



HAM HUM



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

September 1975

Vol. XXV
No. 9

PLAN TO ATTEND THE
FAMILY PICNIC AND
BACK END FLEA MARKET
OF
AK-SAR-BEN RADIO CLUB, INC.

WHERE: MISSOURI VALLEY CITY PARK - MISSOURI VALLEY, IOWA
(One-half mile east of I-29 on U. S. Hwy 30,
southwest edge of city.)

WHEN: SUNDAY, SEPTEMBER 21, 1975

TIME: STARTS at 2:00 P.M. EAT at 4:30 P.M.

CLUB WILL FURNISH FREE . . . HOT DOGS . . . BUNS . . . COFFEE . . . COLD DRINK
YOU BRING DISH OF . . . BAKED BEANS . . . SALAD . . . COLESLAW . . . POTATO CHIPS
OR WHATEVER YOU WOULD LIKE TO BRING

BACK END FLEA MARKET - In view of interest evidenced by some Club members, you are welcome to hold a flea market from the back end of your car, or bring a table to display your wares beside your car. All money transactions to be handled by individual. No charge by the Club for any sales made. Come early for a preferred parking space.

FUN GAMES PRIZES

ADULT GAMES SUCH AS "JARTS" (PRIZES - SILVER DOLLARS)

SPECIAL EVENTS FOR CHILDREN

* * *

NO RESERVATIONS NECESSARY

ALL AMATEURS, FAMILIES AND FRIENDS ARE INVITED TO ATTEND

* * *

SPECIAL REGISTRATION FOR DRAWING

* * *

NO REGULAR MEETING OF AK-SAR-BEN RADIO CLUB, INC. IN SEPTEMBER

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



Next copy deadline: September 19th

Annual Dues:

Regular member\$7.50
 Regular member and XYL 9.00
 Student member 3.50
 (due and payable each Jan. 1)

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 Post Office Box 291
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Editor: Dick Eilers, WØYZV

Phone HOME: 397-3999
 BUSINESS: 342-1402 - EX. 20

Associate Editor: John Snyder, WØWRT

Phone HOME: 556-1538
 BUSINESS: 397-3000 - EX. 3761

Associate Editor: Ervan Heinz, WAØEEM

Phone HOME: 553-2033
 BUSINESS: 554-2656

New member initiation fee\$1.00

Quarterly for balance of year:

Regular member\$2.00
 Regular member and XYL 2.45
 Student member 1.00

**MULTIPLE SCLEROSIS
 BIKE-A-THON 1975**

The 1975 M.S. Bike-A-Thon will be held on Sunday, September 28th. The AREC will again supply communications for this event.

Contact Bob Lockwood, WAØDHU, at 451-7233 if you wish to participate.

6 METER REPEATER

John Gebuhr, WBØCMC, has announced the 6 meter repeater is currently on the air when he is at home and will be on permanently as soon as he can get a tape recorder hooked up. Input frequency 52.76; output frequency 52.525; mode 5F3. Hopefully it will also have autopatch on it in the near future.

FORMER MEMBER NEWS

Aug. 6, 1975

Dear Dick:

I would like to have my name removed from your mailing list. I find that there are fewer names that I remember each month; I did appreciate getting Ham Hum after Ed's passing, but now things are getting easier. I have moved to 1702 North 60th and after thinking it over, I thought it best to stop getting the Ham Hum. I know it has been costing you, as I'm not a paying member and I want you to know I have enjoyed it. Give my regards to Ed's old friends.

Sincerely,
 Maxine Donze
 1702 No. 60th
 Omaha, Nebr. 68104

RECENT CONTRIBUTORS

Autopatch

Ronald E. Hester, WBØMUB

Repeater

William A. BeSore, WBØEQV
Lloyd L. Burks, WBØNGD
LeRoy Hilt, WBØMSN
John H. Lapsley, WAØTIF
Lyman B. Longstreth, WØAUH
Jay C. McAleer, WAØLLQ
Roy M. McCabe, WØUVU
David N. Smith, K3CRF

