

PACK RATS'



PACK RATS

CLUB CALL: W3CCX

MT. AIRY VHF RADIO CLUB, INC.

CHEESE

BITS



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

AFFILIATED CLUB: AMERICAN RADIO RELAY LEAGUE

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

VOLUME IV

MARCH 1970

NUMBER 3

OUR PREZ SEZ

Spring Action Calendar

432 XMTR NITE: For all the gang that have acquired 432 MC car fone xmtrs. At K3UJD's QTH. "On 432 in 15 minutes" a la Mario. This to be the last week in March. Firm date to be announced.

LADIES NITE: May 2. Who will forget the last one? Good food, music, dancing and the XYLs dressed to the hilt. Mix this with a lively bunch of Pack Rats and you've got yourself a time. John Tate is the one to see. Don't miss this.

VHF QSO PARTY: June 13 and 14. We have Hilltown again! Big plans are being formed. YOU volunteer for the band you'd like to be on. All hands are needed. See co-chairmen W3SAO and W3CXU. Attend the planning meetings and get set for real VHF D.X.

ANTENNA MEASURING PARTY: By popular demand! Date not set as yet, but some time in May. This to be at Mario's Ranch. Great chance to check your beam or just help out.

ALSO - Other events such as Xmtr Hunts, Antenna Parties and regular meetings that are bordering on the spectacular.

Boy, are we gonna have fun.

W3KKN, Ernie Kenas

P.S. Phooey on you ghost writers!

DEADLINE FOR ARTICLES IS THE GENERAL MEMBERSHIP MEETING.

EDITOR:

K3JJZ, ELLIOTT WEISMAN
8533 ALGON AVENUE
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215 - PI 2-3525

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215 - DA 4-7524

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215 - ME 5-1078

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COLLINGS LAKE, N. J. 08094

AWARDS CHAIRMAN:

W2EIF, JOSEPH KILGORE
#5 SUNNYBROOK COURT
STRATFORD, N. J. 08084

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

MONDAY NIGHT NETS:

145.2 - 7:30 P.M.
50.2 - 8:30 P.M.
221.4 - 9:30 P.M.
432.3 - 10:00 P.M.

OFFICERS - 1969-1970:

PRESIDENT: W3KKN, ERNIE KENAS
VICE-PRES.: K3JJZ, ELLIOTT WEISMAN
CORRES. SEC.: W3SAO, FRANCIS BRICK
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W3CXU, JOHN ALLEN
K3MXM, LEE COHEN
K3CIV, RALPH HERSH
(Ex-Officio)

PACK RATS' CHEESE BITS is a publication of the Mt. Airy V.H.F. Radio Club, Inc., Philadelphia, Pa., and is published monthly.

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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.

MEMBERSHIP

Silent Key
K3ALK, George L. Keyser
5610 N. Ormes Street
Philadelphia, Pa. 19120

Applied for Membership

W3ELX, Mario Deluca, Sr.
422 Kansas Road
Warrington, Pa. 18976
DI 3-6816

W3MFV, Dan Mitten
997 Holland Road
Holland, Pa. 18966
355-5269

K3DMA, John Taylor
216 Wellens Avenue
Philadelphia, Pa. 19120
DA 4-7521

THE 12TH ANNUAL DINNER OF THE EAST COAST V.H.F. SOCIETY

Will be held at the Neptune Inn, Route 4, Paramus, N.J., on Saturday, March 21, 1970 at 7 p.m.

K2HHS, Jack Tompkins - Master of Ceremonies

W4FJ
Ted Mathewson

WLHDQ
Ed Tilton

Continued on Page 6

50 MHZ LINEAR AMPLIFIER
W2AXU, Jack Power

There has been considerable interest in a 50 MHz amplifier I have used, since 1960, for a number of years until I retired it. It was then put into service for my son, WB2OAD. Will retired the amplifier a few months ago in favor of an amplifier tuning both 6 and 2 meters. We'll talk about that in a later writing.

