43 GREAT CB ARTICLES, PROJECTS & FEATURES

# S9

the citizens band journal


December 1963

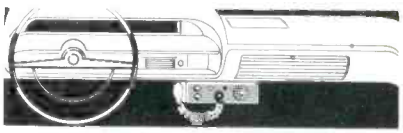
# SPECIAL 1963 ANNUAL ISSUE

LARGEST NUMBER OF CB FEATURES EVER IN ONE MAGAZINE!

# NEW NEW NEW Executive REMOTE CONSOLE

for International Model 50 and Model 100 Citizens Band transceivers


A brand new compact control unit that permits the installation of transceivers in the automobile trunk or other out-of-the way space. Unit mounts under auto dashboard and gives you complete remote control of transceiver.



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- EASY INSTALLATION
- TURNS TRANSCEIVER ON AND OFF
- CHANNEL SWITCH
- ILLUMINATED DIAL
- DIMENSIONS: 2½" H x 7" W x 5" D
- RUGGED CONSTRUCTION

## SPECIFICATIONS:

The International Executive Remote Console is designed as a companion accessory for remote operation of the Model 50 and Model 100 transceivers. The console contains the receiver/converter stages (uses the printed circuit board from your present Executive) plus a new transmitter oscillator. The attractive console blends with and compliments your auto instrument panel. Console panel includes illuminated dial, On-Off switch, volume control, squelch, transmit and receive indicator lights, push-to-talk microphone socket.

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Model RM0-9 . . . a deluxe unit with 9 transmit and 9 receive channels. Complete with channel switch, but less crystals ..... **$57.50**

Model RM0-1 . . . for single channel operation. Does not contain channel switch. Complete less crystal ..... **$42.50**

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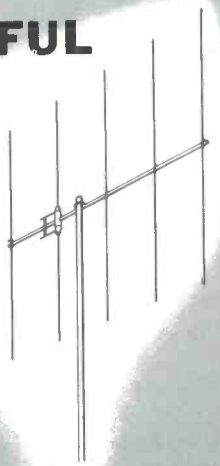


## hy-gain's All New LONG JOHN 5-Element Beam

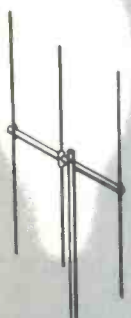
- Delivers Tremendous 12.7db Forward Gain
- SWR at Resonance 1.05:1
- Rotates with Heavy Duty TV Rotator

Now...base station-to-mobile or point-to-point, you can multiply your power 10 times—give your CB transceiver the effective radiating power of a 50-watt rig—with the installation of Hy-Gain's all new Long John 5-element beam. Check the phenomenal performance figures developed by the Long John when vertically installed: 12.7db forward gain; 25db front-to-back ratio; 40db front-to-side ratio. Receiving or transmitting, the Long Lohn is positively the highest gain directional antenna system commercially manufactured for Citizens Band.

Here's an important consideration...Hy-Gain subjected the Long John to exhaustive field tests just as they do with all of their products. It was determined that a vertically polarized installation on 27 to 30 Mc delivers performance far superior to that attainable with a horizontally polarized installation. On Hy-Gain's 5.5 mile test range, vertically polarized installations proved as much as 25db stronger than horizontally polarized installations. This performance difference is due to ground absorption losses and other accumulative ground effects. Where circumstances require, the Long John is adaptable to horizontal installation without modification. However, maximum performance and range can be attained only when it (or any other beam) is installed vertically.

Structurally, the 30 pound Long John has five 16'6" heavy wall aluminum elements which are mounted on a 24'x2" O.D. heavy gauge boom. Vertical turning radius is 12'; horizontal 15'. Insulators are of high impact cycolac plastic and all steel parts are iridite treated to MIL specs. The Long John features Hy-Gain's exclusive Beta Match and comes to you factory pretuned for 52 ohm feedline. SWR at resonance is 1.05:1. For much improved signal-to-noise ratio and lightning protection, the driven element of the Long John is at DC ground.

Easy to assemble and install, the incomparable Long John will vastly extend the coverage and readability of your Citizens Band signals. It's reasonably priced, too...Hy-Gain's Model 115B...only **$69.95** Net.



## Where space is a factor choose hy-gain's Model 113B 3-Element Beam MULTIPLIES POWER 8 TIMES

Expressly designed to develop maximum performance in minimum space...16'6" elements on a 9' boom with a vertical turning radius of 4½' and a horizontal turning radius of 8'. Weighs only 15 lbs. Has same quality construction and features found on the Long John—gain is slightly less due to reduced size. Will positively out-perform any beam of comparable size at only...**$31.50** Net.

## STACK 'EM FOR ADDITIONAL RANGE

Stacking two 115B's or two 113B's will give you an additional 3.5db gain literally re-doubling the power increase you get from installing a single unit. Complete instructions for stacking included with every Hy-Gain beam.

*See them today at your favorite Hy-Gain Distributors or write for the name of the Hy-Gain Distributor nearest you.*

**HY-GAIN ANTENNA PRODUCTS CORPORATION**
**8466 N.E. Highway 6, Lincoln, Nebraska**

S9
the citizens band journal 300 West 43rd Street New York 36, N. Y.
S. R. COWAN, PUBLISHER

# SPECIAL 1963

Vol. 3, No. 6

December, 1963

# ANNUAL ISSUE



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# READER MAIL

## RAGES AND OUTRAGES

Dear Tom:

First, let me congratulate you on the deserved success of S9. I hope for your continued good fortune.

I am writing mainly to comment on the anti-FCC movement sponsored by another CB publication. I had hoped that CB would come of age by itself, but it seems that bootleggers, moonlighters and other misfits will continue to seek an organization that caters to their kind. That is not to say that all members of this type of organization are sympathetic with the law-breakers—far from it. Most join these clubs in good faith, then later find that they have been duped. Some never do. I joined the so-called "National Citizens Radio League." I also talked my company into sponsoring ten "Rallies," later to find that we had been taken.

I hope that you keep up your present editorial policy. We need someone with enough courage to speak up. Our company has cancelled all advertising with the other CB publication. We don't want to change their policies—if they think they are right, they should continue their chosen path. We simply no longer want our firm associated with this type movement. March on Washington, indeed! Who are they kidding! I think you can look for a step up in our S9 advertising.

Jack Craven
The James Knights Company
Sandwich, Ill.

Sirs:

I'm a disgusted member of ACBA. That sure was a buck fed to the birds.

Bill Jones, KBA8553/K1MUJ
Putnam, Con.

Dear Mr. Kneitel,

Congratulations to you and your staff for an interesting and honest publication. It's too bad that we CB'ers are being represented by some other publications which are doing more damage to the CB population than anything else. Many of their articles are anti-FCC in my opinion—not to mention their famous "Pink Slip Club."

John W. Reninger, KGC1019
Los Alamos, N. M.

Tom,

Enjoy your rag each month, especially since your attitude has been one of stressing the obeyance of the law, rather than contra same (as is currently being done elsewhere).

Karl Kopetzky, KHB4291/K9AQJ
Chicago, Ill.

Mr. Kneitel,

You always make your readers think about things which aren't at first apparent. You handle every situation with poise and good common "horse sense." Best of all the way you handled this ACBA situation and told them what you thought of them in no uncertain terms.

I believe that the ACBA is a form of socialism. By that I mean that they are planning to "take over" many radio clubs and form them into one union. Thanks for keeping us posted with the truth. It's most refreshing—and hard to get in a CB magazine today.

Donald Lowe, KEA2152
Little Rock, Ark.

Tom:

I don't know, of course, how you answered Mr. Brown Thornton (KDB5075) whose letter was in the November S9 Reader Mail Column. I'll tell you how I (and most other CB'ers) would answer him. I'd let him know that I am in full support of any attempt by anybody to "destroy the ACBA."

I am truly thankful that the FCC realizes that the ACBA does not represent more than a pathetic handful of unfortunates.

Hank Gavit, 20Q5491
Stony Creek, N. Y.

Kneitel:

BRAVO on having the guts to tell your readers the frank and honest truth.

Ed Grubgeld, Jr., KEJ0733
Solvang, Calif.

KBG4303,

I could not agree more wholeheartedly with your sentiments on ACBA.

George O. Kunzman, KIC1000
Johnson City, N. Y.

*Reader mail has overwhelmed us in support of our policy of bringing out the many "hidden truths" of the ACBA. See this month's "KBG-4303 Rides Again" column to get the scoop on what may very well be the final gasps of this warped little group.*

## THE COST OF GOOD LIVING

Dear Tom,

I recently finished the September issue of S9. Your Washington Outlook was quite interesting, especially since it concerns me.

Many of the local CB'ers know that a Mr. Popkin has been monitoring in the area. I wrote to the FCC to inquire as to the validity of his monitoring but I never did receive any type of answer. Your article answered my questions.

As to what you called a "likely candidate to get a monetary forfeiture," it looks like I was elected. I was informed that as of September 30th I have an apparent liability to the U.S. Government of $100.00.

All in all, S9 is very enjoyable and informative. The technical articles and projects are the best part. Keep it up.

Craig Kleinfeld, KBG8570
Bridgeport, Conn.

# Meet the magnificent new transistorized CB-5 Mark II


**P5-120 AC Power Supply.** Slim matching pedestal for CB-5 MARK II. Size: 10¾" x 2¼" x 6¾". Optional at just $44.95.

**HA-14 Portable Pak.** Either 1.5 or 5-watt capability, depending on batteries. Two alkaline or single nickel-cadmium—both types rechargeable. Fiber glass whip included.

## Precision engineering throughout—and a genuine engineering breakthrough in noise immunity.

A high-performance citizens band transceiver, reflecting the most advanced and practical concept of transistor design.

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**SPECIFICATIONS**

**5 watts input; 100% modulation capability; 6 crystal-controlled channels; 1 μv sensitivity for 10 db. S/N ratio; 45 db. adj. channel rej.; PTT ceramic mike; 6 kc. selectivity at 6 db.; 18 transistors, 9 diodes, 3 instant-heat transmit tubes.**

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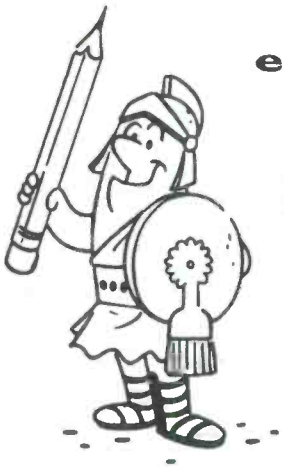


editorial

# KBG4303 rides again!

by TOM KNEITEL
EDITOR, S9

## THE FINAL PLEA?

Well it looks as if the short lived anti-FCC club, the ACBA, is taking its last few gasps of breath. In spite of the frantic campaign (akin to beating on the bottoms of pots and pans with spoons) to announce "We are taking in more members than . . ." "We are the world's biggest . . . ," and so on. However, the actual facts are that the club has laid a monstrous egg—one *so* big that an executive of a closely associated company has confessed to at least one CB manufacturer, "Starting the ACBA was probably the worst mistake we ever made." The only thing actually accomplished by this club is a deep and severe dislike for the club by the people at the FCC, most of whom bristle at the mere mention of the letters "ACBA."

Member recruitment pitches have been changed in a drastic manner to meet this growing threat. What they now say is that if you *don't* like the ACBA you should join the change the group the way you would like to see it. I can just see the Communist Party soliciting memberships from the John Birch Society by saying, "If you don't like Russia, what better way to change what's going on there than by joining up and doing something about it?"

In another last ditch bid to rally public sympathy and support, they have been reduced to showing up humbly, hat in hand, to ask us to lend S9's name to the dying ACBA in an attempt to plug up the holes in the dike. Yes, the latest pot-and-panning is a so-called "free standing offer" to meet with yours truly at my convenience, pleading that there is "plenty of room for both publications" and wanting to "patch up the rift," establish a "united CB front for the industry," and provide for "a unique working relationship between both publications."

Somewhere along the line there is a bit of razzle-dazzle double talk which looks quite good at first, but curdles after a few minutes of exploration. In the first place, the ACBA is being lumped together with its associated publication into a "package deal" in the foregoing paragraph. They are begging for mercy for both under the guise of one under the philosophy of, "Love me, love my dog."

We, quite frankly, are far too involved with S9's highly specialized production and publication to accept their request to join into what they call a "unique working relationship between both publications." For one thing this smacks of collusion, for another, we already belong to CEMA, a CB industry organization. We feel that our CEMA membership, which gives us a "unified front" with *all* CB publications and manufacturers, is as about as "unified" as we wish to be at this point. I realize that this probably sounds as anti-social and ungrateful as the dickens, but we just do not choose to go merrily skipping down life's highway arm and arm with a competitive publication. While we are always interested in maintaining a cordial business relationship with all CB publications, we cannot possibly see that there would be any advantage to S9's readers if we "teamed up" with the publication in question. As a matter of fact, the circulation of the other publication is considerably less than that of S9 so we can see an advantage only to the other publication, which could trade on the advantages of publicity in S9; larger circulation.

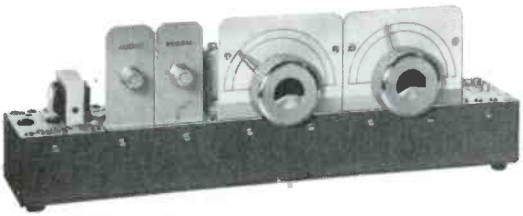
However, just to give the folks at ACBA moral reassurement that we at S9 aren't just a bunch of narrow-minded buggers, we will agree to accept their offer to examine

*Continued on page 58*

# EXPERIMENTER, SWL or RADIO AMATEUR

**Select your receiver, transmitter, or VFO from easy-to-build International A O C kits.**

**Simple step-by-step instructions show you how to assemble factory prewired units. Designed for top performance at a low cost!**



## RECEIVER KITS

This new line of International receiver kits cover a wide range of amateur, citizens band and special frequencies. Designed for AM, CW, or SSB reception, this basic receiver using a superheterodyne circuit* with regenerative second detector may be expanded to a more elaborate receiver by the addition of other Add-On-Circuits. Sensitivity usable to below 10 microvolts for voice and 1 microvolt for code. Nuvistor rf amplifier, mixer, oscillator, I.F. transformer, detector/1st audio, and power audio amplifier. Tube lineup: 6DS4 nuvistor, 6BE6, 6U8, 6AQ5. Shipping weight: 15 lbs.

Receiver kit includes 4" speaker and power supply.

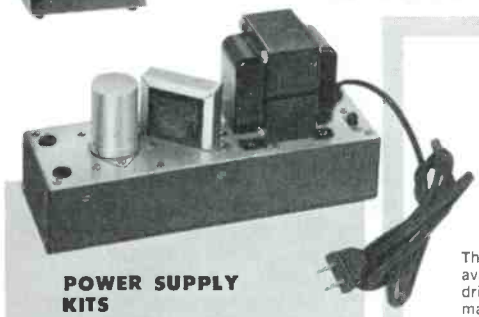
| Kit | Frequency | Price |
|---|---|---|
| AOR-40 | Special | $69.00 |
| AOR-41 | 150 kc — 450 kc | 62.50 |
| AOR-42 | 2 mc — 6 mc | 62.50 |
| AOR-43 | 6 mc — 18 mc | 62.50 |
| AOR-44 | 80 meter/40 meter | 62.50 |
| AOR-45 | 15 meter/10 meter | 62.50 |
| AOR-46 | 6 meter | 66.50 |
| AOR-47 | 2 meter | 66.50 |
| AOR-48 | Citizens 27 mc | 62.50 |

*AOR-41 uses a tuned rf circuit with 6BA6

## TRANSMITTER KIT

A compact package delivering a plate input of 50 watts for CW operation on 80 or 40 meters. 12BY7 crystal oscillator—6DQ6 power amplifier. Pi-network final. When used with AOR-44 receiver, transmitter operates from receiver power supply. Meter and TR switch.

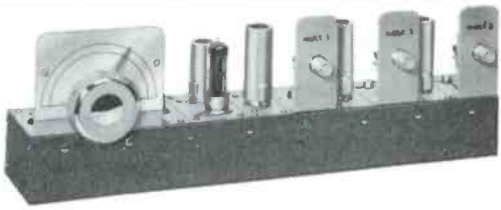
AOT-50 transmitter kit less power supply and key, but with one 40 meter novice band crystal. Shipping weight: 5 lbs. ..... **$35.00**



## POWER SUPPLY KITS

**AOP-100** 350 volts, 150 ma intermittent or 100 ma continuous service, 6.3 volts @ 5 amps. Shipping weight: 8 lbs.....**$18.50**

**AOP-200** 650 volts, 250 ma intermittent or 200 ma continuous service, 6.3 volts @ 10 amps. Shipping weight: 10 lbs....**$32.50**



## VFO KITS

The International AOF series of variable frequency oscillator kits is available in three versions. For example, the AOF-91 kit is a complete driver unit to be used with 6 meter and 2 meter transmitters. Approximately .5 watt of power is available on both bands. Tube lineup: 6BH6 oscillator, OB-2 voltage regulator, 12BY7 buffer-amplifier/multiplier. Shipping weight: 5 lbs.

| Kit | Frequency | Price |
|---|---|---|
| AOF-89 | VFO 8 mc — 9 mc and buffer | $22.00 |
| AOF-90 | VFO 8 mc — 9 mc plus buffer multiplier and 6 meter output | 29.00 |
| AOF-91 | VFO 8 mc — 9 mc plus buffer multiplier, 6 meter/2 meter output | 36.00 |

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I enclose $_____ Send free catalog_____

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# "CQ EN ONCE METROS"

## CONFIDENTIAL MEMOIRS OF A MEXICAN CB'ER

by RAFAEL L. CORCUERA, XB3

(Translation by Lilia Neira, S9 Staff)

I first found the need for CB when I realized that it would be a handy thing to have (for safety reasons) on my small boat. I decided to obtain a few Lafayette HE-23 rigs and put them into this service.