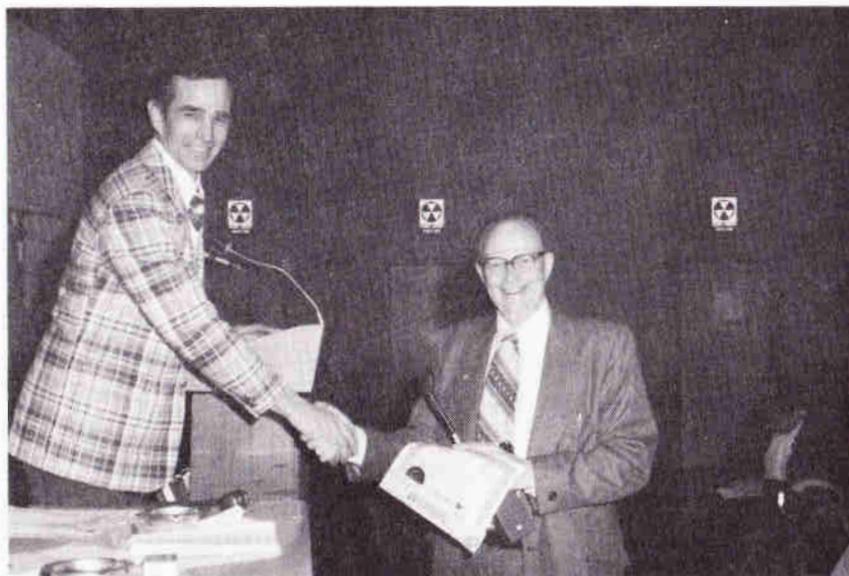
Sincere thanks to all!

AUGUST MEETING

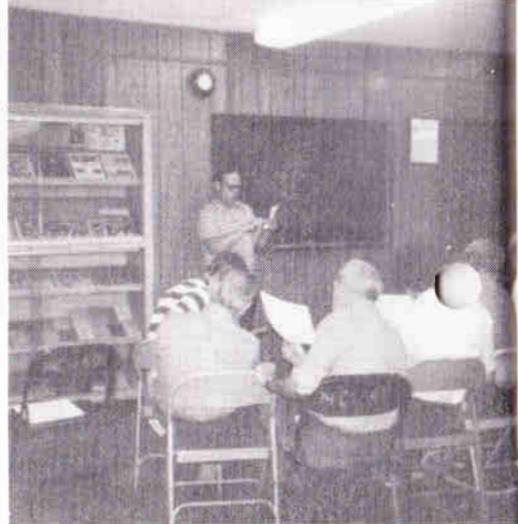
By – Bob Lockwood, WAØDHU

During the August meeting of the Ak-Sar-Ben Radio Club, Inc., Al McMillan, WØJJK, gave an informative talk on the Smith chart, what it is, and an explanation of the practical use of the chart. A chart was given to each in attendance.

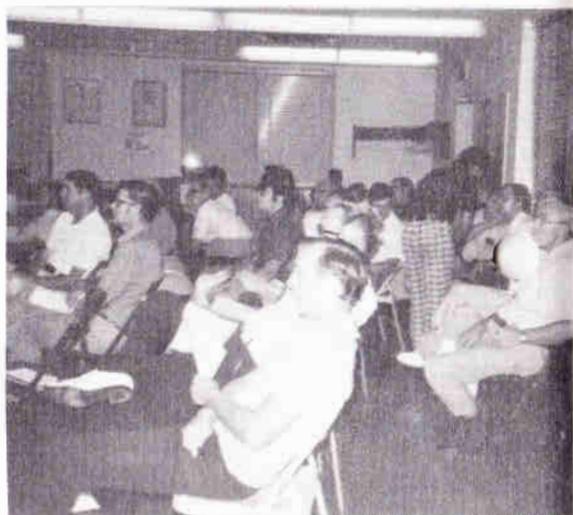
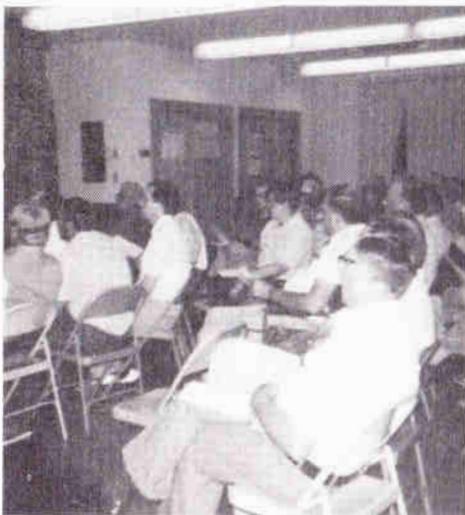
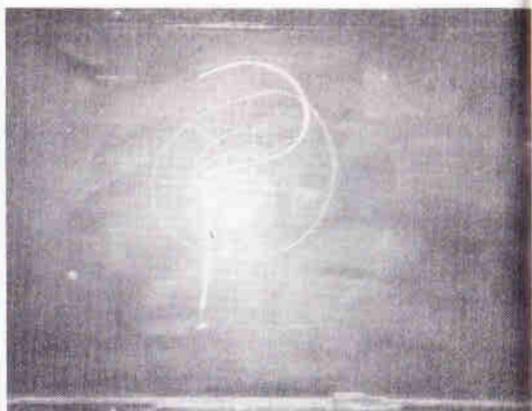
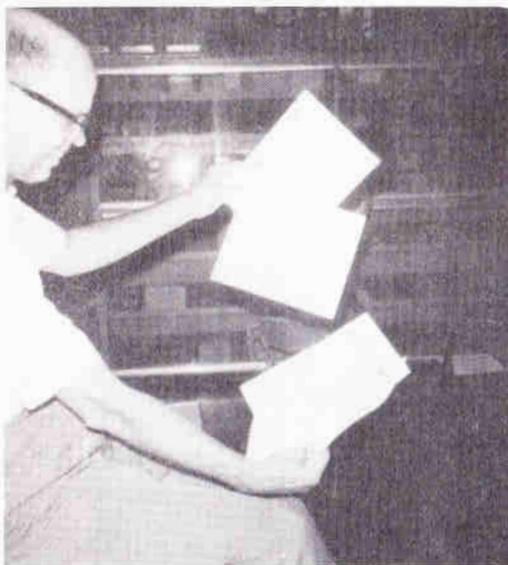
The Smith chart unlocks the secret of what happens along a transmission line of a radio station when SWR is present. A question and answer session followed during which Al fielded many questions put to him. A good presentation was the result of a well-planned program presented by Al. Our sincere thanks to him.



