

Reese also noted information on the Illinois NEAR effort may be sought from Captain R. G. Miller, director of Communications, Illinois Highway Patrol in Springfield.

* Both Hahn and Bernard are on loan to the DOT from the U. S. Coast Guard.

STATE COORDINATORS FOR NEAR

The state-level highway safety coordinators are the best place to start when seeking information on local planning for the National Emergency Aid Radio Program.

ALABAMA

Mr. Jesse J. Lewis
Governor's Coordinator
Office of Highway
and Traffic Safety
2600 E. South Boulevard
Montgomery, Alabama 36111
Phone: 205 / 832-5974

ALASKA

Mr. Charles Smith
Deputy Director,
Motor Vehicle Division
Pouch N
Juneau, Alaska 99801
Phone: 907 465-4371

ARIZONA

Mr. James L. Hill
Governor's Highway Safety Rep.
Arizona Dept. of Transportation
Office of Highway Safety
1655 West Jackson St.
Phoenix, Arizona 85007
Phone: 602 261-7692

ARKANSAS

David Ellzandro, Ph.D.
Governor's Representative
116 National Old Line Bldg.
Little Rock, Arkansas 72201
Phone: 501 371-1101

CALIFORNIA

Michael P. Evanhoe, Chief
Office of Traffic Safety
P. O. Box 865
Sacramento, California 95804
Phone: 916 445-9718

COLORADO

Mr. Cordell Smith, Director
Division of Highway Safety
4201 East Arkansas Avenue
Denver, Colorado 80222
Phone: 303 757-9381

CONNECTICUT

Mr. Norman C. Booth
Governor's Representative
Department of Transportation
Office of Highway Safety
24 Wolcott Hill Road
Wethersfield, Connecticut 06109
Phone: 203 566-4248

DELAWARE

Mr. Franklin P. Fountain
Deputy Coordinator
for Highway Safety
Treadway Towers
9 East Lockerman Street
Dover, Delaware 19901
Phone: 302 678-5460

DISTRICT OF COLUMBIA

William E. Corgill, Ph.D.
Highway Safety
Program Coordinator
D.C. Office of Highway Safety
Munsey Building Suite 908-18
1329 E Street, N.W.
Washington, D.C. 20004
Phone 202 / 629-3743 or 347-7131

FLORIDA

Mr. James "Nat" Cole
Bureau of Intergovernmental
Relations
Division of State Planning
660 Apalachee Parkway
Tallahassee, Florida 32304
Phone: 904 / 488-5455

GEORGIA

Mr. Charles O. Hill
Program Manager
Office of Highway Safety
7 Hunter Street, S. W.
Atlanta, Georgia, 30334
Phone: 404 656-3218

HAWAII

Mr. Lawrence K. Hao
Asst. Highway Safety Coordinator
869 Punchbowl Street
Honolulu, Hawaii 96813
Phone: 808 548-5755

IDAHO

Mrs. Patricia Hause Ehrlich
Administrator
Idaho Traffic Safety Commission
State House

Boise, Idaho 83720
Phone: 208 384-3533

ILLINOIS

Mr. Karsten J. Vieg, Director
Division of Transportation Safety
319 Administration Building
2300 South Dirksen Parkway
Springfield, Illinois 62764
Phone: 217 / 782-4972

INDIANA

Samuel L. Burch, Director
Dept. of Traffic Safety
& Vehicle Inspection
215 North Senate Avenue
Indianapolis, Indiana 46204
Phone: 317 633-5870

IOWA

Mr. Lance Faust
Highway Safety Program Director
Office for Planning
and Programming
Capitol Hill Annex
523 East 12th Street
Des Moines, Iowa 50319
Phone: 515 281-3832

KANSAS

James W. Stevens
Director, Kansas Highway Safety
Coordinating Office
535 Kansas Avenue - Room 1110
Topeka, Kansas 66603
Phone 913 296-3756

KENTUCKY

Bennie R. Maffet
Administrator
Office of Highway Safety
Dept. of Transportation
State Office Building - Room 328
Frankfort, Kentucky 40601
Phone: 502 564-7074

LOUISIANA

Mr. H. Lee Arledge
Acting Executive Director
Louisiana Highway
Safety Commission
P. O. Box 44061, Capitol Station
Baton Rouge, Louisiana 70804
Phone: 504 389-5591

MAINE

Fred Campbell, Jr.
Highway Safety Program Manager
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Editor's Note: Despite popular myth, the U. S. has not run out of oil, and most American oil deposits are not under the control of big multi-national oil companies. Over 70% of the oil that was underground when the first wells were completed in 1859 is still underground. About 10% was recovered under its own gas-driven flow; some 20% more can be recovered by pumping water in and pushing the oil out. This leaves 70% [billions of barrels] in the "played out" fields still waiting for the right technology to be developed. In the meantime, as natural and "waterflood" production drops, the majority of America's oil wells have been acquired by small independent producers. Many of these small companies are able to survive by keeping thousands of marginal wells [which produce less than 10 barrels-per-day] pumping. They are the custodians of our energy wealth until the day that engineers devise a method for rejuvenating the country's still-vast, but almost dormant older oil fields.

This report describes the frustrations small oil producers in Oklahoma's Osage Hill country have with "oil pirates" and how they hope CB will help nab them.

The skunks walk into John Kester's headlights as he stops his pickup. They seem unconcerned as they amble across the road and disappear in the rural blackness.

The owner of Kester Oil Company ponders the .44 magnum pistol beside him on the seat. Earlier, at the sight of a coyote he had hastily produced it as he gunned his pickup down a strip mine road in pursuit. But now, he just watched the skunks. "You know, those critters are worth six bucks a head, but I never had the heart to do it," he laughs.

But skunks and coyotes are only a diversion as Kester continues driving all night over the back roads south of Nowata, Oklahoma. The critter he's

Stripper Well Operators Declare War On Oil Outlaws

The movie 'Oklahoma Crude' is played out for real in the fabled Osage Hills.

By Robert Mercer

looking for isn't worth much compared to a skunk, or even a coyote.

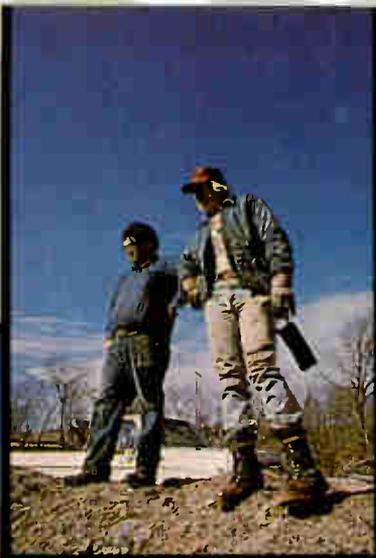
While 30 oilmen take turns patrolling each other's leases nightly in northern Rogers county, the shotguns in the pickup windows and the pistol are only the second line of defense. The first line is their CB radios which will summon sheriff's deputies to arrest the thieves who plague the oil patch.

One used to the close-order-drill oil pumps in California's Long Beach, or the massive offshore towers in the Gulf of Mexico, can see little worth stealing in the oil fields of the Osage Indian territory. The site of Oklahoma's first oil well is here, just a pile of rocks now, marked by a weathered metal plaque tacked to a fence post along a dirt road. Pumpjacks, dwarfed when compared to those which pull oil from miles below the earth, rod up and down in the clean rangeland air drawing oil from only 500 feet below. Tank batteries caked with grime and connected to the pumps by rusty pipes easily hold the 3 1/2 barrels

of oil the average well produces daily, compared to the hundreds of barrels from new wells.

Kester explains, "We're strippers. You know a barrel, two barrel-a-day well is a good well." Yet, despite the minimal production which forced high-overhead corporations to abandon the wells years ago, the stripper wells now account for 83 percent of all oil production in Oklahoma and 73 percent of all U.S. production, Frank Hoel says, noting the figure was 72 percent in 1976." The average oil stripper company around Nowata has two employees.

Hoel, who owns Hoel and Associates and has a part interest in Independent Oil and Gas, has followed the oil business from Michigan to South Carolina and then to Oklahoma three years ago. The production consultant explains the importance of the northeastern Oklahoma oil patch. "This is a huge reserve of oil. People have rushed through here, pumped out the easy production and have gone on to larger and more exciting drilling elsewhere. But this is shallow oil and when



At Left: Larry Wilson starts up one of several wells he operates for other oil companies, besides having his own oil lease to run. He was one of the originators of the CB patrol in the oil patch.

Above: John Kester, owner of Kester Oil Company, responds to an emergency call from employee Bob Crupper who used a walkie-talkie to report an oil spill. Spills not only cost money in lost production, but can result in government fines.

Below Right: John Kester patrols oil leases in northern Rogers County near Nowata, Oklahoma.

you get to the sand (oil bearing) itself, you've got 20 feet of good sand here; good Bartlesville sand."

"If you make a mistake in here, you haven't lost a fortune. I've got some wells in Alabama that are about 10,000 feet deep. If you make a mistake there, you're out about a quarter of a million dollars on an individual well. Out here, if you make a mistake, you can grin and walk off from it."

But one can't afford to grin and walk away too often at \$7,000 per well, which is what it costs to drill and set up for production. Many of the wells are new wells drilled alongside abandoned wells.

Hoel explains, "A lot of these old wells are in different states of disrepair. So what you have to do to get the oil is you have to go back and put in new wells in; bring in new equipment. The old wells, many of them have caved in

considerable. They have old tubing, old rods, old pumpjacks on them. It's just like driving say a 1939, a 1940 automobile and trying to make it go. And until the Arabs ran the price of oil up, we weren't able to do much more than just keep the old things running with bailing wire."

Strip mining also accounts for many new wells. Since the price of coal is also up, the Peabody Coal Company shovels are chewing their way across the landscape and wells in their path must be plugged. Kester is currently developing 50 wells after a lease was stripped of coal. "It kind of compared with the reconstruction of the south," he smiles. "Those coal shovels do about as much as the Union forces in Richmond." But it is the increased price of oil which makes the continued activity possible.

Before the price rise, Hoel says, "We had no profit. We just scratched out a living. The government permitted everything to go up but the price of natural gas and the price of oil." As much as possible, producers try to market inside Oklahoma to avoid federal controls.

The price of oil is now \$14.50 per barrel. But Phil Kempton of S & K Oil Company remembers when governmental controls prevented oilmen from making a living from their production. "I survived during the 1960's by building up a lease; fixing it up and selling it and going on to the next one. It let us live. But you couldn't break even on the production. No way, selling \$3 oil. I got more for oil in 1958 than I was getting in 1970. I think it got up to \$3.15 in 1958." The only people who could afford to actually produce oil in the sixties were people who needed a tax write-off, he says. Of the current S & K operation, Kempton proudly states, "There's five families that live off it."

But the price is still low enough to limit full production. Hoel says he has a couple of gas leases "shut in" because they will not produce the volume of gas necessary to pay for the equipment needed to produce the wells. It used to be worse. "About five years ago, the price of gas at the well head was 16 cents per thousand cubic feet. Well, a man couldn't afford to make a mistake . . . he had to have a big producer, otherwise, if he didn't have, he might just shut it in."

By now, one gathers the government is considered enemy number one. When looking at the oil industry, Hoel says, "Most people look at Exxon or Texaco. They assume it is an ultra giant business. They assume everybody in the business is rich. The government even believes that. It's just like this EPA stuff. They come to one of our leases and say we don't like your oil spill prevention program. Then 45 days later I get a notice that I'm being fined \$5,000. Well, I'd have to go to work for the government to pay \$5,000."

Kester interjects, "If the government keeps their nose out of it they'd save the taxpayers \$10

million a year. And in turn, they would let economics take care of the oil growth problem. We can't sell that damned stuff if we let it get on the ground . . . hell, we're not going to run out there and run oil down the creek. We can't afford to. We have a hard enough time getting the stuff to the top of the ground."

Hoel compares "oil spill prevention plans" to the plans he was instructed to make during World War II to protect South Carolina from a land invasion. The chances of America being invaded via Charleston were slim. He claims the EPA inspectors he has met are neither qualified engineers, nor even know anything about oil.

Kester compares it to a time when the Oklahoma Corporation

Stripper wells now account for 73% of all U.S. oil production

Commission appointed political hacks to be oil well inspectors. Kester remembers one inspector who would sit around in his pickup eating peanut brittle while oilmen plugged wells any way they wished. "You could drive a fence post into (it) and him sitting up there watching you. That's no lie . . ." Kester laughs. "I've seen that happen many a time. My mom makes good peanut brittle."

But the system has changed, Kester says. Oklahoma inspectors now must have an oil background; someone who understands what it means to have a line break. "Somebody who understands you have everything strung out over hell's half acre. And until the EPA wakes up and hires people with prior knowledge, we're going to have hell."

Kester says the laws which affect the oil business constantly change. "The prices are good now, but a person is scared to death to do anything because the government'll put in some more regulations that'll be retroactive back to the first of the year like they did this last tax thing. And you can't operate with deals like that hanging over you."

With profits already abbreviated by the government, the

thieves were just too much for the Rogers county oilmen. Alton White, who has been in the oil patch as long as the 34-year-old Kester can remember, will try to convince you, "It got so bad the thieves painted their own equipment white to keep from stealing their own stuff."

The thieves were taking pumping motors, electrical wire, tools, power meters, welders, oil, or as Kester says, "You name it, they'll steal it." They even stole anti-theft devices oilmen installed."

Kester and White tell of an oilman who painted his tools a shade of paint "between charreuse and purple" to make them easily identifiable. Not only where the tools stolen, but after the thieves were arrested, the tools were stolen again, by the same thieves.

Used equipment dealers are an indispensable part of the stripper business, but also make good fencing operations. White winces over the time he bought a set of tools to replace some that were stolen. He discovered they were the same tools. "That's okay. I got them cheaper than what I paid for them (new)."

Kester said oil patch thievery became a profession for many Osage residents, because in boom times there was a hesitancy to prosecute. "This area grew up with a lot of major oil companies . . . Their philosophy was, if they had something stolen, they very rarely attempted to prosecute someone. 'Don't you do that again, you know your uncle works here. You're jeopardizing your uncle's job . . .' Well, unfortunately, they set a precedent in this area." The majors also have 24-hour crews which kept thieves away.

But where the thieves went wrong, Kester claims, "They stole my damn welder." It was the welder he had begun a welding business with prior to entering the oil business. He says his total loss to thieves has been about \$4,000.

For four years, Larry Wilson, who has a one-man production operation, had been trying to organize a patrol. Asked what kind of problems he had had with thieves, he replies, "Fourteen

motor's worth." They cost \$135 each. But once Kester was angry, Wilson had someone who would listen to his idea and help organize the others.

Kester says of the patrol, "It's the first time in my life I've known of this many people in the oil business to agree on anything." About 30 oilmen and farmers signed up for the patrol. But they continue in their independent ways. "I doubt seriously if we called a meeting for next Wednesday, we'd have more than five. And yet, they're all working their nights."

The fact that farmers are cooperating with oilmen speaks of the seriousness of the thefts. There have been hard feelings over leases through the years. But, "stealing touches everybody," Kester says.

The patrol requires a member to work two nights per month. They work closely with the Rogers county sheriff. The sheriff advised the group on the purchase of shotguns and the use of the radio. Each patrol unit has a rotating number so thieves cannot identify who is on that night. A favorite trick in the past was for one thief to cover an oilman's house while a second thief was out stealing. The patrol area has been divided into numbered quadrants. The sheriff has a copy of the map. In this way, when a patrolman calls in

The thieves were taking pump motors, wire, tools . . . "they even stole anti-theft devices."

an alert, no thief with a monitor can tell if he is the one that was spotted. The radio channels upon which the patrol operates changes nightly, with auxiliary channels selected if a patrolman thinks he is being monitored.

Three base stations monitor Channel 9 all night. The sheriff's deputies also monitor this channel. The base station operators set the squelch low and the volume high so it will wake them. This works fine except for skip.

But Kester says the real secret to success is, "We keep com-
[continued on page 40]

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Stripper Well . . .

[continued]

munications to a minimum. You call only when you need help." If a thief is monitoring the radio, even once radio silence is broken, "He's already cornered."

But the patrolman does not move in until the deputy arrives. "We've never advocated being a vigilante force," Kester emphasizes. "You call a deputy and they make the arrest."

However, at least one thief has slipped the tightening noose by exiting from a lease using routes even the owner didn't know existed. While one of the first acts of the patrol was to secure all unnecessary gates on leases, the thieves still are elusive.

Phil Kempton is a member of the patrol even though he hasn't had much problem with thieves. He remembers the time he actually caught a thief. "I spent more time in the courthouse trying to get him prosecuted than he did serving his time." However, under the patrol rules, every thief will be prosecuted.

Kempton has owned a CB three years. Actually his family has five units, two base stations and three mobile units. "I didn't think it'd be too much of an advantage, really, but you know, we just use it all the time."

Kester, on the other hand, and his father, Bud, operated one of the first CBs in the Nowata area. The radio "worked like a top," Kester says, remembering a horn alert device they added to it. It worked fine until other people added horn alerts and the Kesters began receiving a lot of wrong number calls. Kester's association with the radio continues both in the patrol and as a member of the Nowata 10-33 Team, a volunteer emergency group which operates the city ambulances. It was an idea approved by the Nowata City Commission, of which Kester is a member.

Kester once tried radio-telephones. "They wouldn't stay together. They're too sophis-

CB helps protect the environment . . . when a pipe bursts, passers by can get the oil man out to repair it right away.

ticated; too many circuits. I had that thing with all the channels that were available, 11 or 12 channels, working out of two local towers and I still couldn't get (on) the thing." He says CB radios "are simple. Nothing can go wrong with them." The oil patch is notorious for wearing out pickup bodies long before the motors wear out.

Hoel bought his CB recently for patrol work. "Twenty-three channels are plenty. Forty channels are nice, but we don't live in the city. Consequently, we don't have that many people talking."

But Hoel has found, besides helping thwart thieves, it keeps him ahead of the government. "It's especially good on situations where you have an emergency spill or a leaking tank, a ruptured line, just anything like that . . . Even neighbors if they see something that needs doing, if they have a CB, they can call us . . . A CB substitutes for a phone and then some."

Spills can be particularly bad in the winter, when the water, which is mixed with the oil, freezes and breaks pipelines.

Thieves add to the number of spills by stealing equipment which regulate the flow of oil out of the ground during water flooding.

Why is so much oil still underground? Hoel compares oil production to putting one's hand into a bucket of oil. Lifting one's hand out, the excess oil will immediately drip off. This compares to primary recovery when producers can easily pump out oil pushed by a supply of gas in the oil sand layer. After the gas is gone, to force more oil out of the sand, a second step — water flooding, is used. Injector wells are drilled near the oil well and water is pumped into the sand layer, removing some more oil, much as a water hose washes oil off one's hand. But just as oil will still cling to a hand, no matter how much water is used, so the oil sand is still saturated. At this point, a third step, is needed to remove the rest of the oil, using some solvent. But no economic, efficient third step has yet been devised.

The giant northeastern Oklahoma fields have been producing oil for over 50 years. Yet well over half — perhaps 70%, is still there. It is a matter of waiting for the price of oil to become high enough and technology to come on stream, to make recovery complete. Hoel believes the development of efficient third step recovery means huge oil booms in the future, particularly Oklahoma.

"It stands to reason they'll come to this area first because of the shallow structures here; 400 feet compared with 5,000, 10,000 feet to get to 20 feet of oil sand."

He also cites the interest in mining oil shale from which oil can be extracted at great expense. "If they will go 500 to 1,000 feet to get shale out, they'll go 400 feet to get the real McCoy out."

But in the meantime, Hoel says "We're just playing a holding game."

And part of the holding game will be continuing the successful CB patrol of the oil patch. As Alton White testifies, "Boy, they've stopped that stealin' down there." But one wonders, can John Kester continue to resist those six-dollar skunks. 

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Above: Steep canyons, plus heavy stands of pinion and juniper in Colorado's Bookcliff range made wild horse round-up hazardous.

Right: This great black stallion was one of the wild horses herded to the safe haven of the Bureau of Land Management's preserve.



Wild Horse Round-Up Saves Natural Resource From Extinction

Cowpokes, slow to accept radios, now won't go out without them.

