



HAM HUM

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



Vol. XXVII
No. 4

April 1977

REGULAR MEETING

of Ak-Sar-Ben Amateur Radio Club, Inc.

WHEN: FRIDAY, April 15, 1977
TIME: 7:30 P.M.
WHERE: 911 COMMUNICATIONS CENTER
15th and Harney Streets, Omaha, Nebraska

Emergency calls are directed to the 911 Center here in the City of Omaha. That is the location of our April 15th meeting at 7:30 P.M., 15th and Harney Streets.

The communications dispatch center will be open to our members and visitors when you identify yourself and guests as members of the Club before passing through the security doors on the main floor. We will gather on the 5th level and hold our business meeting. Then small groups will be given the tour.

Coffee will be Dutch treat at nearby machines and eyeball QSOs will abound while others are on their tour.

* * *

ANNUAL AUCTION

of Ak-Sar-Ben Amateur Radio Club, Inc.

WHEN: SUNDAY, April 17, 1977
TIME: 11:00 A.M. (See details page 4 this issue.)
WHERE: HOLIDAY INN
72nd and Grover Streets, Omaha, Nebraska

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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Regular member and XYL	9.00
Student member	3.50

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Deadline for May issue is April 22nd

New member initiation fee	\$1.00
Quarterly for balance of year:	
Regular member	\$2.00
Regular member and XYL	2.45
Student member	1.00

THE PREZ SEZ

Well, we did it again — SRO at the March meeting. The program was very interesting and kudos are in order to Mr. Jim Zoller of the National Weather Service and to Major Don Bahr, Capt. Rick Hiembaugh and Sgt. Peterson for the valuable information we received from them to help us in the upcoming severe weather season. I am sure that all of us will be a credit to our hobby and the citizens of our area when called upon to be spotters, so let us all think again about what we were taught about spotting.

As we look to the future events of the Club, we find that some work must be done on the antennas and the trailer, so if you are so moved, please contact Lloyd, KØDKM, and he will be glad to hear from you. I think he can find a little bit for all to do. Hi!!

Let us not forget about the trip to the Grand Island FCC Station. This will be a good one for all of us. Watch the Ham Hum for details.

Kudos also for Ed, WBØBCB, and Kevin, WAØYCC, for a fine job on getting together information and the patches for jackets. So be sure to use the handy order form in this issue of Ham Hum and be one of the first to sport around in our new colors.

Once again our code and theory classes are drawing to a close and it looks like we will have to have at least one more session of classes again this year. This means that we need instructors for both CW and theory, so how about it fellows? Remember, some one some time had to take the time to help you. So give Bob, WAØDHU, a call and offer a hand to help out.

TNX and CU at the 911 Center this month.

Bob, WBØLYU
 * * *

Spring has sprung, the grass has riz. It's now time to give those antennas the biz.

BOARD OF TRUSTEES MEETING—15 MARCH 1977

The Board received a report from WBØDXA, Chairman-Auction Committee, that eleventh hour negotiations with the Holiday Inn by WBØBCB, had resulted in a reversal of their rental fee for the exhibition hall. Mike stated that the originally scheduled date of April 17th was available and a written contract was in hand that stated a rental fee of \$100. A motion by KØPQR, and second by WBØMSN, to accept the Holiday Inn site was unanimously carried, and the Board instructed WBØDXA to sign the contract immediately. Details of the Auction will appear elsewhere in this issue. WBØDXA also reported that member WAØGEH had donated one of the small 12 volt TV sets for the purpose of helping defray the cost of the Auction site rental fee. The Board agreed to raffle the TV at the Auction and set the price of the tickets at 50¢. As WAØGEH was absent from this Board meeting, the Board wishes to take this opportunity to thank Marty for his generosity.