One unit was immediately installed on my boat, plus one in my office. Both installations were made so that the units could be removed and re-installed elsewhere, thus I may also use the units in my office, home, car, or pickup truck. They certainly come in handy for local communications around Guadalajara, where I live. Eventually we all became so dependent upon CB that we had to obtain additional equipment. We added some Lafayette HE-20 rigs to the network recently.

Here in Mexico there is no regulation on the use of 11 meter CB stations. As in the United States, it used to be a Ham band, but now the CB'ers have taken it over. Since there are no such things as Mexican CB licenses, operating restrictions, or other regulations, I was forced to select my own call-sign of XB3, although the government is aware of my CB operations and of the call-sign which I use.

There are 380,000 residents in Guadalajara (it's the second largest city in Mexico) and we have about 100 CB'ers in this area. It is the common practice of Mexican CB'ers to "call CQ" and conduct "ham type" communications with DX and local stations, however since there aren't any regulations against this type of operation (as in the U.S. and Canada), we aren't molested by the government. Mexico is really a great place for DX, and I have worked into Caracas, Callo Hueso, and Argentina and have been called by scores of American and Puerto Rican stations. It's a pity that most of the DX I hear is from American stations; a pity because I don't want to work them and get them in trouble with the FCC.


My first real DX contact occurred one day when I was mobile. I was driving home from a fiber glass factory which I own. I called "CQ-11" and was shocked when I was answered by a station in Coro, Venezuela. His name was Anderson and we chatted for about 10 minutes. He was as strong as a local.

Although I am not in the habit of working American CB stations, I have received reception reports from North and South Carolina, California, Texas, Indiana, and New York. I even received a reception report from Canada once. Apparently my ground plane is doing a good job because most of the reports said that I was really blasting through.

Although I am a member of the "Radio Aficionados de Occidente," a Ham club

with a 250 watt transmitter, I still get a lot of pleasure from my 5 watt CB operations. Sometimes I have initiated a contact on 11 meters and then have switched over to work the station on another band with the 250 watt Ham station. I have found that a great many Latin American CB'ers are also Ham operators.

I sincerely hope that American CB'ers will be able to get permission to contact Mexico and the other countries on CB. It is certainly an easy way to make new friends, and that doesn't have to be the complete extent of it, because CB is a great way to perform many humanitarian services, or to provide immediate attention to emergency situations.

If any of the American or Canadian CB'ers are in Guadalajara I hope that they will come to see me. I'm a great publicity agent for Guadalajara and will be only too happy to provide all sorts of interesting facts on the city. All CB'ers have a waiting friend at station XB3. My 10-20 is: Rafael L. Corcuera, Station XB3, Prisciliao Sanchez No. 416, Guadalajara, Jal., Mexico.

S9

# A DROOPING GROUND PLANE

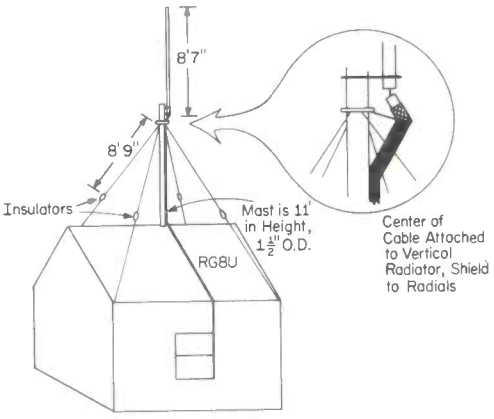
## CHEAP 'N EASY WAY TO RADIATE

**by MARTIN CUNNINGHAM, 13Q0947**

The sketch shows a simple version of the ground plane antenna that is easy to build, not too conspicuous, and one which has excellent electrical characteristics.

There are a lot of us who are faced with restricted antenna space. Many CB'ers are further restricted by a landlord or neighbors who are quick to howl long and loud about anything as complex as one of the more sophisticated commercially made units.

The drawing shows a method of using the drooping ground plane on 11 meters to everyone's satisfaction (including your own). It's an easy one man job and can be constructed from a mobile CB whip, a few insulators, a mast and some wire. The end result looks as harmless as a simple broadcast antenna—a natural where CB'ers aren't welcome.




Instead of an actual whip, you might try using a length of ½-inch aluminum electrician's conduit, or, for a little more money, the same size tubing made of the stiffer alloys of aluminum.

The main requirement is that the mount used to hold the vertical radiator to the mast be of sufficient strength to accept leverage from the whip when there is a stiff wind blowing. I used a 24¢ Allied type 91C275 mount and was satisfied with the results.

S9

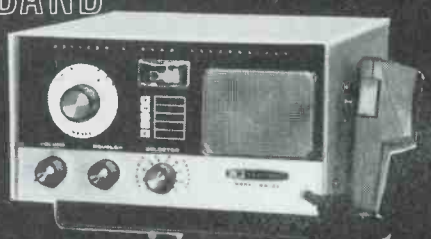




Subscription form between pages 48 and 49!

# HEATHKIT CITIZEN'S BAND

## world's biggest line of top quality 2-way radio values



**MARINE CB**
Styled to match Heathkit Marine equipment • 5 transmit-receive channels • All-channel tuning • RF stage for extra sensitivity • Crystal filter for extra selectivity • Efficient transmitter for extra range • 3-way power supply • Kit MW-33, $89.95

**DELUXE MASTER STATION**
5 transmit-receive channels • All-channel tuning • 4-tone selective calling • Tuning meter • Squelch • Noise limiter • 3-way power supply • Kit GW-42, $119.95

**SINGLE CHANNEL**
One transmit-receive channel • Sensitive superhet. receiver • Squelch • Noise Limiter • AC power supply plus accessory DC supply • Kit GW-12A, $39.95

**ACCESSORIES**
Heathkit offers a complete line of CB accessories including selective-call kits, mobile and fixed station antennas, microphones, and extra crystals.

**GW-52—1 WATT**
10-transistor, 2-diode circuit; ½ uv sensitivity; built-in charger; $20 rechargeable battery included. Pair $139.95; Each $74.95

**Walkie Talkies**

**GW-30—100 MILLIWATTS**
4-transistor curcuit; 4 uv sensitivity; 9-v. battery lasts to 75 hours. Pair $35; Each $19.95

**GW-21—100 MILLIWATTS**
9-transistor, 2-diode circuit; 1 uv sensitivity; 9-v. battery lasts to 75 hours. Pair $84.95; Each $44.95

Heathkit, pioneer name in citizen's band radio . . . the name found wherever fast-moving, dependable 2-way radio communications are functioning . . . the name associated with quality at great savings. Whether you use citizen's band radio for your work or recreation, there is a Heathkit CB model to fit your purpose and budget. Five different 5-watt basic transceiver models are available with various power supply options. Three different walkie-talkie units are ready to keep you "in touch" . . . each in a different power and price class. And all Heathkit CB equipment is available as do-it-yourself kits or factory-assembled and tested . . . either way, you save more, get more for your money with a Heathkit. See the Heathkit Catalog for full details on the very model you need to put you "on the air."

**FREE 1963 HEATHKIT CATALOG**
Over 250 money-saving, do-it-yourself kits for stereo/hi-fi, citizen's band, amateur radio, marine, test & lab, educational, electronic organs, television, and more. Save up to 50% on your electronic equipment needs with Heathkit. Send for your free Heathkit catalog today!

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Prices and specifications subject to change without notice. Dealer & Export prices slightly higher.

# GIVE ME THE SIMPLE LIFE

## EXCLUSIVE INTERVIEW WITH "JOE CB'ER"

**by THE OL' TIMER**

"You are a Citizens Radio operator, I believe, is that right?"

"I'm a CB'er, yes."

"I take it, CB'er and Citizens Radio operator mean the same thing."

"10-4."

"What does that mean? That's radio code, isn't it?"

"Roger!"

"Do you always say Roger when you agree with someone?"

"Not always, sometimes I say O.K., or fine business, or . . ."

"But all of those sayings mean that you concur?"

"Check."

"Is that your transmitter over there on the desk?"

"That's my CB rig."

"Is that what you call it, your CB rig?"

"Not always. I call it my Tin Can, or the Pile of Junk."

"I must say that it certainly has many tubes in it."

"Please, those are not tubes; they are bottles."

"Are all radio tubes referred to as bottles?"

"Just the big ones, the little ones are called transistors."

"Now tell me, just what is the purpose of this radio broadcasting station of yours."

"I CB with it."

"You mean that you are in communication with other similar instruments."

"I have Qew-soes with my other units, yes."

"Do you always Qew-soe when you talk?"

"Sometimes I give them a buzz, or a shout, or I work them."

"Where are these stations that you talk to?"

"I work only my own units. I'm not allowed to work DX."

"What do you mean by DX?"

"That means they're not locals. They have DX calls. They come in on skip."

"You mean that the operators out of town skip and jump to contact you?"

"Well, I guess that you could apply that thinking to some of the DX stations."

"You mean that despite their athletics, you still are not permitted to communicate with them?"

"Roger."

"You know, ever since I entered your radio room . . ."

". . . you mean, radio shack."

"Since I've been in here I've been curious as to the significance of that heavy black cable that runs through the wall up there."

"That's part of the sky hook."

"Oh, I thought that it was part of your aerial."

"It's coax, a 52 ohm line to suck up RF."

"Why did you just throw that switch on the apparatus?"

"I just kicked it on."

"But you turned the switch on with your hand. You didn't kick it at all."

"I always kick the rig on with my hand."

"What are you doing there now?"

"I'm going to flip across the band."

"Do you always flip across the band?"

"Sometimes I just read the mail."

"Say, that's a loud station you have on the radio there now."

"He's twenty DB over nine."

"You mean, you measure the strength of

the stations you hear?"

"I've got an S-meter. That's how I can tell."

"You've got a weak station on there now. I can just barely make out what he's saying. How does he measure on the meter?"

"He's only ten DB over nine."

"Then your meter doesn't go much below nine, I take it."

"It's a liberal meter."

"What's that station saying, he's calling all those letters and numbers?"

"He's my Unit 2 trying to get through to me. 10-23 a second, I'll throw on my transmitter and go back to him."

"What was that blinding flash?"

"My final went west."

"Is that what caused the flash?"

"Either that or the audio section."

"I take it your station is inoperative now."

"Roger."

*Curtain*

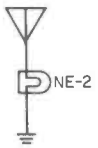
S9

# A 10c LIGHTNING INDICATOR

## INTERESTING DEVICE USES ONLY 1 COMPONENT

**by GILBERT OSMOND, 1W3324**

The 10¢ lightning indicator consists of a type NE2 neon bulb with one of the wire terminals connected to a 100 foot long wire antenna, and the other wire terminal connected (by means of as short a length as possible of heavy) to a cold water pipe ground.




The bulb will flash whenever a nearby stroke of lightning produces voltage on the antenna. It takes about 60 volts to cause the NE2 to flash, and with the antenna and ground acting like the plates of a capacitor, the charge builds up electrostatically. When it hits 60 volts—bingo!

If you don't want to sit in a dark room to watch the pretty little light, you can place the bulb inside a small cardboard tube, cutting a hole in the side of the tube.

This scientific gimmick has no practical value, but will give you an idea of the electrical potential which builds up on your CB antenna. One interesting thing we noticed was that we were able to watch the bulb flash during several heavy snow storms last winter.

S9

# MOBILE ANTENNA HINT

## MOBILE ANTENNA INSTALLATION SOLVER

**by KENT A. MITCHELL, KCF0147**

While installing a bumper antenna mount for my mobile rig, I came across the problem of how to bring the coax from inside the trunk to the antenna base. Drilling a hole in my Lincoln Continental was out of the question . . . so, the only other route was through the crack between the trunk lid and the body. However, how could I be certain that the clearance would be sufficient to prevent the coax from being crushed when the lid was closed?

The problem was solved with a small wad of modeling clay. Placed at the critical spot, the lid is closed on the clay and then opened . . . and the clearance is measured by the height of the compressed clay.

S9

THE NEW CITIZEN BAND ANTENNA
THAT WILL OUT PERFORM ANYTHING
COMPARABLE ON THE MARKET TODAY

# MOSLEY HAS PROVEN IT AGAIN

## THE ALL NEW "SUPER" A-511-S

will out perform any five element CB beam, mounted vertically or horizontally, available on the market today. *Regardless of claims by others,* the *A-511-S* delivers a crushing 9.5 db forward gain over a reference dipole or 11.6 db gain over an isotropic source* or effective power multiplier of 14.5. * See Foot Note.

This *All New Mosley A-511-S* with elements at optimum spacing on a heavy duty 24 foot boom delivers the highest directive gain available. Excellent low SWR and 52 ohm match is achieved through the use of the proven gamma match. Front to back ratio, 25 db or better. Improved signal to noise ratio and lightening protection is achieved through the grounded driven element.

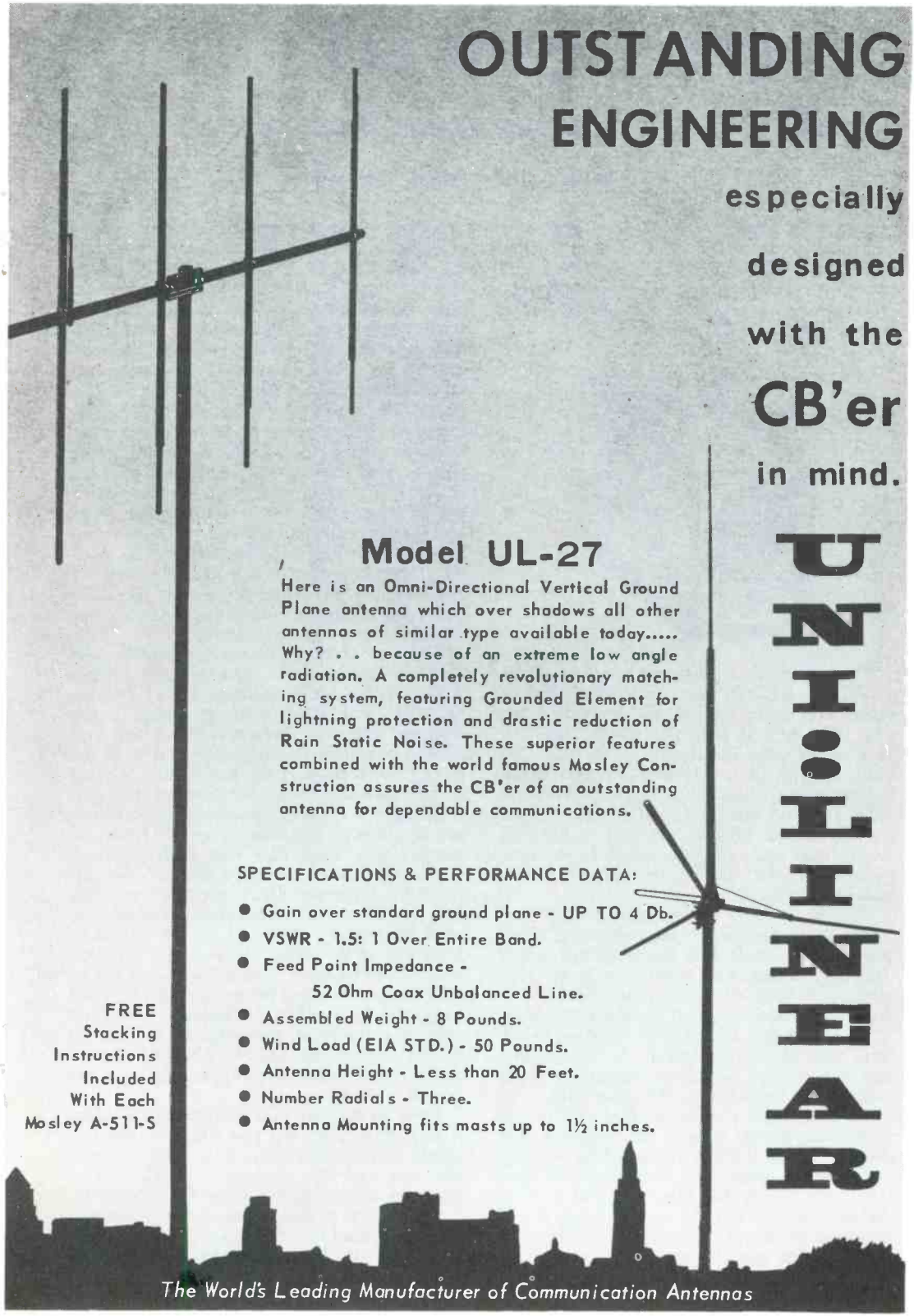
### SPECIFICATIONS AND PERFORMANCE DATA:

- Radiation - Uni-Directional.
- Number of Elements - 5
- Antenna Weight - 16.5 lbs.
- Boom Length - 24 ft.
- Maximum Element Length - 18' 8¾"
- Vertical Wind Load - 112 lbs.
- Horizontal Wind Load - 62 lbs.
- Type Matching - Gamma.
- Impedance Point - 52 Ohm.

*Mosley's A-511-S CB Beam* is superior in performance as well as tops in quality and design - second to none. Easy to assemble and install, antenna comes complete in light weight, easy-to-carry-home carton. Be the first in your area to enjoy the advantages of the *New Mosley A-511-S CB Beams.* Order yours NOW at your favorite Mosley dealer or write department UA-17, Mosley Electronics Inc. for the name of your nearest *Mosley dealer.*

*REFERENCE: *JOHN D. KRAUS PH.D., (Antennas) Mc Graw-Hill Book Co. Inc, 1950, Page 54.*

**Mosley** *Electronics Inc* 4610 N. Lindbergh Blvd., Bridgeton, Mo. 63044.

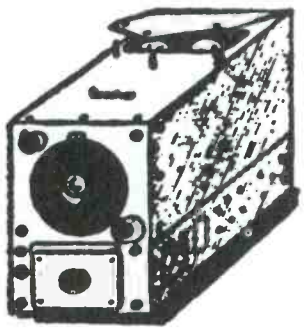


# UNCLE SAM GOES CB

## PUTTING THE SURPLUS BC-455 RECEIVER ON CB

by JOHN G. BORKMAN, 12W1919

Although getting scarcer each year, the venerable old World War receiver known as the BC-455 ARC5/R27 is still to be found on the shelves of surplus electronic dealers. This inexpensive unit can be easily made into a nifty little CB superhet.