By Darrell Arnold

"Dave, this is Hal." The mounted cowboy spoke into a small CB unit held in his gloved hand.

"Go ahead, Hal," came the radioed answer.

"We've got two grays and a black down here in the big flat. We're gonna turn 'em back to you."

"Dave sat in the thick cedars, near the wing of the trap. "Okay," he radioed, "spur 'em on, Johnnn!" He moved to conceal himself.

"Ten-four," said Hal. Spurring his mount, he moved out of the trees toward the wild ones. They stopped when they spotted him, stood for a moment and then wheeled and ran toward the cedar knob. Hal motioned to other cowboys nearby to head on down

the hill, toward the trap. He fell in behind the fugitives.

In a few moments, the CB cracked again. "Come on in boys," said Dave, "I've got 'em." He leaned on the trap rail and admired his catch, three more residents for the new wild horse refuge.

The CB conversation took place in the Bookcliff range country of western Colorado, where for two years, an effort has been underway to save and preserve an important national resource: America's wild horse herd.

It is part of a master plan, administrated by the Bureau of Land Management, to protect the wild horses in several western states. The round-ups in the Bookcliff area were the first attempted and the first time CB

was used on a major scale in wildlife management.

The BLM, of course, has long used radio as a communicative system between its offices and its men in the field. It was never considered unusual that they should use CB in their every day work. What is unusual is the very important part CB plays in the management of wild horses.

Dean Evans, then range specialist for the Grand Junction office, explained why they decided to go with CB on the first round-up in 1975.

"Existing wild horse laws make it unlawful for anyone, including public agencies, to use vehicles in the roundup of wild horses. This is because, in the past, many horses were injured or killed. We were forced to contract the job to

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Wild Horse . . .

[continued]

any cowboy who thought he could do it on horseback. Our task was to move 50 animals into a newly fenced area that would be managed for their protection. The problem was that the country was so rough, deep canyons and heavy stands of pinion and juniper, that we did not know how we would be able to keep track of the men and the animals."

"Our first idea was to use an airplane, not as a means of chasing the animals, but rather as a spotter. We figured we could fly out each morning and find the herds, then radio the cowboys at base camp as to what their position was. The cowboys could then find them and bring them in."

"After much discussion, we decided not to use the plane. It might have caused some controversy with certain private groups. We decided, instead, to arm each cowboy with a portable CB unit and monitor the traffic with our own vehicle installed units. It proved to be the right choice."

When the roundup began, the BLM personnel were disappointed to find that the cowboys did not want to pack the radios. Dave Cattoor, the cowboy who contracted the roundup, explains. "We had never used them before and it sounded like a silly idea. A cowboy chasing a crazy wild horse through the cedars needs his hands free. You need one hand on the reins and the other on the rope. You have to put all your concentration on not being unhorsed by a tree limb. The radio seemed like an unnecessary extra item to have to carry."

Nevertheless, the BLM supervisors convinced Cattoor to carry one radio. Dave took one man and went out in search of the horses. He stationed his other seven men at various locations along the route he intended to drive the horses toward the gates of the refuge. When he brought the wild ones out, his plan was that the others would join in and help herd them on into the refuge. If the situation called for it, they

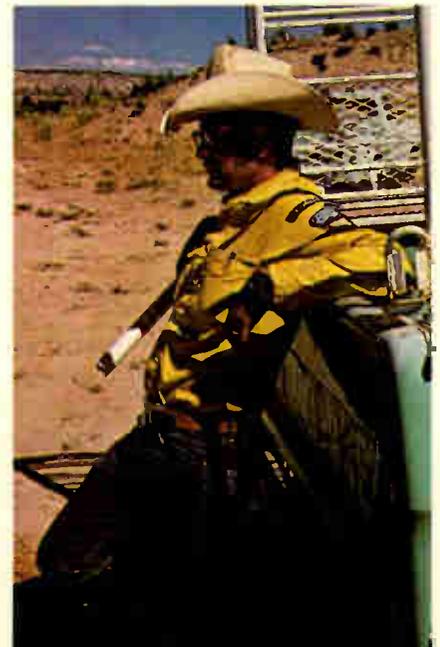
would rope any horse that decided to turn back.

The first day's work proved to be a disaster. Cattoor found the wild ones, but he could only communicate with the BLM manager sitting in the spotter vehicle. The spotter, parked atop a high cliff overlooking the operation, had no way to inform the other cowboys. When Cattoor brought the horses past their positions, the action took place so fast the waiting cowboys couldn't react fast enough to haze the horses. They all slipped back to freedom.

Several of the cowboys were now ready to try the CBs. Rick Lyons, one of the riders, put it this way, "We had to sit there all day waiting for something to happen. It was real tedious sitting on that point, not knowing what was happening. We didn't know if Dave had found the horses. We didn't know if he was bringing them by us or by somebody else. When they did finally come past, we missed out because we didn't have time to get ready."

On the second morning, Dean Evans was happy to hand out radios. This time, all the cowboys wanted one and he didn't have enough to go around. By pairing up the men, he managed to give everybody access. Each radio was placed in a heavy leather

Dean Evans, Bureau of Land Management supervisor hit upon CB as an aid in finding and catching elusive herds.



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There are now more than 50,000 wild horses and burros roaming the rangelands and deserts of the West. In fact, wild horse herds have increased to the point where, in some areas, they now pose a threat to themselves and to their environment. When this happens the range is overgrazed and the animals are deprived of adequate forage. As a result, thousands of wild horses will need to be removed each year from the range for their own good. Hopefully, new homes can be found for as many of them as possible.

The Wild Free-Roaming Horse and Burro Act of 1971 calls for management, protection and control of all unbranded and unclaimed horses or burros on public lands administered by the Forest Service and the Bureau of Land Management.

Almost everyone, at some time during their lives, has wanted a horse to ride and care for. With the hope that many people haven't completely forgotten such wishes, the Bureau of Land Management has a program under which wild horses and burros can be "adopted" for care in "foster" homes by qualified people.

Through well planned and humanely conducted roundups (such as the one in the accompanying story), the Bureau expects to capture a large number of wild horses from overpopulated ranges and make them available to individuals.

Although these animals appear similar to domestic horses, there is one major difference — they are wild and training period is required to tame them.

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reluctant to leave their home range and learned to dodge the riders and hide in the timber. The cowboys resorted to roping a few that came near enough, but their success ratio was dropping and they decided on a new course.

Cattoor set his men to building a horse trap along a major trail. He constructed woven wire wings out from the trap and camouflaged it with cedar branches. Dave stationed himself at the trap, on foot, and sent his riders out to find the strays and bring them in.

When Hal radioed him that he had the herd on the way, Cattoor was ready. When the horses came past, he jumped out and hazed them along the wing, waving his jacket in the air. In a few minutes, he had the trap gate fastened behind them.

"The CB kept me in contact with the men. I knew right when the horses were coming and I was able to surprise them before they could turn back."

When the cowboys rode in, yelling and congratulating themselves on the capture, Cattoor grinned and interrupted them. "I don't know what you guys are so proud of. While you were out riding around, I caught them all by myself, on foot!"

There were still some areas where the trap could not be used, and the cowboys had to contend with long days in the saddle. Some of the canyons were so deep, between the riders, that those down in the bottom could not be picked up on the portable units. It became necessary to

Dave Cattoor, a contractor, listens to his radio, as his cowboys report in.



holster that was attached to the cowboy's belt, or, if he preferred, to the leather lacings on his saddle. The only trouble with tying it to the saddle was that it proved to be so rough that the radios could not stand up.

The success of the roundup picked up immediately. The BLM spotter located himself on the high ridge. Cattoor and one man would ride out to encounter each small bunch (the horses ran in herds of 6 to 10) and his riders waited, ears to their radios, for his report. When Cattoor picked up the tracks, he relayed the information and directions were given as to what action to take. The waiting cowboys could now hear every move that was being made, either by the horses as witnessed by the BLM spotter, or by the cowboys tracking them.

By the seventh day, the roundup had moved 31 wild horses from their old range into the new protected area. Cattoor decided to call a halt and take an aerial survey. He shut down his operation for two days, giving

his men and their mounts a well deserved breather.

Riding was treacherous work in the Bookcliffs. The wild horses led the cowboys through dense stands of timber, where it was nearly impossible for the rider to sit upright on his horse. In chained areas, where the timber had long ago been knocked over, it was still dangerous. It appeared open, but the jumbled tangle of downed trees and logs presented large stumps and broken branches that the cowboy had to be careful to dodge, or he might cripple himself or his mount.

Cattoor and the BLM managers flew over the area and discovered that they still had 19 head to move. He was soon to learn that the first seven days had been the easy part.

When the cowboys went back to work, they found that the horses were no longer easy to drive. The bands had been scattered and broken up until they could not be herded as a unit. The wild studs were

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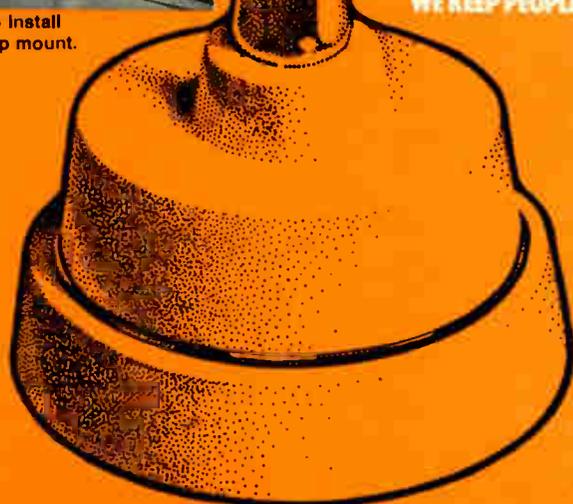
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Wild Horse . . .

[continued]

park a BLM pickup on a high centralized location to relay messages between the riders.

Another vital feature of CB was contact with the regional office, 10 miles away, in Grand Junction. Whenever a wild horse or mount was accidentally injured, it was necessary that the roundup personnel be able to contact a veterinarian, immediately. On two occasions during the 21-day roundup, a vet was flown in by chopper to administer to wounded animals.

After three weeks, the roundup was completed. All but four of the wild horses had been moved, and the operation was called a success. By that time, the cowboys had formed what amounted to a love affair with the radios. Whenever one broke down, they argued who was going to have to be the one to go without for a day. On days when action was slow, impatient cowboys with radios invariably used them to call the spotters and find out what was going on. The regular radio chatter had a calming effect on all those stationed in remote locations around the rugged terrain.

Since that roundup, CB has continued to be a part of the BLM horse management plan. Last summer, they went back in and rounded up the remainder of the horses. In Utah, Wyoming, and northern Colorado, other wild horse roundups have taken place with CB an important tool in the operations. In the Bookcliffs, the use of CB as a management tool is not over. Gerald Thygerson, BLM spokesman, had this to say: "If we didn't have the CBs, we couldn't have rounded up the horses, and we wouldn't now be able to keep track of our protected herd. The herd keeps growing and we have to watch it carefully. When it grows beyond the carrying capacity of the range, we will again have to use CBs to help us round them up, humanely." 

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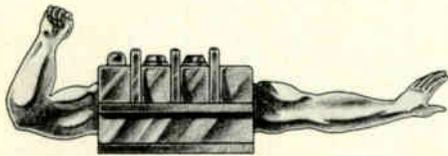
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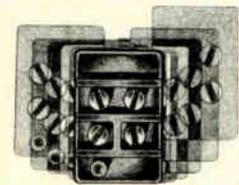


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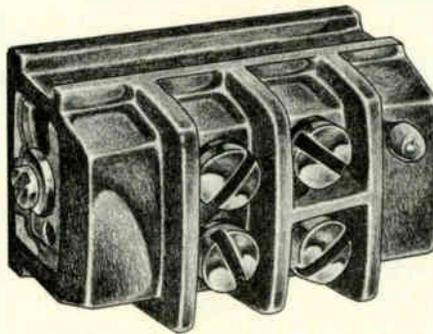
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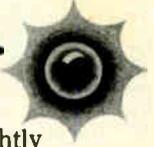
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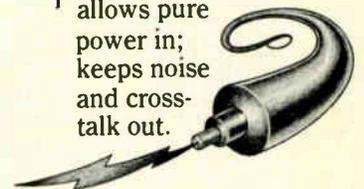
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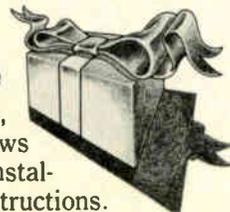


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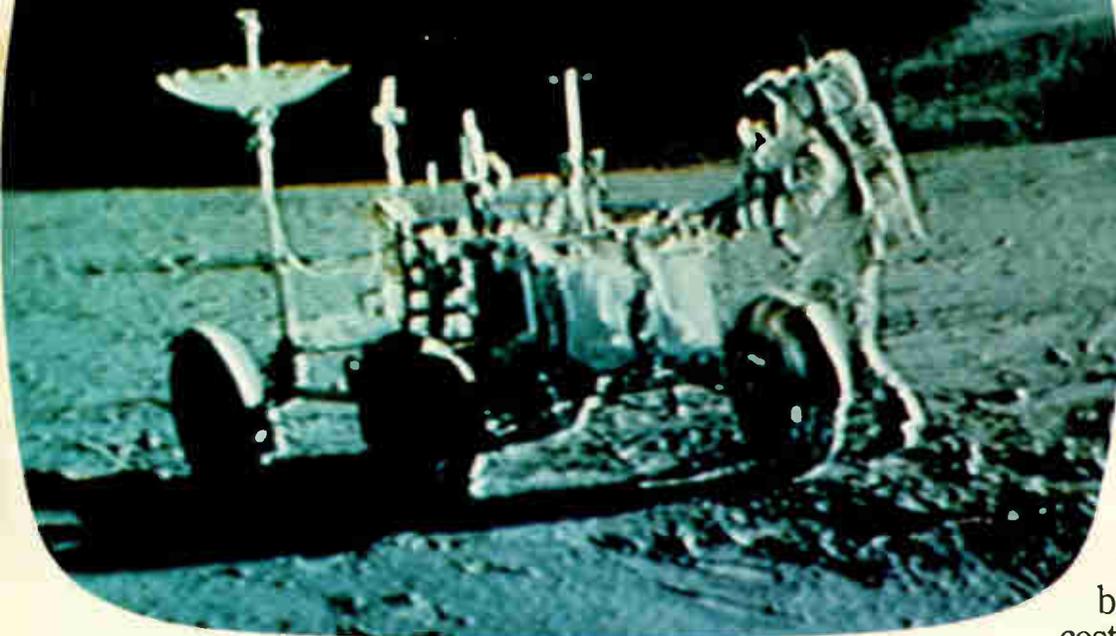
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ELICITING INFORMATION FROM CALLERS

When a request for assistance is received, you have four basic considerations:

1. You must make sure that you do not lose contact with the caller until you have all of the information needed.
2. You must relay the information to the proper agency so that the dispatcher can start the response vehicle to the scene, or take other action.
3. You must calm the caller and stay calm yourself. If you don't reassure and calm the caller, you may receive no further information or cooperation.
4. In some localities, under certain conditions, you will determine whether the caller needs to, and is competent to, carry out any immediate measures to help himself before the emergency vehicle arrives.

In obtaining and recording information about the call, you have to get the information in a regular sequence. You can't ask everything at once and you have to ask important things first. Although "experts" may differ on priorities of obtaining information, one generally recognized sequence is:

1. Caller's perception of the nature of the problem.
2. Time that the call was received (simultaneously with No. 1 above).
3. Phone number of caller.
4. Specific location of the incident, including directions for guiding vehicles to the scene.
5. Name of caller.
6. Specifics of the nature of the incident (i.e., for a medical incident — How is patient's breathing? Is the airway clear? Is patient conscious? Bleeding severely? In severe pain?). Is there a better sequence?

After the call is "handed off" to a dispatcher and the caller is notified that help is on the way, you may want to obtain additional

Guide to Channel 9 Monitoring-Part 3

This is the third installment of a series which consists of Channel 9 monitoring procedures excerpted from the "Citizens Band Communication Manual" published by the National Highway Traffic Safety Administration, U.S. Department of Transportation, for the guidance of participants in the government-sponsored NEAR [National Emergency Aid Radio] program. These monitoring guidelines are published here for the information of existing and prospective Channel 9 monitors, either as team members or as independent individuals.

information. In a medical emergency this may be:

1. Name of patient
2. Name of patient's doctor
3. Time that the incident occurred (ETI)
4. Is caller alone?

The people calling a monitor will sometimes be greatly agitated. Sometimes they will be in pain; sometimes they will have witnessed a violent accident or have seen a gruesome sight. You can detect the excitement in their voices. They will speak quickly or loudly. They may be out of breath. The voice may be higher pitched than normal. They may make irrational demands. They may not listen to reason.

One of the first things you need to do is to calm down the caller.

You don't want him to have a heart attack. However, you should not tell him to "calm down." This will only make him think you don't appreciate the seriousness of the situation. The most effective way to calm a caller is to let him know, by your actions and your tone of voice, that he has reached a calm and competent person who will do the right thing to help.

Here are some things you can do to calm a caller or keep a caller calm:

1. When you answer a call, you should identify yourself and your unit. Use a name that the caller will instantly identify as one that deals with emergencies. It does not much matter how your mail is

APCO TEN-SIGNALS

10-1 —Signal Weak	10-13—Existing Conditions	10-25—Report to (Meet)
10-2 —Signal Good	10-14—Message/Information	10-26—Estimated Arrival Time
10-3 —Stop transmitting	10-15—Message Delivered	10-27—License/Permit Information
10-4 —Affirmative (OK)	10-16—Reply to Message	10-28—Ownership Information
10-5 —Relay (To)	10-17—Enroute	10-29—Records Check
10-6 —Busy	10-18—Urgent	10-30—Danger/Caution
10-7 —Out of Service	10-19—(In) Contact	10-31—Pick Up
10-8 —In Service	10-20—Location	10-32—Units Needed Specify/Number/Type
10-9 —Say Again	10-21—(Call ()) by Phone	10-33—Help Me Quick
10-10—Negative	10-22—Disregard	10-34—Time
10-11—On Duty	10-23—Arrived at Scene	
10-12—Stand By (Stop)	10-24—Assignment Completed	

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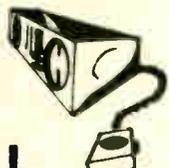
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Guide to channel 9

[continued]

- addressed. Instant recognition is the important thing.
2. Let the caller state the problem in his own words, but don't let him ramble. Control the conversation to get all the information you will need in order to decide what sort of assistance is required and where help is needed. Be courteous but firm.
 3. Pass information to the emergency service dispatcher as soon as you can. If this requires asking the party to wait, explain the wait. Letting the phone go dead with no explanation can only make the caller anxious, irritable and uncooperative. Get back to the caller as soon as you can and briefly explain the measures you have taken. Let him know that help is on the way. Only then should you ask for any additional information you may need.
 4. When people speak to us in an agitated manner, we tend to reply in the same way; to speak quickly, to speak loudly, to speak in a higher pitch. When people tell us about serious injuries we may be shocked or get emotionally involved. Try to keep the excitement out of your own voice. Listen to yourself. Don't sound apathetic or uncaring, but try to instill confidence and calmness by setting an example with your own tone of transmission.
 5. If a caller becomes hostile or abusive, do not express hostility yourself. Make allowances for what the caller has been through. Stay calm.

The two most important persons in the victim's life at the moment are you and caller. It does no good for you to be angry with each other. It can only make things worse. Similarly, if the caller starts to argue, don't argue back. It takes time to argue — time you may not have. In addition, your caller may be too

excited to listen to reason.

To insure proper response of emergency vehicles to the site of an emergency, you have to get a clear fix on its location. But sometimes your caller will be a stranger to the area and won't be able to tell you where he is. The only thing he will be able to tell you for certain is the highway he is on, or some distinguishing terrain features. In such cases you have to be able to use other means to determine the location. For example, you may have a route directory that lists each highway in the area along with topography. If you are not familiar with an address, you can look it up in an alphabetical listing of street names in the area. With each street name there will be map/grid coordinates to help you find the street on one of the maps you have available.