Club members who attended the March meeting were informed by an announcement from WBØCMC, that a possible transmitter site for the 34-94 machine had been offered by WOWT television. A spot on their downtown TV tower at approximately the 430 foot level was being offered to the Club, along with space inside their building for our equipment. The offer was made on a Lease basis for \$1.00 per year. The offer came through Wayne Goetz, WBØHEU, who just happens to be the Chief Engineer for

WOWT. Thank you, Wayne. President Conley reported to the Board that in order to accept this offer, a Lease agreement would have to be signed and called to the attention of the Board a few problems with the lease, mainly insurance coverage, and as information was not available, the subject was tabled until the next Board meeting at which time full information would be available regarding cost of insurance, etc.

The Board then took up the subject of the jackets that were shown to the membership by WBØBCB at the March meeting. The Board reached a consensus to accept the nylon jacket. The Board agreed that the front of all jackets will be the same, with a Club emblem, operator's call letters, and name. Club name lettering across the back of the jacket will be optional. A motion was made by WBØLYU, and seconded by WBØCMC, to authorize WBØBCB to order a loom for the Club emblem and a minimum order of emblems to be made at a cost not to exceed \$400.00 The motion was passed unanimously. Full details on the jacket prices and an order form will appear in this issue.

The Treasurer's report for the month ending Feb. 28 was read by WBØJPN. A motion and second to accept the report as read was unanimously carried. A motion and second to adjourn the meeting was carried at 2150.

Tom Thiessen, KØPQR
Club Secretary

GOOD NEWS

The Holiday Inn at 72nd and Grover has agreed to rent the Exhibition Hall at a greatly reduced rate. This means the auction will be held on Sunday, April 17th. Check-ins will start at 9:00 a.m. and the auction at 11:00 a.m. In an effort to make a better auction, the Board has approved the following set of rules. These rules should help eliminate problems we have had in previous years and hopefully speed up the process of sales.

Please read the rules carefully and understand them. The auction will run according to them without exception. Many of the rules have been in effect over the years but we are giving them to you one more time. Of special interest to you will be the new minimum offer. Twenty-five cent items take just as long to sell as twenty-five dollar items, so for that reason we set a \$2.50 minimum. Please group your equipment so it is worth that or more. If you don't, you will end up taking it back home because no item will be auctioned for less than \$2.50.

Sellers please read the buy-back rules; there is no such thing as "no sale."

We will also have a raffle for a 5-inch black and white Sony 12 volt Television, donated by Marty Griffin, WAØGEH. Tickets will be available for a fifty cent donation. The drawing will be held at 2:00 p.m., April 17th, during the auction. You must be present to win. We will draw until a winner is announced.

Again read the rules and see you in

the Exhibition Hall at the Holiday Inn on April 17th.

Mike McAllister, WBØDXA

* * *

GENERAL RULES:

1. Check-in of equipment and buyer registration will start promptly at 9:00 a.m. the day of the auction. No equipment will be allowed in the sale area prior to 9:00 a.m.
2. The auction will start promptly at 11:00 a.m. and will continue until the last item is sold or until called off by the combined ruling of the President of AK-SAR-BEN Amateur Radio Club, Inc. and the Auction Chairman.
3. All items will be auctioned off and sold to the highest bidder.
4. All items will be auctioned off in numerical order according to check-in order without exception.
5. In financial matters, the ruling of the Treasurer will be final. His record of sales will be considered true and final.
6. The AK-SAR-BEN Amateur Radio Club, Inc. and the Auction Committee are not responsible for any loss or damage to items held for sale.
7. There will be a minimum bid of \$2.50 on any item for sale. Any item not meeting this bid will be passed off the sales block and returned to the seller.
8. Sellers may not be paid for items until they are paid for by the buyer.

9. Once an item has been registered, it may not be sold by any other means than through the auctioneer.

BUYER RULES

1. All persons must register and receive a "Buyer Card and Number" prior to bidding on any item.
2. All items will be paid for immediately after the buyer receives his card with the item number and amount of sale.
3. The Treasurer must mark this card PAID before the buyer may take possession of the equipment.
4. The high bidder must show his "Buyer Card" to make the sale official.