President Mike, WBØBMV, presents 30-Year Membership Certificate to Dick Eilers, WØYZV, at recent meeting.



LAST MEETING PHOTOS
By — Jon Penner, WØQGT



1975 ARRL MIDWEST DIVISION CONVENTION

The Lincoln Amateur Radio Club, Inc. will host the 1975 ARRL Midwest Division Convention on October 17, 18 and 19, 1975 at the Ramada Inn, Lincoln, Nebraska (Airport exit I-80).

Room charges will be in the neighborhood of \$13.50 for a single and \$16.00 for double. Pre-registration will be \$6.50 and banquet will be \$5.50. Featured speaker at the Saturday night banquet will be FCC Commissioner Robert E. Lee. Also speaking will be Tom McMullen (W1SL) on FM and repeaters; Bill Tinnen (W3KMY) on the world above 50 MHz; and Andy Andros (WØLTE) on antennas. An ARRL forum will be hosted by Nebraska SCM Dick Dyas (WØJCP), Midwest Director Paul Grauer (WØFIR), and Dick Baldwin (W1RU) from ARRL.

A drawing for a Wilson hand held will be made from the pre-registrations mailed prior to October 1. The Grand Prize will be an Atlas 215X.

Make checks payable to Lincoln Amateur Radio Club, Inc. and mail to P. O. Box 5006, Lincoln, Nebraska 68505, giving the following information:

Call _____ Name _____

XYLs name if accompanying you _____

Address _____ Phone _____

City _____ State _____ Zip _____

Please send _____ Convention tickets @ \$6.50 _____

_____ Banquet tickets @ \$5.50

\$ _____ Total enclosed

CLASSES TO BEGIN FOR XYLS

By — John Gebuhr, WBØCMC

We will be starting classes two nights a week for any XYL interested in obtaining her license. Tentatively the classes are scheduled to begin the latter part of September and are to be held at Radio Engineering Institute, 104 South 31st Avenue, Omaha. Classes will include general theory and 5 words a minute code for technician

license or 13 for general if we can get up that fast. Instruction will be free; only cost will be for small parts to be announced and textbook which is now being selected.

Interested persons should contact Ann Maples, XYL of WØOXT, at 572-6254 or John Gebuhr, WBØCMC, at 553-6414.

