



HAM HUM

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



Vol. XXII
No. 10

October 1972

NOTE CHANGE IN MEETING PLACE FOR OCTOBER

- WHERE: FITZGERALD FRIENDSHIP ROOM
COMMERCIAL FEDERAL SAVINGS
AND LOAN ASSOCIATION
4724 South 24th Street, Omaha
(Free parking in rear off 25th Street)
- WHEN: FRIDAY - OCTOBER 13, 1972
- TIME: 8:00 P.M.
- WHAT: GADGETS, HOMEBREW AND OTHERWISE
How have you solved your problems? We all
want to know, so bring the gadget, the
schematic, or just tell us about it.
Demonstrate it if you can!

REFRESHMENTS - EYEBALL QSO'S
VISITORS WELCOME

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: October 20th

Published by
AK-SAR-BEN RADIO CLUB, INC.
Post Office Box 291
Omaha, Nebraska 68101
Editor: Dick Eilers, WØYZV
Phone HOME: 391-2255
BUSINESS: 342-1402 - EX. 3
Associate Editor: John Snyder, WØWRT
Phone HOME: 556-1538
BUSINESS: 536-4460
Associate Editor: Ervan Heinz, WAØEEM
Phone HOME: 553-2033
BUSINESS: 553-4700 - EX. 331

September 14, 1972

Ham Hum
Ak Radio Club
Omaha, Nebraska 68101

Dear Friends:

I know I would have enjoyed the steak fry in September, but was unable to attend. I left Omaha for the University of Wyoming, here in Laramie, in August.

One of the first things I did after classes started was join the UWARC, with the call W7OBE. The station is located on the top floor of the student union and all the antennas are attached to the tower of the broadcast station, KUWR, atop the same building.

It's rather ironic that after three years as a ham, I have *still* never worked a Wyoming station, but I'm now operating one!

For the benefit of you Omaha two-meter FM freaks (of which I know there are many), let me give you the

essentials on the Laramie-area repeaters.

The downtown Laramie repeater is on 34/94 with a radius of 20 miles. The "biggy," however, is on a nearby mountain which they call "Sherman Hill." It runs 200 watts on 16/76, and is interfering with the Denver repeater 140 miles to the south. Sherman Hill also has a 10/70 setup for teletype only. Really it's not too bad of an FM operation for a town of only 23,000 including 8,200 of us students.

If any Omaha hams are losing sleep at night because they haven't worked Wyoming (I'm assuming there are still a few who are trying for a W.A.S. Certificate) I'd be glad to arrange a sked. Just write me.

So, from the land of beautiful desolation, I wish you all "good DX" and, to whom it may concern "perpetual full quieting."

73,

Brian Zdan, WBØAJI/7
605 McIntyre Hall
Laramie, Wyoming 82070

1972 HAM FEST AND STEAK FRY

The annual ham fest and steak fry of Ak-Sar-Ben Radio Club, Inc. was held at the Missouri Valley Park, Missouri Valley, Iowa on Sunday, September 17th. Treasurer Charles Kelly, WAØUZX, made the arrangements for the park, including adequate protection against rain and inclement weather. Of course, it was a beautiful day!

We were pleased to have many visitors, such as, a large delegation from Fremont, a delegation from Kansas including our Midwest Director Andy, KØNL, - all told about 80 adults and 20 some kids.

The steaks were excellent (thanks to Pres. Ed Askew, WAØRDZ), and the potluck portion was more than adequate and delicious as well (thanks to the XYLs). Most enjoyable were the eyeball discussions; and best of all we were able to enjoy ourselves and still come out almost exactly even on the money.

RECENT CONTRIBUTORS

Auto Patch Fund

Dale Diamond, WBØGXJ
Mike Wilczynski, WBØBMV

Repeater Fund

John D. Snyder, WØWRT
Robert J. Cain, WBØIBT
Mike Wilczynski, WBØBMV

Many thanks, fellows!

INTERESTED?

If there is anyone having an interest in radio or TV broadcasting, I have a large number of copies of the Technician-Engineer publication by the IBEW Broadcast Engineers. Come and pick up if you're interested.

