

ORC

NEWS

BOX 13
PORT WASHINGTON
WISC. 53074

EDITOR AA9W

AUGUST/SEPTEMBER 1981

EXCELLENCY SEZ:

TWO MONTHS HAVE PASSED SINCE LAST MEETING WITH THE 'STAY-AT-HOME' CROWD...BET YOU THOUGHT WE HAD FORGOT ABOUT YOU. OF COURSE NOT, WE ALL TALKED ABOUT YOU AT THE CORN ROAST (BOIL), AND LET ME YOU TELL YOU SOME OF THE STORIES WERE VY FUNNY.... ..

BUT DON'T GET THE IDEA THAT WAS THE ONLY TIME WE WERE THINKING OF YOU, YOUR NAME PROBABLY CAME UP SOMEWHERE DURING THE 'COUNTY FAIR BOOTH' OPERATION. WE MET A LOT OF YOUR NEIGHBORS THERE AND HAD SOME GOOD TIMES TALKING ABOUT ANYTHING FROM CB CONFUSION TO TVI (YES THE TENN. VALLEY INDIANS ARE ON THE WAR-PATH AGAIN) TO GOOD OLD ARMY/NAVY DAYS OPERATING THE FIREBOTTLE JUNQUE. MAYBE YOUR NAME CAME UP AT HOLLAND DAYS (RECIEVED A \$75.00 DONATION AGN.) OR DURING THE SAAGBRAW PROJECT. WELL I JUST WANT TO LET YOU KNOW THAT YOU WERE MISSED, AND SINCE I'M SURE YOU WOULD HAVE LIKED THE LEMON-CHEESE BARS @ C.R. HERE'S THE SCHEMATIC:

- 1 DUNCAN HINES PUDDING RECIPE YELLOW CAKE MIX
- 1 - 8 OZ. PACKAGE CREAM CHEESE, SOFTENED
- 1/3RD CUP SUGAR
- 2 TEASPOONS LEMON JUICE

MIX DRY CAKE MIX, 1 EGG AND 1/3RD CUP OIL UNTIL CRUMBLY, RESERVE 1 CUP. PAT REMAINING MIXTURE LIGHTLY IN AN UNGREASED 13 X 9 X 2 INCH PAN. BAKE 15 MINUTES AT 350° BEAT CHEESE, SUGAR, LEMON JUICE AND 1 EGG UNTIL LIGHT AND SMOOTH. SPREAD OVER BAKED LAYER. SPRINKLE WITH RESERVED CRUMB MIXTURE. BAKE 15 MINUTES LONGER. COOL. CUT INTO BARS.

THE FALL TOPICS YET TO BE DISCUSSED INCLUDE A 'BOWLING LEAGUE' AND A 'SOFT-BALL TEAM' FOR NEXT YEAR IN THE SPRING AND SUMMER. INTERESTED? IF NOT - WELL YOU CAN ALWAYS STAY HOME! OH IF YOU'RE WONDERING WHY THIS IS IN ALL CAPITAL LETTERS, IT CUZ I HEARD THE OTHER DAY THAT IT'S JUST TOO MUCH WØRK TROUBLE TO GET TO THE MEETINGS...SO I FIGURED I WOULD TRY TO MAKE IT EASIER TO READ THE ORC NEWS.

"EVERYTHING SHOULD BE AS SIMPLE AS POSSIBLE, BUT NO SIMPLER" - EINSTEIN

73 - TERRY A. BERG (WA9AW0)

QST QST QST

1982 SPRING SLO PITCH LEAGUE SOFTBALL TEAM

The "HAMATEURS", O.R.C.'s own team is now being formed. Interested parties should make Barrie WB9SFK aware of your prowess and availability. He needs to know who will play now!

C.P.R. CLASS

A C.P.R. class to be taught by Stan WB9RQR is being organized by Skip KA9DDN. The class will be either for beginners, for those wanting the refresher course, or for both groups depending on who signs on. The Basic and Recertification courses follow the RED CROSS method (12 hours). See Skip KA9DDN for details.

CAMPING OUTING

A fall camping outing for all the intrepid outdoorsmen and families of the Ozaukee Radio Club is being organized by Dick KC9CJ. See him for details.