The 50 MHz linear uses a pair of 6146 tubes in a parallel configuration. The grid is tuned and a pi-network tank circuit is used in the plate to match the plate impedance to the antenna. The plate voltage should be around 800 volts which will allow a power output in the order of 80 watts. The plate tank circuit has a loaded Q higher than the normal 12 or 15. The Q is on the order of 25 or 30 which provides a higher efficiency in linear service thus the higher power output. With a loaded Q of about 15 in its original configuration, the power output was 60 watts under single tone conditions. These powers are with no or very, very little grid current flowing. When I say little grid current, I mean microamperes.

Construction of the amplifier is straight forward using good VHF techniques. A 5 in. by 7 in. or a 7 in. by 7 in. chassis can be used. A front and rear panel can be bent from 1/16 in. aluminum, being sure to clear the tops of the tubes by an inch or so. The rest of the shielding can be formed from do-it-yourself perforated aluminum. The grid tuning capacitor is centered between the two tubes near the grid pins. A small aluminum bracket is bent for mounting and an extension shaft is used to the front panel. The plate tuning and loading capacitors are mounted on the front panel spaced so that the coil will mount between them. The tubes are mounted in such a manner so that there is room for the RFC, the blocking capacitor, and the paralleling leads. This should be layed out carefully. The neutralizing capacitor is mounted so that it can be connected either to the plates or to the plate tuning capacitor and coil common connection. Either is usable. The output connector can be brought out the front or via coaxial cable to the rear. The grid input connector is mounted at the rear as is the grid link tuning capacitor. This capacitor needs to be tuned once with a particular exciter.

Metering of the grid and plate currents is accomplished by measuring the voltage drop across a resistor. Grid current is measured by the drop across a 1000 ohm resistor and 1 milliamperes will produce a 1 volt drop. The 10 ohm resistor in the negative of the power supply will produce 2 volts with 200 milliamperes through it. The 1 milliamperes meter is normally a 1000 ohm per volt instrument thus a 1000 ohm resistor in series with a 1 volt source will produce a full scale deflection. The scale is multiplied by 1 and read directly in milliamperes. The 4000 ohm resistor in the plate metering circuit allows the meter to read full scale with 4 volts. The scale is multiplied by 400 thus reading 400 milliamperes full scale or 200 milliamperes half scale.

Neutralizing is accomplished by turning on the filaments but no plate or screen voltages. A means to read RF voltage is coupled to the output connector. A vacuum tube voltmeter with an RF probe is ideal, a diode voltmeter is the poorest and probably will be unsatisfactory. Bias voltage need not be applied. Some small amount of 50 MHz signal is applied to the grid and the grid and plate capacitors adjusted until some voltage is read on the VTVM. The assumption is made that these circuits have previously been resonated to 50 MHz by

50 MHZ LINEAR AMPLIFIER (Continued)

using a grid dip meter. Once voltage is read on the VTVM, the neutralizing capacitor is adjusted for the minimum dip in this voltage. Drive can be increased so that the minimum dip can be found. Only a 0.5 watt to 1.0 watt need be used. Now, if the neutralizing capacitor is at minimum capacity for the dip, the value of C2 must be increased. If the neutralizing capacitor is at maximum capacity, C2 must be decreased. This will be a cut and try operation. The point is to get the neutralizing capacitor to be centered in its range for neutralization.

When this is accomplished, the bias voltage can be applied and adjusted for 50 volts. The plate and screen voltages are applied, but no drive, and the bias adjusted so that the static plate current is 28 to 30 milliamperes. Try adjusting the grid tuning and the plate and output tuning capacitors while watching the grid meter for any fluctuations. Fluctuations indicate instability. A 50 ohm dummy load has been connected to the output connector for the above tests. An RF output indicator must be in series with the load unless the load is also a wattmeter. The indicator or wattmeter should be in its most sensitive position.

Apply a small amount of drive until the plate current increases and resonate the grid for maximum plate current and resonate the plate tuning for maximum output as indicated on the wattmeter or RF indicating device. Note if the plate current dip and peak RF output coincide. If they do, you are properly neutralized. If they don't, adjust the neutralizing a small amount one direction or the other until they do coincide. With this accomplished, continue to apply drive and adjust the plate tuning and loading capacitors for maximum output and the plate current to 230 to 240 milliamperes. No more drive should be applied than that necessary to just indicate a bit of grid current - like just move the needle off zero.