The going price for a used, but excellent condition, BC-455 is about $10, plus a power supply to operate the receiver from 117 volts AC. It will have to furnish 6.3, 12.6 or 24 volts for the filaments and 250 volts for the plates (these are also available on the surplus market. The only other parts you will need are a phone jack, plate switch, midget 25,000 ohm pot, a 5 prong socket with male plug to match power connections at the rear of the chassis and a splined turning knob.

The first step is to remove the small can insert at the bottom of the front panel. This can contains male and female plugs which are clipped free of all wires close to the plug terminals. This will allow room for the controls which are mounted on the front plate. The midget pot, which is to serve as an RF gain control, is mounted in the center with the B + control switch on one side and the phone jack mounted on the other side.

The filament circuit is then rewired to match the power supply you will use. The BC-455B was initially designed for a 24-28 volt supply using 12.6 volt tubes. With a 12.6 volt supply the filaments will need to be rewired for parallel connections. 6 volt equivalents may be substituted while again rewiring for parallel operation.

At this point the biggest job in the conversion is to reduce the capacity of the tuning capacitors. This will be a much easier task if the capacitor section is completely removed temporarily from the chassis. By heating the point of mounting of the plates, they can be easily removed. Care should be exercised to avoid bending or misaligning those plates which are to be left in the gang. Leave only one rotor plate (the middle one). Leave only two stator plates (the ones on either side of the remaining rotor plate). Also remove the front rotor sections of the trimmers on the mixer and oscillator variables, and all but 3 rotor plates from the remaining trimmers on the three sections. Do not touch the oscillator series padder capacitor. Center the tuning plates by adjusting the centering screws on the sides of the capacitors, remount the capacitor and resolder the connecting wires.

The next step is to rewind the coils. The oscillator grid coil is changed to a double spaced 5-turn winding using the same wire and the same spacing for coupling to the adjacent winding. Take the mixer coil and remove the large winding of fine wire at the top of the form and replace it with 4-turns of No. 24 enamelled wire. Change the grid winding to a double spaced 6-turn coil leaving a space of approximately ⅛" from the smaller one, being sure that both windings are in the same direction. Rewind the RF form to duplicate the mixer grid winding and the 2-turn antenna coupling coil of covered buss white (No. 18) on top of the 6-turn coil at its center. If a single wire antenna is to be used, ground one end of this winding at the plug on the chassis, connect the other terminal to the antenna post, first removing the small capacitor in series with the former antenna lead-in. An SO-239 coax socket may be used to replace the antenna post if desired.

Prior to starting the realignment process it is best to drill out the rivets in the coil shield cans. Enlarge the holes to ¼" in both the can and the mounting bracket. This provides access to the slugs for alignment.

Preferably a signal generator feeding a 27 mc/s signal into the mixer grid should be used to start the realignment. Set the dial

at 6.5 mc/s and adjust the oscillator trimmer and slug until a signal is heard. Next feed the 27 mc/s signal into the RF stage through the antenna post and tune the mixer and RF slugs for maximum signal output. An output meter should be used rather than tuning solely by ear. Now turn the signal generator to 29 mc/s and pick up the signal by rotating the receiver tuning dial. At this point tune the RF and mixer trimmers for maximum signal output. Do not retune the slugs at the high end, nor the trimmers at the low end, as this will upset the tracking of the mixer and oscillator. Repeat the two settings until the tracking is accurate. Then remove the shield cans and replace the slug locking tabs. If care has been exercised in replacing the locking tabs the tuning should still be correct. Sometimes it may be advantageous to align the IF transformers with a 27 mc/s signal as the last step.

The 25,000 ohm midget pot is wired into the circuit to replace the external gain control of the BC-455B. The arm and one side of the pots are grounded and the other side is connected to pin 1 on J3, or pin 3 (outside view) on J3.

The end result is a CB and 10 meter Ham receiver with 6 mv sensitivity. The IF frequency of this unit is 2830 kc/s.

# HIGH VOLTAGE

## PROTECT YOUR LIFE WITH THIS GADGET

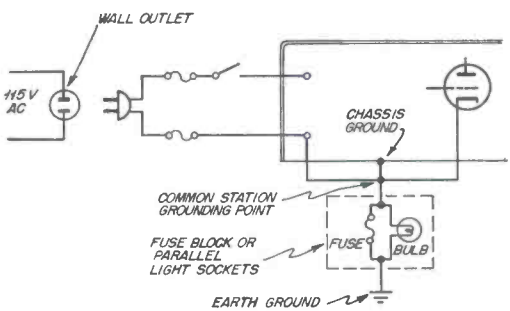
**by MAURICE KIRKWOOD, 16Q0364**

All radio equipment must be grounded—that is the first rule of safety. An ungrounded metal chassis or cabinet, or an ungrounded power circuit, can be as dangerous as a poisonous snake. A connection to a water pipe will suffice for the ground connection; but a heavy wire connecting to a pipe driven into the ground is to be preferred, for it offers a more certain connection.

Since one side of the 115 volt lighting circuit is always grounded, it is necessary that the radio equipment be connected to the power line with the proper polarity, for reversed connection would put a direct short on your power line.

Most of us depend on a plug in a wall outlet for our power connection. Any time it is removed, whether accidentally or not, the whole process of polarizing it correctly must be gone through again, checking with a lamp or volt meter before plugging into the outlet again.

A permanent arrangement that facilitates reconnecting the power lead, and also protects the equipment any time the power plug might be removed and replaced incorrectly, is shown in the diagram.




A fuse block of the type designed to hold two screw fuses is installed permanently in the station; and the two fuse sockets are connected in parallel. All ground connections from the radio equipment are bound to a common point and connected to one side of the fuse sockets. The other side of the sockets is connected to the earth ground. Thus the only connection from the common

ground point of the equipment to the earth ground is through the fuse sockets.

When the line plug is inserted on the wall outlet, a light bulb is screwed into one of the fuse sockets. If it lights, the polarity is *wrong* and the AC plug must be turned over.

If the lamp does not light, which indicates proper polarity of the line plug, a fuse of low amperage rating, say 3 amps, is screwed into the other socket in parallel with the lamp. This provides a good low-resistance ground connection as long as the line polarity is correct; but if the line plug should be removed and plugged in wrong, the fuse will blow; and then the lighted plug will give the warning of trouble.

Incidentally, the brightness with which the bulb lights when the polarity is wrong indicates the efficiency of the earth connection. If it is a good connection to moist soil, the bulb will light with almost normal brilliance.

Remember, *always* unscrew the fuse befor replacing the plug in the wall outlet; and if the bulb does not light, screw the fuse in again.

S9

# THE "SNEAKY PETE" ANTENNA

## GETTING AROUND A "NO CB ANTENNA" RESTRICTION

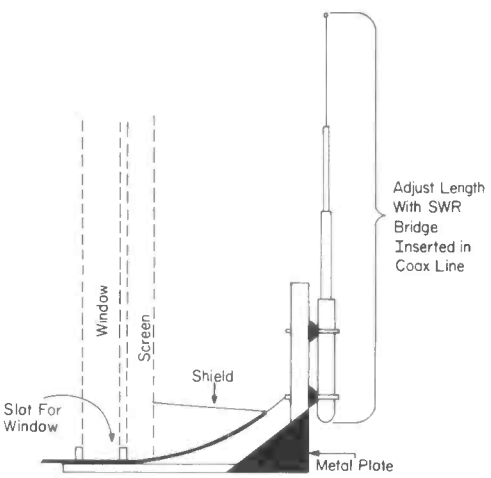
**by ROBERT McAIRE, KIC7608**

Living in a big city *can* be fun, but it can be miserable if you're a CB'er and the landlord (or neighbors) raise a fuss at the sight of a CB antenna adorning your abode. Being faced with this very same situation, I decided to take the bull by the antenna and work up a solution to the problem.

The best way to solve the dilemma was to find an antenna which would be small, as efficient as possible (under the circumstances) and able to be ripped from its mounting and hidden in the closet upon short notice. The first antenna tried was a standard ¼-wave whip which was stuck into a spring mount on my window-sill. This worked alright because the whip could be unscrewed when it was not in use, however when the neighbors started pounding on the door it made for panic because the whip "froze" in the mount during the winter months.

The method eventually adopted was to mount an auto whip on a specially built window mount. The auto whip is capable of being telescoped down during off-the-air periods, or removed entirely when desired.

The best place, I found, to mount the whip was near a spot where I could obtain a ground for the shield side of the coaxial cable. The whip used was one which designed for side cowl auto use, it has 4 sections and opens up to 100 inches. The whip mount was a 2-stanchion type, to which I added my own refinements for the window mount.




A mounting brace was made out of 1" pine wood, as shown in the illustration. This brace is held in place by the window being closed down on the "U" shaped section. The antenna is fed with RG-58/U, with the shield (in my particular instance) being connected to the window screen in back of the whip. I suppose that a connection to a radiator or water pipe would give better results, however none happen to be convenient to the window I am using. As short a lead as possible to "ground" is suggested.

S9


# The best mobile CB rig on wheels.

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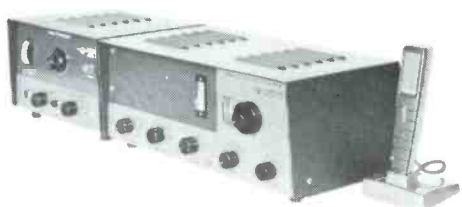

For home, office or business use, see the complete Browning CB base station equipment.

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# FREE CB CLUB PUBLICITY

## IT'S EASIER TO GET THAN YOU MIGHT THINK

**by PETER PATTIESON, KBG8911**

Newspapers receive and print many "free" items. These are called free because the group or individual sending these news items are not paid or charged. Your CB club can take advantage of this practice to get some free publicity.

### *THE "CATCH"*

This free publicity is not as easy to get as it may seem. Of the total material sent in to a newspaper, only a small percentage ever appears in print. This article seeks to help you increase your chances of having your club's news printed.

### *HOW IT'S DONE*

1. Interest. The main commodity of a newspaper is news—that's what the newspaper sells. Therefore, any publicity release you send in should contain some newsworthy fact. Among the possible stories are: emergency communications, public services, elections, awards made to members, and speakers scheduled for meetings. Any event to which the general public is invited is always a good story.

2. Style. The newsworthy fact should always be contained in the *very first* sentence of the story. This is called the *lead*, and contains the classic five W's: Who, What, Where, When and Why. For example, if your club has an election, the story you send the paper should begin: "Four Lompoc men (or local men) were elected officers of the Lompoc CB Radio League here last night."

The next paragraph should identify the men by name, age, and street address. Call-signs may be included, but will probably be of no interest to the average newspaper reader, and could even bring the poor club officer some TVI aggravation.

In the following paragraphs, you can tell the reader a little bit about the club, in terms of that which will show them, such as public services normally performed by the club, recent emergencies handled, etc.

A good news story is written like an inverted pyramid. That is, the prime interest comes at the top, the opening lines, of the column. Other information follows in order of its importance. This is done because surveys have shown that the average reader reads only the first few lines of a story to see if it will interest him. If something in those opening lines doesn't catch his eye, he's going to pass the whole thing right by.

Unless a person is known to nearly everyone in the community, his name should never begin the story.

*Bad:* John J. Jameson, 24, of 4778 Elm Street (reader reaction: "Ho-hum, who's he?" turns page, reads *Peanuts*).

*Good:* A local Citizens Band radio operator has been nominated to receive a special award from the Lompoc CB Radio League for his work during the recent hurricane.

(Second paragraph) The nominee, John J. Jameson, 24, etc.

Every newspaper has style rules. These have mainly to do with such matters as abbreviations and capitalization. Do they write street, st., St., or Str.? Do they abbreviate Pennsylvania as Pa., Penn., or Penna.? These may seem minor, but it will help your chances of having a story printed if you follow the style of the paper, for all good-sized newspapers have a copy desk which examines every story and corrects errors, spelling, *and* makes the story conform to the paper's style.

A word now on the use of technical terms. Use them as if it cost you a quart of blood for each one. The ordinary reader will not know what a colinear antenna is, nor will he be a bit interested in a local man getting written up in S9, unless you let him in on what these things mean.

The quart of blood price goes also for adjectives. If you describe the work of a CB'er in an emergency situation as heroic, that is editorializing; a capital sin, and strictly *verboten!* Tell the reader what the CB'er did and all the pertinent circumstances, and let him decide whether or not it is a case of heroism.

3. Form: Here also you can increase your chances of being printed. All material *must* be typewritten. Even Mr. Palmer of shorthand fame could not expect handwritten



Subscription form between pages 48 and 49!

copy to be accepted. Triple spacing or at least double spacing should be used. Leave generous margins (left 2 inches, right 1 inch).

The story begins halfway down the first page to leave space for a headline to be written. Never allow a sentence to run over to the next page. Even a paragraph should not do so. Remember to number each page. Use 8½" x 11" paper, with a club letterhead as the first page.

4. Photographs: Because it costs a bit to make an engraving for a picture, and because non-professional photos usually lack quality, very few pictures are used in a free story. However, a good photo does have a chance. Photos should be at least 5" x 7", but 8" x 10" is the preferred size. Many papers prefer *not* to work with Polaroid shots.

All persons in the picture should be identified. All other necessary information is included with the identification and pasted to the back of the photo.

5. Etc.: Newspapers print such free material when and where they have to space to fill after they get through commenting on the day's Senate doings, Castro quotes, murders, clubbings, scandals and revolutions. Generally speaking, the hardest paper to try to make is the Saturday edition, since it is so small. The Monday paper is probably the easiest, because not too many good murders take place on Sunday and there's very often not enough real news to fill it. Find out from the city editor when all deadlines are. Always have your material in well ahead of a deadline. It is advisable to bring your story in yourself in order to answer any questions the editor might have (but make your stay as brief as possible because editors are usually busy fellows and can "sour" on your story if you overstay your welcome).

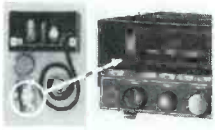
If your paper does outside printing work, you can create good will by having them print your club letterheads, club newspaper, QSL's, etc.

# hallicrafters gives you the basic superior performance you need for just $159.95...

All the gadgets ever invented wouldn't improve the tremendous basic performance and reliability of the CB-3A. You get 8-channel, crystal controlled convenience . . . 100% modulation capability . . . 40 db. min. adjacent channel rejection . . . less than 1 μv. sensitivity . . . 6 kc. selectivity . . . removable accessory panels and built-in accessory jack—plus a reliability record unequalled in the field.


# ...and lets you decide which extras you want

**HA-9 S-Meter Kit.** Illuminated. Complete hardware; installs in minutes in removable CB-3A front panel. Universal. $8.95.



**HA-11 Noise Eliminator.** "Racket Buster" deluxe. Mounts completely hidden on back of CB-3A; front panel thumb control. $15.95.

**HA-3 Noise Suppression Kit.** Pass condensors, ground braid, etc. Minimize electrical system noise. $13.48. SP-3 spark plug suppressor, $2.95.

**HA-12 Encoder/Decoder.** Full duplex selective calling system. No tubes or transistors. Single switch operation. $79.95. HA-12A Encoder only, $44.95.

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# CB DIRECTION FINDING LOOPS

## PINPOINT MOBILE UNITS AND BASE STATIONS

by VINCENT CRUMMLES, 12Q1291

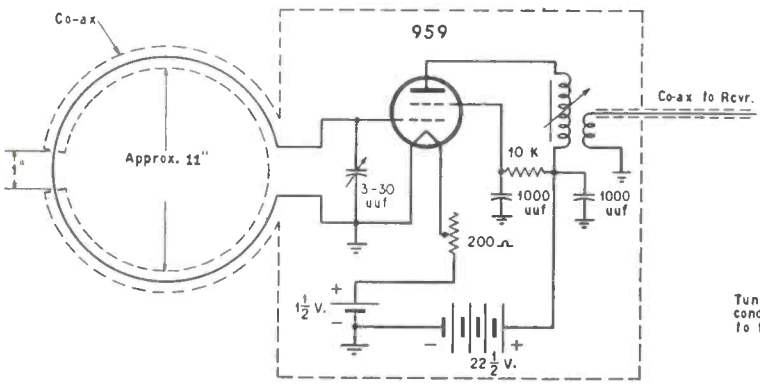
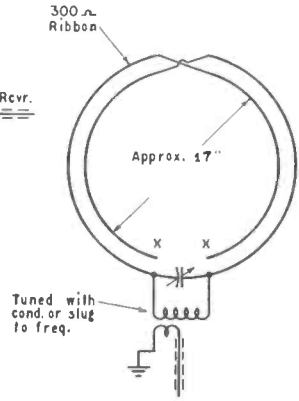



FIG. 1




Clip free ends (marked X) until loop tunes to frequency.

FIG. 2

CB'ers have requested information and construction information on direction finding loops to use in locating mobile units, determining the direction of base stations, for tracking down sources of interference.

Here are schematics of two loops. Figure 1 illustrates a loop with an RF stage in a box at the loop, and Fig. 2 shows the construction of a loop feeding directly to the receiver portion of a transceiver. The loop in Fig. 1 is preferred because of its increased sensitivity.

The loop is made of coaxial cable, copper tubing or any convenient material which will "stay put." There is nothing particularly critical about any of the components, or adjustment.

In Fig. 2, the loop should be tuned for maximum S-meter readings by trimming off the free ends of the 300-ohm ribbon a fraction of an inch at a time (at points "X").

When using the loop in Fig. 1, the sensitivity control (the 200-ohm pot) is particularly important since greater nulls can be obtained when approaching the source of a signal. When about ½-mile from a strong signal, the filament current of the 959 tube is turned off. For best results, always use the DF loops with an S-meter. If you are using the loops from your mobile unit, the regular CB whip should be removed from the vehicle or tied down while direction finding, although when taking the first bearing it is left in normal operating and used as a "sense" antenna.