One of the most important things a monitor must do is to keep track of the disposition or status of the emergency resources in the area. Only in this way will you know which ones you can refer calls to. There are many ways to keep track of the availability status of emergency services. Most of these ways involve the use of cards or tickets. A few are more sophisticated.

The professional society of public safety communicators (APCO) has developed a standard set of 10-codes (see table), recommended for use throughout the United States. The most frequently used of these 10-codes is 10-4, which means affirmative, OK, or Roger.

Whether you use 10-codes in your own transmission depends on (a) local policy and (b) the party with whom you are talking. You should never use 10-codes with parties who would not understand them.

Whether or not you use 10-codes yourself, you should be able to understand them, nevertheless. You should memorize a few and be able to quickly look up the rest. This will help you understand police, fire, and ambulance personnel who may use 10-codes in communicating with you and with each other.

(To be continued)

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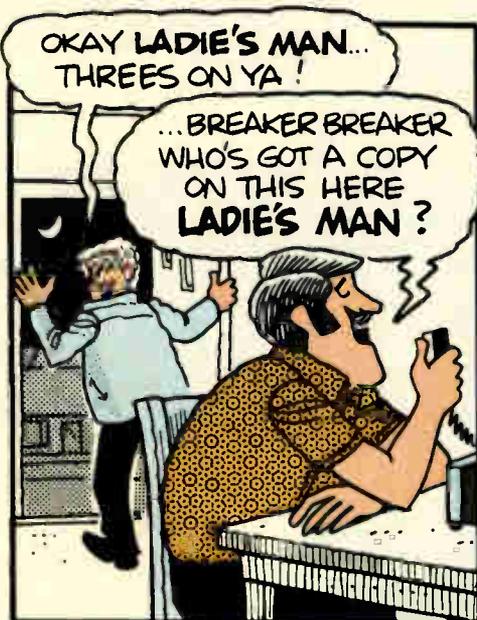
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THERE YA' GO, PAL... YOUR NEW C.B. IS ALL SET UP! HAVE YOU THOUGHT UP A GOOD HANDLE YET?



YEA... BEINGS I'M GONNA TALK TO SO MANY GIRLS I'VE DECIDED ON "LADIE'S MAN"!



OKAY LADIE'S MAN... THREES ON YA!
...BREAKER BREAKER WHO'S GOT A COPY ON THIS HERE LADIE'S MAN?



YOU'VE GOT "STARLITE SUZY" HERE, BABY'S CAN C'MON BACK...
IT'S NOT "BABY'S CAN" IT'S "LADIE'S MAN"!



STARLITE SUZY... THIS IS "ANNIE OAKLEY... THAT BABY'S CAN SOUNDS KINDA' CUTE! HOWBOUT IT?
10-4 ANNIE!!
LADIE'S MAN!
"L" AS IN LINDA
"A" AS IN ANN



HEY GIRLS!! THERE'S A NEW GUY ON THE CHANNEL TONIGHT... EVERYBODY SAY HELLO TO "BABY'S CAN"!
WELCOME BABY'S CAN!
10-4 BABY'S CAN!
LADIE'S MAN!
LADIE'S MAN!



BIG MAMA LOOKIN' FOR THAT BABY'S CAN ONE TIME, C'MON?
YEA... YOU'RE LOOKIN' AT THE BABY'S CAN...

CB CHUCKLES

John Law, Post Tabbed

The following are direct quotes from Public Notices issued by the Federal Communications Commission, 1919 M Street, NW, Washington, D.C. 20554.

"The Commission, by its Safety and Special Radio Services Bureau, on the dates shown, sent notices of apparent liability for monetary forfeiture to the following licensees:

"January 17 - BATH, N.Y., COUNTY OF STEUBEN POLICE DEPARTMENT COUNTY JAIL, \$50, licensee of Police radio station KEB-394. For violation of Section 89.153(a)(d) of the Commission's Rules by failing to identify radio station as required

"January 14 - WASH., D.C., WASHINGTON POST, \$50, licensee of Relay Press radio station KJE-535. For violation of Section 91.102(a) of the Commission's Rules by operating radio station outside the frequency tolerance prescribed

"January 21, - FORT LAUDERDALE, FLA., BROWARD SHERIFF'S OFFICE, \$50, licensee of Police radio station KD-5760. For violation of Section 89.103(a) of the Commission's Rules by operating radio station outside the frequency tolerance prescribed."

(FCC Reports No. 1628-9)

CB MAGAZINE will pay \$25 for each "CB Chuckle" published. CB oriented incidents or humorous fiction are welcomed. Manuscripts of original material should be addressed to: CB Chuckles Editor, CB MAGAZINE, 531 North Ann Arbor, Oklahoma City, Oklahoma 73127.



"OK, Good Buddy, I know you're in there."

The Ten Commandments For Servicing CB Sets

By James Smith, KKZ-4361

- 1) Cause thou to pulleth the plug that giveth life to the transmitter, so that thy days be many and fruitful.
- 2) Beware the jolt that lurketh in an undischarged capacitor, lest it cause thee to land on the seat of thy britches; causing much mirth to all save you.
- 3) Taketh great care that that which thou workest upon is grounded, lest thee be lifted to high-frequency potential causing thee to emit strange unintelligible sounds.
- 4) Endeavor thou to useth correct methods when thou taketh measure of high-voltage circuits, so as not to incinerate thee and void the warranty on both thee and the CB set; where as you can be replaced, thy CB warranty cannot.
- 5) Avoideth jesters who court disaster with intentional shocks; they are non-believers and are not long for this mortal plane.
- 6) Taketh care to be advised of safety devices, or suffer the pangs and arrows of outrageous fortune.
- 7) Taketh care not to testeth circuitry with sweaty hands, or thy "good buddies" may 10-27 to your 10-20, sharing sorrows and consoling thy XYL.
- 8) Verily, verily, I say unto thee, service not high-voltage CB equipment alone, for broiling by electricity is a messy process and thou might sizzle like bacon until frazzled and then thou shan't give a damn about the terrors of going to Hell.
- 9) Messeth not with things that glow brightly; things of which you knoweth little, lest thou begin to glow also and thy wife be upset with thee in the night-time and have no use for thee save but for thy paycheck.
- 10) Commit thee to memory the works of the disciples, which are written in the specifications, which fooleth thee not and pray consoleth thee, and thou cannot make a mistake; sometimes; maybe.

CB Terms And Their True Meanings

By DRIFTWOOD

- Auxiliary Speaker — The "good buddy" that 10-5's for you.
- Hi-Frequency — Sagitarrius (half man, half horse).
- Ground Waves — High tide.
- Lightening Arrestor — Locks up moonshiners.
- Operating Practice — What doctors do before operating for real.
- Propogation Of Ground Waves — Making lots of ripples.
- Superregenerative — Frankenstein.
- Sky Waves — A waterspout.
- Solid State — Frozen stiff.
- Single sideband — Orchestra that only records one side of record.
- AM — Early in the morning.
- FM — Female.
- Block Diagram — Drawing of the area between 56th and 57th Street.
- Crystal — The stuff Grandma gave you — but you're afraid to use.
- Tone alert — Sagging skin under the chin.
- Adapter — The thing to do if a baby girl is left on your doorstep.
- FCC — One of the gods CBers sacrifice to.
- Resistance — What your wife gives you when you try to take the microphone away from her.

Examining PLL Systems

Phase-lock-loop is the heart of the circuitry in most 40-channel units.

By Sol D. Prensky, Professor (Emeritus) Electronics, Fairleigh Dickinson University

Confronted by a change-over from 23-channel designs to the new 40-channel CB sets, most manufacturers have adopted the so-called phase-locked-loop (PLL) system. It provides a tremendous simplification over other frequency-synthesizer methods of the past. While the resultant circuit for selecting the 40 receiving channels is by no means a simple one, the use of the PLL method offers an outstanding advantage in that it requires only a single crystal as a reference control, as opposed to the multiplicity of crystals (amounting to over a dozen) that would be needed by other systems that presently use different versions of frequency-synthesizer circuits. Moreover, present users of 23-channel sets already using the PLL system have been the first to be informed of their manufacturers' offer for factory modification of their sets to 40 channels at a manageable fee.

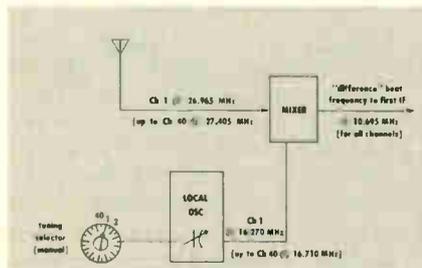


Figure 1. Basic receiver principle for CB tuning, by mixing incoming carrier with local-oscillator, to produce intermediate frequency [IF] for 40 channels.

In examining the functional operation the single crystal scheme (technically called a digitally-controlled PLL system), we will concentrate primarily on explaining the receiving portion of the CB transceiver, and only briefly note the corresponding provisions for transmitting.

Before describing PLL operation, we should back track a bit briefly to review the basic superheterodyne receiver principle that applies to both old and new types of practically all CB sets. These receivers, in general, employ double-conversion; that is, the incoming carrier frequency is down-converted twice to fixed frequencies for the first and second intermediate frequencies (IFs), with the first IF nominally at 10.7 MHz and the second IF generally at 455 kHz.

The principle for this first conversion to produce the first IF at a nominal 10.7 MHz, is shown in Figure 1. Channel selection is shown as being done by continuous manual tuning for the sake of functional simplicity. Here, there are two input frequencies to the mixer which produces an output that is the difference beat frequency. One input is the desired carrier, which will be Channel 1 for our example at its carrier frequency of 26.965 MHz. The second input comes from the local oscillator (LO), which must be tuned manually for Channel 1 to a proper frequency, such that the difference frequency in the mixer

output will be at the frequency of the fixed-tuned first IF (or nominally 10.7 MHz).

We will use this fixed IF at 10.695 MHz, rather than the nominal 10.7 MHz, for the sake of convenience, since the use of the 10.695 figure rather than 10.7 allows the results to be expressed to no more than three decimal places, rather than four (as will be seen later). Thus, in our example for Channel 1, we tune the local oscillator to a frequency which is 10.695 MHz below the carrier ($26.965 - 10.695 = 16.270$ MHz). Then the mixer combines the carrier (at 26.965 MHz) with the local-oscillator signal (at 16.270 MHz) and thus produces the difference frequency at the fixed first IF of 10.695 MHz, as required. By the same token for Channel 40, the local oscillator should produce a 16.710 MHz signal ($27.405 - 10.695 = 16.710$).

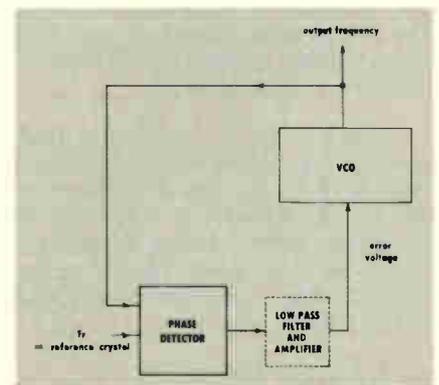


Figure 2. Basic principle of a phase-locked-loop [PLL].

Thus, the local oscillator must cover from 16.270 to 16.710 MHz in order to generate the first IF for all 40 channels.

In covering the 40 channels in the CB receiver, it therefore helps to keep in mind that we require the local oscillator to tune to 40 separate frequencies (each one 10.965 MHz below the incoming carrier), as an essential requirement for the tuning system. Moreover, since these frequencies must be extremely accurate to receive correspondingly exact signals from a crystal-controlled transmitter, it is obviously necessary to likewise have crystal control of these 40 frequencies. In most 23-channel receivers, such control is accomplished by a frequency-

synthesizer utilizing many crystals. By contrast, the PLL method can generate these 40 frequencies, with reference to a single crystal. The essential operation of a PLL system is shown in Figures 2 and 3, as applied to CB which is illustrated in simplified functional form.

In the block diagram of Figure 2, the basic action of phase-locked-loop is illustrated, showing how a given oscillator output frequency can be locked to a reference frequency (such as a crystal-reference frequency), by the action of a feedback loop. The loop essentially is made up of a voltage-controlled oscillator (VCO), whose original output frequency (f_0) is fed-back to a phase detector which has a second input from the frequency of the crystal reference (f_r). (For a simplified discussion, we will at first omit the dotted block, which involves details necessary only for practical design.)

The free-running frequency (f_0) of the VCO is compared in the phase detector with the crystal frequency (f_r), and the difference in phase (and therefore frequency) produces an error, which is processed in the form of a DC voltage. This DC voltage, applied to the VCO causes the output frequency to be changed in a direction that will drive the error to zero, at which time the VCO is locked to the crystal-reference frequency. (While simple enough in theory, the practical design involves the dotted block labeled low-pass filter and amplifier which processes the phase-error into a corresponding DC voltage).

The essential point, however, is that the VCO will remain in lock through a specified range of frequency difference. And, most important in our application, will also remain in lock for harmonics and divided subharmonics of the injected frequencies, as they are precisely divided by means of digital logic (as will be shown later in the form of "divide-by-N"). As a result, we can expect the VCO in the PLL system to produce a series of crystal-referenced frequencies that will serve the function of the local oscillator in a CB receiver, as dictated by the selection of the

proper divide-factor of the channel selector.

This scheme is applied in Figure 3 as a simplified block diagram which highlights the functional aspect of the PLL system (with practical details of actual operation to follow). It is given in theoretical form to emphasize the fact that the arithmetic involved is quite straightforward, and not all that complicated for a general understanding. So, get your pencils ready for a little subtraction and simple division arithmetic (a calculator wouldn't hurt, but is not strictly necessary) and follow a couple of examples of the actions that take place as the Channel selector dial of the CB receiver is set to the 40 different channels. Numerical examples of the PLL action are presented on just two of these, Channel 1 and Channel 40.

In applying the PLL system to the channel selector process in Figure 3, we should again keep in mind the basic requirements, that in order for the VCO to act as our local oscillator, it must be directed step-by-step to produce the LO frequencies of 16.270 MHz for Channel 1 up to 16.710 MHz for Channel 40, in order to feed the mixer the proper signal, required to be 10.695 MHz below the desired carrier frequency for that channel.

Referring now to Figure 3 for Channel 1, we derive the reference signal input to the phase detector by dividing the crystal frequency of 10.240 MHz by 1.024 to obtain a precise 10-kHz reference input. The other input to the phase detector is

derived from the VCO, divided by N (where N is a digital binary-coded number) directed by the position of the channel selector (for Channel 1 position, $N = 1627$). Accordingly, the phase detector produces an effective value of DC voltage output (depending on the error from its comparison), which forces the VCO to oscillate at a "locked" frequency of 16,270 MHz, so that the division by $N = 1627$ produces an exact 10 kHz, to match the reference input of 10 kHz and consequently driving the error to zero. Accordingly, the mixer output properly feeds the first IF (i.e., Channel 1 carrier $26.965 - 16.270 =$ required IF of 10.695 MHz).

In a similar manner, when the channel selector dial is turned to Channel 40 (27.405 MHz), the digitally-coded signal directs the division-by-N chip to divide by $N = 1671$. The PLL action will now result in an error-proportioned DC voltage from the phase detector to force the VCO to oscillate at 16,710 MHz, so that this signal divided by the new N of 1671, again results in a 10 kHz signal that precisely matches the crystal-referenced 10 kHz input. Again, we can check that VCO is now producing the proper precise local oscillator signal at 16,710 MHz in order for the mixer to feed the first IF at 10.695 MHz (i.e. Channel-40 carrier $27.405 - 16.710 = 10.695$ MHz, as required) or Q.E.D. for this theoretical case.

In the practical block diagram shown in Figure 4, as can generally be expected, practical design involves some modification of our simplified theoretical model. The high megahertz frequencies of CB operation have resulted, in the theoretical model, in excessively large division numbers for N, as were arbitrarily used for convenience.

The practical model in Figure 4 employs prescaling in order to be compatible with the real design world. While the basic principle remains valid, this additional prescaling is accomplished by down-mixing the VCO frequencies before they are presented to the programmable divider, by means of an additional mixer.

As shown in the practical diagram, the additional mixer

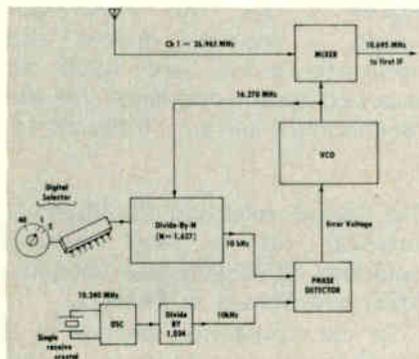


Figure 3. Block diagram [in simplified functional form] showing phase-locked-loop [PLL] system "in-lock," for Channel 1.

combines the generated VCO frequency with a crystal-derived frequency of 15.36 MHz. This latter frequency is obtained from the 10.24 MHz crystal by a divide-by-2 (to 5.12 MHz), followed by a tripler block, producing the crystal-derived 15.36 MHz frequency. Thus, in the additional mixer, we have this 15.36 MHz signal subtracted from the VCO

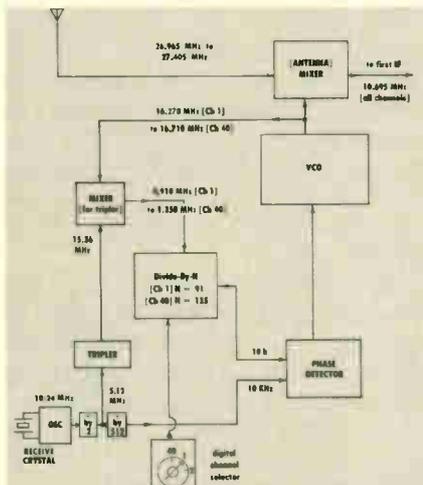


Figure 4. Practical PLL system for 40-channel reception.

frequencies, ranging from 16.270 to 16.710 MHz and so producing a lower-frequency output ranging from 0.910 MHz (Channel 1) to 1.350 MHz (Channel 40). When fed to the divide-by-N block, the factor N for programmable division is now reduced to the manageable figures, $N = 91$ (Channel 1) and $N = 135$ (Channel 40), according to the command from the channel selector. The rest of the operation is the same as shown before in Figure 3.

The net result of the operation of the PLL system in the receiving mode can be summarized by stating that: each digital command from the channel-selector switch (BCD from 0000 0000 to 0011 1001) produces an appropriate division of the VCO frequency for that channel, which is then corrected by the off-frequency error from the phase-comparator, through a proportional DC output, back to the VCO in a "locked" condition at zero error. In this way, the VCO in-lock produces a crystal-referenced signal for each individual channel position, at the proper precise frequency to act

as a digitally-selectable local oscillator. This local-oscillator signal is then mixed with the incoming carrier frequency to produce the first IF signal and subsequently amplified in the conventional manner.

The pertinent frequencies produced in the PLL system by

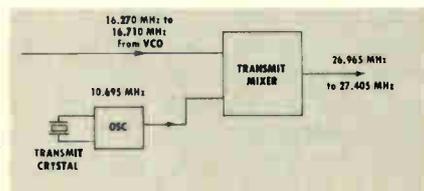


Figure 5. For the TRANSMIT mode, a separate crystal and separate mixer are used to produce a sum carrier frequencies.

the digital selection (divide-by-N factors) for a few channel positions (RECEIVE and TRANSMIT) are shown in Table 1.

In the transmitter portion of a 40-channel transceiver, the generation of transmit frequencies for each channel is also greatly simplified by the crystal-referenced VCO in the

TABLE 1
ABBREVIATED TABLE FOR CHANNEL SELECTION

CHANNEL	DIVIDE-BY -N N =	RECV. VCO FREQ (MHz)	TRANS. VCO PLUS (MHz)
1	91	16.270	26.965
2	92	16.280	26.975
3	93	16.290	26.985
gap of 10 kHz*			
4	95	16.310	27.005
5	96	16.320	27.015
.	.	.	.
.	.	.	.
.	.	.	.
20	115	16.510	27.205
.	.	.	.
.	.	.	.
40	135	16.710	27.405

PLL. In the transmit mode, it is only necessary to add the output of a second crystal at the frequency of 10.695 MHz to the VCO output. This VCO output is already locked at a frequency that is below the carrier by that same amount of 10.695 MHz. Thus, by adding the crystal output to the VCO output in a mixer block (Figure 5), the sum frequency that results covers the carrier frequencies of each of the 40 channels, from 26.965 to 27.405 MHz. Moreover, each channel frequency is held to better than the required accuracy of $\pm 0.005\%$ by the reference frequencies precisely determined by the single receive and the single transmit crystals.