As stated before, only 0.5 and 1.0 watt of drive should be needed. The exciter should be operated as it normally would be and any excess drive must be attenuated through a 50 ohm attenuator. These have been discussed previously at club meetings and also in the literature.

With the amplifier tuned and loaded properly into the dummy load, place the exciter in the upper sideband mode and speak into the microphone. Adjust the gain until plate current peaks at one-half the single tone plate current and listen to yourself in your receiver - in the SSB mode of course. If it sounds good, disconnect the load and connect the antenna. Tune the load as in the dummy load. Give me a call and I'll be happy to give you a report.

Notes and Requirements:

1. Drive requirements - 0.5 to 1.0 watt
2. Bias voltage - 50 volts negative
3. Plate voltage - 800 volts
4. Screen voltage - 210 volts regulated from 800 volt plate supply
5. Plate current - 230-240 milliamperes single tone
6. Grid current - 0.0 milliamperes
7. Power output - 70 to 80 watts PEP
8. 6146 B tubes may also be used with slightly higher single tone plate current.

Ref. - "Neutralization" by Joseph Taschetta, W8IZH, CQ, January 1970, page 46.

W2AXU, John B. Power

WHEN I BECAME A PACK RAT

K3AUH	-	September 25, 1961	W3HKZ	-	December 17, 1958
W2AXU	-	May 18, 1959	WA3IMT	-	December 20, 1967
W3BQU	-	November 19, 1958	W3KXH	-	July 15, 1959
WA3BRV	-	April 21, 1965	WB2NOK	-	July 19, 1967
WA3CND	-	May 18, 1966	K2RTH	-	June 21, 1967
W3CXU	-	December 19, 1956	W3ZTL	-	August 16, 1958
K3EOU	-	August 19, 1964	K3ZVD	-	July 21, 1965
K3GQJ	-	January 21, 1959			

Should Auld Acquaintance Be Forgot?
Where Are You?

K3AUH	-	Alan Rubin	K3EOU	-	Paul Pfleiger
W3BQU	-	Ham Buerger	K3ZVD	-	James Powell

W3SAO, Frankie Brick
(Club Historian)

PACK RATS FIGHT INFLATION

As we all know, our club publication CHEESE BITS goes all over the world. We exchange copies with other club papers and send copies to individuals in ARRL, FCC and local newspapers. The balance of issues we send out are subscribed to at \$2.00 per year. This figure was passed by the Board of Directors a year ago when the cost of putting out the paper went up considerably. With the addition of advertising, our cost has leveled off and we now find that we can offer subscriptions at the former price of \$1.00 per year. Starting with January of this year, all those who subscriptions expire will pay only \$1.00 per year. Subscriptions will be extended another year for those who have paid \$2.00 in January. Inflation.....BAH!

K3GAS, Doc Cutler, Publisher
7815 New Second Street
Elkins Park, Pa. 19117

SILENT AUCTIONS
K3GAS, Doc Cutler

A word about the silent auctions we have at each regular meeting. For quite a while now, I have endeavored to promote a lot of activity at our silent auctions. Members are to bring in anything they want to get rid of that might be of use to someone else. The more material that is brought in, the better the action. This was the basic premise. However, it has not worked out that way. The reluctance to spend a few shekels has not made the silent auction a real worthwhile project. With the club getting 10% of the receipts, it could be very worthwhile in swelling the treasury. We will continue a while longer and hope that more interest is shown and that the members will come to realize that the Silent Auction is where a real bargain can be had. Don't forget that material can be donated to the club itself so that all money received goes into the treasury.

WE GET LETTERS

Greetings from the Pittsburgh area. Hope you are doing well. All is well out this way. The weather can't make up its mind. Now +10° with 3/8" ice everywhere, but clear.

How did we make out in the contest for Eastern Pennsylvania? Wrote a letter to the "Spark Gap" Club in McKeesport, Pa., who operate on 28.73 MHZ AM saying I am a Pack Rat/3 in Allegheny County and they said "the Cheese Bits is one of the best papers issued by ham clubs...!!!", quote from Zip, W3MIW.

