



HAM HUM



Published by
AK-SAR-BEN RADIO CLUB, INC. - Omaha 1, Nebr.
Post Office Box 291 - Downtown Station

August 1965

Vol. XV
No. 8

JULY MEETING

Those attending our July meeting were pleased to hear Lewis G. McCoy, WIICP, of ARRL Headquarters staff. Mac called our attention to the fact that on a previous visit he was made an honorary member of our Club and that he has a certificate to show for it; and, inasmuch as there has been no change in the Board minutes since that time, Mac is still an honorary member of our Club.

He gave us a most interesting talk on antennas, transmission lines, and the impedance matching problems thereof, as well as a slide presentation on "How To Succeed in Amateur Radio Without Really Trying." This is the same slide presentation that a few of us who attended the Wichita Convention were familiar with. Mac is working on another of these humorous presentations of amateur radio problems and observations and next time he comes out this way he promised to bring it along.

Also visiting us that night was Bob Denniston, WØNWX. Bob is the Midwest Division Director and a member of the Executive Council of ARRL. He gave us some of the thinking behind the FCC proposal

and, in fact, brought with him from the National Convention in San Jose, California a copy of the speech given by the FCC representative at that meeting.

Our thanks to both Mac and Bob for a very interesting and informative meeting. (See photos - Page 8)

I enjoy your HAM-HUM very much.

Enclosed a buck to pay postage.

Chas. W. Boegel, Jr.

WØCVU

1500 Center Point Road N. E.

Cedar Rapids, Iowa

THE SARPY COUNTY AREC NET

There will be a change in the Sarpy Co. 6 meter AREC Net which usually meets on Sunday nights. We decided that the day was rather unpractical so, starting August 3, 1965, the Sarpy Co. AREC Net which now meets on Sunday nights will meet every Tuesday at 8:00 P.M. CST on 50.478 mc, I hope this will be more convenient.

Tony, WAØFHH

Net Control

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.



Published by
AK-SAR-BEN RADIO CLUB, INC.
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 Omaha 1, Nebraska
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ADDITIONAL WIAW CODE PRACTICE AT 20-25-WPM ANNOUNCED

FCC's Docket No. 15928 proposals, besides precipitating comments to FCC and ARRL Directors, brought immediate requests to the Communications Department for even more code practice than the generous daily fare WIAW has been providing.

Effective at once we're undertaking to send four extra mid-evening periods each week (to follow usual slower-speed nights) to give additional practice at 20- and 25- w.p.m. Mention of this is also planned for August QST. All practice is transmitted simultaneously, addressed to amateurs, on 1805-, 3555-, 7080-, 14,100 kc. also 50.7 and 145.6 Mc.

There are two daily periods set aside for the tape-sent transmission of code practice, these at 2330-to-2359 GMT and 0130-to-0230 GMT, our mid-evening in Connecticut. The first or earlier hour code practice covers those speed ranges most needed to get within reach of

the General Class Amateur License (10-13-15 w.p.m.). All practice groups will continue to include letter-numeral groups taken from the tube tables of the '65 Radio Amateur's Handbook.

The mid-evening sessions, scheduled to start daily at 0130 GMT covers both Novice/Technician speed ranges and this newly requested 20- and 25- w.p.m. practice for the many getting ready for FCC's Amateur Extra Class examinations, if and when the Docket is finalized and assuming the requirements stick with the proposal, of course. (Informal advices from good authority have indicated that the number of amateurs turning up at FCC exam points for this test in April exceeded the number taking such exams for 3-months just previous!)

The 0130-0230 GMT CP sessions cover the following consecutively sent ranges:

Days of Week (GMT)	W.P.M. SPEEDS
Mon. Wed. Fri. Sun.	5 7 10 13 20 25
Tues. Thurs. Sat.	15 20 25 30 35

AUGUST MEETING

The next meeting of the Ak-Sar-Ben Radio Club, Inc. will be held at the 4-H Building, Ak-Sar-Ben Field, at 8:00 P.M. on Friday, August 13th.

We will have two films for this meeting which promise to be very interesting. They are as follows:

SCATTER RADAR - This film tells about a new technique developed by the National Bureau of Standards to study the upper atmosphere and outer space without using satellites or specialized rockets. With scatter radar, continuous investigations of the ionosphere and measurements of electron density in the upper atmosphere are being made from an unusual field station in South America.