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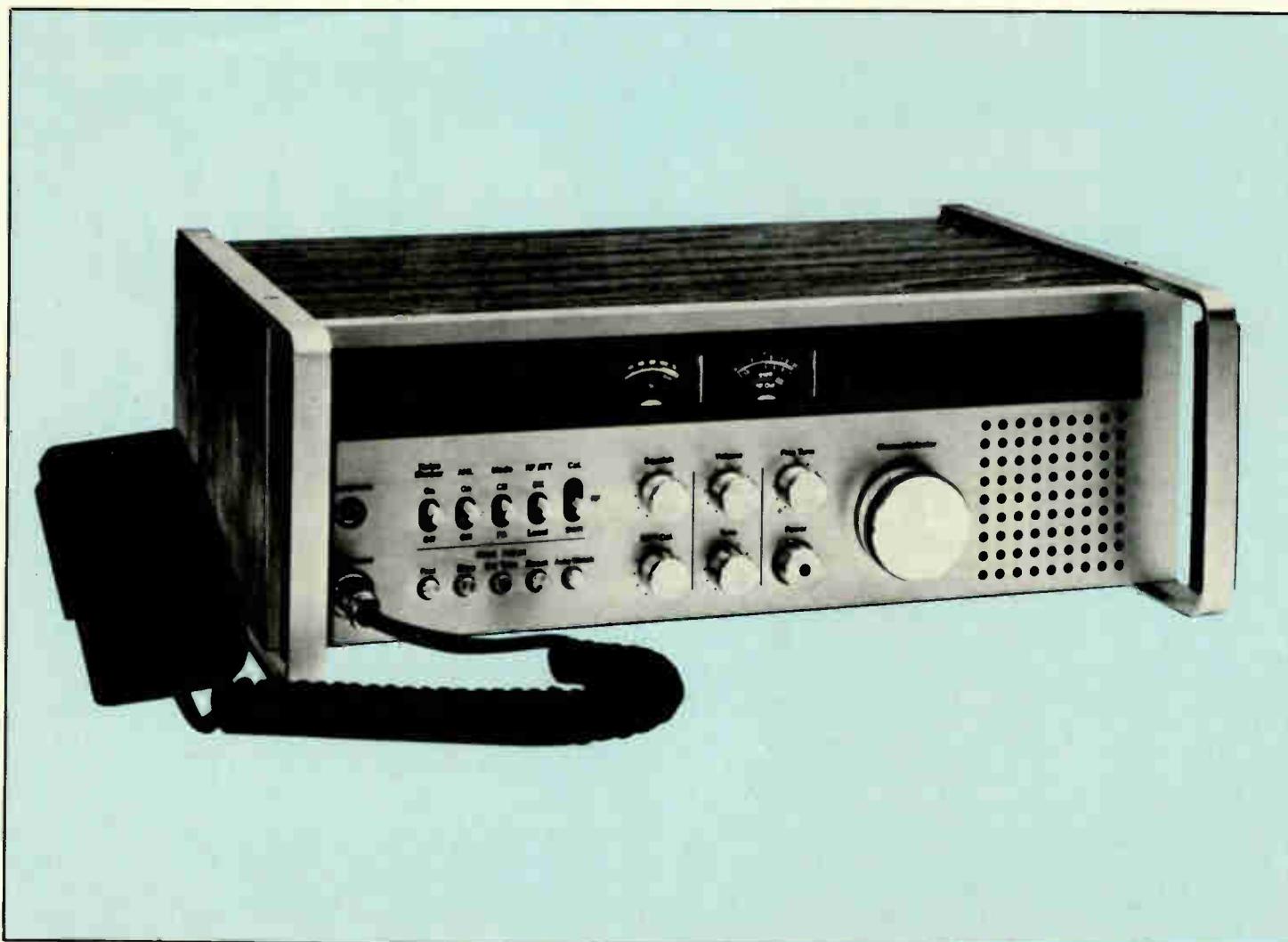
'High Style' Breaking Into CB?

Citizens Band radio users may be judging the appearance of their CB equipment along with the quality of its sound, if the recent debut of a luxuriously-styled transceiver is any indication. The new design is the CB-5100, a base-station, introduced nationally this year by Sparkomatic Corporation. It features a number of luxurious appointments previously lavished more on hi-fi sets than on CB equipment. Features include teakwood-grained wood cabinetry with a solid brushed aluminum front. Sturdy front handles are incorporated into the design for easy portability.

The high fidelity look, however, is not the only

facet that adds what Sparkomatic considers an extra touch of class in this model. Convenience features also play a major role. Among these are a digital clock, with large LED numerals, which can be pre-set to turn the transceiver on automatically at pre-determined times. This can be of particular value to a businessman operating with a small fleet of delivery trucks, or to a small cab-fleet operator who may have peak traffic — and therefore, broadcast periods to contend with.

Other features are a meter that shows the strength of the received signal and the outgoing RF power. This meter can also be used as an SWR



indicator for tuning the antenna. A modulation meter monitors the percentage of modulation. In addition, an indicator light shows receive and transmit modes; and another flashes on if the antenna is faulty — or perhaps loosened from its mount in a storm. The model also has a channel selector with an LED readout.

The Sparkomatic CB-5100 utilizes a double-conversion superheterodyne circuit for high image rejection, high sensitivity and minimum noise.

A ceramic filter provides impressive adjacent channel rejection. A fine tune control makes possible clear reception of off-frequency stations

and a noise blanker reduces impulse noise interferences before it reaches the detector. Residual noises not eliminated by the noise blanker are reduced by the automatic noise limiter. The automatic gain control circuit provides maximum sensitivity for weak signals and prevents overload on strong signals. A local/distance switch is provided to optimize the automatic gain control circuit. The tone control has been designed to maximize intelligibility and listening preferences. The transmitter is rated at 4 watts of RF power and can be modulated up to 100%.

Sparkomatic Corporation, the company that manufactures the CB 5100, is a major maker of aftermarket automotive accessories and car speakers, and is fast emerging as a major factor in the CB transceiver and accessories market. The firm has shown a remarkable and rapid growth record since its inception slightly more than 15 years ago in Milford, Pennsylvania. This growth is graphically illustrated by the fact that the company has recently announced three major expansion programs, planned for completion in 1977. These new facilities, in Milford, at Watson Industrial Park in Carson, California and in Seoul, Korea are designed to not only increase Sparkomatic's physical space, but also to broaden the scope of the company's product and service capability.

Behind the capability, according to Ed Anchel, Sparkomatic's young and dynamic president, is the total commitment to the adaptability of every applicable modern technological advancement in engineering technique.

"Since we began operating, we have applied a painstaking investigative approach to seeking out the most innovative engineering concepts and applying them to every product in the company's line," Anchel stated. "When we made our decision to enter the CB field, it was based on the understanding that only a total commitment would enable us to produce the kinds of products needed and wanted by the CB buying public. Therefore, we have applied the same time, attention and intense product development in producing CB equipment as we have to all our other product lines," he added.

In referring to the newest highlight in the line, Anchel states that "we feel we have a winner in the CB-5100. We believe it embodies the most contemporary thinking in terms of product design, the latest PLL technology and overall precision electronic engineering." 

Specifications

- 40 channel operation — PLL digital frequency synthesizer.
- N-channel chip technology insures total reliability, perfect channel tracking. Eliminates frequency deviation, fuzzy reception, "off" channel problems.
- 4 watts RF output power (FCC maximum limit).
- Rotary channel selector knob.
- LED digital readout.
- Controls: Power, volume, variable squelch, continuously variable fine tuning, tone, SWR calibrate.
- Switches: Noise Blanker (NB), Automatic Noise Limiter (ANL), PA/CB, RF Antenna-Long Distance/Local, SWR Bridge and Calibration Control.
- Illuminated S/RF and SWR Meter.
- Illuminated modulation percentage indicator.
- Built-in LED digital clock with five function control including memory capability for turning transceiver on at desired time.
- Transmit, receive and antenna warning indicator lights.
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- J handic 4005 - 40 ch/5w Base CB w/Sub-receive (LED) - \$279.95
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- N handic 004-U - 4ch/hi-lo band or UHF Pocket Scanner - \$139.95
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Durable Alpha V58 stands at 21 feet and can handle up to 2 kW of power.

Specifications

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The V1 has a gain of 3 dB and features the loop loading ACC (*Adjustable Capacitive Coupling*) system, and durability of the Alpha V58 antenna. It stands 21 feet high, weighs only five pounds, yet will handle up to 2 kW of power.

Model antennas
not to scale

Specifications

- Gain 3 dB
- No radials
- Loop loading
- 1.1 to 1 SWR
- Frequency range 26.5 to 29 MHz
- No coils to burn out
- Will handle 2,000 watts
- Height, 21 ft.
- Weight, 5 lbs.

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Audio Devices, Radio Frequency Interference and Thee

Now you can discuss RFI with your neighbor, calmly.

By Theodore J. Cohen, KFD-2459

"Go ahead, RED DEVIL! It's your turn to burn!"

Audio devices should not behave like radio receivers; that they do

Unfortunately, the majority of the complaints reaching the Com-
operation



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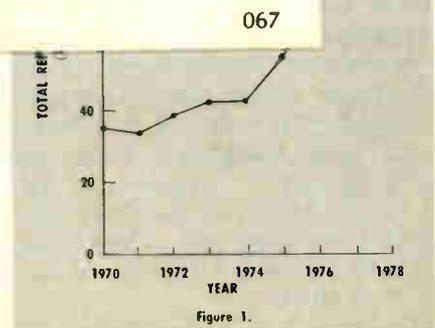
(SEE REVERSE SIDE FOR MAILING ADDRESS)

near a freeway (May issue) a constant chatter on "KOJAKS WITH KODAKS," and similar CBisms. In some cases, the audio equipment involved does not even have to be turned on for voices to be heard!

As you may have noticed, the word "allegedly" is emphasized above and for good reason.

80% of these complaints are expected to involve electronic home-entertainment equipment, with a significant proportion of the complaints related to such audio devices as electronic organs, electric guitars, phonographs, hi-fi amplifiers, intercoms, PA systems, tape recorders and players, etc.

of RFI rapidly. a federal re taken olve the ave been is during ch would turers of such as steps to of their



Interference Bill Re-introduced

Proposed changes in the Communications Act, authorizing the FCC to prescribe regulations with respect to certain electronic equipment susceptible to radio frequency energy interference, were introduced in the 94th Congress as the Goldwater-Vanik Bill. These changes have been reintroduced in the 95th Congress by Senator Barry Goldwater (R., Ariz.). Representative Charles A. Vanik (D., Ohio) plans to follow suit shortly in House legislation, his office stated.

Senator Goldwater's new bill (S 864) has been referred to the Senate Committee on Commerce, Science and Transportation. The previous bill died in committee, without having been scheduled for hearings.

Under the proposed legislation, Section 302a of the Communications Act would provide that "The Commission may, consistent with the public interest, convenience, and necessity, make reasonable regulations governing (1) the interference potential of devices which in their operation are capable of emitting radio frequency energy by radiation, conduction, or other means in sufficient degree to cause harmful interference to radio communications, and (2) the use of protective components in consumer electronic equipment capable of reducing interference to such equipment from radio frequency energy. Such regulations shall be applicable to the manufacture, import, sale, offer for sale, shipment, or use of such devices."

"Some 80 percent of the problems," Senator Goldwater said, "are related to the operation of CB stations," and "another 7 percent stem from the operation of stations licensed in the amateur service," but "What is not commonly understood is that the great majority of these complaints result from defects in home electronic equipment that pick up signals they should not receive. In fact," he noted, "the FCC has found in past years that 90 percent of all television interference problems can be cured only at the television receiver. Interference has not been caused by the CB or amateur radio transmitter; it has resulted from basic design defects in the TV set itself.

In a change from the proposed legislation of the last Congress, he pointed out, the new bill drops the restrictive term 'audio and visual electronic equipment' and substitutes for it the term 'consumer electronic equipment', a change intended to reach electronic control devices and warning devices, as well as the above kind of equipment. "Home burglar alarm devices are one type of warning system I have in mind," he said.

Senator Goldwater pointed out that "if anyone in my neighborhood complains about my transmission on my amateur radio set, I just pick up a \$1 or \$1.50 resistor and go over and install it for them." but "It would be far simpler and more efficient for the manufacturer of the stereo or TV to do this." [Industrial Communications]

products to signals from nearby radio transmitters.

Thanks to lobbying on the part of some electronic equipment manufacturers and to the less-than-energetic support by CBers and radio amateurs, those RFI bills never even received hearings in the appropriate subcommittees.

Meanwhile, having received no guidance from the federal government, state and local officials are taking matters into their own hands. Almost all states now have one or more municipalities with recently-enacted public nuisance, anti-noise, or tower restriction ordinances which can be used, and are being used, to silence CB and amateur stations. Never mind the fact that you are licensed by the FCC . . . to operate your station in the city or state in which you live may decide (if it hasn't done so already) that regardless of the facts, RFI problems are the fault of the radio operator. And since few of us have the time or the money to take the issue into court, the only alternative would seem to be staying off the air, or fixing other people's audio devices for them.

Is RFI a problem? You bet it is, Good Buddy, and it's growing worse!

The Interception of Signals by Audio Devices

We already know that for RFI to occur in an audio device, the device must intercept a radio signal. Once it does, circuit components such as power supply diodes and amplifier transistors **rectify** the signal and convert it into an audio signal. Technicians refer to this problem as **audio rectification**.

To understand how your radio signal is intercepted by the device in question, let's consider a few examples which are frequently encountered today.

Figure 2 is a generalized diagram of a hi-fi amplifier. Even

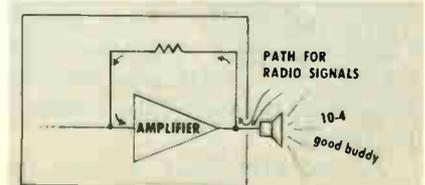
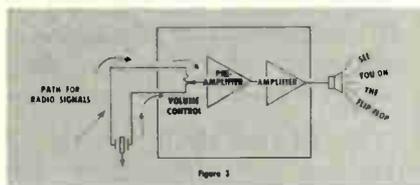


Figure 2

though the amplifier may be mounted in a screened, metal cabinet (which, by the way, is an excellent means of preventing radio signals from being picked up by the amplifier's internal wiring), those long, unshielded speaker leads make a beautiful antenna. The radio signals they intercept are conducted into the amplifier enclosure, where they are fed back into the front end of the output transistors. Here, the radio signal is rectified and an audio signal produced which can be heard through the speakers.

Essentially the same problem arises in children's phonographs. In this case, however, the antenna is the wiring in the pick-up arm (Figure 3). And does it pick up things, including your radio signal? Once the radio energy is

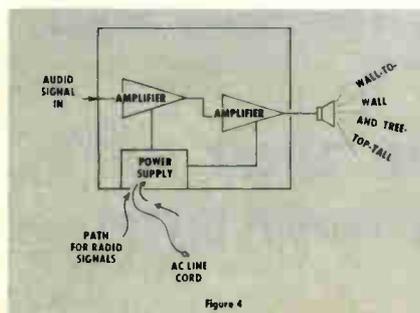


intercepted by the pick-up arm's wiring, it is conducted into the first amplifier stage and rectified. The end result is the same as in the case of the hi-fi amplifier . . . instant grief!

In other devices, your signal may be intercepted by the AC line cord (Figure 4). Absorbed by the device, the first thing it hits is the diode rectifier in the power supply. Once the rectifier does its thing, your signal, which has now been converted into an audio signal, is sent to every circuit in the device via the power supply leads, and eventually, it is heard on the speaker.

Why Do Audio Devices Behave This Way?

Audio devices are susceptible to strong radio signals because these devices exhibit basic design



deficiencies. More specifically, in most equipment built today, the few small components or filters which would be required to eliminate RFI are left out of otherwise well-designed products. This happens because manufacturers, faced with a highly competitive market place, seek to reduce their costs, and hence, the cost of their products, to the lowest acceptable level.

As an example of this "penny wise and pound foolish" policy, consider the problem previously described with the phonograph. Here, the RFI problem could probably be solved with components which would cost the manufacturer one to two cents. Add a few cents for labor, and bit for profit, and the modifications required to reduce the susceptibility of this product would probably cost the consumer 5¢. The manufacturer, however, looks at this matter in another way. Let's say he is planning to build 1,000,000 of these units. By eliminating the components which would render his product immune to radio signals, he will save between \$40,000 and \$50,000. It doesn't take much to see what the manufacturer will generally do when faced with this choice.

Times are changing, however. As the number of RFI cases continues to rise at an astronomical rate, some manufacturers are beginning to recognize their responsibility to the consumer and are building audio equipment which will operate in the vicinity of a radio transmitter. Then too, a number of manufacturers will now assist the consumer in correcting RFI problems by providing needed advice, parts, and in some cases, service, for equipment already in the consumer's hands.

Who Needs the Manufacturers . . . I Can Fix It Myself!

Forget it!

Most CB operators are not electronic technicians and are simply not capable of making the circuit modifications necessary to eliminate RFI in an audio device. In any event, why should you spend your time and money correcting a problem which should rightly be corrected by the manufacturer? After all, it was

the manufacturer who eliminated the needed components in the first place. You should also be aware that modifying the circuitry in a piece of equipment, or in some cases just opening the cabinet, will void the warranty, thereby creating additional problems should the device require service at a later date. And if you are still not convinced to keep your cotton pickin' fingers out of your neighbor's audio equipment, remember this: no matter how good a relationship you have with your neighbor, when the device you modified fails, guess who will be blamed.

How do you obtain help from manufacturers of audio equipment when RFI occurs?

Advice, Parts and Service [Maybe]

As noted earlier, some manufacturers will provide advice, parts and possibly even the service required to eliminate RFI problems in their audio products. But how do you know which manufacturers are willing to assist the consumer, and to what extent he will provide assistance? That's an easy question to answer.

The American Radio Relay League (ARRL), a national organization made up of over 125,000 radio amateurs, has prepared a list which gives the points of contact within various companies to whom inquiries and complaints on RFI problems can be addressed. Figure 5 shows how the list is set up.

The ARRL RFI Assistance List is the most useful document available to the consumer and the radio operator for obtaining assistance on RFI problems. To obtain a copy, send a stamped (13¢), self-addressed, business size envelope to:

RFI Assistance List
American Radio Relay League
225 Main Street
Newington, Connecticut 06111
And by the way, the RFI assistance list also provides information on television manufacturers and how they handle so-called television interference (TVI) complaints.

How To Obtain Assistance From Manufacturers

A simple letter to the manufacturer involved, stating

ABC Electronics
1234 Research Way
Anytown, Anystate
(999) 666-000

Mr. E. R. Jones
National Service Manager

Home entertainment audio products.

ABC Electronics asks that customers with RFI problems contact their dealer for assistance. If the product is in warranty, parts and labor will be provided free of charge; otherwise, only the parts will be provided at no charge. If the dealer cannot correct the problem, the customer should contact Mr. E. R. Jones, National Service Manager.

Figure 5

the relevant facts on the interference problem experienced, is usually sufficient to bring forth the sought-after assistance. Be sure to state the audio device's model number and serial number, and any observations which may be useful in determining the cause of the problem (for example, perhaps the volume control has no effect on the sound level of the CB signal; or maybe the CB signal can be heard even when the set is not in operation). Regardless, be courteous. After all, you are seeking help and the manufacturer is under no legal obligation to assist you. That he will provide advice, or parts, or possibly even service, is to be appreciated.

Finally, be sure to send a copy of your letter to the Federal

Communications Commission at: 2025 M Street, NW, Washington, D.C. 20554. If you don't let the FCC know you have a problem, how can we ever hope to solve the RFI problem at the national level?