Do not attempt to use these loops for transmitting. They are connected to the receiver at the "receive" side of the transmit/receive relay. The coax.

The output circuits are as follows:

Loop in Fig. 1. Miller 20A686RBI slug tuned coil. The center lead of the coax is wrapped around the coil 3 times and then grounded.

Loop in Fig. 2. Output circuit consists of a Miller RFC-144 choke and a 20 mmf variable capacitor. The center lead of the coax is wrapped around the choke 3 times and then grounded. Tune the variable capacitor for maximum S-meter reading.

The type 959 tube is an acorn job and is generally available inexpensively on the military surplus market. I picked one up from Barry Electronics (512 Broadway, New York, N. Y.) for $1.50. These tubes usually sell for more than $10 in the commercial market, if you can dig one up.

# 11 METER CRYSTAL RECEIVER

## SHORT RANGE CB'ING IN A MATTER OF MINUTES & A FIELD STRENGTH METER

by GEORGE WEBB, KEJ7214

Chances are there are many times you'd have found a pocket sized CB receiver a very handy assist. In erecting antennas, checking field strength, adjusting antennas, checking TVI, or for just plain eavesdropping in the vicinity of a CB rig, this little crystal receiver will prove itself a worthwhile evening's project. If you get tired of listening to the station, you can plug in a meter and watch it for a while because this unit doubles as a field strength meter.

The original crystal receiver was housed in a 3 x 4 x 5 utility box which happened to be on hand, but a smaller box is large enough, and in any case, all parts are mounted on one cover. The back cover supports a sheet metal clip, bent to hang the receiver from the belt.

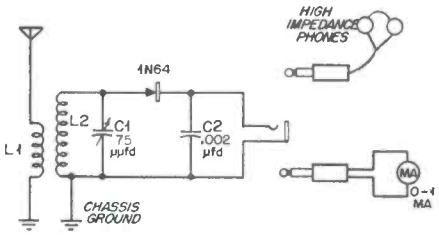
A 75 mmfd APC screwdriver type capacitor was chosen, since the bumps and jars of portable use might require frequent resetting if a shaft type were used.

The coil is composed of eight turns from a #3003 B&W Miniductor, with four turns of #22 enamel wound on the ground end for the antenna link.

A short cowl mount antenna was found adequate, and is conveniently compact when telescoped.

The circuit is standard for crystal receivers, and leaves small need for comment, except perhaps the usual reminder to use care in soldering to the germanium diode leads.






### PARTS LIST

**$L_1$ 4 t. #22 e. on ground end of L2**
**$L_2$ 8 t. #20 enam. ½" diam. ½" long (B&W #3003)**
**$C_1$ 75 mmfd APC screwdriver type (Hammarlund)**
**$C_2$ .002 ceramic or mica**
**Germanium diode 1N64**
**Utility box, 2 section side cowl auto ant., single circuit phone jack, high impedance phones, 0-1 ma meter (optional)**

The unit was used to position a TV antenna located seven hundred feet away, and out of sight of the shack. It was possible for the operator to observe the screen and report via the shack transmitter when the antenna was properly aimed for best reception.

Using an efficient CB installation, reception should be good for about a quarter of a mile over hilly terrain. On level ground the receiver should be useful at greater distances. Of course, a longer antenna could be used to even increase these ranges.

By replacing the headphones with a 0-1 milliammeter the device becomes an effective field strength meter. For purposes of adjusting antennas it serves admirably in a dual capacity, both as a receiver and a field strength meter.

To prospective builders of this unit, the author suggests the possibility of providing plug-in coils, making it an all-band receiver to make it adaptable for other uses.

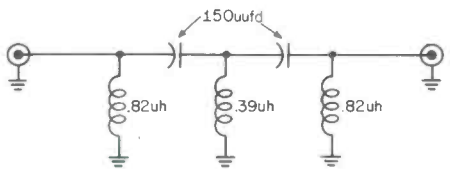
I hope you have as much fun with your 11 meter crystal receiver as I've had with mine.

# FILTER FOR CB CONVERTERS

## FILTER OUT THOSE BROADCAST STATIONS

by LAURENCE TEMPLETON, 4Q1405

I'm one of those CB'ers who uses a broadcast receiver in conjunction with an 11 meter converter for CB reception. Living in a large city, I have been plagued with all manner of chirps, heterodynes, whistles and birdies ever since I began trying to convert CB to the broadcast band. The problem was because the powerful broadcasting stations were still feeding through and being received along with the CB signals. There was only one solution, a high pass filter which would trap the unwanted broadcast band signals, while still permitting the CB signals to pass.




The circuit shown in the accompanying diagram is just such a filter. It consists of two 150 mmfd capacitors, two Miller type 9230-18 chokes, and a Miller type 9230-10 choke.

The filter is constructed in a Bud CU-3015-A Minibox, with the chokes spaced as far apart as possible to prevent any coupling between them.

The unit is located in the circuit between the T/R relay and the converter.



Subscription form between pages 48 and 49!

# LINE NOISE FILTER

## ELIMINATE MOST INTERFERENCE FROM POWER LINES

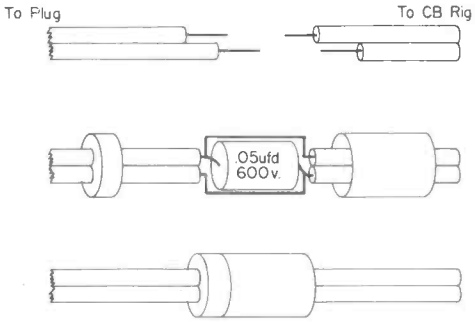
by MARK TAPLEY, 10W3140

Did you ever try to hear a distant (and weak) CB station when suddenly a period of prolonged static took out the other station? It's pretty aggravating, but there's a solution for you at the bargain price of about $1.15—and I'm sure that you would probably pay several times the buck fifteen while your being serenaded by the static.

This type of prolonged heavy static generally enters the CB rig through the 115 volt power lines—being sent there by electric razors, oil burners, refrigerators, vacuum cleaners and any one of several dozen other household contrivances.

Most of this type of interference can be eliminated by the insertion of an Aerovox type P123ZNG capacitor rated at .05 mfd, 600 WVDC (Lafayette 3CG-326, Allied 11L846) in the power cable of your CB rig.

The connection is simple, the capacitor is simply placed across the leads as shown in the diagram. For protection against short circuits and shocks, it is suggested that you enclose the connected capacitor within one




of those cylindrical plastic pill bottles which most drug stores keep in stock. A hole is drilled in the bottom of the bottle and also in the cap and these are placed on the power lead before the capacitor is connected. The bottle must be at least 1" long by ½" in diameter to enclose the capacitor.

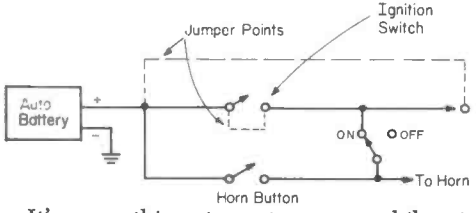
If you can locate the motor which is causing the interference, you can also place one of these filters there for an extra touch of noise filtering.

S9

# IGNITION ALARM SYSTEM

## DON'T LET THEM STEAL YOUR MOBILE

by ROD HUDSON, 11Q5362




It's one thing to get your mobile rig stolen, but it's another thing when the car is still attached. The easiest method (and most commonly used) is to short circuit the ignition switch with a piece of wire.

You can protect your mobile unit against this type of shenanagins by connecting your car's horn to the ignition circuit so that the horn sounds when current flows through the circuit. A switch is provided to permit your own (quiet) operation of the vehicle.

The system shown in the schematic actually provides double protection because it will set off the horn whether the thief tries to "jump" the circuit by running a wire from the battery to the coil or by doing it right under the dashboard directly at the ignition switch.

The on/off switch can be placed in the glove compartment.

S9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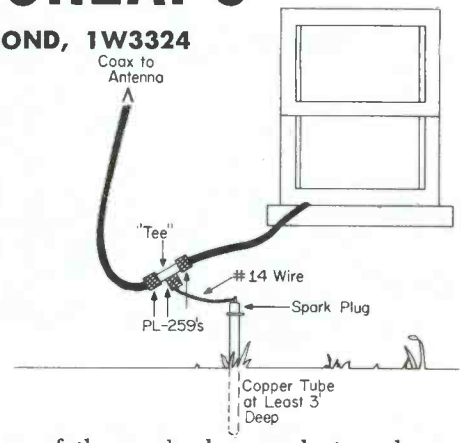
# THE "EL-CHEAPO"

**by GILBERT OSMOND, 1W3324**

Last summer I had occasion to get a first-hand look at the results of a lightning storm on a CB antenna. Needless to say, the antenna was crumpled up like a giant spider.

Looking for an immediate solution to the lack of lightning protection at my own station, and not wanting to spend any money (as usual), I borrowed a trick learned while in the South Pacific (where Texas sized lightning storms are commonplace).

The whole thing is strictly from scrounge-ville and consists of a coax "Tee" connector, a few PL-259 connectors, a spark plug, a short length of No. 14 Nyclad magnet wire, and some copper tubing. As shown in the diagram, a convenient place (near the ground) is selected on the coax lead-in and the coax is clipped. Next, a PL-259 is connected to each of the two coax ends which you created. A "Tee" connector is then inserted between the two PL-259's.




Next, solder the No. 14 wire into the center connection of another PL-259. After that, drive the copper tube into the earth to a depth of at least 3 feet and then fit the bottom of the spark plug snugly into the top end of the tube (make sure that the tubing you use is of sufficient diameter to receive the spark plug). The final connection is when you place the free end of the No. 14 wire to the top of the spark plug.

There are a number of these now in use in this area, although I suspect that there are probably 150 times as many in the South Pacific.

# CB-DELITY

**by MARK O. KRALJEVIC, 18B2326**

The thought struck me one day that there might be some clever new use to which I could put my little 11 meter super-whiz-bang transceiver. Let's see, I had already worked it as a PA system, I had found that it was a dandy paperweight, and once in a while I found that it could pinch hit as a means of transmitting and receiving CB messages.

Having what was left of an ancient phonograph in the garage, I decided that it was time to see if I could get the rig to double as a phono amplifier, while still retaining its use as a transceiver.

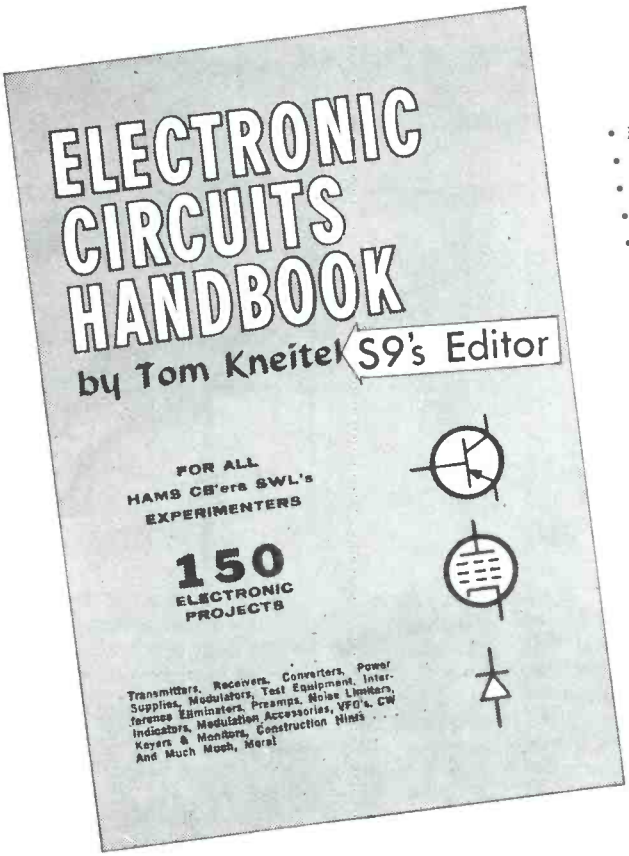
There was, I found, a very simple way to accomplish this feat. This way was to run a simple connection from the phonograph pickup cartridge right into the volume control of the transceiver. Here is how this is accomplished; Under the chassis of the rig the volume control can be seen, with its associated on/off switch (which is mounted directly on the back of the volume control). There are three contacts on the volume control switch, with one of the end contacts going to a tube and the contact on the opposite end going to an IF can.

Take a length of coaxial cable (RG-58/U or RG-59/U) and solder the center conductor to the volume control contact which goes to the IF can. Solder the braid of the coax to the chassis of the transceiver. Now mount an RCA phono plug on the rear of the transceiver chassis, connect the other end of the piece of coax, and you're all set to hook up your phonograph.

With the phonograph output plugged in here, turn on the transceiver and locate a relatively dead spot on the band (disconnecting the antenna helps if you live in a crowded area where there is no one particular channel in the clear). Now play the phonograph and, if you have wired up the thing correctly, you should be able to hear the phonograph through the CB rig, and be able to control its volume with the volume control.

Don't expect too much in the way of HiFi from this lash-up. I like to call my system "CB-delity," and its sounds surprisingly well.

# PERFECT Holiday Gift




Here's just a sample of what you'll find in its chapters:

- Mike preamps
- Speech Clippers & Filters
- Speech Compressors
- Novice Ham Transmitters
- VOX circuit
- Walkie Talkie
- 2 Watt CB Transmitter
- Transmitting Tube Rejuvenator
- Code Practice Oscillators
- Crystal Receivers
- All-Band Receivers
- Broadcast Tuner for CB Rigs
- Receiver Preselectors
- CB Preamplifiers
- Noise Limiters
- Q-Multipliers
- Heterodyne Eliminator
- Weak Signal Detector
- Modulation Indicators
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- Field Strength Meter
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- TVI Filters
- Mobile Unit Burglar Alarm
- Schematic Symbols Chart

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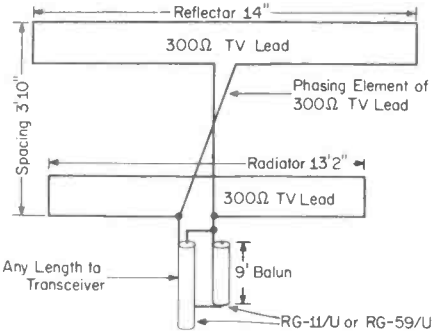
# A $1.00 BEAM FOR 11

## A SPOOL OF TV LEAD & A HUNK OF COAX

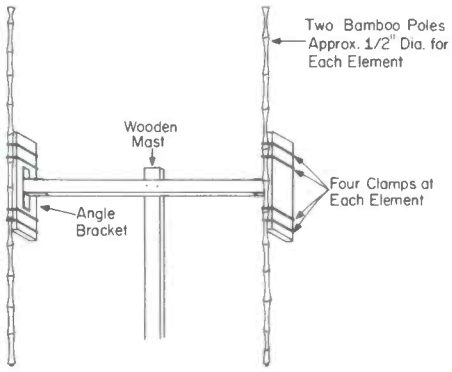
by PAUL MEYERHOFER, KHH4055

Some months back, I was informed by a very learned colleague that my tattered, but faithful 11 meter whip-on-the-roof was obsolete. This bit of wisdom, and the strong desire to be up to date, prompted much catalogue-paging in search of my "dream antenna," a beam. One was selected and ordered, but by then the "beam bug" had bitten me so hard that I just *had* to get some sort of "Mickey Mouse" beam on the roof to experiment with until the commercial model arrived. So a stack of ragged CQ Magazines came from the hall closet for hopeful inspection. Luckily, near the top was an issue with a description of a neat, and easily constructible, beam for the 10, 15 and 20 meter Ham bands. A few computations on the back of an old ACBA press release (had to steal it from the bottom of the bird cage) and I was certain that this little beam would be ideal for 11 meter use, providing 7 DB gain—about a 50% increase in groundwave coverage potential over my whip, and the beam's weight and size would allow use with a low cost TV rotor. But most interesting perhaps, was the fact that these advantages were available for as little as one dollar.




My computations determined that the reflector length (computed for the center of the band) should be 14 feet, the radiator 13 feet 2 inches, the spacing between elements 3 feet 10 inches, and the matching balun (to convert the 300 ohm antenna impedance to 75 ohms for use with coax) length 9 feet.

The construction of the antenna is simple. Bamboo rods carry the 300 ohm TV twin




lead elements, as shown in the construction diagram. The twin lead is fastened with electrical tape to the bamboo rods. However there should be at least two good coats of waterproof paint on the rods to lessen dielectric losses when the rods are wet or covered with snow. To hold the bamboo rods in position I used three pieces of ¾" x 1" x 24" pine, joined with 1¼" dime store brackets and 8 clamps. A U-bolt was used for the mast mounting. The hardware is worth about 40¢ and the lumber needn't be counted as any self respecting CB'er can beg it from a local lumber company scrap pile.

By the way, if you have difficulty in finding bamboo poles, you can use ⅜" dowl rods.

The feedline and balun were also taped to the construction.

Construction time, from start to finish was just a few hours (most of it spent waiting for the paint on the elements to dry, and, as a matter of fact, it was still tacky when it went up on the roof).

Refinements to this antenna are possible, but since excellent results were obtained here I applied "Meyerhofer's Law" ("Always quit while you're ahead") and left well enough alone. For the cost and construction involved this beam is surprisingly sturdy and efficient. So much so, that I eventually sold it to one of the members of our club when my commercial beam arrived.



