

# HAM HUM

Published by

AK-SAR-BEN AMATEUR RADIO CLUB, INC.  
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October 1979

Vol. XXIX  
No. 10

## OMAHA AMATEUR CENTER INC.

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

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**AK-SAR-BEN AMATEUR RADIO CLUB, INC.**  
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**Copy deadline for Nov. issue is Oct. 23rd**

**Dues-Annual Basis**

(Due and Payable each January 1.)  
 New member initiation fee ..... \$ 1.00  
 Regular member ..... \$10.00  
 Regular member and spouse ..... \$12.00  
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New member initiation fee ..... \$1.00  
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 Regular member and spouse ..... \$3.60  
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**NEXT MEETING**

**DATE:** Tuesday, October 9th, 1979

**TIME:** 7:30 P.M.

**PLACE:** JEWISH COMMUNITY CENTER  
 333 South 132nd Street, Omaha, NE

**PROGRAM:** "PHASE - NOTHING"

Al McMillan, WØJJK, of Hi, Inc., will explain the above title, and tell you why it's so very important to those who own the latest solid-state transmitters.

Won't you please join us for another of Al's always informative technical sessions?

73s and see you at the October meeting.

Tom, KØPQR

\*\*\*\*\*

## THE PREZ SEZ

I received an exciting phone call, and I must say a very pleasant surprise this morning. There were a few doubters, me included, when our 1979 Field Day Co-Chairmen, Frank and Ave, WAØIWF and WDØDLN, told us all last May that we were out to win one. Well, the results hit the mailbox this morning. Not only did our Club win the Zero District, the effort was also good enough to place in the top 25 nationwide! Not bad considering the rash statements made last spring! Wait 'till next year; we're gonna do it again! Thanks to all who were involved, and a special thanks to Ed and John. (Everybody knows that an Army travels on its tummy!)

One last reminder of the Midwest Division Convention to be held in Cedar Rapids, on October 19, 20 and 21. Good times are had by all at Division Conventions, and this one holds the promise of being one of the best in many years. I have heard of several Club members, now living elsewhere, who are planning on being there, so come join the reunion and be a part of the fun! I understand you may have to beg, borrow or steal a Banquet ticket, as it is already a virtual sellout.

By the time this is read, I assume the first news reports will be forthcoming from the WARC meeting in Geneva. I was rather surprised at the apparent lack of interest in this subject, judging from the low turnout for last month's meeting in Lincoln. The guest book showed 51 in attendance from our Club, 51 from the Lincoln Club, and 28 from other outstate Clubs. My thanks again to Mr. A. James Ebel for finding the time to address our group. I believe that everyone came away from the meet-

ing with a much better understanding of how things will happen at the WARC meeting. For the benefit of those who were not able to attend last month's meeting, I will state that Mr. Ebel did not express optimism, nor pessimism, concerning the probable outcome of the Conference. He did say, "We're gonna win some, and lose some." What this means to Amateur Radio specifically remains to be seen. I'm of the opinion that Mr. Abel is an excellent negotiator, and if the rest of the United States delegation is of the same caliber, I now firmly believe that while we may see some changes in our hobby, we won't see the devastation that has been voiced in some circles. Whatever the outcome, we won't have long to wait now to find out what we're going to have to live with for the next 10 or 20 years. I would like to take this opportunity to thank Steve May, WAØASM, who took care of the arrangements for the meeting hall in Lincoln. Our total bill, including the refreshments, was an amazingly low \$70.

I will close this month with a look at Boren's Three Laws of Leadership, which state: "When in doubt, mumble. When in trouble, delegate. When in charge, ponder."

73s. See you at the next meeting.

Tom, KØPQR  
\*\*\*\*\*

"Drinking coffee keeps me awake. Does it you?"

"It sure does! I never could drink coffee while I was asleep."

*Sunshine Magazine*  
\*\*\*\*\*

## QCWA SILENT KEY MEMORIAL SCHOLARSHIP

Just returned from the QCWA National Convention in Chicago and believe many of you Ak-Sar-Ben Radio Club members would be interested in our scholarship awards program.

The idea was born in 1977 at the National ARRL Convention in Seattle. Five hundred dollars was appropriated and eventually was won in 1978 by John P. Georges, WA2MYU, of Johnstown, New York, now studying E. E. at Clarkson College with a very bright future ahead.