FOR SALE

Heath SB101 Transceiver---price negotiable or even cheaper---

See Dick KC9CJ

Pups---Golden Retrievers---\$75 each----- See Andy KB9UE

Rubber Duck---Two meters---Has UHF style connector--- See Ed AA9W

This article includes a unique circuit, devised by KA9DDN, and some information gathered by WB9RQR in his efforts to understand how to treat the little box hanging from the bottom of his new HT. We hope it will be of use to you.

Your HT nicad battery pack contains a number of individual nickel-cadmium cells which may be recharged many times. How many cells are there in that sealed pack? This is easily determined, as follows. Nicad cells measure a no-load voltage of 1.4 volts, *immediately after a full charge*, which drops off to 1.35 volts an hour after charge. To determine how many cells are present, simply charge the pack fully according to the instructions and measure the voltage, immediately. Divide by 1.4 and round your answer to the nearest whole number. Are all of the individual cells in the pack good? Again, easy to determine, provided you can do without the pack for a time. Fully charge the pack and put it on the shelf for 2 to 3 days. Again measure voltage. If the pack shows at least 1.3 volts per cell, it is fine. If the voltage has decreased by multiples of 1.2 to 1.3 volts, the whole number multiple represents the number of bad cells in the pack. Note that these values hold at room temperature only (20°C, 68°F).

Your battery pack (and each cell within it) is rated in milliampere-hours. For example, the small BP-3 pack which comes with the ICOM 2AT contains seven cells, each rated at 250 maH. Each cell will provide 250 ma for one hour. Of course, these are in series to provide enough voltage, so the whole pack will also provide 250 ma for one hour. When dealing with charging, it is common to consider *current rate (C)*; the value of current rate is the same as the milliampere rating of the battery pack or cell.

There are three commonly accepted rates to pump new life into nicads. These are standby or *trickle* charging, slow or *overnight* charging, and quick or *fast* charging. The table below shows how these are related.

<u>NAME</u>	<u>C</u>	<u>HOURS TO RECHARGE AT 25°C (77°F)</u>
Fast	0.3	3 - 4
Overnight	0.1	14 - 16
Trickle	0.01	-----

Note that the trickle rate is only designed to maintain a full charge while the battery is not being used; repeated charging at less than 0.1C will cause the battery capacity (milliampere-hours) to fade. Note also that the fast charge rate can be safely used with conventional nicads, *provided* that the ambient (surrounding) temperature is above 15°C (or 59°F; lower temperatures alter the desired chemical reactions during charging), and *provided* the battery case temperature does not exceed 45°C (113°F). The latter can easily be tested with your hand during the charging period.

For a 250 maH pack such as the small one (BP-3) which comes with the ICOM 2AT, the ideal charging rates would be: fast charge (0.3C) = 75ma for 4 hours; overnight (0.1C) = 25ma for 15 hours; trickle (0.01C) = 2.5ma for as many hours, days or weeks that the battery is not in use. For a 450 maH pack the values would be: 0.3C = 135ma, 0.1C = 45ma, 0.01C = 4.5ma. One word of caution. If you are fast charging a pack, *do not exceed the 4 hour time period*. If you forget and leave it on overnight, you may well find a puddle of melted plastic and metal in the morning. Even worse, the pack may explode!

So much for the theory! Now that you know you can safely fast charge that pack, how about a gadget to do it? Here is a versatile charger, low in cost,

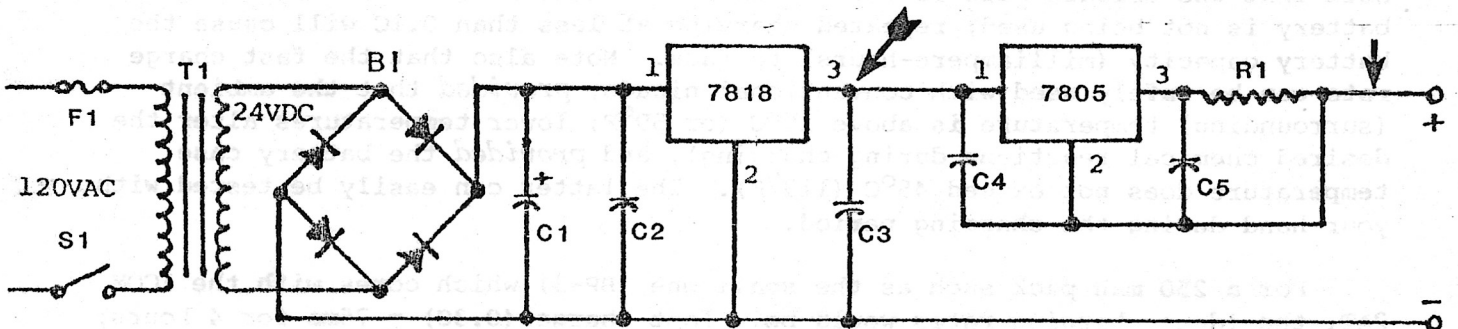
that can be used with individual cells or a battery pack, and that will regulate *current* at the desired level. It is a simple circuit, using two IC's. The first, a 7818, regulates well filtered DC at 18 volts. This should be the value you measure at the large arrow in the diagram below. The second IC, a 7805, is the unique part of the circuit. Although this is a 5 volt 3 terminal regulator, in this circuit it is used to regulate *current* rather than voltage, the level of which is set by R1. R1 can be a single, fixed resistor, which limits current according to Ohm's law, as follows:

	<u>R1</u>	<u>CURRENT</u>
	10 ohms	500 milliamperes
	33.3	150
(I = E/R)	50	100
	100	50
	200	25

Alternatively, R1 can be switch-selected, permitting several levels of current output. Even more handy would be a variable resistor. However, if you use a pot, be sure it is a hefty one or you may burn it out (WB9RQR "smoked" three before settling on a 2 inch diameter vitreous enamel model). Also, if you use a pot, it might be a good idea to insert a fixed resistor of 10 ohms or so in series with it, which will limit current to 500 ma when the pot is turned all the way down to zero resistance. This will protect the IC's from going up in smoke if you turn on the supply with a load connected, and the pot is set for maximum current. You might consider also using a value other than 10 ohms, in keeping with the maximum value of current you wish to pump into the battery pack. A milliammeter is also convenient, especially if you use a pot. Break the circuit at the small arrow and insert a 0-500ma meter (if the circuit is built to reach 500ma maximum current).

Note that this is a *floating* supply; if you use a metal case, no connections should be made to the case. Capacitors C2 through C5 serve bypass functions, and stabilize the IC's. It is best to solder them directly to their respective IC terminals, or at least keep them close.

One final note. If a meter is in the circuit so that you can monitor the charging rate, you may see a decrease in the charge rate toward the end of the charge cycle, depending upon your particular nicad pack voltage and the charge rate you select. Don't worry about it. It is normal. *HAPPY CHARGING.*



PARTS LIST

- | | |
|-----------------------|--------------------------------------|
| F1 - 0.1 amp fuse | B1 - 1 amp or better bridge, |
| S1 - SPST switch | 50 PIV. Individual 1 amp |
| T1 - 1 amp, 18 to 24 | 50 volt diodes can be |
| volt transformer, | substituted. |
| 120 volt primary | C2-5 - 0.01uFd, 50 volt disc ceramic |
| C1 - 1000uFd, 50 volt | 7818 - 18 volt 3 terminal regulator |
| electrolytic | 7805 - 5 volt 3 terminal regulator |
| R1 - see text | |

REPEATER REQUEST DENIED

A letter from Federal Commissions Communicator Marvin Larpsnog received last month stated that the Ozaukee Club's request for repeater site change had been reviewed and was denied. Larpsnog stated that while the Club's technical plan to put up an earth orbiting repeater platform was an interesting idea, the FCC would not permit moving WR9AAE to the platform. He further stated that the Club must now take the satellite down before somebody gets hurt. The O.R.C. satellite had been circling the earth once every ninety minutes at an altitude of nine feet. This altitude had been chosen by the repeater technical committee to circumvent NASA and FAA regulations but after a few orbits, it was obvious that the satellite had been collecting debris and would soon be unuseable.

