



HAM HUM

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



Vol. XXII
No. 5

May 1972

NOTE NEW MEETING PLACE

WHEN: FRIDAY, MAY 12, 1972

TIME: 8:00 P.M.

WHERE: ENGINEERING BUILDING—ROOM 256
UNIVERSITY OF NEBRASKA AT OMAHA
(See article page 12 and map page 14.)

WHAT: PROGRAM BY DELBERT G. GIBSON, KØUIV,
INCLUDING TOUR OF ENGINEERING BUILDING

REFRESHMENTS — EYEBALL QSOs
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: May 19th

APRIL MEETING

By — Bob Andrus, KØLUG

The nice people we have in the Ak-Sar-Ben Radio Club will always amaze me; for instance, the April Club meeting. We found out at the last minute that one of our scheduled speakers, Fred Kujawa, KØETA, was called to a wedding and could not attend. Harold McClenahan, WAØ-DGA, took over the program and gave a most interesting talk. Along with Harold's talk we heard a recording by Fred Kujawa on the old bug — TVI. We all learned something from the talk and tape recording and came away from the meeting a little smarter about what to expect when someone calls on the phone and tells us we sound quite loud on his television, record player, or even an intercom.

For those of you who missed the discussion that followed the talk, the idea is not to antagonize the person or persons who may call you in reference to a TVI complaint. Try to be your own sweet self in explaining the difficulties that can occur when someone down the street is causing a

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. 331
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

lousy TV picture and you, the HAM, is being blamed for anything that might happen.

Thanks to the two on the TVI Committee who came through with a good program!

SILENT KEY

Sumner H. Foster, WØGQ
2110 Goblins Gully Drive, S. E.
Cedar Rapids, Iowa 52403

March 23, 1972

FIELD DAY SITE NEWS

New arrival at the farm of Norval and Connie Bowen — a brand new quarter horse filly.

The site of the 20-meter tent proved so good last year that Connie and Norval have now dug the hole and are putting in the footings for their new home at that point. Wonder if they found the ground rod we lost last year!

(Editor's Note: It will be quite some while before some of our members can join the Old Old Timers Club. However, we hope they are interested in the early days of the hobby amateur. We are reprinting in two installments an article from SPARK-GAP TIMES, the official publication of the Old Old Timers Club, Inc. Henry's call is W2UV.)

HENRY L. THOLSTRUP'S HISTORY OF EARLY EXPERIENCES IN WIRELESS AND RADIO

PART ONE

I was born in 1901 in the small town of Northfield, Minnesota (pop. approx. 3000) and by the time I was 9 or 10 years old my interest in electricity was very active, and by that time there were two Auto garages, a local Telephone Company and a Junk yard, that I could get stuff from that they had discarded, such as old pieces of cable, relays, burned out condensers, terminals, weak drycells, weak or burnt out spark coils and from the scrap dealers yard I found electric motor field coils that had lots of large size wire. By putting them in the coal furnace I was able to burn off the insulation, and by unwinding and rubbing with old sandpaper I got some nice bright wire about 12 ga. that made a very nice Antenna. From the local Photographer I was able to get some old photographic plates that I soaked in water and scraped off the emulsion and got some high quality glass to make up my high voltage condensers as I had no way to get Variable tuning condensers then,

anyway, I couldn't afford them. My biggest expense was a pair of head phones (Brandies? I believe).

In the town of Northfield, Minn. there are two colleges, St. Olaf and Carlton and at Carlton College was an Observatory that cooperated with the Bu Stds? or Naval Time system whichever was operating at that time. They had a wireless receiver there to receive NAA time signals, to check with the Astronomical Observations via their Telescope. Now it so happened that my Father was a General Contractor and had installed the Telescope mountings, and the receiving Antenna towers about this same time (1910 or so). This further stimulated my interest and with his help I soon had a nice Flat top Ant. It was 150 ft. (4 wire) long and supported on masts on our buildings to give about 35 ft. high at center where the lead came down to my small Wireless shack. My father's work at the college got me acquainted with the Prof. F. Exner of Chemistry, who supplied me with the Galena Crystals and the Silicon Crystals. While Dr. Gingrich showed me the receiving equipment that they used for the reception of NAA.