SELLER RULES

1. All items must be registered in advance and will be auctioned off in order of check-in.
2. A commission of 10% (ten percent) will be charged on the first two hundred dollars of any single sale. Any sale over \$200.00 will be charged a maximum of \$20.00.
3. All items will have a minimum bid of \$2.50. If the item is not worth more, put it with something that is!! No other minimum bids will be allowed.
4. In order to buy back an item, the seller must be the high bidder. Terms such as "No Sale" will not be allowed under any condition. A fee of \$1.00 will be charged the seller for all "Buy Backs."

YOU CAN'T GET LOST

Those members who are interested in taking the tour to the F.C.C. Grand Island Monitoring Station should bring checks to the 911 Communication Center meeting.

Checks should be made out to the Club and Jim, WBØJPN, our treasurer, will hold them. The amount of the check should be \$10.00. These checks will go towards chartering an over-the-road bus on Sunday, June 5, 1977. If not enough people are paid up for the trip, checks will be returned as soon as possible.

Please bring your checks so the bus can be chartered during the month of April. It looks like a fun trip as we leave the driving to them. You will see a real antenna farm and many receivers. The farm consists of several Rhombics, a Beveridge, a Conical Monopole, etc. They have Collins gear, Rayco, CEI receivers covering not only our bands but business and citizens through the microwave area.

Take time from your busy schedule and take advantage of our proximity to the monitoring station. It's not every day that you get a full guided tour of this facility, geared to amateur minds.

de WBØQGV

SILENT KEY

We have just learned that Paul G. Taylor, KØBSV, passed away 4 February 1977 from a heart attack.

Our sympathy goes to his wife, Lucille, and to sons Glen and Mark. Mark plans to get his license so as to carry on the ham tradition in the family.

LADIES ONLY

First I want to thank all of you fine gals for the many cards and phone calls relating to my new column; also double thanks to the OM members who also took their time to offer words of encouragement. Sure makes me feel good to have such fine backing. It was great to receive the many good ideas to work on. KEEP THE LETTERS AND CARDS COMING GALS! Almost nicer than receiving DX QSL's - Hi Hi.

NOW FOR FIRST TUNE-UP! Most want to know how to get started, so here are some ideas; all workable and good. One sure way is to spend more time in the OM SHACK, thus building up an interest in two-way communications - familiarizing oneself with proper procedures and protocols in this enjoyable pastime. Even a turn or two at the microphone is thrilling and this is PERMISSIBLE under the FCC Rules as long as a CONTROL OPERATOR is present. It is fun and exciting also to talk to other YL's and XYL's of the families that your OM has contacted. In many cases this develops into lifelong friendships and contacts.

For myself, I got started by listening to the OM on code and thought it was so fascinating and intriguing - it aroused my curiosity and I wanted to learn code with really no thought of going into radio at that time. As I progressed in learning code, via the tapes at 5 and 7½ words per minute, which are available at a nominal fee, and also listened to W1AW daily at 8:00 A.M. on either 14.08 or 21.08, approximate frequencies (full schedule in QST Magazine), I

KNEW I WAS HOOKED!! Many, many owe their start to the fine classes held and promoted by our fine AK-SAR-BEN AMATEUR RADIO CLUB, INC. This course covers BEGINNERS CODE AND BEGINNERS THEORY and runs approximately 14 weeks, which at its conclusion will qualify you after passing a simple five words per minute Code Speed test and 20 questions on Theory for beginners. These sessions are now being held three times throughout the year. This is definitely the "WAY TO GO" because we are double blessed to have the World's BEST Instructors teaching these classes; energetic and capable individuals, such as, BOB, WAØDHU; HILTON, WBØHPP; LLOYD, KØDKM; BOB, WBØLYU; CHUCK, KØKKL; and CHARLIE, WØQQN. These are just a few that cross my mind at this time.

