



HAM HUM

Published by
AK-SAR-BEN RADIO CLUB, INC. - Omaha, Nebr. 68101
Post Office Box 291 - Downtown Station



Vol. XXVI
No. 3

March 1976

NEXT MEETING

WHEN: FRIDAY, MARCH 12, 1976

TIME: 7:30 P.M.

WHERE: NATIONAL GUARD ARMORY
6929 Mercy Road, Omaha

PROGRAM: EQUIPMENT SECURITY—John A. Draus, WØEKB, District Representative, ADT Security Systems
(He will discuss ways of marking equipment to show ownership. Should we use name, call, social security number, driver's license number? What should we do about the car itself? John is an expert on security systems and can give us the dope whether it be protecting the mobile unit or the ham shack and will answer your questions and help you determine what, if anything, you should do about it.)

* * *

VISITORS WELCOME—REFRESHMENTS—EYEBALL QSOs

HAM HUM is the official organ of the Ak-Sar-Ben Amateur Radio Club, Inc., of Omaha, Nebraska, mailed monthly to all members and to others upon request.



Published by
AK-SAR-BEN AMATEUR RADIO CLUB, INC.
 Post Office Box 291
 Omaha, Nebraska 68101
 Editor: Dick Eilers, WØYZV
 Phone HOME: 397-3999
 BUSINESS: 342-1402 - EX. 200
 Associate Editor: John Snyder, WØWRT
 Phone HOME: 556-1538
 BUSINESS: 397-3000 - EX 3761

Deadline for April issue is March 19

Annual Dues:	New member initiation fee	\$1.00
Regular member	Quarterly for balance of year:	
Regular member and XYL	Regular member	\$2.00
Student member	Regular member and XYL	2.45
(due and payable each Jan. 1)	Student member	1.00

ADDITIONS TO ROSTER

Bruce J. Bretz
 816 South 54th Street
 Omaha, Nebraska 68106
 Phone: 556-7265

John A. Draus, WØEKB
 7303 Ames Avenue
 Omaha, Nebraska 68134
 Phone: 571-4207

Frank D. Bruner, KØSST
 10012 Emmet Street
 Omaha, Nebraska 68134
 Phone: 571-1975

Ronald Edmunds, KØPAY
 7921 South 84th St., Lot #6
 Papillion, Nebraska 68046
 Phone: 331-1839

Theodore J. Ciurej
 4101 South 38th Street
 Omaha, Nebraska 68107
 Phone: 731-4924

Donald D. Hed, KØZTI
 1635 North 107th Street
 Omaha, Nebraska 68114
 Phone: 496-1412

John M. Crawford, WA4BOY
 215 Fairchild Circle
 Offutt AFB, Nebraska 68113
 Phone: 291-3255

Donald A. Woodhull
 760 North 11th Street
 Blair, Nebraska 68008
 Phone: (402) 425-5763

Robert W. Dougherty
 6225 South 42nd Street
 Omaha, Nebraska 68107
 Phone: 734-2327

Armour P. Wright, WBØEGI
 2726 South Cornelia
 Sioux City, Iowa 51106
 Phone: (712) 276-2139

FEBRUARY MEETING

Hats off to Jim Howard, K5TNP/Ø, Mike McAllister, WBØDXA, and Bob Conley, WBØLYU, for an excellent example, straightforward demonstration on RTTY. The equipment used for the demo (the truck to haul the equipment is not a part of the demo nor the price) is available through usual amateur outlets: beg, borrow, or _____!! However, it was clearly pointed out through simply circuitry, a model 15 or 19 RTTY unit and a HF or VHF transceiver, an enthusiast could easily involve himself in RTTY communications for about fifty dollars.

RTTY frequencies usually are found in the CW portions of bands. Locally, 146.70 is used. Consult the experts Jim, Mike and Bob for further information.

RECENT CONTRIBUTORS

Ham Hum Postage

Neil Hoover, WØAXE

Autopatch 22/82

Harold M. Abrahamson, WAØORC

Mel L. Cunningham, Jr., KØVAL

Robert H. Fricke, WØPOL

Repeater 10/70

James R. Peterson, WBØQGV

Repeater 34/94

Harold M. Abrahamson, WAØORC

Linda F. Chisholm, WBØNCU

Mel L. Cunningham, Jr., KØVAL

Robert H. Fricke, WØPOL

Midland International Corporation

Dan C. Pettengill, WBØBXC

Paul S. Sherrerd, WBØBKZ

March 1976

CONVENTION PROGRAM

Dear O.M.,

The Ak-Sar-Ben Amateur Radio Club will be host to the 1976 Midwest A.R.R.L. Convention on October 8, 9, and 10 this year at the Holiday Inn on south 72nd Street.