I wound my Loading Coils and Loose Couplers on "Quaker Oat" boxes. The Tuning condensers were of Tin Foil taken from the Telephone Exchange condensers cemented onto glass plates obtained from the local Photographer, after the emulsion was soaked off and dried. The plates were moved for tuning. The Galena Crystal was wire held to one binding post and the 'cat whisker' held in another post to make contact with the crystal. Some time later I was able to get one

of Hugo Gernsbach's Molded Mud Crystal detectors for a dime. But it did work better and was more stable than the binding post holder.

Now, my knowledge of all this business was not of the best, but I did look at a lot of pictures and read stuff that I did not understand, in the Electro-Importing Co. catalog as well as the Murdock and Wm. B. Duck catalogs that I had sent for and tried to duplicate from the pictures etc. I also had a couple copies of the Electrical Experimenter of Gernsbach. I then took my gadgets over to the local college professor from whom I was able to ask questions and also get some needed information and suggestions. (This was pretty good bus. for a kid of 11 yrs. or so). At Carlton College was a student named Grant Minor who did have a Spark Xmtr working and set up in one of the Physics Lab rooms. It was open core tranf. ($\frac{1}{2}$ KW) with a fixed spark gap, the capacitor was fixed and the tuning was done by moving the clips on the tank coil. The antenna was directly connected to the tank coil and a local ground was used. When Mr. Minor graduated from Carlton he sold the transmitter to my friend Robert Ramage, who lived several blocks away from where I lived. We worked each other for some time after that with my Xmtr being only the lowly Ford spark coil, which got its energy from dry cells that I had scrounged from the local garages and by connecting them in series and parallel I was able to get a good sized spark, such as $\frac{3}{8}$ th inch no load and when the ant. was connected it was $\frac{1}{8}$ th inch or less. I used Brass screws for spark gap at first and later I got some zinc rods for the

fixed spark gap but it did not seem to improve the operation any.

In Northfield, near St. Olaf College was another Wireless set which was owned by Arnold Flatten (son of a St. Olaf prof.). I never saw his transmitter or receiver but did study how his antenna was made up and how he grounded it and the lightning protection which was much needed in that part of the country as there were many bad electrical storms in the summer. My antenna seemed to work very well. The one inch bladed S.P.D.T. switch mounted on a slate base was used to ground the antenna to the water pipe to the rain water cistern and also the iron vent pipe on the septic tank when the set was not in operation. The same grounds were used for the Xmtr. Robert Ramage and I learned the code by sending to each other with a buzzer and straight key. I also listened to NAA transmissions. They sent messages and news at certain times of the day.

Some time later, I believe in 1913, I obtained a LeClanche Battery Jar from one of the garages and I made an electrolytic interrupter in it, and I was able to operate the Ford spark coil directly off the 110 volt AC that had just become available in our neighborhood. We apparently got out further with our signals than we were aware of, because one day in 1914 a naval officer came to our town and took the pertinent parts of my transmitter apart, put them in a brown canvas bag and put a seal on it which said, Tag and Seal is Official and the warning is, Do not remove the contents of this bag under the penalty of imprisonment and/or fine of \$10,000 SO, that ended my Spark

Wireless Days, and I did not have a license either so I turned to experimenting with 'Tesla Coils' and other electrical devices, as I was very much interested in anything electrical.

In 1921 I went to Milwaukee, Wisc. to attend the Milwaukee School of Elec. Eng. At the school they had a nice rotary spark gap transmitter. It was located on the fourth floor of the school building in downtown Milwaukee, and I remember copying the spark gap noise down on the street below and at times a couple blocks away. I could not operate their station as I was not one of their advanced students (3rd or 4th year). I don't recall their call letters.