How does scatter radar work? Very high frequency radio waves transmitted from the NBS ground installation pierce the ionosphere and excite free electrons in the upper atmosphere. The excited electrons then re-radiate or "scatter" a small part of this radio-frequency energy in all directions. Part of the scattered energy becomes earthbound where it is picked up by a powerful 22-acre antenna.

"Scatter Radar" describes an exciting new research development, illustrating the search for an appropriate location near the equator, and the construction of an entire research facility at the foot of the spectacular Andes in

Peru. The cooperative efforts of the Peruvian and NBS workers add a heart-warming story of international good will at work.

High school and college students interested in science will learn about a new way of conducting space research and will see some of the challenging work done by Government scientists today. This film is in color and sound and runs for 22 minutes.

POLAR BLACKOUT - This film has to do with a lower-ionosphere phenomenon prevalent at high latitudes. High frequency radio waves normally reflected from the ionosphere will occasionally be heavily absorbed because of ionization produced below the reflected layers. Although this occasional heavy absorption - termed "blackout" - is most prevalent near the auroral zone, i.e., over those regions of the earth where the aurora is most frequently seen, the blackouts of long duration (one to five days) are seen most frequently inside the auroral zone over the polar caps.

Plots of the northern hemisphere (down to about 40 degrees latitude) have been photographed and are shown in the film in rapid sequence in such a way that the changing areas of blackout during each of five major events of the IGY are displayed. Sound, 15 minutes.

Bring your friends! Refreshments and QSO after the meeting.

After reading about AK-SAR-BEN's Field Day I thought you might want to hear about ours and the comparison of our scores.

BAND	AK-SAR-BEN (3 or more transmitters)	KØUKN/Ø (1 transmitter)
10	0	1
15	0	164
20	325	552
40	313	126
80	328	17
VHF	79	0
TOTAL	1,045	860

Of the above figures 7 stations were worked on 80 meter CW and all other contacts were made on SSB.

What does this show? Well, quite a few things. First of all KØUKN/Ø operated only ONE transmitter where Ak-Sar-Ben used several simultaneously. KØUKN/Ø made better use of the higher bands (except VHF) while Ak-Sar-Ben made better use of the lower bands.

In respect to antennas Ak-Sar-Ben had a far superior antenna system: 10-15-20 tri-band beam, 40 meter beam up around 50 ft, beams on both 6 & 2 meters plus other antennas as compared to our 10-15-20 tri-bander up 22 ft and a 40-80 meter dipole 6 ft in the air. We had only ONE transmitter while Ak-Sar-Ben had several, 6 or more, even though they didn't use all of them at once. We had only 5 operators while Ak-Sar-Ben had many.

I don't know enough facts about Ak-Sar-Ben's operators but here are some facts about ours that should be considered. The average age of our operators was 18. In contest experience, one of our operators was 1964 CW Sweepstakes winner for Nebraska and one was 1964 Phone Sweepstakes

winner for the Midwest. In experience for handling pileups, each of the 5 operators has an average of 100 countries each.

Actually the 5 of us hadn't made up our minds until the night before the contest whether or not to even go on Field Day. No one could set up the equipment Saturday morning because of jobs, so nothing was done until Saturday afternoon. It wasn't until 2 PM that KØCVA and myself made it to Hummel Park. The other 3 hams hadn't arrived yet (they had the beam!), so Ray and I set up the 40-80 dipole (only 6 ft off the ground). It was 3 PM now and still no beam. The beam arrived at 4 PM with 2 of the 3 absent boys (they got lost) and the antenna was hastily put together and was hoisted on a 22 ft pipe I had bought. Finally the beam was guyed and at 5 PM (2 hr after contest started) KØUKN/Ø was on the air. The storm that missed Ak-Sar-Ben contesters didn't miss us. We got drenched!! The storm caused us to quit the contest 30 minutes early.

A few suggestions for next year's Field Day can be made by the above figures. Ak-Sar-Ben should try to use the higher bands better eg.

15 and 20 meters-our 716 contacts to Ak-Sar-Ben's 325-more that twice as many contacts. Myself I've learned that the lower bands 40-80 offer more potential than I figured and next year we'll put up better antennas for these bands. Also I've learned that more advance planning would help.