The easiest and most economical way as Program Committee Chairman to request input from club members and those who are members of clubs that read Ham Hum is to seek your help through these pages.

If you have information that could lead us to a specific person that would be of interest to the convention, please correspond with us thru the following address:

Program Committee
Midwest A.R.R.L. Convention
P.O. Box 1173
Omaha, Neb. 68101

We have also been favored by Terry, WØCJD, in Council Bluffs, with the use of his convention public address systems and his know-how. Thank you, Terry.

Jim Peterson, WBØQGV
Program Committee Chairman

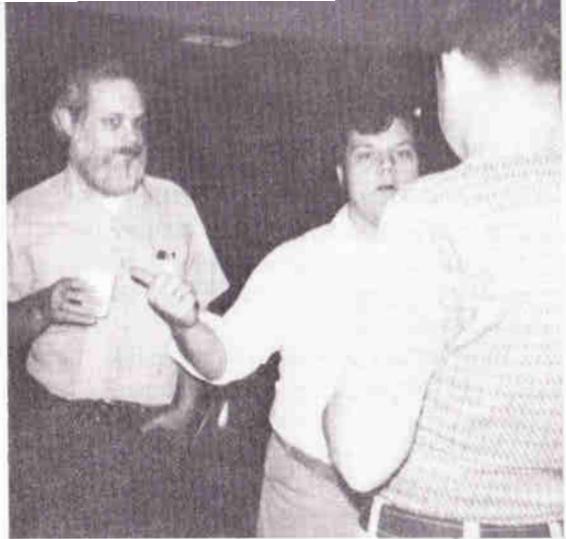
MEMBER NEWS

Marjorie Kelly recently passed the general class exam and her new call is WBØKHO. Congratulations, Marge!

William F. Seipel, who joined the Club in January, has now received his call - WNØRVU. Congratulations, Bill!

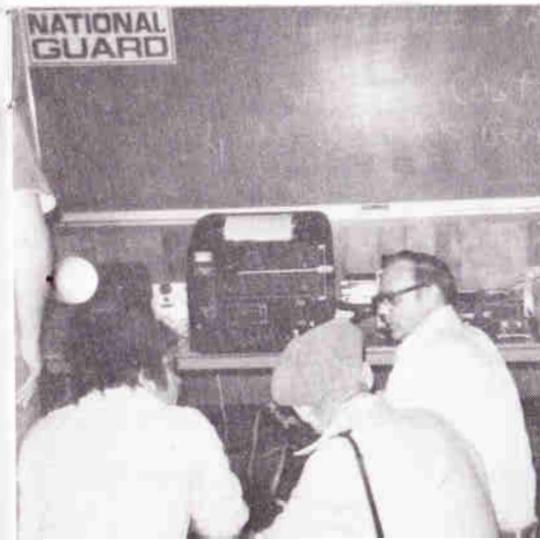
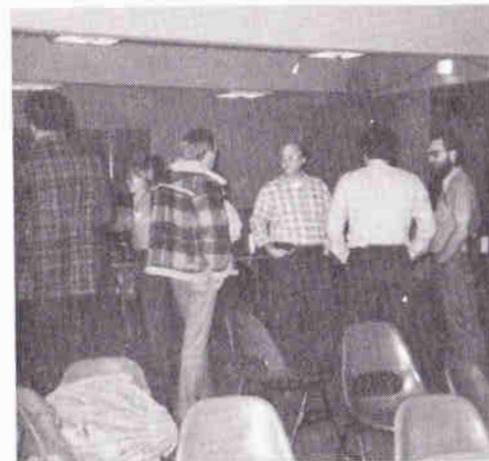
HAM HUM

Page 3



PHOTOS OF
FEBRUARY MEETING

By Jon Penner, WØQGT



**DOUGLAS/SARPY COUNTY
AREC SIMULATED
EMERGENCY TEST
1/25/1976**

Members of the local AREC and others responded to a surprise disaster training exercise on a cloudy and somewhat snowy Sunday afternoon. The simulated emergency consisted of a flood on various branches of the Papio Creek. The exercise was based on an imaginary request from local public authorities that we dispatch mobile units to various spots along the Papio to monitor the water levels, and then report the conditions to a central information point.

