



# HAM HUM

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AK-SAR-BEN RADIO CLUB, INC. - Omaha, Nebr. 68101  
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November 1974

Vol. XXIV  
No. 11

## NEXT MEETING

WHEN: FRIDAY - NOVEMBER 8, 1974

TIME: 7:30 P.M. (NOTE CHANGE IN TIME)

WHERE: FITZGERALD FRIENDSHIP ROOM  
COMMERCIAL FEDERAL SAVINGS AND  
LOAN ASSOCIATION  
4724 South 24th Street, Omaha  
(Free parking in rear off 25th Street)

WHAT: SHOW AND TELL - GADGETS  
(HOMEBREW AND OTHERWISE)  
Whatever your second hobby, bring the gadget, the  
schematic, tell us about it, and demonstrate if you can.

AND

PAST PRESIDENTS' NIGHT  
All Past Presidents who attend this meeting will be  
individually introduced.

VISITORS WELCOME - EYEBALL QSOs - REFRESHMENTS

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**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.



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**AK-SAR-BEN RADIO CLUB, INC.**  
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**Annual Dues:**

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

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

**NEW MEMBERS  
 ADDITIONS TO ROSTER**

Douglas L. Brown, WØONZ  
 9131 Timberline Drive  
 Omaha, Nebraska 68152  
 Phone: 572-9353

Lloyd L. Burks, WNØNGD  
 1613 North 60th Street  
 Omaha, Nebraska 68104  
 Phone: 553-1357

Bernard R. Chap, WBØEYT  
 4656 Harrison Street  
 Omaha, Nebraska 68117  
 Phone: 731-0128

John Gebuhr, WBØCMC  
 2340 North 64th Street  
 Omaha, Nebraska 68104  
 Phone 553-6414

Lt. Col. Patrick J. Murphy, W6HXT  
 13002 South 34th Circle  
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 Phone: 292-2937

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 13002 South 34th Circle  
 Omaha, Nebraska 68123  
 Phone: 292-2937

Louis E. Nelson, WAØDKE  
 2922 Avenue C  
 Council Bluffs, Iowa 51501  
 Phone: 323-2525

\*\*\*\*\*

A man should live with his superiors  
 as he does with his fire: not too near,  
 lest he burn; not too far, lest he freeze.

*Diogenes*

\*\*\*\*\*



## OCTOBER MEETING

The regular October meeting was held at our usual quarters at Commercial Federal Savings & Loan, 24th & L Streets.

The meeting was called to order by the new president, Mike Wilczynski, WBØBMV, replacing Rip, WBØGAJ who as all of you probably know, has been transferred out of town.

Ak-Sar-Ben radio members felt we had a very successful meeting with Jim Droege, WØYCP, giving us a very nice demonstration on FM stereo. A lot of good comments on the demonstration were heard . . . even from XYL's, and Jim was kept busy for quite some time after the meeting answering many questions. All the members say thanks, Jim . . . well done!

The November meeting will be Past Presidents' Night and "Show and Tell." Be sure to bring all your homebrew gadgets, such as Knight Kit, Death Kit, etc. We will be looking forward to a lot of interesting and unusual equipment.

Ed Eichler, WBØBCB, was appointed Vice President at the last board meeting to replace Mike Wilczynski,

WBØBMV. We know Ed will continue to give his good and loyal support to the club. Congratulations, Ed!

James D. Howard, K5TNP/Ø, was selected to replace Ed Eichler, WBØBCB, on the Executive Council. Jim will complete Ed's term which runs through 1975.

Hey Gang . . . our new donut and coffee man is Bob Conley, WNØLYU. Thanks, Bob, for taking over this job. Bob was the field day ramrod for the novice shack. (We know he's had lots of experience drinking lots of coffee; let's see how good he makes it!)

Mike, WBØBMV

P.S. Thanks to the person who gave me the surprise gift when I went to conduct my first meeting. If you'll let me know who you are, I'll thank you in person.

(Editor's Note: Mike is doing a fine job taking over the position of President, not only at the meeting as those of you who were there observed, but at the Board meeting and other Club functions. Congratulations to you too, Mike!)

