

PACK RAT'S CHEESEBITS

MT. AIRY V.H.F. RADIO CLUB, INC., PHILA., PA.
(50.2, 145.2, 221.4, 432.3 & 1296.3 Mc.)

CLUB CALL: W3CCX

AFFILIATED CLUB: AMERICAN RADIO RELAY LEAGUE

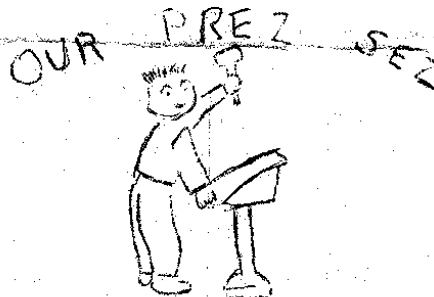
MEMBER CLUB: DELAWARE VALLEY COUNCIL OF AMATEUR RADIO CLUBS

MEETING NOTICES: LAST PAGE

VOLUME XI

MARCH 1968

NUMBER 3



Glad to see that everyone took my advice and turned to the old rig, fixing and correcting those bugs and gremlins discovered during the contest. At least, I think everyone took my words to heart. They must have for I hear just about no one on the air these days!!! Oh well, the tail end of winter has always been a bit slow on the VHF bands, mostly a state of mind though, for there is a lot of good stuff to be worked any month of the year. Get on and give out with a few CQ's and I'm sure you will find a bunch just scanning the band listening.

Don't forget our big AUCTION ... AUCTION ... AUCTION ... March 20 at our regular meeting place. Bring with you ... MATERIAL ... MONEY ... AND FRIENDS. Spread the word now among those who are not members. Lots of good material for the lower frequencies will be sold ... a golden opportunity for the hf bunch to pick up a few bargains from the crowd. Anyone may bring material to be auctioned, but as usual, the material brought by members will be sold first. This should be no problem, for we plan to sell everything.

I thought the last issue of this paper had a few very well written articles by members. Nice work, and we sure can use some more of it. Let me say again, any article written by a member will be published. Someone in the club will help polish it if required. Let me urge every member to give it a try ... even if you tear it up ... try it ... you may find talent you never suspected ... try it.

I also liked the little gem from the "OLD DUTCHMAN" taken from STATIC. This same idea has been repeated many times, and this article merely highlights a truth that is universal. Any organization runs because it has a group who run it. In no other way can we accomplish anything. Everything in our club, no matter how small it may seem, happens because someone took care of it! Go back and read the item if you missed it, and resolve to join this select group in the club. It's easy.

Dave, W3LHF

PACK RATS' CHEESE BITS IS A PUBLICATION OF THE MT. AIRY V.H.F. RADIO CLUB, INC., PHILADELPHIA, PA., AND IS PUBLISHED MONTHLY.

BOOK REVIEW NET
A CONTAGIOUS HABIT
Paul R. Behrman, K3WBU

10¢ per copy \$1.00 per year

WE OPERATE ON AN EXCHANGE BASIS WITH OTHER PUBLICATIONS AND ANYTHING THAT IS PRINTED IN CHEESE BITS MAY BE REPRINTED-UNLESS SO STATED-AS LONG AS THE PROPER CREDIT IS GIVEN.

DEADLINE FOR ARTICLES IS THE 20TH OF EACH MONTH.

ALL INFORMATION SHOULD BE SENT TO:

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DIRECTORS' MEETINGS ARE HELD ON THE SECOND WEDNESDAY OF EACH MONTH AT DESIGNATED LOCATIONS.

CODE PRACTICE:

7:00 TO 7:30 P.M. MONDAY THROUGH FRIDAY, 50.2 MC. BY W3CL, HARRY STEIN.

MONDAY NIGHT NETS:

- 145.2 -- 7:30 P.M.
- 50.2 -- 8:30 P.M.
- 221.4 -- 9:30 P.M.
- 432.3 -- 10:30 P.M.

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PHILADELPHIA, PA. 19111
215 - RA 5-1106

MEETINGS: FOURTH WEDNESDAY OF EACH MONTH AT 8:00 P.M.