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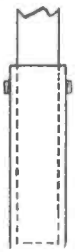

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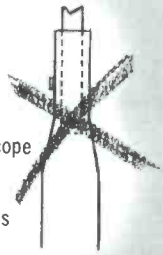

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# CARD SWAPPERS UNLIMITED

This month we have a request from Bill Jones, KBA8553, Putnam, Conn. Bill wants to know why we don't offer awards such as PX-125, PX-150, etc. We would if we thought that anybody out there in CB Land could qualify for it. Bill also asks if it is necessary to list all your cards if you are going in for the next step in an award. For instance, if somebody qualifies for PX-75 and then wishes to try for PX-100, would they have to write out the original 75 cards all over again? The answer is "no," we will accept the PX-75 award as qualification towards the PX-100 award. Likewise, any other awards may be used to apply for graduated awards of the same general type (SSC-1 for SSC-2, etc.). By the way. Bill received 800 cards from having his name in the September issue.

The fellows and gals who received QSL Swappers' Awards this month are:

SACA #8 Ed Gruber, KIC4127, Horseheads, N. Y.
#9 Seth Paull, KBC8691, Bristol, R. I.
#10 Louis Lamanna, KID1431, Pitts., Pa.
#11 Jack Washington, KID1889, Pitts., Pa.
#12 Joan Webster, 19W4980, Romulus, Mich.
#13 L. D. Davis, KDD4342, Marion, N. C.

PX-25 #38 Greg Smith, KFA0763, Glendale, Calif.
#39 Barry Schaffer, KBG8599, New York, N. Y.
#40 James Upton, KCC3964, Allentown, Pa.
#41 Calvin Hibbs, KHB4523, Sturgis, Ky.
#42 Jeffrey Weiss, KBI3023, S. Orange, N. J.
#43 R. DeShong, KCI0448, McConnelsburg, Pa.
#44 Harold Channell, KCF1224, Alexandria, Va.
#45 James McClure, KHI2703, Yawkey, W. Va.
#46 Bill Siefkin, KFA0753, Glendale, Calif.
#47 George Kaneshige, 21W0225, Honolulu, Hawaii
#48 James Greaser, KFD1330, Hanford, Calif.
#49 Bob Guma, KEB0400, New Orleans, La.
#50 L. D. Davis, KDD4342, Marion, N. C.
#51 Bob Wallenburg, KEA2853, New Orleans, La.
#52 D. P. Henry, Ocala, Fla.
#53 Casey Durso, 12Q2962, Santa Clara, Calif.
#54 Wayne Stroh, KHB2858, Avilla, Ind.
#55 Arno Feltner, KED0775, New Braunfels, Tex.
#56 Guy Jackson, Jr., KDD3451, Atlanta, Ga.

PX-50 #27 Sheldon Marion, Richmond, Va.
#28 Calvin Hibbs, KHB4523, Sturgis, Ky.
#29 Raymond DeShong, KIC0448, McConnelsburg, Pa.
#30 Thomas Martin, KFA1028, Pomona, Calif.
#31 Marshall Britt, 5Q1803, Matthews, N. C.
#32 Harold Channell, KCF1224, Alexandria, Va.
#33 George Kaneshige, 21W0225, Honolulu, Hawaii
#34 Greg Smith, KFA0763, Glendale, Calif.
#35 L. D. Davis, KDD4342, Marion, N. C.
#36 Bob Wallenburg, KEA2863, New Orleans, La.
#37 Bob Pacheco, KFD2078, Santa Clara, Calif.
#38 Wayne Stroh, KHB2858, Avilla, Ind.
#39 Guy Jackson, KDD3451, Atlanta, Ga.

PX-75 #9 Marc Joondeph, KBG9040, Ridgewood, N. J.
#10 Iona Velpel, KHA8376, Garrett, Ind.
#11 Harold Channell, KCF1224, Alexandria, Va.
#12 George Kaneshige, 21W0225, Honolulu, Hawaii
#13 James E. Miller, KHC1006, Mattoon, Ill.
#14 L. D. Davis, KDD4342, Marion, N. C.
#15 Tom Watson, KDD2173, Huntsville, Ala.

PX-100 #4 G. Ashley, KGB1886, Diamondville, Wyo.
#5 V. D. Ashley, KFA4192, E. Las Vegas, Nev.
#6 George Kaneshige, 21W0225, Honolulu, Hawaii
#7 L. D. Davis, KDD4342, Marion, N. C.

MSA #4 George Gruber, KCI4126, Horseheads, N. Y.
#5 L. D. Davis, KDD4342, Marion, N. C.

SSC-1 #5 Ed Gruber, KIC4127, Horseheads, N. Y.
#6 Raymond DeShong, KIC0448, McConnelsburg, Pa.
#7 L. D. Davis, KDD4342, Marion, N. C.

SSC-2 #2 L. D. Davis, KDD4342, Marion, N. C.

SSC-6 #1 Dan Gutherie, KDB1435, Spruce Pine, N. C.

You probably qualify for one or more of these snazzy 3-color award certificates. Want to get a free copy of the rules? Send your name and address, together with a stamped, self-addressed envelope to: Swappers' Awards, S9 Magazine, 300 West 43rd St., New York, N. Y. 10036.

If you want to be listed as a swapper in the February S9, send us your card (no letters please) by December 12.

Here are the December swappers:

1Q5507 Jim Mott, 40 Narragansett Ave., Wakefield, R.I.
1Q5773 Costas Broutzas, 96 W. Rosemont Ave., Manchester, N.H.
1Q6865 Tom Howarth, 52 Lincoln St., Esmond 17, R.I.
1Q7315 George Brown, 24 Van Buren Ave., Norwalk, Conn.
1W1619 Howard Gokey, 315 Riverside Ave., Torrington, Conn.
1W7223 Gerry Lecours, 34 Bridge St., Monson, Mass.
2Q0602 Arthur Hamm, Church St., Philmont, N.Y.
2Q0920 Dick Race, Ellsworth St., Philmont, N.Y.
2Q1011 Les Strassman, 530 Olive Terr., Union, N.J.
2Q1911 William Plog, 11 Gould Rd., Centereach, L.I., N.Y.
2Q2301 Al Augustyn Jr., 2029 Caroline Ave., Linden, N.J.
2Q6776 Bernie Pinkard, 61 Norwood Ave., Terryville, N.Y.
2W4586 John Krejc, 60 Division, Garfield, N.J.
2W9623 Bert Endress, 161 East 4th St., Clifton, N.J.
3W2369 Walt Drake, 229 Wynnewood Ave., Lansdowne, Pa.
5Q0577 Fred Harris, Rt. 3, Gate City, Va.
6W2675 Bobby Morehead, Rt. 2, Shelby, N.C.
8W0820 Lester Wycoff, P.O. Box 92, Marmaduke, Ark.
8W0821 Ralph Tucknies, Rt. 1, Booneville, Ark.
11Q0676 Chuck Holt, 426 Main St., El Segundo, Calif.
11Q2237 Roger Ledig, Rt. 2 Box 189, El Centro, Calif.
12W1890 Jim Conner, 2293 Alberta Dr., Napa, Calif.
16Q1960 Ralph Sorensen, P.O. Box 131, Bay City, Wisc.
17Q1339 Jack Doggett, 8060 Dema Dr., Des Moines, Iowa
17Q3732 Jack Schaaf, 1300 E. 65 No., Kansas City, Mo.
17Q3947 Al Polley, 1608 East Nevada, Marshalltown, Iowa
18A4352 Guy Bolin, Rt. 1, Plainfield, Ill.
18B0339 Betty Medearis, 1506 North Hoyt, Chillicothe, Ill.
18Q3647 Pierre LaBounty, 2007 Ridge Ave., Rockford, Ill.
18Q0434 Blondell Jr. Watkins, 4129 Delaware, Anderson, Ind.
18Q9633 Bruce Paulsen, Rt. 1 Box 316, Muldelein, Ill.
18W3782 Jim Rigney, 102 E. 75th St., Anderson, Ind.
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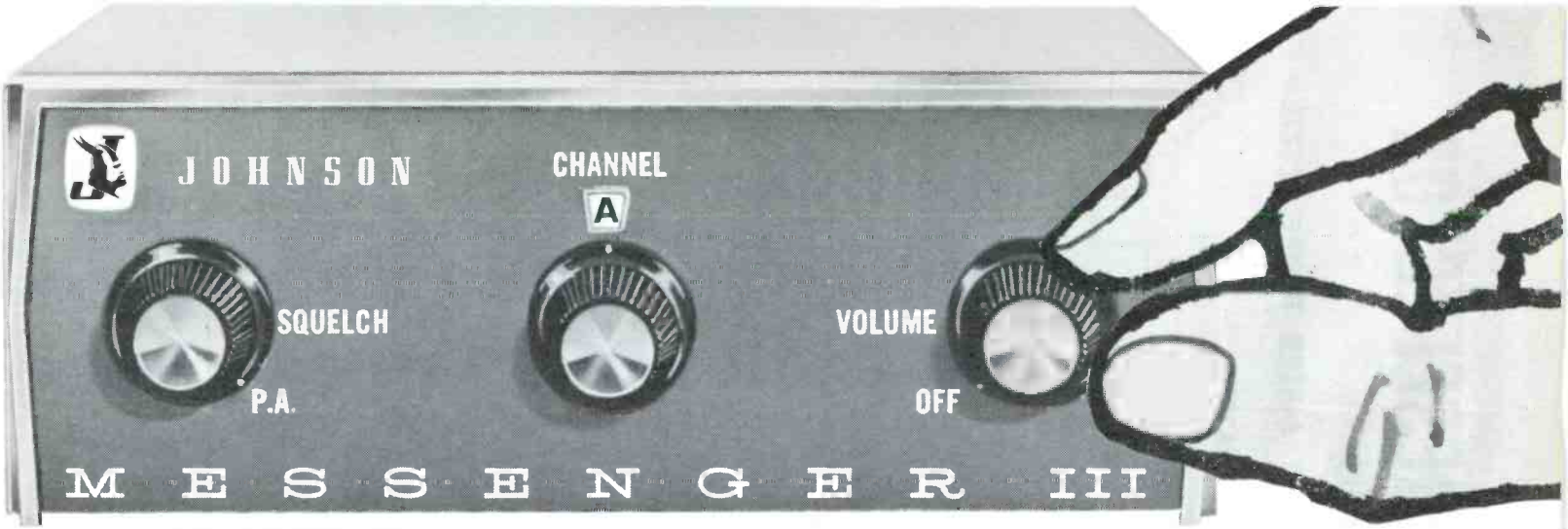


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# NUVISTAPLUGPRESELECTOR

## NO, IT'S NOT A NEW DISEASE,

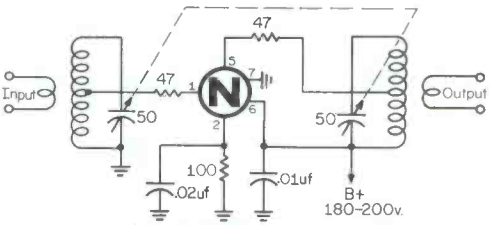
## IT'S LOW NOISE 11 METER PRESELECTOR

by PHILIP NOLAN, KEA2905

In response to practically no requests from fellow CB'ers I have designed an 11 meter preselector which uses an ultra low-noise Raytronics Nuvistaplug cascode amplifier. The Raytronics Nuvistaplug is a 2 Nuvistor plug-in unit which is designed to replace most 7 pin miniature pentodes in RF amplifier circuits. See page 15 of the November, 1962, issue of S9 for details of this unit.

The unit used in this circuit was a model 62 Nuvistaplug, which is available from many local parts shops or from Raytronics, % S9 Magazine, 300 West 43rd Street, New York, N. Y. 10036. The Raytronics Nuvistaplug costs $19.95.

Both input and output circuits are tuned by a 50 mmf midget variable capacitor (Hammarlund type MCD-50-M). Input and




output circuits are separately shielded.

Both the input and output circuit coils are wound on 1⅛" ceramic forms and consist of 8 turns of #20 DCC spaced ⅞" and center tapped. Input and output links are 2 to 2½ turns on the cold end of each coil. A 10K pot may be inserted in series with the 100 ohm resistor for a gain control.

The unit is connected between the receive side of the transmit/receive relay and the grid of the RF amplifier ("front end") tube of the transceiver, with the input end of the unit towards the relay.

Here's an interesting experiment you can try if your set uses any of the following tube types in the front end: 6AH6, 6AK5, 6BH6, 6CB6, 6CE6, 6CF6, 6DC6, 6DE6 or 6BZ6. You can remove this tube, insert it in the Nuvistaplug preselector, removing the Nuvistaplug and placing it in the receiver's tube socket. You might get such good results that you can leave the circuit connected in this manner.

If you are CB'ing on a budget and don't want to invest in a Nuvistaplug, you can build the circuit without a Nuvistaplug; substituting any of the foregoing tubes in its place. You won't have the advantages of the low noise characteristics of the Nuvistaplug but you will give your receiver considerably more "soup."

# THE COAXIAL "STRIPPER"

## IS IT THE WORLD'S SIMPLEST CB ANTENNA?

**by AL BORAK, 6W6328**

What with CB'ers always on the move, taking rigs along on business trips, vacations and the like, it seemed to me that there should be an ultra-simple, ultra-compact, ultra-transportable type of CB antenna which could be homebrewed and then chucked in the car's trunk for use when necessary. Here it is, I call it the "Stripper" coaxial antenna.

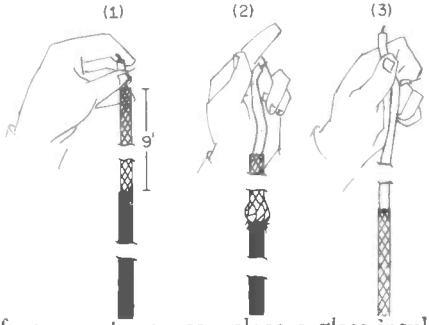
The "stripper" is essentially a quarter-wave radiator extending above a quarter-wave "skirt." The latter acts as the remaining half of a dipole and at the same time does an excellent job of preventing radiation from the coaxial feedline. It is also well known as a low-angle radiator.

Although most coaxial antennas require considerable machine work I was inclined to think that the same radiation efficiency could be obtained from a simple variation of the main idea. I used RG-8/U cable to make up both the transmission and the radiating element.

To construct an antenna of this type, begin by measuring 9 feet. This will be used as the radiator. Strip the black outer covering off the cable and then push the copper braid back down over the remaining coaxial cable, this then becomes the "skirt." You will notice that with the black outer coating stripped off the coax, the copper braid is able to expand in diameter when it is squeezed lengthwise. When pushing the braid over the remaining coax, it will be necessary to expand it in this manner so that it can be easily "peened" back. See accompanying illustration. I found that best results were obtained when the radiator measured 8 feet 7 inches.

When purchasing the RG-8/U, check to see that the type which you will use does not have the "soft" type of center insulation. The braid adheres to this stuff and makes "peeling back" the braid a little ticklish.

The problem of supporting this type of antenna is left to you with a few thoughts which may be of some help. We started at the ground end of a discarded telephone pole. The antenna was then simply taped to the side of the pole using Scotch electrical tape. Make certain that the top of your antenna does not extend more than 20 feet above the ground in such an installation.




If you want, you can place a glass insulator at the top end of the "Stripper" and hang it from a tree or other object—however if this method is used you will have to cut your radiator an inch or two longer to have some wire to "waste" wrapping around the insulator.

S9

# DESIGNING YOUR QSL

## HOME-BREW YOUR OWN DISTINCTIVE QSL

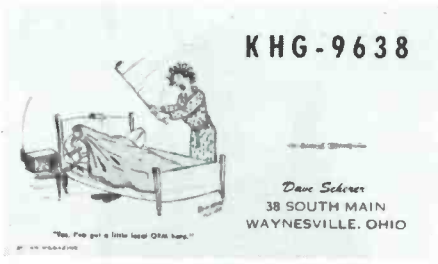
**by RICHARD SAUNDERS, KHB4307**

The QSL card seems to have gained a rather unique stature in CB-land. For this reason many operators go to some lengths to secure designs for their cards that are worthwhile, attractive, and outstanding.

Due to the specialized nature of the QSL, its design can generally best be handled by persons familiar with the purpose and requirements thereof. Most CB'ers are capable of making their own layout, particularly if they have a few concise facts to guide them.

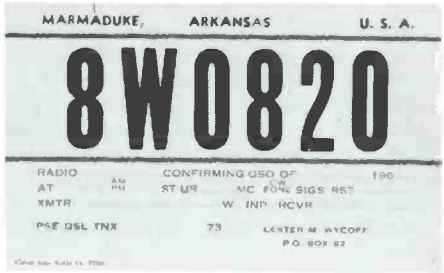
### *LAYOUT CONSIDERATIONS*

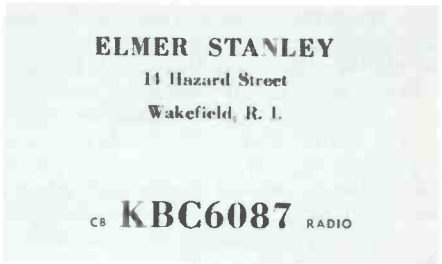
Effective layout requires some portions of the text to be subordinate to the more important portions that are to be emphasized. Equally important is the allowance of plenty of space around the printing itself. A few moments spent in thumbing through the advertising section of any magazine will bring out both of these points clearly. It should be noted that large national advertisers almost always leave large quantities of space around the key words, with the balance of the message grouped and paragraphed attractively in such a manner that it does not detract from the major part of the advertising. These are well-founded principles based on long usage and are directly applicable to the design of the QSL card.


Typical pencil layout as given to the printer and the QSL card as printed.

Type face, or style of lettering, can also have a subtle but noticeable influence in delivering the printed message. Obviously a solid, blocky, boldface type would be much more suitable for the use of a contractor or a blacksmith than it would be for a jeweler, the latter deriving better representation from a graceful style of type or script. Few people not engaged in the printing industry are aware of the fact that type styles change from time to time in much the same way that clothing styles vary. It is, therefore, wise to check on the type faces selected to see that they are of fairly recent issue.



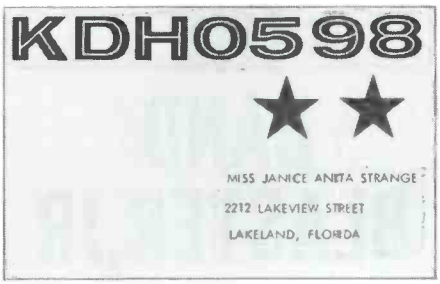

Good examples of bold and conservative layouts. Both are nice.