Thinking back it was a lot of fun and it didn't take too much preparation or much money - \$10 total - for a small group to have a lot of fun and rack up a BIG score. If scores are about the same as last year, KØUKN/Ø will be in the TOP TEN stations in the world!

Bill Dennis KØUKN

**OFFICIAL BULLETIN NR 15
FROM ARRL HEADQUARTERS
NEWINGTON CONN JULY 15 1965
TO ALL RADIO AMATEURS \overline{BT}**

Israel and the U.S. have agreed to permit the handling of messages or other communications on behalf of third parties, effective August 6, 1965. Messages must not be important enough to be sent by commercial channels, and neither operator may have any pecuniary interest in the traffic. The U.S. has previously signed similar agreements with Bolivia, Brazil, Canada, Chile, Columbia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Haiti, Honduras, Liberia, Mexico, Nicaragua, Panama, Paraguay, Peru and Venezuela. Third party countries by prefix are CE CM CO CP EL HC HH HI HK HP HR OA PY TI VE VO XE YN YS YV and ZP \overline{AR}

**GAIN: Transmitter power vs
System gain**

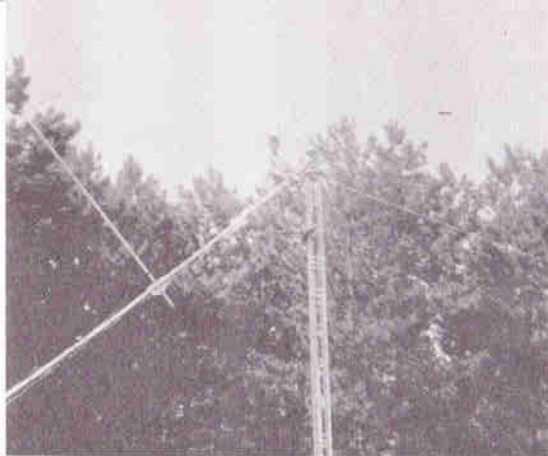
A recent article by K8PBA on antenna gain should point a lesson to the super-kilowatts on 20 and certain higher bands. A ham with a 100 watt rig has a dipole antenna, with a 3 db loss in the feedline. If he adds a linear amplifier to give 1000 watts input, assuming output efficiency to be the same, he will achieve 10 db gain from the linear, less 3 db soaked up in the feed line - or a net gain of 7 db. On received signals, he still suffers a 3 db loss in the feed-line, so we can say that his net receiver gain is minus 3 db.

Now, if instead of buying a linear, he puts up a new antenna with 10 db gain, less 3 db lost in the feedline, he'll still have a net gain of 7 db over the original transmitting situation...so his signal will be the same as the guy who bought the linear. But, on receiving, he'll also be 7 db better than before; whereas the owner of the linear is still down 3 db. The ham with the gain antenna is 10 db better off on receiving...and that means he should be receiving 10 times as well as the owner of that monster of a linear.

de George H. Goldstone,
W8MGQ (Autocall)

SILENT KEY - MAY 25, 1965

Sewall P. Smith WØGMZ
4622 Douglas Street
Omaha, Nebraska 68132

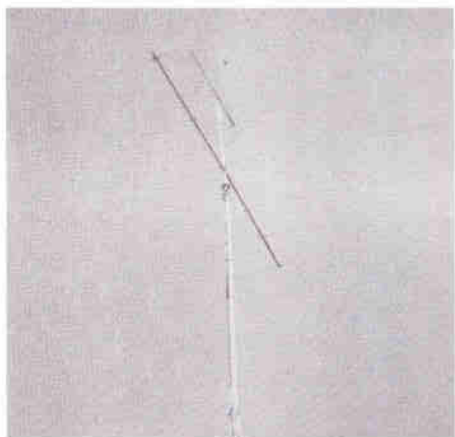


Harold McClenahan, WA0DGA, setting up VHF antennas for W0EQU/0, Ak-Sar-Ben Radio Club Field Day - June 26, 27, 1965



Left to right:
Bud Smith, WA0ICK
Ralph Ertz, W0SMY
Harold McClenahan, WA0DGA
Tony Martinkus, WA0FHH

ADDITIONAL FIELD DAY PHOTOS
by Harry Silver, WA0DSK



6 and 2 meter beams - W0EQU/0
(2 meter beam courtesy W0VLI)