If there had been any question of the enthusiasm regarding the weekly BOOK REVIEW NET (it meets each Tuesday evening at 8 PM local time on 50.2 MC), just consider two or three of the many episodes which occurred last week.

Jay (WA3CQO) reviewed a Random House book titled WHILE SIX MILLION DIED. He made the statement at the beginning of the NET that he would complete the review in 10 to 15 minutes. What happened in part was this: the net was officially closed at 9:13 (the normal duration of the net is one hour). The discussion evoked by the book continued for nearly two and one half hours afterwards by a group on 220 MC ... and even in eyeball the next day when some of the fellows met at their common salt mine. WHILE SIX MILLION DIED followed by one week a review of John O'Hara's THE INSTRUMENT ... one non-fiction, one fiction ... most of the books reviewed thus far have been of unique and special interest to amateurs (on a variety of areas ... transistor transmitters for the ham; uses of the oscilloscope; beam antennas; quad antennas; schematic diagrams; the ARRL Stanford Report which provided lots of nostalgia for the old timer; the comprehensive review of ELECTRONICS ...). Many more books are already lined up: ORR's THE RADIO HANDBOOK (Editors and Engineers) ... a wonderful book on incentive licensing which is as new as tomorrow ... Joe (W2EIF), Bob (K3ZPN), George (W3HSS alias W3ELI), Jay (WA3CQO), Don (W3VSK) are a few of the Pack Rats who have done so grand a job with the books ... and Sharon (Jay's daughter) did an outstanding job.

It did our heart good to have still another rewarding experience. WA3GNL (Lou) checked into the Net for the first time with many queries and comments. "When did this Net begin?" "When does it meet?" "Golly, I'll certainly check in every week hereafter and I'd like to review a book." etc. etc.

Finally, these personal observations: we have been officially recognized as a Net by ARRL; as in any project, there are always problems of one kind or another ... matters which do not appear on the surface but, when we realize that in addition to the stations checking in, there are friends and families of hams, countless SWLs listening; and when we comprehend that the books reviewed, first of all, provide names, titles so that the amateurs may realize the endless number of books which are being published for them to read and study; that the fiction and non-fiction alike can be the source of one of the great gifts we have at our disposal, namely, the enormous body of literature we can choose to read for pleasure, information or inspiration ... that learning ... that reading can be fun ... and always available

BOOK REVIEW NET cont.

for if the books are not purchased, there are the free libraries in all communities. It's worth all the problems and the trouble. Which of us, anyone of us could at his own choice or whim, day or night, have Winston Churchill, John O'Hara, Plato, Socrates, Hemingway, Faulkner, Wolfe, Capote or the 1001 greats and near-greats visit with us and talk of the serious, or the humorous, the practical, or offer us our individual opportunities to dream. Or when reading some technical material to suddenly realize that you've captured an electronic concept which had always been elusive ... or to give you a vision of something you'd like to accomplish, and maybe have an author or an editor provide you with the motivation to go ahead and dream that impossible dream. Remember and remember well, that none of the electrical or electronic giants of the past had so golden an opportunity ... neither a Steinmetz nor a Marconi nor an Armstrong nor a Volta or Ohm, and I could go on and on; for as one man once wrote, "our sons and grandsons are going to do things which would stagger us" (our imaginations). Perhaps I should give you the entire verse -- "Make no little plans, they have no magic to stir man's blood, and probably themselves will not be realized. Make big plans, aim high in hope and work, remembering that a noble, logical diagram once recorded will never die, but long after we are gone, will be a living thing asserting itself with ever-growing inconsistency. Our sons and grandsons are going to do things which would stagger us". (Daniel Hudson Burnham)

So, check into the Book Review Net ... accept the challenge of listening to something new, stimulating ... share some facts and ideas ... also, think about it in this way - if we say hello to each other at a monthly meeting, and exchange one dollar bills, and then go home, we each still have only one dollar except for different serial numbers; but, if we say hello and exchange one idea with each other, each of us goes home with two ideas.

very 73, Paul, K3WEU

432 AND UP

By K3IUUV, Bert Soltoff

While activity on the 432 net has decreased somewhat in the last several weeks, the interest of the group that signs in appears to be increasing. The net serves as a meeting place for those stations that are interested in going up on 1296. Information and experiences are discussed, making for an interesting session. Mike, K2DZM, Rahway, New Jersey, passes along the following roster of North Jersey and New York stations that are presently active on 1296:

- K2JNG, Union City, New Jersey, 10 W out, 32 El Colin
- WB2FWN, Morristown, New Jersey, 15 W out, GUD location
- K2DZM, Rahway, New Jersey, 12 W out, 32 El Colin, Xtor Preamp
- W2CQH, Morris Plains, New Jersey, 10 W out, 4 Helix, Xtor Preamp
- W2JBZ, Spring Valley, New York, 10 W out, 4 Helix, 40 mile DX
- WA2VTR, Spring Valley, New York, 10 W out
- W2CCY, Morristown, New Jersey, 100 W out, Pair 2C39's, Horn antenna (20 db Gain), Paramet Amp.

Mike is anxious to try and make a contact down in our area on 1296. So far the best local prospects appear to be either Lou, WB21OE, or Ed, K2HQL. These fellows have managed two-way contact on 1296, and are now working on increased power and better antennas. Other stations currently building for 1296 are:

K3DYO, K3UJD, K3BPP, W3HFY, W3VIR and K3IUUV.

The 432 net is looking for additional stations. Net time is 2200 local time on Monday evenings. How about signing in next week?

73, Bert, K3IUUV

QUICK SOLDERING
de: "QRZ"

A Weller or similar type soldering gun can be used to heat joints by the resistance method. By cutting off the end of the regular heating element, applying the two ends to the joint to be soldered, and closing the trigger switch, heat is developed directly in the joint itself.

If a variac is available, it may be used to control the heating rate and temperature by plugging the soldering gun in the 'variac' and reducing the line voltage.

QUICK SOLDERING cont.

After using this technique for some time, the author hasn't observed any damage to the gun. In fact, the gun runs cooler than normal since it heats the point more rapidly than usual.

This method will develop a rapid and localized high temperature and, in a crowded chassis, will help prevent damage to adjacent components.

TWO METER ACTIVITY

By David Zimmerman, W3LHF

Two meters seems to have died a rapid death since the contest around this shack due to the loss of my rotor-motor at 2130 on the last night (Sunday). Glad that it didn't happen several hours earlier, for I picked up a VE3 by swinging the beam a bit west of North. I heard a New York station working him on CW and wondered why I couldn't hear him. After swinging the beam, he popped out of the wood work and another light went on down here ... I haven't looked at the map of the eastern part of this country for a long time (National Geographic has a nice one this month if you haven't seen it). I find myself with the wrong ideas on the actual distance and direction to many other states and regions. Anyone else have this trouble?

There has been at least one Aurora opening during February, but I missed it and the rigid beam probably would have wiped me out. It's not certain though for some of that Aurora stuff is strong, and I have, on several openings, heard my first station, or gotten the first indication of the opening from the side of the beam. Best indicator though is activity. Anytime you hear half a dozen CW stations on, you just know this is not for code practice.

Pres W3MEY, reports via K3KWH in Pittsburgh, that KOMQS skeds a Mich station every night at 2130 CW on 144.2 mc. Might give a listen, some of those good CW sigs are enhanced by a meteor trail so that you can hear frequent pings or even whole words, even when the station is not beamed at you or conditions are such where you might contact the station yourself.

Did anyone count the number of Pack Rats on the new 220-432 and higher VHF directory from Ed Tilton, W1HDQ? Quite a showing.

How about a report on any new convertors built or bought by the gang? Should be something good around with all this exotic solid state stuff on the market. Getting so I'm feeling a bit dowdy when I mention 417A's in the inhale box.

CU on 2, Dave, W3LHF

DID YOU KNOW THAT

The Pack Rat Crying Towels which appeared at the January meeting were printed by WA3ERQ, John Gallagher. John was also responsible for the auction signs which appeared at the February meeting. Nice work.

W3GEW, Sid Weiner, was in and out of Jeannes Hospital. Get well soon, Sid.

W3BVR, Ted Leaf, is out of the hospital also. Get well wished from the gang.

W3HIX, John Specialny, Jr., is in the Veterans' Administration Hospital, Lebanon, Pa., 17042, Ward 18-2B. Send cards.