Without prior warning, the AREC net was activated at exactly 1:00 P.M. on Sunday afternoon on the 34/94 repeater, with the announcement of the simulated emergency, followed by requests for check-ins and units available to go mobile. By the end of the net, which lasted approximately one hour and 45 minutes, over 40 stations had checked in. The following operators were actually dispatched and manned check points along the Papio: WAØORC, WBØMTS, KØJBL, WBØNVL, WBØMNK, WBØPGS, WBØIKL, WA2BXY, WBØARZ, WBØNPS, KØDKM, WAØBMJ, WAØYCV, and WBØPEX. WAØGEH was dispatched to Sarpy County Civil Defense; WAØZUR to Red Cross Chapter House; and WBØBCB served as a radio unit for Dean Noyes of Douglas County Civil Defense.

My personal observations of the exercise are as follows:

1. The level of check-ins for a surprise operation was very good.
2. Radio discipline was excellent. I have never heard it better. There were few unnecessary transmissions and all stations responded as requested.
3. On the negative side, I can only term the actual field participation as being poor to fair. It took us far too long to get all check points manned and too many stations were unwilling to go mobile. Of course, I realize that if this had been an actual emergency, the field participation would have been much greater. Still, we had hoped for better response to requests for mobile units.

We had Dean Noyes of Douglas County C.D., Tom Swales of Sarpy County C.D., and Bill Shaw of Omaha Public Works monitor our exercise. All were impressed by our abilities and made several favorable comments.

In addition to the main part of the exercise, there were also requests for out-state weather reports to be gathered via H.F. and some weather reports were taken off the local RTTY net. It was originally planned to have the Red Cross prepare some simulated emergency messages for us, that would have had to be handled by H.F. Unfortunately, due to a breakdown in communications, these messages were not prepared.

Special appreciation to those who braved the cold and the snow to go and look at a creek that was 30 feet below flood stage! Also thanks to those who checked in and did their job by standing by; to WBØCMC for help in planning the exercise; to WBØNVL for arranging for some good media coverage; and to WAØABT for

allowing us to use his home and equipment for net control.

Gary Maples, W00XT
Douglas/Sarpy County
AREC E.C.

MORE MEMBER NEWS

25 January 76

Hello to all from
KA/JA/JH etc. land -

Still haven't gotten on the air, but I expect to get set up during this in-port period. The ship spends about 60% of the time away from home port, so I haven't had much time for amateur radio. I did just locate a ham store here in Yokohama, and I'm going to check on the prices of some VHF gear.

Hope the WX back there is reasonable - it's considerably milder in this part of Japan than in Omaha. We do get typhoons during the summer and fall, though. I've enjoyed all the news in Ham Hum and I'm looking forward to lots of great work from the Club.

Best 73 to all,
Dave, K5QJG
LCDR D. A. Wells, K5QJG
USS Midway (CV-41)
OPS Dept.
FPO San Francisco, CA 96601

(Ed Note: Good to hear from you, Dave, and thanks for your check for 1976 dues.)

REPEATER UPDATE (AS OF 2/18/76)

Since the last update report, two important things have occurred. First, LeRoy Hilt, WB0MSN, has given the Radio Club a Comm Prod antenna that belonged to him personally. Although the Club Board of Trustees had authorized the purchase of such an antenna for the 146.34 MHz receiver site, LeRoy's very generous gift will save the Club approximately \$180.00! Since LeRoy has already donated a 12 VDC power supply to the repeater, how can you say enough "Thank you's"?

WB0NPS, Bill, has been in contact with the repeater committee chairman, and has informed us that he will personally take charge of placing the Comm Prod antenna on top of the Woodmen Tower and that he is aware of a way it can be done. Antenna should be in place in 30 to 60 days. Many thanks to Bill for solving what had appeared to be a tough problem.

Purchase of a VHF Engineering exciter strip has been approved by the Club Board of Trustees. This strip will be used to drive the 100 watt solid state amplifier donated by WB0BMV, Mike. Once the strip arrives and the exciter/amplifier combination has been checked out, they will be put in service at the 94 transmitter site.

It is very gratifying to see individuals, such as the ones above, step forward with donations of time, skills and equipment. Because of their generosity, the Repeater Committee is going to be able to make significant improvements to the 34/94 machine at a very small cash cost to the Radio Club.