Seven hundred fifty dollars was voted by the QCWA Board at the 1978 Convention in San Diego and was just awarded to Katherine (Kitty) L. Hevener, WB8TDA, from Franklin, West Virginia. Kitty was selected from among 90 amateurs who applied for scholarships administered by the Washington, D. C. Foundation For Amateur Radio.

She is a junior at the George Peabody College for teachers in Nashville, Tennessee. She is majoring in elementary education and special education for the visually impaired. Herself blind, she graduated from the West Virginia School for the Blind in Romney, West Virginia, in the Spring of 1977. She was the class valedictorian. She was also secretary of the school science club, class secretary and treasurer. She has been a member of the Girl Scouts, Explorer Scouts, high school student council and high school choir.

Kitty came into radio via a third class commercial ticket and then upgraded to amateur in 1974. Her favorite mode is cw and she is an active member of the traffic nets. She has been Emergency Coordinator of

Pendleton County, West Virginia, and manager of the West Virginia Novice Net.

QCWA salutes Kitty Hevener, WB8TDA. She is a credit to the amateur fraternity and a most deserving recipient of the QCWA Silent Key Memorial Scholarship.

Like Kitty, any worthy licensed amateur is eligible for this scholarship award and must be nominated by a QCWA member. We have just appropriated \$900.00 for the 1980 scholarship award and next year, as QCWA growth continues, we hope to increase the scholarship amounts. Any individual can contribute to the scholarship program and take it as a tax free deduction.

QCWA is presently working on an "Amateur of the Year Award." If you have a person in mind who has served his fellow hams in a fashion deserving national recognition, please send his name and a resume of his activities to me to submit to our Board.

In my opinion, QCWA with these new constructive activities has added a great deal of prestige and good will to their organization specifically and to amateur radio generally.

Any licensed amateur who has held a ticket for 25 years or more is eligible for QCWA membership. Dues are \$19.00 covering a 3 year period plus a one time \$3.00 entry fee. Additional information is available from our Nebraska Chapter Secretary, W0FQB, Art Gaeth, 6105 North 37th Street, Omaha, NE 68111; telephone 455-3769.

QCWA net meets at 9:00 AM Saturday on 3980 Kc.

Leo I. Meyerson, W0GFQ  
National Director QCWA

\*\*\*\*\*



## GUEST EDITORIAL

By John Lakin, W4MMW

A "good press" is a phrase not heard too often anymore. More likely we hear about the shortcomings of the news media or a Supreme Court ruling relating to it - lately not too favorably. I guess that "press" like "media" can include radio station coverage. Anyway, at least one community in Florida is blessed with "good press" as far as ham radio is concerned.

Broadcast radio coverage of Panhandle amateur radio doings by WFTW, Ft. Walton Beach has been consistently good. At least one piece was printed in full in the FLORIDA SKIP (June 1978) - an Editorial by a Bill Jones which compared amateur radio operators to fire insurance.

Well, during the evacuation and cleanup attendant to the train derailment near Crestview, Florida, WFTW and WDIS, of the Vacationland Broadcasting Company, aired two editorials and two news items giving ham radio honorable mention. Included, were even some suggestions on how the hams could do even better if they were given the opportunity.

Some quotes show the approach to giving a full understanding of what the hams can do: "The derailment... triggered the operation of the Playground Area Amateur Radio Club's special emergency team"... "Units and operators were stationed at Civil Defense headquarters, emergency shelters, and at the scene of the derailment"... "Two emergency shelters have been opened in Crestview"... "This information reported by Amateur Radio Operators."

And so on.

Anyway, the hams can have a good press when: they do good work,

spread the word, and have knowledgeable press people "in on the act."

Ft. Walton Beach is lucky, but can be done anywhere. It is just easier when a ham owns the radio station and is dedicated to the service aspects of the hobby.

de Florida Skip

\*\*\*\*\*

## SILENT KEY

Dayton L. Phifer, W0VEA  
E. Tryon Route  
North Platte, Nebraska  
September 9, 1979

\*\*\*\*\*

## RECENT CONTRIBUTOR

Repeater 34/94  
John F. Leeder, W0UFD

Many thanks, John!

