

FEBRUARY 1963

50c

# S9

*the citizens band journal*



**LATEST FCC NEWS!**



**ADD A SECOND SPEAKER**



**CB FLICKERS: NEW HUMOR CRAZE**



**ALL ABOUT CO-AX**



**ALL ABOUT DIRECTIONAL ANTENNAS**



**"THE GALLOPING GHOST"**



**SPECIAL CB PUZZLE**



**CB TREASURE HUNTERS**



**FREE WALL CERTIFICATES**



**CANADIAN CB NEWS**



**BUILD THE "EXPERIMENTAL 753"**

**Hey CB'ers!  
Don't DARE miss this issue!**





# NEW!

## INTERNATIONAL

### Model 1500 . . . for the Hobbyist . . .

Now . . . you can be on the air, and operate a two-way radio, without a license. The new International Model 1500 Executive transceiver is certified to meet all FCC Part 15 requirements for short range radio communication within the 27 mc frequency range.

Designed and engineered for phone and cw (code), you can talk 1 to 10 miles with other Part 15 stations depending on the height of the antenna. You are also permitted to work skip signals 1,000 miles or more with other Part 15 stations when a band opening occurs.

The Model 1500 Executive puts the maximum RF power into the antenna by combining the transmitter and antenna for rooftop mounting, thus eliminating loss through a transmission line.

A second unit houses a supersensitive receiver and exciter for better reception. Other features include a special crystal filter for reducing interference from adjacent channel Class D two-way radios.



# EXECUTIVE TRANSCEIVER

## *No License Required!*

- Certified for FCC Part 15 communication
- 100 milliwatts input / 60 inch antenna
- 27 mc frequency range
- Operates on phone and cw
- Eight channels . . . all crystal controlled
- 115 vac operation
- Quality components and construction

The Model 1500 is a complete package, ready to go on the air. The package includes: ① receiver/exciter complete with 8 sets of crystals, ② transmitter/antenna assembly, ③ antenna mount, ④ 5 foot mast, ⑤ 100 feet of control cable, ⑥ microphone, ⑦ key for (cw).

Model 1500 Transceiver complete . . . . . \$299.50\*

See this exciting new transceiver at your International dealer. You can be on the air tomorrow with International's Model 1500.

\*other models from \$80.00

Write for International's complete catalog of radio crystals and equipment.



**INTERNATIONAL**  
CRYSTAL MANUFACTURING CO., INC

18 NORTH LEE • OKLAHOMA CITY, OKLA

Detailed description: A dark rectangular box containing a globe graphic. The globe shows the Americas. The text 'INTERNATIONAL' is in large, bold, white letters across the top of the globe. Below the globe, 'CRYSTAL MANUFACTURING CO., INC' is written in smaller white letters. At the bottom of the box, the address '18 NORTH LEE • OKLAHOMA CITY, OKLA' is printed in white.



*the citizens band journal*

S. R. COWAN, PUBLISHER

300 West 43rd Street New York 36, N. Y.

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# The new RCA MARK VIII 27-Mc 2-WAY RADIO



## More Features • Improved Performance • AT A LOWER PRICE

Here is THE outstanding bargain today in a 2-way Citizens' Band radio: THE NEW RCA MARK VIII. Compact, dependable, simple to operate, it outperforms and offers more features than even the famous RCA Mark VII.

Look what this remarkable new unit offers you:

- 9 crystal-controlled transmit and receive channels
  - Tunable receiver for reception of 23 C-B channels; dial marked in both channel numbers and frequency
  - Exceptionally good voice reproduction—high intelligibility
  - Maximum allowable transmitter input of 5 watts\*—nominal output of 3 watts or more
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- plus many more features to increase its usefulness and efficiency.

The new low Mark VIII price **\$149<sup>50</sup>\*\***  
puts 2-way radio convenience within reach of everyone

GET THE FULL STORY; FILL OUT AND SEND IN THE COUPON BELOW

RCA Electron Tube Division, Commercial Engineering, Dept. B132-R  
415 South Fifth Street, Harrison, New Jersey

Please! Rush more information on the new RCA Mark VIII 2-way  
Citizens' Band Radio.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

\*Maximum plate input power to final radio-frequency  
amplifier stages as defined by FCC regulations

\*\*Optional list price.



The Most Trusted Name in Electronics

Special club subscription rates for \$9

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# READER MAIL

## MORE GOODIES

Editor,

I understand that you have made color reprints of the attractive wall CB identification certificate shown on page 37 of the October, 1962 issue of S9. How much are these, and are they available in bulk?

Allen Swiciwski, KBG3008  
Irvington, N. J.

*Word sure gets around in the S9 crowd—we gave them out at the International Communications Fair and ever since then we've been swamped with requests from all over the country. Anyway, they're FREE as a reader service of S9—all you do is send us a stamped, self-addressed envelope (make it at least 7 by 10 inches if you don't want your certificate folded). Address your request to "Wall Certificate," % S9 Magazine, 300 West 43rd St., New York 36, N. Y. One to a customer, although clubs may request bulk amounts if an officer writes on the club letterhead.*



*If you throw in a paltry 25¢ per certificate, we will have your call sign boldly imprinted in large block letters on your certificate(s). Order as many as you like, but don't forget to send 25¢ for each one.*

## NERVOUS WITH THE SERVICE

Editor,

Our local CB shop has a news release on the wall announcing the new FCC rules going into effect. I realize that another publication sent out this release, but perhaps you can give me some advice regarding the information contained in the release.

Frankly, I was all set to purchase some CB equipment for use in my business, but when I read that notice with the new rules I don't know whether or not now is the right time. What's the story? Should I bide my time? I have spoken to many other people who decided to hold off after reading that release.

Bob Cohen  
Chicago, Ill.

*As explained in our editorial (see Page 7 of this issue), there is no need at this point to press the panic button. Despite the fact that many people have decided to hold up on buying as a result of reading the news release which you mention, it is the opinion of us here at S9 that if you've got a reasonable need for Class D equipment, you should have no fear of any FCC rule changes, whatever they may be. By the way, you made a common misinterpretation when reading that news release—you (and many others) said in your letter "new FCC rules going into effect." The "rules" are not "rules" at all right now, they are but proposed rules which must be decided upon and discussed before they can be passed into law, modified, or even dropped.*

*Our suggestion is to buy the equipment and ignore the folks from the panic button factories.*

## NOTE FROM THE NORTH

Editor,

My problem is this; when I am copying a club member who is about 50 miles from my base station, the "skip" rides him out. How can I cut out the "skip" but still stay tuned to my local contact?

Incidentally, you've got a dandy magazine and all of us buy every issue.

W. Rex Stirling, XM66053  
Newfoundland CB Club  
St. John's, Nfld., Canada

*I'm afraid that you'd have to punch a few holes in the ionosphere to kill the skip. The only suggestion we could make would be to get an antenna with a low angle of radiation (co-axial sleeve, or ground plane with an isolating skirt). Bear in mind that at 50 miles, you're in a "fringe area" and even without the skip, it's a long haul.*

**TWO FOR  
THE MONEY  
ONE FOR  
THE SHOW!**

**antenna  
specialists brand  
NEW M-103  
combination CB-AM  
antenna**

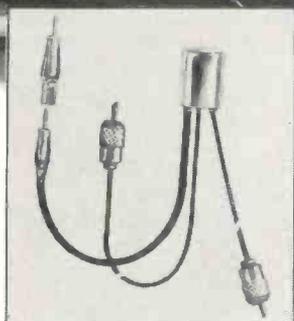
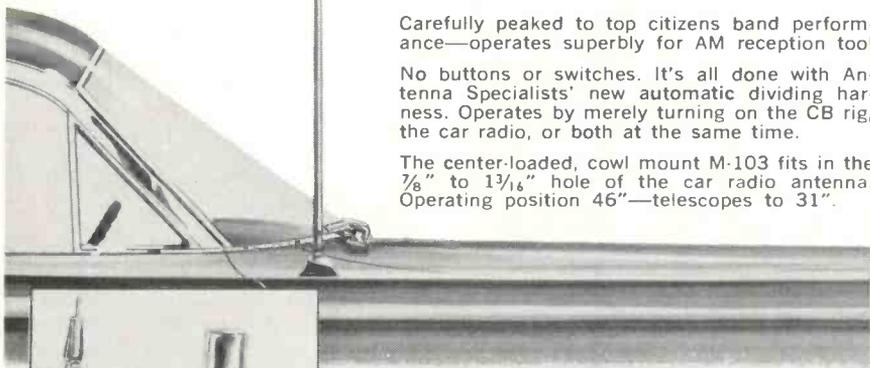
Now, by combining superior communications experience and finest quality materials, Antenna Specialists brings you a truly functional CB-AM antenna . . . one that will dependably serve both citizens band and AM reception with optimum performance.

Beautiful, clean lines and heavily chromed, the M-103 is inconspicuous yet has that professional air about it.

Carefully peaked to top citizens band performance—operates superbly for AM reception too!

No buttons or switches. It's all done with Antenna Specialists' new automatic dividing harness. Operates by merely turning on the CB rig, the car radio, or both at the same time.

The center-loaded, cowl mount M-103 fits in the  $\frac{7}{8}$ " to  $1\frac{1}{16}$ " hole of the car radio antenna. Operating position 46"—telescopes to 31".



**Automatic Dividing Harness**

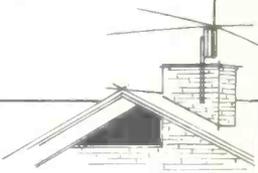
Fits under dashboard out of sight . . . three simple connections to make. 1' low loss cable to the AM set; a 2' cable to the CB rig; a 5' cable to the antenna.

Available separately as the M-104. Couples with our M-49, MR-49, or any ungrounded CB antenna requiring no more than 5' of cable.

**TO TEAM UP WITH THE M-103  
MAGNUM 27** CB base antenna  
(27 Mc.)

Winds hate it—you'll love it—so will your neighbors

100 mph winds give up on this rugged, end-fed  $\frac{1}{2}$  wavelength antenna. Yet it's slim and sleek in aluminum and steel . . . so very inconspicuous • 6 db. operating GAIN! • Easy to install on masting or side mount! • Inexpensive too!



"Stripes of Quality"



your CB dealer has them in stock now, or write to  
**the antenna specialists co.**  
12435 Euclid Avenue, Cleveland 6, Ohio  
Export Div., 15 Moore St., New York 4, N.Y.

# Checklist for buying a full-power CB 2-way radio

look for these features:

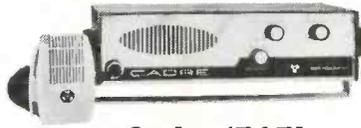
- TRANSMITTER POWER** — For longest transmission range possible, choose a 5 watt unit, the maximum authorized power input for Class D CB radios.
- SENSITIVITY** — A greater sensitivity rating indicates a better ability to reproduce weak signals. Look for a sensitivity rating below 1 microvolt to capture signals transmitted many miles away.
- SELECTIVITY** — A radio's ability to reject interference from channels not tuned in, is largely determined by the type of circuit used: superregenerative, superheterodyne or dual-conversion superheterodyne. The latter circuit, the dual-conversion superheterodyne, is acknowledged by experts to be the best circuitry for clearest reception. Says Len Buckwalter, noted communications author, in *Electronics Illustrated* May 1962. "... Look for the dual-conversion feature if you wish to get top receiver performance."
- CRYSTAL-CONTROLLED CHANNELS** — Fixed crystal controls assure accurate, fast communications contact. They enable users to switch quickly from one channel to another to contact different persons, to find a channel that isn't busy. It is best to choose a CB unit with multiple crystal-controlled channels for an efficient, flexible 2-way radio system.
- POWER SUPPLY** — A power supply should be an integrated part of a CB radio. Since full-power CB radios are most often used in vehicles and base stations, a CB radio's power supply should be able to operate from both a 12-volt auto battery and 110-volt AC line.
- AUTOMATIC SQUELCH** — This automatically eliminates annoying background noise when a CB radio is on standby (not transmitting and ready to receive any radio calls). Thus, hisses, crackles and other noises can't distract workers, drivers, etc.
- AUTOMATIC NOISE LIMITER** — An effective automatic noise limiter is necessary, especially in heavily populated areas, to shut out extraneous interferences such as ignition noise. Makes messages more intelligible.
- RELIABILITY** — CB radios must withstand vibration and shock which occurs during mobile use. Solid-state components—transistors and diodes—are less susceptible to damage than fragile tubes.
- PORTABILITY** — Some full-power CB radios may be used in the field as portable units when equipped with a portable case-battery accessory. These units are generally lightweight, compactly designed and offer greater operating flexibility.
- INSTALLATION** — Compact CB radios with simple mounting provisions don't steal leg room in vehicles, lower installation and maintenance costs.

Cadre Industries has two 5-watt models that rate high in every category. Each is supplied with a press-to-talk microphone, set of matched channel crystals, universal mounting bracket and AC & DC cords.



**Cadre '510'**

All-Transistor, 5-Watt, 5-Channel,  
plus all-channel manual Tuner, \$199.95

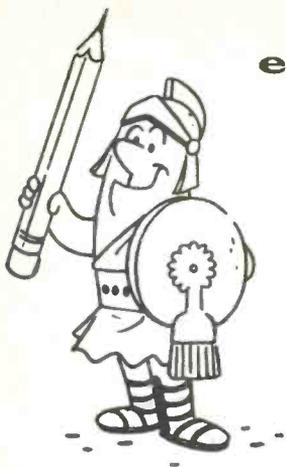


**Cadre '515'**

All-Transistor, 5-Watt,  
5-Channel, \$187.50



See your Cadre distributor for a demonstration, or for more details, write:  
**CADRE INDUSTRIES CORP.** □ COMMERCIAL PRODUCTS DIVISION □ ENDICOTT, NEW YORK □ AREA CODE 507, 748-3373  
Canada: Tri-Tel Assoc., Ltd., 81 Sheppard Ave. West, Willowdale, Ont. Export: Morhan Exporting Corp., 485 Broadway, New York 13, N. Y.



**editorial**

# **KBG4303 rides again!**

**by TOM KNEITEL**

EDITOR, S9  
300 WEST 43rd STREET  
NEW YORK 36, N. Y.

As we go to press with this issue there is still a generalized panic among the CB populous regarding the pending FCC rule changes which relate to CB'ers. Insiders at the FCC tell us privately that, "we warned them time and time again and they brought it on themselves." Some manufacturers are also very unhappy about the prospect of the rule changes, while others seem to feel that their gear will fare the storm no matter what possible "evil" tides may befall.

Meanwhile, down at the Commission, there has been an avalanche of mail from both individual CB'ers and CB clubs to protest the impending action to restrict and tighten use of CB frequencies. A number of requests for extensions of the closing date for comments have also been sent in by parties who wish to study the situation before filing actual comments with suggestions.

Our feeling is that there is certainly no need, at this time, to press the panic button. The Commission will take into account all of the comments which have been filed regarding Docket 14843 before coming to any final decisions. Our guess is that the finally approved version will not contain all of the things which were first outlined when the Commission announced the proposed changes to Part 19. Surely, the rules will be tightened up to some extent—at least to the extent the Commission will consider to be in the best interests of the public.

We hope that when the Commissioners are making their decisions they will keep in mind that Citizens Band operators, even with their alleged shortcomings, are the first people on the scene at a disaster or to help with search and rescue operations. CB has inspired many people to become interested in electronics, it has consequently brought many persons into the Ham radio ranks who might otherwise never have gotten there—and these people are now among the members of our RACES, MARS and Civil Defense communications programs.

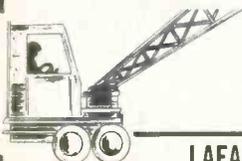
In many areas of our nation, CB has brought a common interest and meeting ground to communities and enabled them to provide invaluable monitoring services for CB-equipped tourists seeking assistance.

While it is true that there are abuses of CB regulations, the Commission must realize that proper and adequate enforcement of existing CB regulations, coupled with a vigorous public education program relating to the existing regulations, would no doubt eliminate most of the problems which seem to have brought on the present events in Washington. We believe that an ounce of prevention is worth many times more than a Docket of cure—and many readers have written to S9 to ask, "who will enforce any additional regulations on CB operators?" It's a good question.

*Continued on page 59*

# LAFAYETTE CB

## Spectacular

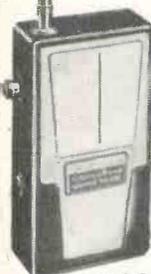


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LAFAYETTE 10-TRANSISTOR  
PORTABLE CITIZENS BAND  
"WALKIE TALKIE"

**33.95 ea 2-for-62.90**

- 50% More Powerful — Receives and Transmits Up to 2 Miles
- Extra RF Stage
- 10 Transistors plus 1 Diode
- No Licenses, Tests or Age Limits (As per FCC Regulation 15)
- With Carrying Case, Earphone, Antenna, Batteries, Crystals



HE-29B

**New!**

LAFAYETTE HE-20C CITIZENS  
BAND TRANSCEIVER

Officially Approved  
for Use in  
CANADA  
Type Approval  
No. 169361029

**109.50**

- 8 Crystal Controlled Transmit Positions plus 8 Crystal Controlled Receive Positions
- 14 Tube Performance
- Tuneable over all 23 Channels
- Built-in Power Supply for 110V AC or 12V DC
- Complete with Matched Crystals for Channel 9



HE-20C

**New!**

LAFAYETTE HE-15B  
CITIZENS BAND  
TRANSCEIVER

Officially Approved  
for Use in  
CANADA  
Type Approval  
No. 169361034

**54.50**

- 8 Crystal-Controlled Transmitting Positions
- Tunable Superhet Receiver Over All 23 Channels
- Effective Full-Wave Variable Noise Limiter
- Front Panel RF Jack • 12 Tube Performance
- With Transmitting Crystal for Channel 9



HE-15

**New!**

LAFAYETTE 4-TRANSISTOR  
CITIZENS BAND  
"WALKIE TALKIE"

**19.95 ea**  
2 for 38.95

- Sensitive Superheterodyne Circuit
- Crystal-Controlled Receive and Transmit
- Push-to-Talk Switch
- No License Required When Used Under Art. 15 FCC Regulations.



HE-66

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Page Lafayette  
Catalog



# ALL ABOUT COAX

THE COMPLETE STORY FROM RG8 TO RG58C/U

by WILLIAM HAYMON, KBG5891

Your antenna feedline is perhaps the weakest link in a Citizens Band station. The cable contributes nothing except losses in signal strength; perhaps this is why it is so frequently overlooked. *Bad "coax" (coaxial cabling) can easily remove over 70% of your power!* It matters little how expensive your antenna is, or how superb your transceiver performs, if the chain connecting the two is poor. But before we go plunging into the causes and cures, it might be well to investigate exactly why we use this material.

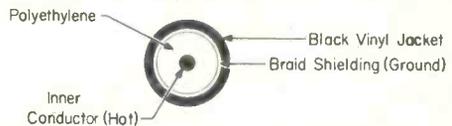
## WHAT'S SO GOOD ABOUT COAX?