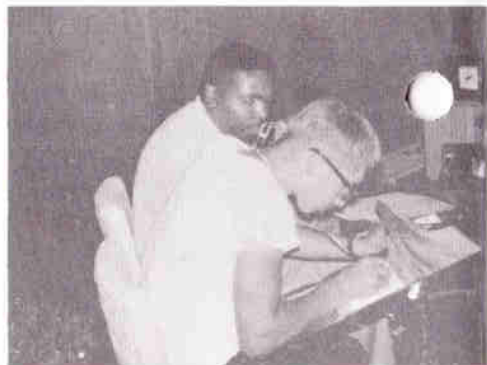


6 meter tent
Back to front: Harold, WA0DGA, Royce, WA0KIL,
Frank, WA0IWF, Steve, WN0MKA

40 meter setup



75 meter tent
Tony, WA0FHH, Bob, K0OQL



MOONBOUNCE JRG-STYLE

On July 3 at 1242 noon, KP4BPZ began two hours and a half of tests bouncing 432 Mc signals off the moon from the 1000 foot dish antenna at Arecibo, Puerto Rico.

Ken, W7JRG, recorded the first hour of transmissions including, at the end of the tape, his own contact via moonbounce with the Puerto Rico station. After an initial cw call, KP4BPZ switched to ssb and, although Ken's receiver set-up was designed for the narrow cw signals, the voice came through the 476,000 miles in readable condition. It was quite a treat to hear the tape and to note the peculiarities of the signals... even to the delay of 2-3 seconds between the end of Ken's transmissions and the beginning of the KP4s due to the distance the signal traveled.

Ken used a 900 watt transmitter into an antenna on the roof which was aimed at the moon by Ken's 12 year old son. The boy stood on an improvised platform, protected from the lethal radiation by a wire mesh, and aimed the antenna under sound power phone instructions from Ken back in the shack. This was probably the most unusual antenna rotating method employed by any of those involved in the experiment.

A second schedule is planned for July 24th and Ken has plans to improve the quality of the received signals for that event. VHFers and prospective VHFers would do well to keep in contact

with Ken to learn of his results on the new try.

de SPLATTER,
Yellowstone R. C.

FOR SALE

GSB100 and 201 Linear or Galaxy V with AC and DC Power Supply. Have BC348 cheap. Chrome luggage rack for car top. Sell or trade.

Bob Miller, KØZLY
556-3478
553-7005

DEFINITIONS

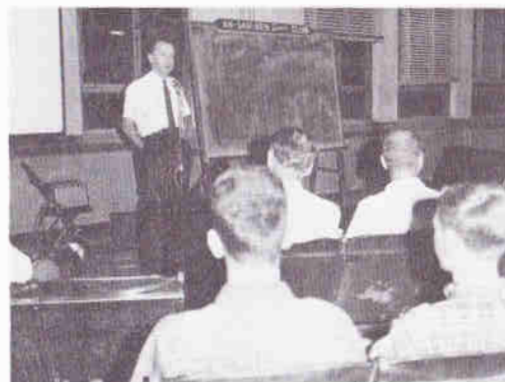
Antenna: a bird roost faced the opposite way you want to transmit.
Bargain: something cheap you buy without any plan for its use.
Capacitor: a small gimey-gadget with rows of dots you can't read.
Diode: a thing you got one of and put in the circuit backwards.
Efficiency: what you don't have if you talk across town with a KW.
Friend: anyone who'll climb your antenna in winter while you direct.
Ground: the thing you are when you touch B plus.
House: a device for holding up the tower.
I: little used term for "we."
Jack: different from any plugs you have.
Kilowatt: an electrically heated basement.

de SPLATTER,
Yellowstone R. C.



Ed Donze, WØYEV, 1965 Club President, and
Lew McCoy, W1ICP, of ARRL

Photos by Erv Heinz, WAØEEM



Bob Denniston, WØNWX, addressing
Club members at meeting.



Thomas "Penn" Leary, WØVTP,
shown receiving QST plaque from
Bob Denniston, WØNWX.

This plaque is given in recognition of an article Penn wrote for QST magazine. The author of the best article each month is given a similar plaque which is made from the plate used to print the cover of that month's QST. As far as our Club is concerned, the plaque is very valuable as it gave us an opportunity to renew acquaintance with Penn and also was an additional reason for getting Bob over here to our meeting which pleasure we would like to have more often.