\*\*\*\*\*

## THE QSL CORNER

By-Charlie, W0QQN

Now that we have passed the midpoint of 1979, some interesting information has emerged. Using five suffix letters (J, O, V, W and Y), we have come up with an almost unbelievable statistic. The number of ounces mailed out each month for these five letters were averaged over a six-month period, and would you believe, for the entire Bureau this would amount to about a ton of cards being mailed in a year. That's a lot of cards! No wonder the pileups are something else, and the DX bands are busy.

In closing, if you figure about an average of 8 cards to the ounce, 16 ounces to the pound, and 2,000 pounds to the ton, how many cards do we mail in a year? Amazing!

\*\*\*\*\*

## LIGHTNING PROTECTION

Lightning was a big problem this past summer for many repeaters and individual Amateurs. There is no absolute protection from lightning damage other than to completely surround the object to be protected with a conducting shell. This is not too practical for most purposes, so some less perfect method is required.

Lightning strokes have peak discharge currents ranging from a few thousand to a few hundred thousand amperes. Peak current is reached in about 10 milliseconds and then tails off. Hot lightning, the kind that starts fires, is characterized by a relatively low peak and a very long tail.

Lightning strokes occur when the static charge on a cloud reaches the point where it can ionize the air gap between the cloud and the earth. Un-ionized air is a very good insulator and ionized air is a very good conductor. When the gap between the cloud and earth becomes ionized, the lightning discharges rapidly rise to a very high current. Current rushes through the surface of the earth from all directions toward the point of contact. This is an important point to remember because if your house with its wiring and piping are in the path you can have a great deal of excitement for a while.

Forget the idea that you can insulate yourself from lightning. A potential great enough to break down an air gap of several thousand feet is not going to be stopped by any puny insulation you might put in the way.

The best protection from lightning is to provide a very low impedance path to ground for the lightning discharge and a relatively high impedance path to your equipment. All

antenna masts and towers should be grounded with the shortest, straightest, and heaviest ground wire you can arrange. Ground rods should be a minimum of eight feet long and heavily galvanized or copper coated. Copperweld service entrance type rods are preferred. If ground conductivity is poor, several rods can be paralleled. Go out radially from your tower base with buried ground wires to the additional rods. The additional rods should be several rod lengths away from each other for maximum effectiveness.

Coax or twin-lead from the antenna should come down the tower to a point several feet below the entrance to your shack, and then loop back up. This way the lightning discharge must reverse direction to get into the shack. With coax you can make a complete 360 degree loop to increase the inductance and hence impedance of the path. Don't bend coax to too small of a radius or you will foul up the rf impedance inside the cable.

There are several varieties of lightning arrestors for both coax and twin-lead on the market. Most of these devices can't carry enough current to be a very important part of your lightning protection system. Most of the discharge current will be on the coax jacket and this can be grounded directly. Ground all cabinets and chassis directly to a good earth ground. Do not use the AC neutral wire as a ground.

Chances are your antenna is the prime target for a lightning hit and the discharge will go to ground through your ground system and/or through your equipment to the service entrance ground. This leads to some confusion if you get a hit because you can't be sure if you really got hit from the antenna or if the hit came from the power line side to

your equipment. By tying all grounds together outside the house, you can minimize the possibility of your inside wiring being the preferred path. If you elect to tie your service entrance ground to the rest of your ground system, use a separate clamp and wire.

Various surge suppressor devices are available for use on power wiring and signal wiring. Non-linear resistors, gas discharge devices, and zener diodes all have their uses. Use surge suppressors inside to get rid of transients you couldn't dispose of outside.