Gary Maples, W00XT



**BRING YOUR
OLD EQUIPMENT
AND
OLD MONEY**

TO

**AK-SAR-BEN AMATEUR RADIO
CLUB, INC.**

AUCTION...

SUNDAY- MARCH 28, 1976

CHECK-IN 11:00 AM

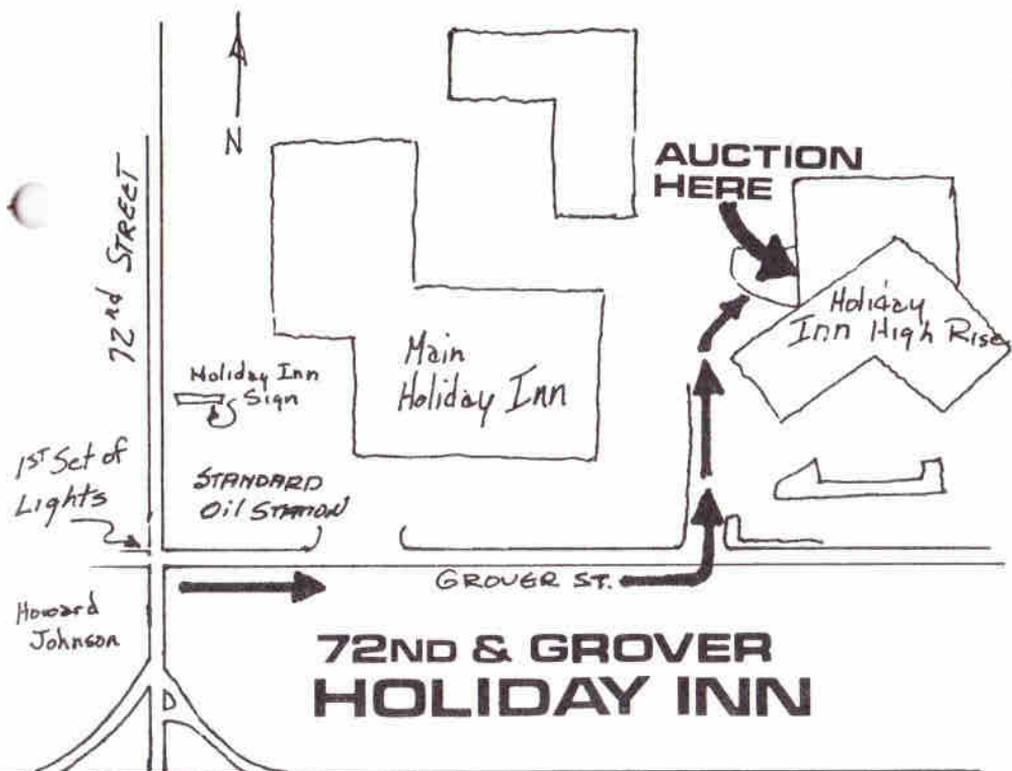
AUCTION 1:30 TO ? PM

HOLIDAY INN

· HIGH RISE ANNEX

· CAUCUS & DOCUMENTS ROOMS

**TERMS: CASH! CONSIGNOR RECEIVES FULL PAYMENT
LESS 10% OF SALE PRICE. CONSIGNOR MAY BID ON
OWN MERCHANDISE—\$1.00 CHARGE FOR BUY-BACK.
MERCHANDISE AUCTIONED IN ORDER REGISTERED.**



72ND & GROVER HOLIDAY INN

I-80



BUFFET LUNCH AVAILABLE

Starting at
11:30 AM

- SALADS
- ENTREES
- *DESSERTS

\$3.25

ALL AMERICAN DINING ROOM

THE GREAT PL MYSTERY

PL or "Private Line" (a Motorola trademark) is a form of tone squelch which was developed for commercial two-way radio almost twenty years ago and has found its way into the FM part of the amateur service in a big way during the past few years. PL is continuous, sub-audible tone squelch. A continuous low frequency tone is applied to a transmitter and is detected by an associated receiver, and the presence of that tone is used instead of quieting to operate the receiver squelch. That sounds pretty simple, doesn't it? Yet there are many people who have no idea of what PL is (even though they may have PL in their radio), and the people who do have a basic understanding of PL are baffled by some of its idiosyncrasies.