The BUDDY SYSTEM is another excellent way to get started and this is putting your trust and fate in the hands of a licensed operator who will spend so many hours a week helping you on your theory and your code. Some prefer this method over schoolroom instruction because of the fact that it is relaxed and intimate. Our CLUB has a list of VOLUNTEERS who stand ready, willing and able to give you that start towards a lifetime career in AMATEUR RADIO. Contact me for any further information relative to the above program

Gals, as a rule, Dear Old Hub does not always make a good instructor - Bless His Heart! This can stem from the fact that we are so good in so many fields of endeavor (other than radio) that they feel we should

conquer overnight! Patience runs thin when this does not materialize – same holds true on learning how to drive a car – my Great Grandmother advised me to learn this field of endeavor from **FIRST TOTAL STRANGER!** This might be a problem, but feel free to take whatever advantage is offered you – the main thing is **GET STARTED!!**

AMATEUR RADIO is enjoyable and exciting! **AMATEUR RADIO** is easy to learn! **AMATEUR RADIO** is beneficial and educational! **AMATEUR RADIO** is a public service, a stalwart of Civil Defense and the backbone of our Country's Communication System – to say nothing of the infinite benefits derived from just plain Gal to Gal ragchewing and resulting friendships!

88's,
IRENE, WBØMPC

ADDITIONS TO ROSTER

Bacon, Earl K. WBØWYA
4971 Magnolia Street
Omaha, Nebraska 68137
Phone: 895-2176

Fleming, Alan Lee WØBNY
1169 South Street
Blair, Nebraska 68008
Phone: (402) 426-2380

Lancaster, Richard K. WCØADF
208 Highland Drive
Council Bluffs, Iowa 51501
Phone: 328-8351

Lee, Dorian F. WBØYQZ
5718 North 50th Street
Omaha, Nebraska 68104
Phone: 451-0241
April 1977

Mahon, Arthur R. WBØMUL
3211 Golden Blvd.
Omaha, Nebraska 68123
Phone: 291-0143

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1234 South 16th Street
Blair Nebraska 68008
Phone: (402) 426-3570

Masin, John L. WBØZRY
1303 Lorraine Avenue
Bellevue, Nebraska 68005
Phone: 292-2496

Mrsny, Richard L. WAØFTH
703 Waterloo Drive
Waterloo, Nebraska 68069
Phone: 779-4737

Rodgers, Alma E.
(XYL of WØQQN)
8003 Farnam Drive
Omaha, Nebraska 68144
Phone: 391-6742

Smith, Mary A.
(XYL of WA6GKH)
Route #3, Box S-43
Sands Trailer Park
Omaha, Nebraska 68123
Phone: 3043

AIR FORCE MARS MEETING

A general meeting for Nebraska A.F. MARS members was held on 18 March in the VIP room, NCO Club, Offutt AFB. Over 25 MARS members were in attendance at this event conducted by the State MARS Director, Zellen H. (Pete) Gunn.

Items of discussion included the recent relocation of the VHF MARS

Repeater to Offutt AFB. The antennas are located atop Building 305 (Base Gym) and utilize some of the existing MARS antenna structure. Also discussed were proposed operations involving linking this repeater to the one located at Beaver Crossing, equipment requests, and participation requirements.

Guests included the Base MARS coordinator, Capt. Vicki Robertson, from Offutt and past and present Iowa State MARS Directors. Next meeting will be a Dinner/Meeting event held sometime in middle May in the Omaha area.

Kevin J. Clatanoff, AFBØYCC

STUDENTS AT THE MIKE

Three novice instructors and three of their students checked into the Eastern Nebraska Ten Meter Net on March 7th from Creighton Prep. The class listened as they learned about nets and their operation.

A Larsen mobile antenna was used, mounted on a metal table in the classroom. The TS-520 was tuned to 28.8 MHz at 8:30 p.m. local time on that Monday evening. Students discovered how quiet 10 meters can be as good communication was maintained throughout the net.