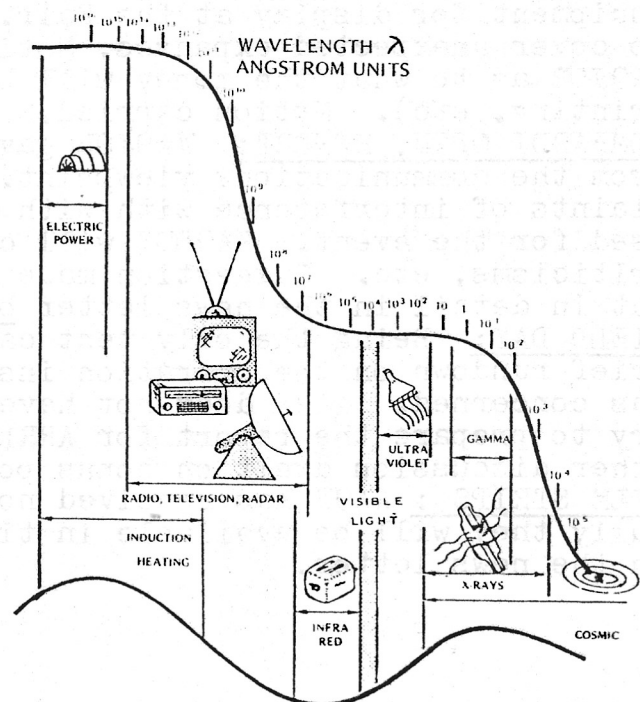
The arrival of the letter caused no concern for the club however. "We had already taken it down and used it for parts for the cornroast charcoal grills", said a Club spokesman, "and besides, the present repeater site is hard enough to get to for making repairs!".

AA9W

WHAT ARE X-RAYS AND GAMMA RAYS

X rays, gamma rays, visible light, radiowaves, and others are energy waves of electric and magnetic influence. They are called electromagnetic waves and travel at the speed of light, about 180,000 miles per second. Electromagnetic radiation is grouped according to its wavelength in what is called the electromagnetic spectrum. The illustration on the following page shows the uses of various wavelength electromagnetic radiation and where they fit in the electromagnetic spectrum.

X rays can affect photographic film and since they can penetrate most materials they have practical importance. If the material varies in its ability to absorb (stop) x rays, as does human tissue, the film image can show the relative size and location of the different materials penetrated. Interpretation of these images requires the skill of a radiologist or dentist.



THE ELECTROMAGNETIC SPECTRUM



Minutes of the 8 July 1981 Meeting

Repeater meeting called to order at 7:13 pm by KA9DDN. He repeated the cautionary note from the news letter about not being too specific in discussing ones vacation/travel plans on the repeater. Performance of the machine has been trouble free over the past month. Planned improvements are proceeding normally but additional volunteers are welcome. WD9FQW suggested that auto patch improvements take priority over other bells/whistles. a discussion of these other changes ensued, including a satellite receiver in the southern end of the county. Motion for adjournment by KA9CSC seconded by WA9JOB, motion carried, meeting adjourned at 7 :25 pm.

Main meeting called to order by Vice President AA9W at 7:26 pm. President, WA9AWO, is vacationing in New Mexico, QSLd by the post card to AA9W. Chair requested a motion to accept the meeting agenda. So moved by KA9DDN, seconded by WB9LNL, approved. Minutes of the previous meeting were corrected. Jacket honcho is KC9CJ (formerly KA9GBE), not WA9CPN. CONGRATS to Dick of the up-graded ticket. There being no further corrections, the minutes wer approved by the Chair.

TREASURERS REPORT: Receipts, Kitty from June meeting, \$22.15, June drawing, \$9, Field Day kitty, \$29.49, Interest on savings account, \$19.19==total \$79.83. Disbursements, Field Day postage, \$1, news letter postage, \$7.60, June meeting refreshments \$26.18, Field day food/gas/etc, \$270.38, Field day printing, \$44.72, total \$349.88. Negative cash flow was \$270.05. Checking account, \$342.31, Savings account \$1931.46, cash \$11.90, patches \$72, one kuhl Duck \$12, NET WORTH \$2369.67. Motion to accept by WA9JOB, second by KA9CSC, motion carried.

OLD BUSINESS: County Fair. chair displayed a computer printout of a proposed handout, and wondered what to do with it. Apparently KA9GDG is to arrange for its printing. KA9GDG solicits loans of equipment for display at the Fair. He also requests a \$50 advance to cover unexpected expenses. Motion seconded by N9BPL. Query by WA9JOB as to what the money will be spent for. (unexpected items, printing, etc). Motion carried.

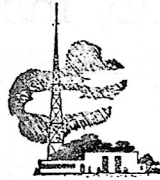
LOMBARDI OPEN, REPORT: WA9JOB gave a brief run-down on the event from the communications viewpoint. He takes a dim view of complaints of interference with with club repeater by the portable one used for the event. KA9DDN will collect these complaints, comments, criticisms, etc. Suggestion made that next years affair be laid out in detail in the news letter before the event.