Also have FOR SALE: tripod roof mount for light ham-type beam or TV antenna, with 10 ft. galv. masting; older model Heath grid-dip meter; Motorola vibrator type 12 v. to 6 v. converter. Might consider getting rid of my 11 element 6 meter Telrex spiralray antenna for fraction of its original cost plus some assistance in getting it down.

John Snyder, WØWRT
Phone: 556-1538
3221 South 45 Street
Omaha, Nebraska 68106

NOTES FROM READERS

Hi Dick and Gang:

This is to let you know that Dave and Pearl Hollander, formerly WØCJW and WØCJY, now W6COJ and W6COM will soon be operating aeronautical mobile from a Cessna 172 Skyhawk which we purchased last week and are now flying - soon to be outfitted with ham gear.

All the best to our Omaha friends.

73,
Dave and Pearl Hollander
W6COJ W6COM

AMERICAN VERSUS JAPANESE

By Charles A. Michel, KØQVL

One thing you can find out from owners of Drake TR-22s, a two meter FM portable transceiver made in Japan, the original batteries don't last and so the transmitter in extended usage slowly lost power. Several TR-22 operators have switched nickel cadmium batteries and now enjoy extended portable usage before they must recharge batteries. Their unit now keeps its power and drops completely out when the batteries have lost their capacity.

The original batteries, SANYO AA sized 450 Ma 1.2 volt cells, are made in Japan. The replacement batteries, General Electric AA sized 500 Ma 1.2 volt cells, are made in USA. Both types are equal in physical size and weight but the GE is rated 50 Ma or 10% more capacity.

Are the American batteries better? What are the discharge characteristics of both batteries? I did some research to answer these questions.

Bob, WAØDHU, loaned me several pair of SANYO cells which he took out of his rig. These were used in a test against the G.E. batteries which I had already.

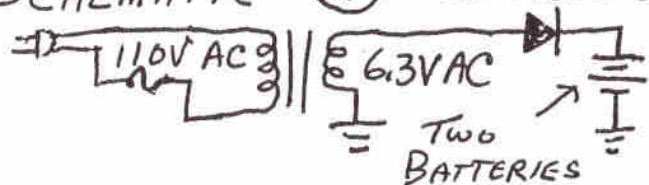
Each pair of batteries was discharged and then charged for 16 hours at a 50 Ma current which is per the manufacturer's recommendations. The charging circuit is shown as Schematic A. The freshly charged cells were then put in a discharge circuit containing a flashlight bulb that causes a current draw of 400-450 Ma from the batteries. The discharge circuit is

shown as Schematic B. I kept track the current reading and the time the reading took place. These readings were then plotted on a graph. When the current reached 100 Ma I stopped plotting, since the voltage had dropped to about .4 Volts per cell. The cell would be considered exhausted.