With most present-day CB antenna systems, two conductors are necessary to adequately connect the transmitter to the roof top ground plane. Almost all CB transceivers and antennas require a 52 ohm input. What does this mean? Simply this: the two-conductor cable you use as your feedline should measure approximately 52 ohms across the two wires under close ohmmeter inspection. The RG8/U and RG58/U varieties of coaxial cable meet this prerequisite perfectly. Hence, a nearly perfect match between your transmitter and your antenna. Results: maximum possible signal output.

## WHY NOT USE LINE CORD?

Don't laugh—if it wasn't for the radio fre-

quency (RF) nature of a transmitter's output, it would certainly be feasible. Unfortunately, however, RF, unlike household AC current, doesn't want to contain itself to just one wire. If you could actually "see" RF, it would look something like a light bulb filament. It actually glows, or radiates. We must use some type of feedline that not only meets the 52 ohm requirements, but will also "contain" that RF. Again, coax is the answer.



Cutaway view of a piece of RG8A/U coaxial cable. Thickness of the inner conductor, width of the polyethylene insulator, and vinyl jacket material all affect the life and efficiency of the feedline.

Only one of the wires in a feedline system is actually "hot." This is the one that carries the *juice* from your transmitter to the antenna. As you can see in the drawing, the "hot" wire is the very center of a piece of coaxial cable. Then, separated by a layer of polyethylene, it is surrounded by a braided piece of shielding wire. The at-the-rig end of the cable is fitted through a connector so that the shielding piece is grounded. This then keeps all the inner conductor's RF from escaping all the way up the line. This shield-

ing idea has worked out so well, that one could actually hold the cable from a 50,000 watt transmitter to the antenna and never feel a thing. If it weren't for that shielded braid inside the cable, you'd be a dead duck with burnt wings.

If, on the other hand, stations did use AC line cord as a feedline, the RF losses would be so great that only about 14% of the transmitted power would ever reach the antenna. Not to mention the poor line cord, growing hotter every second from the strain. The ever-present escaping "glow" in that AC cord would liken it to a filament in an electric room heater. Only a heater with rubber insulation inside—*Phew!*

### CURVACIOUS NATURE OF COAX

Flexibility of coaxial cable can be a problem at times. Sometimes it seems as if the stuff has a mind of its own . . . like a rubber lawn sprinkler hose that's been left out in the sun too long. Naturally, the larger the physical diameter of cable, the more inflexible it becomes. This problem, though, is greatly offset by the numerous advantages of using the material. We'll go into that later.

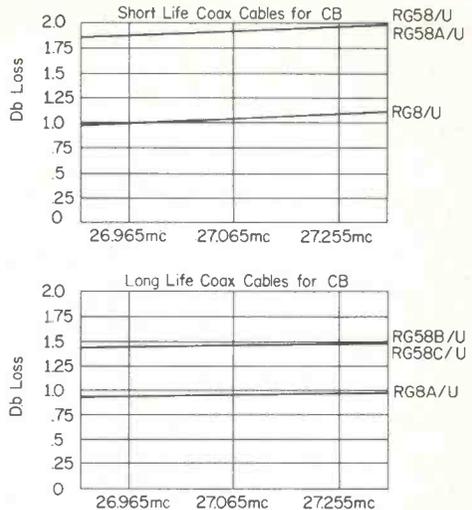
### HOW IS COAX LIKE A WOMAN?

It cracks with age. Beware of old cable. I've seen coax in such bad shape that just bending it slightly made it crumble in my fingers. Hooking it up to my transceiver resulted in a power loss (between the rig and antenna) of 99%. That stuff was *worse* than AC line cord.

### WHY IS COAX LIKE A BIRD?

It migrates in the Winter. And, as a matter of fact, all year 'round. That vinyl jacket material we were talking about earlier contains a plasticizer to obtain a means of flexibility. Unfortunately, however, this plasticizer has a tendency to migrate from the jacket to the inner dielectric. Once this happens, it hardens and cracks the dielectric material. And, to make matters worse, this is a continuing process from the day of manufacture. Obviously, then, World War II vintage cable is utterly worthless and should be condemned as just pure junk.

Every db (decibel) of added power you can get into that antenna means more signal at the other end. Mobile-wise, this signal can make the difference between a solid contact and none at all. If you can change your feed-



Charts are based on 100 foot lengths of coaxial cable.

Note: "Db Loss" expressed above refers to the amount of signal absorbed by the feedline. Each "Db" equals one-sixth of an "S" unit. Three Db's equal a half an "S" unit.

line to something that will give you 2 db less loss, you've got 2 db more signal! *Savvy?*

### SEPARATING MEN FROM BOYS

Let's divide our coax at this point into two categories: Type I and Type II. Type I cable with the traveling plasticizer as described above has a useful life of perhaps 2½ years. And that's really giving it the benefit of the doubt. If your antenna is outdoors and exposed to weather, you can expect one *good* year out of it if it was purchased new. This group is definitely *not recommended* for CB use.

#### Type I Coax

RG8/U  
RG58/U  
RG58A/U

If your feedline type falls in this category, replace it. You can check its condition by use of an SWR meter, or simply by testing its flexibility. If it starts to crack, you've had it.

### MALE SURVIVORS

Type II cable is of non-migrating variety and are good for ten to fifteen years of use (even abuse). This feedline costs a bit more, but is worth every cent. Not only that, but

*Continued on page 60*



# NOW HEAR THIS:



## ... Browning Brings You 23-Channel Operation In A Mobile CB Unit.

Now, you can own a mighty mobile rig that lets you operate on any of 23 channels at the flick of a channel selector switch.

Model M-523 is designed and manufactured by Browning to give you big base station performance in a mobile unit. Ideal for car, boat, or other vehicles, Model M-523 has a transistorized DC power supply that can be mounted in any location, plus many other Browning features.

This compact powerhouse (8" x 3" x 9" deep) is easy to mount and leaves plenty of leg room. Contact your local authorized service center or write for information. Also available is Browning Model M-506, mobile transceiver for 6-channel operation.

### OVERALL FEATURES

- Small size (8" x 3" x 9" deep) makes for easy mounting and more knee room.
- Rear lighted channel indicator.
- Transmit and receive channel selected simultaneously with flick of channel selector switch.
- Modern styling matches interior of all cars and boats.
- Price includes 12-volt power supply, speaker and microphone.
- Transistorized DC power sup-

ply providing high efficiency and reduced maintenance can be mounted in any location.

### TRANSMITTER SPECIFICATIONS

- Plate power input: 5 watts.
- Power output to antenna: 3.5 watts.
- Modulation — 100%, peak limited, plate modulation.
- Harmonic suppression: Better than 50 db down through use of TVI Trap.
- Frequency stability: .005% per FCC specifications.

### RECEIVER SPECIFICATIONS

- Sensitivity: 0.4 UV for 10 db signal to noise ratio.
- Selectivity: 5 KC @ 6 db; adjacent channel 60 db down.
- Frequency stability: .005%.

### ACCESSORIES

- AC power supply — Model AC-115.
- S-Meter with illuminated dial — Model DB-40.
- Rear deck speaker kit — Model SK-1.

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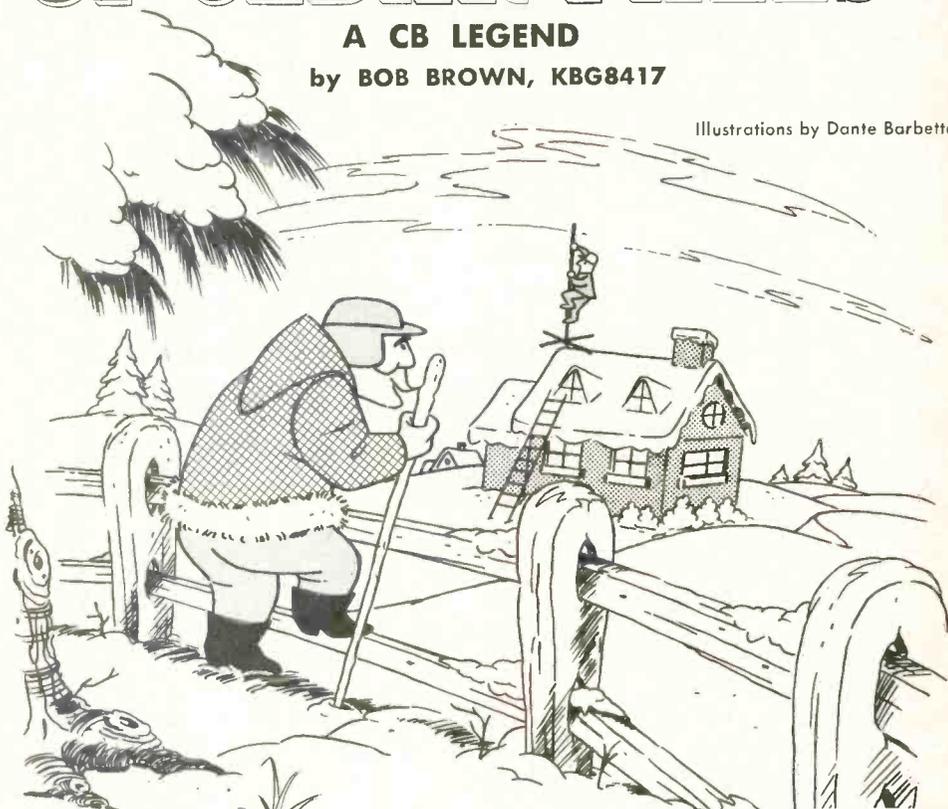
Other lines handled .....

# THE "GALLOPING GHOST OF CEDAR FALLS"

A CB LEGEND

by BOB BROWN, KBG8417

Illustrations by Dante Barbetta



Cedar Falls used to be nothing more than an average sleepily midwestern town inhabited by a closely-knit clan of industrious gentry who labored all week just so they could look forward to a little fishin' down at Jonah's Pond, or perhaps a bit of laughin' and scratchin' around the cracker barrel on Saturday night while the missus was at the sewing club. Yes, Cedar Falls was indeed a quiet town, but like all small communities it *did* have its livelier moments. One of these "moments" makes for the topic of this tale.

All was quiet on the western front, but on the north side of town strange things were happening. An average domicile belonging to one Johnathan Payant, a peculiar individual to say the least, was suddenly sprouting ghastly tentacles from its beshingled roof,

reaching ever upward towards the eternal ethereal environs. Yes, *KHB6666* was hard at work. But perhaps we should delve for a moment into the making of this man, for after all, if we are to comprehend the mysterious phenomena of that never-to-be-forgotten moment in Cedar Falls annals, one should first try to understand the phenomenal personality of *KHB6666* himself.

Johnathan was certainly a well-versed person, and always seemed to have the answer for any question that be fired his way. More personally, however, he kept all too much to himself and was certainly not of the cracker-barrel ilk. No, Payant didn't quite fit into Cedar Falls' social circles, although he was certainly respected for whatever it was he was.

Seemed like he was always experimenting with something or other; like the time he developed the town's first 4-barreled, double carburetor, three wheeled *Zibimicka* and piloted it laboriously to City Hall. No one was ever able to figure out just what it was supposed to do, but it *looked* darned impressive. Only trouble was that it seemed to infuriate local animal life and the Cedar Falls Stampede will be remembered for many a year. Lately, however, Johnathan has attracted the label of "that radio nut down the street," obviously stated in some meager attempt at classifying Payant's latest contrivances. *But we know . . . don't we?* Yes, he was a CB'er, with a brand-spankin' new license and raring to go. But Johnathan wasn't about to reveal to the world until he was ready "his most certain madness."

"My God!" sayeth neighbor Brown over the back fence to old man Cline. "Jes look et all that plumbing on yonder shingles. Wonder what *he's* 'ventin this time?"

"I 'spect maybe it's one 'o them new-fangled lightnin' rods like Uncle Elmo had on his barn afore the storm," replied tobacco-chewin' Cline, who was never too bright in the first place.

"I dunno, Ralph. Damndest thing I ever saw. Say what ever happened to Elmo's barn, anyway?"

"Burned down," quacked Cline, who was never too bright in the *second* place either.

"Come to think 'o it, Bill Nimbletrees down at the Post Office were a-tellin' me of some new megzine that Payant's been 'scribin to. Called Ess-Nine, or sumpin. Bill's gon-ter check it on that Communist literature banned list t'morree. A guy's gotta check, ya know. Brown, sort of letting loose with a deep-rooted fear of that man down the street.

"What you say we amble down an' 'vestigate the sitcheeatshun, Charlie?" queried Cline with undoubtedly his most worthy contribution of the day.

. . . . .

SCENE: KHB6666 laboriously putting the finishing touches on his pride and joy antenna.

ENTER: Brown and Cline.

"Afternoon Mr. Brown and (ahem) friend," greeted Johnathan Payant in a somehow knowing tone of voice from the rafters. "To what do I owe the esteemed pleasure of this visit?"

"Oh, 'jes passin' the time 'o day," they replied, being careful not to look too frequently skyward else they be branded too curious or just too damned stupid.

"Sure a nice day, isn't it?" KHB6666 remarked in an all too typical voice to the utter dismay of his beleaguered guests, who were at this point just dying to get a clue as to what on earth was gracing the eaves . . .

Well sir, they couldn't contain themselves any longer. A quick glance at each other to confirm their anxieties, and the pair were all set to pounce upon their victim. Both seemed to agree that Charlie Brown was patriotic enough to lead in the initial attack . . .

"Folks have sorta been wonderin', Johnathan, 'jes what you plan on doin' with all that allyewmineeum plumbing up there," Brown queried and quickly stepped back to brace himself for the inevitable battle at hand.

"*SIR! Are you referring to my super duper whooper snooper iridite-treated colinear ground plane, whose omni-directional gain is a fantastic 3.4 db and whose SWR is a perfect 1 to 1?*" retorted our boy Johnathan.

". . . Uh, yeah . . ." was all Brown could utter amid the helpless expression that covered his face. A deep two-toned rumbling was heard as the patriots beat a fast retreat down Oak Avenue, united in their agreement that they had severely underestimated the striking force of the enemy.

With a restrained smile on his lips, KHB6666 reveling in this minor victory climbed triumphantly down the ladder and stood once more with both feet firmly on the sod. "Aha!" he thought as he contemplated with sheer enthusiasm the pleasure upon which his very soul had been devoted for the past three months. "Now to try it out . . ." and he was off in a flash. One neighbor later recalled upon his flying into his domicile that he was spouting idiotic remarks sounding slightly like "twenty-seven mad cop cycles," and something else that sound like "Citizens for Bander" (Everett Bander was a local right-wing politician who had lost the last 17 elections in a row).

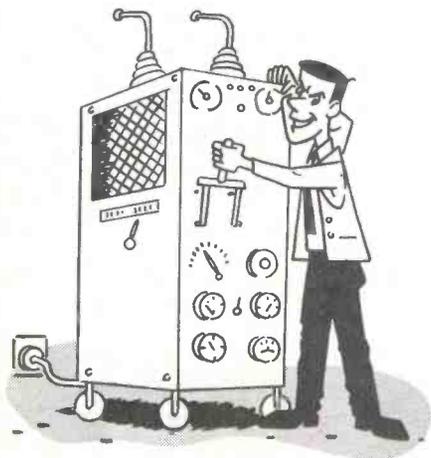
Meanwhile back at the ranch, Johnathan Payant seated himself tensely before his newly-acquired five channel transistorized *Bandslopper*, which was capable of operating from the car, house, boat, submarine, airplane, interstellar spaceships, or from pen-

light cells. But this in itself didn't satisfy KHB6666, who was never one to settle for anything less than the best. Connected to the antenna jack on the unit was his coaxial feed-line, which draped itself over the rear of the mahogany table and disappeared mysteriously into the floor.

"Little does Cedar Falls know what is in store for it this day," Johnathan thought. For at the other end of that snake-like black vinyl-covered tubing was his secret project. Deep in the lower extremities of the spider covered cellar at 473 Oak Avenue was a 1,000,000 watt military surplus linear amplifier, *surely* the only one of its kind in the world today. Yes, this was connected to the little *Bandslopper* . . . An effective setup possibly capable of contacting Timbuktu . . . He delighted in the thought. *That* would most assuredly give him his rightful spot on the band.

*Click!* The *Bandslopper* was turned on. *Snap!* The remote control power switch for the linear was popped on. An odd rumbling cadence instantly accompanied this action; evidently the linear was awakening from its state of suspended animation. *Click!* The Model A gasoline-driven blower was called to action in the field below. The house nearly wreaked with sound not unlike the Science Fiction Theater on Channel 5. Johnathan Payant was ready at last . . .

He flicked his channel selector to Channel 9 and listened ever intently. There were a couple of unsuspecting CB'ers talking about the weather or whatever.



" . . . surely the only one of its kind in the world today."



"From Afghanistan to the Upper Yukon Territory . . ."

*BrrrrrrBOOM!* "This is Kelly's Happy Bar Quadruple Six. Break Break Break." *BrrrrBOOM!* He didn't have long to wait. Forty-seven amazed citizens banders were calling frantically on channel. From Afghanistan to the Upper Yukon Territory to the *Japanese National Police Brigade* . . . Johnathan was getting results all right. Little did Cedar Falls know, he thought again, what history was being made this day . . . KHB6666 this is ZX4XFV, Southern Rhodesia. Go ahead . . .

But Cedar Falls *did* know. Mamie Glutenhouser was at the beauty salon under a hair drier when she emitted a blood-curdling scream that could be heard for miles. "My hair, my hair!" And she was not alone.

Svenson's Clothing Factory was in a frenzy. Conveyer belts were running backwards, and old man Svenson was busting a gut. \$45,000 machines were operating in reverse, dismantling cotton sweaters as fast as the conveyer could get them there. Chaos reigned throughout.

Doc Williams' radio-controlled garage door was opening and closing at such a rate that the door glass was shattered while waiting-room patients were fearfully gasping at the thought of what was going on in the examining room.

When Johnathan was modulating, traffic for miles around increased at least 70 m.p.h.; even a few old Hutmobiles arose, unmanned, from the graveyard to go careening down

*Continued on page 59*

# new! Hammarlund CB-23



**\$229.50**  
complete

## REVOLUTIONIZES CITIZEN BAND CONCEPTS!

- Crystal-Controlled 23 channel RECEIVE
- Crystal-Controlled 23 channel TRANSMIT
- NO EXTRAS—Every crystal, push-to-talk microphone, cables and mobile mounting bracket included in ONE LOW PRICE
- $\pm 3$  KC Receiver Vernier Tuning Control (No effect on transmitted frequencies)
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Hammarlund's CB-23 really goes all the way. It provides you with crystal controlled stability on 23 channels—receive or transmit—with the added facility offered by the  $\pm 3$ KC Receiver Vernier Tuning Control. This amazing transceiver has every feature you have ever wanted in a citizen band unit. Peak "Talk-Power," dual conversion super-heterodyne receiver, noise limiter, adjustable squelch, and built-in S-meter to indicate relative rf transmitter output plus strength of the received signal—built-in... at no extra cost.