### *THE COLOR SCHEME*

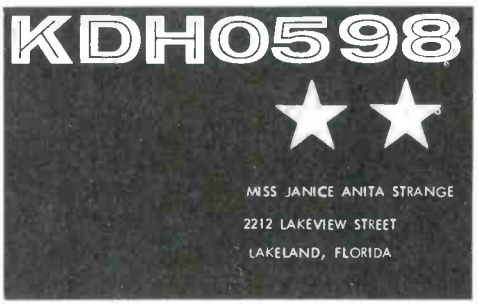
The choice of colors is, to a great extent, a matter of personal opinion and taste, but in all cases, combinations should be selected that give a good clear contrast between the print and the card. Some colors are known to have definite effects—for instance, reds are "exciting," yellows and oranges are "warm," blues are "cool," greens and browns are generally considered to be "neutral," purple suggests royalty, and grey is "sober." Colors of opposite effect can often be combined to give very attractive results. Red on warm grey, and brown on medium yellow are well known examples. Avoid combinations of similar characteristics like dark blue



Subscription form between pages 48 and 49!




Preparation of a QSL design suitable for a line cut or negative. The design is always in proportion to the finished size and generally twice as large.




A line negative used for the contact printing of postcard QSL's on sensitized stock.

on a light blue card, which lacks strength, or bright red on a yellow card, which appears garrish and cheap.

### YOUR CARD

To prepare the layout for a QSL printer, draw the outline around a postcard and pencil in the wording as you expect it to appear. Such a layout is shown in the accompanying illustration, together with the printed result. In this case it was required that the printer furnish a cartoon "cut." Most printers have a selection of radio-type cartoons which they will be glad to work into the layout on request. If a photo of the station or operator is wanted, a cut must be made for the purpose. If the printer does not do this himself, he can tell you where to have it done. Clear sharp photos are needed for the making of a cut, and the 8" x 10" professional size is preferred.

Shown here is a rather good contrast between a bold layout and a comparatively modest type of card, the latter using the correspondence space on the address side for the station information data. Although considerably different, both cards are very nice and are quite typical of contemporary design.

It is practical to have a cut made for the entire QSL card. This necessitates an artist's drawing, as shown here. This drawing should be made twice the size of the finished dimensions. For postcards this is 7" x 11" and the reduction is made in the manufacture of the cut. Most commercial sign shops can produce very nice drawings of this sort, and of course commercial artists do this sort of work regularly. An inexpensive way is to do it on a typewriter, or by "borrowing" the print from another card.

### PHOTOGRAPHIC CARDS

Another method of printing QSL's from an artist's drawing is the photographic contact printing with a "line negative." In this case the drawing is sent to the photo shop where a postcard-size negative is prepared, as shown in the accompanying illustration. A blank space in the lower left hand corner has been left for the operator to insert a negative of the station. The card that finally results from such a process is shown here, printed on sensitized postcard stock available most photo supply houses with the instructions for contact printing. Any photo shop will do the printing at the usual rates; however in many cases a saving may be made by home printing. The line negative is inexpensive, and this feature is of value to the operator who changes designs frequently. The insert negative may be changed at will, a point that may have value in certain instances. The address side of the sensitized postcard has the prepared correspondence space in which the QSO data may be recorded.


Finished QSL printed from the line negative. A corner was removed and a snapshot negative inserted to put the station photo on the card.

In filling out QSL's for mailing, regardless of the type card in use, nothing contributes more to the appearance and permanence of the written message than the use of black ink. India ink, in particular, is jet black and waterproof and will look good on the other fellow's wall for years to come.

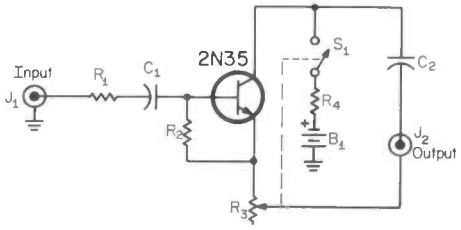
# THE BAND BLASTER, JR

## 40 DB AUDIO GAIN FROM 1 TRANSISTOR

**by BILL SIKES, KEG5051**

It's almost hard to believe that this little mike preamp will deliver anywhere from 11 to 40 DB gain from one single $1.20 transistor, BUT . . .

Yes, the old, old, Sylvania type 2N35 (which has been around since Methuselah was in knickers) really does a bang-up job here. The entire circuit can be constructed in a tiny 1½" x 2" x 2½" box in a jiffy time and the end results will equal a number of high priced commercially made mike preamps.




### PARTS LIST

**$C_{1,2}$ 1 ufd capacitors**
**$R_1$ 68,000 ohm resistor**
**$R_2$ 150,000 ohm resistor**
**$R_3/S_1$ 10,000 potentiometer with switch (Lafayette VC-28 or equiv.)**
**$R_4$ 100,000 ohm resistor**
**$J_1/J_2$ use the same type connectors now on your mike and rig**
**$B_1$ 22.5 v. battery (RCA VS-084 or equiv.)**
**2N35 transistor**
**Bud CU-3000-A Minibox chassis**

The pot, $R_3$, varies the amount of gain. This will prove handy, allowing you to make your signal as conspicuous or *in*conspicuous as the QRM warrants at any particular time.

The jacks, $J_1$ and $J_2$, will vary from installation to installation—you should use the type connectors which currently exist on your CB rig.

# NEW WRL "DX'ER" 5-WATT CB TRANSCEIVER ENGINEERED FOR GREATER "TALK POWER" HOME • BUSINESS • MOBILE • INDUSTRY

I Full 5 Watts Power II 100% MODULATION III Built-in Three-way Power Supply IV Illuminated "S" and Modulation Meter V Double conversion superheterodyne receiver VI Push-to-talk ceramic mike VII Instant switching for 12 transmit channels VIII All channel tuning IX Unique "Spot Quick" control.

# IT'S NEW!

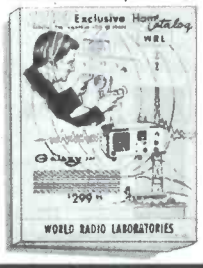
WRL's New Powerful 5-watt "DX'er" CB Transceiver offers more performance extras than ever before at this low price — $119.95. Completely hand wired and made in U.S.A. to WRL's specific high standards. Deluxe Extras include DOUBLE CONVERSION CIRCUIT. This feature with its tuned circuits and IF stages offers 5 kc receiving selectivity, freedom from unwanted spurious signals, .3UV @ 6 DB S/N sensitivity, crystal controlled conversion oscillator gives minimum drift. ALL CHANNEL TUNING as found in more expensive transceivers, makes drift-free tuning E-Z. Also allows the best reception tuning to each station without a channel selector. EXCLUSIVE "SPOT QUICK CONTROL" indicates instant "on channel" transmitting position as you tune the dial by the peak position on the "S" meter. This feature eliminates any need for separate receiver crystals. COMPACT, RUGGED steel cabinet attractively finished in dark grey and white. Size: 12-½ x 7-¼ x 4-¼. Wt. 17 lbs. Complete with a channel 9 transmit crystal, mike with hanger and 117 VAC power cord.

138SO13, Model DX-12 ..... $119.95
Buy two & Save $14.90 ..... $225.00

Accessories

86SO66—MOBILE Mounting Brackets (underdash mt.) ..... $2.95 ea.
86SO65—6/12 Volt DC Power Cord ..... $2.95 ea.

**SEND FOR FREE CATALOG**




# $119.95 FULLY WIRED

**$6.00 A MONTH**
**BUY A PAIR AND SAVE TWO FOR $225**

**NO MONEY DOWN USE WRL'S CHARGE-A-PLAN**

Guaranteed for 90 Days Against All Defects!

**TWO-WEEK HOME TRIAL* MONEY-BACK GUARANTEE** LESS TRANSPORTATION CHARGES

WRL — CB Transceiver
Made in U.S.A. to WRL's Strict specifications

* on DX 12 only

## FIVE MONEY SAVING PACKAGES

1. **Base Station Package** — Save $7.49
   You get: DX'er Transceiver, Push-to-Talk Mike, AC Cord, Crystal for Channel 9, Hy-Gain VP-II Antenna, 50' RG-58/U, Two PL-259 Plugs, Two UG-176 Adapters. Wt. 27 lbs. ZZSO29 Base $139.95 — $7.00 per mo.
2. BUY TWO — Save $29.84 — $265.00 — $14.00 per mo.
3. **Mobile Station Package** — Save $6.87
   You get: DX'er Transceiver with built-in DC Supply, Push-to-talk Mike, Cord, Crystal for channel 9, New-Tronics FGB-27 Cowl-Mount whip with cables & plugs, 6/12 V Power Cord, Underdash Mounting Bracket. Wt. 23 lbs.
   ZZSO30 — $124.95 — $6.00 per mo.
4. BUY TWO — Save $28.64 — $235.00 — $12.00 per mo.
5. Buy One Base Station & One Mobile Station ZZSO31 — Save $31.69 — $247.55 — $12.00 per mo.

**WORLD RADIO LABORATORIES, INC. • 3415 WEST BROADWAY • COUNCIL BLUFFS, IOWA**

# THE MINIWATTER

## PART 15 BROADCAST BAND TRANSMITTER

by HANK MILTENBERG, 2W9299

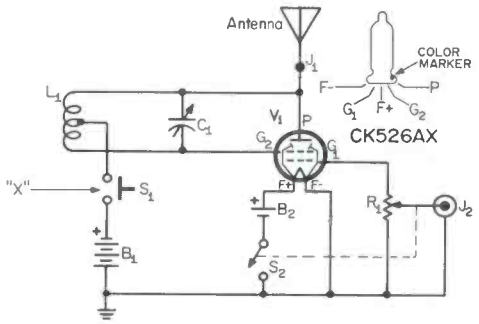
You aren't going to break any DX records with the Miniwatter, but it is a good project for the new electronic experimenter and will give surprisingly good results, pip-squeek that it is.

The Miniwatter is an ultra-miniature transmitter which operates under the FCC's Part 15 and will transmit within the standard broadcast band. The unit is constructed in a small metal box and should cost you no more than $12 to build.

Central component of the Miniwatter is a sub-miniature tube which Raytheon manufactures for hearing aids. Known as the CK526AX, it is available from large scale tube suppliers for about $4.60, and it's the most expensive component in the circuit. It is mounted in a Cinch-Jones type 2H5 subminiature socket.

The other compents are garden variety and should be readily available from most electronic suppliers. The only homebrew part is the coil $L_1$ which consists of about 200 turns of No. 30 enam. wire scramble wound and center tapped on a form 3/8" in diameter and 1/2" long.

A pot ($R_1$) provides for variance of the modulation and the variable capacitor ($C_1$) offers you a choice of most frequencies within the broadcast band (you will be better off at the high end of the band).




### PARTS LIST

- $C_1$ 10.3 to 200 uufd variable (Hammarlund MC-200M or equiv.)
- $R_1/S_2$ 1/2-Meg pot with SPST switch (Lafayette VC-39 or equiv.)
- $L_1$ see text
- $S_1$ SPST momentary push button switch (Hart & Hegeman 3391 or equiv.)
- $J_1$ Antenna terminal (GC Electrocraft 33-196 or equiv.)
- $J_2$ Phono jack (Cinch-Jones 13-A or equiv.)
- $B_1$ 22.5 v. battery (RCA VS-084, Sonotone 212, Eveready 412)
- $B_2$ 1.35 v. battery (RCA VS-145, Eveready E400, Burgess Hg-400R)
- $V_1$ Raytheon CK526AX, sub-miniature tube
- Misc. wire, knobs, tube socket, hardware, and chassis

### 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 510 kc/s to 1600 kc/s and using an antenna limited to a single element not more than 120" long.

Thomas S. Kneitel

S9 Magazine, New York 36, N. Y. Dated: November 12, 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 unit.

A crystal high output mike is to be used with the Miniwatter; it is inserted in $J_2$. The antenna, which fits in $J_1$, must not exceed 10 feet in length (including lead in) in order to comply with FCC regulations. Compliance with FCC regulations also calls for you to cut the accompanying coupon from S9, sign it, and paste it to your completed Miniwatter.

As a precaution to make certain that the Miniwatter is functioning within the FCC's regulations, check Point "X" in the completed Miniwatter with a milliameter. Point "X" is at $S_1$, which is the push-to-talk switch. The milliameter inserted at this point in the circuit will give a misleading reading, which, thankfully is correctable. To comply within FCC power limits, the plate current should not exceed .44 mils; however you should get a reading of .56

mils. This is because you will be getting a dual reading of both the plate *and* screen currents. The screen current is .12 mils, and this amount should be deducted to compute the proper plate current. If the plate current (after subtraction) is .44 mils, you have built the unit correctly and it complies with Part 15. It runs 99 milliwatts.

Switch $S_2$, the on/off switch for the filaments, is part of $R_1$.

Here are some hints. I found that increased range could be obtained with a loading coil in the antenna and a good cold water pipe ground on the chassis. When wiring up the unit, keep all leads as short as possible, and make certain that the antenna does not short onto the chassis.







**Subscription form between pages 48 and 49!**

# THE GIFT OF LIFE

## TRICK-OF-THE-TRADE CAN DOUBLE TUBE LIFE

by DICK TURPIN, KCF2700

Could you be happy with 250 volts constantly being turned on and off inside of you? Well the tubes in your CB rig aren't holding any celebrations about it either. Each time you turn your rig on and off you chop a little piece of life expectancy from each and every tube in the unit.

When the set is turned off the tubes are cold. Suddenly you turn on the set—a surge of electricity and heat tears through the filaments, they expand with the heat, they glow red. High voltage from the rectifier tube surges through the plates of tubes before amplifier tubes are warmed up. Other components could be affected too. When you turn off the set you have some of the same conditions, only in reverse. The heat-expanded filaments are suddenly left without sufficient heat to maintain their size, they quickly cool and change size again, and so the process goes.

Learned electronic genius-types have actually discovered that this operating cycle is probably one of the most important factors in governing the life of tubes, possibly second most important thing in tube life, next to actual physical damage (like dropping one).

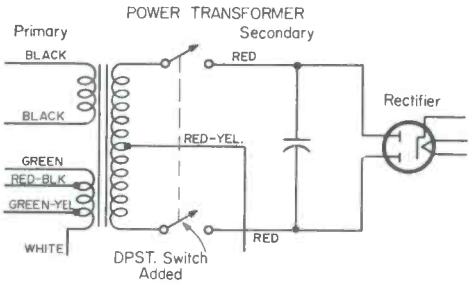
It seems that as long as the filaments get a chance to warm the tubes for 10 to 30 seconds before the high voltage hits the plates the tubes will last much longer. This is especially true in high powered transmitting tubes. Most Ham transmitters, therefore, have provisions for turning on the filaments ahead of the plates, with instructions for the operator to allow for some time to pass before hitting the high voltage switch.

This is all well and good, but we still, under these conditions, must live with the compromise of the filaments being constantly turned on and off—and the filament is still known as one of the weakest links in the tube.

Not too many years ago a few TV sets came on the market with filaments which were constantly "on." Yes, as soon as you plugged the set into the wall the tubes lit up. The on/off switch on the front panel served only to throw the high voltage on. These sets were "instant starting" and required no warm-up time. They did not drift as they warmed up.

I applied this same principle to my CB rig and found that since I made the change, several years ago, I haven't had to replace one single tube. The filaments have been burning 24 hours a day, too. The cost of operating the filaments is almost nil, and leaving the filaments on all the time is, surprisingly, far easier on them than the constant turning on and off they would have normally received.

The conversion is amazingly simple and requires only a double pole single throw switch which can handle 250 volts (or whatever B + your particular transceiver uses).




In my Globe CB-100 rig, which has a typical power supply (shown here) I used a Cutler-Hammer 7360-K7 type toggle switch placed across the high voltage leads of the power transformer. These are the red leads. The switch was mounted on the front panel of my rig and was the switch used for turning the rig on and off. The combination volume control on/off switch was then used *only* as the volume control. Heavy leads are used between the transformer leads and the switch, and all connections are taped with electrical tape. Be certain to unplug the set from the house current when performing this minor operation.

Although my CB-100 is a fixed channel rig, this modification would eliminate receiver warm-up drift which is present in many tunable rigs. That's just a bonus blessing.

# HAMMARLUND'S

# SOLID CB-SIX


## *The Last Word In Dependable CB Communications*

Whatever the intended use; casual, commercial or industrial, the SOLID CB-Six offers the inherent dependability of Hammarlund design and super-rugged construction. Built to withstand the jarring, day-after-day jolts of trucks and heavy duty construction equipment, this ruggedly constructed unit offers the sophisticated CB'er outstanding sensitivity and remarkably efficient circuit design for full use of maximum legal power.

Hammarlund's SOLID CB-Six is a dual conversion superheterodyne transceiver featuring six crystal controlled channels for receive and transmit. Suitable for both mobile and base station use, it incorporates a built-in power supply for use with 12 volt DC and 117 volt AC operation. Optimum sensitivity with razor-sharp selectivity is combined with an effective dual diode series-type noise limiter for reliable reception under all operating conditions.

A microfine ±3KC vernier tuning control on the front panel assures peak signal reception on all receive channels—a Hammarlund extra to compensate for minor frequency variations in other CB transmitters.

Send for complete technical literature today—or see the SOLID 'Six at your nearest Hammarlund CB Dealer.

**$179.50**

*Includes Crystals For One Channel.*

## HQ-105 TRS


With one unit you get both Ham and CB coverage—and can listen to short wave stations all over the world. This is a quality communications receiver with a built-in 5 watt transmitter—which can easily be retuned for 10 meter use when you get your Ham ticket.