Haven't received the February Cheese Bits. Take care and be back with the club in 4 weeks.

73,
Ed Barbacow, K3ZCY/3

NEW PRODUCTS OF INTEREST TO HAMS

- 1. Alternate Action Push Button Switch #46-502 (\$3.50 list)

Here is an ideal item to use as a spot switch for Zero Beat action on a VFO. Just push the button once and the SPDT makes, and locks in. Push again and it breaks and locks. (Nearly all other push buttons on the market have to be held in contact.)

- 2. DRI-WICK - American Beauty Soldering Iron (\$1.50 per roll)

Just the ticket for de-soldering a printed circuit board on the pins on a tube socket salvaged from the last experiment. At first glance, this looks like a roll of small braid, which is actually what it is. A coating of flux is applied, and, when a connection to be de-soldered is heated with the hot iron, the Dri-Wick draws all of the solder out of the connection. (It works, I tried it.)

- 3. Arrow-Hart Toggle Switches (\$2.18) - Page 417 Newark Ind. 1970 Catalog

This may seem like a high price for a toggle switch, but this unit has some special features. First, it is a paddle lever type, which helps to dress up the panel of the new rig. Second, the paddle is made of plastic and can be had in several colors. It follows that one might use a green paddle for filaments, a red paddle for HV, and perhaps a yellow paddle for send-rec. functions. Orange, blue, gray, and black are also available.

W3NSI, Lyn Rowland

THE 12TH ANNUAL DINNER OF THE EAST COAST V.H.F. SOCIETY (Continued)

W4FJ, Ted Mathewson, will talk about V.H.F. Past, Present, and Future. Awards will be given by W1HDQ, Ed Tilton, including awards for highest single and multi-operator station in the September ARRL V.H.F. contest. Door Prizes and gracious Dining. MENU: Prime Ribs of Beef! TICKETS: \$7.50 per person!

W3IUV, Bert Soltoff, is coordinating the Pack Rat contingent.

Conducted By: W3ZRR, Ray Whitehead
7329 Shelborne St.
Phila., Pa. 19111
215 - RA 2-4786

The next DIRECTORS' MEETING will be held on Wednesday, March 11, at the QTH of W3CXU, John Allen, 1119 Highland Avenue, Abington, Pa. Please call 886-4109 if you cannot attend.

FOR SALE

- Home Brew 2E26 50 mc transmitter complete with modulator and power supply. Make offer.
- Gonset G76 Mobile Power Supply 600 volts at 300 mils - good condition. First offer over \$30 takes it.

The next REGULAR MEETING will be held on Wednesday, March 18, at the West Oak Lane Jewish Community Center, Sedgewick and Thouron Streets, Phila. Meeting Topic: "VHF SSB The Easy Way", starring W2AXU, W3CXU and K3UJD.

CONTACT: W3GEW, Sid Weiner
2036 Disston Street
Philadelphia, Pa. 19149
215 - 332-8655

* * * * *

DID YOU KNOW


FOR SALE

- 6 meter linear amplifier \$200
- 2 meter Gonset linear w/spare tubes 100
- Tape deck stereo 2 & 4 track (3 motors, 3 heads) Bell T-337 90

K3GAS, Doc Cutler, is again on the Board of Governors for the Greater Philadelphia Meeting of the Philadelphia County Dental Society held in March at the Sheraton Hotel. Get well wishes to W3MVF, Dave Bloch, and W3MFY, Pres Funk, who had recent hospital stays. W3SAO, Frankie Brick, thought W3SMK, Jim Perkins, was a visitor since he hadn't seen him for so long.

CONTACT: WA3BIV, Carl Barish
8760 Stenton Avenue
Philadelphia, Pa. 19118
215 - CH 7-1071

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ODDS AND ENDS
W3KKN, Ernie Kenas

Michigan Ham Flys in to Attend Pack Rat Meeting

Len Wilhelm, WA8FZW, decided to see for himself. Flew in from Birmingham to attend Home Brew Nite. He stated "If they're all this much fun, I'll come down for the next meeting."