In 1922, I became acquainted with two other students at the school that were also interested in wireless, Mr. Harold Boyce and Ivan Bullock (now WOQE). Mr. Boyce had been in the Signal Corps in WWI and had some know-how as well as some parts to start with, such as VTIs, tuning condensers, etc. From these we built up a Hartley type of oscillator. The power supply for the plate was made up of three groups of small flashlight batteries, each group provided 90 volts. And since the electrical system in Milwaukee at that time was 110 volts DC it means that the three sets were in series for the oscillator and when they became weak we put them in parallel and recharged them again, and then back in business. With the 270 volts on the VT1 Plate made it cillate very well. We used a small flashlight bulb soldered to a single turn wire loop and by holding it near the oscillator we could determine the degree of oscillation. We took the microphone off from the telephone

that was in the hallway of the rooming house in which we stayed and we found that by putting a single turn or two across it and holding it near the tank coil and held the light loop there also we could see the light intensity vary as we talked into the microphone. Thus we had modulation by absorption.

Now one of us had a room a couple blocks away, and it was visable from the room where we had the oscillator setup, i.e. transmitter. So when the transmitter was powered up we had a receiver tuned to the same frequency at the other room and we gave visual signals back to the transmitter room, so we were sure we were actually getting modulated signals out from our little rig. Thus we knew it was going out into space but not how far. We did calculate that we were below 200 meters. We did find out a couple of weeks later after first trials and some subsequent ones when we got a phone call later that day from the Coast Guard Operator, had been on a boat about 30 miles up the Lake Michigan from Milwaukee and had heard us and said our signals were quite strong. He located us by our conversation on the air, as we did give that just in case someone else should happen to hear us, we did ask for acknowledgement at intervals. Since we did not have a license we stopped any further experiments with the rig as we did not want to create any interference with anyone elses operation, should we be on their frequency.

(To be Continued)

the series of C4, C5 and C6 provides a band spread of just under 200 KHz. Since the basic frequency is multiplied by 12 the tuning range of the receiver is about 2 MHz. With C2 you can shift crystals to cover any 2 MHz segment from 144 to 148 MHz.

This same arrangement will work on GE Progress Line receivers using crystals in the neighborhood of 12 MHz. Simply use a somewhat smaller value on C3. I haven't tried this circuit on a Motorola receiver but with smaller values for L1 and C3 there should be no trouble hitting the 27 to 28 MHz frequency. However, since the multiplier factor is only 5, C1 should have about 3 rotor and 4 stator plates. As an alternative you might try boosting the VFO supply voltage to about 18 VDC. This will increase the output to about 3.5 RMS and you should be able to set the VFO frequency at 13.5 to 14 MHz and use the second harmonic for the multiplier stages.

Some suggestions and a word of caution. It is best to use a vernier dial for the tuning capacitor. A planetary type with a 5 or 6 to 1 ratio is OK and one of the Calrad VD 36 dials should work very well. The VFO should be well shielded. Mine is in a homebrew completely enclosed "minibox." The negative 13 volt supply line is common to the VFO case and the receiver chassis. Do not use coax line to pipe the VFO output to the crystal oscillator tube. Open line is best. Finally, the supply voltage must be stable. The circuit is not critical as to the AMOUNT of supply voltage just as long as the supply doesn't vary. The VFO can be left "on" even while transmitting.

I think you can have some fun with this circuit, but if you run into any problems give me a call on the repeater. I usually monitor most of the day.

Good luck,
C. E. Schurman, KØKQE
431 West 19th Street
Fremont, Nebraska 68025

MAY MEETING

By—Bob Andrus, KØLUG

The next meeting on Friday, May 12th, will be of interest to one and all. We will meet at the University of Nebraska at Omaha — Engineering Building, Room 256 (see map on page 14 for exact location and directions for parking). As there are no evening classes at UNO on Friday, adequate parking space will be available.