OFFICIAL BULLETIN NR 13
FROM ARRL HEADQUARTERS
NEWINGTON CONN JULY 1 1965
TO ALL RADIO AMATEURS BT

A reciprocal operating agreement is now in effect between the United States and Belgium. Amateurs of one country visiting or residing in the other may obtain permission to operate their own amateur stations there. The United States has previously reached such agreements with Bolivia, Canada, Costa Rica, the Dominican Republic, Ecuador and Portugal. Many others are being negotiated and successes will be announced as they occur AR

OFFICIAL BULLETIN NR 16
FROM ARRL HEADQUARTERS
NEWINGTON CONN JULY 22 1965
TO ALL RADIO AMATEURS BT

The Federal Communications Commission has granted an extension of time for filing comments in Docket 15928 until September 1. The time for reply comments also has been extended in the incentive licensing matter until October 1, 1965. Full details of the extension and the full text of the ARRL comments in the docket will appear in the September issue of QST AR

SWR vs. POWER
by: Bill Welsh (WA6VTL)

Many of the new guys getting started in ham radio (plus some of the established ones) become over-conscious of standing waves on their transmission lines. Back when VSWR meters weren't so inexpensive the SWR wasn't checked too often and there was less concern over one's transmission line. It is good to have dependable measuring instruments available at low cost and we are smart to be concerned with the SWR of our transmission lines. Nevertheless, let's not become

overly concerned with knocking that SWR all to hell because there's damned little (0.1%) to be gained when you decrease it past 1.1:1 and, in fact, there's only a 3.9% power gain to be obtained when we decrease it from 1.5:1 to 1.05:1. The following tabulation of SWR versus out-put power percentages should help you regain some sense of values in this matter in case you've been knocking yourself out trying to lower SWR readings:

1.05 : 1 - 99.9	1.3 : 1 - 98.6	2.0 : 1 - 89
1.1 : 1 - 99.8	1.4 : 1 - 97.3	2.5 : 1 - 81.5
1.15 : 1 - 99.6	1.5 : 1 - 96	3.0 : 1 - 75
1.2 : 1 - 99.2	1.6 : 1 - 94.7	4.0 : 1 - 64
1.25 : 1 - 98.8	1.8 : 1 - 92	10.0 : 1 - 33.3

de LERC
Burbank, Calif.

This article was also submitted in the writing contest by Bob, W0CRO. If you plan to build this meter, take note that the dial shown in the article can be cut out and glued to your meter.

A Low Power Wattmeter by Bob Hall, W0CRO

When working with transistor oscillator and doubler stages, it was found that at these low power levels, the usual tools used by hams as r.f. indicators are of little value. Neon lamps or pilot lamps won't light when coupled to these low-powered circuits. The same thing may be true of tube circuits when running at low voltages for receiver applications.

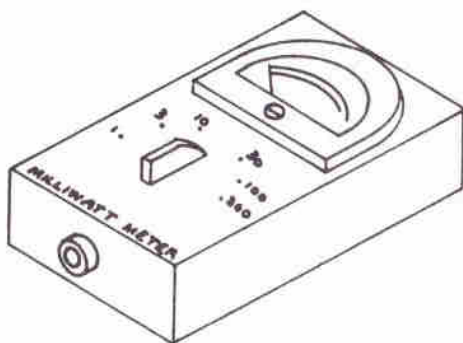
A very useful tool has turned up, a dummy load and power indicator, and it is presented as a simple but useful project to build.

Basically it is a 50 ohm load with a rectifier and micro-ammeter to measure the power of 1 milliwatt across the resistor. Keeping the power at this level means that the diode will be working at the linear part of the curve instead of in the square-law region. To increase the power handling capacity of the device beyond one milliwatt, a rotary switch is used to switch in 5 db. pads so that the larger input signals are attenuated to the one milliwatt level by the time the r.f. power reaches the load resistor.

Wiring should be kept extremely short in the r.f. portions of the circuit and it will be useable to very high frequencies. Small disk frequency compensating condensers are shown in the diagrams but they have not

been too effective up to 150 mc but may be beyond that range.

The unit was built in a small LMB #136 box (or equivalent) with a 0-50 DC micro-ammeter and switch on the face of the box. An RCA type phono jack is the input connector at the end of the box.