The first thing to remember about PL is that it is supposed to be sub-audible. Frequencies between 80 and 250 Hz are usually employed. Transmitter and receiver audio response on common radios usually begins about 300 Hz and extends to about 3 kHz for voice transmission and reception. In other words, the PL frequencies are below the normal audio passband of your radio.

PL systems normally use vibrating reeds to provide sensitivity and selectivity of the tone squelch. This allows the PL squelch to be as sensitive as carrier squelch, and it allows many different PL codes to be assigned in the sub-audible range. One of the major PL uses in commercial service is the operation of several cab companies (for example) on the same channel, communicating with their own units

without having to hear all the conversation from the other people on the channel (each group has its own PL assignment).

Hams who install PL equipment on some of the newer transceivers invariably fall into one or more traps when it comes to making PL work properly. Here are a few common problems —

1. PL should be applied directly to the modulator, not the microphone input. The transmitter audio amplifier in most radios is designed to pass only the microphone audio. The PL tone will be attenuated. Worse than that, the transmitter deviation limiting will cause the PL applied at the microphone input to be reduced during voice peaks causing squelch clamping.
2. Phase modulators are usually high impedance, sensitive areas in most transceivers. PL signals applied at the modulator should be carefully decoupled and bypassed or extraneous RF and other signals will enter the modulator at the PL input and cause noise or other garbage to be modulated.
3. The PL tone should be extremely clean and free of harmonics. Any distortion of the PL tone will result in harmonics which will fall in the normal audio band and will cause a buzz in your transmitted audio.
4. PL levels *cannot* be set by listening. Most receivers can't detect the fundamental of the PL tone, only the harmonics. If you set the PL level by ear, you are setting the level by listening to the harmonics of the PL tone while the reed used for reception of the tone is listening

to the fundamental frequency. A PL tone with lots of harmonic content may sound loud on your receiver, but there may not be enough of the fundamental frequency to allow the receiver to operate properly. A scope on the receiver discriminator or a modulation monitor with a scope are the only sure ways to set PL levels.

5. Extra care should be used when connecting PL equipment to synthesized radios. Most synthesizers have small instabilities of frequency as a result of their frequency generation scheme. This causes no particular problem until a PL tone is applied. The frequency instability is then added to the PL tone causing an apparent distortion and therefore harmonics of the PL tone to be present in the audio. Some phase locked loop synthesizers actually sense the PL tone as deviation from the desired frequency which the synthesizer tries to correct causing additional PL fundamental attenuation and distortion. PL actually applied to the synthesizer seems to reduce these problems, but they are tricky at best.

Here are some common misconceptions about PL —

1. "PL will make the receiver more sensitive." PL is a squelch system. It cannot improve the sensitivity of a receiver or your signal to that receiver. PL squelch can (in certain instances) sense signal presence better than carrier squelch, but once your receiver is open, your signal will be no more quiet. PL can allow a receiver in a noisy environment to be tuned more

sensitive, because the PL will keep out some of the noise and intermod that would hold a carrier squelch open if it were tuned as sensitive.

2. "PL gives you priority on the repeater." I'm sorry, but it doesn't. If a signal comes on the input to the repeater that captures your PL signal, both you and your PL will be gone.
3. "You must not be sending PL because I can't hear it." Maybe the PL tone is very clean and your receiver does not hear the fundamental frequency. WR9ABY sends PL whenever it is transmitting. Listen for it.

How come some stations don't have squelch tails on the repeater? What is "reverse-burst?" What is a squelch tail? You'd be surprised how many operators have not stopped and thought where that strange blast of noise at the end of transmissions comes from. The squelch tail is receiver noise which you hear from the time a signal disappears until the receiver figures out that it's gone and the receiver squelch closes. There has to be a delay incorporated in the receiver or a fluttery signal would open and close the receiver squelch and would become generally unreadable.

If the squelch in a PL system is controlled by the PL tone, why not take advantage of that fact and eliminate the annoying squelch tail? Well, that's exactly what happens. If you turn off your transmit PL tone when you let up on the mic button, and hold the transmitter on the air to keep the receiver that's listening to it quiet until the receiver PL reed stops, then the PL squelch has turned off the

receiver and you can turn off your transmitter with no squelch tail in that receiver (its squelch is already closed). Easy! That's all there is to it. Motorola systems do it a little bit more sophisticated. Motorola units send a burst of PL tone out of phase with the regular PL tone (the reverse burst) to force the receiver reed to stop more quickly. Then the transmitter goes off. That's the only difference.