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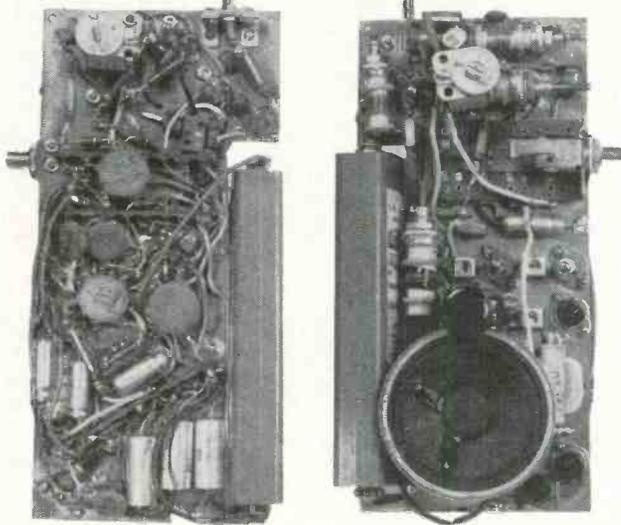
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# Build the "EXPERIMENTAL 753"

## A PHILCO DESIGNED TRANSCEIVER



by T. C. LAWSON and J. J. YOTIDES

PHILCO CORPORATION

This report describes a transceiver for "Part 15" CB operation which utilizes low-cost transistors. Four of the seven transistors are used for both the receiver and transmitter sections with only four switching circuits required. Power input to the transmitter final is 100 mw to comply with the FCC's Part 15 which governs low power transmitters so the unit will require no license of any kind to be operated. The RF power output of the unit has been checked at about 60 mw and the receiver, which is crystal controlled, has a sensitivity of 1 uv for 10 db signal to noise ratio. The unit was designed and constructed by engineers in the **Lansdale Division** of the **Philco Corporation**; application report number 753.

### HOW IT WORKS

An attempt has been made to use as many common elements for both the transmitter and receiver as possible.

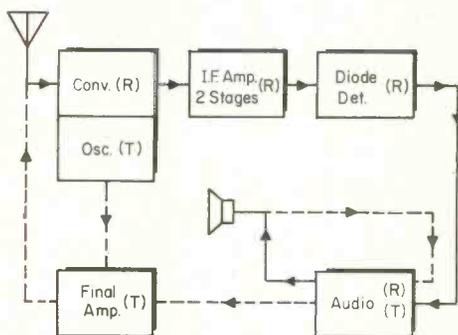


Figure 1. is a block diagram of the receiver and transmitter sections, the antenna is coupled to a crystal controlled converter stage whose output

is 455 kc/s. The converter stage is followed by a two stage IF amplifier, a diode detector, and an audio amplifier consisting of a driver stage and a Class AB push-pull output stage. The output of the audio amplifier is connected to a 100 ohm speaker.

In the transmitter section, the speaker of the receiver is switched to the input of the audio amplifier to act as a microphone driving the audio amplifier which serves as a modulator.

The modulator modulates the final amplifier which derives its RF excitation from a crystal controlled RF oscillator. The energy from the transmitter final is coupled to the same antenna that is used for the receiver, which is a telescoping whip 5 feet or less in length.

## INDIVIDUAL CIRCUIT HIGHLIGHTS

**GENERAL**—The transceiver is energized from a 9 volt supply and utilizes a positive ground.

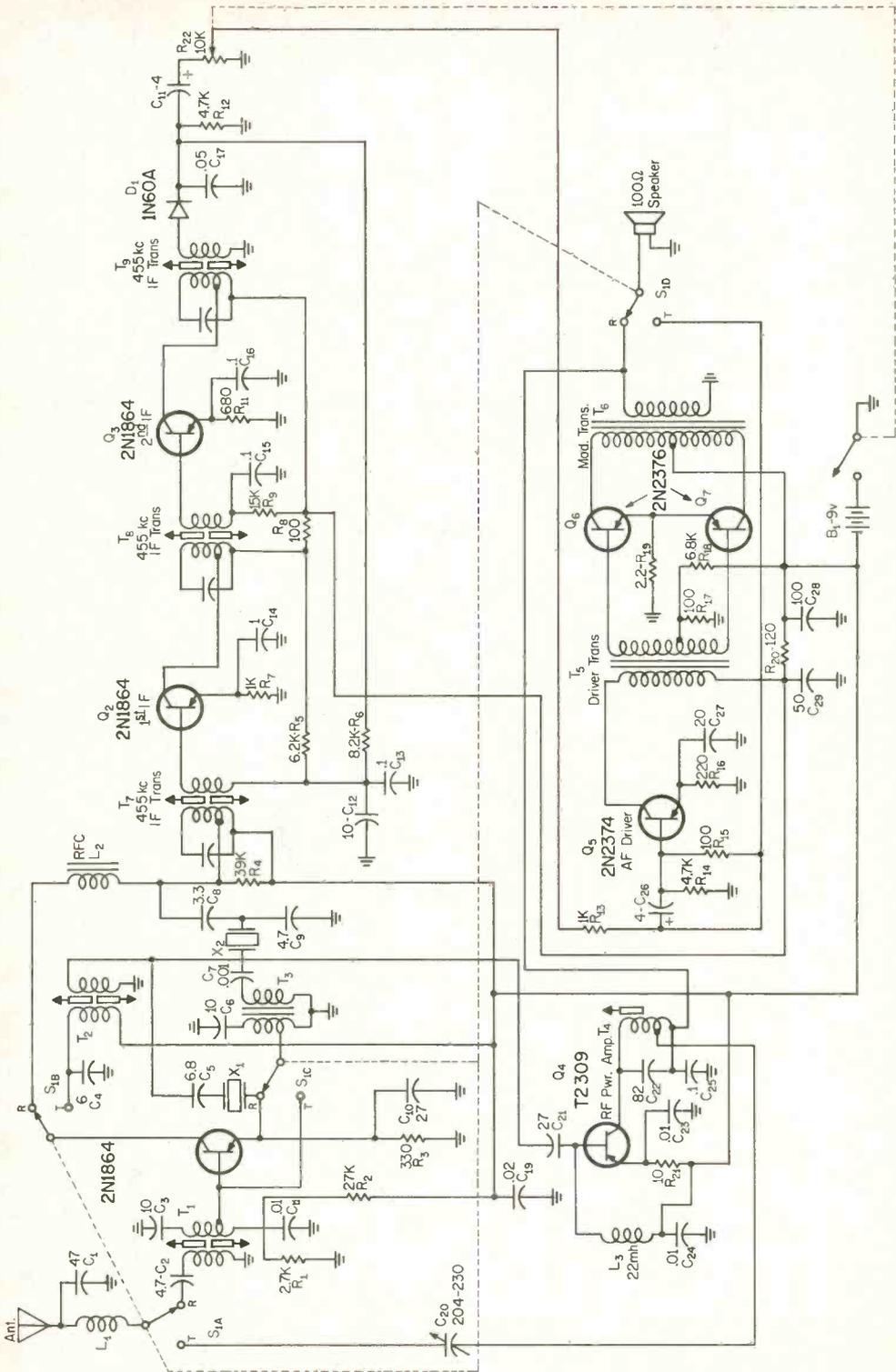
**AUTODYNE CONVERTER** — The common-emitter autodyne circuit uses a 2N1864 MADT transistor. The crystal controlled oscillator operates at a frequency of 455 kc/s higher than the incoming signal.

**IF AMPLIFIER AND DETECTOR** —The IF amplifier of the receiver section is composed of two common-emitter un-neutralized amplifiers using 2N1864 MADT transistors. The two stages are mismatched on both the input and output to provide stability. AGC is applied to the first stage.

*Continued on page 19*

## PARTS LIST

- |  |   |  |
|--|---|--|
| R1 2.7 K (all resistors 1/4-watt)  | C10, 21 27 uufd                               | T2 Pri: 10 turns #28 Nyclad copper wire close wound on 3/8" form.  |
| R2 27 K  | C11, 23, 24 .01 ufd                           | Sec. 5 turns #28 Nyclad copper wire close wound over low potential end of primary. Powdered iron core.                           |
| R3 330 ohms  | C12, 14, 15, 16, 25 .1 ufd                    | T3 Pri: 16 turns #28 Nyclad copper wire close wound on 1/4" form. Emitter tap 1 turn from low potential end. Powdered iron core. |
| R4 39 K  | C17 .05 ufd                                   | Sec: 7 turns #28 Nyclad copper wire close wound over low potential of primary.   |
| R5 6.2 K   | C18, 26 4 ufd                                 | T4 6 turns #18 tinned copper wire wound on 3/8" form spaced over 3/4" length. Powdered iron core.                                |
| R6 8.2 K   | C19 .02 ufd                                   | T5 Driver transformer. Argonne AR-103 or equivalent.   |
| R7, 13 1 K   | C20 204-230 uufd trimmer                      | T6 Modulation transformer. Argonne AR-136 or equivalent.   |
| R8, 17 100 ohms  | C22 82 uufd                                   | T7 455 kc/s 1st IF. Lafayette MS-776 or equivalent.  |
| R9 15 K  | C27 20 ufd                                    | T8 455 kc/s 2nd IF. Lafayette MS-777 or equivalent.  |
| R10 2.2 K  | C28 100 ufd                                   | T9 455 kc/s output. Lafayette MS-778 or equivalent.  |
| R11 680 ohms   | C29 50 ufd                                    | L1 2 3/4 turns B&W #3007 or equivalent.  |
| RT2, 14 4.7 K  | Q1, 2, 3 Philco 2N1864                        | L2 RFC, 50 turns #36 Nyclad copper wire close wound on powdered iron form. 15 uh.  |
| R15 100 K  | Q4 Philco T2309 (Allied Radio)                | L3 RFC, 22 uh.   |
| R16 220 ohms   | Q5 Philco 2N2374                              | B1 Eveready 2709 9-volt battery or equivalent.   |
| R18 6.8 K  | Q6, 7 Philco 2N2376                           | S1 4PDT switch. Lafayette SW-85 or equivalent.   |
| R19 2.2 ohms   | X1 27.450 mc/s miniature crystal              | Ant. Whip antenna. Lafayette F-343 or equivalent.  |
| R20 120 ohms   | X2 26.995 mc/s miniature 3rd overtone crystal | Misc. sockets and hardware. Chassis.   |
| R21 10 ohms  | D1 1N60A diode                                |  |
| R22 10 K not with on/off switch  |   |  |
| C1 47 uufd   |   |  |
| C2, 9 4.7 uufd   |   |  |
| C3, 6 10 uufd  |   |  |
| C4 6 uufd  |   |  |
| C5 6.8 uufd  |   |  |
| C7 .001 ufd  |   |  |
| C8 3.3 uufd  |   |  |
| T1 Sec: 20 turns #28 Nyclad copper wire close wound on 1/4" form. Base tap 2 turns from low potential end. Powdered iron core. |   |  |
| Pri: 10 turns #28 Nyclad copper wire close wound over low potential end of secondary.  |   |  |



Schematic of the Philco designed "EXPERIMENTAL 753."

Power gain of the amplifier to the detector is 70 db and the bandwidth 4.9 kc/s for 6 db and 7.4 kc/s for 10 db attenuation. The selectivity can be improved by replacing the emitter bypass capacitors with series piezoelectric filters. If both the emitters are bypassed with these filters, the 6 db bandwidth will decrease to 3.5 kc/s. These filters must be tuned to the exact frequency of 455 kc/s since the converter stage is crystal controlled.

**AUDIO AMPLIFIER** — The input impedance to the driver stage is about 3,000 ohms and the power gain is 73 db.

**FINAL AMPLIFIER** — There are two procedures used for the alignment of the final amplifier. One procedure is to tune the amplifier for maximum RF power output. The second procedure is to tune the amplifier to maximum audio signal as indicated by a detector circuit. Maximum audio output as would be indicated by the detector circuit does not always occur at the same tuning point of the final for maximum RF power output. Since the transmission of intelligence is the main objective, it would naturally seem best to tune the final for maximum audio output as indicated by the detector circuit.

The alignment procedure consists of placing the detector sufficiently close to the antenna of the transceiver to receive sufficient voltage for detection. The final stage is modulated 100% with an audio tone and then tuned for minimum distortion and maximum output at the detector output. The RF power of the final may be as much as 15% less when tuned in this manner as compared to tuning for maximum RF power output.

You can build this experimental CB transceiver with a little effort and a few evenings' time. The cost is low and the unit will function on a par with commercially manufactured units costing considerably more.

The chassis for the unit is a sheet of copper measuring  $7\frac{1}{4}$  inches by  $3\frac{3}{8}$  inches overall. The unit can be housed in an inexpensive plastic cabinet for ease of operation and portability.

If you construct the unit, the FCC requires that you affix certain information with this article and it will therefore only be necessary for you to clip the coupon from the magazine and paste it onto the cabinet of your unit.

**CAUTION:** Do not attempt to operate this transceiver with a battery larger than 9 volts.

**CERTIFICATE OF COMPLIANCE WITH  
FEDERAL COMMUNICATIONS COMMISSION  
REGULATIONS, PART 15, PAR. 205**

S9 Magazine certifies that this low power transmitting device can be expected to comply with the requirements of Paragraph 15.205 of the FCC regulations under the following conditions: (A) When this device is assembled according to the diagrams and instructions published by this magazine, using components of the exact specifications described. (B) When in use for the purpose and in the manner indicated in the instructions. (C) When operated on a frequency between 26.97 mc/s and 27.27 mc/s and using an antenna limited to a single element not more than 5 feet long.

*Thomas S. Kneitel*  
S9 Magazine, New York 36, N. Y.      Dated: January 15, 1963

I hereby certify that I have assembled and adjusted this device in strict accordance with the above.

Owner's signature.

Date:

The finishing touch! To comply with FCC regulations it will be necessary for you to sign this tag, cut it from the magazine, and paste it firmly on the rear of the transceiver.



Sorry for the delay but I've just had my first  
TVI complaint.

# “FOR YE SHALL SPEAK INTO THE AIR”

A NOVEL USE PUTS CB IN THE PULPIT

by CHARLES F. PITTS, KED0221

When the Apostle Paul wrote these words to the Corinthian church (I Cor. 14:9), he could hardly have been speaking of operations in the Citizens Band. For the pastor and staff of the Tarrytown Baptist Church of Austin, Texas, however, these words seem almost prophetic.

Being licensed in the amateur bands, the pastor readily recognized the potential value of units which could be used for business purposes. Accordingly, application was made for a license to operate five units.

Because many calls come directly to the pastor's home, the base station was located at the parsonage. Another fixed station was set up in the office of the pastor's secretary. A third unit was installed in the pastor's automobile. Two portable "walkie-talkies" completed the equipment.

There being several hospitals in the city, the pastor's secretary has frequently been



Mrs. W. H. Pannell, secretary to the pastor, keeps in touch with him during pastoral visitation by means of CB radio.

able to inform the pastor of those who have entered the hospital since his leaving the office. When the pastor completes a call at one hospital, he calls his secretary for any later additions to the list of sick to be visited. This has saved considerable time and the expense of unnecessary travel.

It often happens that emergencies arise while the pastor is making calls among his parishioners. Before the radio service was begun there were frequent and embarrassing time lapses before the pastor learned of deaths, serious illnesses and accidents. This is now cut to a minimum.

Another service rendered is that of reaching the pastor for weddings. (There are still some who get married without elaborate rehearsals!)

The small hand held units lend themselves to countless uses. They are invaluable when on camps and outings with Boy Scouts, Sunday School classes and youth organizations.



Dr. Charles F. Pitts, KED0221, checks in with his secretary at the Tarrytown Baptist Church, Austin, Texas.



Mrs. Charles F. Pitts, wife of the pastor, finds CB radio an invaluable aid in locating her husband to inform him of an urgent call.

Invariably, at a church camp, there are those who get lost accidentally or on purpose. Those who lose themselves according to pre-meditated plan still must be found, for one never knows when lost sheep are actually lost. Search parties can cover a wide area and still keep in touch with one another.

On one occasion, a little girl left for camp without taking proper leave from home. She had told her mother two weeks previously that she wanted to go to camp but had made no definite plans. When the mother returned from work and found her daughter gone she was frantic until she knew that the child was safe. There was no phone service to the camp area, nearly forty miles distant by road. A message from the pastor's wife was picked up twenty miles away by the pastor on his mobile rig. Thus the mother's fear was assuaged and a long trip over rough roads averted.

Practically all hospitals forbid small children to visit above the first floor. It has been a delight to child and mother alike when they have been able to communicate by means of the walkie-talkies. Often, the mother, or other hospitalized member of the family, can be seen through a window on an upper floor while the child talks over the radio.

Before installing the CB service it was feared that there would be no moment when the pastor could feel free from the pressures of his pastoral duties. This, however, has proven to be unfounded. On the contrary, there is a freedom of spirit which springs from the knowledge that he can be reached at any time for any emergency. This has completely destroyed the constant apprehension arising from the fear that an emergency might arise without his knowledge. CB radio is, indeed, a form of tranquilizer and a real nerve tonic for the busy pastor.

Thus, the pastor has added CB to his vocabulary, right alongside B.C. and A.D.!



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### MODEL 350C-Ceramic-

Equipped with hanger button, dash bracket, 5-foot (extended) rubber-jacketed coiled cord.

Response: 80-7000 cps.

Output Level: -54 db.

### MODEL 254C-Ceramic-

Operates with on-off push-to-talk and lock switch. Cable is 7-foot, three conductor (one shielded) wired for relay operation.

Response: 80-7000 cps.

Output Level: -54 db.



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# CB FLICKERS

by TOM KNEITEL, KBG4303

EDITOR



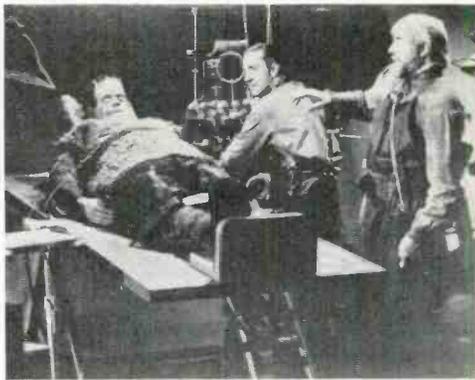
"You and your lousy 'extra modulation' gadgets!"



"Alright Moto, his 5 minutes are up, go get him!"



"You no more talk long Channel 11."



"Go back and tell THIS to your friends at the FCC!"



"QSL card? You idiot, this is the FCC!"



"That dumkopf keeps telling me to clear the REACT channel."



"Interesting device you've got here, Dr. Ranjii. What does 'BREAK-BREAK' mean in your native tongue?"



"The monitoring truck is coming down the street, you've just got time for one more skip contact!"



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For:  110 VAC & 12 VDC  110 VAC & 6 VDC  
See page 40 for credit information.