The Bottom Line

What it all means is this: voluntary, case-by-case assistance provided by responsible manufacturers is only a temporary solution to RFI problems. In the long run, unless all manufacturers take steps to

resolve RFI problems in their products at the time of manufacture, federal legislation is needed. It would enable the FCC to specify susceptibility standards for electronic home-entertainment equipment to insure the consumer is offered equipment which will operate properly in today's radio-frequency environment. CBers in Congress are trying for such legislation this year.

Senator Barry Goldwater (R-Ariz.) introduced Senate Bill 864, similar to a bill being introduced in the House by Congressman Charles Vanik. This legislation would give the FCC the authority it requires.*

Until legislation is enacted, however, keep cool, work with your neighbors, use the RFI Assistance List and resolve those RFI problems before they blow up into really big headaches. 

* **CB MAGAZINE** urges its readers to write their Congressmen and Senators supporting this legislation.

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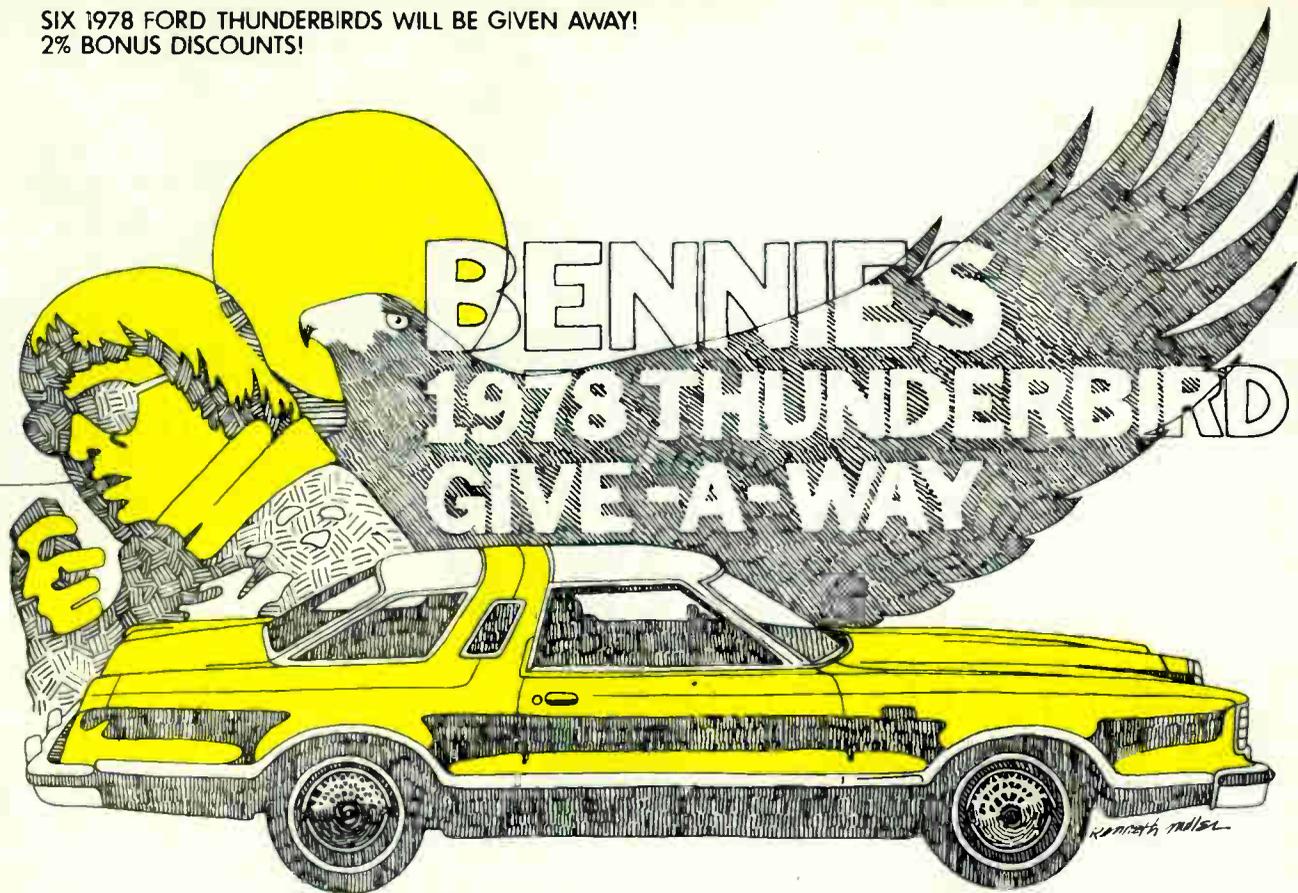
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Understanding CB Specs — Part Three

Which is the best CB transceiver, price not considered, and which is the best for the money?

This is the third part of this article which explains the meanings of CB transceiver specification terms.

SENSITIVITY. The ability of a CB transceiver to receive weak radio signals is rated in terms of sensitivity in microvolts for a given effect at the speaker. Typically, the sensitivity of a CB transceiver is better (less) than 1 uV (microvolt) for 10 dB S+N/N (power of signal plus noise at the speaker is 10 times greater than the power of noise alone). That's engineering talk. But, look for the 10 dB S + N/N and the smallest microvolt number. Remember that 1 microvolt is only 1-millionth of 1 volt.

SQUELCH SENSITIVITY. This is the term used to rate the most sensitive squelch control setting. When you turn the squelch control just beyond the point where background noise stops, it is at its threshold. If squelch sensitivity is rated at 1 uV, for example, it means that a 1 uV signal will "awaken" the squelch and that a weaker signal (less than 1 uV) will not.

SELECTIVITY. This is the most important spec. An AM receiver should pass the entire AM signal which is about 6 kHz wide (narrower for SSB). Allowance should be made for some frequency drift of the received signal and of the receiver itself. To avoid sideband clipping and the resultant distortion, the receiver "bandpass" should be

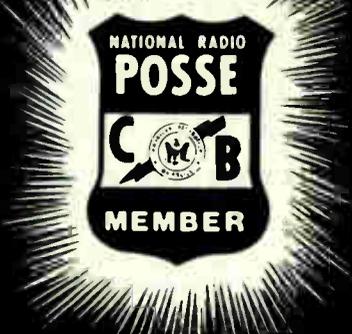
wide enough to pass the entire signal. Signals at frequencies beyond the extremes of the bandpass should be completely rejected. But, this is an unattainable (at this time) ideal condition. So you have to settle for "attenuation," not rejection of off-channel signals.

If the adjacent channel selectivity rating is 40 dB, it means that when the rig is set to Channel 9, for example, the carrier of a Channel 10 signal must be 10,000 times more powerful than a Channel 9 signal to have the same effect on the receiver. If the rating is 50 dB, it's 10 times better.

METER. Many rigs have an S meter or a combination S/RF meter and some also have a built-in SWR meter and even a modulation indicator. None is actually needed, but can be a convenience for checking operation. An S meter indicates the relative strength of intercepted signals as does an S/RF meter which also indicates relative transmitter power output. An SWR meter indicates antenna system functioning and a modulation indicator lamp flickers to show that the transmitter is being modulated.

TYPE ACCEPTED. This is a must now. Since November 1974, it has been illegal to sell, or even offer to sell, a new CB transceiver that has not been type accepted by the FCC. How can you tell if a transceiver has been type accepted? Look at the identification

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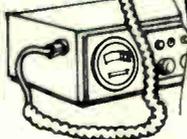
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CB Specs [cont'd]

plate or label for an FCC TYPE number or an FCC DATA number. If there isn't one, chances are that the rig was on the dealer's shelf before type acceptance was required. In the event, the same model has been type accepted since then, the dealer should have been sent the appropriate ID plate or label.

To get type acceptance, the manufacturer or importer must have a unit thoroughly tested to confirm that it meets FCC technical standards. Then a report of the findings of the tests and a TA application must be filed with the FCC for consideration. In addition, the FCC may demand that a sample transceiver be sent to the FCC lab for further testing. If the unit passes, it is reasonable assurance that it will perform to your satisfaction. In addition to assuring the FCC that a transceiver won't cause excessive interference to others if used properly, requiring type acceptance is a form of consumer protection. 

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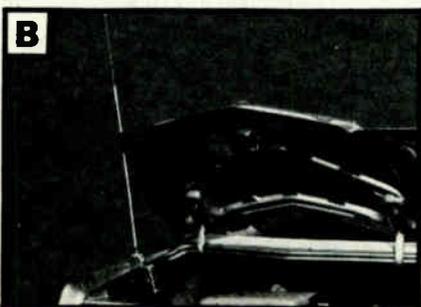
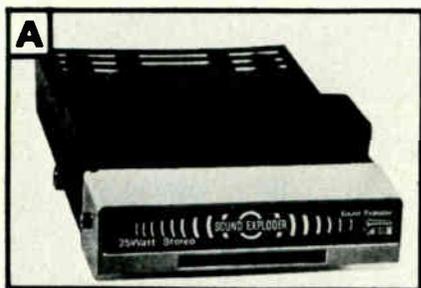
Some of the CB products described in CB Scope, in product reports, in articles or advertisements, may not be offered for sale or lease, or sold or leased until FCC approval has been granted. Publication of information on these products may sometimes occur, however, before grant of FCC approval.

AUDIO BOOSTER **A**

A new sound exploder-amplifier adds up to 25 watts of power to auto stereos and CB radios. Labeled Model AMP-500, it provides additional sound power output. The slim, silvertone unit mounts easily under the dash of an automobile. It features a push type on-off switch and illuminated face. The new amplifier measures 4-1/2" (w) x 1-3/8" (h) x 5" (d). Mounting hardware and installation instructions are included. For more information write to **Audiovox Corporation** 150 Marcus Blvd., Hauppauge, New York 11787, or use **SPEDE No. 057-3**

ANTENNA MOUNT **B**

WHIP-FLIP is the brand name for a new line of "anti-theft" CB radio antenna mounts. There are two basic models of WHIP-FLIP — one for automobiles and one for trucks. The cartype mount (T-100 series) clamps onto the rain channel inside the trunk of an auto. In the "up" position, the mount fits between the



trunk, completely out of sight. It just clamps on. You don't have to drill any holes in your car. It's very handy to have at automatic car washes, also. The truck version (model M-200) clamps onto the truck's mirror arms, top and bottom, using two non-slip hooks and a springloaded shaft. To remove, just pull up on the shaft and lift off. A thumbscrew is provided on the top hook for positive antenna ground. The M-200 will mount on any conventional westcoast mirror. For further information, contact: John J. Gostomski, president, **Hellstar Corporation**, 1600 North Chestnut Street, Wahoo, Nebraska 68066, or use

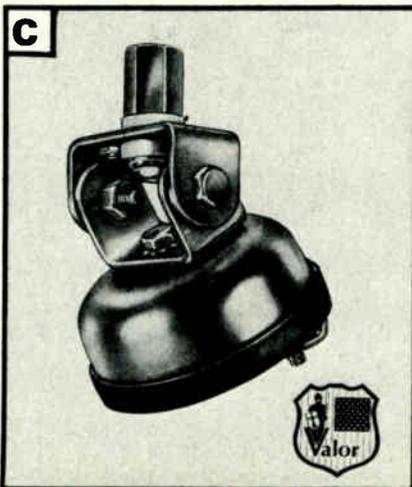
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HATCHBACK CB ANTENNA MOUNT **C**

An innovation is the new Model 118 hatchback mount to solve the problem of mounting CB antennas on hatchback style automobiles. The Model 118 mount is designed for quick and easy installation. Mounting does not require drilling or tapping and will not damage paint finish. It is chrome-plated for appearance and resisting rust or corrosion. The mount is equipped with all necessary mounting hardware, a moisture preventing seal, and is designed to accept a standard 3/8"-24 or snap-in CB antenna. For more information, write to: **Valor Enterprises Incorporated**, West Milton, Ohio 45383, or use **SPEDE No. 067-3**

BASE ANTENNA **D**

The Mark AMB-2 is a tunable base station antenna with advanced features.



It is tunable to reduce the effects of nearby objects and detuning as height varies, and has no unsightly ground radials. The AMB-2 also features a "Static Sheath" claimed to eliminate precipitation static, improve signal-to-noise ratio, increase effective receiver sensitivity and extend intelligible coverage. The reactive tuning feature compensates for and reduces the adverse effects of nearby objects which normally detune base station antennas.

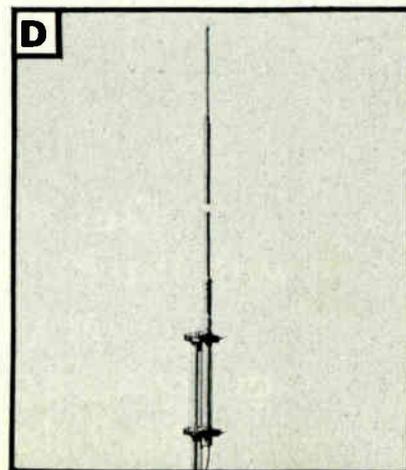
When installed, a simple screwdriver adjustment of the reactive tuner will virtually negate the effect of any nearby objects and provide the lowest possible SWR across all 40 channels.

The AMB-2 is a full half-wave radiator, voltage fed at the bottom high impedance point through a special launcher-matcher cable section. The new antenna's design reduces the angle of the radiated signal, placing the signal directly on the horizon for maximum contact with mobile units and other bases. For further information, write: Jerry Howard, sales manager, **Anixter-Mark**, 5439 West Fargo, Skokie, Illinois 60076, or use **SPEDE No. 067-4**

COAXIAL KITS

Hy-Gain introduced three new pre-cut coaxial cable kits. Kit No. 523 includes a 3-foot RG 58/U coax with PL-259 type connectors for use between transceiver and station accessories such as preamps, power meters, or antenna matchers. Kit No. 524 includes an 18-foot RG 58/U coax with a PL-259 connector at one end and lugs on the other.

This kit has been designed for mobile installations and can be used as a



A REVIEW OF NEW PRODUCTS AND SERVICES

replacement coax for CB antennas. Kit No. 526 is for base station use and comes complete with 2 50-foot RG 58/U coax and solderless PL-259 connectors which easily slide through mount holes. For further information contact Department MM; **Hy-Gain Electronics Corporation**, 8601 Northeast Highway Six; Lincoln, NE 68505, or use

SPEDE No. 057-5

BASE ANTENNAS E

Model RA1776 is an indoor base station antenna that is adjustable to 36". It features a two-piece construction of fiberglass and stainless steel whip with right angle connector. Called "the rabbit ears of CB", the antenna is designed for use in high rise apartments, college dormitories and wherever an outdoor antenna is not available. Matching can be adjusted by shortening the center rod 1/4" at a time. For more information, write to: **AVA Electronics Corporation**, 242 Pembroke Avenue, Lansdowne, Pennsylvania 19050, or use

SPEDE No. 067-6

MOBILE ANTENNA F

AM/FM/CB reception, plus high performance CB transmission, can now be accomplished by a single, conventionally designed cowl antenna, the CiBco DX-400, which is factory tuned. No field adjustments are necessary after the usual whip tuning to the individual vehicle. All electronic circuits are combined in a powertube, an integral component of the antenna itself, installed below fender or cowl. Coax may be lengthened or shortened without affecting performance. An efficient filtering system permits simultaneous use



of AM-FM radio and any of the 40 CB channels.

The loading circuit in the powertube eliminates the need for tunable couplers, allowing the DX-400 to transmit and receive along the entire length of its radiating element. No portion of the antenna cable becomes part of the radiating element. Since length of cable is not critical, the DX-400 can be mounted on the rear fender as well as the front. For further information, contact: Bob Lamons, **Ackerman Incorporated**, 5708 Mosteller Drive, Oklahoma City, Oklahoma 73112, or use

SPEDE No. 067-7

ANTENNA CATALOG G

The Hustler 1977 revised and expanded 26-page CB catalog illustrates never before — mobile and base station antennas, including special designs and a wide selection of 40-channel antennas and hardware for any application plus a new series for recreational vehicles. To obtain your free copy, send a postcard or letter to: Sales Department, **New-Tronics Corporation**, 15800 Commerce Park Drive, Brookpark, Ohio 44142, or use

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TOUCH-COM 40 H

The SBE Touch-Com 40 is a 40-channel CB transceiver with controls for all key functions and an LED channel readout combined in the microphone head. All normal functions on the Touch-Com 40 are controlled from the microphone,



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CB Scope

[continued]

safety during CB communications. Holding either button down will automatically step through all 40 channels. Channel readout on the microphone features large, base-station size LEDs, polarized for easy daylight viewing. Further information is available by writing **SBE Inc.**, Dept. P., 220 Airport Blvd., Watsonville, California 95076, or use **SPEDE No. 067-9**

ANTI-THEFT ALARM



The Atlas Anti-Theft Alarm is a self-contained electronic tilt detector which emits loud piercing bursts of sound when jarred or tilted, such as an item would be when being burglarized. This compact unit (3-1/2" x 3-1/2" x 1/2") can be mounted in a concealed place such as in the back panel of a transceiver. When tampered with, the alarm inside will "scream" in short, loud bursts, then be silent again. However, if tampering continues, the alarm will shriek continuously for up to five hours, until desensitized by the owner with a special factory provided tool, with which he can reset the unit. It cannot be disarmed by the thief. For more information write to **Atlas Security Systems**, Rt. 2 - Haygood Rd., Pendleton, South Carolina 29670, or use **SPEDE No. 067-10** 



Questions and Answers

While we would like to, CB MAGAZINE can no longer reply to questions by mail, because of the increasing numbers of questions received. The most interesting questions and their answers will be published, about three months after receipt. Send questions to CB MAGAZINE, Editorial Offices, 250 Park Avenue, New York, NY 10017.

HOW CAN I BOOST MY SIGNAL?

Q. A lot of magazine space has been used explaining types and uses of CB antennas and how they can boost your output signal, depending upon their gain. I would like to know, how this "boost" actually takes place in what seems to be a simple electrical circuit antenna. I'm familiar with the power scale, in terms of decibels, which determine the actual multiplication of an antenna. I wonder if this boost can be synthesized externally, with an inline circuit to the transceiver which would boost your 4-watt signal significantly and still meet FCC regulations.

(R.G.K., KIS-7313, Edison, New Jersey)

A. Antenna gain is obtained by compressing the radiated energy downward or in a specific direction. If upward radiation is suppressed, more energy will be radiated outward horizontally. Antenna radiation cannot be increased by an inline device except an illegal amplifier.

WHAT CAUSES COLOR LOSS ON MY TV?

Q. I have a color TV and suffer from interference. The color disappears during communications between mobile and base stations. There are four or more CB base stations within four blocks of my house. Would you say it's from their CB, or is it my TV?

(G.Z., KXL-2567, Phoenix, Arizona)

A. Loss of color indicates weakening of the TV signal because of front-end overloading of your TV set by strong CB signals. Try installing a good high-pass filter between the TV set's VHF antenna terminals and the TV antenna transmission line.

SHOULD I TRIM EXCESS COAX ON MOBILE ANTENNA?

Q. Most "off-the-shelf" CB antennas have coax attached. I am told by some to leave any excess cable intact and to coil it but not in an even coil, if I don't want the SWR affected. Others say cut off the excess as the length of the stinger controls SWR. Inasmuch as there are a number of us here with CBs, could you please give us the straight answers to the above "what ifs?"

(R.I.P., KTO-7888, Oklahoma City, Oklahoma)

A. Coax length is not critical if the antenna is correctly installed (so car body will act as ground plane). Cut it short if you wish to do so. But this does **not** apply to the matching harness of a co-phased pair which should not be altered in any manner.

'GLOBE STAR' SCHEMATIC WANTED

Q. I need a schematic for a Globe Electronics "Globe Star." The Sams Photofact CB Radio Series index does not list the Globe Star. Any help will be greatly appreciated.

(W.L.C., KEF-2364, Ft. Worth, Texas)

A. Any reader who has a schematic is requested to contact William L. Criss, 6420 Ascol Dr., Ft. Worth, Texas 76114.

SKIP ON 9 A PROBLEM

Q. We REACT members down here in Florida are considerably disturbed by Spanish skip originating from countries including Costa Rica, Venezuela, Colombia and Puerto Rico. They are using Channel 9 as a call channel and very often interfere with the reception of local distress calls from boats and motor vehicles.