BDS
de Squelch Tales - CFMC

My doctor is one in a million. He put me on my feet in no time. Made me sell my car to pay his bill.

Small boy's definition of conscience: "Something that makes you tell your mother before your sister does."

Service

"I like the sound of the job, but the last place I worked paid more."

"Did they give you rest periods?"

"Yes."

"Furnish life insurance?"

"Yes."

"Vacation with pay?"

"Yes, and a \$100 holiday bonus."

"Hmmm! Why did you leave?"

"The company went busted."

The Kleinknecht Encyclopedia

RAY-DE-O-RAY 2-WAY RADIO

2 METER FM SPECIAL

12 CHANNELS 15 WATT - \$149.95

We also stock 2 meter antennas, crystals, coax, antenna fittings and most brands CB radios and antennas.

Open Mon.-Wed.-Thurs.-Fri. 10:00 A.M. to 5:30 P.M.; Sat. 10:00 A.M. to 4:30 P.M.; Sun. 1:00 P.M. to 4:30 P.M. Closed Tuesdays.

RAY KYDNEY
WAØWOT

5347 North 30th Street
453-3344

PUBLIC SERVICE/ PUBLIC RELATIONS

In last month's edition of Ham Hum, I carried on at length about the relationship of Amateur Radio and Public Service. This month, I would like to continue the discussion to cover the relationship of amateur radio public service operations and amateur radio public relations.

How many times have people pointed to the antenna on your car, or the tri-bander on your house, and asked how you "like playing with that CB radio stuff"? Face it, people don't know who we are! Well, in case you haven't noticed it, our hobby is in trouble. There are less than 280,000 licensed amateurs in the U.S., and a good many of them are inactive. The number of licensed CB operators will soon reach 5 million. How much longer will we be able to justify a small number of amateurs having authorized use of 1000's of kiloHertz while 5 million users are jammed into 23 channels? If you believe that this situation is going to continue to exist, not to mention the commercial radio services which are always hungry for spectrum, then I have some friends who would like to talk to you about selling you some swampland in Alaska and some desert lots in Arizona! I quote the following written by WA4BDW in the January 1976 issue of "73":

"As I see it, we have two great obstacles staring us in the face, though. One: that great mass of amateurs out there in radio land who either are ignorant of the facts of regulatory life, are concerned but are too short sighted...When these guys are left with nothing but

the upper megacycle of ten meters in which to pursue their hobby, they will probably be the first to point their fingers at Newington, Wayne Green, and the other more visible spokespeople for ham radio and let out a multi-decibel 'Wha' Happened?' "

In the January 1976 issue of World Radio News, W6AJY wrote:

"In many areas of the country the other radio service is being used because the civic, social and charitable groups cannot get amateurs to participate in the projects. We are getting kicked so badly that we should have a collective nosebleed."

The following appeared in the February 1976 issue of World Radio News under the title "It's Later Than We Think.":

ALBIN FISCHER, W7UV

Last week I listened to the proceedings of a 2-meter net and heard 22 stations signing into the control.

A large public meeting function and parade was scheduled in the metropolitan area for the following week, so the net control announced that public authorities had asked for volunteer communications assistance — so, who will volunteer? To my amazement, NOT ONE of the 22 stations in the net would help. All claimed other activities and prior commitments.

Not long ago law enforcement authorities in the largest county in Nevada went on public broadcasting and pleaded for emergency communications volunteers. Four amateurs showed up and 41 CB boys. The CBers got the job and Amateur Radio got you know what!!

—*Amateur Radio News Service Bulletin*

Our hobby, exciting as it is, is virtually invisible to the general and official public.

Don't believe for a minute that we have no need for PR via public service, because *you know* that public and private agencies will automatically flock to amateur radio when disaster or emergency strikes. *No other agency*, private or civil, had an accurate survey of the damage caused by the May 6th Omaha tornado until the Wednesday or Thursday following the tornado. Amateur radio operators in Omaha had a reasonable survey done by 8:30 p.m. on the Tuesday of the tornado. When this was mentioned to a local public official he exclaimed, "Where were you guys?!" In other words, we had information he was desperately in need of that Tuesday night, but he didn't know who we were, what we could do, or how he could get a hold of us. This situation points out a failure on our part to accomplish effective public service public relations. We need to get to that point where the general public knows and understands the difference between amateur radio and other radio services. We need to get to the point where the public official knows who we are and what we can do. To allow amateur radio to perform its public service duty, we need to take advantage of every public service opportunity that we can reasonably handle. We won't get those opportunities unless we effectively perform public service operations *that make people aware of us*.