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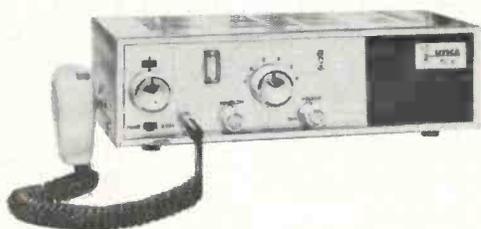
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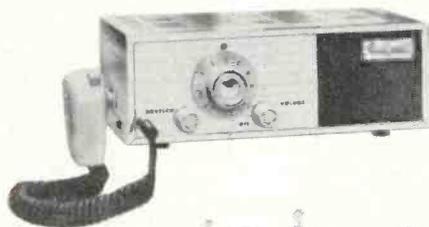
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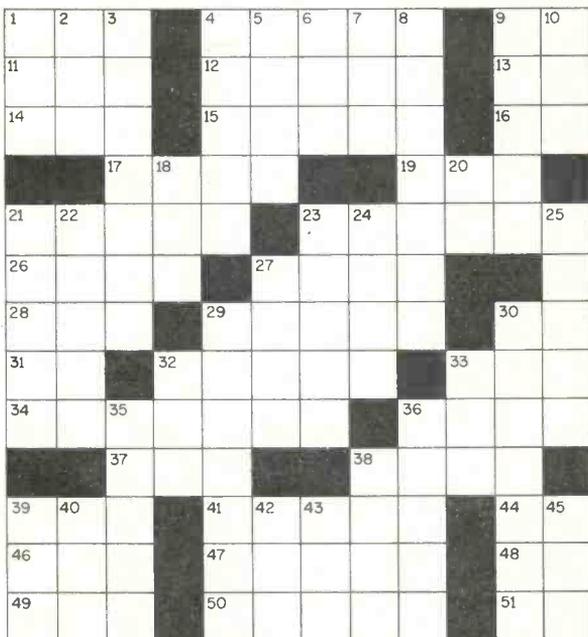
# CROSSWORD

# PUZZLE

by TERRY W. OWENS

## ACROSS

1. --- Cards
4. Mfr. of Thruline Transicheck
9. -- Amplifier (abbr.)
11. Indian
12. Non-rigid airship
13. 110 V. -- (abbr.)
14. A scrap or bit
15. American symbol (bird)
16. 12 V. -- (abbr.)
17. Small lake
19. --- Tan Cigars
21. Specifications (slang)
23. Atmospheric noise
26. Rabbit
27. Type of moss
28. Attorney Generals (abbr.)
29. Thicket of trees
30. -- Cowan of S9 (initials)
31. Calcium (abbr.)
33. Three (Italian)
34. KBG4303 of S9
36. Twitches
37. Broadcast Interference (abbr.)
38. Mfr. of Model 530 Signal Filter
39. Fuss
41. Naughts
44. World War (abbr.)
46. CB Answerman
47. To vote-in
48. Argon (abbr.)
49. Attempt
50. Man's name (pl.)
51. National League (abbr.)



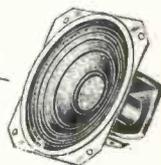
Answers on page 39

## DOWN

1. --- Vadis
2. String (abbr.)
3. Call -----
4. S9 readers
5. Eagerness for action
6. Signal (abbr.)
7. Commercial (abbr.)
8. To use CB gear
9. Parts of circles
10. Fox Charlie Charlie (abbr.)
18. Highest card
20. Portion of Bible (abbr.)
21. CB'ers sanctuary
22. Heathen
23. Division of the calyx
24. Russian news agency
25. Insides of magnets
27. One electrode of a battery
29. User of 11 meter band
30. Publisher of S9 (initials and last name)
32. Thus
33. --- Tac Toe
35. Dark wood
36. Uses a meter
38. Punch (slang)
39. Altitude (abbr.)
40. The (German)
42. Man's name
43. Record (abbr.)
45. Iowa CB dealer

# ADD A SECOND SPEAKER

## TO YOUR MOBILE RIG



by HARVEY HURWITZ, 2W2921

The advantages of a rear seat speaker have long been known on broadcast reception. The additional bass response provided by the large amount of air space in the trunk compartment can appreciably increase the intelligibility of the received signal. The physical addition of this speaker is not particularly difficult. Due to the switching circuitry involved in most transceivers there are certain steps that must be performed if the remote speaker is to operate correctly.

In most CB units in use today, the *ground* side of the speaker voice coil does NOT go directly to ground. It is connected to a relay or switch that is grounded only during the receive cycle. Any attempt to use a rear seat speaker that uses the auto body as a ground will result in a speaker that can not be turned off while transmitting with the resultant feedback howl. The circuit used will enable you to select either front or back speakers or both if desired. Both speakers will be disabled when transmitting.

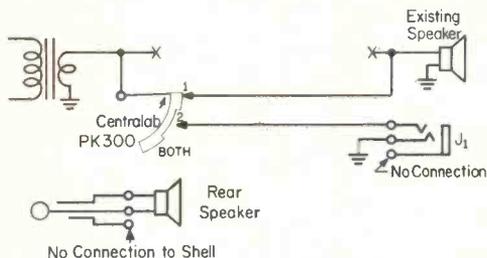
Obtain a Centralab PK 300 or equivalent rear speaker switch, available at most electronic supply houses, and a PM speaker (3.2 ohm voice coil) of a size to fit the cut out on the metal frame under the rear window ledge. (The rear window ledge is usually

made of a stiff cardboard and may be cut with any sharp instrument.) Complete speaker and switch kits are available as one package. Disregard the instructions provided with the kit.

In addition, you will require one three conductor phone jack and plug. (Switchcraft #267 with mating jack.)

Mount the rotary switch at any convenient point on the front panel of your transceiver using the switch plate supplied. Carefully remove the right angle bend on this plate before mounting. Use the switch nuts and washers to hold this plate in place. Mount the three conductor jack on the rear apron of the chassis. This jack is supplied with similar mounting nuts and washers. Locate the lead that connects the output transformer to the existing speaker. Disconnect this lead at the speaker end. Connect and solder the loose end of this lead to the wiper arm terminal on the rotary switch. Connect a new lead from the number one terminal on this switch (solder) to the speaker terminal from which you removed the lead earlier (solder). Connect and solder a new lead from the remaining terminal on the switch to the TIP lug on the three conductor jack (use an ohmmeter if you are in doubt) (solder). Connect and

solder a lead from the *Ring* terminal on the three conductor jack to the second, and as yet untouched, lug on the existing speaker (solder). This completes the modification of the transceiver itself.



The unit will operate normally with the switch in the number "1" or "both" position. The speaker should be dead with the switch in the "2" position.

Before proceeding further it would be wise to prepare and check out the cable and speaker setup. Using a length of two conductor wire (#14 lamp cord is ideal) long enough to reach from the trunk to the dashboard, connect one conductor to the plug tip lug (solder). Connect the other lead to the plug Ring lug (solder). There should be no connection to the plug shell or barrel lug. This lug is normally used as a ground point but in this case will not be used at all. Temporarily connect the new speaker to the other end of this cable. **DO NOT SOLDER.** The new speaker should now work in the number "2" and "both" positions and should be dead in the number "1" position. If you do not obtain this result, check the schematic and wiring carefully.

Mount the speaker in the precut frame under the rear deck using the grill cloth and plate provided with most kits. Snake the cable through behind the rear seat and under the floor mats to the dashboard. Insert the plug into the transceiver and connect the speaker temporarily. Any excess wire should be removed at the speaker end of the cable. With the switch in the "Both" position listen carefully to the incoming signals. If the base response seems poor, reverse the leads at the remote speaker. Once you are satisfied with the bass response, you can then solder the speaker leads in place. Although this is not stereo, you will be pleasantly surprised by the improved audio quality of your rig.



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## METROSTAR



Monocall plus Metrostar, a compact, power-packed 8 channel crystal controlled transmit-receive and a 23 channel tunable receiver, can provide you the ultimate in personal, point-to-point communications. Metrostar transceivers for base or mobile installation are just \$169.95.

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Starfire

I am a citizens band dealer, please send information on dealer franchise program.

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City \_\_\_\_\_

State \_\_\_\_\_



# PART 15 CALLBOOK

To accommodate the hundreds of readers who have asked for a listing of Part 15 CB stations, we begin this month to offer our readers an installment callbook of the assignments of the FREE S9 Part 15 Station Identifiers. This month's listing includes only those stations issued identifiers in the ATLANTIC and CENTRAL zones. Next month we will present the NORTHERN stations.

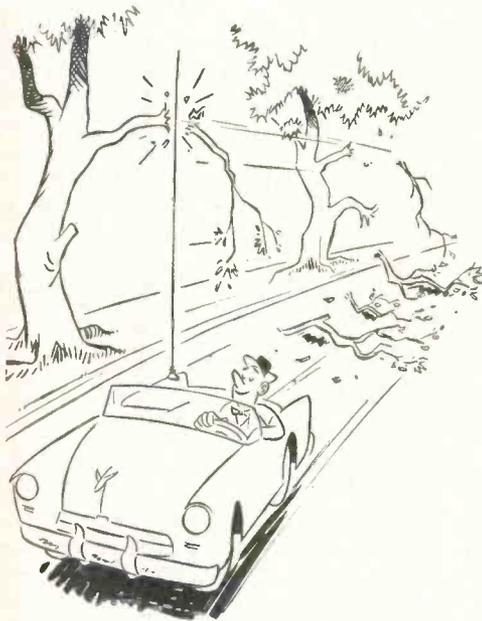
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If you would like to register for Part 15 CB operation, complete the form on page 41 of this issue and send it to S9's offices with a self-addressed stamped (5¢) envelope.

Atlantic		Ch	Central		Ch
11	S. T. Jones, 3075 Vine Circle, Decatur, Ga.		11	H. B. Smith, 467 Park Ave., Birmingham, Mich.	
12-13	J. G. Dobson, 1190 Forrest Blvd., Decatur, Ga.	7	12-14	J. E. Bennett, 9708 S. Dibson Ave., Chicago, Ill.	A & B
14-15	W. A. Keffer, P. O. Box 3, Kinston, N.C.	A & B	15-16	T. A. Starrett, Sr., 321 Marguerite St., Elgin, Ill.	13
16	Lynn Long, Gorgas, Alabama		17	F. Rowe, Box 97, Monroe City, Ind.	16
17	Charlie Long, Gorgas, Alabama		18-19	R. M. Mechan, 1628 Winterhaven Dr., Ashtabula, Ohio	A
18	Joe Davis, Gorgas, Alabama		20-21	W. R. Wootan, 331 Granada Pl., New Whiteland, Ind.	10
19	Douglas Hartley, Gorgas, Alabama		22-25	P. M. Meehan, P. O. Box 2841, Ashtabula, Ohio	A
20	James F. Shivers, Gorgas, Alabama		26	R. C. Blomberg, 3913 N. Kildare, Chicago, Ill.	11
21-23	D. Carter, 116 Billy Harris St., Spray, N.C.	A, C, D	27-30	M. J. M. Deppert, 19956 Darden Rd., South Bend, Indiana	7, 15
24-25	R. L. Sydnor, Mannboro, Amelia County, Va.	11	31-33	W. E. Ferbrache, 824 Homestead Rd., La Grange Park, Ill.	B
26-27	T. A. Reid, 1702 S. Perry St., Gastonia, N.C.	11	34-37	R. Melton, 414 Poplar St. Fortville, Ind.	7
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30-31	Glenn Poore, Box 142, Byrdstown, Tenn.	A	40-45	J. Westbrook, 1033 W. Burligh St., Milwaukee, Wisc.	7
32-34	R. P. Trowbridge, 120 E. 8 St., Waynesboro, Ga.	A	46-53	P. R. Nelson, 6 N. Washington St., Croix Falls, Wisc.	A
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49-51	A. G. Thomas, 414 Plymouth Ave., Winston-Salem, N. C.		64-65	P. W. Barbera, 4938 W. Superior, Chicago, Ill.	14
52-55	W. E. Pitts, 309 N. 17th St., Nashville, Tenn.	A & H	66-67	K. K. Margroff, 2624 Leland Ave., Akron, Ohio	10
56-58	C. H. Cookus, 230 S. Queen St., Martinsburg, W. Va.	7, 11, 12	68	B. Gray, 22832 Byron Rd., Shaker Hights, Ohio	A
59	W. T. Emerson, 325 Spruce St., Lexington, N.C.		69-72	T. J. Vastine, 341 Frederick Ave., Bellwood, Ill.	A
60-61	M. R. McKone, 308 N. Edison St., Arlington, Va.	10	73-74	S. Lefferson, 1010 S. Lincoln, Bloomington, Ind.	
62-63	M. Russell, 201 Perry Rd., Jamestown, N.C.	7	75-76	P. Carroll, 1111 W. 40th, Kansas City II, Mo.	10
64-65	F. J. O'Brien, Jr., 3027 Woodbine Ave., Knoxville, Tenn.		77-78	F. Chaff, Jr. 216 Wayne Ave., Akron, Ohio	
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244-245 J. Filiatreault, Rt. 5, Box 397, Antioch, Ill.	A
246-247 T.E. Peifer, 1044 E. Elmhurst Ave., Decatur, Ill.	C
248-250 A. Phillips, R.R. 4, Box 17, Oak Hill, Ohio	16
251-255 M.S. Moran, 324 Sunnyside Ave., Munster, Ind.	A, C, D
256-257 Bro. H. Henrsey, St. Meinrad Archabbey, St. Meinrad, Ind.	14
258-259 R.L. Van Horn, 633 Fulton St., Sidney, Ohio	2, 11
260 J. Jenny, 8101 Hollybrook ct., Cincinnati, Ohio	5
261-263 S.P. Koehler, 12901 W. Needham Dr., New Berlin, Wisc.	4, 7
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342 M.J. Thibaudeau, 118 1 St., Luxemburg, Wisc.	11
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361-362 D.H. Owen, 4454 Colfax Ave. S. Minneapolis, Minn.	7
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370-371 M. Brinn, 1829 23 St., Rock Island, Ill.	
372-373 B. Hoge, 2685 Meadow Dr., Akron 12, Ohio	B
374-375 K. Bookwalter, 2708 E. Broadway, Logansport, Ind.	9, 14
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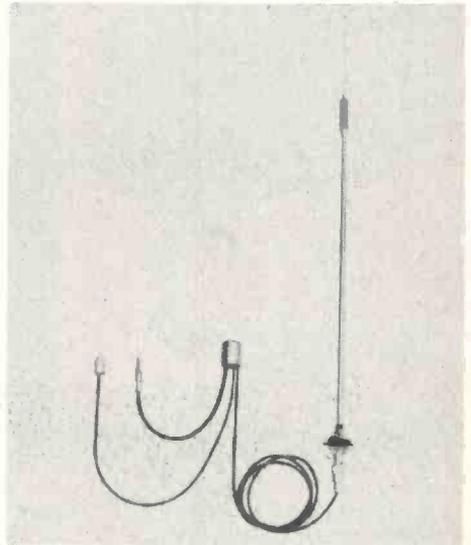
# ON THE COUNTERS

The title "On The Counters" was taken literally by one of the guests at the *International Communications Fair* last December. Someone walked off with a CB-4 "Littlefone" hand held transceiver from the *Hallicrafters* booth. Dealers and CB service centers are requested to be on the lookout for the unit, which bears the serial number 404001-243000, and report to Mr. Bud Drobish (% *Hallicrafters*, Chicago 24, Ill.) if the lost child turns up.

*Vocaline* (Old Saybrook, Conn.) is giving away nifty things called "Vocalogs." These are small CB log forms which contain a CB channel chart, signal strength codes, 10-codes, and sufficient space for more than 20 listings of local CB calls, operators' handles, addresses, etc. Drop a card to Bob May at the company if you would like some.

Remember the contest which *Browning Labs* (100 Union Ave., Laconia, N. H.) was running in S9 to pick a name for their new 23-channel mobile rig? Well the winning name the "Drake," and the winner is Linda C. Miller of Fresno, Calif. By a coincidence, the name "Drake" is the monicker used on the very first unit produced by Browning 25 years ago. The original unit was a broadcast band receiver.

*Antenna Specialists* (12435 Euclid Ave., Cleveland, Ohio) has just released a dilly of antenna called the M-103. This is a dual purpose antenna designed to be used for both CB transceiving and standard auto receivers. It looks pretty much like a regular non-CB auto antenna, with the exception of a small loading coil at the top. Anyway, there are no switches to push to switch back and forth from CB to AM and you can even transmit on CB while simultaneously listening to the



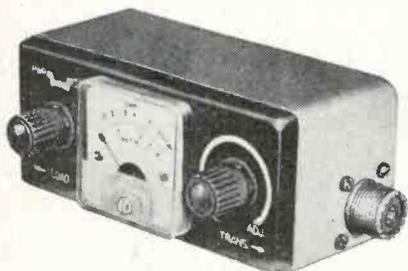
regular radio—and there's no interference. It fits into a standard auto radio cowl mount. It's 46" high, but can telescope down to 31" when not in use.

Here's an S9 advance scoop! Watch for *Stoner Electronics* (Box 7388, Alta Loma, Calif.) to hit the market shortly with some exciting Part 15 hobby gear. Currently under consideration is a low cost transistorized CW transmitter for mast mounting. It will send modulated CW. They've got lots of other Part 15 goodies, but we've been sworn to secrecy. All we can say is, "watch this outfit for big things in Part 15."

A distributor in the mid-west is watching the Part 15 CB hobby trend and may shortly announce a line of gear for such operation.

*Craftsmen Instrument Labs* (60-30 34th Ave., Woodside, L. I., N. Y.) is ready to market a dilly of a transmitter which will

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operate on the 6 and 10 meter ham bands in addition to the 11 meter band. The unit runs both 'phone and CW and is equipped with a variable power control which can place the output anywhere between 5 mw and 50 watts —this means it is suitable for *both* Part 15 and Part 19 uses, *plus* ham use with the flick of a switch. Price has not been announced yet, but the manufacturer told us that it be a "low cost" unit.

Hallicrafters (Chicago 24, Ill.) has made the scene with a new unit too, their model



CB-5 transistORIZED CB rig. Tiny in size, the rig features 6 channels, a full 5 watt input, 1 microvolt sensitivity for 10 db S/N ratio, 6 kc/s selectivity, 18 transistors, 9 diodes, 3 instant heating tubes, squelch, optional tone call squelch plug in rear, plus the famous sleek Hallicrafters "look." Now here's another "plus," you can operate this unit in your mobile unit, in your home (with optional AC power supply), or even use it as a portable by operating it from a special "Portable Pak" holder which contains nickel cadmium batteries. Price category for the CB-5 is \$200.

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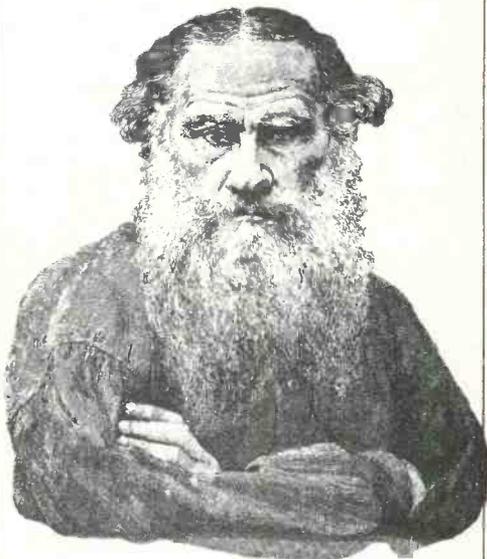
Here's an official looking FCC warning sticker of a somewhat novel shape. This one looks like a police shield and is red with white lettering. Printed on a rugged plastic material, it has a stickum back. They're available 4 for \$2, or 12 for \$5 from KEJ0990, Box 383, Arcadia, Calif.