Would it be legal to call on your CB base station in Spanish: "Latin Friends, in the United States Channel 9 is only used for emergencies. Please use another channel for your conversations. You are disturbing the reception of messages concerning help for people in distress in the United States. Thank you."

I myself speak and can understand Spanish perfectly, so do many of my REACT friends. Could we clear Channel 9 using this method to minimize skip interference from Latin countries? (Alfred E. Weber, KGK-1755, Holiday, Florida.)

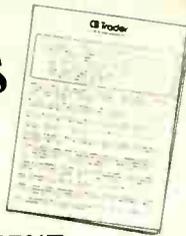
A. Sounds like a good idea, but doing so would be violation of the rules. 95.501(a) says in part "a (CB) station shall not be used (3) to communicate with . . . 'foreign' stations" (except in emergencies and in connection with civil defense activities). And, 95.501(b) says in part, "A station may not be used to communicate with, or 'attempt' to communicate with, any — station over a distance of more than 150 miles." Even if you don't engage in "two-way" communication, the broadcast you propose is "one-way" communication. Perhaps the FCC or the State Department should be asked to write to the Minister of Communications in those countries to ask them to restrict use of Channel 9 to emergency and motorist aid communications.

INTERCOM PROBLEM, SOLUTION

Q. We have a Chevrolet pick-up with a topper on the back. Since our two small children frequently ride in the back, we installed an intercom system that is hooked up to the truck battery. Also in this truck we have a CB radio which is hooked up to our auxiliary battery. Both the intercom and the CB are grounded to the dash.

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Q and A (cont'd)

Whenever our intercom is on "monitor", and we key the mike on the CB, we get an awful squeal out of the intercom. Apparently we are getting feedback through it. Why? And what can we do, other than just use one at a time? When we have our regular AM receiver on, this does not happen. (Curtis N. Greer, KAEI-2072, Warner Robins, Georgia).

A. It sounds as if your intercom is picking up and demodulating your CB signal. If it is, you have an audio feedback loop from the CB mike, through the intercom unit in the back, and from the front intercom speaker back to the mike. You might try powering both the CB and intercom from the same battery. If that doesn't cure it, get a service technician to install an RFI filter in the intercom line.

SINGLE LICENSE SUFFICIENT

Q. To operate on the 17 new CB channels, do I need a new station license? Does my present license limit me to operation on 23 channels?

(C.S., San Diego, California).

A. No, any valid Class D CB license authorizes operation on all 40 Class D channels. The FCC urges CB licensees to refrain from applying for a new 40-channel license if they already have a CB license.

READER WANTS INFORMATION ON SIDEBAND

Q. I would like to know more about sideband. I have a 23-channel AM set but can't get out more than two miles from my base station.

(N.S.B., Bridgeport, Connecticut).

A. We have in the past published and plan in the future to publish additional articles on the relative merits of AM and SSB. With an SSB rig, you should be able to get somewhat more range. But, if you're only getting two-mile range with your AM rig, there's something wrong with your set or

your antenna system unless your base station is in a heavily-wooded valley. Get an SWR meter and check your transmitter and antenna system.

INSTALL BEAMS CORRECTLY

Q. I have a set of 5-element beams. If I put them up diagonal will I be able to talk and receive on both vertical and horizontal polarization?

(Shawn Duffy, Gretna, Louisiana).

A. Yes, but not very well. It is a wasteful way to use the power gain of your beams.

COAX AGE CAN AFFECT RANGE

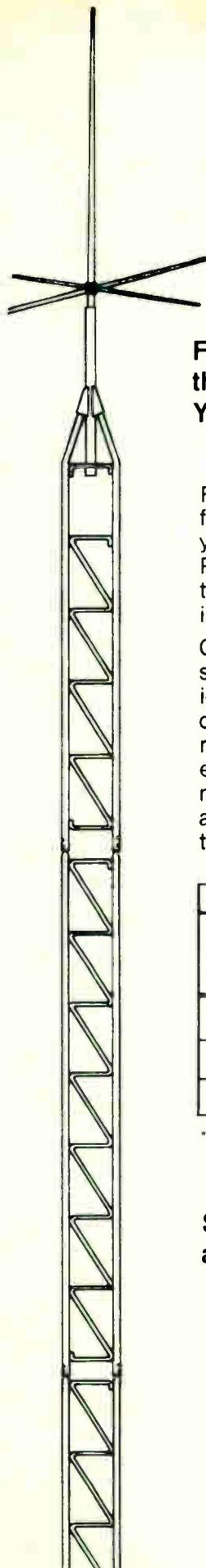
Q. I installed my base antenna in 1970. My range is becoming less and less. I had the rig checked. It is OK. Why am I losing range? (Maestro, Peekskill, New York).

A. Perhaps your coax should be replaced, assuming your antenna is OK. Common types of coax deteriorate with age (attenuation increase).

CBer PICKS UP HAM BROADCASTS

Q. Is there any type of filter, either internal or external, to prevent interference from ham frequencies while receiving on CB frequencies? My antenna is parallel with a ham's stick antenna. He completely destroys my incoming transmissions. He denies it when I ask if he is transmitting. Several ham operators and servicemen say that he can be off frequency. Is this possible? (D.G. KBP-9498, Colonia, New Jersey).

A. A ham may legally run 1000 watts. When you're that close to a ham station antenna, you can expect interference. Its signal is so strong at close range that your receiver is overloaded, regardless of its frequency. It is doubtful that any reasonably priced filter could help significantly. If you install a low-



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Check this handy chart for tower heights to support your antenna. It shows wind load, ice or no ice conditions. Your antenna size, conditions, tower model determines maximum tower height above a proper base or extension of tower above bracket. You should not exceed those maximums for a proper antenna installation. CB beams are limited to 20' above a structure or building.

Self-Supporting Height of Towers*																																
Tower Model	Wind Load = 20 psf								Wind Load = 30 psf																							
	No Ice				1/2" Ice				No Ice				1/2" Ice																			
	Antenna Area, ft ²								Antenna Area, ft ²																							
	0	2	5	10	0	2	5	10	0	2	5	10	0	2	5	10																
20	39	13	9	23	8	15	8	28	1	22	7	18	6	13	7	32	0	24	9	17	8	11	1	21	3	18	0	14	1	9	9	
25	44	7	37	6	29	4	20	4	29	8	28	5	22	3	17	36	8	29	5	21	9	14	4	24	4	21	1	17	2	12	5	
45	56	8	50	4	42	3	32	2	37	9	35	0	31	1	25	7	46	4	40	1	32	4	23	6	31	0	28	1	24	3	19	3

* Does not include wind on transmission line.

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Q and A (cont'd)

pass filter (as for TVI), it will pass ham signals at frequencies below 27 MHz. What you would need is a band-pass filter that would pass CB frequencies and attenuate all others. But, it could cost you hundreds of dollars. Move your antenna higher or lower and farther away from the ham antenna.

CHANNEL 5 FOR CIVIL DEFENSE?

Q. We are using Channel 5 as a Civil Defense channel in Platte, Nance, Boone and Colfax counties. We would like this channel designated as a Civil Defense channel, if possible, for the State of Nebraska. Who could take care of this?

(B.J.K., KRH-2405, Columbus, Nebraska).

A. You may voluntarily use Channel 5 as a Civil Defense channel. But, you would find it

very difficult to get the FCC to designate it as an official Civil Defense channel. Nor would the State of Nebraska have the authority to do so since it is within the jurisdiction of the FCC.

WHAT IS THE BASIS FOR 'SECRECY RULE'?

Q. I am unable to find the FCC rule which sets forth the secrecy provision as applicable to CB radio. I certainly would appreciate it if you would tell me the rule number.

(J.M., KWY-7700, Northridge, California).

A. It is not in Part 95. You will find it in the "Communications Act of 1934, as Amended". The contents of radio transmissions, except those by amateur and broadcast stations, are not to be revealed to other than the addressee. **CB**

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NOW HEAR THIS

Images And Their Effect On Monitor Receivers

By Gene Hughes, KOK-9671

Of all the undesired signals that seem to creep into our receivers, the **image frequency** is undoubtedly the most irritating. In the "search" mode on the new synthesized scanner, images lock up the receiver and render the function useless: TV sound in the low band; 2-meter amateurs in the government high band; and two trucks blaring through in the vicinity of 172 MHz.

To understand images, let's review some basics. The mixing of any **two** frequencies (audio or radio) will result in at least **four** frequencies: the original two, plus the sum of the two and the difference between the two. For example, mixing 100 and 150 gives us:

100 and 150 (the original frequencies)
250 (100 + 150)
50 (150 - 100)

This phenomenon is the basis of the superheterodyne receiver. A desired incoming radio signal, regardless of frequency, is **converted** to one standard frequency via the mixing process. The **IF**, or intermediate frequency, is usually 10.7 MHz. (Some use 10.8, but we'll stick with 10.7 in most of our examples). The **local oscillator** is a miniature transmitter within our set whose frequency is regulated by the crystal or synthesizer circuit. It is tuned 10.7 MHz higher or lower than the selected frequency. Thousands of signals may come down the antenna and hundreds may be amplified and pass through the first stage (front-end), but only the frequency that can mix and produce 10.7 MHz will get through the rest of the circuitry. Unfortunately for monitorists, more than one frequency can pass the test.

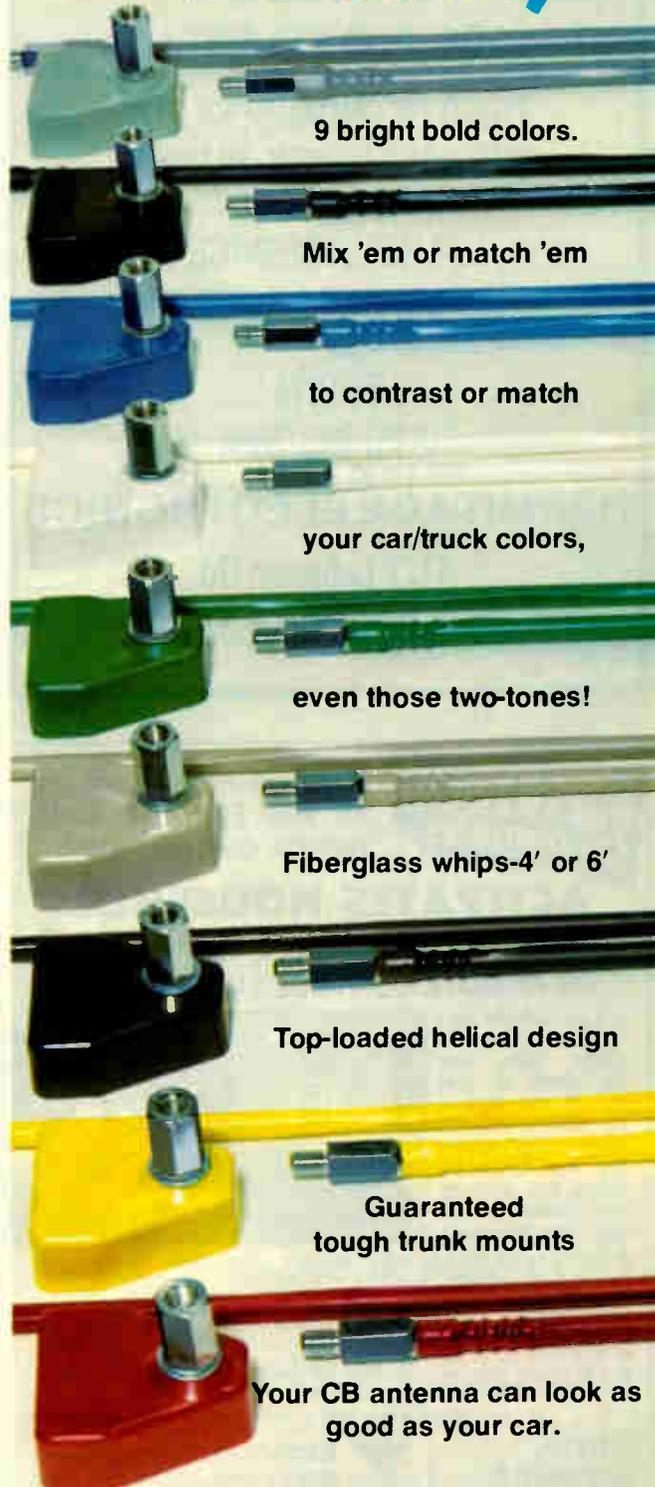
Commercial receivers have tightly tuned front-end circuits that filter out all but the desired frequency, or frequencies within a narrow spread — about 0.5 MHz to 2.0 MHz wide. Monitors, on the other hand, must accept frequencies as far as 30 MHz apart. So, let's see what happens. Suppose we have a crystal in our unit for 168.25 MHz. The local oscillator is actually tuned to 157.55 MHz (168.25 - 10.7). A few miles away, a ham repeater is transmitting on 146.85 MHz and that signal also comes

JUNE, 1977

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down our antenna and through the first stage of the receiver. Our local oscillator mixes (157.55 - 146.85) and produces the same 10.7 MHz IF, giving us a loud and clear "bleed through." Notice that the unwanted frequency was exactly 21.4 MHz away: exactly twice the IF frequency of 10.7 MHz. It's like a mirror reflection, whence we get the name "image."

In most scanners, the local oscillator (LO) operates higher than the tuned frequency on low-band (RF + 10.7 = LO); and, below the tuned frequency on high band and UHF (RF - 10.7 = LO). Therefore, a low band image frequency will be higher and a high-band or UHF frequency will be lower than the desired frequency. Confusing, huh? You may need a calculator to determine if you are hearing an image or the real thing. Double your IF frequency (e.g. 2 x 10.7 = 21.4, 2 x 10.8 = 21.6) and add or subtract from the channel you have tuned in.

Even more frustrating are harmonic image responses. Say you tune to 33.7 MHz and instead of fire calls, you get music. Now what? Well, oscillators also generate multiples of their fundamental or operating frequency (2x, 3x, etc.). In this case, our oscillator is tuned to 44.4 MHz (33.7 + 10.7). The second harmonic of 44.4 MHz is 88.8 MHz. A power FM broadcast signal on 99.5 MHz mixes (99.5 - 88.8 = 10.7) and you get Peter Frampton instead of the fire chief.

Recently, while testing a scanner, we were startled to hear a police repeater when we were tuned to U.S. Forest Service frequency 171.3125 MHz. It took our calculator to prove that we weren't hallucinating: the third harmonic of the local oscillator was mixing with 470.7375 (171.3125 - 10.8 = 160.5125 x 3 = 481.5375 - 470.7375 = 10.8).

Manufacturers of commercial equipment publish the image rejection ability of their equipment; typically, 100 dB for quality lines. That's the equivalent of a 50,000-microvolt (uV) signal. Scanner makers seldom publish their figures but they have been independently calculated:

Equipment Minimum image signal to break squelch

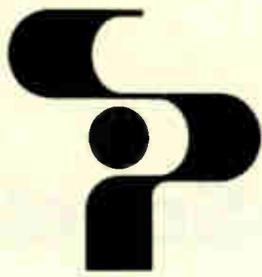
	Low-band	High-band	UHF
Crystal Scanners	500 uV	50 uV	20-60 uV
Synthesized Scanners	50 uV	5 uV	5 uV

Translated, these figures indicate that a base station eight to twenty miles distant, or less, will produce an image response in the typical scanner. Note that synthesized units fare far worse than crystal controlled receivers.

Images can be put to constructive use, especially in the synthesized monitors. Some models tune down to 416 MHz, omitting the 406-416 MHz range. To tune a known frequency in the latter area, simply add 21.6 MHz and program. If the signal level is above 5 uV, it will come in loud and clear.

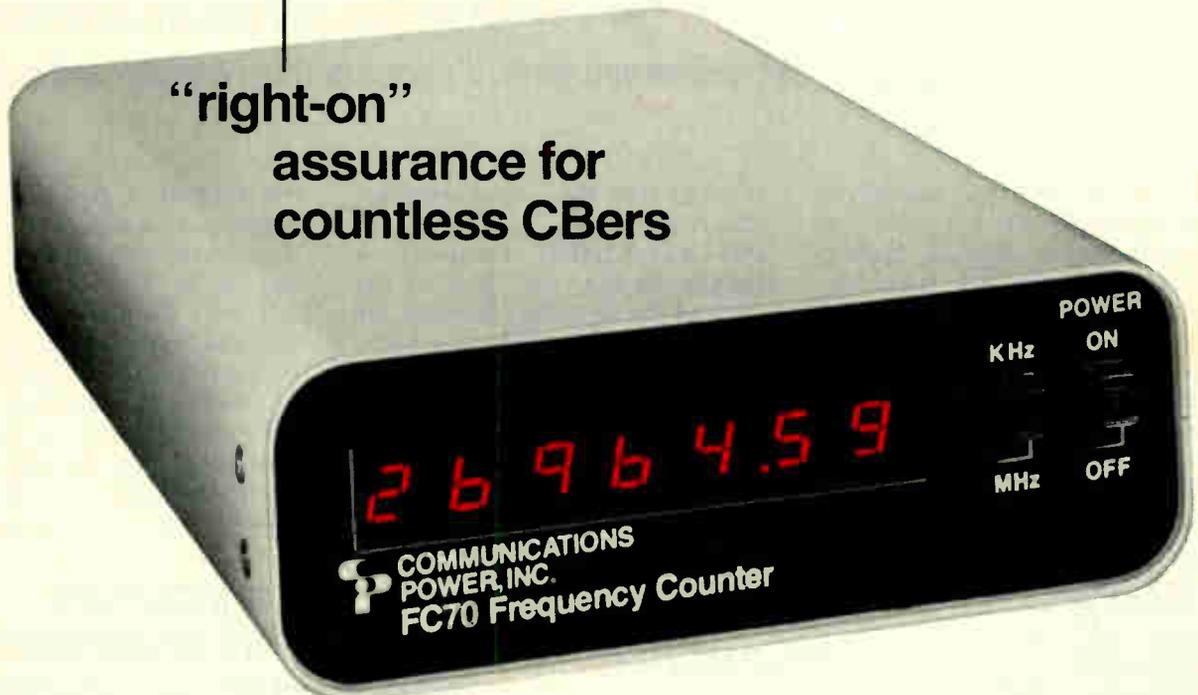
(Our thanks to Chris Thomas, a senior systems programmer at UCLA. Our image rejection statistics are interpolated from data appearing in his article in the monthly newsletter of the Radio Communications Monitoring Association, PO Box 4563, Anaheim, California 92804.)

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REAR VIEW



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Small...less than text book size with built-in 12VDC/115VAC supply...fits handily in cars/trucks...sits on top of most CB base station cabinets.

Connect permanently between transceiver and antenna input without concern about power through it (but 4 watts you say? Relax. 400 watts won't bother it!). Also doesn't effect performance and no spurious signals in the CB receiver!

Many other operator and technician uses: Provides accurate digital readout for RF test oscillators/grid-dip meters...Checks I-F frequencies, filter characteristics, crystal frequencies, more.

- 7 digit readout (switch for kHz or MHz.).
- Extra brilliant, LEDs, plus anti-glare louvers. Easily read in bright daylight.
- 40MHz limit guaranteed, 55MHz typical. (approx. 30kHz, low end).
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- Reads to 10 Hertz (many counters resolve only to 100 Hertz).
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169⁹⁵

Adding Tone Squelch

Tone squelch provides ability to pre-select only those incoming CB transmissions you want. It's done with an encoder and a decoder.

An easy-to-add tone squelch is now available for the CBer, at most electronic dealers. Named "Select Call" by its manufacturer, it consists of a hand-held encoder and a plug-in decoder. The decoder is available in kit form and takes about an hour to assemble. The encoder does not come in kit form. The frequency of both the encoder and decoder

is set to 1209 Hz, unless specified otherwise.

INSTALLATION. Connect a speaker to the "out" jack on the back of the decoder. Connect the external speaker jack of a radio to the "in" connection. Connect 12 volts (10 to 15 volts) to the "12 VOC" connection. Install a 9-volt transistor radio battery in the encoder.