**$224.50**

**HAMMARLUND** MANUFACTURING COMPANY.
A Giannini Scientific Company
53 West 23rd Street, New York 10, N.Y.

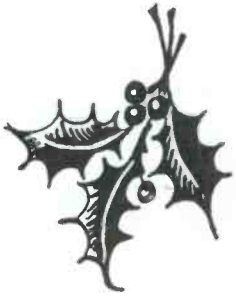
# "THERE WAS A CB'ER..."


**by WILLIAM HAYMON, KBG5891**

*There was a CB'er named Kevin,*
*Who monitored Channel 7.*
*With squeals and with moans, whistles and groans,*
*It was still quite better than 11.*

*There was a CB'er named Jack,*
*Who installed a rig on his back.*
*In one pocket a dime, in the other S9,*
*He was the world's most portable shack.*

*A hungry CB'er from Winnetka,*
*Swallowed a coax connecta,*
*He nibbled S9, gulped hookup line,*
*Now he's munching his channel selecta.*



*CB at the North Pole is great,*
*Without it Santa'd be late.*
*Under each tree, he puts S9 you see,*
*As he scoots from state to state.*

*And you can play Santa too,*
*Here's all that you have to do.*
*Twixt pages 49 and 48, is a form so great,*
*Just sitting and waiting for you.*

*As you've guessed, we're at it again,*
*And you must admit to us, friend,*
*S9 is the one with the data and fun,*
*Only 5 bucks for this jazzy new blend.*

# HAPPY HOLIDAYS

# CB CHIT-CHAT

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

**TO JOHN KREJC, 2W4586**

**ATTENTION ALL A. P. R. E. — CB CLUBS — CLUB PAPERS — CB'ERS & READERS OF S9.**

S9, Club Editor, John F. Krejc, 2W4586, has moved to another 10-20. Please forward all mail to 60 Division Ave., Garfield, N.J. If you haven't already changed your mailing list, please do so. My postman's pencil is not as sharp as it was.

Starting with the January issue, your CB CHIT-CHAT column will be changed to meet the demands of our readers. Look for a more interesting and informative items. See you in January with the Big Change.

Over 800 attend Shuppes Grove Jamboree—Better than 800 CB'ers from the Penna, New York, New Jersey, Maryland and Delaware area attended the 2nd Annual CB Jamboree at Shuppes Grove near Reading, Pa. A caravan of a dozen or more cars from the Keystone 11 Meter League, Pottstown, were led to the Grove by Jim Rowland, 3W4471, in his newly painted Jeep, complete with the club banner.

Elections of the Dade County REACT, Inc, Florida, shows James Kickert, Director, 7Q0256. A short time after the election, the Dade County REACT answered an emergency call involving a lost child, Tony Jenson, a three year old male wandered off on a Sunday morning after Church. Quick action by the REACT unit, the child was found 45 minutes later.

Officers of the CB RADIO PATROL, Burlington, Vermont are President Dick Gendron, 1Q0928, Fice President, Leon J. Lestage, 1Q4551, Secretary, Robert E. Gendron, 1W6011, Treasurer, William A. Gendron Jr., 1Q0929. The regular monthly meeting is held every second Thursday of the month.

The North Area Emergency Radio Team (N.A.E.R.T.) has spent the past three week-ends patroling the Riverside Drive-In in Riverside, Missouri. Their job has been to aid local police in preventing brawls and breaking-up fights, as well as preventing sneak-ins. The N.A.E.R.T. has started a membership drive to attract CB'ers to join their club. You need not be in the North Area to be a member. They are hoping to attract men from all over the greater Kansas City area. Contact Jack Schaaf, 17Q3732, or Harvey Bates, 17W0654 if interested. N.A.E.R.T. monitors channel 21.

The Jacomo CB Radio Club in conjunction with the Independence C.D. (Civil Defence) unit held their monthly get together at Lake Jacomo in Jackson County, Mo. Anyone interested in belonging to this growing group should contact Joe Elrod (KGH1032) for dates and places. The Jacomo Club monitors Ch 11 and are located in Independence, Mo. to aid CB'ers in the area.

One of the well organized and very active REACT Units in the state is the Trace "C" Beams of Tracy, California. The numbers about 25, and are active and respond quickly to every emergency. The club is affiliated with the California Citizens Band Coordinating Council of Northern California. The REACT emergency teams monitor channel 11 around the clock. President of the fine club is Spencer Lamb, KFC3883.

News reaches us of another fine start for a new CB Radio club in Stockton, California. The membership as of Sept. was 40 chartered members. The club will be known as the Stockton CB'ers. President is George Pauline. All CB'ers in the area are invited to visit the new clubs meetings. We are sure we will hear more from this club in the near future.

The valley-wide Hi-Desert CB Radio Club has set in operation its 24 hour ALERT NET to cover emergency needs on the highway. Monitoring channel 11 around the clock by three members in the three principle towns, is another public service the Radio Club has launched to serve fellowmen in the time of need.

A newly born CB Club in Brooklyn, N.Y. is known as the Brothers on Four Relay League. President of the club is Dr. O. Lewis Levitt, KBG8240. The club's aim is at technical goals rather than social. Most of the group are working on their Commercial license. The club is located at 4716 New Utrecht Ave., Brooklyn, N.Y. Any interested parties should contact Dr. O. Lewis Levitt. Looks like a really interesting club. Could benefit CB'ers.

August 10th-11th were the dates the Coosa Valley CB Radio Club held their 2nd Annual Jamboree, at Lake Rhea, in Attalla, Ala. Crowds started to roll in Friday evening and continued until Sunday. There were quite a few units camping out. 10 States were represented. Over 2000 CB'ers attended this gala event. Olsen Hibbs, 6Q6533, President of the Coosa Valley CB Radio Club and all officers and members are to be commended for their work in getting the Jamboree to go off so smoothly. They are hoping for a bigger and better one next year.

WANTED—One stolen Hammarlund CB-23 Serial #2177. The gear was stolen from Mr. James Hungaski, 254 Flax Hill Road, South Norwalk, Conn., while in New York recently. Seems that Jim is a musician, and while one of his breaks, he decided to check on his mobile, only to find that the roof was cut and the rig stolen. Anyone knowing its where-abouts contact Jim, pronto.

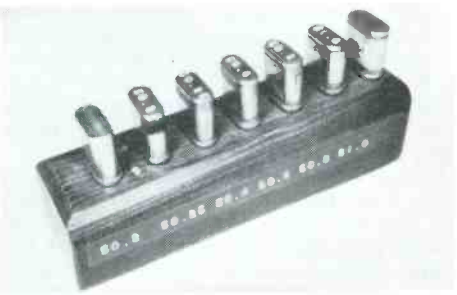
Recently, Georgia CB history was made. Through the efforts of former Dixie Communications Club President, Bud Horton, 6W1458. The Hilltoppers of Atlantic, Georgia, and the Atlantic CONTAC Club met with the joint idea of forming a Union of CB Clubs. It was interesting to note that each representative has the same ideas and feelings toward the purpose of establishing some type of association for the betterment of CB. The Dixie club monitors channel 15.

# ROCK RACK

## A NEW HOME FOR WANDERING CRYSTALS

**by FRED BLECHMAN, K6UGT**

If you operate a CB rig, and want to utilize more channels than are provided for in the transceiver, you must know what a bother it is to keep track of your transmitting crystals. Small enough to be easily misplaced, these "rocks" always seem to be scattered around the operating area, with the one you want invariably missing. The Rock Rack, brainchild of Ham operator Hank Wagner, WA6BHC, is a boon to CB'ers because it will solve this problem once and for all.



The Rock Rack is merely a short length of 1 x 2 inch wood stock with holes appropriately drilled to accept the pins of the type crystal holder you use. Most CB crystals are of the HC/6U type with .050" pins spaced .486" apart, although some have fatter pins (.093").

An added convenience is to label the crystals with a Dymo Home Labelmaker (Lafayette Radio HG-222), since the stamped frequency is difficult to see on most HC/6U cases. By labelling the Rock Rack with the proper frequency by each set of holes, each "rock" will have a home of its own, to have and to hold, till your little "harmonics" do them part. S9





Subscription form between pages 48 and 49!

# FILTER FOR 115 VOLT LINES

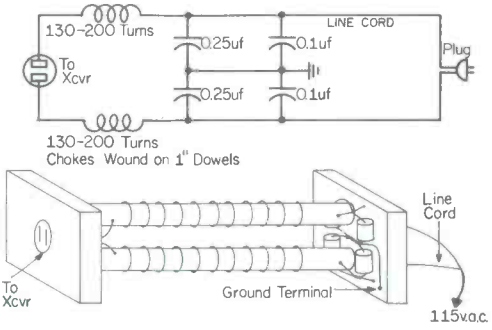
## TRAP RF BEFORE IT LEAKS INTO THE POWER LINES

by PETER DENDIN, 17W6366

I recently built one of these units when I found that RF from my CB rig was leaking into the power lines and causing TVI, BCI, HiFi-I, and even electronic organ "I."

I wound 133 turns of No. 16 enameled, double cotton covered wire on 15/16th inch broom sticks (more turns might even be better). Then I tried various capacitors until the RF feed-back (and resulting interference) was at a minimum. (Different values of capacitors should be tried for each particular installation.)

After winding the chokes, I fastened a block of wood on the ends (as shown) and placed the AC socket on one end-plate, and the capacitors and ground terminal on the other. I drilled a hole through the block with the capacitors and ran the AC line cord through this block.




For double protection, I used this gadget in conjunction with the "BCI Trapper" which was described in the August, 1962, issue of S9. No more problems and everybody is happy now!

S9

# SHOP TALK

## 8 CB HINTS

**by LEE AURICK, 2W2870**

An old solder spool makes a fine rest for your soldering iron. It is only necessary to bend-up the flange on each side to form a shape that cannot roll away from you.

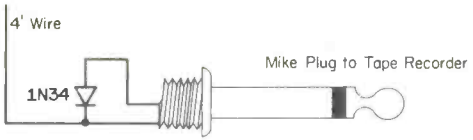
Have you ever tried to replace a tip in one of the small "pencil-type" irons? If you have, and it was stuck due to corrosion, next time try this easy remedy before inserting the new tip. Carefully tin (cover lightly with solder) the threads of the new tip before inserting it into the holder. The tinning will improve the efficiency of the new tip and it will only be necessary to heat the iron to remove the tip with a slight twist of your pliers.

The conventional soldering iron has a tendency to corrode between the tip and the metal shank which encloses the heating element. After a period of time, the set screw which holds the tip in the iron will be found to be pushing a smaller part of the tip against the opposite side of the shank. This may be corrected by filing both tip and inside of shank until they are clean, and then wrapping the tip with a single layer of aluminum foil. The foil will prevent much of the corrosion, and will provide a more even transfer of heat to the tip.

While there are several good rules to follow for good soldered connections, perhaps the first one is to start with a clean iron. You will never have to worry again about this rule if you will nail a small soap dish to your workbench. A pad of steel wool (the kind without soap) placed in the dish will keep your iron sparkling if you will remember to frequently touch the tip to the pad while you are soldering.

Always hunting for parts? Here's an idea we've used for years to keep parts, nails, and screws always within easy reach. Empty coffee jars provide an almost limitless storage space when their covers are fastened to the basement floor joints. The covers may be nailed to the beams with two nails (to prevent the covers from turning) and the jars easily screwed to the covers when the contents are not in use.

If you've ever wondered how you actually sound on the air, or if you ever have occasion to suspect that something may be wrong with your modulation, there is one easy way to find out—if you have a tape recorder. Obtain an extra microphone plug just like the one presently used with your recorder, and a 1N34 germanium diode. An inch or so of "spaghetti" (insulated tubing) should be passed over the diode leads, and the ends of the diode connected to the terminals of the microphone plug. It is possible to house the diode entirely within the plug. A four foot piece of wire is then connected to one side of the diode to act as an antenna. The rest is very simple. The closer the wire is to the rig or to the station antenna the more signal it will pick up. Adjusting this distance, as well as the recording level, for optimum performance will




give you a reliable reproduction of your voice and signal as it sounds at other stations. It will be possible for you to determine accurately, for example, the best distance at which you should hold the microphone, as well as how loudly you should talk. It would be best to make these observations while talking with another station in the course of your normal contacts. No attempt should be made to broadcast this recording over the air.

Some commercial beams, and not a few home-made models, are subject to severe flutter of the elements. In the worst condition, we've had beams that have literally torn themselves apart even in a gentle breeze. At best, the condition produces an annoying rattle or humming sound. Here's how to stop it entirely. Obtain some rubber grommets that will pass into the ends of the beam elements, and will not be too tight. Next, select several woods dowels of a diameter such that the grommets will fit very tightly on the dowel. Placing the grommets every 18 inches on the dowel, and then inserting the dowel into the elements, will cure the most stubborn case of flutter. One three foot dowel in each element-end should be sufficient. The dowels are available in most foot dowl in each element-end should be sufficient. The dowls are available in most hardware stores, and if the grommets can't be found there they are certain to be located in any electronic supply house. Simple cases of howling, due to wind blowing across the element-ends in the fashion of a whistle, may be cured by inserting corks of the appropriate size into the ends of each element.

# WHERE DID MY SIGNAL GO?

## TRANSMISSION-LINE LOSSES

by ED NOLL, KCC2618

Transmisison-line losses are worthy of consideration because of the limited CB power output. There are three major transmission line losses; these are conductor, dielectric and radiation losses. Theoretically the radiation losses from a transmission line of the coaxial type should be negligible. In practice, however, such radiation can be considerable for a poor antenna installation. If there is a strong standing-wave on the line as a result of mismatch the line radiation can become high. If the antenna is a beam type such line radiation can have an adverse influence on the antenna pattern. It is possible that the directional lobe can be shifted or changed in magnitude. Pick-up and transmission in undesired directions can be increased because of the influence of the transmission line.

A popular style of CB antenna is the quarter wavelength vertical. Such an antenna uses a mirror ground at the actual mounting position of the antenna. A good mirror ground is a ground-plane or some other type of available ground close to the antenna mounting site. In a typical example, a standard quarter-wave whip antenna was mounted on a vent pipe, the vent pipe being used as a ground right at the antenna mounting position. By so doing both transmission line radiation and standing wave ratio were greatly reduced as compared to a mounting position on the apex of the roof a considerable distance away from a good ground.

Conductor losses are mainly resistive and results from the flow of current along the transmission line between the CB unit and the antenna. Dielectric losses are a result of the voltage stress placed between the two conductors of the line. These two quantities determine the attenuation of the various types of transmission line. Value is usually given in terms of db per hundred feet. Attenuation increases with frequency.

The db loss per 100 foot of line is as follows for the two popular CB types.

TABLE I

| | IMPEDANCE OHMS | ATTENUATION 27 MC | (DB PER HUNDRED FEET) |
|---|---|---|---|
| RG-58/U | 53.5 | 2.2 | 10.4 |
| RG-8/U | 52 | 1 | 4.8 |

The above attenuation figures apply to a perfectly matched line. The presence of a standing wave on the transmission line will result in a further attenuation of the signal. When there is a standing wave on the line, there is a higher current flow and therefore a greater conductor loss. Likewise there is a higher voltage on the line and a greater stress across the line dielectric. It is apparent then that line loss is kept to a minimum by proper matching of line to antenna system.

In most cases the line loss as a result of mismatch is unimportant for SWR values of 2 to 1 and lower. Also the influence of a mismatch is more pronounced when there is a low over-all line attenuation.

What are some typical line loss figures? The figures of Table I will give you an introductory glimpse into the influence of line loss. When using a 100 foot length of RG-8/U cable on the CB band there will be a loss of 1 db. This is comparable to a power decline to the 79.4 per cent level. If the output of the transmitter is 3.6 watts this means that there will be only 2.86 watts delivered to the antenna ($3.6 \times 0.794$). When RG-58/U cable is used instead of RG-8/U the power delivered to the antenna would be only 2.16 watts ($3.6 \times 0.602$). A 2.2 db loss corresponds to a drop to the 60.2% level.

The losses on the 465 megacycle band would be very much greater. For example, 100 feet of RG-8/U cable will only deliver 33.1 per cent of the input power to the antenna. For lengths of line under 50 feet at 27 mc/s the losses are quite unimportant. Note that the losses in the chart are based on matched conditions. There can also be significant losses in radiation as a result of poor SWR ratio.

For long lengths of line losses become quite significant. For lines of 200 feet and greater, one can expect to lose half of the power in the transmission line. It is important then to choose a long line carefully and route it over as short a path as possible. In fact, it is readily possible to lose the gain advantage of a more expensive antenna because a mounting position is selected that requires an exceptionally long length of transmission line.

# FREE FIELD STRENGTH METER

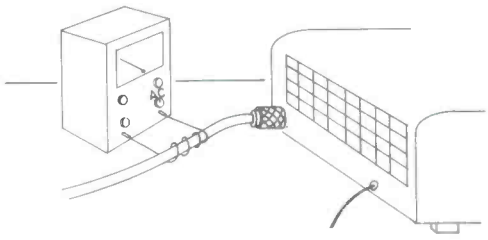
## ALL YOU NEED IS A V.T.V.M.

by WILLIAM LATCH, KCI6808

A vacuum tube voltmeter is a piece of test gear which is becoming popular around CB shacks. A good V.T.V.M. is expensive. A field strength meter is a piece of gear which, although inexpensive, is not to be found in as many CB shacks as need them (judging from the signals heard on the band).

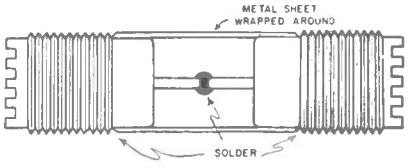
Here's an almost unknown way to make any V.T.V.M. double as a field strength meter—at a total cost of nothing.

The adaptation consists of switching the meter to the AC voltage position and plugging a length of wire into the AC input jacks. Actually the wire should be twisted into a loop of several turns and placed near the rear of the transceiver or wrapped loosely around the coaxial cable.