*Keltner Electronics* (1045 W. Hampden, Englewood, Colo.) offers a jazzy new unit



known as the "KELTNER 500," a powerhouse of 20 transistors and 13 diodes which go together to make up an ultra-miniature 5-watt 5-channel CB transceiver. This is complete with squelch, PTT, electronic switching, 3 IF stages in a superhet receiver, 2

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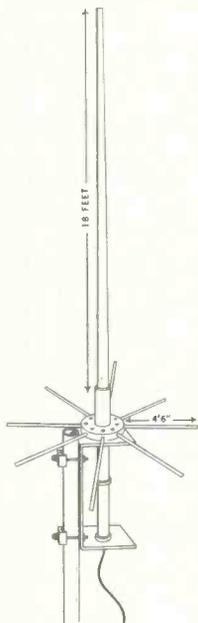
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300 West 43rd Street New York 36, N. Y.

stage preamp built into the mike, and all the other trimmings. So it only weighs 4½ lbs. It sells in the price class of \$250.

Here's a new antenna which has created a lot of talk in the New York area, the *Astro Star-Burst*, produced by the *Astro Antenna Corporation of America*, and distributed by



*Semco Electronic Measurements Co.* (2 Rock Spring Road, West Orange, N. J.) It's 18 feet high and has 8 radials 4½ feet each—and the manufacturer claims up to 7 db gain, very low angle of radiation, unity SWR with proper installation, water tight construction, constant impedance (rain or shine). It lists for \$37. By the way, several fellows are using these in the New York area and have reported excellent results.

*Holstrom Associates* (P.O. Box 8640, Sacramento 22, Calif.) has a new DP-2 Cou-



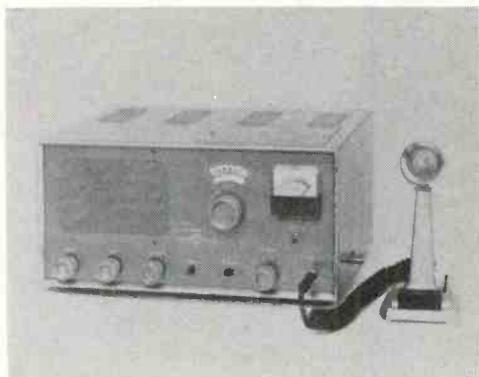
pler-Duplexer. For a \$5 investment you can get this simple-to-build kit and run your broadcast receiver off your regular CB whip. It comes complete with all cables and connectors.

If you would like further information on any of the items mentioned in this monthly S9 feature, fill in the *Reader Service Card* between pages 16 and 17 of this issue and return to our office.

Before we dash off this month, we wanted to advise you that there's a hilarious story behind why *e.c.i. electronics communications, inc.* never brought out a great squelch unit called the "Hush-it." Ask Pete or Irwin about it sometime.

## S9 Lab Reports

### THE TRAM TR-27B



There are few, if any, Citizens Banders who have not had the experience of owning a unit with an excellent receiver and fair transmitter. Conversely, the combination is often one of an excellent transmitter and fair receiver. Rarely do you come across a unit that is excellent in both respects. The TRAM Electronics (P.O. Box 187, Winnisquam, N. H.) model TR-27B would appear to fall in this last and most desirable category. The clean looking silver and blue cabinet conceals a high performance transmitter and an excellent dual conversion receiver.

There is a choice of eight switch selected Transmit/Receive channels with manual tun-

ing available at any point. An external crystal socket is available for quick change of transmit crystals on one channel. This unit also features such operating conveniences as an S-meter, spotting switch, squelch, full variable noise limiter, accessory speaker jack and built-in audio clipping and compression. A Turner 254 desk type push to talk microphone supplied with the unit completes the picture of this commercial grade piece of communications gear.

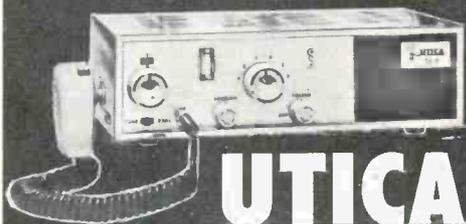
The unit selected for test was taken at random from the production line and appears quite representative in both quality and performance. As with all such tests the first step is the reading of the instruction manual and schematic provided. The first item that caught our eye is the extensive use of tuned circuits in the receiver. A total of fifteen tuned circuits incorporating high-Q inductors is one of the reasons for this unit's excellent selectivity. The transmitter features the use of fundamental 1/2-frequency crystals and the well known 5763 tube as a final amplifier. A pi-output network output stage is provided for efficient matching to any load between 30-100 ohms. Switching is accomplished by use of a relay controlled by the push-to-talk microphone.

Physically, the unit appears clean and uncluttered. A large removable panel is provided for easy changing of transmit or receive crystals. The cabinet, panel and rear cover show good mechanical rigidity and good RF shielding. The chassis itself is roomy and well laid out. Components are rugged and appear to be operating well below their maximum capability. This should lead to greatly extended service life of this unit. Lead dress, sub-chassis parts placement and mechanical mounting of terminal strips, and components shows evidence of careful thought and engineering know-how. The power supply utilizes a full wave bridge rectifier configuration with 600 Volt PIV 750 ma diodes providing 300 volts of B-plus.

The receiver is best examined in stages. The first RF stage is a low noise dual triode feeding the first mixer. The first IF oscillator is crystal controlled at 31.5 MC to reduce image and spurious responses from other radio services. The resultant 4.5 MC IF is then fed through two double tuned transformers to the second mixer. The second IF oscillator is either crystal or manually con-

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trolled to produce the resultant 455 KC output. This output is then fed through a total of three tuned circuits and two IF amplifiers to the detector stage. The variable noise limiter and squelch circuit complete the trip to the audio amplifier and speaker. The speaker itself is a large oval type leading to excellent fidelity and quality. The transmitter utilizes a pentode oscillator/buffer driving a high efficiency final amplifier. Output from the final is taken by way of an air wound large diameter pi-network with an associated TVI trap. The modulator employs keyed compression to provide a maximum of effective talk power.

Bench and on the air tests performed produced substantially the same results as those provided in the well written manual. Power output measured a full 3.5 watts with a measured 4.95 watts input. Audio output available measured 4 watts. Distant stations reported excellent audio quality and ability to punch through local interference and atmospheric noise. The receiver showed the following characteristics. Selectivity was found to be excellent with a band pass of 5 KC. A local station with an S-9+ signal on channel 9 had no effect on an S-3 signal on channel 8. Sensitivity was found to be on the order of .1 microvolt for 6 db of quieting. The noise limiter action was smooth and squelch action positive with even the weakest signals producing adequate triggering action. S-meter accuracy was excellent with a measured 50 microvolt signal applied at the antenna jack producing a reading of S-9. Dial tuning on manual was accurate and the gear mechanism used was free of backlash. Receiver drift was found to be under 300 cycles per second from a cold start to the thirty minute point with virtually unmeasurable drift from that point on. The spotting switch performs the dual function of establishing your own frequency and also performing rough checks on the frequency of incoming signals. The instruction manual provides full information as to the use of this switch in calibrating the manual tuning dial should this ever prove necessary.

In summation, this unit appears to be a very high quality transceiver that should easily provide many years of trouble-free service. It is not only easy to operate, it provides full flexibility and features that will satisfy the most exacting and demanding

user. The use of components that are rugged and capable of far higher output levels will enhance the unit's life and reduce the amount of service required. In all respects this unit appears well made, well inspected and a good investment for the serious user of Citizens Band.

Price class: \$265.

## THE HEATH GWW-11A



The most recent addition to the *Heath* line of Citizen's Band units is the new GWW-11A transceiver. This unit incorporates a large number of changes both in circuitry and ease of operation. Not the least

of these is the large illuminated tuning meter located on the right side of the panel. This meter, while not calibrated in S, units serves the dual function of a signal strength and a transmitter output meter. Switching is automatic and performed by the push-to-talk circuitry. The internal changes are considerable.

The transmitter is now a full three stage unit consisting of an overtone oscillator, driver and high-efficiency final amplifier. The final amplifier in this case being the interesting 5763 tube, long a work horse of the ham bands. Measured power output on the unit under test was in excess of three watts. The modulator consist of a 6AQ5 driven by a 6AN8 mike preamplifier and audio amplifier. Modulation percentage is held down to just below 100% with some clipping of high frequency tones evident. The resultant clipped audio gives excellent *talk power* to the rig.

There are three transmit positions selected by a slide switch mounted on the right side of the cabinet. These operate independently of the receiving mode selected. The transmitter appears to be right up in the class of units selling for two or three

### CROSSWORD SOLUTION

from page 27

Q	S	L		C	E	S	C	O		R	F
U	T	E		B	L	I	M	P		A	C
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The receiver is a single conversion super-het with an IF frequency of 455 KC. This low frequency IF results in fair selectivity. Measurements made indicated selectivity on the order of 4 KC either side of center. This came remarkably close to the manufacturers claims of 3.75 KC either side of center. Sensitivity also met the published specifications with a 1 microvolt signal producing ten db signal to noise ratio. For the uninitiated this means that a signal of 1 microvolt strength will produce a ten decibel rise in the AVC voltage when compared to the existing noise level. The noise level for this purpose being set at an optical zero line. An S9 signal for purposes of comparison would represent a strength of 50 microvolts at the antenna terminals. One S unit represents 6 decibels. Therefore this one microvolt signal will produce a reading of one and one half S units above the noise. Stability on the unit under test proved excellent. Total measured drift was less than 1 KC from a cold start to a point five hours later. The greatest drift being measured in the first three minutes of operation. Tuning calibration proved quite accurate with pre-selection of channels quite easy. The dial is calibrated from channel 1 through channel 23, with vernier drive. The unit also features a separate crystal receiver channel with its own oscillator tube. This system leads to a high degree of stability and higher gain due to the higher level of oscillator signal injection. This is quite normal in units having both fixed and variable tuning. Squelch operation was both positive and smooth. The noise limiter circuit worked quite well with effective elimination of ignition type noise.

The microphone supplied with the unit is of the ceramic push to talk type with a coil-cord attached. The unit is supplied in a combination of beige, white and brown that goes well with almost any type of room. Power supplies are available for 110 volt, 6 volt or 12 volt operation. One supply being used for AC and another for either 6 or 12 volt DC. The DC supply may be changed quite easily from 6 volt to 12 volt or vice versa.

In summation, this unit appears to be a well engineered product and should give the user effective, efficient service. Price category \$70.00 in kit form.

**S9**

# PART 15 KORNER

by **DEAN DETTON, NORTHERN 17**

7/8 S9 MAGAZINE  
300 WEST 43 ST.  
NEW YORK 36, N. Y.

Interest in the Part 15 program originated by S9 exceeded all of our highest hopes. Mail has been pouring into my office with assorted registration applications for S9's free Part 15 identifiers and numerous comments from Part 15 users.

Hart Smith, CENTRAL 11, one of the first Part 15 authorities suggests that we keep all Part 15 transmissions horizontally polarized. By doing this we will greatly reduce any chances of interference between Part 15 stations and Class C and D CB stations, since Class C and D stations are, for the most part, vertically polarized. The cross polarization will cut the interference by 20 db. Horizontal polarization will also greatly reduce ignition

PART 15 CHANNELS	
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Channel C	27.095 mc/s
Channel D	27.145 mc/s
Channel E	27.195 mc/s
Channel F	27.235 mc/s
Channel G	27.245 mc/s
Channel H	27.265 mc/s

interference from passing vehicle as ignition interference is polarized vertically. Considering these very valid facts, we agree with Hart and suggest that Part 15 users use horizontal polarization for their base station operations whenever possible.

Mark Langenfeld, CENTRAL 186, of Racine, Wis., comments that prior to S9's

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Part 15 Department  
S9 Magazine  
300 West 43rd Street  
New York 36, N. Y.

- Please do not request special identifying words for your station as all identifiers are issued in alphabetical rotation for ease of recording on our records.

### APPLICATION FOR PART 15 IDENTIFIER

Name: \_\_\_\_\_ CB Call: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ Zone: \_\_\_\_\_ State: \_\_\_\_\_

Part 15 Channel: \_\_\_\_\_ Type of unit: \_\_\_\_\_

No. of units: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Part 15 coverage, most license-free units were simply thought of as units of some licensed CB unit. He feels that Part 15 is tops for experimenting and for hobby use. He'd like to hear from others (locally and distant) who are truly interested in Part 15 "as Part 15." Mark (who isn't a Part 19 5-watt CB'er, but who is a ham, WN9ETW) hangs his antenna at 722 Orchard Street, Racine, Wis.

Duff M. Neely, Jr., NORTHERN 236, of Lake City, Pa., uses his Part 15 units in his burglar alarm business for checking out "bad" circuits. Prior to receiving his Part 15 identifiers from S9 he called his units "Walkie Talkie 1" and "2" which wasn't too good when there were 3 or 4 pairs of units all doing different things on the same channel at the same time.

A number of Part 15'ers have written to ask if we would publish the International Morse Code (CW) so that they could get steam up on Channel B. We're reproducing the CW alphabet here for the benefit of those who are so interested.

By the way, did you know that Joe Ostrowski, NORTHERN 141, of Rochester, N. Y. is using a homebrew VFO for Part 15 use?

International Morse Code					
A	•—	N	—•	1	•—•—•—
B	—•••	O	—•—•	2	•—•—•—
C	—•—•	P	•—••	3	••—•—•
D	—••	Q	—•—••	4	••••—•
E	•	R	•—••	5	•••••
F	••••	S	•••	6	•—••••
G	—•••	T	—•	7	•—••••
H	••••	U	••—•	8	—•—•••
I	••	V	••••	9	—•—•—•
J	•—•—•	W	—•—•	0	—•—•—•
K	—•—•	X	•—••		
L	•—••	Y	—•—••		
M	—•—	Z	—••••		
Period	•••••	Error	••••••		
Comma	••—•—•	End of Transmission (SK)	•••••		
Question	••—•—••	End of Message (AR)	••—•—•		
Wait (AS)	•••••	Fraction Bar (NA)	•••••		
Break (BT)	—••••				

The International Morse code alphabet, together with numbers and most needed punctuation marks. Keep this at your operating position for convenience.

He's using both kinds of CW (modulated and unmodulated) and also A3 ('phone). Look for him on all of the Part 15 channels.

Keep those letters coming with news of your Part 15 activities.

**S9**

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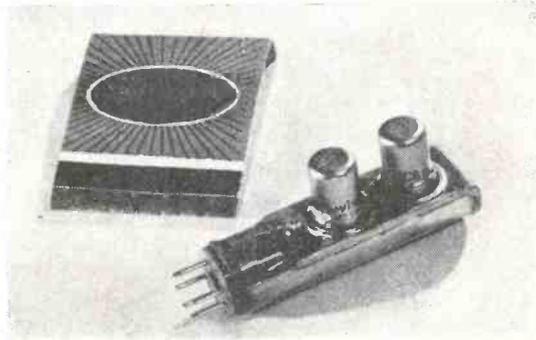
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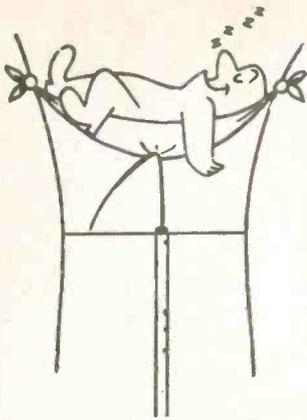
SPOTTER gives AUDIO and VISUAL signal when receiver is tuned to transmitter frequency. Ideal for mobile rigs, where the meter might not be easily viewed. 19 tube performance. Variable squelch. Built-in positive action "S" meter. 1 XTAL front panel mtg. Dual series gated noise limiter. 5 Watts input with 100% modulation. Output: 3 Watts or more. Illuminated dial. With channel 9 crystal. Size: 4 1/2" H x 12 1/2" W x 7" D. Shpg. Wt. 14 lbs.

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# ANTENNAS

by ED NOLL, KCC2618  
BOX 23  
CHALFONT, PA.

## CB AND THE DIRECTIONAL ANTENNA

A properly designed directional antenna does have gain. However, an antenna is not an amplifier. It is said to have gain because the r-f energy supplied to it from the transmitter is sent out in a directional manner. If your CB transmitter supplies 3 watts to a simple vertical antenna (such as a quarter-wavelength whip), signal energy is sent out in an essentially uniform manner in all directions. The basic function of a directional antenna is to concentrate the 3 watts of r-f energy into a beam. In so doing there is less energy sent out in other than the preferred direction. Since more of the applied energy is sent out in some particular direction as compared to the energy that would be sent in that direction from a simple antenna, the directional antenna is said to have gain.

If more energy is sent out in a given direction, it means that any receiving antenna in this path will pick up a stronger signal. Furthermore if the receiving antenna is also directional, a higher percentage of the signal that it intercepts will be delivered to the input of the receiver.

It is apparent that by using a directional transmitting antenna more signal is sent out along its directional path. An additional improvement can be obtained if the receiving antenna is also directional because it makes more efficient use of the incoming signal. This technique can be used for those CB operations that require communications between base stations. In general the use of directional antennas for vehicular operation is impractical. However if the vehicular activities are localized in a given direction with relation to a base station, a directional base station antenna can be very helpful.

As a matter of fact, the gain characteristic of a directional antenna, although beneficial, may not be the major advantage of a directional antenna for CB operation. A directional antenna is helpful in reducing interference. The directional antenna is less sensitive to signals arriving from angles other than the favored direction. Therefore the receiver on the average is more quiet and is unquelled less often by signals that do not arrive via the favored direction. Certainly, a directional antenna is not completely insensitive to other angles of arrival. However, on an average basis, it will permit quieter receiver operation.

Since the directional antenna concentrates the r-f energy in one direction, there is less energy radiated in other directions. Consequently there will be less interference caused to stations that are operating off of the path of the directional antenna. In fact, this technique is used widely in radio broadcasting to minimize interference between broadcast stations operating on the same frequency.

In summary, the advantages of the directional CB antenna are:

1. A stronger signal is sent out in a given direction. Thus you can more readily dominate the interference that may exist over this path. In some cases, the reliable range of transmission is extended considerably.
2. There is less interference from stations operating off of the directional path because the antenna is less sensitive to signals arriving from off-of-the-beam directions.
3. By concentrating your energy in the favored path you send out less signal at other angles. Therefore, you are less likely to interfere with stations that are operating off of the

beam direction.

The directional antenna has some disadvantages:

1. It is larger and more elaborate. It costs more.
2. In general, the transmitter must be tuned more carefully to the antenna. The antenna performs best in one direction and it must be oriented carefully that direction. Hence the installation must be more painstaking.
3. If the signal is to be sent out in more than one direction, the antenna must be rotatable. This can be accomplished manually or by means of a husky TV antenna rotator or a rotator of the type used by radio amateurs.

### FRONT-TO-BACK RATIO

Most of the directional antenna types applicable to CB operations have some version of a figure-eight pattern as shown in Fig. 1. Simple vertical antennas have a circular or

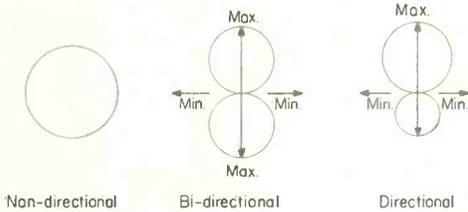


Fig. 1 Basic Horizontal Radiation Patterns

omnidirectional horizontal radiation pattern. A horizontal dipole has a figure-eight pattern, the two figure-eight lobes being identical. The simple horizontal dipole is set to have a bi-directional pattern because maximum signal is sent out in two directions. Less energy is sent out at the side angles.