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## THE "PORTA-PEATER"

By - Martin (Marty) Griffin, WAØGEH

Authorities in the emergency services have recognized the value of 2 meter repeater services throughout the nation as a highly reliable means of local communications. However, some smaller communities across this nation cannot support a repeater operation. Perhaps there isn't even a Ham in town! With this in mind, picture the following fictional story.

Zipswitch, Montana was devastated by a storm that destroyed half the town, took many lives and left the town with no communications for rescue teams. Immediately after the storm, Tom Smith, the only local ham summoned the "Porta-Peater" from the Ak-Sar-Ben Radio Club in Omaha, Nebraska. Within an hour Tom picked up the system from the local airport and drove to Lookout Hill. In 15 minutes the antenna system was installed and the Repeater was on the air.

In the meantime the AREC Net in Montana was activated to enlist mobile units for service in the Zipswitch area. The nearest AREC Montana Hams were contacted and dispatched. Within hours, Hams started to flow into the area to aid disaster officials. They would utilize the Repeater that was just installed by Tom!

This story is a fabrication but the availability of the "Porta-Peater" is not. The Ak-Sar-Ben Radio Club of Omaha unveiled the system at the Midwest ARRL Convention at Sioux City, Iowa. The system is a portable self-contained .34-94 Repeater complete with antenna system, coax, tools and installation instructions. Demon-

strating the system were Marty Griffin, WAØGEH, Frank Wolczak, WAØIWF and Ed Eichler, WBØBCB. Frank and Ed, having never worked with the system, rendered the system operational in less than 12 minutes installation time.

The Porta-Peater is primarily a concept with a purpose. The design had to meet the criteria of portability, installation ease, universal frequency (.34-.94) and ruggedness. The concept dictates that the system is used for emergencies only and not merely as a "back-up" for a repeater.

The Repeater itself is a modified G.E. M.T.S. Progress Line. M.T.S. operation meant full shielding of the transmitter and receiver. The busy camp relay was modified to serve as a keyer and audio cut-through circuit. It is powered through battery clamps on the 12V system of the vehicle that drove it to the optimum site. The transmitter is set at 16 watts which is balanced with the receiver sensitivity, i.e., it can hear as well as it talks.

The antenna system consists of two Ringo antennas, Rec. up and Trans. down, separated by a 10' mast. This mast is clamped onto a 20' mast which is guyed by the nylon ropes supplied.

The system is shipped in two containers built by Dick Harper, WBØMWB. The transceiver is in a box 19" x 17" x 10" and weighs 64 lbs. The antennas, cables, etc. are in a box 62" x 8" x 16" and weigh 84 lbs.

The system may be requested for emergencies only by qualified amateurs by calling:

1st Martin (Marty) Griffin, WAØGEH  
(402) 331-5080 Home  
(402) 422-4188 Work

2nd Bob Lockwood, WAØDHU  
(402) 451-7233 Home  
(402) 558-8200 Work

3rd Any Ak-Sar-Ben Radio Club  
official.

The system should be returned as soon  
as possible to:

Martin (Marty) Griffin, WAØGEH  
5408 South 106th Street  
Omaha, Nebraska 68127

There are many improvements that  
can be made to a system as this such as  
all transistor receiver and transmitter,  
phone patch capabilities, ID etc. The  
importance of the Porta-Peater is that  
the concept works and, with minimum  
sophistication, so does the machine.

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## NEWS NOTES

New Code and Theory class is  
meeting in Plattsmouth, Wednesdays  
at 7:30 P.M. at the First Christian  
Church. This is the third year it has  
been run and we have a class of 10.

Gene Mockabee, KØDNV, went to  
KC in August and passed the  
advanced. He got the new ticket  
September 28th.

Gene, KØDNV

(Ed. Note: Congratulations, Gene!)

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Liz Hall, mentioned in October  
Ham Hum, (Ex-employee of World  
Insurance Company) has notified us of  
her new call, WN3YHM.