RECEIVING A CALL. When the toggle switch of the "Select Call" decoder is in the "off" position, the radio will operate in the normal fashion. When the decoder is turned on, the speaker is disconnected from the radio. The radio remains silent until the caller transmits 1-1/2 seconds of tone from the encoder. At this point, the decoder will connect

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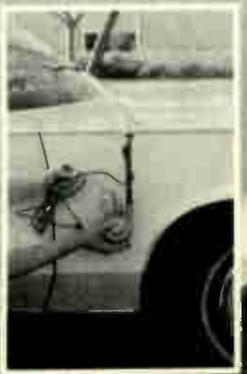
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the speaker to the radio and will remain connected until the reset button is pushed. Thus the tone need only be transmitted once. After a conversation is completed, push the re-set button to again disconnect the speaker from the radio. To go back to normal operation, simply turn the decoder off.

MAKING A CALL. To use the

encoder, simply place the microphone near the speaker grill of the encoder. Use the microphone case to depress the encoder push button switch. (The microphone should be 1/4 to 1/2 inch from the speaker grill.) With the microphone close to the encoder and the encoder push button switch depressed, press the push-to-talk switch for at least 1-1/2

seconds. This will activate the listening decoder.

THEORY OF OPERATION. A phase-lock-loop system is used in the encoder to detect the presence of the encoder tone. When the tone is not present, a relay is activated, which disconnects the speaker input from the speaker output. When a tone of the proper frequency appears at the input for approximately 1-1/2 seconds, the relay drops out, thus connecting the speaker to the radio. Pushing the re-set button activates the relay, which in turn disconnects the speaker from the radio.

In the encoder, the frequency of oscillation is determined by a capacitor and a pot. An audio amplifier drives a speaker. Zener regulation is used so that the oscillator frequency is independent of the supply voltage variations. The supply voltage is furnished by a 9-volt transistor radio battery.

For more information about tone squelch, write: Egbert Electronics, 17333 Tramanto Drive, Pacific Palisades, CA 90272. ☎

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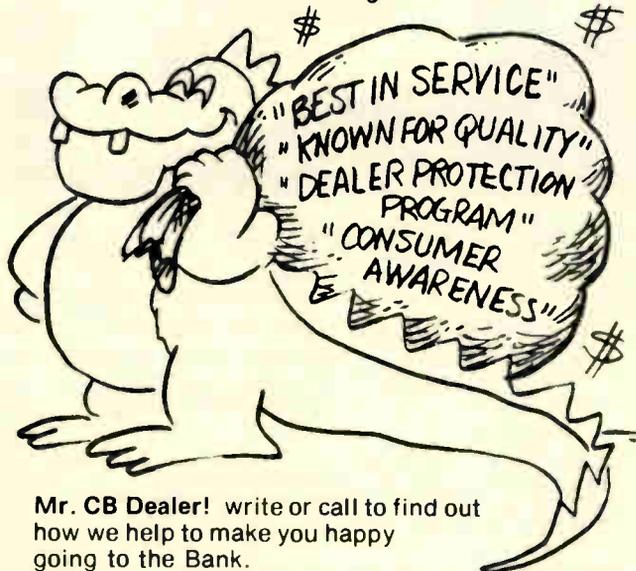
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Linking Man To Society: Personal Communications And Vehicular Technology

"Personal Communications and Vehicular Technology — Linking Man to Society" was the theme of the 27th Annual Vehicular Technology Conference held March 16-18 at the Orlando Hyatt House in Kissimmee, Florida, near Disney World.

The technical program, consisting of eight sessions, was opened with a session on Law Enforcement Communications with Marshall J. Treado of the National Bureau of Standards as chairman, and a session on CB Radio and Automotive Electronics with Leo G. Sands, editor-in-chief of **CB MAGAZINE**, as chairman.

Robert W. Brandel of E. F. Johnson Company presented a paper on "Television Interference Associated with the Proposed Class E Citizens Radio Service."

Henry F. DeFrancesco and John J. Renner of Advanced Technology Systems Inc. reported on their "Evaluation of the Effectiveness of Citizens Band Radio in the Highway Safety Environment."

Ronald S. Stone, a member of the Personal Radio Planning Group of the FCC Office of Plans and Policy, procedures used by the FCC to develop plans for future personal radio services and the criteria for arriving at conclusions.

W. J. Johnson of Ford Motor Company presented a report on "Radiated Noise Due to Individual Spark Events in Internal Combustion Engines."

Chia H. Sung of the University of Louisville presented: "Air-Fuel Control in a Microprocessor-Based System for Improved Automobile Fuel Economy." R. F. Ayotte of General Motors spoke about a "Dual-Car System for Proving Ground Mileage Accumulation Tests."

What's important about IEEE-VTG conferences? The fact that the technical decision makers attend. It's not a sales forum. It's a "where do we go from here" think tank. And only **CB MAGAZINE** was among publications represented at a conference where the technical future of vehicular radio is discussed in depth. It is where avant garde thinkers meet with the hardware designers.

RADIO SHACK MARCH SALES UP 24%

FORT WORTH, TEXAS — Radio Shack, the nationwide electronics store chain, recorded sales of \$76,622,000 for the month of March 1977, a gain of 24% over sales of \$61,784,000 for March 1976.

Radio Shack's parent company, Tandy Corporation (NYSE), announced that its consolidated sales for the month were \$82,327,000, an increase of 23% over sales of \$67,162,000 for March 1976.

AEROTRON SALES UP 32%

RALEIGH, NORTH CAROLINA — Aerotron Inc. reports that for the three months ended February 28, sales increased 32% from the comparable 1976 period to \$2,866,000. Net income increased 46% to \$108,000. For the nine months ended February 28, sales increased 31% from the comparable 1976 period to \$8,402,000 and net income increased 44% to \$373,000.

LLOYD MARSHALL TO BROWNING LABS

LACONIA, NEW HAMPSHIRE — Lloyd Marshall has been appointed advertising manager of Browning Laboratories. He directs the major media programs and promotional activities for Browning's CB radios.

DYNASCAN '76 SALES, INCOME UP

CHICAGO — Dynascan Corporation reported record net income and sales for 1976, including a profitable fourth quarter in contrast to general CB industry performance. Carl Korn, president, said that the manufacturer of electronic equipment, including Cobra CB radios, achieved its record results while preparing for the transition from 23-channel CB sets to 40-channel sets. Net income for 1976 totaled \$7,730,000, a 50 percent increase from \$5,156,000 in 1975. Net sales of \$102,487,000 more than doubled the previous year's \$48,605,000.

FINCO URGES ANTENNA SAFETY PROGRAM

BEDFORD, OHIO — The Finney Company, manufacturers of antennas, has suggested all antenna makers incorporate in all their installation sheets a bold "WARNING!" paragraph outlining certain safety instruction procedures to minimize, if not eliminate, the hazards as publicized recently by the Federal Consumer Product Commission. Finney has done so since March, believing carelessness to be the principal factor in the majority of deaths incurred during the installation of any type antenna — TV/CB/FM. FINCO President M. L. Finney, Jr., pointed out that in Louisiana alone, fifteen persons have died and five others have experienced injury from December, 1972 through August, 1976 during

antenna installation work. He feels "WARNING!" notices on instruction sheets is not a complete solution to the problem, but contributes to safeguarding the lives of antenna installers.

HY-GAIN NAMES APPOINTEES

MIAMI — Ronald N. Mickwee has been appointed vice president of marketing by Hy-Gain Electronics Corporation, and R. Craig Gaughan has been appointed public relations/consumer affairs director. A.R. (Sandy) Enos has been named director of sales and John Kuijenhoven has been appointed marine products marketing manager.

COBRA APPOINTS McNAMARA, PROMOTES FAETZ

CHICAGO — Cobra Communications Product Group of Dynascan Corporation has appointed Patrick McNamara as national advertising manager and Larry J. Faetz has been promoted to western regional sales manager.

KORN, HORNER ADDRESS NEWCOM CLINIC

LAS VEGAS, NEVADA — Carl Korn, president of Dynascan Corporation, manufacturer of Cobra CBs, was a keynote speaker at the NEWCOM '77 CB/Communications Marketing Clinic and Forum here on May 4. Korn spoke on "The Second Revolution — 40 Channels," sharing the platform with Richard Horner president of E. F. Johnson Company, who focused on "Expanding Our Communications Future."

EIA SPONSORS U.S. PAVILION AT TELECOM '79

WASHINGTON, DC — The United States pavilion for the world's largest telecommunications congress and exposition, TELECOM '79, to be held in Geneva, Switzerland in September, 1979, is being sponsored by the Electronic Industries Association's Communications Division. The announcement of U.S. industry's participation was made by EIA Vice President and Communications Division head John Sodolski.

TELECOM '79 is being held in conjunction with the '79 World Administrative Radio Conference where some 2,000 delegates from more than 140 countries will discuss the revision of administrative regulations governing international operation of the three modes of communications, telegraph, telephone and radio. Sodolski said, "The U.S. pavilion at TELECOM '79 provides a major opportunity for all American manufacturers of telecommunications equipment to demonstrate their technology to a large and growing market."

[continued]



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Industry News

WHITLEY SILTRONIX VICE PRESIDENT, GM

OCEANSIDE, CALIFORNIA — Loren Whitley has been named vice president and general manager of Siltronix Division and Swan Electronics Corporation. Previously, Whitley was vice president of marketing for the firms, which are major producers of two-way radio communications equipment.

NEW-TRONICS SALES EXPANDED

CLEVELAND, OHIO — New-Tronics Corporation, manufacturer of Hustler brand antennas announces the formation of a new sales and marketing management team comprised of Bill McNeil, general sales manager; Ms. Patty Fritz, assistant sales manager; Bob Nowac, newly appointed marketing manager; and Wayne Techet, field coordinator. "This team" says John Altmayer, president of New-Tronics, "greatly expands our capability to provide far better sales service."

GATES MANAGER DISTRIBUTION, PRESIDENT

IRVINE, CALIFORNIA — Carl Gates has been appointed manager of distribution for President Electronics, it is reported by national sales manager James Adams. Gates has been active in the consumer electronics industry more than 25 years.



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NEW LOW 50 CH. SWR

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- TUNED FROM 26.965 TO 27.405 PLUS
- 3/8 WAVE TOP LOAD
- AVERAGE SWR 1.5 TO 1
- MORE EFFICIENT THAN CENTER OR BASE LOAD TYPE ANTENNAS
- RUGGED FIBERGLASS CONSTRUCTION
- 3/8-24 HEAVY DUTY THREADED BASE
- FITS ANY SINGLE OR CO-PHASE ANTENNA SYSTEM
- FIRE RED WITH WHITE TIP OR WHITE WITH RED TIP

NEW SUPER TIP!



- ALWAYS USE COAX CABLE 18'-20' LONG
 - NO TUNING NECESSARY
 - NOISE LIMITING COVER REDUCES STATIC NOISE UP TO 50%
- IT TAKES A TOP ANTENNA TO MAKE A TRANSCEIVER DO ITS BEST WORK

KW3

A 3 HEAVY DUTY EQUAL TO MOST 6 ANTENNAS

KW5

A 5 HEAVY DUTY WHIP THAT WILL MAKE YOU SOUND 10 TALL

"UFO"™ BASE ANTENNA

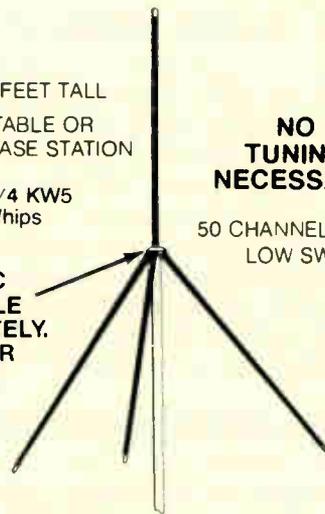
LESS THAN 10 FEET TALL
 USE FOR PORTABLE OR PERMANENT BASE STATION

NO TUNING NECESSARY

Complete W/4 KW5 Firestik Whips

50 CHANNEL PLUS LOW SWR

UFO DISC AVAILABLE SEPARATELY. SEE YOUR DEALER.



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 (Please Print)

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A Div. of Fire Comm. Corp.
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 Phoenix, Arizona 85034

602-273-7151

CB Happenings

Event sponsors are urged to mail notices 90 days in advance to **CB MAGAZINE**, Editorial Offices, 531 N. Ann Arbor, Oklahoma City, OK 73127. Please state: 1-Dates, times of event. 2-Type of event. 3-Sponsor's name. 4-Location and directions. 5-Attractions, prizes, etc. 6-Admission charge, if any. 7-Whom to contact for details: Name, address, phone.

June 3-4-5, CANADA. Event: 4th Annual Jamboree. **Sponsor:** Sun Parlor G.R.S. Radio Club. **Place:** Harrow Fair Grounds, Harrow, Ontario, Canada. **Time:** 10 AM to ? **Events:** Prizes, Trophies, Saturday Night Dance. **For more information,** write: DIRTY HARRY, P. O. Box 361, Windsor 14, Ontario, Canada. Telephone 519/948-2337.

June 3-4-5, VIRGINIA. Event: Jamboree. **Sponsor:** Scott County Communications Club, Inc. **Place:** Cozart Tobacco Warehouse, Weber City, Virginia. **Time:** June 3 — 12 PM to 12 AM. June 4 — 12 PM to 12 AM. June 5 — 12 PM to 5 PM. **Events:** Prizes. **For more information,** write: Scott County Communications Club, Inc., Route #2, Box 184-A, Nickelsville, Virginia 24271.

June 4, OKLAHOMA. Event: Coffee Break. **Sponsor:** Calera Channel Cats CB Club. **Place:** Southeastern State College, Hwy. 69-75, Durant, Oklahoma. **Time:** 6 PM to 10 PM. **Events:** Prizes, Games. **For more information,** write: Richard Ryker, P.O. Box 572, Calera, Oklahoma 74730. Telephone 405/434-5138 or 924/8361.

June 4, NORTH CAROLINA. Event: 2nd Annual Spring Jamboree. **Sponsor:** Lafayette CB Radio Club, Inc. **Place:** JC Fairgrounds, Fayetteville, North Carolina. **Time:** 8 AM to 12 PM. **Events:** Prizes, Trophies, Exhibits. **For more information,** write: Lafayette CB Radio Club, Inc., c/o Joyce Comp, 4721 Pamilco Road, Fayetteville, North Carolina 28304.

June 4-5, INDIANA. Event: 1st Annual Jamboree. **Sponsor:** Jaw Jackers of Southern Indiana. **Place:** 4-H Center, Boonville, Indiana. **Time:** May 4 — 12 AM to 5 PM. May 5 — 10 AM to 5 PM. **Events:** Prizes, Trophies, Refreshments, Entertainment. **For more information,** write: John R. Garrett, BABY JOHN, R.R. #5, Boonville, Indiana. Telephone 812/897-4591.

June 4-5, KANSAS. Event: First Jamboree. **Sponsor:** Kansas Flatlanders CB Club. **Place:** Great Bend, Kansas. **Events:** Prizes, Refreshments. **For more information,** write: Bob Shanks, THE BUDMAN, Box 114, Great Bend, Kansas 67530.

June 5, INDIANA. Event: Jamboree. **Sponsor:** Land 'O Lakes CB Club, Inc. **Place:** National Guard Armory, RD 15N, Warsaw, Indiana. **Time:** 11 AM to 8 PM. **Events:** 50% Proceeds to Special Olympics Fund.

June 5, NEW YORK. Event: Coffee Break. **Sponsor:** Wyoming County REACT. **Place:** Alexander Firemens Hall, Route 98, Alexander, New York. **Time:** 12 PM to 9 PM. **Events:** Trophies, Displays, Prizes, Refreshments. **For more information,** write: Wyoming County REACT, Box 234, Castile, New York 14427.

June 5, ILLINOIS. Event: M.T.M. Jamboree. **Sponsor:** M.T.M. CB Club. **Place:** Expo Gardens, Peoria, Illinois. **Time:** 10 PM to 6 PM. **Events:** Prizes, Games, Refreshments. **For more information,** write: Larry Lankford, Box 646, Tremont, Illinois 61568. Telephone 309/359-8250.

June 10-11-12, OHIO. Event: 3rd National Jamboree. **Sponsor:** The New Breed of the Ohio Valley CB Radio Club. **Place:** Washington County Fair Grounds, Marietta, Ohio. **Events:** Prizes, Games. **For more information,** write: The New Breed of the Ohio Valley CB Radio Club, P.O. Box 516, Marietta, Ohio 45750. Telephone 614/373-3575.

June 10-11-12, WASHINGTON. Event: 6th Annual Friendship Campout. **Sponsor:** Citizens Band For Common Courtesy. **Place:** King County Fairgrounds, Enumclaw, Washington. **Events:** Booths, Displays, Refreshments, Dances. **For more information,** write: Ron Peterson, Chairman, P.O. Box 257, Seahurst, Washington 98062.

June 11 through 19, MINNESOTA. Event: Annual Jamboree. **Sponsor:** CB United Inc. **Place:** Apache Plaza Shopping Center, St. Anthony, Minn.
JUNE, 1977

Events: Prizes, Trophies, Displays, Dances. **For more information,** write: CB United Inc., P.O. Box 33104, Coon Rapids, Minnesota 55433.

June 11-12, NEBRASKA. Event: 3rd Annual Jamboree. **Sponsor:** Missile Center CBers. **Place:** Lariat Club, Kimball, Nebraska. **Time:** May 11 — 1 PM to 1 AM. May 12 — 9 AM to ? **Events:** Prizes, Entertainment. **For more information,** write: Marilyn Halstead, WHITE DOVE, 401 South Elm, Kimball, Nebraska 69145. Telephone 308/235-3776.

June 11-12, SOUTH DAKOTA. Event: 2nd Annual Jamboree. **Sponsor:** Modulators CB Club. **Place:** Brown County Fair Grounds, Aberdeen, South Dakota. **Events:** Prizes, Auto Race, Entertainment. **For more information,** write: Modulators CB Club, P.O. Box 895, Aberdeen, South Dakota 57401.

June 11-12, SOUTH CAROLINA. 4th Annual Jamboree. **Sponsor:** Low Country Modulator CB Club. **Place:** National Guard Armory, Beaufort, South Carolina. **Events:** Prizes, Trophies, Saturday night dance. **For more information,** write: Low Country Modulators, P.O. Box 4736, Burton, South Carolina 29902. Telephone 803/524-0507.

June 11-12, INDIANA. Event: Jamboree. **Sponsor:** Hub City Radio Club. **Place:** 4-H Fairground, South of Winchester, Indiana on U.S. 27. **Events:** Prizes, Trophies, Refreshments. 40% proceeds to area Scout Council. **For more information,** write: Dan Samples, 112 Bon Bon Drive, Union City, Ohio 47390. Telephone 513/968-4693.

June 11-12, ILLINOIS. Event: Jamboree. **Sponsor:** Northwestern Illinois Radio Patrol CBC. **Place:** Stephenson County Fairgrounds, Freeport, Illinois. **Time:** May 11 — 9 AM to ?. May 12 — 9 AM to 5 PM. **Events:** Prizes, Saturday night dance. **For more information,** write: Bob Ortman, President, N.I.R.P., RR #2, Box 157, Forreston, Illinois 61030.

June 11-12, SOUTH DAKOTA. Event: Jamboree. **Sponsor:** Southeastern Dakota CB Club. **Place:** Gains Point Primitive Area, Yankton, South Dakota. **Events:** Refreshments, Prizes, Displays. **For more information,** write: Scotty Joffer, Box 254, Hurley, South Dakota 57036.

June 12, MISSOURI. Event: Coffee Break. **Sponsor:** Eleven Mile CB Club. **Place:** Smitty's Auction Barn, Ashland, Missouri. **Time:** 10 AM to 6 PM. **Events:** Prizes, Trophies, Entertainment. **For more information,** write: Eleven Mile CB Club, Box 353, Ashland, Missouri 65010. Telephone 314/657-2172.

June 12, ILLINOIS. Event: 1st Annual Jamboree. **Sponsor:** Hamilton County Coax Cutups. **Place:** East Side Grade School, McLeansboro, Illinois. **Time:** 10 AM to 5 PM. **Events:** Prizes, Trophies, Entertainment, Refreshments. **For more information,** write: Pat Gladden, P.O. Box 101, Rt. 2, McLeansboro, Illinois 62759.