A directional antenna extends one of the figure-eight lobes and decreases the area of the other figure-eight lobe. In most practical antennas, the minor lobe is never completely eliminated. Sometimes there are additional minor lobes. Thus the off-the-beam radiation from a directional antenna cannot be reduced completely with any antenna design that is practical for CB operation.

The ratio of the signal sent out in the desired direction as compared to the signal sent out in the back position is called the front-to-back ratio of the antenna. For ex-

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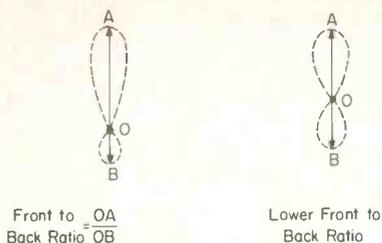


Fig. 2 Front-To-Back Ratio

ample the front-to-back ratio of the pattern shown in Fig. 2A is higher than that of example B. When the front-to-back ratio is high it indicates that substantially more of the energy applied to the antenna is sent out in the desired direction as compared to that radiated in the back direction.

### THE PARASITIC REFLECTOR

A simple form of directional antenna is the two-element style shown in Fig. 3. At the rear of the dipole or driven element there is a second element that reflects forward the energy coming off the dipole. It is called a "parasitic reflector" because there is no connection from the reflector to the transmission line system. When a reflector is used the energy is directed forward as shown by the arrow in the pattern of Fig. 3.

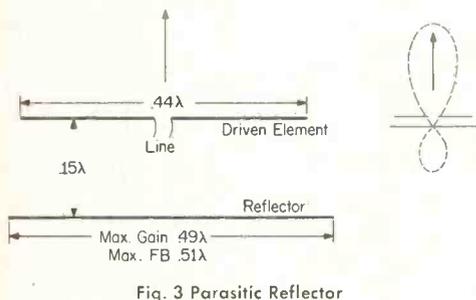


Fig. 3 Parasitic Reflector

The reflector is longer than the driven element. The actual dimension in terms of wavelength are shown in Fig. 3. When maximum front-to-back ratio is desired the reflector is made somewhat longer than it would be if the very maximum gain is desired.

A wavelength for any CB frequency can be calculated by dividing the channel frequency (frequency chart) into this constant:

$$\lambda \text{ IN INCHES} = \frac{11808}{\text{FREQ. IN MCS}}$$

For example, a full wavelength in inches for channel 3 would be:

$$\lambda = \frac{11808}{26.985} = 437 \text{ inches}$$

The length of the dipole or driven element for channel 3 would be:

$$\text{DIPOLE} = .44 \lambda = .44 \times 430 = 192 \text{ inches}$$

Reflector dimensions for maximum gain and maximum front-to-back ratio would be:

$$\text{REFLECTOR} = .49 \times 430 = 214 \text{ inches}$$

$$\text{REFLECTOR} = .51 \times 430 = 222 \text{ inches}$$

There can be various spacings between the driven element and the reflector according to the characteristics desired. However for practical CB operations a spacing of approximately  $0.15 \lambda$  can be used. Thus the separation between the dipole and reflector is:

$$\text{SEPARATION} = .15 \lambda = 65.5 \text{ inches}$$

A similar calculation can be made for any one of the CB channels. It is quite possible, however, to build up a two-element antenna that will work very well over the entire citizens band. There will be no great difference in performance on any one channel as compared with the results obtained with an antenna cut for a specific channel.

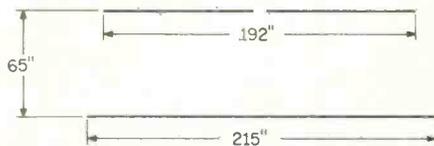


Fig. 4 All-Channel CB Dipole and Reflector

The dimensions for a compromise antenna of this type is given in Fig. 4. The driven element is dimensioned for channel 9 operation while the reflector must be cut an adequate length to insure its operation as a reflector on channel 1. The maximum gain dimension is used for the reflector. Thus it

Continued on page 61

# CB ANSWERMAN

by LEN BUCKWALTER, KBA4480



**Editor's Note:** Readers are invited to ask the CB ANSWERMAN any questions which they have regarding the CB service. Address your questions to Len Buckwalter, KBA4480, Wilridge Road, Georgetown, Conn.

## LIQUID TVI

Why do I have more of a problem with TVI on rainy days than at other times?

J. F., Kew Gardens, N. Y.

A couple of possibilities present themselves, all due to water on the antenna system of your rig or that of the TV set. Mixing with dirt or other agents, water can form a conducting pathway. One area of difficulty is at the terminals of the TV antenna. Over a course of time, corrosion and other deposits build up a signal-shorting bridge between twinlead terminals. It's a rule that interference to television goes up as the TV signal to the set weakens. In dry weather an ordinary accumulation of dirt may not cause TVI. However, rain could introduce just enough moisture between the terminals to temporarily drop the TV signal into the interference region. So the answer here is a cleaning job between the twinlead terminals on the TV antenna.

An even stronger possibility relates to the run of twinlead from antenna to TV set. When rain douses the length of line, the brown plastic insulation of the twinlead absorbs water and significantly loses its ability to insulate the copper wires. In effect, the dielectric constant of the line is disturbed. Losses shoot up and the set is far more susceptible to TVI. The solution in this case is replacing the conventional twinlead with stuff of higher quality. There are types available which are more impervious to moisture.

There's also the possibility that your CB antenna system is contributing to TVI.

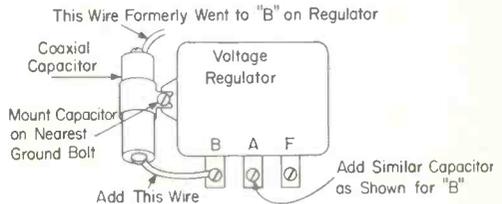
Water across the insulator that separates the "hot" and ground portions of the antenna could increase the SWR and produce radiation from the feedline. Wipe the insulator occasionally to keep dirt and water from aggravating the problem.

## REGULATOR HASH

After installing special spark plugs and a generator capacitor on my car, I still get noise in the receiver. It seems to have little to do with the speed of the car or engine, but comes and goes.

F. G., Kansas City, Mo.

Sounds like a case of points sparking inside the voltage regulator. You can do much to reduce it by adding two .1 mfd capacitors of the coaxial type. As shown in the sketch,



they mount as close to the regulator as possible with short leads throughout. Note that connections go to the following terminals on the regulator: B (or battery) and A (armature). Be especially careful to avoid the F, or Field terminal, since a capacitor at this point interferes with the regulator's normal operation.

Make clean connections, scraping away rust and grease that may prevent good electrical contact.

## FUSE

I picked up a second-hand rig that

Continued on page 60

# CANADIAN

## G. R. S. NOTES

by **M. PAUL ARNOVITZ, XM52127**

1117 ST. CATHERINE ST.  
MONTREAL 2, P.Q., CANADA

Just so you wouldn't think that the only CB activity in Canada is in Quebec, we've got some interesting items this month from British Columbia in the far west and Newfoundland on the east coast.

Out in British Columbia they've got the "RADIO AID 16 CLUB," ably run by Bill Morrison, XM13027, of Duncan, B. C. For those of you who aren't familiar with the terrain of B.C., I might point out that it's pretty rugged and the population is sparsely located—therefore there are a great number of uses for CB.

First organized as the COWICHTAN VALLEY RADIO-AID ORGANIZATION, the club is one of the oldest in Canada. The basic purpose of the club is to provide a reliable communications link for persons and organizations in need of such services, although they assume no obligations to provide such services. No dues are solicited and the club has no assets.

Worthy as the organization is, it is reasonably exclusive in its selection of members. For instance, you must be equipped for Channel 16 operation, you must be a capable operator and know the 10-code, and to insure the capability of the operator, both written and on-the-air exams are given.

So far, the club has been very well accepted by the public, the R.C.M.P., Civil Defense and Air-Sea Rescue. Equipment used for these operations is mounted in cars, trucks, jeeps, motorcycles and even in aircraft belonging to members. Despite this big diversification, the volunteers who man the club can swing into action with only five minutes notice. By the way, being volunteers, they do not accept any type of payment for their services.

Members of the club have assembled their own callbook which is constantly being expanded by new calls monitored on the air.

It's interesting that the club has discovered that various areas of B.C. have their own favorite channels. Some of the most popular are: Vancouver (XM1-1) on Channel 11, Victoria (XM1-3) Channel 11, and Duncan (XM1-3) is on Channel 16.

Out Newfoundland way, we have the NEWFOUNDLAND CITIZENS BAND CLUB, whose Secretary is W. Rex Stirling, XM66053, of St. John's. The president is Fred Holloway. Veep is Cliff Stephens of Electronic Centre Ltd.

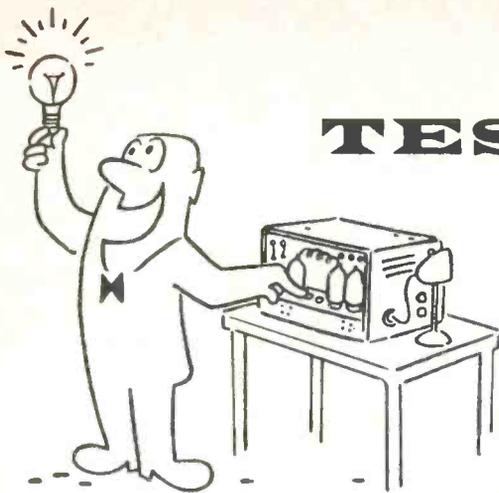
A recent addition to the Canadian GRS scene, the club was formed last August 13th with 9 charter members. By the second meeting, a week later, there were 40 members—that's what we call "rapid growth." Members aren't localized in St. John's, and a number of new members are located throughout the province. Meetings are once a month and the initiation fee is \$1, with an additional \$1 per month going towards dues. The money collected is placed in a treasury for the benefit of the club.

Rex Stirling told your S9 reporter that the club had plans to accept as members any persons who have an interest in furthering the use of 11 meters. Once fully organized, the club will be able to implement its equipment in a manner so as to be effective and dependable in the event of any national emergencies, as well as being useful to local governments in the area should the need ever arise.

The club meets on the second Tuesday of each month, but as yet has not decided on a regular gathering place.

A novel aspect of the group is the beautiful trophy donated to the club by member John Haliburton of Canadian Assemblies Ltd. A two man committee was appointed to work

*Continued on page 60*



# TEST GEAR

by **HERB FRIEDMAN, 2W6045**  
 2271 KNAPP STREET  
 BROOKLYN 29, N. Y.

Are you tired of reports (usually incorrect) that your modulation is low, distorted, etc. Or maybe you are tired of interminable arguments when you try to assist a brother CB'er. Well, in the *Heath Monitorscope* you will find the answer to getting the most out of your rig, and *keeping that way*; and you will find that you will become the local expert on performance.

The Monitorscope is a device which tells you *everything* about modulation. It will tell you—accurately—what the percentage is, if the audio is clean or distorted, if the modulator has the *capability* to modulate to 100%. It is indispensable for speech clipper/compressor or preamplifier adjustments. In addition the Monitorscope can “read” the *received* signal's modulation, and it can be used a medium gain general purpose oscilloscope. Because the Monitorscope was originally designed for amateur use, a single-sideband two tone test oscillator is provided. This circuit gives you a 1kc. test signal output which can be used for CB tests.

The Monitorscope has several inputs. For modulation measurements the scope is connected in series with the antenna feedline. Two SO-239 jacks are provided; you connect one to the transmitter and the other to the antenna—that's all—you are all set to “read” your modulation. With this connection the scope will display what is known as the envelope or modulating waveform; you will see an actual picture of what your modulation looks like. If you can install just one connection in your transmitter you will obtain the familiar trapezoid pattern.

The envelope pattern shows the exact modulating waveform. If you feed the trans-



mitter with sine-wave signal (tone) you will get a sine-wave display. If the pattern is clean your modulating system is distortion free. If distortion is present the pattern will be distorted.

The trapezoid pattern is the easiest means of *accurately* indicating percent modulation. Unfortunately, it indicates primarily percent modulation, not distortion. Since the Monitorscope provides instantaneous switching between the envelope and trapezoid connection you can quickly, and easily, determine the condition of your modulation.

If you do not have an AF signal generator (for accurate sine-wave envelope measurements) you can use the scope's internal 1kc. signal which is available at a standard phono jack.

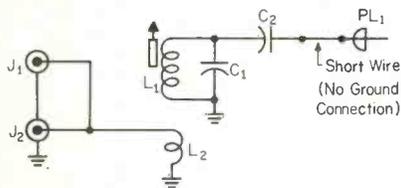
Since the scope also has a medium gain vertical amplifier it can be used, just as a standard oscilloscope, to track down distortion or noise which develops in the preamplifiers. There is sufficient gain to permit servicing so far back as the microphone preamplifier.

A special feature of the Monitorscope is that it can be connected to the plate of the IF amplifier, thereby providing an envelope

ay of the received signal. This connection is normal to the Monitorscope. Once it is made the scope can instantaneously switch between the received signal display, your trapezoid, or your envelope.

If this all sounds too good you are right—there are a few limitations. First off, the Monitorscope can only be used to read the other station's modulations with receivers having an IF frequency of 455kc. or lower. While many CB rigs will fall into this category many won't; but this limitation is not serious since "the other fellow's modulation" is an extra.

The big limitation is that CB rigs produce a very small pattern on the CRT. To experienced operators this will be no problem. However, if you have never worked with a small pattern it might be annoying. This limitation can be easily avoided with the circuit shown in Fig. 1.



### PARTS LIST

- L1, 2 see text
- C1 33 uufd molded mica
- C2 30 uufd ceramic disc
- J1, 2 coaxial jack
- PL1 PL-259

Fig. 1. Outboard RF bridging transformer.

Fig. 1 is an RF bridging transformer which can be added as an outboard unit to the Monitorscope; it is built in a small minibox. J1 and J2 are coaxial connectors which match your existing equipment. J3 is a PL-259 which mates with the scope's RF input jack. L1 consists of 8 turns of #24 enameled wire closewound on a CTC PLS5-24CL/B coil form. L2 consists of two turns of #20 plastic insulated hook-up wire closewound on L1. With the transmitter connected to J1, the antenna to J2, and the Monitorscope to J3, adjust the coil slug for *maximum* CRT pattern—that's all there is to it. The circuit has no adverse effect on SWR and will give nearly a full screen display.

If you don't care to take the cover off your CB rig just leave the connections as given and

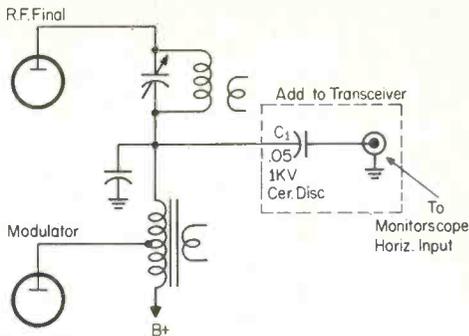


Fig. 2. Components in dotted box must be added to obtain trapezoid pattern.

you will get what is called a modulating waveform pattern. As you modulate a display of the actual modulation appears on the CRT. If you hit 100% modulation tiny bright dots appear on the baseline. If you exceed 100% the dots become lines, if you under-modulate you get neither dots nor lines. The same applies when you are reading the other station's modulation.

If you want a standard trapezoid pattern you only have to add the simple connection shown in Fig. 2. Using shielded lead, bring out the transceiver's modulating signal through a .05 mfd. capacitor. Notice that connection is made at the point where the modulated B+ feeds the plate and screen of the final RF amplifier. To permit easy servicing or quick disconnect it is best to install an AF output jack on the transceiver's rear apron. Contrary to popular belief, you cannot accurately judge percentage modulation by ear, nor can you measure it accurately with the so-called budget modulation meters; only a peak indicating device of the scope type can do the job accurately; and if you use a compressor/limiter or preamplifier you can have a distortion free talk-power hitherto unobtainable.

The Monitorscope comes in kit form. It is not a difficult kit to build, but then again, it is not a "one tube breeze"—it will take about five evenings work.

We leave you with one thought. If you have gone through endless microphone tests and received endless opinions, you are in for a rude awakening with the Monitorscope. The Monitorscope is not biased—it is not influenced by personal opinion or technical expertise—it will tell you the exact truth about your signal.

**S9**

# CB CASEBOOK

by **LEE AURICK, 2W2870**  
MT. PLEASANT RD. RFD 1  
COLUMBIA, PA.



Shades of John Silver—and visions out of the romantic past of every sea saga we've ever read come to mind with the exciting story that *Marine Specialists*, Flint, Michigan are enacting every day on the Great Lakes.

Your S9 reporter asked Mr. Calvin De-Viney, the president, to tell you about the remarkable uses he has found for CB radio in the unusual sea-going business of underwater exploration.

"We have approximately ten units in use. These include the office, cars, an airplane, and several boats. We enjoy about 40 miles range over water, and about twenty miles over land. In fact, I believe you could consider this as a minimum distance, as we can usually work further than this under normal conditions.

"We are primarily engaged in diving and underwater salvage, and in the course of this work we do considerable underwater photography as well. Our work usually involves search and salvage of ships that once sailed the Great Lakes, and were lost. Many of them a hundred years or more ago. There is little information to go on, and what records were kept in those days are either lost or have

been destroyed also. We are constantly looking for historical items that may have become lost or been hidden for any number of reasons. Some of these are cannon or guns that have been thrown overboard or buried on land. Our work customarily deals with the underwater end, but we check out all stories of this type, particularly if there is treasure involved, no matter where they are. Metal detectors and other electronic devices are our stock-in-trade, and just as important to us as all the other modern equipment including planes, boats, a large inventory of diving gear, and our most recent addition, our CB radios.

"When weather and water conditions are right, it's a relatively easy job to sight a wreck from the air. Of course, you have to know what you're looking for. The inexperienced observer could pass right over a large wreck, and never think twice about it. We used to have the problem of directing a boat to the wreck scene. From water level some wrecks are absolutely invisible. Now we are able to position a boat directly over the site by means of radio, and a diver checks it out on the spot. If time doesn't permit immediate inspection, we may hang a buoy at the scene for future examination.

"One of the problems that plagues a business like ours is that often a piece of equipment, or even personnel, will be on one boat, when it is discovered that the gear or the individual is required on another boat. Radio promptly arranges a rendezvous, and the exchange is made, frequently between boats that were well beyond sight.

"By means of CB radio I am constantly in touch with my office. This is important in a

business where minutes are often as precious as the artifacts we recover. We operate on CB channels 4, 9, 11, 13, and 21, mostly 13.

"My job requires constant travel and contact with both clients and prospective clients. I frequently find myself in a strange town, and it is mighty comforting to be able to receive helpful and friendly information in finding a certain street or address. I have found that most CB's are very friendly and will go out of their way to help a stranger in this manner. I find many other divers use CB radio, and in my travels I am able to make contact with them and discuss things of mutual interest in the underwater world. In this connection, I'd be interested in hearing from other S9 readers on any information they may have on the subject of lost historical items, sunken ships, and of course, treasure.

"We operate from many spots on the coast of the Great Lakes where there are few or no navigational aids. Many spots do not even have lights. By radio we can arrange to have a vehicle at the exact spot on the shore we intend to land. At night, this is a great advantage. In fog, it is a necessity.