Delbert G. Gibson, KØUIV, will be in charge of the program. Del, as his friends call him, will conduct a tour of the Engineering Building with the help of his associates. He mentioned that we can expect to see some of the developments and improvements in the Engineering Department at UNO. Guests will be welcome at this meeting, particularly high school students who may be interested in having questions answered concerning an engineering education.

The meeting will be followed by the usual refreshments and eyeball QSOs.

Map of location of Field Day site appears in center of Ham Hum.

1972 CODE AND THEORY CLASSES

By—Bob Lockwood, WAØDHU

The 1972 Ak-Sar-Ben Radio Club code and theory classes have been concluded with a smashing success record. At the last count, 25 students have passed the novice code test and are anxiously awaiting the theory exam. List will be published in next issue.

The advanced code and theory class numbered 34 at the beginning session in January. At the final class in April, there were 21 in attendance. Those completing the course are:

Ed Askew	Al Dias	Peter Mahowald
Marge Askew	Jeff Dixon	Mike McAllister
Connie Bowen	Clark Elliott	Frank McGlone
Gary Bowman	Ruth Fleming	Milo Nechvatal
Jess Chance	Doug Hanson	Don Pettingil
Maxine Chance	Charles Kelly	Pat Scolla
Dave Carrick	Osman Ladue	Doug Summerfield

Not all of the above took the FCC exam on April 13th for various reasons, but the following are known to have passed:

<u>Novice</u>	<u>General</u>	<u>Advanced</u>
Curt Armstrong	Doug Hanson	Dave Carrick
Doug Summerfield	Milo Nechvatal	Peter Mahowald
	Don Pettingil	

Most of those who did not feel that they were ready to take the test at this time plan to do so in July. I am sure that there will be others who will pass later.

As seen here, this year's record is much better than that of the last two years combined. The success of the classes this year was the result of people working together. A hardy "thank you" to all of them.

We express our appreciation to Hugh Tinley, KØGHK, for the overwhelming publicity the classes received. Without this publicity, many people would not have been reached. We express our gratitude to the management of the Red Cross for allowing us to hold our classes at the Chapter House. We thank Father Haller, WØGPT, at Creighton Prep and Gordy Wilson, WAØUBQ, for use of instructograph machines for teaching code; World Insurance Company for use of the chairs; and the staff of instructors for a job well done. Included as instructors were: WØODL, Jack Prall; WBØBMV, Mike Wilczynski; WBØCLU, Jim Garr; KØDKM, Lloyd McElhaney; KØUIV, Del Gibson; WBØDRT, Ron Fulkerson; WBØAJI, Brian Zdan; WAØWOT, Ray Kydney; WAØWRI, Joe Eisenberg; WAØDHU, Bob Lockwood; also WØRMB, Cecil DeWitt and WAØZPW, Bob Serlet and others who helped set up demonstrations for the classes.

We also thank the Board of Directors of the Ak-Sar-Ben Radio Club and the general membership for the support they gave to this project. This is truly a Club project involving many and without the support of all, the 1972 classes could not have existed.

Those who deserve the most credit for the success of the classes are the students who worked so hard to achieve their goals. It was a real privilege to work with these people and we wish them much success....success they so richly deserve. Instructor Jack, WAØDL, says, "Without exception they were fine dedicated students and those of us on the staff thoroughly enjoyed our association with them."