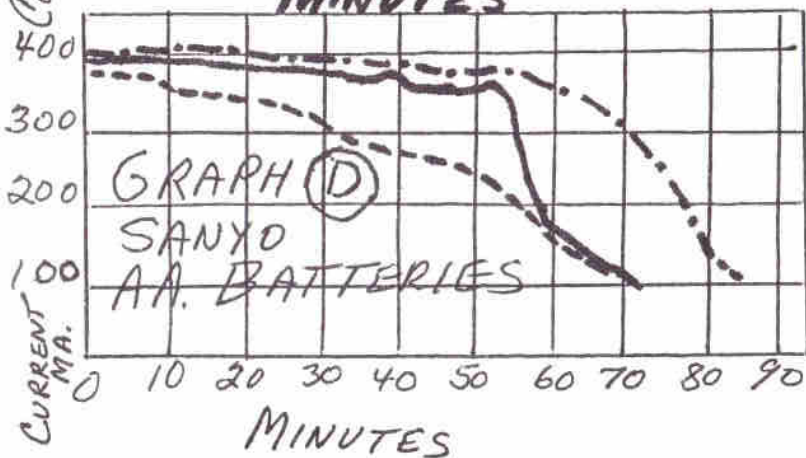
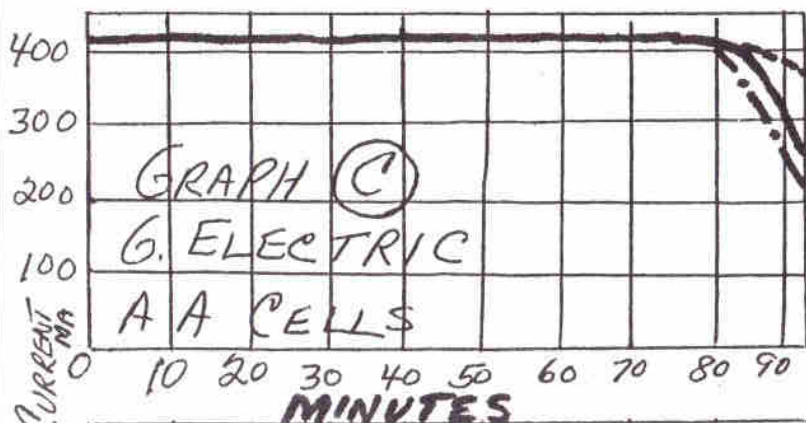
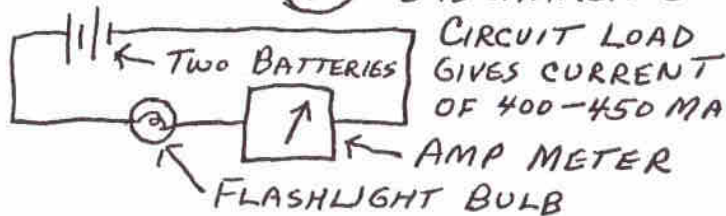
The resulting graphs are shown as Graph G for the G.E. batteries and Graph D for the SANYO batteries. The G.E. graph shows almost a constant current. With this battery in your equipment the voltage would stay at 1.2 volts. As the battery neared exhaustion the voltage would drop at a fast rate. I would consider the useful time a current output of 400 Ma can be drawn for the G.E.s is 90 minutes. There exists small variations in the last 10 minutes under load, one pair batteries may last longer, one pair may drop out 5 minutes sooner but 90 minutes seems a good average.

The SANYO batteries, shown in Graph D, show considerable variation in their discharge rate. One battery pair starts discharging at 350 Ma and keeps on going down. Another seems to be equalling the G.E. performance and then has several dips, each lower, before it heads for the 100 Ma point. The third pair starts at 400 Ma and looses 10 Ma per 10 minute period. That pair has the best curve. That is curve and not a straight line such as the G.E. show. When the current dips below the 400 Ma line the battery is not putting out exactly 1.2 Volts. This situation is O.K. at the end of the

SCHMATIC (A) CHARGING



SCHMATIC (B) DISCHARGING



useful life in nickel cadmium batteries but not at or near the beginning or middle periods.

I have verified the performance shown on the graphs by recharging and discharging the individual pairs of batteries several times.

If I was given the choice of the American or the Japanese batteries used in this test, I definitely would choose the G.E. cells. Their ability to maintain voltage while delivering their rated current has been shown above. Even if I was not using the batteries to power a critical oscillator, I would choose the American G.E. batteries because I would be certain of a certain period of usefulness that would remain fairly constant between charges. Do you agree?

WOW, THEY REALLY WORK!

At the August meeting of the Board of Directors of the Ak-Sar-Ben Radio Club, it was decided to go ahead and spend more money on the solid state receivers that were donated to the Club many months ago. The receivers were used in a service where they had no squelch circuit and no means of keying a transmitter for repeater operation. There had been many people volunteer to help on the squelch and relay boards, but somehow the project never got off the paper and into the etching solution. So, without the boards no parts were soldered on the boards, and consequently the boards were never built.

After some careful investigation on some Motorola commercial base station diagrams, we thought that one

particular board would do the trick for the squelch circuit and another for the relay function. When I proposed the plan to the Board, I said that it was kind of sad we could not get the new receivers going as they were worth a sum of money and it was a waste to see them rot away doing nothing, so the Board authorized me \$300.00 to get the whole project going.

Well, after some more hours of labor (including the first day and a half of my vacation) the project was on its way. The Council Bluffs 34 receiver was the first on the line; after interference on the 22 receiver it was decided to shift the IF so the two receivers in the same cabinet would not interfere with each other. Lo and behold, the shifted IF worked!

The next receiver to attack was the standby receiver at the Red Cross. Wow, it worked too! As a matter of fact it now works so well that it is on the line all the time, right next to the 94 transmitter.