"On several occasions our boats have been caught in very bad weather. Some of our crews have been forced to spend a week at a time on a small island. At a time like this we wouldn't trade our CB rigs for all the treasure in the world. It means that we can talk to our families and assure them of our safety, and, should we be in serious difficulty, even notify the Coast Guard of our position. CB radio plays a very great role for us in heavy fog. Without our radios we would often spend many hours waiting for a fog to lift before we would be able to return to shore. Now, with someone on shore listening for the sound of our motors, and guiding us by means of radio, we make almost as good time as in clear weather. At night, they advise us of our exact position in relation to pilings, reefs, and sandbars.

"I try to keep in constant touch with other divers about their progress on wrecks on which they may be working. CB radio helps us to act as a clearing house for information on artifacts found by us and other divers. In this way we are able to expedite the sale of the items we recover by finding buyers almost as soon as we bring them aboard.

"The actual diving season on the Great Lakes is relatively short. We make the most

of our plane to spot areas to be investigated, and this means money to us. Before we had our radios we flew around and made rough charts of promising areas, and would then try to find them again by boat. We found that many landmarks look different from the air than when you see them from the water line of a boat. It would be difficult to determine the number of hours saved by our radios in this manner alone. I only know that I wouldn't want to go back to the old way of doing things.

"We don't usually refer to our work as treasure hunting, but this is what it mainly consists of. So far we haven't found any great treasure. Just ships' bells, anchors, binnacle or compass stands, and other parts of the ships that we sell to collectors. If any S9 readers are interested in an anchor for the lawn, we will try to supply the item ourselves, or through another diving company. Eventually we will find one of the great treasure ships with a load of gold, copper, silver, whisky or some other valuable cargo. So far they have eluded us.

"The steamer *WESTMORELAND* went down in Lake Michigan near Frankfurt, in 1854. She is alleged to have a cargo of whisky as well as \$100,000 in gold on board. This ship has high priority on our list of desirable recoverables, but there are also several other good targets on the Great Lakes that we don't talk about too much. Winters we spend doing research on these ships and digging up and piecing together what scraps of information we can find.

"Our dream is a museum of the many things we find on the bottom. This requires a lot of capital, and will have to be postponed until we find our sunken ship. It does hurt us to have to sell some of the artifacts we find, and to see them scattered all over the country. However, we see the museum not far off, and we keep records of where our finds go in the hope that we may be able to recover them for the second time in the near future.

"Without CB our work would take longer, cost more money, and would certainly not be as pleasant. The element of danger would also greatly increase.

"One of my men recently summed up our feelings about CB radio when he said he would rather leave the compass behind than the radio, when he went out. This is quite a the radio, when he went out.





# ELECTRONICS 'N STUFF

by **DON STONER, 11W1507**  
BOX 7388  
ALTA LOMA, CALIF.

## THE DECIBEL, WITHOUT PAIN

"But Sam," he frowned, "that new antenna you sold me hardly works any better than my ole' ground plane. According to the ad sheet, it's supposed to have 3 db gain. What gives?"

Sam set down his *Globe* "Signal Optimizer" and slid the CB rig he was working on toward the back of the bench. "My boy," Sam drawled, "Do you know what a db is?" he inquired. Young KEK5301 was slightly taken back. "Well not exactly, Sam, but I know it's good!" "You might say that," Sam chuckled, "if you're getting 'em. But they're bad if you're giving them up! The only way to understand why your new antenna didn't rock everyone on channel 9, is to learn more about decibels, or db's.

"You might think of db's as a different way of counting. Our common numbered counting system deals in units—four units, nine units, etc. They can be apples, or oranges, or CB'ers for that matter. The decibel system originally was for measuring sound levels and is based on the bel. Thus, a decibel is  $\frac{1}{10}$  of a bel. Three db's is the smallest unit of sound which the human ear can detect. Therefore, plus 3 db is a barely detectable increase in volume, while minus 3 db is a barely detectable reduction.

"Whether we are talking about sound or the power from your CB rig, db's don't deal with units, they always express ratios and can be either an increase or a decrease in something, rather than plus, or minus, or times. When we talk about power output of your CB rig, 3 db's is considered to be a ratio of 2 to 1. Thus, plus 3 db represents a doubling of power while a 3 db loss is half power. If the coax cable up to your antenna had a 3 db loss, you would only have half as much power at the antenna as you did at the transmitter output. Here's something else amazing about our friend the decibel. 10 db always

works out to be a power ratio of 10 to 1. For example, let's take a 1 watt transmitter and increase its power by 3 db. Now the output is 2 watts. Another 3 db makes the power output 4 watts. If another 3 db increase is added, the output rises to 8 watts. A fourth increase in power of 3 db brings the output to 16 watts which is 16 times the original power. If we had added one more db at the third db point, the increase would have been 10 times or 10 watts output. The same ratios hold true at any power level; if the transmitter had originally 10 watts output, a 10 db increase would bring it to 100 watts.

"If you continued adding 3 db increases to our 1 watt transmitter, you would discover that when you reach 20 db the output was not 20 times but rather 100 times. And if you continued even further at 30 db, the power would be 1000 times and so on. Thus, you can see that 10 db represents a 10 times increase at any level. Therefore, 20 db means a 10 times increase of a 10 times increase. By the same token, 30 db means a 10 times increase of whatever you had at 20 db, which is the same as saying 1000 times.

"One of the reasons for using db's is to avoid some rather enormous numbers. A 1000 times (30 db) is not bad, but what about an amplifier with a 60 db power gain? This represents a million times increase. It is not at all uncommon for an amplifier to have a power gain of 90 db which would be a billion times! From this explanation, you can see that as db's are increased, what the ratio represents goes up much faster. If the db's are increased in a linear manner, the resultant is said to increase in a logarithmic manner.

"Now that we see how db's effect our transmitter power, let's investigate what they do to a CB receiver. Many receivers include an

## PRESS-TIME FCC FLASH!

A trade association known as the Communications Equipment Manufacturers Association which will act as a spokesman for this segment of the industry has been formed it was announced today by John H. Artesani of Metrotek Electronics in Raleigh who has been elected president of the new group.

The CEMA group was formed after a meeting of interested manufacturers at the International Communications Fair which took place at the New York Coliseum on November 28 thru December 2nd. Membership in the new Communications Equipment Manufacturers Association is open to all companies manufacturing equipment or related products directly associated with the communications industry.

The primary objectives of the new organization are as follows:—(1) To provide a representational group in Washington which will make recommendations, suggestions and petitions to the FCC on any and all matters which might effect the status of the industry or any of its members, (2) To prepare an educational program and public relations campaign to the public, to make the public better aware of the values and benefits which derive from the use of two-way radio equipment, (3) To set up committees for standards and ethics which will attempt to up-grade the general level of advertising and sales practices within the industry, and (4) To provide liaison between the manufacturers and the federal government in the event of military mobilization.

The following companies have officially joined CEMA as charter members: Browning Laboratories, Cowan Publishing Corp. (Publishers of S9), Crater Lake Antennas, e.c.i. electronic communications, inc., General Radiotelephone Co., The Hallicrafters Co., Hammarlund Manufacturing Co., Heath Company, Horizons Publications, Hy-Gain Antenna Products Co., Metrotek Electronics, Inc., Osborne Manufacturing Co., Inc., Pearce-Simpson, Polytronics Laboratories, Sampson Co., 10-4 Magazine Corp., Tram Electronics, Utica Communications Corp., and Ziff-Davis Publishing Co. At the present time CEMA is in an organizational stage and actively recruiting new membership.

The officers elected at the initial meeting are: President, John H. Artesani, of Metrotek Electronics, Inc., Vice President, Frank Lester of Hammarlund Manufacturing Co., Vice President, Gar Greene, Sr., of Browning Laboratories, Secretary-Treasurer, Dick Salam of Utica Communications Corp.

These officers represent a steering committee to actively solicit new membership and any company interested in learning more about CEMA—its activities and membership requirements are invited to contact any of its executive officers.

S-meter to indicate the strength of incoming signals. How does the decibel or db change in radiated power effect the meter?

"Most manufacturer's design their S-meter circuits so that S-9 on the scale represents 50 microvolts (50 millionths of a volt) at the antenna terminals. Normally, a doubling of received power causes the meter to increase one unit. However, some manufacturer's use the 'soft' unit which results in a two S unit change for the same power increase. This of course makes the receiver seem 'hotter.'

"So Bill, that's the story on db's. Let's see how it applies to your particular problem. When you put up your new antenna, I'm sure you got that 3 db increase that the manufacturer claimed for his antenna. This meant that your *effective radiated power* was doubled. If you were getting 3 watts to the antenna before, the new antenna gave you the same range as if you had put 6 watts into the old antenna. At someone's receiver, this increase probably moved their S meter at one unit. But remember earlier, I said that you can just barely hear a 3 db increase. That's why everyone did not set up and take notice when you put your new bomb on the air. In fact, the only way that anyone could tell the difference was if you had switched from one antenna to the other. Since you had taken down your old antenna there was no basis for comparison." Sam wound up his dissertation. "Don't get me wrong tho, the antenna and those extra 3 db were certainly worth what you paid for them. At the very extreme limit of your range, where copy was marginal, that 3 db can make the difference between being heard and not."

"O.K. Sam," replied Bill with a pleased look for the first time that morning. "I didn't want to take the antenna down anyway. Besides, I understand the trade-in's around here are pretty bad," he smirked.

"No," laughed Sam, "I'll take the db's back, but I sure don't need the antenna."

# FREE

station identification certificate

see PAGE 4

# CLUB NOTES

**INDIVIDUALS AND CLUB MEMBERS!!  
SEND US ITEMS FOR THIS COLUMN!**

**TO JOHN KREJC, 2W4586**

40 LANZA AVE.  
GARFIELD, N. J.

**WANT TO MAKE MONEY? S9 has a nationwide staff of AREA PUBLIC RELATIONS EDITORS who act as our representatives in the field. We are always looking to expand this force with good workers. Our A.P.R.E.'s can earn some nice money too, and many are already supplementing their regular incomes substantially by representing us. We're especially interested in persons to act in this capacity in the following call areas: 2, 6, 9, 14, 16, 17, 18, 19, 22, and 23, although ambitious S9'ers in all other areas will also be most welcome. Drop us a note and tell us about yourself.**

Static, the club paper of the Wabash Valley Citizens Radio League, Inc., are looking for anyone who is interested in joining the Vigo County Special Assn. should contact Richard Eppley. The Assn. is in the process of equipping all their cars with CB units. To date, 6 members have been interested enough to attend their meetings. Club stickers are available from club Treas., Bob McKee at 35¢ per sticker.

The Tri-County Communications Net are still looking for volunteers for the Bulletin (club paper) staff, but up to date they have received no help. Come-on fellows how about lending a hand. All who are interested should contact Robert F. Durnin, 1W7200, P.O. Box 102, Dover, New Hampshire. Bob is also president of the Net.

Have you seen the flashy cover of the "The Voice of Dixie," The Dixie Citation yet—we dig those colors. Editor of the fine publication is Ted Robertson, KDB3810 and is assisted by Lee Whitmire, KDB2644. Staff writer is David Hall, 6Q2054. Let's all rally around President Larry Peavy and show him that you are still interested in the club as a whole and attend the next meeting in force. Any club who has a paper, they will be happy to exchange paper for paper. Write—The Dixie Communication Club, Inc., P.O. Box 136, De-catur, Georgia.

The Keystone 11 Meter League members are taking Red Cross training and are being taught by Paul Haupt. The class is for anyone that would like to learn First Aid, how about you. The club held its Pre-Christmas on Dec. 3rd. Presents were exchanged by members, but didn't exceed \$3.00 in value. President of the Trappe, Pa., club is Jack Hartman, 3W2205.

The Kern County Citizens Radio Assn., of California recently provided communications at the Open Golf Championship here. Along with assisting the Kern County Sheriff's Dept. during the recovery of a drowning victim in the Kern canyon area, they were credited with having assisted in saving buildings and property valued at \$60,000 from destruction. President of the highly efficient organization is Berry L. Aubrey. The club monitors channel 9—24 hours a day to assist persons traveling through the county area who might need help of any kind. Also they are available to provide additional necessary communications for all police, fire, civil defense agencies in the county.



New president of the Delaware Valley Citizens Radio League is Sid Stokes, 3Q1079. See you soon, Sid.

Recently the Eaton County Civil Defense held a practice run for CB mobiles in which the Lansing CB'ers did a wonderful job of tracking down the "lost" mobile. The 5 Watter CB club of Lansing, Michigan held their annual Halloween Party on October 21st.

The November meeting of the Metropolitan Citizens Radio Association was held at Wilder Hall, Hingham, Mass. The theme of the meeting was a free fall tune-up consisting of a frequency check, peaking, and receiver line-up on all sets. President of the club is Ed Lambert, 1W4895. All correspondence to the club should be directed to Pat Sands, Secretary, P.O. Box 235, Cohasset, Massachusetts.

New president of the Middle Georgia Citizens Radio Club for 1963 is Harold Norman, KDB3912, Vice president, R. T. Watson, KDB5775, Secretary, Elmer Stevens, 6W2395, Treasurer, Maj. M. L. Holland, KDB3878. Good luck boys.

From Donald Parrott, KGB0186, of the Metropolitan Denver Citizens Radio Club, comes the news that on Saturday, Nov. 10th, two airmen from Lowry Air Force Base in Denver were exploring in an old abandoned mine near Idaho Springs, Colorado. Airman Chester West of Rye, N. Y. slipped and fell 150 feet down a near vertical shaft in the early afternoon. From the time of the first word of the accident until the locating of the airman, ten hours later, and his rescue some 13 hours later, the group established communications, dispatched equipment and supplies, was in constant word with Lowry Air Force Base, located the Commissioner of Mines and informed him of the alert, contacted the local doctor the minute the airman was found alive, and relayed important messages, such as food for the rescuers to be prepared for pick-up, summoning the local police to the scene when they were needed. All that we could say—FINE JOB TO THE CB'ERS WHO ASSISTED.

By CB'ers for CB'ers, The Carrier, club paper of the 5 Watt Wizards Citizens Band Radio Club of San Bernardino Valley, California. Editor and personal

friend of mine is Jack Kinsey, 11Q5345, Hi Jack. The paper has appointed 3 new reporters starting with the edition that we received. Ron Morey will report on the news from Riverside, Scotty Brown from Fontana, and Don Ruggles is the news hound in Yucaopa. Welcome to the staff, fellows. President of the club is Walt Belknap.

Cecile Houck, 19Q4056, Communication Officer and recording Sec'y of the 19-20 Club, Pa., tells of their membership of 70 in which the club covers three counties in Ohio and Pa.

Congratulations to Jack Dold, KHA9478, on his recent appointment as Editor of the Maumee Valley CB News. The Rescue and Communications Squad members who are giving of their time and effort toward the betterment of the Fort Wayne CD program have the best wishes and appreciation of the MCVBRA. Looks like everyone is taking First Aid courses in the club.

The last meeting of the O-K CB Club was held at Georgetown, Ohio, in which a good crowd was on hand for the election of officers. Officers elected were: Harold Edington, president; Hal Clark, Secretary and Vic Henderson was reelected treasurer.

Approximately 200 people attended the recent meeting of the Citizens Band Clubs of the Ohio Valley held at the Fair Grounds, Lucasville, Ohio. One of the highlights of the day was a talk by Paul Thacker. The Ohio Valley CB News is published each month at Brooksville, Ky., P.O. Box 404.

From the Ken-O-Valley Club, of Raceland, Ohio, comes the news of Roger Kilgore has been elected president. Five new members joined the club this month. This active club has signs ready to go up on all main roads welcoming CB'ers. The club monitors 9.

Club "23" of the Louisville, Kentucky area informs us that they have 36 members in the club at the present time. Vice president of the club is Terry Heick, 18Q-6255.

We, at S9 say "welcome back to the Southern California 11 Meter League." We are happy to have your organization back after its period of inactivity. By your cooperation and enthusiasm the 11 Meter League should have an excellent opportunity for remaining active and for this we hope that each and everyone gives their most to accomplish this feat. President of the newly reorganized group is Lou Ellis, 11W3242. Good luck, Lou.

The Western New York Emergency Net was organized July 1, 1962 with Richard Kwitek as president. The Net is not a social organization and dues are kept to a minimum. Membership is open to all CB'ers and Hams. At present, the Net has fifty members and is expanding rapidly. The Net covers a wide area which is now being expanded with relays so that there will be a solid line of emergency communications. Address all inquiries to Charles Di Rosa, 165 East Avenue, West Seneca 24, New York (KIC3732).

Ocean County Emergency Aid Network, members contributed over 100 man-hours to the boro of Lakehurst, N. J. in a successful effort to keep vandalism to a minimum. Fifteen members participated in the three night event. Pres. of the group is Fred Shapre, 3Q1055, Lakewood, N. J. Meetings are held the 2nd Wednesday of each month at the Ocean County Court House, Toms River, N. J.

North Alabama Citizens Band Radio is now monitoring Channel 1 on a 24 hour basis and also have an Air to Ground and Marine rescue squad available here in the Huntsville area. The club meets at the Naval Training Station.

Dick Murphy, 19Q1727 writes the Vulture Valley CB Club, from Roscommon, Higgins Lake, and Houghton Lake, Mich., monitors Ch. 11 all day and Ch. 7 at night for emergencies.

Among the new clubs in the 1st area are the "11 Meter Modulators," who meet the 1st and 3rd Wednesday of each month at the Old Town Hall, Bayville, N. J. The presidency of the group is rotated at each meeting, with the CB'er with the oldest call letters presiding.

Sec'y of the club is Mary Mitchell, Ocean Gate. Members primarily formed the club as a social group in order to keep CB chit-chat off the air and to allow CB'ers in the area to meet each other personally.

Lots of luck to the Ingham County CB Club. They held their first meeting Sept. 23, in Mason, Mich. Meetings are held the fourth Sunday of the month.

Bill Nichlos, 19Q0536, writes the Tri-State 11 Meter Club closed the season with a free Christmas party for the members. This club is very active with the local authorities, and law agencies in helping with traffic control at fires, parades, and everything for which they are asked to help.

A new club was formed in Big Bear Lake, California, during November. Officers have been elected and meetings will be held on the 1st and 3rd Sunday of the month, at the Justice Court in the Sheriff's Building. President is Warren Lemke, 11Q3764. The club, known as the Bear Valley CB'ers will monitor 11. They will aid travelers in the mountain areas 12 months a year. Communications is always a problem in a mountain area due to heavy winter snow. This club will be a vital link in protecting local and traveling CB'ers. Complete cooperation has been offered by the Big Bear Sheriffs Dept. who have their own CB units and monitor Emergency channel 11.

The 5 Watt Wizards CB Radio Club of San Bernardino Valley still monitor 9 through their monitoring station. The Shack, as it is called, monitors on week-ends from Friday evening to Sunday mid-night. During the week, members monitor from their own base rigs from 6:00 P.M. to about mid-night. The 5WW's meet the 3rd Monday of the month. Information can be had by calling KEJ0922 Monitor, Walt Belknap, President, KEJ0922 Unit 1, or Jack W. Kinsey, 11Q5345, during the evening. Write: P.O. Box 3364, San Bernardino, Calif.