W3HK, George VanDyke, had to get a two letter call because people wouldn't talk to W3ELI anymore. W3EveryLoversIdeal, EveryLadiesInspiration, has now been replaced by W3HongKong, a very poor substitute, George.

K3UJD, Mario Fontana, passed his general and advanced all at the same time. Nice going, Mario. Now will you do that article on the 432 converter?

W3SAO. Frankie Brick, had a full page spread in the Johnsville NADC paper about his excellent work at the Normandy fire. (See article by Mother Rat, last month's CHEESE BITS.)

K3IUV, Bert Soltoff, was classified as Albidale's No. 1 Ham in the "Breeze". (the local paper) A description was given of his work during the contest and the net control operation of the 432 net. (See article by Bert on 432 operation, this issue.)

K3IUV, Bert Soltoff, is chairman of the June QSO party which this year falls on the 8th and 9th. All volunteers contact Bert. Don't miss this one. Bert guarantees more than one 1296 contact this year.

May 11 is Ladies Night. Chairman - K3KTY, John Tate, 520 Larkspur Street, Philadelphia, Pa. 19116, OR 3-8840. John promises more info next month.

CHEESE BITS is publishing an article by K3WEU, Paul Behrmann, who insists that he can't write. You be the judge.

Help stamp out bankruptcy. Pay your dues.

So many of the clan are now using stable receivers with LKC read-out, it became increasingly obvious I could no longer bluff my way through with the old Hartley VFO in the 2 meter rig. Time was a 2 meter man was so happy to work you that something less than xtl control was entirely adequate. Today, standards are such that you can no longer tell your buddy it is his drift receiver and be 50% right.

So into the mags handbooks, commercial schematics, et al we went. Do you know how many ways it is possible to go VFO?

It's appalling!

There are transitron oscillators, VXO's, modified colpitts, Hi-C, cathode coupled, electron coupled and another that sounds like a terrible disease. There were others that were unnamed, but did oscillate, for no apparent reason. Then of course, most all the above had their versions in transistors in NPN, PNP and all of a sudden a rash of FET's. The net result was bewilderment; like reading a 1040 return with its accompanying instructions.

Reading about stability is a fascinating subject. Drift is like a who-dun-it. James Bond could learn something here. What causes it? How was it arrested? A book could be filled. Every electronic company must have a research unit on this. What affects stability? Apparently everything. Heat, components, ratio's, mechanical rigidity, regulation, electrolysis and nervous spasms. The attempt to eliminate drift can lead to the funny farm, so watch out. Methods I have read about include negative and zero temp. compensation, D.C. filaments, lo voltage filaments, special wound coils, exotic capacitors, regulator, zener and gas tubes. Heavy chassis assembled with carriage bolts, silver soldering, remote layout, etc. Somewhere, I read where an oscillator buried 10 feet in the ground was the most stable! This reminded me of graves and how short life really is.

After sorting through these scientific papers, I decided to take the cowardly way out and buy one. A consumers union type of investigation took place. aha, not so simple. Most of the reports of the common and medium priced were unenthusiastic for 2 meter work. A few good ones were incredibly expensive. So back to the drawing board.

It seemed that a Heterodyne type was the best selection, especially if you want to use CW. The high C colpitts was chosen for the tuneable oscillator, G.E. ham news has been pushing this circuit over the past few years. This unit was made to tune 5.0 to 5.5 MC. This in turn was mixed with 31MC from axtl osc, to produce 36 MC. In my case, this was needed to fit in an existing xmitter. There are many combinations you can use. It is possible to again beat this frequency against another xtl source frequency to arrive at 144MC with excellent stability. The tuneable oscillator is similar to G.E. ham news July-August, 1959 with variations shown in the schematic. It is important to have a good dual bearing tuning capacitor, solidly fastened. The coil used silvered wire over a solid grooved form set in epoxy. (I have some extra coil forms). A differential capacitor is used in the grid circuit together with zero and neg coefficient capacitors to enable a means of balancing out drift. All other fixed capacitors are silver mica. D.C. on the filaments of the 6BJ6 was considered but found not necessary.