The last receiver to attack was the Woodmen Tower receiver, which was the worst offender because of the intermod problem between 22-82 and 34-94. You will never believe this; it works beautifully! Only one or two strong mobiles in the downtown area cause any problems.

Well, as all the receivers (except the 450 Mhz receivers) are solid state now, we are going to have to get some greenbacks back into the club coffers. So, if the urge hits, you, send a donation to Ak-Sar-Ben Radio Club, Inc., P. O. Box 291, D.T.S., Omaha, Nebraska 68101.

Your Tired Repeater Chairman,
Jim Droege, WØYCP

THE HEATHKIT COUNTER

While we have dwelled a bit on the new Heath Counter in the editor's blurb, we're going to steal enough space for a little better description. We won't go into the specifications because you can do that in the ads. The counter uses a 1 MHz crystal for its time division. We hooked it up to a receiver after about an hour of preheating, and zeroed it in on WWV. Particular care was exercised to be sure it was zero beat, using the S Meter for finding zero. We rechecked it with WWV about three hours later, and it was off about one beat in two seconds, which translates to half a cycle (excuse me, please, half a Hertz). There is no gain control on the input, the circuit is supposed to take care of any overdrive. It is especially sensitive on the input, and you need couple only very lightly to a crystal oscillator, for example, for it to start reading. We haven't put a very high input into it to see if it will be handled and we ain't gonna do it either!! The thing went together very nicely, and there was only one item - the sides of the case are different and there is no mention of this in the instructions that I found. The handle is involved, and since we aren't going to use the handle anyway, it didn't matter. IC sockets are used. You make them. What I call a "picket fence" is furnished. This is punched material which looks like a fence about a half inch wide. For a "14" socket you cut off seven fence posts and stick them in the circuit board and solder them. Then you bend the top of the fence which comes off leaving 7 sockets sticking up in the air. They work fine. It is easy to plug the IC's

into the socket. We had but one trouble. The "fence" was cut to a certain length and folded for shipping. We had to use the material where it was bent, and ended up with two shorted socket contacts. These were very easily found and corrected. With this exception the counter worked right off. We were short some 4-40 hardware, but since we have jillions of it around, this didn't concern us one bit. The counter has five digits. First you punch the switch and read MHz. The units and tens digits are remembered and the Hertz switch is punched. The two remembered digits will now appear in windows 4 and 5. So you can read up to 15 MHz right down to the cycle. There is a built-in check to see that the decimal counters are functioning properly but you have to take off the top of the case to do it. It might have been better to have provided a switch for this purpose. When one considers the cost of a similar unit already made up, and compares it with the cost of this unit, it is easy to see that one can save a lot of cash by building the kit. We are more than well satisfied with it, and highly recommend it for anyone wanting a counter. But we don't expect to use it on the receiver for many reasons.

de KØNL, Auto-Call

"Do you want to challenge any of the jury?" the judge asked. After looking over the panel carefully, the defendant replied: "I think I could handle the little fellow on this end."

de Fresno Amateur Radio Club, Inc.

MULTIPLE SCLEROSIS BIKE-A-THON

At 9:00 A.M. on Sunday, September 24th, 253 bike riders left Boys Town to kick off the 1972 Multiple Sclerosis Bike-A-Thon. Riders followed a path from Boys Town to 144th and Pacific, west to Highway 6, south to Gretna and Ashland, and back on the same route to Boys Town for a total of 50 miles.

The Ak-Sar-Ben Radio Club supplied communications for this event with four check points. Check point No. 1 was at Boys Town; check point No. 2 was at the intersection of Highways 6 and 92; check point No. 3 was at the junction of Highways 6 and 31 south of Gretna; and check point No. 4 was at Ashland. Roving mobile units were assigned between these check points. The result was a well-organized directed communication net to check the progress of the bike riders.

Net control was set up at Boys Town with WBØBMB, Bill doing a fine job operating the net in a highly organized, smooth running manner. K5LEP/Ø, Jim Gardner of Houston, Texas who was in Omaha visiting Bill, helped man that net control station. KØLUG, Bob set up a base station at Ashland to handle the work at that point; check point No. 2 was manned by WBØDDZ, Randy and WAØFPB, Bill; check point No. 3 was manned by WBØGDE, John and later by WAØIWF, Frank. WAØGEH, Marty supplied a truck for bike pickup. Two more trucks were supplied by the Multiple Sclerosis organization.