Longview, Texas is the home of the Gregg County CB club. This fine new group got off to a good start public relations wise when they were called on to provide communications for a county wide polio drive. This again shows what CB'ers can do when called upon.

A real swinging, brand new club, South-Lynd Radio Club of Lyndhurst, Ohio, is devoted to the betterment of operation on the air and with the compliance of FCC Part 19. CB is in wide use throughout the area and is in need of great improvement. For this reason the South-Lynd Radio Club was formed. Membership is limited to persons 16 years of age or older and members must carry out and promote the ideals of the club. Channel 9 is the calling channel and 16 is their emergency channel. President is Max Schneider, 19Q3298.



Max Schneider, 19Q3298, president of the South-Lynd Radio Club is shown presenting a lifetime membership card to Mr. and Mrs. Gar Greene, president of Browning Laboratories, Inc.

Tri-County Citizens Radio Association this month's club personality was Ed Wolfgang, KCC0011, who is one of the members who really creates interest in the club. Ed is a member of the Finance Committee, (ah, money) the group which goes out and gets the "goodies" they have for prizes at their monthly meetings.

The North Jersey Chapter of MCEU, State of New Jersey Headquarters, will hold its 2nd Annual Past President's Dinner, February 9, 1963 at the Clifton Casino, Broad and Grove Streets, Clifton, N. J. This year the MCEU chapter will honor Governor and President, Bert Endress, 2W9623, for his tireless and unselfish time which he devotes toward making this past year a success.

The 5 Watters of Lake County Inc., majority voted to include The Lake County Emergency Monitoring Service as part of the club. Function of the "Service" is to help in emergencies and with your help they can be successful.

The Metropolitan Dade Citizens Radio club from deep-down in Florida is a organization guided primarily to the betterment of CB Radio and to use the service as it was intended for. The club is incorporated in the State of Florida as a non-profit group. Channel 9 is the calling and emergency channel. President of the Metropolitan Dade Citizens Radio club is Ed Lander, 7W2247.

President of the CB Rangers, Frank Gibson, 20Q3527, informs us that the club has in the last 6 months helped in a manhunt, conducted a Halloween patrol, directed traffic during a fire and conducted various drills among other things. We would like to see all clubs with the purposes of the CB Rangers. We intend to print these at a later date.

"Special Project" of the Illinois Valley Citizen Banders, is to buy, equip, and maintain an Emergency Car for the use of all CB'ers in emergency. The club would like to build a better organization, promote good community relations and to be of real service in the Tri-County Area. Keep us posted.

"The C-B Snooper," club paper of the Blair House Communicators from Central Jersey area is published in the interest of better citizen-band radio communications. Editor is Vic Siebold, 2Q4457, 538 Roosevelt Ave., Carteret, N. J. Monthly meetings are held on the second Tuesday of the month, with President Lou Jakiel, 2Q1480, presiding.

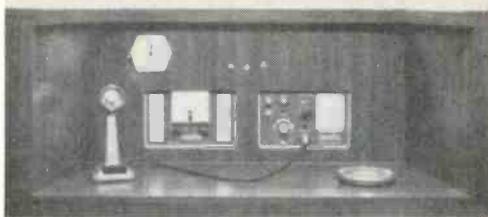
The Central Arkansas Citizens Band Radio club of Little Rock was organized in April, 1961. Total up-to-date membership is at 151 with the club monitoring channel 9 and 11. Meetings are held at the Little Rock Police and Courts Building, the second Monday of the month. The club sponsors Red Cross First Aid courses and furnishes Alert Team to help police on special occasions as Auxiliary Police, and work in cooperation with Little Rock CD. President is Tucker Moore, 8W2760.

Well . . . how about this . . . from W. Rex Stirling, XM66053, Secretary-Treasurer of the Newfoundland Citizens Band club of St. Johns, comes our first Canadian news on club activities. Let's hear more from the Canadian clubs!

Congratulations to Willie Sipes, KDB1954, on being selected "MR. COURTESY" by the Memphis Radio CB club. Editor of their club paper is Maury Spiro, 6W3130.

Where did all those ZUBRZYCKI'S come from. All are members of the South-Eastern Pennsylvania Citizens Radio club. Lets see there's . . . Al, 3W3960-2; Ray, 3W3960-3 and Chet, KCC4044. The club received a vote of thanks from CD officials when they took part in the mischief night watch-out on Halloween. The Delaware County Firemen's Association also lauded the club for its service in participating in their Fire School activities.

The Tri-State 11 Meter club of Steubenville, Ohio, announces the following are their officers for 1963. President, Floyd Guy, 19Q4239; Vice president, Jim Ferrington, 19Q4959; Sec.-Treasurer, Tony Lucas, 19Q-8555. The above slate of officers are capable and will have to equal the wonderful leadership of the retiring president, Ben Will, 19Q1839 and his staff.



Look what was done by Jack A. Howe, KHA6727 of Washington, Ill. with \$13.00 worth of lumber, glue, nails and plastic covering material. The cabinet contains a model 100A Executive with a 320-S Meter also made by International, with a M-82 "Black Box" mounted in the center. Also a 254-C Turner Stand mike.

Seth Paul, 1W1717, sends us the newspaper clipping of how CB played an important role in the recent fire at Hog Island. The Island was reported to the mainland by Jeff Field. Jeff radioed over to the Hurricane Bar, in Bristol, where Capt. Richard Catalan of the Portsmouth Fire Dept. relayed to his headquarters and within minutes a Duck was rolling down Quaker Hill and the fire. Good cooperation by all prevented a further loss in real estate.

The Lake Sunapee CB Radio Alert Unit, N. H., helped keep the Halloween witches and ghosts at bay. These units, while unable to make any arrests, did help relieve much of the pressure that is placed on Newport's small police force.

The Citizens Band Association of Conn. is ready and able to assist any local rescue, police or fire organization and is willing to offer their assistance anywhere in the State where it may be required. It would be appreciated, at this time, that if any such groups that are forming within the state call upon them for any help for assistance.

Reprint from the Lycoming CB Radio Club paper—"Gentlemen:

"On behalf of the directors and myself, I would like to express our thanks and heartiest congratulations to the committee in charge of the float for the unprecedented feat which this club accomplished in the South Williamsport Mummies' Parade. It was the first time our club ever undertook a project of such magnitude in this field, and to come up with first prize shows well enough how much effort was put into this adventure. We also give our deepest thanks to all the non-members which, without their many hours of work, none of this would have been possible.

"In closing, I would like to say this, that the people who worked on the Lycoming CB Radio Club's float have shown us what really can be accomplished when a group of people are willing to work for a club and its high ideas.

Best wishes,

C. A. Reed

Chairman of the Board"

On November 2nd, president, Graig Wooster, 3W4964, of the South Jersey Citizens Band Club, was interviewed on the Red Benson Show on radio station WPEN. A topic as big as CB Radio is impossible to cover in a 15 minute interview, so many stones were left unturned, but he did manage to gain much publicity and make a segment of the public aware of the fact that they are here and interested in their welfare through a desire to cooperate with Civil Defense, toward which they have been unsuccessful thus far, even though CB is successfully used all over the country. He managed also to make a blast at the "CB Clowns," who give the band such a bad reputation.

The tape of this interview will be played at this month's meeting for those who were unable to listen to the live broadcast.

**INDIVIDUALS AND CLUB MEMBERS!!  
SEND US ITEMS FOR THIS COLUMN!**



# WASHINGTON OUTLOOK

by EDWIN FREDERICK, 2W4580

Not taking time out for a breather in their attempts to clear up CB violations, the FCC took the following actions recently.

Richard C. Samuelson of Portland, Ore., was asked to show cause why his license for CB station 13W1203 should not be revoked. He was charged with ignoring letters from the FCC regarding the operation of his station and also for improperly transferring the control of his station.

Alfred L. Kerr, 4W1224, of Elkins, W. Va. also got hit with a show cause notice for ignoring FCC communications regarding transmissions of nonsubstantive messages and for working skip.

Out Colorado way, Francis C. Baxter, 15Q1314, of Denver received a similar notice for the same violations.

In Houston, Texas, Lloyd D. Phillips, Jr., KED0622, was awarded a show cause notice for overtime talking and not observing the two minute "break."

Not to show preference to areas other than the West Coast, they also mailed a show cause notice to Phyllis F. Kaiser, 12W2215, of Oakland, Calif.

Beyond the show cause stage, they actually revoked the licenses of R. W. Baugh (Baugh Electronics), 12Q1009, of San Carlos, Calif. and A. F. Roberts (A. F. Roberts Transport), 3W4560, of Glassboro, N. J. Joseph C. Szoka, 11A3249, of Lakewood, Calif. and David Colella, 1A2170 of New Haven, Conn. also felt the pain of the loss of their license. Lastly, Francis J. Worthington, 3W3303, of Lansdale, Pa., lost his license for off frequency operation. He may, however, re-apply for a new license without fear of having the former revocation count against him.

The Commission directed Johnny Rivenbark, 7W2126, of Vero Beach, Florida, to show cause why his CB license should not be revoked for failing to satisfactorily respond to official notice of violation of the rules regarding change of address.

Also on the receiving end of a show cause notice was Michael A. Schwartz, 2Q3878, of Croton on Hudson, N. Y. for failure to respond satisfactorily to an FCC notice concerning transmissions not directed to a specific station or person within the direct groundwave coverage area.

It would seem that the major cause of show cause notices and license revocations boils down to the fact that the stations ignored, or did not satisfactorily respond to, FCC citations or other notices. The actual on-the-air violation seems to be of secondary importance, the FCC seems to get more shook up when CB'ers refuse to acknowledge the notice of violation than when they actually monitor the violation.

Our suggestion is that if you receive a little *love note* from the FCC that you answer it pronto.

Remember the "Small Fines and Forfeitures Law" which we discussed several months ago? Well, in case you were wondering whatever happened to it, it hasn't been filed and forgotten. The Commission is now, as they informed your S9 reporter, "busily engaged in drafting rules and guidelines" for using their new law which gives them the right to impose fines of \$100 to \$500 on CB'ers and others who violate FCC rules and regulations. They will issue the *guidelines* "in a short while," they said.

The Commission recently announced the appointment of Mr. Curtis B. Plummer to

the newly created post of Executive Director. Mr. Plummer was formerly the Chief of the Safety and Special Radio Services Bureau and has, in the past, been very kind in lending his support to worthwhile endeavors of CB'ers such as "Operation Dollhouse." He holds CB license 24W0364, a real pioneer.

He will have continuing supervision over all FCC procedures and administrative matters in order to recommend measures to expedite and generally improve the administration process.



### 4303 RIDES AGAIN

*Continued from page 7*

The first International Communications Fair has come and gone, and for 5 days the New York Coliseum was the scene of a considerable amount of CB gear (not considerable enough, unfortunately) and CB'ers (also not considerable enough).

Don't get me wrong, the CB gear that was there was fine—it's what *wasn't* there that made the difference. Although there were promises of lectures and seminars, none ever materialized; there were all indications that the FCC would give examinations for Ham tickets, none were given; there was supposed to be a "Big Broadcast of 1962," and the only broadcasting done was by manufacturers demonstrating their gear to a sometimes interested, although more often indifferent, group of spectators.

The management felt the necessity to offer booths to a number of non-communications people (a Florida land bonanza outfit, an encyclopaedia company, a dictionary company, a fellow selling some kind of malted milk mixer who had a sales pitch straight from a carnival midway, etc.) and these certainly detracted from what, by all indications, was to have been a dignified communications show.

Many of the exhibitors expressed disappointment at the lack of turnout from other companies within the industry, and perhaps had the promoters of the show been able to land a better representation from the industry the show would have been a little better received by the public.

If there is a show next year, we certainly hope that it receives better support from within the industry than it did in its first try.



### GALLOPING GHOST

*Continued from page 14*

Main Street. Disorder was rampant.

Television sets for miles around were working earnestly to earn their nickname, "Blow-up Tubes." Tubes were blowing up in traditional gung-ho fashion, splitting with agony they'd never dreamt of what with RF barreling in like Brady's Thunderbird at the Carrol County Car Strippers' Roadrace last August.

Telephone lines from Cedar Falls to Indianapolis resounded with a common theme: *BrrrrrBOOM!* "Roger ZX4XFV. Signal here is S9. Over." *BrrrrrrBOOM!*

Talk about a mysterious "Galloping Ghost of Cedar Falls" was now rampant.

Well, as any passable philosopher knows, all good things must come to an end, and KHB6666 blew a fuse right in the middle of a thirteen-way contact resembling a UN Security Council meeting. Johnathan scrambled for the cellar to see what had happened . . . but already his doom was closing in.

For at that very moment Charlie Brown and his *Vigilantes* were gathering at the east end of Oak Avenue. Turning the corner was an FCC monitor truck equipped with rotating loop antenna. State Police with sirens wailing were speeding towards the Payant residence. *National Guard* reservists were called up for immediate action. *Associated Press* reporters were streaming into the community. KHB6666's time had indeed run out.

"What'd I tell ya, Ralph?" queried victorious Brown as he commanded his army, hell-bent on 473 Oak Avenue.

"Lightnin' rods—hmmh!" grumbled Corporal Cline, who was never too bright in the third place either.

\* \* \* \* \*

Well, that's the whole story of the famous "Galloping Ghost of Cedar Falls." Johnathan Payant's done give up his 'lectrical tinkering, leastwise that's what Lem down at the 'lectric company told me—he said that Johnathan now buildin' some kind of machine for *new-clear fishin'* or somethin' like that. I suppose we'll hear from Johnathan again someday.



## ALL ABOUT COAX

Continued from page 10

Type II cables have less attenuation (signal loss) to start with.

### Type II Coax

RG8A/U  
RG58B/U  
RG58C/U

Other cables are available that have similar low-loss long-life characteristics. Bear in mind when shopping that on the average, "/U" indicates Type I and "A/U" or "B/U" tagging clearly steers you along the proper road. There are exceptions of course, but as a general rule, don't buy "/U".

### WHAT'S THE BEST COAX FOR CB?

That question is darned near impossible to answer. It all depends on your particular needs. As a rule, though, you'd do well to choose between RG8A/U and either RG58B/U or RG58C/U. The latter is the more flexible and costs less (about 7¢ a foot), but higher losses often rule it out.

If you're going to be using 50 and 100 foot lengths of cable, I'd highly suggest your investing in RG8A/U. This is a thicker coax and somewhat less flexible (plus costing 14¢ a foot), but the losses in large lengths are nil compared to other available lines.



## ANSWERMAN

Continued from page 47

**works fine at home but blows fuses when I try to operate it in the car. It has both AC and 6-volt power supplies built in. What could cause this?**

**G. H. J., Seattle, Wash.**

*There's a good chance that the rig requires a change in fuse when powered from different sources. In a typical set, operating from AC house current, the fuse is usually about one ampere. In mobile operation, a 6-volt set generally calls for a 12-amp fuse and a 12-volt unit takes a 6-amp fuse. Thus, take a look at your present fuse; if it's too small, replace it with the appropriate value. Since it goes into the same holder, secure a fuse of the identical physical size.*

*It's very important not to operate the rig from the AC line while it contains a fuse intended for mobile operation. If the circuit develops a short, the high-amperage mobile*

*fuse might not blow. This could cause considerable damage to the rig.*

## SPEAKER REPAIR

**Is it worth repairing a defective speaker in a CB rig?**

**H. G. L., Danbury, Conn.**

*It depends on the defect. If the problem is due to a rubbing voice coil, the speaker cannot be repaired. You can tell by gently pressing the paper cone with your finger for a fraction of an inch. If you feel any rubbing, the speaker must be replaced. However, a tear in the paper is easily corrected. Electronic distributors sell a type of non-shrinking glue for the purpose. If it's a small rip, glue alone can be used to mend it. For punctures, where the edges cannot be brought together, make a small paper patch and glue it in place.*



## GRS NOTES

Continued from page 48

out a points system whereby individual members will be in competition to win the trophy, which will be awarded in August, 1963. Points will be awarded for public services such as helping stranded motorists, spotting stolen cars, etc. Each Sunday the club holds a hidden transmitter hunt and the winner of this will also gain points towards the cup.

All is not rosy with the points however, as points are deducted from the totals if a member misses meetings, breaks club regulations.

If you're a Newfoundland and interested in joining this organization, contact Rex Stirling at 1B Tunis Court, St. John's, Newfoundland.

As you can see, activity is certainly on the upswing in provinces other than Quebec. Possibly the other provinces will catch up—although unless you write and tell us about what you're doing the world will never know. Come on, don't be shy. We welcome Canadian items from both individual GRS users and members of GRS clubs.



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## ANTENNAS

*Continued from page 46*

operates as a reflector on each of the CB channels and will provide a good front-to-back ratio up to channel 23.

The dimensions indicate that such an antenna is quite large and it must be well mounted. It can be mounted horizontally or vertically. From the standpoint of interference rejection and communications with mobile units, the vertical mounting is to be preferred. In general, there is a lower angle of radiation and possibly fewer skip problems.

### DIRECTORS

A two-element beam can also be made by using a parasitic director as shown in Fig. 5. In this case the element is made shorter than the driven element into the desired direction. In so doing, the forward lobe is again increased while the back lobe is decreased. Typical dimensions in terms of wavelength are also given in Fig. 5.

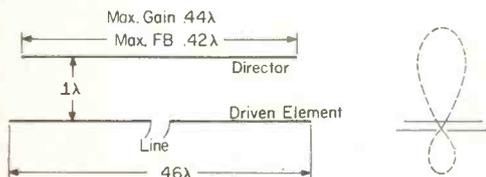


Fig. 5 Parasitic Director

The actual dimensions for a dipole-director combination for operation on all the citizen band channels is given in Fig. 6. The driven element is again cut for channel 9 while the director is cut for the highest frequency (22 or 23). In so doing you can be certain that the director will operate as a director on all of the citizens band channels down to channel 1. An advantage of a director is its shorter length as compared to a reflector. Furthermore it can be positioned nearer to the driven element. Notice that the separation between the dipole and director is  $0.1 \lambda$ .

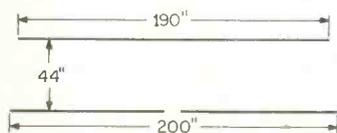


Fig. 6 All-Channel CB Dipole and Director

It is apparent that directional antennas for CB operation are rather large structures. Hence  $\frac{3}{4}$  inch and preferably larger tubing is preferred. The crossarm can be either wood or tubing. A strong outdoor bakelite insulator can be used between the two sections of the driven element.

Beam antennas can be made from good quality antenna wire or thin tubing and suspended between attic rafters. Commendable results can be obtained from a suburban or rural attic-mounted beam when reliable communications is to be established between fixed locations. More on this subject will come in a later column.

Higher gain and better front-to-back ratio can be obtained by using both a reflector and director or, a reflector and several directors.

### REVISION

The director dimension given in last months column for a simple coaxial vertical and director can be shortened for better performance. To improve that front-to-back ratio, cut the director length down to 62-64 inches.

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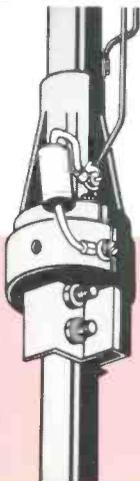
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