# JIFFY COAX CONNECTOR

by ROBERT HERRICK, 20Q1731




The connection of two or more lengths of RG-58/U or RG-59/U coax frequently becomes necessary and requires the use of a PL-275 straight through adapter which can be difficult to procure on short notice, and costs about $2.30 when you do find one. Chassis type receptacles, SO-239, are usually more plentiful, quite a bit cheaper, and very frequently already lying around the CB shack.

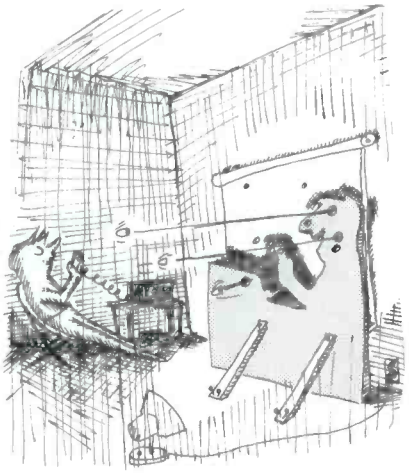
A very practical straight adapter can be made by removing the flanges from two SO-239 chassis receptacles either in a lathe or with a hacksaw and filing flush with the diameter of the connector. The normal protruding connections are then soldered together, keeping both pieces as close on centerline as is possible. Then wrap a piece of sheetmetal completely around and over the gap overlapping the start of the sheet slightly. Do not try to use kitchen type aluminum foil wrap for this purpose. Now solder along all the edges.

Subscription form between pages 48 and 49!

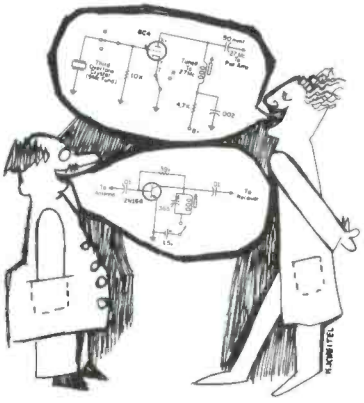
# CB CHUCKLES

by K. Knott

"I sympathize with you on your ignition noise, but I haven't had any problems along those lines."



"No, I couldn't cure the TVI but I did the next best thing."

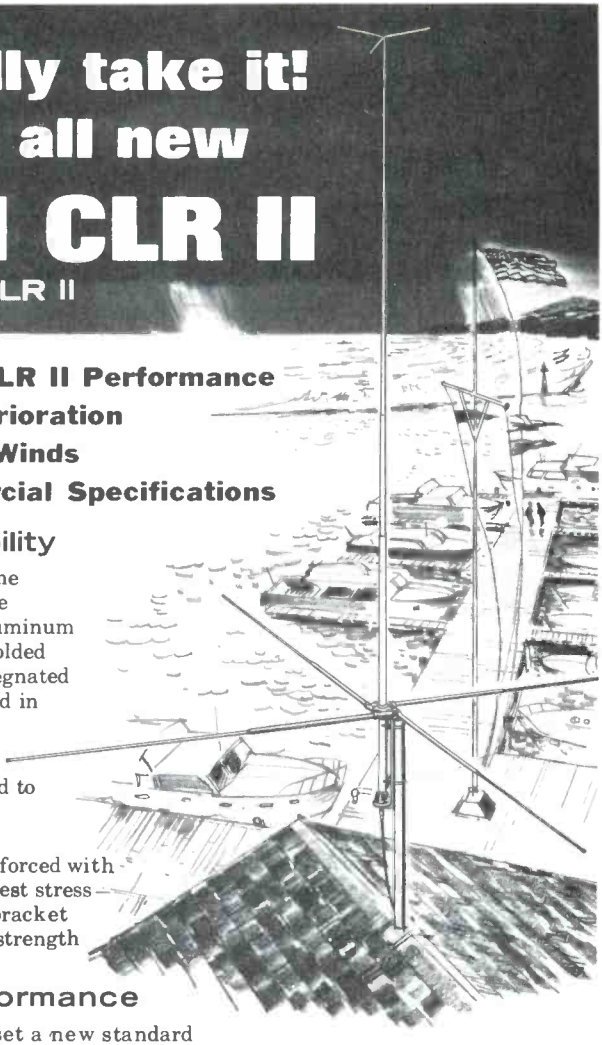


# Built to really take it!

## hy-gain's all new

# GOLDEN CLR II

Model GCLR II



- **Delivers Unequalled CLR II Performance**
- **Defies Corrosive Deterioration**
- **Challenges 100 MPH Winds**
- **Built to Rigid Commercial Specifications**

## A new standard in durability

The new Model GCLR II features the same rugged 12" double grip mast bracket – the same new technique of taper-swaging aluminum tubing for greater strength – the same molded high-impact Poly-Styron insulators impregnated with tough durable fiberglas as those used in Hy-Gain's fabulous CLR II...

## PLUS

Ever-enduring GOLD IRIDITING applied to *all* surfaces of the antenna to provide maximum resistance against corrosion.

Extra heavy gauge seamless tubing reinforced with double wall thickness at points of greatest stress – solidly anchored into the massive mast bracket to provide extra rigidity and maximum strength under hurricane-like conditions.

## A new standard in performance

Like Hy-Gain's Model CLR II, which set a new standard in performance superiority, the new Model GCLR II delivers 8db gain in all directions – DOUBLES THE EFFECTIVE RADIATED POWER OF THE ANTENNA.

### 3.4db Omni-Directional Gain in Measured Field Strength Intensity

The GCLR II, with its 19'10" (maximum legal height) radiator which is electrically extended to a full ⅝ wave length, provides maximum legal signal capture aperture. Four full ¼ wave length (9') horizontal radials serve as a perfect ground plane system for the ⅝ wave length radiator to work against in producing the lowest possible angle of radiation – directing the maximum amount of energy along the horizon for greatest possible range.

### 6db Circuit Gain... Low SWR

Another feature built into the GCLR II is Hy-Gain's unique static arrester which prevents static build-up – greatly reduces atmospheric noises in the receiver – provides gains in signal-to-noise ratio of 6 to 20db.

SWR of less than 1.2:1 is accomplished with the GCLR II by Hy-Gain's new moistureproof Solid State Matcher which is permanently weather protected and features a recessed 52 ohm coax connector... as extra insurance against electrical failure.

**Unmatched in Performance... Unrivaled in Mechanical Durability**

**Hy-Gain's New Model GCLR II $39.95** C.B. Net

*See it today at your favorite Hy-Gain Distributors or write for the name of the Distributor nearest you*

**HY-GAIN ANTENNA PRODUCTS CORPORATION**
8446 N.E. Highway 6 at Stevens Creek Lincoln, Nebraska

## KBG4303 RIDES AGAIN

*Continued from page 7*

their problems and see if we can save the group from complete oblivion, but only under certain conditions.

From several usually reliable sources we have heard that the ACBA is falsely claiming *far* more members than are actually enrolled. We understand that they have *nowhere* near the "almost 10,000 members" claimed. We would like to see conclusive evidence of the ACBA's claimed size and stature with acceptable proof that "almost 10,000" CB'ers had specifically *requested* membership in ACBA, completed the membership applications and paid the $1 membership fee to belong, as of the date of the first "almost 10,000 member" claim.

Further, we would have to see records to the effect that the membership funds which have been solicited are in accordance with U.S. Post Office regulations, plus assurance that "almost 10,000" dollars allegedly paid in membership fees has actually been received and handled in a proper and legal manner, as certified to us by a leading accounting firm in any large city.

With these assurances that we will be dealing with a legitimate operation we would accept ACBA's invitation, although it still escapes by understanding as to why the ACBA has singled me out of the 460,000 CB'ers in the country to perform this noble service. I'm just a guy with a personal opinion which was formed by reading the ACBA literature, and the ACBA publication has already said that there are a lot of Tom Kneitels in this land.

Presuming that my opinions would actually be of invaluable aid to the success of the ACBA (which I personally doubt), then why weren't they asked for *prior* to the announcement of the club's principles and tactics—*before* the damage was done at the FCC? I've been kicking around with all sorts of opinions on CB since 1959.

I really don't know the behind-the-scenes motives of this surprising invitation, but the whole thing doesn't sound particularly kosher. Rest assured that I will exercise the utmost caution in any dealings with these fellows. However, I have *strong* doubts that the ACBA will be able to furnish adequate information regarding their membership rolls and funds to substantiate their past claims so I guess that you won't be seeing too much more about them in our pages. So far the only benefit to members has been a lot of talk, talk, talk, and promises galore.

If you aren't certain about the issues involved, by the way, they are spelled out in recent issues of S9. The ACBA platform has been expounded very heavily in recent issues of CB Horizons under the by-line of the "President" of the club, although the material was all actually written by the club's self-appointed "Administrator." Other ACBA literature is signed by "Kenn C. Bostick," who is actually the brother of the "Administrator." Mr. Bostick's *real* name is Kenn B. Cooper.

By the way, we previously announced the resignation of ACBA officer Ernest L. Walker, and the following month the resignation of ACBA officer Vernon Jackson. This month we see two more high echelon ACBA'ers have left the fold--the President of the club, Paul Thacker, and Richard Bromley, Vice President. Looks like about the only officer left is the club's self-styled "Administrator." Maybe if they ever get around to holding elections, even he won't be there anymore.

As often stated in S9, we feel that our primary function is to provide CB'ers with informative and entertaining reading and to keep them on the right track. This turns out to be a full time job for our staff and we haven't found the time *(or need)* as yet for the operation of a national club for CB'ers to be run under our auspices. Good reading is *all* we try to offer, but (as they say in the TV commercial) "that's really quite a bit when you think about it."

### *PRESS TIME FLASH*

As we go to press we are informed that an apparent flood of irate mail and phone calls has caused some changes regarding the ACBA. As you know, the ACBA was established as a side-line of another publication.

The violent policies of the ACBA have caused more headaches than profit, and reader indignation has advanced to what may be considered to be "beyond the point of no return." In what looks like an effort to try to reverse the gears, those employees of the publication who have been associated with ACBA are no longer employed by the publication. There will probably be a polite announcement made that said personnel have "resigned to devote their full time to the ACBA."

### *IT'S OFFICIAL*

S9 has been informed by Joe Verdi, President of the Citizens Band Radio League, Inc., that we have been accepted as the official club publication. This means that S9 now replaces the club's former publication, "The Relay," as the means of club communication with its 1,000 active members.

The CBRRL has 10 chapters throughout the nation and has been in operation since mid-1959. A group subscription rate for S9 has been arranged with the club for the benefit of members. The 10-20 of the CBRRL is 2265 65th Street, Brooklyn 4, New York. The land line is 212-CL-9-4326. There will be a special section of our "CB Chit Chat" column for CBRRL news as it's received from HQ. Glad to have the CBRRL aboard.

If there are any other clubs who are interested in similar arrangements, please contact us.

### *THIS MONTH*

You may have noticed that we don't have several of your favorite columns this month. This is because of the fact that this is a special issue. They will all be back with us next month.

S9

# CB SHOP

Rates for CB SHOP are 10¢ per word for advertising which, in our opinion, is obviously of a non-commercial nature. A charge of 25¢ per word is made to all commercial advertisers or business organizations. A 5% discount is in effect for an advance insertion order for six consecutive months.

We do not bill for advertising in CB SHOP. Full remittance must accompany all orders and orders sent in otherwise will not be run or acknowledged.

Closing date is the 15th of the 2nd month preceding date of publication.

We reserve the right to reject advertising which we feel is not suitable.

Because the advertisers and equipment contained in the CB SHOP have not been investigated, the publishers of S9 cannot vouch for the merchandise or services listed therein.

ATTRACTIVE CBL's: Large variety of styles; cartoons, colors. Samples 25¢ (deductible). Levin, K2MTT, 1460 Carroll St., Brooklyn, N. Y. 11213.

CB QSL CARDS—100 two-color $3.00 postpaid, samples—10¢. Rusprint, Box 7575, Kansas City, Missouri 64116.

Quality QSL's—New Low Prices. Samples 10¢, 25¢, 50¢. Savory, 172 Roosevelt, Weymouth, Mass.

CB LOG BOOKS—50 pages BIG, loads of entries per page, space for all needed information. This is THE ORIGINAL CB log book—best seller since 1960. Only $1 postpaid. Harewood , 1536 Lexington Avenue, New York 29, N. Y. (limited supply at this price)

HAM SACRIFICE—Deluxe Hallicrafters 6&2 meter ham transceiver, top condition, orig. cost $395.00. Internal AC supply. Best offer. Box D, S9 Magazine, 300 West 43rd St., New York, N. Y. 10036.

SHORTWAVE RECEIVER—Hallicrafters Model SX-42 AM/FM super receiver, covers CB, AM-BC, FM & police bands. Needs minor work but is clean outside. A real beauty. Best offer. Box D, S9 Magazine, 300 West 43rd St., New York, N. Y. 10036.

Hi-Fi AMPLIFIER —Grommes 10 w. Model 55-C mono amplifier in top notch condition, sounds beautiful. In metal cabinet. Only $20. Box D, S9 Magazine, 300 West 43rd St., New York, N. Y. 10036.

UNWANTED CB gear kicking around your CB shack? Everybody has some! Turn it into fast cash with an inexpensive (10¢ per word, no minimum) S9 classified ad which will be read by more CB'ers than an ad placed anywhere else at any price. You'll probably be deluged with checks. Closing dates on the 15th of the 2nd month preceding date of publication.

FREE SAMPLES—CB QSL CARDS—$2.50 per 100 in 3 colors, POSTPAID. Garth Printing Company, Box 51S, Jutland, New Jersey.



**Subscription form between pages 48 and 49!**

ATTRACTIVE CBL's: Guaranteed largest selection of INDIVIDUAL styles. Samples 25¢ (deductible). Levin, K2MTT, 1460 Carroll St., Brooklyn, N. Y. 11213.

CB QSL Cards. New, Kute, Klever, Komical designs. Reasonable prices. Brilliant colors, including beautiful silver and gold. Samples Free. M. Hellwig, Box 425, Lake Wales, Florida.

FCC WARNING DECAL Against Unauthorized Use . . . 2 x 3 . . . 35¢ 4/1.00, 3 x 4 65¢ 2/1.00. Box 457, Encino, California.

LOG BOOK for the CB'ers. Over 1100 lines 17 inches long in plastic ring binder. S9 call map printed on inside cover. $1.00 postpaid. CAROLINA CAMERA PUBLISHERS, Post Office Box 1728-S Wilmington, N. C. 28402.

CB'ers—Our easy-do Dual Conversion adapter kit improves selectivity, increases sensitivity. Often copied but never duplicated. For HE-15, A, B; 800; 910, A, B, C; Mark VII; 770, 1, 2; Messenger; GW-10 etc. $15.50, with tubes $17.50. Also, Speech Clipper-kit complete $17.85 or $5.00 deposit plus COD. Results! Not promises. There is a difference. Free literature Dept. #12S, Bainbridge Radio Electronics, 2839 Briggs Avenue, New York 58, N. Y.

FOR SALE:—Ray-Tel TWR-1 and TWR-2, write J. Edwards, 28-C Woodland Terrace, Columbia, S. C.

TNS MOBILE NOISE ELIMINATOR—No Coils, uses 6AL5-12AX7! Schematics, parts list, step-by-step instructions $1:00. FRANKEL, Box A-143, Wantagh, New York.

CB QSL SWL Cards that are different. Quality Card Stock. Samples 10¢. Home Print, 2416 Elmo, Hamilton, Ohio.

CB-QSL's over 100 designs, samples—10¢. Rogers, K0AAB, 961 Arcade, St. Paul 6, Minn.

NOW—cards of distinction for discriminating CB'ers. Your photo on cards from snapshots or send us your ideas and designs for custom work by professional artist, samples 25¢. Dick McGee, 1444 Home Street, Jacksonville 7, Fla.

WALKIE-TALKIES, Telecon Line, Direct from Japan 100 mw and 1 Watt Units. Catalog and Order Form Airmailed. Write Rotoken Corporation, 18 Mikawadai-Cho, Minato-ku, Tokyo.

CB QSL's, 100 for $3.00, samples 25¢, Redbird Printers, Freedom, Indiana.

QUESTION—Want to design a QSL card? Sampler Instruction Kit 25¢ Wow! What cards you can create. $1.50 and up 100. Samco Box 203, Wynantskill, N. Y.

WALKIE-TALKIE RADIOS: CITIZEN BAND EQUIP.; INTERCOMS; RADIO-TV PARTS—FREE CATALOGUE—ALLEN ELECTRONICS, 4142A Main, Flushing 55, N. Y.

CB QSL's 100 three colors $2.00 samples dime. Bob Garra, Lehighton, Penna.

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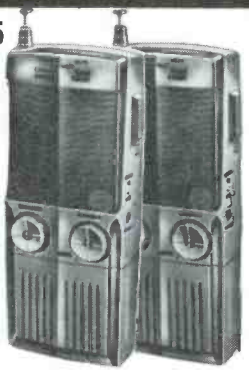

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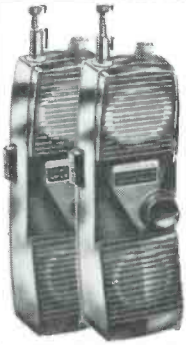

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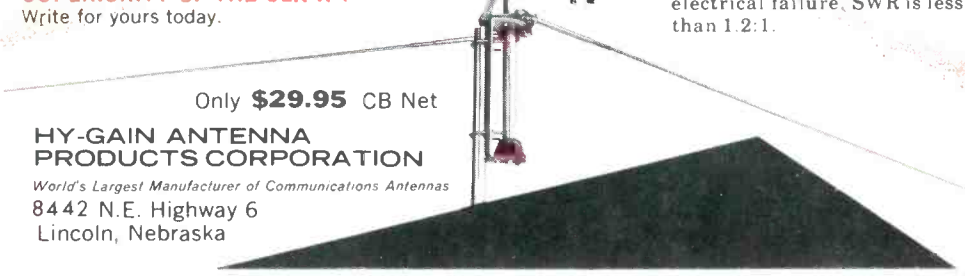

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