If public service is one of the few ways we can get the story of our hobby in the news media, then that is what we must do in order to reach the public. If we don't get our story out, then what recently happened to me

may happen to you.

An associate at my place of employment approached me because he wanted to get into radio, and he had heard that I "messed around with that sort of stuff." He told me that he wanted to get into this "CB thing." I explained to him that amateur radio was another alternative he should consider. We talked about ham radio at great length, discussing the opportunities and fun that was available. I even gave him some ham radio magazines to take home and read. When he came back, he informed me that he wanted to get into CB instead of ham radio. He said that he had heard and read much more about CB and besides, it looked like ham radio was dead and that CB was going to be the future.

The above story certainly indicates that we need every form of PR that we can get. If we don't reach the general public and civil authorities with the story of amateur radio, then we had best start tuning all our antennas for that top megacycle of 10 meters.

It is going to be more and more important that we justify our very existence. Not only must we continue to justify our existence, and a good public service record is the best way to justify that existence, but it is imperative that we inform people just what we are doing to warrant our continued spectrum authorizations. What do I mean by "informing people"? Tell your neighbor, the guy you work with, and local, state and governmental authorities. And most importantly, help people and organizations via amateur radio.

Gary Maples, WØOXT
Douglas/Sarpy County E.C.

HAM HUM

March 1976

HAM HUM SWAP

FOR SALE: Drake R-4 Receiver. Excellent condition — \$250.00. Less speaker.
Neil Hoover, WØAXE, 2644 S. Glass, Sioux City, IA 51106
Phone (712) 276-5312 after 6:00 P.M.

FOR SALE: 2 each JAN-CIM 4-400A in cartons. New — never used. Will accept
best offer.
Alan Lee Fleming, WØBNY; (402) 426-2380
1169 South St., Blair, NE 68008

FOR SALE: 4 Channel 2M VHF Scanner — \$65.00
Richard H. Swig, WBØZQG; phone 322-3088

THANKS, JOHN!

We would all like to thank John Gebuhr, WBØCMC, for his generosity and
patience in helping our YL class on the road to our general licenses.

Ellen Morrissey, WNØHWF
Amy Hohensee
Kay Wilson
Mary Lou Sherrerd

Irene Mulick, WNØMPC
Ann Maples
Jean Kiser, WNØQAY

Short haired girl to long haired
boy: "Of course Daddy doesn't mind
our being alone together, he thinks
you are a girl."

de W6SD Carrier

Don't tell people your troubles.
Half of them aren't interested and the
other half are glad your're getting
what is coming to you.

de W6SD Carrier

A catalog do-it-yourself firm
received this letter from a customer:
"Built a birdhouse according to your
stupid plans. Not only is it too big, but
it keeps blowing out of the tree!
(Signed) Unhappy."

The do-it-yourself people replied:
"Dear Unhappy. Sorry. We acci-
dentally sent you a sailboat blueprint.
If you think you're unhappy, you
should see the guy who came in last in
the Yacht Club regatta in a leaky
birdhouse."

Good Reading

NEW **SSR-1** RECEIVER

\$ 350.00



- Synthesized • General Coverage • Low Cost
- All Solid State • Built-in AC Power Supply
- Selectable Sidebands • Excellent Performance

PRELIMINARY SPECIFICATIONS: • Coverage: 500 kHz to 30 MHz
• Frequency can be read accurately to better than 5 kHz • Sensitivity typically .5 microvolts for 10 dB S + N/N SSB and better than 2 microvolts for 10 dB S + N/N AM • Selectable sidebands • Built-in power supply: 117/234 VAC \pm 20% • If the AC power source fails the unit switches automatically to an internal battery pack which uses eight D-cells (not supplied). • For reduced current drain on DC operation the dials do not light up unless a red pushbutton on the front panel is depressed.

The performance, versatility, size and low cost of the SSR-1 make it ideal for use as a stand-by amateur or novice-amateur receiver, short wave receiver, CB monitor receiver, or general purpose laboratory receiver.

For more information on this and other Drake products, please contact:

Hi Hobby
Industry

BOX 864 COUNCIL BLUFFS, IOWA 51501