OMAHA CITY COUNCIL

OMAHA/DOUGLAS CIVIC CENTER

OMAHA NEBRASKA 68102

June 24, 1975

ROBERT G. CUNNINGHAM
PRESIDENT
JOHN F. MILLER
VICE PRESIDENT
BETTY L. ABBOTT
JERRY HASSETT
JOHN HLAVACEK
STEVE ROSENBLATT
MONTE TAYLOR

RESOLVED BY THE CITY COUNCIL OF THE CITY OF OMAHA:

WHEREAS, on May 6, 1975, a portion of the City of Omaha suffered a most destructive tornado and sustained damage unsurpassed in the history of this City or any other city; and,

WHEREAS, the Mayor and the City Council of the City of Omaha declared a state of emergency and called upon individuals, businesses, organizations and outside agencies to help in the City's disastrous hour of need; and,

WHEREAS, response thereto reflected a cooperative spirit unheralded yet exceeding even the most optimistic hope, and was a momentous as the task was prodigious; and,

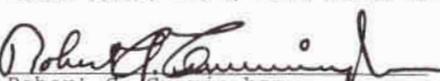
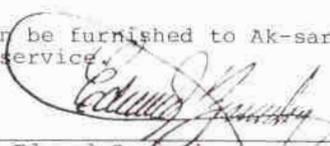
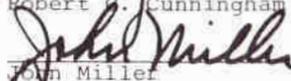
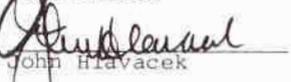
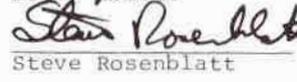
WHEREAS, the assistance given was a tremendous community effort, making it impossible to name each participant.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF OMAHA:

THAT, the City Council of the City of Omaha together with Mayor Zorinsky express their gratitude, and convey heartfelt thanks to those concerned citizens who came to the aid and comfort of Omaha's stricken residents. Their uncompromising dedication, devotion, fidelity and industry in this effort; their compassion and capacity for understanding; their benevolence, cooperation and distinguished performance exemplifies the highest and best attributes of all men and women and merit our highest commendation.

BE IT FURTHER RESOLVED:

THAT, a copy of this Resolution be furnished to Ak-sar-ben Radio Club, Inc., as a memorial of that service.

 Robert G. Cunningham	 Mayor Edward Zorinsky	
 John Miller	 Betty Abbott	 Jerry Hassett
 John Hlavacek	 Steve Rosenblatt	 Monte Taylor

430/1

MEMBER NEWS

Marjorie Kelly, WNØKHO, (XYL of WAØUZX) recently passed the general class exam and is awaiting her new call. Photo shows Marge with a congratulatory card received from a friend which read, "After I learned all the answers, they changed the questions." Our congratulations too!



Gentlemen:

Thought I would drop you a note and let you know that I passed the GENERAL exam on May 22 at Kansas City and received my ticket on July 17. My new call is WBØMUB.

Enclosed is my check for the autopatch fund.

73,
Ron Hester
703 South 35th
Council Bluffs, IA 51501

(Ed Note: Congratulations on the new call, Ron, and thanks for generous check.)

September 1975

NOTES FROM BOARD MEETING

The Board of Directors met on 12 August 1975.

A repeater committee to be composed of Frank, WØGOJ; Tom, KØPQR; John, WBØCMC; Frank, WAØIWF; Marty, WAØGEH; and Gary, WØOXT was appointed.

A letter has been sent to each of the above named members requesting that they get together and report their findings and recommendations to the Board.

The Board furnished guidelines as follows:

1. The repeater should be accessible within a range of 40 to 50 miles of Omaha from a mobile station.
2. The repeater should be a one-site, telephone line controlled type. If the site chosen is the Woodmen Tower, there is no choice as to the brand of repeater.
3. The repeater may be located any place in the city or its immediate vicinity. Alternate sites for the repeater, if available, should be considered.



HAM HUM

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TECHNICAL TOPICS

(Reprint from H.P.'s *BENCH BRIEFS*)

Vol. 13 Nr. 2

dB AND dBm WITHOUT LOGS

by Dick Gasperini

The last issue contained a discussion (in Bench Briefs) of db and dBm that showed helpful manipulations, but this procedure required the use of logarithms. A great number of situations can be handled without logs by using a simple technique that requires remembering two key numbers.

For 3 db the key number is 2.

For 10 db the key number is 10.

A 3 db change means a power change of 2 to 1. A 3 db increase corresponds to 2 times the original power; a 3 db decrease means 1/2 the original power.

A 10 db change corresponds to a power change of 10 to 1. A 10 db increase means 10 times the original power; a 10 db decrease corresponds to 1/10 times the reference power.