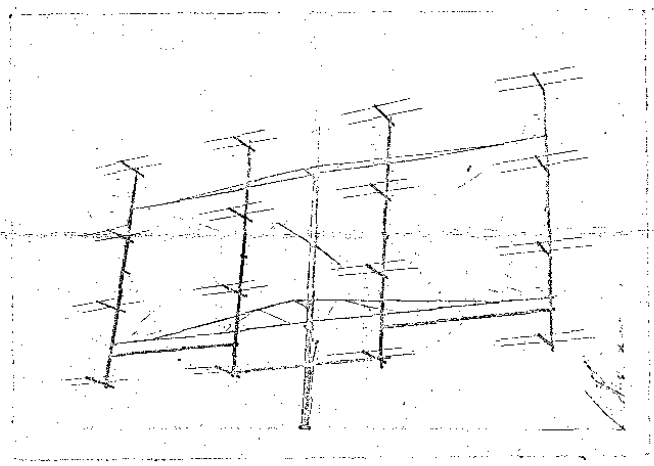
A triode section of a 6AW8 serves as the xtl osc, and the tetrode section as the mixer. A switch allowing a choice of two xtl frequencies was used in my case to give full band coverage.

The output was rather weak for adequate drive, so a 6AK6 buffer stage was installed. This gave the necessary push and helps to suppress any unwanted beats from the mixer.

I did not follow the G.E. parts layout, however all tuned circuits are shielded from each other with copper or aluminum baffles, minimizing any inductive coupling. Heat shields on the tubes were used to reduce coupling inasmuch as the tubes were closely grouped. All filament leads are shielded and bypassed. The frequency forming components in the tuneable oscillator are positioned so there are virtually no lead length. A little toying with paper and pencil, your parts, and chassis can usually result in a compact design. (Just imagine your JR OP lost your wire.)

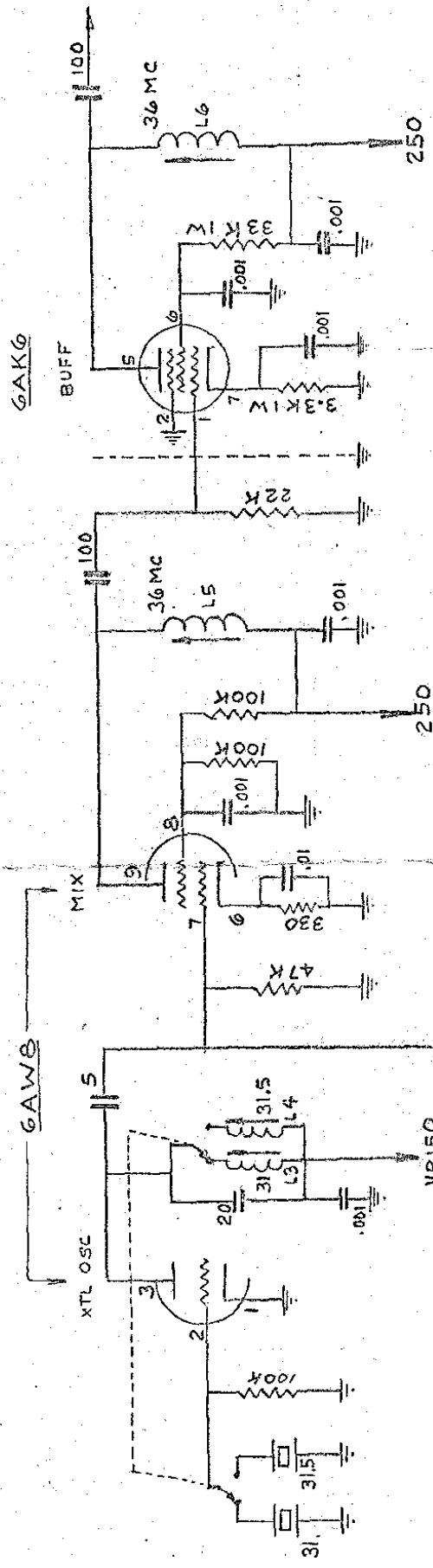
Grid block keying is used for C.W. This is applied in the mixer stage and subsequent stages not shown in the schematic. If any one is interested in this, contact me for details. The VFO and the xtl osc run continuously with no beats noticeable in the receiver.