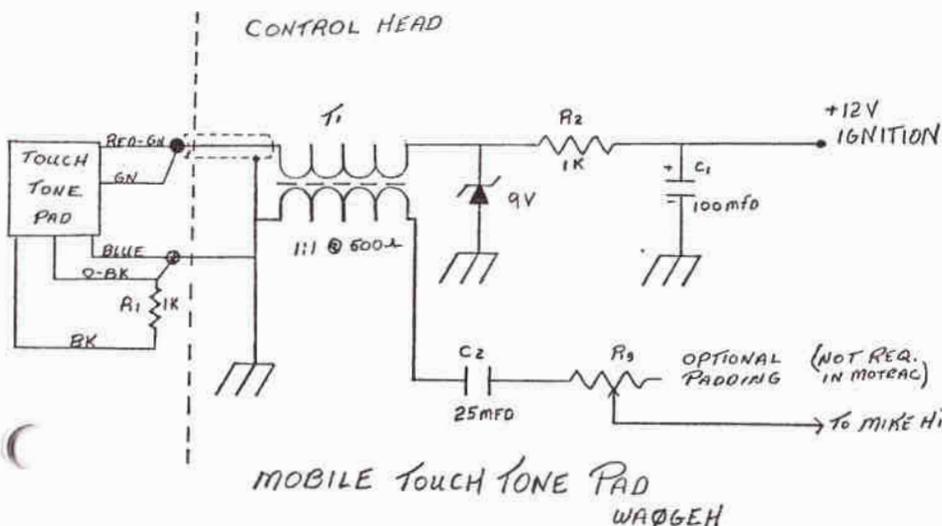
Yes, the 1972 Code and Theory Classes go down in the records as a record of which we can be proud. It is projects like this which have made our Club what it is today. Our sincere thanks to all who contributed to a job well done!

MOBILE TOUCH TONE PAD

There are many uses for touch tone pads in mobile applications. However, there are as many problems, such as, varying voltages, alternator noise, low deviation and poor tones. This circuit was designed with the help of Frank Taylor, WØGOJ, and we would like to make it available to other amateurs.

The pad should have 9 volts across it which is accomplished by filtering (hash) through a 100 mfd capacitor and a 1K resistor to a 9 volt Zener. The Zener will drop voltage spikes and maintain 9 volts in a system which varies from 10 to 14 volts. Audio from the pad rides the DC component and is transferred to the secondary of the 1:1 transformer. In our use a 25 mfd capacitor isolated the mike DC and passed the audio to mike high. This circuit will deviate a Motrac at 5 Kc with no clipping. However, optional padding may be required for other applications.

Marty Griffin, WAØGEH



TR-22 REMEDY

By—Dale Diamond, WBØGXJ
5607 Williams Street
Omaha, Nebraska 68106

I noticed at the last meeting that several members encountered the same problem that I did, that is, a broken TR-22 antenna. Del, KØUIV, and John, WBØGDE, provided me with the necessary materials to replace my broken whip.

The TR-22 antenna may be removed by simply unscrewing it. It is mounted above the receiver board (speaker side up).

A banana jack fits nicely into the antenna hole just above the volume control on the TR-22. Take about 6 inches of RG 174/U coax and run it from the banana jack back to the accessory antenna jack on the back of the TR-22. The Nicad batteries have to be removed to do this.

The whip is made using a banana plug and a piece of "piano wire." This can be obtained at hobby stores very cheap, cut it to 17-5/8 inches long. Simply solder it into the banana plug, put a piece of tape at the top for safety, and you will have an exact replica of GXJ's "piano wire whip." (Hi, Hi)

P.S. Plug it into the banana jack before transmitting! Hi, Hi!

FOR SALE

Motorola 2 meter FM, mobile, mike, antenna, Galaxy station control, patch, bridge, clock, etc.

Bob Miller, KØZLY

Phone: 556-3478

MEETING PLACE

Since the attendance at Ak-Sar-Ben Radio Club meetings has grown, over the months we have found ourselves more and more crowded at the Red Cross Chapter House. Your Board of Trustees has been concerned about this matter for some time and has studied several other possible meeting places in an effort to arrive at a solution to the problem.

At the last Board meeting it was decided the best meeting place for our members would be the Engineering Building, University of Nebraska at Omaha, where we can have access to a room capable of seating 150 people. Also, if we outgrow that room, there is one next door to it that will seat 200. So, beginning May 12, 1972 the monthly meetings of the Ak-Sar-Ben Radio Club, Inc. will be held at this new location.