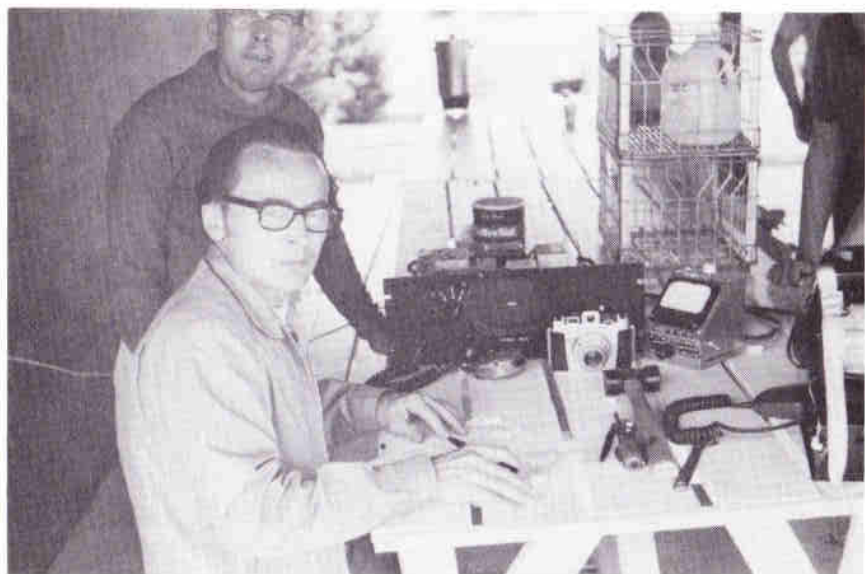
Others who participated as roving mobiles include: WBØFTU, Chuck;

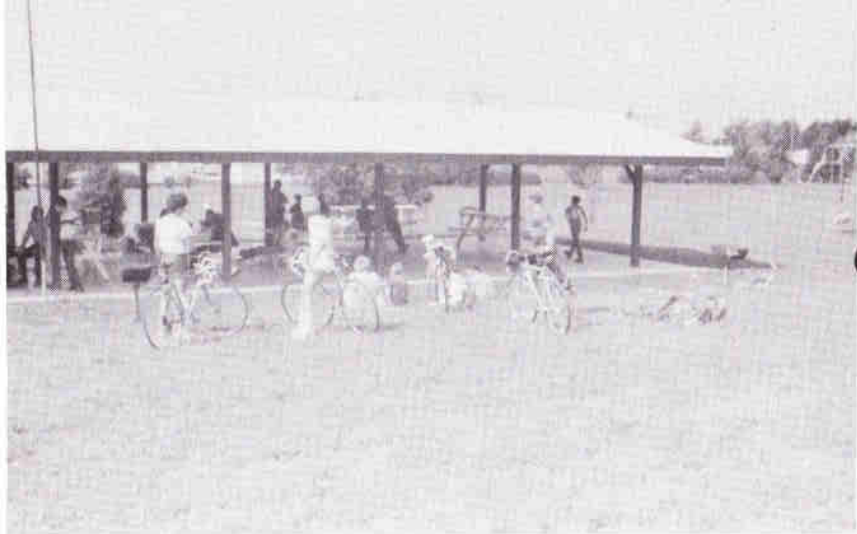
WBØBMV, Mike; WAØHKT, Lowell; WAØROP, Rick; WØCES, Ernie; WBØDSC, Duane; W3YYC, Jack; WBØDEK, Gerald; WBØHCC, Doug; WØRMB, Cecil; WBØGAI, Roger; and WBØDMM, Ralph. WØEGP, Fred set up a station at Highway 6 at Pacific to direct bike traffic east on Pacific on the return trip.

The day went fast for everyone for they were really caught up in the spirit of the event. They did little extra jobs, such as, pumping up bike tires, tightening bolts and nuts, adjusting bike seats, reinstalling bike chains, etc. — anything to keep the bikes rolling. About 12:40 P.M. everyone heard the NCS say "Here come the lead bikes; man are they flying!" About 4 riders didn't make it to Ashland, but about 190 bike riders made the round trip. The last riders to be checked in at Boys Town came in about 5:45 P.M.