\*\*\*\*\*

## FORMER MEMBER NEWS

Dear Ham Hummers:

I have enjoyed your booklet very  
much. It's a nice thing to get in the  
mail (especially when I don't get too  
much mail).

I have been living in Albuquerque,  
New Mexico now for 2 years and miss  
Omaha. I have changed my call to a  
"5" call area but the FCC has been  
taking its time giving me my call  
number so I will inform you when it is  
changed.

Yours,

Robert P. Carrick, WBØDHR  
808 Dakota, S. E.

Albuquerque, New Mexico  
87108

\*\*\*\*\*

## BOARD CHANGES

When Vern Riportella, WBØGAJ,  
resigned as President of the Ak-Sar-  
Ben Radio Club, Inc. on September  
23, 1974, Vice President Marion  
(Mike) Wilczynski, WBØBMV, auto-  
matically moved to the Club Presi-  
dency.

At the October Board meeting,  
Executive Council member Ed C.  
Eichler, WBØBCB, was elected as Vice  
President to replace WBØBMV, Mike  
Wilczynski.

At the membership meeting in  
October, the Board's selection of  
James D. Howard, K5TNP/Ø as a  
member of the Executive Council was  
approved. He will fill the unexpired  
term of Ed Eichler, WBØBCB.

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VISIT WITH  
DON FILBER  
KØAJØ

This attractive cabinet provides a handy housing for KØAJØ's two-meter gear and auxiliary equipment. Pictured on the exposed front panel is (a) an antenna direction indicator, (b) digital clock, (c) three recessed speakers, (d) a Clegg 27-B, (e) a Regency HR2-B, (f) an eight-channel Regency scanner, (g) an SWR meter, (h) a telephone, and (i) an ingenious switching arrangement which permits any of the rigs to be connected with any one of three antennas, or to ground.

Just above Don's plastic call letters is a phone patch which – augmenting his touch-tone pad – enables him to offer emergency telephone communications over the 34/94 repeater as well as on 22/82. Hidden behind the cabinet are two power supplies and a maze of wires, including coax connections to a Ringo floor antenna and to the DX-120 and Ringo Ranger antennas which top the 84-foot tower in Don's side yard. The Clegg transceiver and Regency scanner can be easily removed from this cabinet and transferred to Don's station wagon for mobile use.

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## ANNOUNCING 1975 CODE AND THEORY CLASSES

Volunteer members of the Ak-Sar-Ben Radio Club, Inc. will again conduct code and theory classes in 1975.

Sessions will be held each Monday at 7:30 P.M. beginning January 6, 1975, and will continue for fifteen weeks with the last session on April 14th. The place: CREIGHTON PREP, 7400 Western Avenue, Omaha (use west parking lot).

There will be two Code Classes and two Theory Classes conducted concurrently – one for those preparing for novice privilege, and the other for those preparing for general and above privilege.

The AMECO Amateur Radio Theory Course textbook will be used. This book will be for sale at class. To be sure of having your copy available at the beginning of the class, particularly if you plan to upgrade your license, the textbook may be ordered in advance through the Ak-Sar-Ben Radio Club, Inc. at a special price of \$4.00. Normally the book sells for \$4.95. This special price is available only through the Club due to quantity expected to be used in class. Please send your check for \$4.00 to P. O. Box 291, Omaha, Nebraska 68101 by *December 1st*.

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## MULTIPLE SCLEROSIS BIKE-A-THON

By—Bob Lockwood, WAØDHU

The 1974 Multiple Sclerosis Bike-Thon was held on Sunday, September 29th. The Ak-Sar-Ben Radio Club again supplied communications for the exercise this year on 34-94 as a directed net.

The route was from Boys Town to Pacific, west to Highway 6 and 31, north on 31 to Highway 30, northeast on 30 to a park in southwest Blair, and back to Boys Town by the same route.

The base station was set up at Boys Town, another at the park in Blair, and two portable units at check points along the route. There was one check point at Elkhorn and another on Highway 31, three miles north of the Washington County line. Mobile units were assigned duty between check points.