Dave Bloch, W3MVF, was operated on for an intestinal obstruction. The surgeon discovered a microphone he had swallowed during an exciting moment in the VHF SS.

Walt Bohlmann, K3BPP, has a passion for building gear in household containers, beer cans, coffee cans, sardine cans, etc. He is presently building a SSB Rig in an aspirin tin.

K3IGX, Dick Boyle, attention - Are the Rumors true that you bake the crimpets served at the club meetings?

The secret is out! During W3CL's stay in the hospital the nurse discovered he was tattooed with the call W3CL on his lower rear extremities. Further investigation revealed that this came about when Sylvia backed his car up while he was facing the other way.

Pack Rat Invention: Having discovered the resonant frequency of bowling pins, W2EIF, Jo Kilgore, is presently hollowing out his bowling ball and installing a homing transmitter.

VISITORS AT THE FEBRUARY 18 MEETING

WA8FZW, Len, Birmingham, Mich.
W2HX, B.B., Trenton, N.J.
K3OZB, Bill, Dresher, Pa.
K3DMA, Jack, Philadelphia, Pa.

K3ZSG, Bill, Norristown, Pa.
W3ELX, Mario, Warrington, Pa.
WA3IGK, Steve, Neshaminy, Pa.
K3WJB, Drew, Philadelphia, Pa.

ARRL BULLETINS

NR 256, January 22, 1970

FCC has now taken final action in Docket 18508. Following up an ARRL proposal of some years back, the two meter cw subband will change from 147.9 through 148.0 MegaHertz to 144.0 through 144.1 MegaHertz. Additionally, the F-1 subband on ten meters which is currently 29.0 through 29.7 MegaHertz will change to 28.0 through 28.5 MegaHertz. These changes become effective March 2. Details will appear in March QST AR

NR 258, January 29, 1970

Australis Oscar 5 continues to operate successfully on 144.050 and 29.450 MegaHertz. Modulation of the 10 meter signal has been much lower in amplitude than nominal. Amateurs receiving signals from the satellite are urged to send reports to Amsat, Box 27, Washington, D.C. 20044. Special reporting forms are available without charge from this address by sending an addressed stamped envelope. Reception reports will be confirmed. Continue to listen to W1AW bulletins for orbital predictions and further information about Australis Oscar 5 AR

Ladies Night



1970 MAY 1970

APRIL
S M T W T F S
1 1 1 2 3 4
5 6 7 8 9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30

JUNE
S M T W T F S
1 1 2 3 4 5 6
7 8 9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29 30

1

2

Place: - Buck Hotel, Feasterville, Pa.
Dinner, Prime Ribs of Beef served
at 7:00 P.M. DANCING - 8:00 'TIL ??