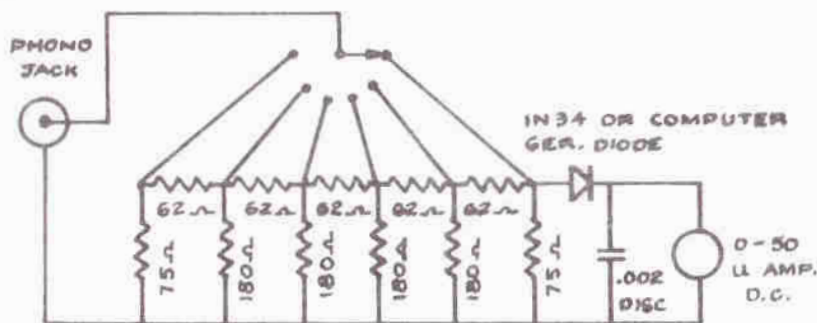
It may be desirable to make about 12-14 inch coax leads to plug into the input jack. More than one may be desirable. One may have a RCA phono plug on each end. Another may have a shielded link on the end and a phono plug on the other. Maybe this type of lead could be duplicated but with a 2 or 3 turn link for lower frequencies or with larger diameter links to couple to larger coils. Coax shielded links are made as shown in the following diagram.

SOLDER INNER CONDUCTOR TO THE SHIELD.
DO NOT CONNECT SHIELD AT THIS POINT TO ANYTHING.



Coax shield is insulated preferably, either with insulation on the coax or slide spaghetti over the shield. Phono coax with brown cloth is good for this application.

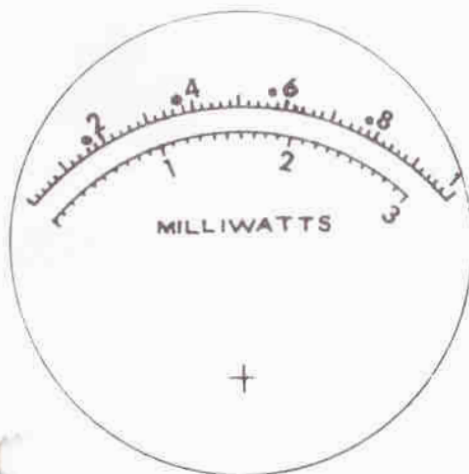
Standard values of resistors are shown which will give close enough results for ham use. All are 1/2 watt 5% tolerance resistors.



CIRCUIT DIAGRAM

NOTE:

The dial shown can be pasted to your meter face. Here's how to do it: Take the meter apart. Glue the face to the back side of the existing face. Center the pivot point to the center of the meter. Cut an opening for the pivot with a razor blade.



Face for the low-lever power meter. Cut it out...it's to size.
 Minneapolis, Minn.
 De SPLATTER

A VE3 said he was looking for a birthday gift for his 15 year old boy. A KL7 suggested a 15 year old girl.

de Yellowstone R. C.

**OFFICIAL BULLETIN NR 11
 FROM ARRL HEADQUARTERS
 NEWINGTON CONN JUNE 17 1965
 TO ALL RADIO AMATEURS BT**

A reciprocal operating agreement is now in effect between the United States and Portugal. Amateurs of one country visiting or residing in the other may obtain permission to operate their own amateur stations there. The United States has previously reached such agreements with Bolivia, Canada, Costa Rica, the Dominican Republic and Ecuador. Many others are being negotiated and successes will be announced as they occur AR



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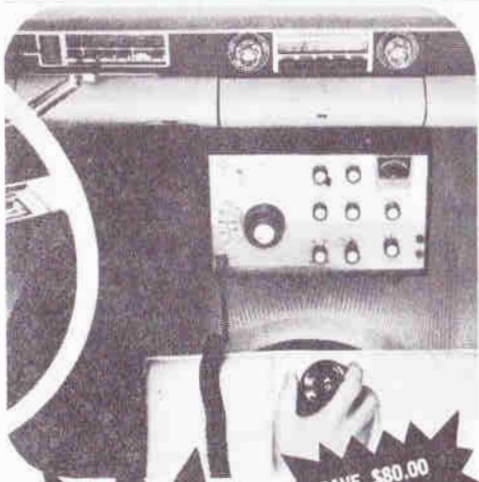
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