Russ, WAØVEE, was net control and cordially invited the prospective novices to join the evening activities. Anyone who has forgotten or was unaware of this regular Monday evening local group, should check in and help keep 10 meters an amateur band.

de WBØQGV

RECENT CONTRIBUTORS

Ham Hum Postage

Charles W. Boegel, Jr., WØCVU
Howard F. Heslin

Repeater 22/82

Milton D. Forsyth, WBØLPG
Richard K. Lancaster, WCØADF
Gerald W. O'Harrow, WBØPPF

Repeater 34/94

Earl K. Bacon, WBØWYA
Jack T. Barnett, WAØCMK
Milton D. Forsyth, WBØLPG
Richard K. Lancaster, WCØADF
Arthur R. Mahon, WBØMUL
Gerald W. O'Harrow, WBØPPF
Carl J. Quijas, WBØTUE
Patrick L. Scolla, WBØEGR
Donald Sudduth, WBØYAM

Repeater 40/00

Richard K. Lancaster, WCØADF
Gerald W. O'Harrow, WBØPPF
Carl J. Quijas, WBØTUE

NEW COMMITTEE

Hear Ye! Hear He! Our revered President of Ak-Sar-Ben Amateur Radio Club, Inc., Bob, WBØLYU, has created a new Committee.

There has been a need for a Courtesy Committee for some time and the time and the co-chair persons are, Jim Wilson, WBØJPN, and his XYL, Kay. Now, we need the help of each and every one of you to let us know when a member of the Club or his XYL is seriously ill, or hospitalized.

Even the smallest expression of acknowledgement is greatly appre-

ciated by the patient. In this way, we can also let each of you know, and a shower of cards can be sent.

Don't let us down; call 455-4259 any evening, Saturday or Sunday. Or you can reach Kay at work, 346-7800.

de Kay

AN INVITATION!

10 March 1977

Ak-Sar-Ben Radio Club

Greetings:

We have been busy on radio on 10-15-20-40-75 and for first time since Dec. 7, 1941 I went on 160 with new 215X. Also run L4B with Collins on other bands.

I want to invite one and all to the annual Nuckols Acres Hamfest, eyeball QSO, etc. on June 18, 1977. Ruth and I are furnishing eats and drink — coffee, soft drinks, and best ice cold deep well water in County.

I have to use my 8 El beam on 2 meters to reach Libby, Montana repeater. Down at bottom of this valley with mountains on east and west makes it difficult.

Regards,

Damon B. Nuckols, W7LKH

Star Route 2, Box 199

Bonnors Ferry, Idaho 83805

AMPLIFIERS — USES AND ABUSES — — —

Hams have long prided themselves on their outstanding technical ability concerning radio matters. However, of late, it would appear that a basic understanding of amplifiers is completely lacking by many hams. The

problems arise in that a small thing such as lack of knowledge is not enough to deter some from speaking with the aura of authority on the subject, thereby lending wrong information to many others. In a short time, many hams don't know that the information they got from an "expert" is wrong. I think the problem becomes apparent.

There are basically two types of amplifiers—linear and non-linear. Consider that each has its appropriate function. The linear amplifier is used whenever it is required that an accurate reproduction of the *amplitude* of an input result. When, as exists in many cases, the output need not be an exact replica of the input amplitude, a non-linear amplifier may be used. 

MULTITRONIX INC.

5203 Center Street
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REPAIRS ON ALL HAM GEAR
MOBILE INSTALLATION
FIXED ANTENNA INSTALLATION
CUSTOM DESIGN OR MODIFICATION

Let us investigate the various modes and what types of amplifiers may be used with each. CW is the simplest mode in use. The information is contained in whether or not a carrier is present. Various bits of information are determined by what period in time the carrier is present and what their relationship is to each other. The amplitude of the signal does not concern us once the presence of the signal is noted. Hence, CW does not require a linear amplification process.