It is helpful to recall that additions in logs is equivalent to multiplying the power ratios. That is, a 6 db gain corresponds to a power ratio of 4 to 1, since 6 db can be broken down into two 3 db gains, each with a power ratio of 2. Multiplying 2 times 2 yields 4. A 20 db loss is a power ratio of 1/10 times 1/10=1/100 since 20 db is the equivalent of two individual 10 db steps. A 30 db gain corresponds to a power ratio of $10 \times 10 \times 10 = 1000$.

This method makes logs easy to calculate.

The 3 db and 10 db key numbers can be combined to provide additional capability. For example, 13 db is the sum of 3 db and 10 db and can be

expressed as a power ratio by multiplying the individual power ratios. This is 2×10 , or 20. To calculate 16 db (the sum of 3 db + 3 db + 10 db), multiply the individual power ratios of $2 \times 2 \times 10$ to obtain 40.

A gain and a loss can be combined easily also. For example, 7 db is the sum of +10 db and -3 db. This corresponds to a power ratio of $10 \times 1/2 = 5$, since the power ratio of -3 db is 1/2. We can also determine 4 db, which is the sum of +10 db -3 db and -3db. The equivalent power ratio is $10 \times 1/2 \times 1/2 = 2.5$.

What power ratio is expressed by 43 db? This can be expressed as 10 db + 10 db + 10 db + 10 db + 3 db. The equivalent power ratio is:

$$10 \times 10 \times 10 \times 10 \times 2 = 20,000.$$

How about 44 db? This can be expressed as 10 db + (-3 db) + (-3 db). This is a power ratio of:

$$10 \times 10 \times 10 \times 10 \times 10 \times 1/2 \times 1/2 = 25,000.$$

Thus excellent range and resolution can be obtained with this method without calculating logarithms. If the exact db number cannot be reached, we can at least get an approximate power ratio.

For example, 8 db cannot be reached directly with combinations of 3 db and 10 db. But we know 7 db is a power ratio of 5 and 9 db is a power ratio of 8. Therefore, 8 db must be a power ratio between 5 and 8.

This technique can be reversed to convert a power ratio to db as long as the power ratio can be broken down into a product of 10 and 2. For example, a power ratio of 25 can be broken down to $10 \times 10 \times 1/2 \times 1/2$. This product corresponds to a sum of

$10\text{ dB} + 10\text{ dB} - 3\text{dB} - 3\text{dB} = 14\text{ dB}$.

Voltage ratios can also be expressed with this method, but it is necessary to double the dB figure for the two key numbers. That is, 6 dB is a voltage ratio of 2 to 1 and 20 dB is a voltage ratio of 10 to 1.

For example, what voltage ratio corresponds to a gain of 52 dB? This can be expressed as $20\text{ dB} + 20\text{ dB} + 6\text{ dB} + 6\text{ dB}$, which corresponds to a voltage ratio of $10 \times 10 \times 2 \times 2$ which equals 400.

How many dB correspond to a voltage ratio of 8 to 1? This breaks down to $2 \times 2 \times 2$, which is $6\text{ dB} + 6\text{ dB} + 6\text{ dB}$ which equals 18 dB.

All of the above apply to dB, which is a relative measurement. This technique also works for measurements stated in dBm, which is an absolute power level, by remembering that the reference for dBm is 1 mw. Multiply the power ratio by 1 mw to obtain the absolute power level. For example, +7 dBm is a power ratio of 5 (obtained by $10 \times 1/2$) multiplied by 1 mw, for an absolute power level of 5 mw. The number of dBm can be determined by reversing the procedure. For example, to determine the dBm equivalent of an absolute power of 2 microwatts, first divide by 1 mw. This yields a power ratio of 2×10^{-3} , which can also be expressed as $2 \times 1/10 \times 1/10 \times 1/10$.

The equivalent is $+3\text{ dB} - 10\text{ dB} - 10\text{ dB} - 10\text{ dB} = -27\text{ dBm}$ since the initial measurement was in absolute power.

Using this technique, a very wide range of dB and dBm can be covered by remembering only a few key figures.

de PAARA, Palo Alto, Cal.



HAM OF THE MONTH

(By roving photographer Jon, WBØGQT)

Roy M. Kaiser, KOPIV, is this month's Ham of the Month. Roy is a retired radio operator from the Sheriff's Department. He has been awarded many public service awards from city and state for helping out in time of disaster. He also moves a lot of emergency traffic.