George, W3FEY  
 (From Red Cross Repeater  
 Association - WA3 MHP)  
 de Florida Skip

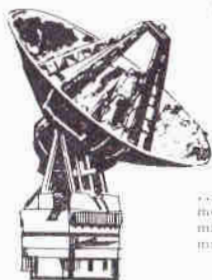
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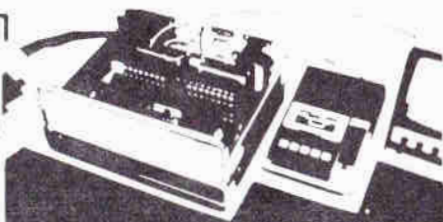


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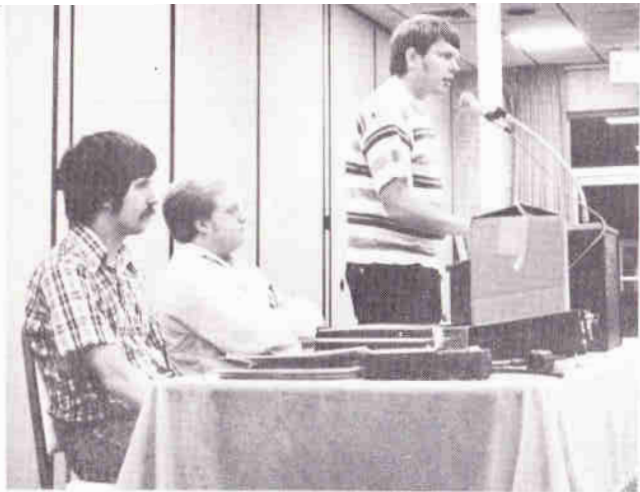
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LINCOLN MEETING – SEPTEMBER 11, 1979  
Photos by Dave Hamilton, WDØDLN





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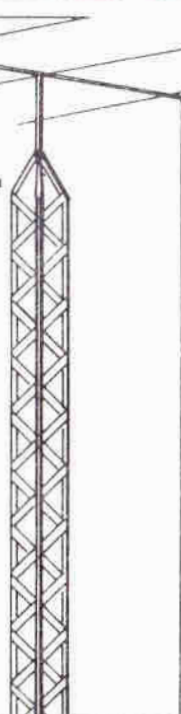
## STOP! LOOK UP! AVOID POWER LINES.

Serious and even fatal accidents can occur when an antenna or any metal object contacts overhead power lines. If you are putting up a tower or antenna, observe these rules:

1. Check for overhead power lines. Every wire should be considered dangerous. Remember, they are not insulated.
2. Make sure there's more than enough clearance for carrying, raising or lowering the tower. It's easy to misjudge this clearance.
3. Erect the antenna or tower far enough away so that it will not hit any power line if it falls.

If power lines are a possible hazard, call OPPD. We are interested in your safety.

**OMAHA PUBLIC POWER DISTRICT**



## THE NEGATIVE FEED-BACK — WHO INVENTED IT AND HOW

*OZ8T sends this clipping from the Danish periodical "Elektrotekniker" The Electro Technician of April 1978.*

One of the things which i.a. has made long distance telephony possible is the negative feed-back which furthermore is applied in many other fields.

Who invented the negative feed-back and how did this happen? In a small article in "Telephony" September 5th 1977 this is cleared up. The inventor was the then 29 year old engineer Harold S. Black employed with the Bell Laboratories.

His own account of the story is this: On August 2nd 1927 he was on his way to work and therefore took the Christopher Street ferry across the Hudson River. During the ferry trip he came to think of a six year old problem he had worked with namely how distortion could be reduced in the amplifiers used in long distance telephone cables. Exactly at 0815 hours while the ferry was on its way to New York he all of a sudden got the idea: By adding a part of the signal coming out of the amplifier and comparing this with the incoming signal the distortion could be identified and be eliminated. The negative feed-back not only revolutioned telephone transmission but it also became a generally applied part of modern amplifier technology.

While Black sailed on the ferry he bought the "New York Times" and a page that happened to be blank was used as notepaper (see figure 1). By December 1927 he had worked out a prototype of an amplifier with negative feed-back and in August

1928 a patent application was filed. Initially the invention encountered opposition within Bell but early in 1928, 8 amplifiers were tested and then things went fast. In 1930, 75 amplifiers were submitted to field tests in Morristown and in 1936 still more amplifiers were put into commercial application in the cable circuit connecting New York and Philadelphia.

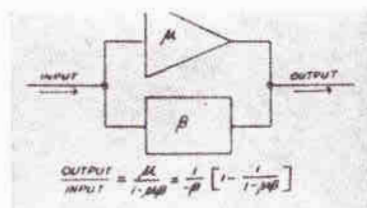


Fig. 1. Sådán så skitsen på New York Times ud.