FIELD DAY: Being the only tent captain present, I(W9WQ), gave a brief rundown on the operation insofar as the secondary CW position was concerned. AA9W does not have the logs/score sheets necessary to prepare the report for ARRL. (deadline is 28 July)W9WQ. Other discussion dwelt on bonus points, messages, etc.

FILM STRIPS : AA9W has received no feedback from the source. Hopefully they will be available in time to permit an advance notice in the news letter.

THE OZAUKEE RADIO CLUB, Inc.

8 JULY 1981 minutes, continued.



BOX 13

Port Washington, Wisconsin 53074

NEW BUSINESS:

Holland Days: Dan Smies, WA9RPB states that it occurs last Saturday in July (25). Communications needed principally for parade organization--KC9CJ has volunteered for net control, KA9GYD will also be available--146.55MHZ simplex is designated frequency.

CORN ROAST: Nothing beyond the information in previous letter.

June WAR Meeting: WA9JOB reporting; since there are no more unoccupied repeater freq pairs on 2 meters in SE Wisconsin, they are planning to double up closed repeaters. This can also be viewed as an attempt to stir up action by those assigned but not yet active channels. WAR is also enlisting help of the Citizens Utility Board to get repeater phone patch service reclassified from commercial to residential. If successful this will result in lower rates for this service. There was also a plea for aeronautical mobiles to use simplex or repeater output frequencies, to avoid activating many repeaters within range of such elevated antenna locations.

ANNOUNCEMENTS: South Milwaukee swapfest this Saturday (11th), Wis nets association picnic at Waupaca this weekend, and the Sheboygan swapfest on the 18th.

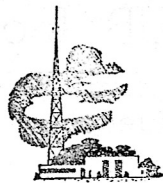
KA9GBG showed the slides taken at the field day site. Motion to adjourn by KA9CSC, seconded by WA9JOB, meeting adjourned at 8:21pm.

E.J. Bauer
E.J. Bauer, W9WQ
Secretary

FIELD DAY RUMINATIONS

As the lead person of the secondary CW position, I'd like to again express my gratitude to all who helped make it a successful operation, particularly those who tried their hand at contest operation for the first time. For them I recommend participation in some of the many smaller contests that take place virtually every week-end of the year. This will help you to sharpen your operating skills in the privacy of your own shack, and you may be able to pick up some of the more elusive QSLs, as many stations never get on the air except during contests. Information on these activities can be found in the CONTEST CORRAL, a monthly feature in QST.

Joe Bauer
Joe Bauer, W9WQ



MINUTES OF THE 12 AUGUST MEETING

Repeater meeting was opened at 7:19pm by KA9DDN. He presented a financial statement, which is available to anyone wishing to peruse it. WA9USA and WD9FQW are to do some work on the tower lights in the near future, the use of a heavy duty weed cutter was solicited for use at the repeater site, volunteered by WB9SFK. Volunteers were also solicited for painting the former repeater shack in Cedarburg. Taylr Electric, WA9GJV, has donated the equivalent of \$150 (in price breaks) to the repeater upgrade project, which will be suitably acknowledged. The new autopatch board is nearing the construction stage, as are other improvements. Again volunteers are welcome. Meeting adjourned at 7:27pm.

Regular meeting was opened by WA9AWO at 7:30pm. No club news--a letter this month, and no minutes available from the July meeting, although they do exist. Treasurer's report by WD9FQW: Receipts, Kitty \$12.57, Drawing \$9.50, total \$22.07. Disbursements; Newsletter postage, \$10.50, Refreshments \$23.62, Meat for the corn roast \$66.52, for negative cash flow of \$78.57. ASSETS; \$272.59 checking account, \$1931.46 Savings account, 96 patches (\$72), one kuhl duck @ \$12, net worth is \$2291.10. There being no additions or corrections, the report was accepted as read.

Paul Simpson has received his novice call, KA9LOJ, Loren Liddell, WD9AUP has upgraded to advanced, and Kathy Liddell is now tech, KA9HPA.

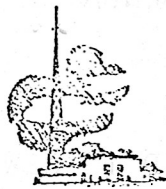
COUNTY FAIR REPORT: WD9GDG reported plenty of volunteer help, which was instrumental in making things go smoothly. Motion made by WA9JMS to pay the liability insurance premium, (\$90), seconded by WB9RQR, motion carried. Total cost of project approx \$210. About 1000 printed propoganda handouts were distributed. It was suggested that the insurance situation for club activities like Field Day and swapfest be investigated.