We have been most appreciative over these past years in being able to hold our Club meetings at the Red Cross Chapter House. Even though it was found necessary to move our meetings elsewhere because of our size, the Board has a great desire to continue to be of whatever assistance is possible to the Red Cross.

We shall continue to send notice of monthly meetings of the Radio Club; however, if out of habit you show up at the Red Cross Chapter House on a Club meeting night, proceed from there directly to the University of Nebraska at Omaha — Engineering Building, Room 256.

FOR SALE

EICO 720 Novice Transmitter with Crystals. \$40.00. Factory wired.

Craig A. Loseke, WAØYGS
3212 California Street
Omaha, Nebraska 68131
Phone: 341-3800

FOR SALE

Johnson Valiant TX in mint condx. with manual. 275 W. CW. Reasonable.

Leo J. Faulk
3077 South 43rd Street
Omaha, Nebraska 68105
Phone: 551-5516

FOR SALE

Almost complete set of QST's from August 1940 thru 1971. Will sell for best offer. Bonus feature - several years of CQ's. Pick them up from WØLJO, Cy Wolfe, 1606 West 6th, Hastings, Nebraska 68901.

FOR SALE OR TRADE

Central Electronics Model 10A Multi-phase Exciter; BC 458 VFO; 811 Amplifier and P.S. - \$75.00. Sell or trade as unit only.

Fred Fischer, WØEGP
Phone: 391-4193

FOR SALE

Hallicrafters SX-99 receiver . . . \$90.00
Hallicrafters HA-5 VFO . . . \$40.00
All in good condition.

Call 731-4482
Jerry Coufal, WBØDEK
5327 "R" St., Omaha

FOR SALE

Hornet Triband beam
Hy-Gain 18 AVQ all band vertical
Heath phone patch
Heath balun - Bal to unbal line.
Henry Velte, WØABI
Phone: 455-9952
2242 Fort Street
Omaha, Nebraska 68110

NEEDED FOR REPEATER SYSTEM

The Repeater Committee is still in need of some various kinds of tubes for use in the Club's repeater system. Most urgently required are type 6J4's which are used in the 450 Mhz links. Also, we can still use 6AK5, 6BH6, 6BJ6, 12AT7 and others. If any question, contact Chairman Jim Droege, WØYCP, either on the air or phone 322-6272 (Council Bluffs) or me at 556-1538 or 541-4460.

John Snyder, WØWRT

NEW MEMBER BOARD OF TRUSTEES

Raymond F. Kydney, WAØWOT, has resigned as a member of the Board of Trustees due to the press of his business, particularly the fact he finds it necessary to work during the time of our normal Club meeting as well as Board meeting.

The Board has selected Delbert G. Gibson, KØUIV, as a replacement to fill the unexpired term of WAØWOT. He will be presented for approval of the membership at the May meeting.

Our thanks to Ray for the service he has given as a Board member and for his continuing interest in the Club.

NO
LEFT
TURN

64th St.

DODGE ST.

Right Turn
Into Parking

PARK
HERE

ENTER
DOOR
WEST SIDE
GO TO 2nd FLOOR
ROOM 256

FIELD
HOUSE

ENGINEERING
BUILDING
(By TV Tower)

UNO
CAMPUS

ELMWOOD
PARK

ROAD OFF PACIFIC
(Southwest corner of Park)

60th St.

57th St.

LEAVENWORTH ST.

← LEFT TURN LANE

DODGE ST.

FARNAM ST.