Fig. 1. This is how the sketch on the New York Times looked.

Black, now retired, has received many distinctions for his invention on the negative feed-back system and he furthermore holds 62 other patents.

From Spark Gap Times  
\*\*\*\*\*

## ADDITIONS TO ROSTER

Robert J. Carl, NØAZA  
334 Shamrock Street  
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Phone: 332-4743

Jean J. Kiser, WBØQAY  
6178 Shirley Street  
Omaha, Nebraska 68106  
Phone: 553-1321

Tom O. Mikkelsen, WAØPOD  
13810 W Circle  
Omaha, Nebraska 68137  
Phone: 895-3039  
\*\*\*\*\*

## MOBILE CHARGER FOR YOUR HT

By Tom Talley, W8HQQ

*Actually it is a small dc to dc converter but small current and price.*

Here is something a little different in the way of a charger for your hand-held that is operated from your automobile battery. As most of you who operate mobile using a hand-held realize, since the battery in your hand-held is between 12 and 15 volts (depending on the manufacturer) it is impossible to recharge the battery directly from your car's battery. In order to charge a 12 or 15 volt battery it takes at least 18 to 20 volts to get enough charging current to flow.

This circuit makes use of our old friend, the 555 timer chip, in an oscillator/voltage doubler circuit that is capable of supplying as much as 100 ma. Most hand-held radios utilize a charging current of between 25 and 60 ma to bring the battery up to full charge. Since the capability of this circuit is in excess of 100 ma, it is possible to also supply additional current so you can receive while charging.

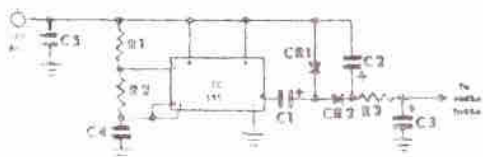
For example, lets say you have a Wilson which requires 50 ma to charge the batteries fully. This radio draws approximately 50 ma in a receive condition with moderate volume. In this case, you would adjust the mobile charger to supply 100 ma while you are driving around in the receive mode (50 ma for the battery and 50 ma for the receiver).

The circuit is simple to construct and the component values are not critical as you will note from the parts list. The charging resistor values (R-3) apply to just about any unit

whether 12 or 15 volt battery. The frequency of the oscillator is about 5 KHz and the addition of C-3 filters out the ripple so you can use the charger while receiving and transmitting. C-5 effectively filters any ripple that might get into your battery line. The addition of a 1 amp fuse, although shown, is highly recommended. This fuse should be installed between the car's positive line and the input plus terminal on the charger.

The charger unit will have little or no effect on your car battery since it doesn't draw much more than an instrument lamp. Some may wish to construct the charger and install it, out of sight in the trunk of their car. This way the radio should be placed in the charger while you are out of the car in order to keep the battery charged up. Others may wish to have the charger connected to the radio at all times while they are in the car.

About the only fabrication necessary will be the construction of a sleeve to hold the radio so contact can be made to the battery terminals on the bottom of the radio. Of course, if you have more than one battery, then the charger can be charging the other one.



### Parts list:

- C-1, C-2, C-3 Electrolytic capacitor, 25 - 60 ufd, 50 volts.
- C-4 .01 ufd, 100 volts
- C-5 .1 ufd, 100 volts
- R-1, R-2, 10K ohm, 1/4 - 1/2 watts, 20% or better
- CR-1, CR-2 Silicone diode, 4002, 4003 (just about anything).



R-3, This is the charging resistor. It should be at least 1 watt and the following values apply for the desired charging current:

100 ma charge	56 ohms
75 ma charge	82 ohms
50 ma charge	120 ohms
25 ma charge	270 ohms
10 ma charge	330 ohms

World Radio News  
de Auto Call

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To avoid smashing your fingers while driving a nail, hold the hammer with both hands.