Roy's shack includes the Galaxy GT-550, Drake TR-22 and the Bearcat police monitor. His antenna setup is limited to a Heath 5/8 ground plane and a long wire. Ham radio is his main hobby.



ADDITIONS TO ROSTER

Melvin D. Amick, WA7VIL
 3423 Duane Avenue
 Omaha, Nebraska 68123
 Phone: 292-4231

Linda F. Chisholm, WBØNCU
 11375 Evans Street
 Omaha, Nebraska 68132
 Phone: 493-5840

Steven M. Baily, WAØGQG
 3262 South 130th Avenue
 Omaha, Nebraska 68144
 Phone: 333-2698

John H. Lapsley, WAØTIF
 208 South 35th Street
 Council Bluffs, Iowa 51501
 Phone: 323-9115

William A. BeSore, WBØEQV
 Route #1, 15 Beverly Hills
 Council Bluffs, Iowa 51501
 Phone: 366-1144

Richard E. Newsome, WØHXL
 5437 Franklin Street
 Omaha, Nebraska 68104
 Phone: 558-8855

POWER SUPPLY FOR TR-22

The circuit described below is a highly regulated supply, with short and overload protection. As is, it is good for 1 Amp.

T1 - 12V, 1.2A, Transformer
 D1 - D4 - 2A, 100 PIV Bridge Rect.
 C1 - 2200 UF, 35V, electrolytic
 C2 - 5 UF 35V, electrolytic
 (Above parts available at Radio Shack)

GE-55
 H₀P - 53500⁰
 PASS TRANSISTOR

Use the above pass transistor along with a larger transformer for 10 watt rigs.

7815 I.C. chip is available from Circuit Specialists Co., Box 3047, Scottsdale, Ariz. 85257. Costs \$2.50 ea. (or WBØMFL at Club meetings).

(BOLT 7815 TO CHASSIS)

By WAØODH via WBØMFL

HAM HUM SWAP

- FOR SALE: B & W T-R Switch; Heathkit HD-10 Keyer.
Bernie Chap, WBØEYT; phone 731-0128
- WANTED TO BUY: 1 or 2 BC 458 or similar transmitter. Please advise cost and condition.
Lawrence Hiltner, WAØQCI
P. O. Box 331, Columbus, NE 68601
- WANTED: Heath DX-40 assembly manual with assembly steps to photocopy. Will return.
Jim Shorney, WNØOXS, 415 Hillcrest Drive,
Plattsmouth, NE 68048; phone (402) 296-3068
- FOR SALE: Instrograph with code tapes.
Royal Enders, KØLYO; phone 571-0680;
7625 Meredith Ave., Omaha, NE 68134
- WANTED: BFO coil for Conar Model 500 receiver — or junked out Conar Model 500 receiver. Please state price and condition.
Mark Ellingson, WNØMFP
214 North 6th St., Plattsmouth, NE 68048
- WANTED: Low band FM gear (on or near 33.78 MHz) for volunteer fire department. Phone 366-0720.
Bill Rambo, WBØDFJ; 4 Beverly Hills Dr.,
Route #1, Council Bluffs, Iowa 51501.
- FOR SALE: Former WNØJGH would like to sell his entire novice rig. All in good working order. Will take \$200.00. Consists of: Heath DX-60B Txmr; Heath HR-10B Recvr; Heath HG-10B VFO; sending key; 110V antenna switching relay; 100 ft. RG-8 coax; misc. coax fittings; 2 eave mounts and masts; 40 meter ant. dipole; log book; plus a Johnson Viking match box.
Contact L. W. Richardson, 9812 Pine Street,
Omaha, NE 68124; phone (402) 393-9268
- FOR SALE: EICO 2400 Stereo/Mono 4-Track Tape Recorder, new with tapes — \$200.00.
Charles Michel, KØQVL, 8720 Charles St.,
Omaha, NE 68114; phone 391-3782



Hobby
Industry

de WØJJK



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YOU BETTER : 1601 AVE. "D" .

HOBBY INDUSTRY-BOX 864

COUNCIL BLUFFS, IOWA-51501

PHONE: (712) 323-0142

STORE HOURS: CLOSED SUN. - MON.
TUES - WED- FRI - NOON /5 PM.
THURS - NOON/8 PM, SAT- 9 AM/5 PM .

STARTING
S E P T. 30