The base station was manned by Kelly, WAØUZX, his XYL, WNØKHO, and Bob, WAØDHU. The Blair station was manned by John, WBØCMC and Bob, WBØMWA. The check point at Elkhorn was manned by Ed, WBØBCB; the other check point by Frank, WØGOJ and Russ, WAØVEE. A bicycle repair vehicle was manned by Lowell, WAØHKT. Ernie, WØCES patrolled the entire route with valuable direct link between our net and the Douglas and Washington Sherriff offices. WAØCEH, Marty and WAØLLQ, Jay also helped in bicycle pick up. Fred, WØEGP manned the junction of Pacific and Highway 31.

There were two bike mobiles on the road: Bill, WBØMAH and John, WBØGDE, and both cycled the entire

50-mile route. Congratulations, guys!

Others working mobile included Martin, WAØHXA; Cecil, WØRMB who manned the chuck wagon; Larry, WØKCK; Lloyd, KØDKM; Wentworth, WAØTMB; and others I cannot recall.

The mobiles did a great job directing bike traffic to the edge of the highway, manning key intersections, pumping up bike tires and general maintenance, keeping NCS up to date on bicycle and personal pickups, and countless others too numerous to mention.

The check points did a great job radioing in the progress of the bikes and supplying valuable information for the M. S. people. WBØCMC and his crew acted as liaison to NCS for those mobiles who couldn't hit the repeater on Highway 30. He also acted as NCS while WAØUZX and WAØDHU fed their faces.

Rose Marie Whiteley, coordinator of the M.S. drive, summed up her appreciation of our participation in the Bike-A-Thon as communicators when she stated, "I wouldn't think of having a Bike-A-Thon of this magnitude without the communication net supplied by the Ak-Sar-Ben Radio Club." What we did was truly appreciated but of equal, if not more importance, is the training we received in the development of more accuracy and efficiency. Communication is priceless and if we develop a more efficient communication net, we are more of an asset to our community in time of need.

I personally wish to thank all who participated in this exercise for an outstanding effort during this event.

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Bringing your Standard HT with you on a business trip can be an interesting experience.

PMM & CO sent 12 of us from various offices to our training center in mid-Manhattan for a 3-day seminar on effective oral presentations.

One of the assignments was to give a 6 minute presentation on a familiar subject using visual aids, audience participation, and demonstration. The visuals had



The demonstration was assisted by Gus, W2LAP, who was standing by on frequency.

Ira, HNV, was kind enough to loan three sets of New York repeater crystals. Unfortunately, two of them, 13/73 and 19/79, are no longer in use in the area. However, 31/91 keys up a Westchester, N.Y. system which is excellent at LaGuardia airport but sometimes difficult in Manhattan. I was told that the receiver is deliberately shielded towards Manhattan.

For Central Manhattan, the best machine was 34/94, a Greenbrook, New Jersey system not listed in the current ARRL repeater directory. Uniquely, it has a 50 second timer and switches to PL 7 to 9 a.m. and 4 to 7 p.m. It was frustrating not to be able

to get in during those hours until someone later happened to mention the procedure. A short break is all that is needed to reset the timer, so you hear a lot of short drops during QSOs, but quite a few time outs too. (Ever try a less than 50 second answer to a request for information on Chicago repeaters?) Notably, there are practically no call signs mentioned after the initial contact until sign off, and very few round tables or "breaks." Others on frequency just listen until a QSO is completed and then take their own turn individually. Seems more efficient than the constant call sign repetition we hear on most Chicago repeaters.

The 16/76 repeater in New York is PL. I understand that a 146.4/147.0 machine located on the Chrysler Building is the best bet for Manhattan locations. Maybe someone should organize a rental exchange for out of area crystals so travelers could borrow them when needed.

Neither airline captain could give permission to use the HT in flight. Matter of fact, even FM receivers are prohibited.

Take your HT on your next trip; buy or borrow one if you must. Do some advance planning on crystal. And take along a map of the area. You'll like it!

Lee Knirko, W9MOL  
de Squelch Tale, Chicago  
\*\*\*\*\*



## THE P – N JUNCTION DIODE

A piece of n-type material when joined to a piece of p-type material results in the formation of a junction diode.