HAPPY HOLLOW BLVD

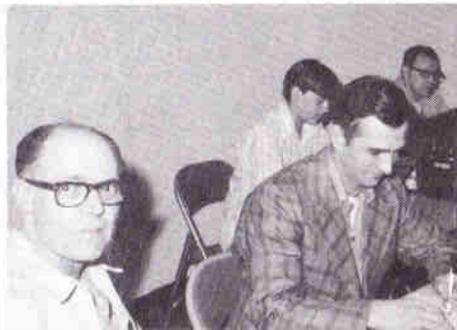
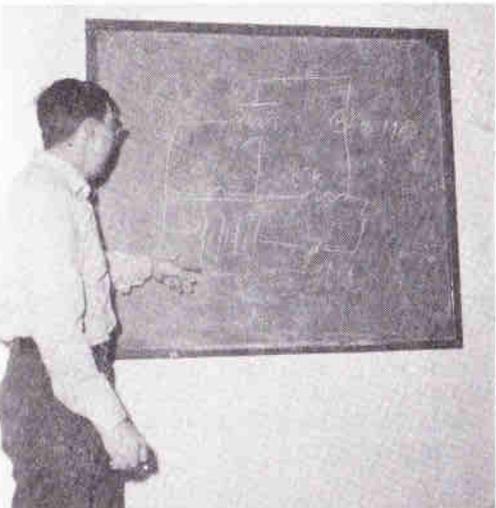
HAPPY HOLLOW BLVD

HAPPY HOLLOW
BLVD

N

— FROM INTERSTATE 80 TAKE 60th STREET EXIT — NORTH —

1972
CODE AND
THEORY
CLASSES



Tower Time In HAM-HUM Land Save With A "SPIRE" Package in MAY

Use
Your . . .

 master charge
THE INTERBANK CARD

 BANKAMERICARD
Exclusive Use

GREAT DX ANTENNA & BEAM SYSTEMS

Popular Packages with CASH-DISCOUNTS

These packages have been selected as optimum value and as a guide for your selection. Years of dependable performance in the field has proven the value of these selections. It's performance that counts!

These packages show the regular price for each package. . . and you can use MASTERCARGE or BANK-AMERICARD to buy these packages at the regular prices stated.

You can get a BIG CASH DISCOUNT & SAVINGS on each package too. . . send full payment with your order. It's like money in the bank, at twice the usual interest it draws there. All shipments go TRUCK COLLECT with two exceptions. If you live in the metropolitan N.Y.-N.J. area it is usually necessary to ship prepaid. If we can ship via I.P.S. (all Iowa & some surrounding states in part) this must always be prepaid. In either case you MUST include money for prepayment. (Check local trucker for quote as if shipping like items & weight to us & include "ADEQUATE" remittance to cover. Any excess refunded).

ALL TOWERS HERE ARE
RIGID MOUNTING.

32 Ft.

EACH PACKAGE CONTAINS
100 FT. CORRECT ROTOR
CABLE & MAST, AS WELL AS
SPECIFIED TOWER-BEAM-
ROTOR. (XX)

40 Ft.

48 Ft.

56 Ft.

HY-GAIN TH6DXX & HAM-M (XX)	HY-GAIN TH3MK3 & TR44 (XX)	HY-GAIN TH3-JR & AR22R (XX)
Pkg. C-SP032 Reg. \$404.06 CASH \$364.95	Pkg. C-SP037 Reg. \$308.11 CASH \$279.95	Pkg. CC-SP1 Reg. \$224.35 CASH \$199.95
Pkg. C-SP033 Reg. \$429.06 CASH \$384.95	Pkg. CC-SP2 Reg. \$333.11 CASH \$299.95	Pkg. C-SP049 Reg. \$249.35 CASH \$224.95
Pkg. CC-SP3 Reg. \$469.06 CASH \$419.95	Pkg. C-SP039 Reg. \$373.11 CASH \$334.95	Pkg. C-SP053 Reg. \$289.95 CASH \$259.95
Pkg. CCN-096 Reg. \$514.06 CASH \$459.95 (Guyed Only)	Pkg. CCN-SP99 Reg. \$418.11 CASH \$374.95 (Guyed Only)	Pkg. C-SP210 Reg. \$334.95. CASH \$299.95

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