Rosemarie Whitley, head of Multiple Sclerosis, stated, "The communication is fantastic." She couldn't get over it. The climax came when she witnessed an autopatch call. She said, "It's wonderful." She personally wishes to thank everyone who participated with a heartfelt "thank you." She said over \$6,000.00 was realized with this bike-a-thon.

The Ak-Sar-Ben Radio Club had a big part in the success of this event, thanks to the effort of those who did such a great job. Equally important is the fact that this was good training for mobiles to work under a directed net authority. This was an excellent exercise for training for a possible emergency situation. We commend those who didn't participate directly in this exercise for keeping the frequency clear of normal chit chat





while the net was in session. We also wish to thank the Repeater Technical Committee for doing such a good job keeping the repeater in top-notch condition.

I am of the opinion that occasional activities such as this will result in a stronger, more closely knit membership and henceforth, a strong radio club. An active club is a healthy club!

Bob Lockwood, WAØDHU

(See photos on insert page)

DOUGLAS COUNTY TWO-METER AREC NET

By—Bob Lockwood, WAØDHU

The Douglas County 2-meter AREC net meets each Monday night at 8:00 P.M., using the Ak-Sar-Ben Radio Club's 34-94 repeater. This is a directed net. Procedure is as follows: Net call followed by call for mobile, portable, and base stations, in that order. Net business comes next, followed by call for late check-ins. Stations with emergency traffic have highest precedence and can break the net at any time. All other transmissions should be controlled by NCS.

Purpose of the net is for training under directed net situations, for information, and any other business which pertains to the net. The net will be short and to the point. Everyone is invited to check in and to participate in net activities. We will also strive to work in close conjunction with neighboring communities to organize a good overall emergency plan.

AREC MEMBERSHIP

We wish to encourage membership in the Amateur Radio Emergency Corps by as many as possible. There is no cost for membership and no obligation to belong to ARRL. The advantage of mass membership is that it gives your EC a good record of those who are serious about public service. On a national scale, Douglas County will stand out as being serious about emergency preparedness.

Applications for AREC membership will be available at the next club meeting or can be obtained by writing a request to Bob Lockwood, WAØDHU, 3711 North 56th Street, Omaha, Nebraska 68104.

FOR SALE

WRL Duo-Bander II and AC/DC Power Supply. Excellent condition. \$160.00 for the pair.

Roger Johnson, WBØGAI

Phone: 558-6707

FOR SALE

Homebrew ball mount for bumper support-V.W. '67 or older-bracket 80, 40 meter mobile antennas.

Best offers on each.

Jim Anderson, KØDNE

Phone: 331-6178

GUEST EDITORIAL

By Ken Stewart, W4SMK

What image does the public have of amateur radio? We don't make page one every day with our public service activities. Yet it is important to keep our public image shiny, even in the daily routine of operating our stations. Unfortunately, as the saying goes, "The times we are right no one remembers; the times we are wrong no one forgets."

A surprising number of people, besides amateurs, listen to our bands. We come into contact with many more people as we deliver or take messages, hold hamfests, or participate in civic activities. What kind of impression do we make on these people? Does the public lump amateurs, and CB operators, and others with no licenses at all who tinker in radio, into the same category? Less than 0.15 percent of the people in this country are amateurs, and probably less than half of these are active. In this sense at least we are an elite group. Do we project this image in our daily activities? Now this is not a plea for snobbishness. It is a plea for all of us to act responsibly, and with the same intelligence, in other areas as we have already demonstrated by mastering the code and theory.

Some of the rudeness and bad operating one hears can be attributed to the over enthusiasm and inexperience of a few younger hams, or to the grouchiness and stone-headed attitudes of a few old timers. Yet the average American amateur is in his early forties, and is experienced, so he should not suffer from either of these problems. We have to work daily to make our public image a good one. We 10

can't depend upon the headlines made by a few amateurs on rare occasions.
de Florida Skip

To: Ak-Sar-Ben Radio Club
Attn: Ham Hum

Howdy:

Well I just bought a new rig and as nobody seems to take trades these days, I need to sell some of the older gear to help defray the expense. I have the following for sale:

Heathkit HW 32 A 20 meter
single band SSB transceiver

Heathkit HM-15 Reflected Power
Meter

Hustler 20 meter mobile antenna

Homebrew AC supply for the
HW-32-A

The above is in excellent shape, both electrically and mechanically, and complete with all manuals and accessories. I will take \$90.00 for the complete package, and will prepay shipment within a reasonable distance of Omaha.