June 17-18, MISSOURI. Event: Come to Kansas City Weekend. **Sponsor:** Worlds of Fun. **Place:** Worlds of Fun Amusement Park, Kansas City, Missouri. **Time:** 10 AM to 10 PM. **Events:** Rides, Shows, Attractions, Baseball game. Overnight camping. **For more information,** write: Worlds of Fun, Sales Department, 4545 Worlds of Fun Avenue, Kansas City, Missouri 64141. Telephone 816/454-4545. Special rates for licensed CBers.

June 17-18-19, SOUTH DAKOTA. Event: Jamboree. **Sponsor:** South Dakota Channel Changers. **Place:** Sioux Falls, South Dakota. **Events:** Games, Prizes, Dance. **For more information,** write: South Dakota Channel Changers, P.O. 173, Sioux Falls, South Dakota 57101.

June 17-18-19, OHIO. Event: 2nd Annual MDA Jamboree. **Sponsor:** Greater Cleveland CB Council. **Place:** ClarMar Lakes Camp Grounds,

CB Happenings

[continued]

Wellington, Ohio. **Events:** Prizes, Trophies, Entertainment, Camping. 50% Proceeds to go to Muscular Dystrophy. **For more information,** write: Willard J. McNees, WONDER MAN, 4319 W. 189th Street, Cleveland, Ohio 44135. Telephone 216/251-5783.

June 17-18-19, TENNESSEE. **Event:** National Jamboree. **Sponsor:** Cookie-Town CBers. **Place:** New Tennessee Tech Sports Arena, Cookeville, Tennessee. **Events:** Prizes, Trophies, Entertainment, Refreshments. **For more information,** write: Cookie-Town CBers, Rt. 12, Box 285, Burgess Falls Road, Cookeville, Tennessee 38501.

June 17-18-19, CANADA. **Event:** International Jamboree 1977. **Sponsor:** Forest City CB Club. **Place:** Fanshaw Park, London, Ontario, Canada. **Events:** Prizes, Trophies, Exhibits, Displays, Camping. **For more information,** write: John K. Pritchard, LIMEY LAD, Forest City CB Club, 64 Southdale Road West, London, Ontario, Canada N6J 2J1. Telephone 519/679-0333.

June 18, NEW YORK. **Event:** 3rd Annual Coffee Break. **Sponsor:** Archer CB Club. **Place:** Ft. Hunter Fire Department Grounds, 3525 Carman, Albany Rd., Rt. 146, Schenectady, New York. **Time:** 12 PM to Dark. **Events:** Prizes, Trophies, Refreshments, Games. **For more information,** write: Archer CB Club, P. O. Box 186, Schenectady, New York 12301.

June 18-19, ILLINOIS. **Event:** Jamboree. **Sponsor:** Tri County CB Club. **Place:** Sandwich Fairgrounds, Sandwich Illinois. **Events:** Prizes, Trophies, Displays, Entertainment, Camping. **For more information,** write: Jim Schmidt, Rt. 1, Plano, Illinois 60545.

June 18-19, OHIO. **Event:** Jamboree. **Sponsor:** Medina County REACT. **Place:** Medina County Fairgrounds, Route US 42, Medino, Ohio. **Events:** Prizes, Trophies, Games, Camping. **For more information,** write: Mel

Kindelberger, 83 Castle Court, Brunswick, Ohio 44212. Telephone 216/225-8374.

June 19, PENNSYLVANIA. **Event:** Coffee Break. **Sponsor:** Titusville CB Social Club. **Place:** Centerville Fireholl, Route 8, Titusville, Pennsylvania. **Time:** 10 AM to 6 PM. **Events:** Prizes, Display, Trophies, Entertainment. **For more information,** write: Jud Walters, P.O. Box 235, Pleasantville, Pennsylvania 16354.

June 19, NEW YORK. **Event:** Jamboree. **Sponsor:** Orange County CBers Club. **Place:** Middletown, New York. **Events:** CB Fleo Market, SWR Checks, CB Engraving. **For more information,** write: John A. Fournier, Orange County CBers Club, P.O. Box 315, Goshen, New York 10924.

June 24, ALABAMA. **Event:** 1st Annual Disco Dance. **Sponsor:** Channel Masters Task Force. **Place:** Fraternal Order of Police Ball Room, 2275 Green Springs Hwy., Birmingham, Alabama. **Time:** 9 PM to 1 AM. **Events:** Trophies, Entertainment. **For more information,** write: Channel Masters Task Force, P.O. Box 5202, Birmingham, Alabama 35207.

June 24-25-26, WISCONSIN. **Event:** 2nd Annual Chorty Jamboree. **Sponsor:** Fox Valley Wave Lengths, SEARCH, INC. **Place:** Fon du Lac Fairgrounds, U.S. Highway 41, Fond du Lac, Wisconsin. **Events:** Prizes, Trophies, Refreshments, Camping, Dances. **For more information,** write: Ken Bakke, ROLLERSKATE, Fox Valley Wave Lengths, S.E.A.R.C.H., Inc., P.O. Box 415, Fon du Lac, Wisconsin 54935.

June 24-25-26, MICHIGAN. **Event:** Jamboree. **Sponsor:** Miracle QSL Swap & CB Club of Michigan. **Place:** McCurdy Park & Fairgrounds, Corunna, Michigan. **Events:** Prizes, Trophies, Entertainment, Refreshments. **For more information,** write: Virginia Watson, 337 Lafayette Blvd., Owasso, Michigan 48867. Telephone 517/723-1881.

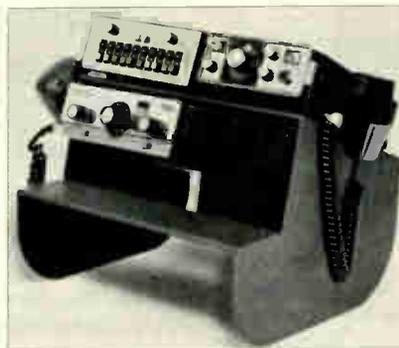
June 25, WISCONSIN. **Event:** Coffee Break. **Sponsor:** Southern Wisconsin Dirty Dozen. **Place:** Threshermans Park, U.S. 51 North, Janesville, Wisconsin. **Events:** Prizes, Trophies, Awards. **For more information,** write: Southern Wisconsin Dirty Dozen, P.O. Box 23, Janesville, Wisconsin 53545.

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Well, not just to you CB'ers, but to anyone who needs a compact way to mount your radio, scanner, tape deck and external speaker in a compact rugged mobil console.

The console, manufactured by Hartzell Manufacturing, is fabricated from 20 Gage steel, heliarc welded with two coats of baked-on, scratch-resistant epoxy paint.

Installation requires only one self-tapping screw into the hump of any American made car.



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Dear J&N Products, please send me _____ of your CB consoles right away at \$29.50 plus \$1.50 shipping each (Ohio residents add 4½% tax).

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June 25, TENNESSEE. Event: REACT Round-up. **Sponsor:** Bristol Tennessee-Virginia REACT. **Place:** Central Heights Community Center, Highway 11, Bristol, Tennessee. **Time:** 12 PM to 10 PM. **Events:** Prizes. **For more information,** write: Bristol REACT, 1102 Kentucky Ave., Bristol, Tennessee 37620.

June 25, MASSACHUSETTS. Event: Coffee Break. **Sponsor:** Bicentennial CBers Inc. **Place:** Union Grove Club, Rt. 3, Kingston, Massachusetts. **Time:** 12 PM to 6 PM. **Events:** Prizes, Games. **For more information,** write: Bicentennial CBers Inc., P.O. Box 1102, Plymouth, Massachusetts 02360. Telephone 617 746-8470 or 746-9061.

June 25-26 WEST VIRGINIA. Event: Jamboree. **Sponsor:** Blue Ridge CB Club. **Place:** Yogi Bear's Jellystone Campground, U.S. 340, Harpers Ferry, West Virginia. **Events:** Prizes, Trophies, Games, Flea Market, Camping. **For more information,** write: West Virginia CB Jamboree, Box 113, Harpers Ferry, West Virginia 25425.

June 25-26, OREGON. Event: Coffee Break. **Sponsor:** Chamber of Commerce. **Place:** Union County Fairgrounds, La Grande, Oregon. **Time:** May 25 — 9 AM to 5 PM. May 26 — 10 AM to 5 PM. **Events:** Prizes, Refreshments, Rodeo. **For more information,** write: P. O. Box 424, La Grande, Oregon 97860.

June 25-26, MISSOURI. Event: 3rd Annual Jamboree. **Sponsor:** Pony Express CB Club. **Place:** City Auditorium, 4th & Jules Streets, St. Joseph, Missouri. **Time:** Bath days — 10 AM to 5 PM. **Events:** Prizes, Trophies, Saturday Night Dance. **For more information,** write: Kayte Dale, P.O. Box 64, Stockyards Station, St. Joseph, Missouri 64504. Telephone: 816/238-0280.

June 25-26, GEORGIA. Event: 13th Annual Jamboree. **Sponsor:** Middle Georgia CB Radio Club Inc. **Place:** Georgia State Fairgrounds, Macon, Georgia. **Events:** Prizes, Games, Trophies, Displays, Camping. **For more information,** write: Middle Georgia CB Radio Club Inc., P.O. Box 5365, Macon, Georgia 31208.

June 25-26, MISSOURI. Event: Silver Dollar City's 1st Annual CB Weekend. **Sponsor:** Silver Dollar City. **Place:** 9 miles west of Branson, Missouri on Highway 76, at Table Rock Lake. **Time:** June 25 — 9 AM to 7 PM. June 26 — 9 AM to 7 PM. **Events:** Activities, Prizes, Trophies, Entertainment. Special admission prices for all licensed CBers and their families. Ticket covers all activities. **For more information** and free color brochure, contact: CB Weekend, Silver Dollar City, Missouri 65616. Telephone 417/338-8206.

June 25-26, ILLINOIS. Event: 2nd Annual Jamboree. **Sponsor:** Sky Watch CB Club. **Place:** Fall Festival Grounds, Route 41, Abingdon, Illinois. **Time:** May 25 — 9 AM to 10 PM. May 26 — 9 AM to 4 PM. **Events:** Prizes, Displays, Trophies, Entertainment. **For more information,** write: Sky Watch CB Club, P.O. Box 29, Abingdon, Illinois 61410.

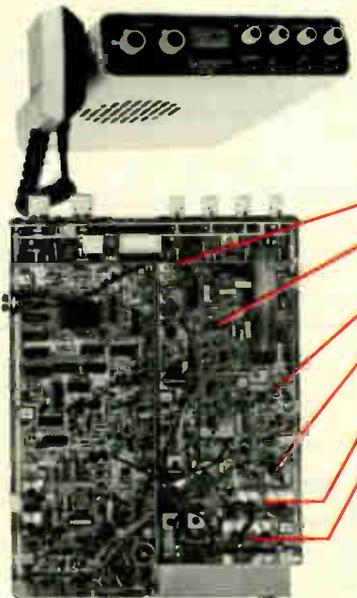
June 26, WISCONSIN. Event: Coffee Break. **Sponsor:** Rock Valley Breakers. **Place:** La Mar Park, Milton, Wisconsin. **Time:** 12 PM to ? **Events:** Prizes, Games. **For more information,** write: John Anderson, 1526 Cande Street, Janesville, Wisconsin 53545. Telephone 608 754-0181.

June 26, PENNSYLVANIA. Event: Coffee Break. **Sponsor:** Chartiers Valley CB Club & So. Fayette Twp. Volunteer Fire Department. **Place:** Fire Department, Cuddy, Pennsylvania. **Time:** 11 AM to ? **Events:** Trophies, Prizes, Refreshments, Dance. **For more information,** write: Joseph A. Haughney, TRAILBLAZER, Rd. #1, Cuddy, Pennsylvania 15031.

June 26, PENNSYLVANIA. Event: Coffee Break. **Sponsor:** Tri-Valley Area Citizens Band Association. **Place:** Valley View Park, Valley View, Pennsylvania. **Time:** 11 AM to 6 PM. **Events:** Prizes, Entertainment. **For more information,** write: Mary R. Tobash, Tri-Valley Citizen Band Association, 905 East Main Street, Hegins, Pennsylvania 17938.

June 26-27-28, CALIFORNIA. Event: PREVIEW/78, The Western Appliance/Electronic Dealer Show. **Place:** Los Angeles Convention Center, Los Angeles, California. 

CP400 "THE" CB RADIO



GPI's CP-400 is THE radio for serious CB'ers for many good reasons. Like the dual synthesized channel selectors. Channel 30 is only one click away from Channel 40. Channel switching is fast and accurate with backlighting for each reading in darkness and bright sunlight. And, it's flexible.

Need more reasons?

- **Receiver tuning**—wide ± 1.5 kHz deviation clarifier
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- **Interference rejection**—8 pole crystal filter for 80 dB adjacent channel rejection on both AM and SSB
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And, a wide selection of CB accessories—reliable BA-5 AC Power Base Station Adapter, RP-1A Range Plus receive pre-amp, TP-1 Talk Power speech compressor, FL-1 TVI Filter, FC-70 Frequency Counter, FA-70 Receiver Frequency Converter and WM-1000 peak-reading Wattmeter. There is more coming, too. See your favorite dealer or write.

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Precision American Technology

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LOW PROFILE CB ANTENNA



This antenna is designed for use on recreational vehicles with metal roofs. The RV269 is a u-shaped half-wave length, gamma fed. Only 8-1/2' high, 5' wide, 6-1/2' long. Lays horizontal, but is vertically polarized, 8.2 dB gain over isotropic. SWR 1.5 to 1 or better. Power capability 2 kw. Special instructions with antenna for FM & TV usage on RV vehicles.

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U.S. Pat. No. 3864686,
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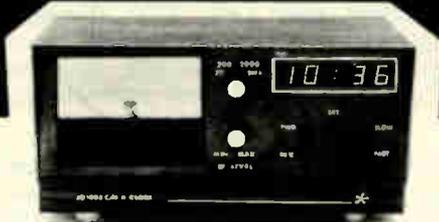
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Everything you need for better base ops. Clock has 4 big 0.5 inch red LED digits, AM-PM lite, flashing seconds colon. Peak reading Wattmeter shows power in 3 ranges to 2 kW. SWR Bridge shows ratios of 1.5, 2, and 3. **Only 89⁹⁵**



COUNTER/WATTMETER/SWR BRIDGE

3-in-1 Black Cat[®] instrument for base stations. 6-digit 50 MHz Frequency Counter reads every time you transmit. Wattmeter has 3 ranges to 2 kW. SWR Bridge reads standing wave ratios of 1.5, 2, and 3. **Only 162⁹⁵**



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dealer, distributor inquiries invited

Advertisements for radiotelephones frequently include two phrases: "FCC Type-Accepted" and "FCC License Required." Charged with ensuring that United States marine radio operators comply with international agreements regarding the use of radio frequencies, the FCC exercises control over the type of radiotelephone that a mariner may use, the boats aboard which they may be installed, and the people who may operate them.

Relieving the consumer of the responsibility for initial compliance with technical specifications describing the frequency and the characteristics of the radio's output, the FCC approves the technical characteristics of new radiotelephones and the manufacturer's test data before the equipment can be offered for sale. When the manufacturer has satisfied all of the technical prerequisites, his radiotelephone is listed as "type accepted" and the radio enters the market place.

The radiotelephone buyer can ensure that the model he plans to purchase is type accepted and licensable by calling any FCC Field Office.

Once in service, it is the owner's responsibility to keep the transmitter properly tuned and within the authorized power limits by ensuring that transmitter repairs or adjustments are made by licensed technicians.

But, before the radio can speak for a vessel, the vessel must have a ship station license. It's called a "ship station" even if the radio equipped craft is a small outboard. FCC Form 502, available from any FCC Field Office and from most marine electronics dealers, must be completed and sent to the FCC, P.O. Box 1040, Gettysburg, PA 17325. The ship station license, valid for five years, will be mailed in six to eight weeks. A special six-month interim license may be granted immediately to an applicant or his representative who appears in person at the nearest FCC Field Office.

With the radio type accepted and the vessel licensed for radio transmission, the last legal step is the operator's permit. The Restricted Radiotelephone Operator's Permit is the minimum

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Marine Radio Must Be Licensed. Here's How.



authorization. No written or oral examination is required and the permit is issued for life. Any person 14 years of age or older who will use the radiotelephone should complete FCC Form 753 and send it to FCC, P.O. Box 1050, Gettysburg, PA 17325.

The above requirements apply to marine band radiotelephones, whether VHF/FM or single sideband. Citizens band equipment must also be FCC Type Accepted and a CB Station license obtained. This requires FCC Form 505. These ap-

plications also go to the FCC at Gettysburg, but should be addressed to Zip Code 17326.

Licensing information is spelled out in detail along with operating instructions and scenarios for different types of emergency and routine calls in the new RTCM handbook, "How to Use Your Marine Radiotelephone." It is available at \$2.50 from marine dealers or directly from Radio Technical Commission for Marine Services, c/o FCC, P.O. Box 19087, Washington, DC 20036. 

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Closing Date: The 10th of second month preceding date of issue. Copy for August must be in our hands no later than June 10th.

General Information: Advertisements using PO Box address will not be accepted until advertiser supplies publisher with permanent address and phone number. All copy subject to publisher's approval. The items and services featured in our classified columns are for the convenience of our readers. Any misrepresentation will be thoroughly investigated, if brought to our attention. **No classified advertisements or copy changes will be accepted by telephone.** Classified ads are not acknowledged. They will appear in the first available issue if received after closing date. Send order and remittance to: Classified Advertising Manager, CB MAGAZINE, 531 North Ann Arbor, Oklahoma City, OK 73127.

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"CARD SWAPPERS DIGEST". SEND NAME, ADDRESS, \$1.00 COPY. YOUR NAME WILL BE PUBLISHED IMMEDIATELY. CARDS, DRAWER P, LEXINGTON, NC 27292.

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JAPANESE TRANSISTORS INTERCHANGE MANUAL, SEND \$4.00 EA. TO QMC, P.O. BOX 4816, IRVINE, CA 92715.

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RADIO EMERGENCY SAFETY TEAMS, INC. Individual membership or form a team to assist boatmen and motorists. Write: Secretary, **REST**, 1039 South 26th Street, Arlington, VA 22202.

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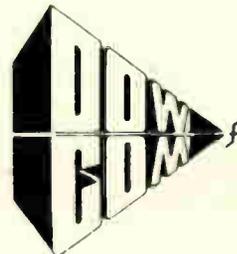
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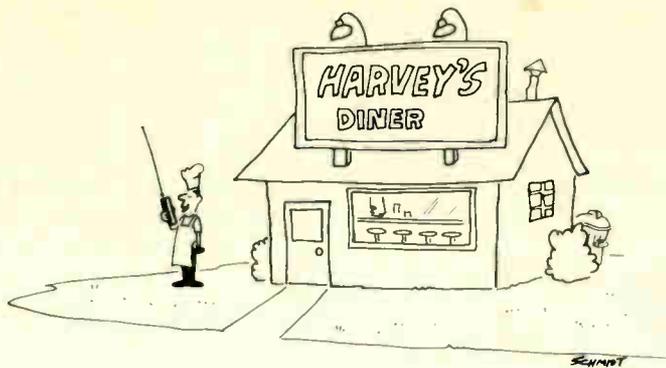
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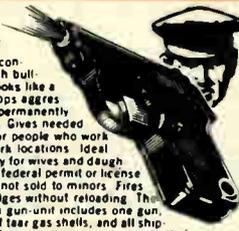
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- Stainless steel radials concentrate signal power on top
- Rigid heavy-duty aluminum tubing
- No long drooping radials to ice up or break off
- So unique it's backed by a U.S. patent (Patent #3587109)
- No coils to burn out or detune
- Easy assembly
- Lightweight — easy to install on simple pipe mast



Ordinary collinear or ground plane antenna signals are blocked...they radiate from the bottom.



ASTRO PLANE gets its signal over obstacles...it radiates from the top.

SPECIFICATIONS

Total Length — 12 feet

Weight — 4 lbs.

Power Gain — 4.46 db

Impedance — 50-52 ohms

Omnidirectional — needs no rotor

Vertical Polarity

Aircraft Quality Aluminum

SWR — Pre-tuned — Less

than 1.2:1

band width — full 40 channels

high performance **CO-INDUCTIVE**[™] antennas

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