PRIZES FOR ALL

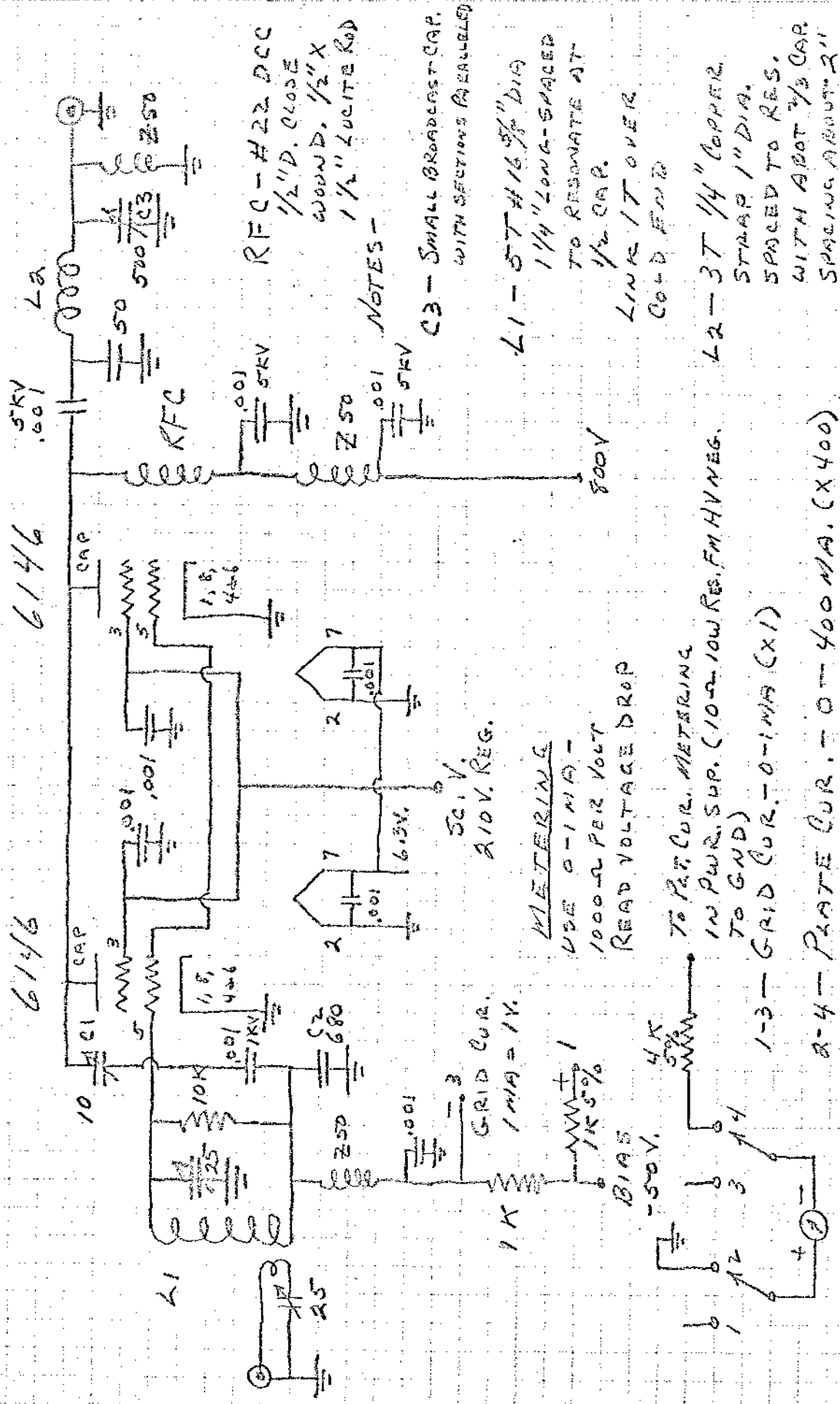
TICKETS! - \$8.00 per person - CALL or Write