AM and SSB are basically the same when the information process is considered. The transfer of information concerns itself by varying the amplitude of the carrier (before removal in the SSB mode). The varying amplitude of the carrier is an exact replica of the information to be transferred. Hence, it is essential that any amplification of an AM or SSB signal be linear so that the information recovered after transmittal is an exact replica of the initial bit of information. You will note that whenever an SSB signal is amplified by a non-linear amplifier, a large amount of distortion results.

FM and RTTY are basically the same in that the information to be transferred is contained in the frequency of the carrier (or sub-carriers) rather than in the amplitude of the carrier. Hence, since an amplitude replica is not required, amplification may be of the non-linear variety.

Note that any of the above modes may use the linear process, whereas only CW, FM and RTTY may use the non-linear mode. You may wonder

why the big deal over what the amplifier does. The answer is in efficiency. Hams (other than those who operate FM) tend to consider only the input power to the final amplifier stage in their transmitter. Most hams are unconcerned with output power as they are unaware of the efficiency of an amplifier. Unfortunately, the power input to an amplifier is not the power output. The efficiency of a linear amplifier varies from 25% to a maximum of 66%. The wide variation represents small compromises that are made with linearity. Greater efficiency is had when a small amount of distortion is allowed. As the efficiency increases, the distortion also increases. However, the effect of the added distortion is not generally noticeable. The crux of the matter is that the best designed and constructed linear amplifier will only put out 66% of the input power applied to it. Since the antenna only cares what power is supplied to it, one should strive to make his amplifier as efficient as possible. If you are operating CW, the non-linear amplifier will do much more than the linear type. Instead of only about 600 watts from a KW in (with a linear type), power outputs of 750 to 800 watts can be realized from the same KW input by using the appropriate type of amplifier for the mode in use. Also, the power lost in the stage (400 watts for the linear amplifier) must be dissipated in heat, therefore necessitating larger components in the final amplifier.

In summary, then, all amplifiers are not linear. Those sold or built exclusively for SSB service MUST be linear. However, those built only for

HAM HUM SWAP

NO CHARGE FOR SWAP ADS (NON-COMMERCIAL) SUBJECT TO SPACE LIMITATION. MUST BE SUBMITTED IN WRITING TO P.O. BOX 291. SEE COPY DEADLINE PAGE 2.

- FOR SALE: Cushcraft 4 el 2 meter beam;
Hustler (new) 5/8 wave 2 meter decklid ant.
Joe Nanos, KØKES; phone 339-7865 after 5 P.M.
- FOR SALE: Teletype, Model 28 ASR. Excellent condition. 60 wpm and 100 wpm gears - \$425.00. Also, 28 typing reperf is available.
Mike McAllister, WBØDXA; phone 334-0871.
- FOR SALE: Motorola HT 220, 6-channel Handi-Talkie with T.T. pad and crystals for local repeaters. Includes spare battery and charger - \$450.00.
Modified Trimline Handset for use on 2-meter VHF and Auto-patch - \$32.00.
Kevin J. Clatanoff, WAØYCC, 806 Matthies Dr., Papillion, NE 68046
Phone: Duty-294-4933; Home: 333-3136
- FOR SALE: Galaxie V Mk2 Transceiver, AC power supply, speaker console, (Make offer) PR550
Galaxie Phone Patch, Pearce-Simpson desk mike, CDR Rotor, RQ414S
Panasonic Cassette Recorder, AVT18 HyGain Vertical.
Bob Arant, WØGOT, 9705 Redman Ave., Omaha, Neb. 68134;
Phone 572-8025
- FOR SALE: Drake TR 22C, 2 Mtr. Transceiver with following Xtals: 22/82, 52/52, 34/94, 43/43, 46/52; PS Drake AC-10; Rango Ranger antenna. Sell only as a package-\$200.00 firm. New condition. Shipping carton, manual for operation and battery charger cord included.
Bob Broom, KØOQL; call 457-4237 after 6 P.M.