The results with this gadget were satisfactory with a considerable improvement in the station here. Does it drift? Sure. But not much.



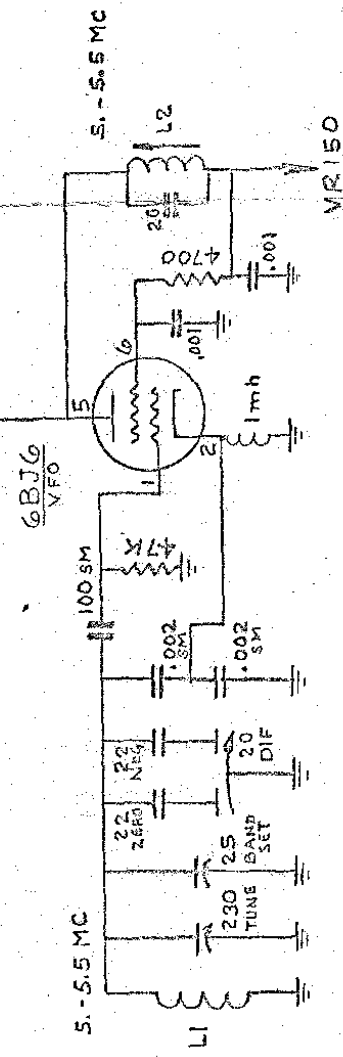
144MC beam array at DJ7GM
Peter Gebauer-Wolfsburg, Germany

This antenna is a 32 element driven array. DJ7GM runs a solid state xmitter of 0.7 watts input. (No electricity in the shack) It consistently works 300 to 400 KM, best DX has been 1000 KM (Warsaw, Poland). It has worked all German districts. Imagine what it would do with average U.S. power inputs. The design is based on a development by HB9CV. The feed system and dimensions are available to any one interested.



COIL DATA

- L1 - 9T - #14 - 1/2 DIA. X 1" LONG
- L2 - CTC - LS3 - 5 MC COIL
- L3 - L4 10T - #24E - 1/4 DIA.
- L5 - L6 9T - #24E - 1/2 DIA.