K3KTY JOHN TATE

520 LARKSPUR ST. PHILA. 19116

-9- OR3-8840

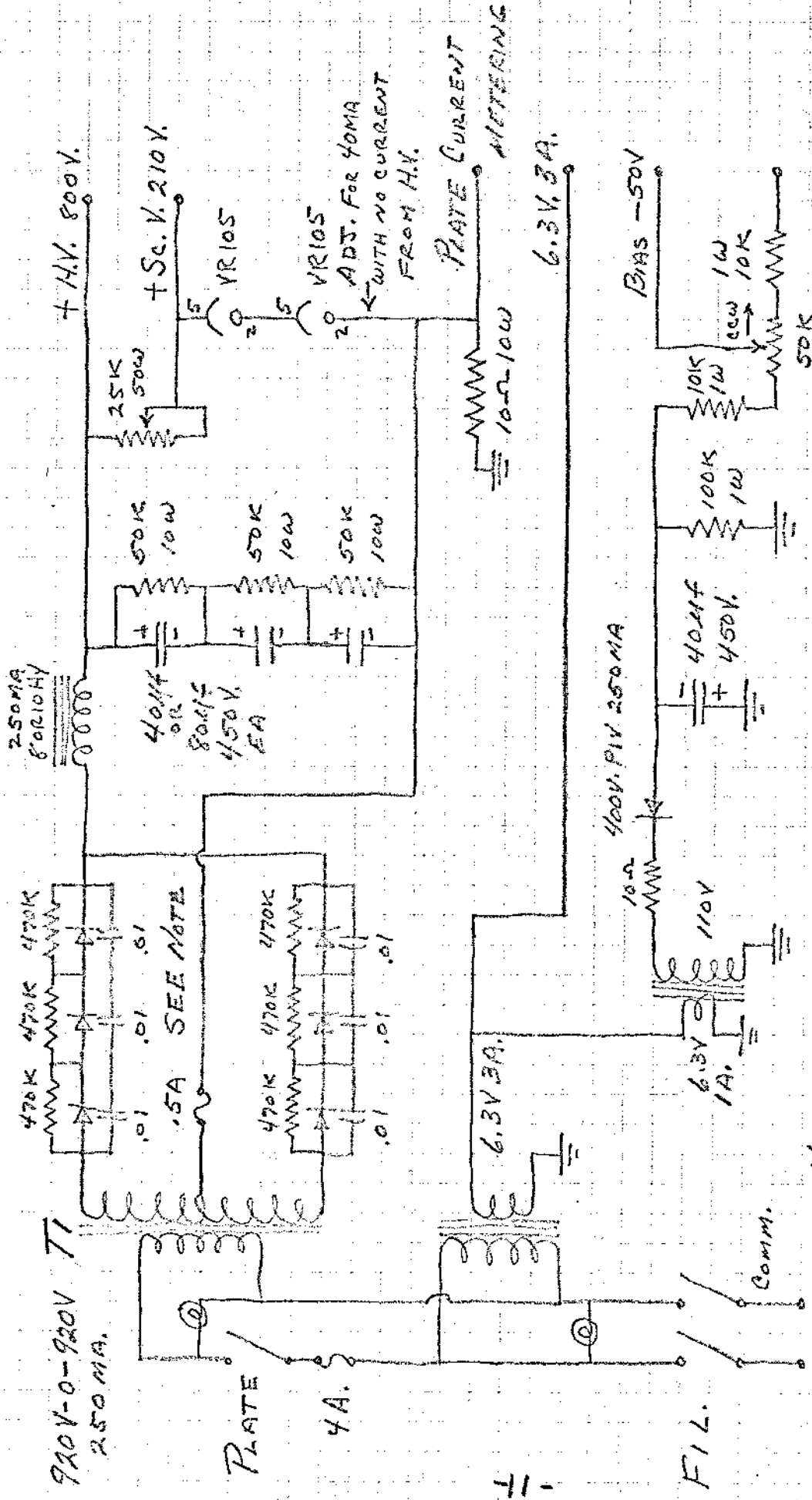
50 MHz LINEAR AMPLIFIER



C1 - NEUT. CAP. IF C1 AT
 MAX. CAP TO NEXT
 DECREASE Q₂, IF MIN.
 CAP., INCREASE C₂

1-15-69
 J.B.P. WAAXU

POWER SUPPLY FOR LINEAR AMPLIFIER



NOTE -
 HV RECT = 6 400V PIV }
 4 600V PIV } Tot. AT LEAST 2.8 X 1/2 RMS
 3 800V PIV } EXAM - 2.8 X 920V = 2208V
 T1 - STANCOR - PC 8305
 ALLIED RADIO - 54 F 3700

1/19/90 JSP/ARXU



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February 10, 1970

QST
OFFICIAL ORGAN

Editor, Cheese Bits

Dear Elliot:

I've been reading and enjoying Cheese Bits these many years, so I was pleased to see the plug for the Talcott Mountain Science Center in the February issue, page 8B.

WA2GUA probably was too busy with other things to get involved with our ham station up there, but I'll bet a few Pack Rats know about it. The call is WALIOX, assigned to the Talcott Mountain UHF Society, and yours truly is the trustee. We operate on all vhf bands, and in the June and September VHF Parties we have twice mustered equipment to work two-way on all bands from 50 through 10,000 MHz.

For more on how ham radio happened to become a part of this fine venture, see "Amateur Radio and the Talcott Mountain Science Center," in June, 1967, QST, page 56. I hope that readers of these lines will take the trouble to get out that issue and read the article. We would hope that our efforts will serve as an inspiration to any experimentally-minded amateurs who like to work with young people. The "Science Center" idea is taking hold in many places, and it offers a great chance for interesting public service, to dedicated vhf enthusiasts.