HOLLAND DAYS: Dan Smies, WA9RPB, presented the club with a check for \$75 in appreciation for our participation in this annual event in Cedar Grove.

CORN ROAST: Set for 22 August, Saturday in Lime Kiln park in grafton. Come one come all. Meat, buns, and corn will be supplied by the club but other dishes are welcome.

Show & Tell: WB9RQR presented a HT battery charger made from an article in a recent issue of 73 magazine. WD9EFH has an HW16/ HG10 combo for sale, and WA9WYI has a Wilson MKII HT for sale. W9WQ is looking for 50 feet of #10 magnet wire.

The American Diabetes association is conducting a Sporta thon on sunday October 4. The Walk For Mankind also takes place about the same time. The Club will provide communications for these activities contingent on the insurance coverage provided by these organization. Moved by WB9SFK and seconded By KA9CSC that the insurance situation be investigated. Motion Carried.



12 August Minutes Continued

NEW BUSINESS: WB9PAS states that reservations should be made soon for the "Post- Everything party". His motion was seconded by WB9SFK.

WD9JIB introduced Bob Baker and his XYL, Iris. they are potential Hams.

KC9CJ reports that he and WA9UJK are organizing a campout on 28/29 August at Long lake, campground "D", and others are welcome. He has reservation forms on hand for those interested.

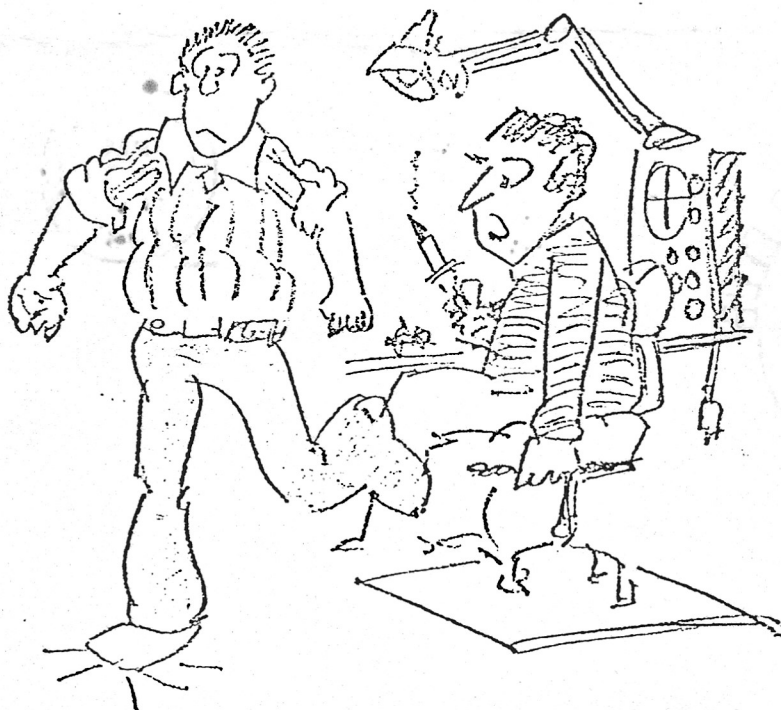
KA9DDN is looking for material contributions for the corn roaster that is to be constructed before the corn roast.

Motion for adjournment was made by WD9ISS and soecnded by WB9RQR.

Motion carried and meeting adjourned at 8:20pm.

E. J. Bauer

E. J. BAUER, W9WQ, Secretary



"That funny black caterpillar you just killed
will set you back five bucks!"

INTRODUCTION

ADOPTION OF AGENDA

SECRETARY'S REPORT (REPRODUCED IN NEWSLETTER)

TREASURER'S REPORT

OLD BUSINESS

1. SAAGBRAW REPORT (W9WQ-JOE BAUER)

2. CORN ROAST REPORT (WA9UDZ OR WD9FQW)

3. HEARING IMPARED TERMINAL UNIT FOR O.S.D. (WB9SFK-KA9HJR)

4. FILM STRIPS (AA9W)

NEW BUSINESS

1. WALK FOR MANKIND (WA9AWO)

2. SOFTBALL TEAM (WB9SFK)

3. BOWLING TEAM (WA9USA-WD9JIB)

4. OPEN TO FLOOR

ADJOURNMENT AT 9:00PM

REFRESHMENTS COURTESY W9DQS, BOB WILLIAMS