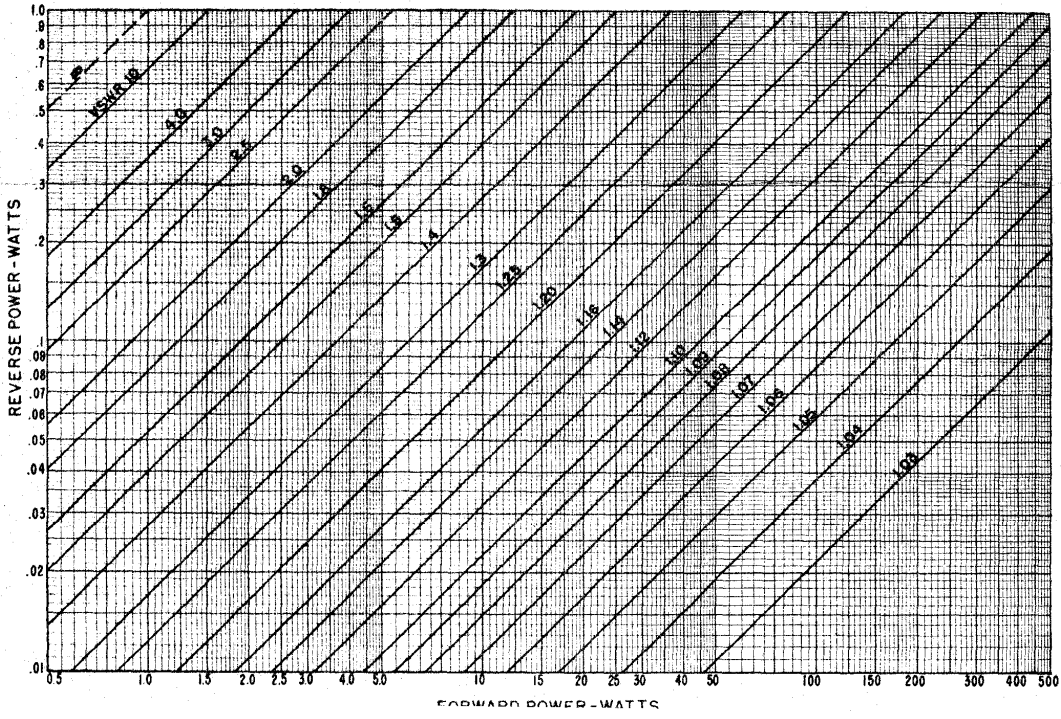
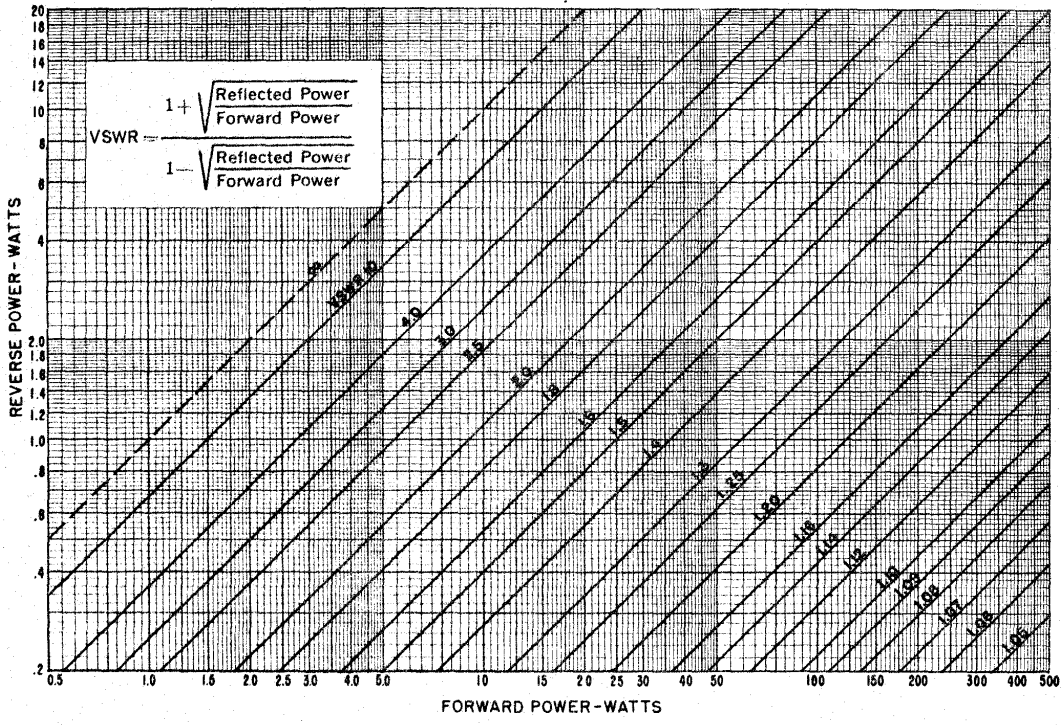


**HETERODYNE V.F.O.
FOR 2 METER RIG**

W3KKN

VSWR NOMOGRAPH

POWER VALUES vs VSWR



SWAP SHOP

FOR SALE

- Heathkit WX-30 6 meter AM/SSB/CW XMTB plus 2 meter heterodyne SSB free 50/144 mc. This is in excellent condition. \$125
 - Central Electronics 20 A SSB exciter with rack mount and table top front panel and VOX unit and VFO. \$90
 - Model 19 RTTY Machine. \$165
 - Western Union Strip Printer 2B for \$35. Get tape and another machine free.
- CONTACT:** Tony Musero, K3UKW
1609 S. Iseninger Street
Philadelphia, Pa. 19148

FOR SALE

- 1 Heathkit Seneca. \$125
 - 1 Heathkit Shawnee with 3-ring halo, hill-topper and spare tubes. \$165
- CONTACT:** K3CQJ, John Greenage
1101 Meshaminy Avenue
Oakford, Pa. 19049
357-1507

FOR SALE

- 1 Eldico SB-100-F Xtal filter SSB 100 watt exciter. 80-10 M. Excellent condition with built in scope. \$190
 - 1 KW HF amplifier 3-4CX300A, grounded grid, AB-1 parallel 80-10 M, requires 2500 VDC to operate. All else built-in. Extra set 4CX300A tubes. \$190
- ABOVE LOCATED AT: W3LYP**
35 Franklin Street
Feasterville, Pa.
EL 5-1983

FOR SALE

- Poly-Comm PC-62B, 6 and 2 transmitter/receiver, AC or 12V DC. \$180
- Philco model 48-2500 Projection TV set, 24 inch. Collector's item in excellent operating condition. Also easily modified into a flying spot scanner for TV camera use.