Not all the objectives outlined in the QST report have been realized, and we have "played by ear" as we have gone along with the rapidly-growing Talcott Mountain Science Center. We have graduated scores of Novice hams in a series of several classes since 1967, and not a few of these young people are now Advanced Class ticket holders, and excellent vhf ops. We still come out quite a few places down the VHF Sweepstakes club tabulation in QST from the Mt. Airy VHF Club, but we're gaining on you.

We hope to be operating on the bands from 220 up this summer, and would be glad to cooperate with the Pack Rats in keeping skeds on at least 220 and 432; possibly 1296, as well. There is nothing in the way of our antennas in your direction, except earth curvature, and the hills of the southwestern part of the state.

73

Ed Tilton, W1HQR

VHF Editor, QST and
Director, Talcott Mtn UHF
Society

*PS: I find on using your membership
checklist that I worked at least 11
Pack Rats in the VHF SS this year.
EPT*

42-

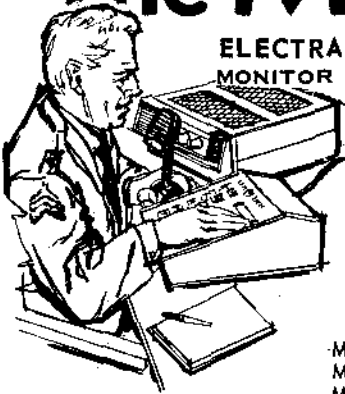
HAMTRONICS'

HAM-BITS



The Monitor Post

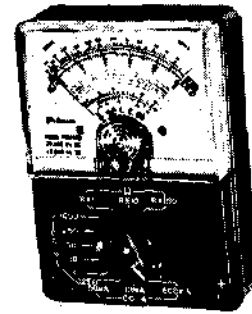
ELECTRA CORPORATION - THE BEARCAT
MONITOR RECEIVER WITH AUTOMATIC SCANNING.



Model BCH-150-174 MC.
Model BCL-30-50 MC -
Model BCU-450-470 MC
Crystals for above units

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Receiver is unique in concept and design. The feature which makes it different is the automatic scan and manual channel select facility. It has the ability to sample 8 fixed frequency channels, lock on to the first channel which becomes active and continues to scan when the carrier is discontinued. The scanner may be disabled and the channel selected manually when desired.



HOW
ABOUT
THIS

3.95

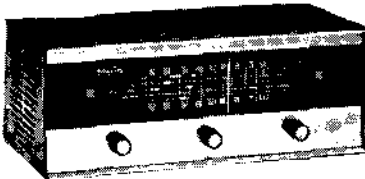
ECONOMY 1000 OHM PER VOLT
VEST POCKET MULTIMETER

AC Volts: 0-10-50-250-1000
DC Volts: 0-10-50-250-1000
DC Current: 0-100 DC MA
Ohms: 0-150 K (3000
ohms center)

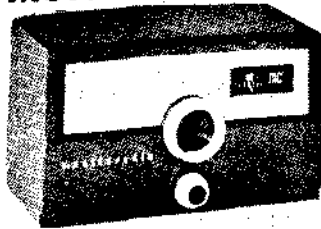
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TUES. WED. SAT. 9 AM TIL 6 PM



Pack Rat Cheese Bits
 8533 Algon St.
 Phila. Pa., 19152



MEETING NOTICE

"HAM" BUERGER'S

Festival of Values

"HAM" BUERGER, INC.
 80 N. YORK ROAD
 WILLOW GROVE, PA. 19090
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3.99



RG8 *Permafoam*
LOW LOSS
COAXIAL CABLE

100 Ft. 11.88



5
FOR
2

Co-Ax Connectors
831SP
831R

SILICON DIODE RECTIFIER



.89

1000 VOLTS PIV
2 Amperes

Meter Type Indicator



(CORNELL-DUBILIER
ANTENNA ROTATORS
HAM-M ANTENNA ROTATOR

99.

STORE HOURS

MON.	9.30	-	5.30
TUE.	9.30	-	1.30
WED.	9.30	-	9.00
THU.	9.30	-	1.30
FRI.	9.30	-	5.30
SAT.	9.30	-	5.30