The p-type material has a net positive charge, the n-type material has a net negative charge. The instant that the junction is formed the free electrons in the n-type material and the holes in the p-type material combine at the junction forming an area called a DEPLETION REGION. As this region builds up, a difference of potential builds up; eventually this potential becomes large enough to prevent further recombination across this junction. This potential at the junction of the p-n material is known as the BARRIER POTENTIAL. This formation is shown in fig. 1.

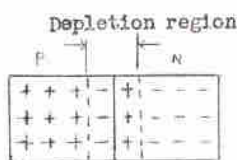


fig. 1

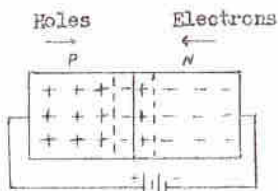


fig. 2

Forward Bias

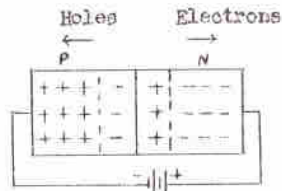


fig. 3

Reverse Bias

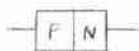
The barrier potential across the depletion region, fig. 1, is approximately 0.3 volts for Germanium and 0.7 volts for silicon.

The p-n crystal acts as a diode because it allows current to flow more easily in one direction than the other. With a battery connected, as shown in fig. 2, the battery potential across the diode forces free electrons across the barrier region. The battery potential has overcome the barrier potential and has established a flow of electrons in the external circuit. This flow is sustained because the holes and free electrons converging on the junction are recombining with each other.

When the battery is reversed, as shown in fig. 3, the positive potential of the battery on the n-type material effectively causes the barrier potential to increase, thus preventing electron movement across the junction and no current flow in the external circuit.

A diode which is forward biased, presents a very low impedance to the current flow, and when reverse biased, the diode presents a very high impedance to current flow. Burn-out of a diode will occur when its power dissipation rating has been exceeded. A diode may have a certain breakdown voltage, when this voltage is exceeded in the reverse direction, the current increases sharply and may destroy the diode; however, if the current is properly limited, the diode will then act as a zener diode and hold the voltage at the breakover point.

The identification of the anode and cathode of a diode is shown below.



## RECENT CONTRIBUTIONS

### Repeater Fund

Bernie Chap, WBØEYT  
Arvin Hernes, KØINZ  
Harold F. Jacobs, KØJBC  
Charles A. Michel, KØQVL

### Autopatch Fund

Bernie Chap, WBØEYT

Thanks also to the following who donated merchandise at the auction, the proceeds going to the Repeater Fund: Joe Humphrey, KØABN; Dick Cunningham, KØHHP; and Harry Snyder, WØNVE.

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## ADDITION TO ROSTER REINSTATED MEMBER

Maurice W. Costello, KØYWY  
5111 North 116th Street  
Omaha, Nebraska 68164  
Phone: 493-0133

\*\*\*\*\*

## ABOUT THE 16/76 MACHINE

We hear many questions about the Lincoln Amateur Radio Club repeater (16/76), and we hear about as many answers. Thought a quick rundown (the machine might help you to answer any you field. The machine is located on the KOLN-TV tower at Beaver Crossing and is 29 air miles from the State Capitol building. The repeater is a GE progress line located at the 1240 foot level in the equipment shack, having been built by Pete Gunn (WAØMFC) and installed under his direction. Two four-stack commercial "J" Pole antennas are located on the NW leg of the tower. The transmit "J" pole is located at the 1300 foot level, and the receive "J" pole is at 1400 foot. Both antennas are about 10 feet out from the leg of the tower. ERP of the transmitter is about 45 watts. A two-man elevator services the equipment shack, and entails a 27 minute ride up the tower and 20 minute descent. (Pete Gunn, WAØMFC)

de Lincoln Log

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**DON'T DELAY FCC LICENSE APPLICATIONS** in hope that another week or two will bring that proposed fee reduction (Docket 19658) into effect. Though Comments were due September 20, it will be some time before the subject comes up before the Commissioners. Reduction in amateur (and CB) fees is only a small part of the total FCC license fee reassessment picture, and definitive action looks a long way off.