WANTED:

- Cement mixer, 2 to 3 cu.ft. size.
 - Ground post for E-Z way tower.
- CONTACT:** K3IUV, Bert Soltoff
961 Warfield Lane
Huntingdon Valley, Pa. 19006
215 - 947-4483

FOR SALE

- Viking 6N2 Trans 5894 Final with Power Supply, Edico Mod 730, Viking 6N2 VFO Complete. \$110
- Heath Monitor Scope H.O.10. \$45
- Barry 220 Mc Trans with power supply and mod. Complete with crystal and 220 2-1 beam. \$40
- Supreme 6B - 6M SSB-AM 6146 trans with Heath power supply. This unit has built in VFO. Complete. \$100
- National N.C 303 Ham Rec. \$115
- 1-6EL Telorx Beam. \$30
- 1-3EL Telorx Beam. \$10
- 2-11EL Cushcraft Beams with stacking balun (factory unit) \$20
- 1-3-ring Safurn 6M halo with post. \$7.00
- Ameco N.V. converter 6M 30.-30.5 Mc \$25
- " " " 2M 30.-30.5 Mc \$25
- " " " 220-11-14 Mc \$25

continued next column

Ameco Power supply. \$10

CONTACT: Joseph L. Raffo
Pump Branch Road
Cedar Brook, New Jersey 08018
561-5815

WANTED

- 2E26 6M transcvr.
 - 2E26 2M transcvr.
- CONTACT:** WA3BIV, Carl Barrish
7948 Thouron Avenue
Philadelphia, Pa. 19150
549-8765

FOR SALE

- 2 mobile power supplies 12 v in, both for \$10
 - Globe Voice Control - new. \$17.50
 - B&W Balun, model 710, 10 meters - new. \$10
 - Transcon transistor power supply 12 v in, 250 v, mobile. 65 ma out \$10
 - Webster transistor power supply mobile, 12 v in, 250 v at 100 ma and 500 v at 200 ma out. \$40
 - Lyman Jr. Transmitter Balun - 75 ohm to 75 ohm, 14-60 mc, 1.5-30 mc. each \$5
 - Philmore novice transmitter kit with key - \$14.95
 - Philmore novice receiver kit. \$10
- CONTACT:** Steve
TU 6-5104

MEETINGS

DIRECTORS': March 13 at the QTH of K3ZPN, Lloyd Schoenig, Red Lion Road, Philadelphia, Pa. 19114, 637-6455. (Are you going to supply maps, Lloyd?)

GENERAL: March 20 at The West Oaklane Jewish Community Center, Sedgewick and Thouron Streets, Philadelphia.

SUBJECT: AUCTION

NOTE: This is an OPEN auction and anyone may buy or sell equipment. The club's take - 10% of the selling price.

AUCTIONEERS: W3LHF, Dave Zimmerman, assisted by K3GAS, Doc Cutler, and K3JJZ, Elliott Weisman.

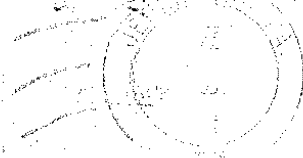
Don't miss this meeting if you are a bargain hunter.

HINTS ON PACK RAIS CODE PRACTICE VIZ W3CF

If you have a recorder in your shack and wish to copy code at your convenience, put it on tape. Record code at 3-3/4 i.p.s., if too slow, use 7-1/2 i.p.s., using a 1800 ft. reel tape.

Three lessons can be put on one side and three on the opposite side.

W3SAO, Frankie



W3KKN, Ernest Kenas
2823 Old Welsh Rd.
Willow Grove, Pa. 19090