(Continued from opposite page)

two meter FM are not linear as there is no need for them to be so. By properly choosing the type of amplifier to be used in a given

condition, the efficiency can be set to a maximum for the best operation.

by Tom Kulas, WAØIAW
de The Flyer, via Ground Wave

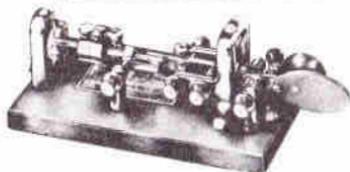


BOX 864 COUNCIL BLUFFS, IOWA 51501

The Vibroplex



Telegraph & Wireless Transmitting Machines



New SUPER DE LUXE "PRESENTATION" VIBROPLEX

The Finest Bug Ever Built! 24K Gold-Plated Base Top,
Patented Jewel Movement and Super-Speed Control!

New patented adjustable main spring affords wider range of speed than ever obtained before in semi-automatic transmitting key. Beautifully designed with polished chromium precision machined parts mounted on a 24K gold-plated base top with colorful red switch knob, finger and thumb piece. This new Super De Luxe "Presentation" Vibroplex key affords a life time of sending enjoyment. Harder than metal, the jewels in this key reduce friction, maintain smoother, easier operation and prolong life.

\$72.50

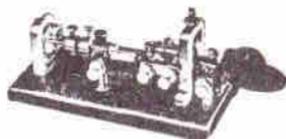
THE Improved "ORIGINAL" VIBROPLEX

Suitable for All Classes of Transmitting Work Where Speed and Perfect Morse Are Prime Essentials

This great new Vibroplex is a smooth and easy working BUG. It has won fame on land and sea for its clarity, precision and ease of manipulation. Can be slowed down to 10 words per minute or less or geared to as high rate of speed as desired. Maintains the same high quality signal at whatever speed, insuring easy reception under all conditions. Weight, 3 lbs. 8 oz.

Standard—Chromium top parts, grey base. \$43.75

DeLuxe—Chromium base and top parts, with jeweled movement. \$54.95



De Luxe Model



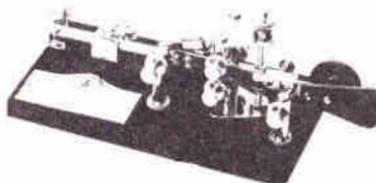
THE "LIGHTNING BUG" VIBROPLEX

High Quality Signals at All Speeds

Flat pendulum model. Weight 3 lbs. 8 oz.

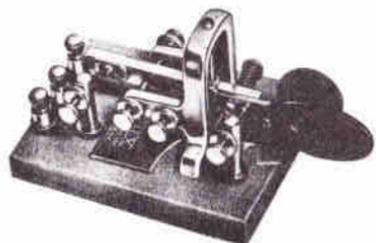
Standard—Polished Chromium top parts, grey base. \$43.75

DeLuxe—Polished Chromium base and top parts, with jeweled movement. \$54.95



THE "CHAMPION" VIBROPLEX

Weight 3 lbs. 8 oz. Without circuit closer. Standard finish only. Chromium finished top parts, with grey crystal base. \$34.95



VIBRO-KEYER (New Listing)

Over the years, we have had many requests for Vibroplex parts to be used for construction of a keying mechanism for an electronic transmitting unit. This beautiful and most efficient "Vibro-Keyer" is ideal for this job.

FEATURES OF THE "VIBRO-KEYER"

- Beautiful beige colored base, size 3 1/2" x 4 1/2", weight 2 1/2 pounds.
- Same large size contacts as furnished on Deluxe Vibroplex.
- Same main frame and super finished parts as Deluxe Vibroplex.
- Colorful red finger and thumb pieces.
- Has the same smooth and easy operating Vibroplex trunion lever.
- A real "Gem" adjustable to suit your own "taste"

\$36.50 Deluxe Finish \$48.50