**Even If Reduced Fees** were imminent the potential danger in waiting until the last minute to renew your license is hardly worth the few dollars the new fee schedule would save you.

**FCC License Backlog** is on the increase again, after having been "under control" just a few months ago. Turnaround time for a "typical" amateur application (running about 25 days (CBers are looking at about twice that), with any special considerations likely to extend those times considerably.

**FCC Is Working Very Hard** to reverse the situation, has even started contracting for outside data handling assistance.

de HR REPORT

# HAM HUM SWAP

FOR SALE: I have some amateur radio equipment that I would like to have advertised in the Ham Hum. My husband was an amateur radio operator (KØPQO) until he passed away. I think someone may be able to get a lot of pleasure from these things.

I have a Globe Scout DeLuxe Transmitter and a Multi Elmac mobile rig. Thank you!

Mrs. D. Grimshaw  
3255 Polk Street  
Omaha, NE 68107  
Phone: 733-9341

FOR SALE: Heath DX-40 Transmitter; Knight 80 thru 10 Meter VFO; \$30.00 each. Call 558-8855, Dick, WØHXL.

FOR SALE: Drake 2B receiver with Drake 2BQ Q Multiplier, crystals, 2AC crystal calibrator, instruction book. Excellent condition - \$250.00;

One - Hybred phone patch - \$10.00;

One Cush Craft 2 meter mobile antenna, model AM147. New - \$20.00;

One - Mini Beam antenna - \$10.00.

Gene Podany, WAØZWS  
Phone: 571-3199

FOR SALE: Hammarlund HQ 170 Receiver with matching Speaker, excellent condition, TR-44 Rotor.

Call Bernie, WBØEYT, 731-0128.

\*\*\*\*\*

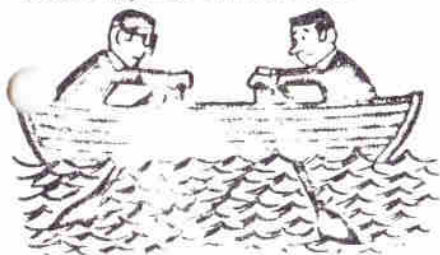
## 10 METER BEACON

Beginning Oct. 1, '74, and ending Nov. 30, '74, there will be a beacon on 10 meters at 29.0 MHz 24 hours a day. This will be USB at 100 watts and a recorded message will be given continuously. The call is K6HME... send a QSL if you hear it, the PO Box will be given in the transmission.

AI, WØJK  
\*\*\*\*\*

## LET'S PULL TOGETHER

...the only way to get upstream!



NOVEMBER 74

# HAM HUM VALUE SPECIALS



## VHF 2 METER WATTMETER

A true VHF wattmeter for 2 (144-162 MHz) meters. A low price of \$19.95 to get true-direct reading power output readings. In-line, 50 Ohm impedance. Switch select 5 or 50 watt range. SO239 fittings.

\*\*\*\*\* \$19.95



## HAM II

~~\$149.95~~

129.95

\*\*\*\*\*



PLUS 100 FT. FREE  
CABLE IN NOVEMBER!!

Improved, rugged HAM-II and new control with independent brake release switch .28 Lb.



## REGENCY HRT-2 10% OFF NOVEMBER ONLY!

2 Meter, hand-held transceiver with 5 channel capability. 94 simplex included. Many accessory features!!

HRT-2 Alone - Reg. \$179  
November Sale - \$161.10

HRT-2 & Batt. Reg. \$229  
November Sale \$206.10

HRT-2 & Acc. Reg. \$295  
November Sale \$265.50



FOAM RGS./U COAX

Reg. price \$21.50

November only --  
100FT. - \$19.95!!



CALL: Tues./Sat. - Noon/5 PM  
Al McMillan W0JKK  
(712) 323-0142

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Box 864  
Council Bluffs, Iowa - 51501