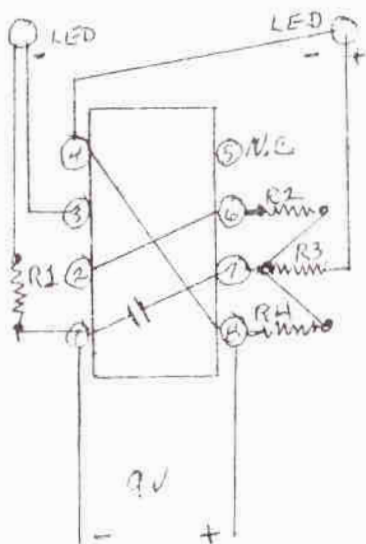
de Auto Call

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## YOU LIGHT UP MY LIFE

From Groundwave  
(Daytona Beach A.R.A.)

Anyone for lighting up your call-letter badge? Here's an inexpensive way to do it. Your total cost for parts, listed in col. 2, is about \$2.00. This unit



is made up and attached to the back of the badge except for the 2 LEDs. Holes for the LEDs are put on the front and soldered to the unit on the back. IC is to be mounted on the back of the badge with pins bent up and used for tie points per schematic. Short battery leads will permit the battery to be put in a shirt pocket or any other convenient location.

### PARTS LIST:

R1 and R3 - 220 ohms

R2 - 470K ohms

R4 - 33K ohms

C-1 - uF

IC - NE 555

9 volt battery.

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We regret to report the death of Dorothy O. Roberts on September 7, 1979. She was the XYL of Silent Key and former Club member KÖKEO, Joe.

\*\*\*\*\*

A football coach accompanied a prospective tackle to the office, where he attempted to get the boy admitted to school without a written examination. The boy, however, could not answer the simplest questions. In desperation, the principal asked, "How much is seven and seven?" "Thirteen," the boy answered. "Aw, let him in anyway," pleaded the coach. "He only missed it by two."

Trestleboard

\*\*\*\*\*

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Jim Wilson, WBØJPN, 6616 N. 46 Ave.,  
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...synthesized, BIG LCD,  
10 memories,  
scanning...and more!

Kenwood TR-2400...It's a synthesized 2 meter hand-held transceiver...the answer to any Amateur's operating requirements its many advanced features include:



### CONVENIENT TOP CONTROLS

- LCD digital readout
- Available in direct-sight (better than LED)
- Available in the dark (with lamp switch)
- Visually no contrast (can't see less than LCD) and display stays on
- Shows receive and transmit frequency and memory channel
- 10 Memories (always retained with battery backup)
- Automatic memory scanning (for busy or open channels)
- Mode switch for the following operations:
  - Simple
  - Standard requires no offsetting the channel frequency
  - 1.600 MHz or 500 kHz
  - Receiver with extended range by offsetting the transmit frequency to any frequency stored in memory (1)
  - REVERSE (receiving on call) (1.5 or 400 kHz) (applicable)
  - Checking signals on the input of a repeater
  - Locking memory to a constant (memory down)
  - Built in Touch-Tone generator (using 16 button keypad)
  - Keyboard selection of 2 kHz channels from 144,000 Hz to 147,999 MHz
  - UP/DOWN manual scanning and operation (from 144,900 to 147,999 MHz in bands of 1 kHz continuous 5 kHz (steps) (with options on MARK-registers, within this range for extra memory 30 for transmit offset frequency)
- LCD "arrow" indicators
  - 170 kHz
  - Memory recall
  - Battery status
  - Lamp switch on
- Two lock switches to prevent accidental frequency change and accidental transmission
- Subtone switch (subtone module not Kenwood supplied)
- BNC antenna connector
- 1.5 watts RF output

The TR-2400 comes with the following standard accessories:

- Flexible rubberized antenna with BNC connector
- Reel battery pack
- Battery charger

Optional accessories include:

- Leather case
- Spare Stand for quick charge and easy base-station operation
- DC (Automobile) quick-charge



ST-1 BASE STAND (OPTIONAL)



Sorry, we did not have the selling price on the TR2400 at the time this went to press. Check with us by phone/letter. First deliveries will be Nov. for those that order early, and we'll have a TERRIFIC INTRODUCTORY PRICE for those that order prior to Nov. 1 - 1979. ASK US!



# Super—Saturday Returns!

SUPER BARGAINS every Saturday. We'll have FANTASTIC SAVINGS on one or more items. But quantities will be limited, so check them out and---save a bundle!

## NEW STORE HOURS NOW!

Wed/Thur/Fri-12/5 ; Sat-9/5 (Closed Sun/Mon/Tues)