Even tho I have now been away from Omaha for more than ten years, I still enjoy getting my copy of Ham Hum, and there are still a lot of people I know being talked about. I am enclosing a small check to help with the postage.

Dick Reimund, WØKZC
(ex-WØLFM)

1516 Countryside Drive
Liberal, Kansas 67901
Phone: (316) 624-6090

(Ed. Note: Thanks, Dick, for your check for postage. We appreciate it!)

FOR SALE OR TRADE

The 2 meter repeater at Norfolk, Nebraska has been shut down and is being dismantled and will be sold or traded. Reason: lack of activity in this area and thus lack of support to maintain operation. For further details concerning this equipment contact:

Lyle C. Johnson, KØHKE
710 South 4th Street
Norfolk, Nebraska 68701

An octo-what?

You know what an asterisk (*) is and an ampersand (&). But what about this: #?

It's an octothorp. Although some people call it a "num." If you look at the bottom row of buttons on some touch calling telephones you will see one of the keys is marked with an octothorp. This is a made-up word chosen by a group of designers and engineers. The basis for the decision is the fact that the symbol has eight points.

The octothorp key on the telephone is used for data transmission applications. —Service

FOR SALE

Drake 2C — absolutely mint condx! With 0.4, 2.4 and 4.8 Khz filters, AM, SSB, or CW modes and 0.5 UV sensitivity. 80-10 coverage with Xtals supplied. Sold for \$255.00. Will sacrifice this gem for \$175.00 or offer. (Free demo.)

Call Vernard Riportella,
WBØGAJ
Evenings at 291-7347

NEWS NOTES

WØYSX has been changed to W6ORE. Hope to be on 20 meters soon. 73s

Bob Schellhorn
2400 E. Pleasant Valley Road
#21
Oxnard, California 93030

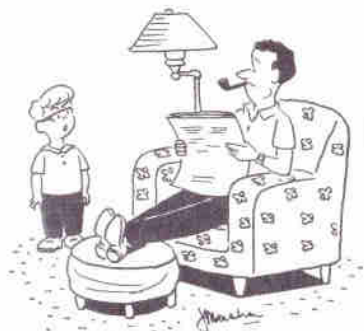
A man couldn't tell his two horses apart. He tried cutting the tail off one and the mane off the other — but this didn't work because they both soon grew back. Then he had a blinding inspiration: He measured them — the black horse was two inches taller than the white one!

de Fresno Amateur Radio Club, Inc.

FOR SALE

Motorola utility base station in good condition. Complete with Ameco neuvistor pre-amp. Several crystals and ovens included.

Call Bob Lockwood, WAØDHU
Phone: 451-7233



"Dad, I need a cost-of-living allowance adjustment to counteract the eroding influences of inflation."

Selected Antenna Specials
HAM-HUM OCTOBER



← **SAVE 20%*** On A SPIRE
Free Standing Tower!

*Applies Only To The Rigid (Concrete) Towers

56 Ft. — Reg. \$189⁹⁵ — **\$151⁹⁶**

40 Ft. — Reg. \$104⁹⁵ — **\$83⁹⁶**

RUGGED — FREE STANDING



TR44 ROTOR
TURNS MOST
HAM BEAMS
F-B

Save
\$10.00*

Reg. \$69⁹⁵

Special \$59⁹⁵

Save Over 15%
On The Big (Reg. \$153⁷⁵)



MOSLEY
10-15-20
Beam

CLASSIC 33

Special *\$129⁹⁵

* Above Specials Limited To Stock On Hand During October

Prices are F.O.B. Council Bluffs, Iowa, and Applicable Sales Tax
and Shipping Charges, or Drop-in and Pick It Up



WORLD RADIO

3415 West Broadway • Council Bluffs, Iowa 51501

Phone: (712) 328-1851