

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 V

OCTOBER, 1971

NUMBER 10

THE PREZ SEZ

The club wants to thank you Bert, K3IUU and XYL, Harriet for having us at your QTH for the annual Pack Rat Film Festival. The film and slides from the past year's activities were just great and our credit goes to the cameramen who took these pictures, K3GAS, W3GEW and W3ELX; a fine record for posterity.

With summer about over, we will be seeing more activity on the VHF bands, not saying that there hasn't been any, but there will be more. Now is the time to get to that "put off" antenna work before it gets too cold.

Our January Contest Chairman, Ron, WA3AXV, has been working with his committee and by now, you all should know who your coordinators are and what groups you are in. If you have any problems or need help just ask the committee as they are there to help you.

Our thanks also to Dave, W3ZD and XYL, Jane for having us at their QTH for our annual Pack Rat Auction which was the greatest yet! As I said before, Dave missed his calling. Besides the moving of equipment from one QTH to another, and just being an auction, everyone had fun. Thanks to everyone who helped and especially to our Cheese Bits Editor, K3JJZ who was also our second auctioneer.

C U all back at the West Oak Lane Jewish Community Center for our Winter meeting.

Don, W3CJU

DEADLINE FOR ARTICLES IS THE GENERAL MEMBERSHIP MEETING.

EDITOR:

K3JJZ, ELLIOTT WEISMAN, ARNS
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PHILADELPHIA, PA. 19152
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W3FQD, Dick Huntzinger
WA3LNH, Charles Benavides
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(Ex-Officio)

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AWARDS CHAIRMAN:

W2EIF, JOSEPH KILGORE
#5 SUNNYBROOK COURT
STRATFORD, NEW JERSEY 08084

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

APPLIED FOR MEMBERSHIP

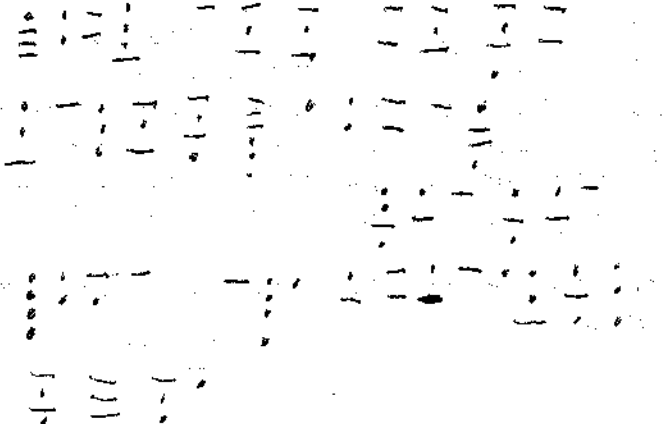
W3TMV, David F. Wintz
3629 Canby Drive
Philadelphia, Pa. 19154

MONDAY NIGHT NETS:

145.2 - 7:30 P.M.
50.2 - 8:30 P.M.
221.4 - 9:00 P.M.
432.03 - 9:30 P.M.
1296.1 - 10:00 P.M.

OFFICERS: 1971-1972

PRESIDENT: W3CJU, Don Hampton
VICE-PRES: K3BPP, Walt Bohlman
TREASURER: K3GAS, Doc Cutler
CORRES. SEC.: W3SAO, Francis Brick
REC. SEC. WA3BIV, Carl Barish



CALENDAR OF COMING EVENTS
Syllabus by Lee, K3MXM

October 13
8:00 P.M.

Board of Directors Meeting - QTH - Dick Huntzinger,
W3FQD, 130 Fairhill Drive, Churchville, Pa.
Directors and interested parties invited.

357-2960

October 20
8:00 P.M.

The first indoor meeting of the new season, West
Oak Lane Jewish Community Center, Thouron and
Sedgwick Streets, Philadelphia, Pa.

PROGRAM:

Our own Bert Soltoff, K3IUV, the designer and project
manager of the RCA camera used on the Apollo 15 Moon
landing. A mock-up of the camera will be on view as
well as a slide presentation. Here is your chance to
have those questions answered that you were unable to
ask when Bert appeared on a national TV program.
It will be a very interesting evening and outsiders,
children and club members are cordially invited.

A part of this meeting will be set aside to discuss a
forthcoming club project. Several ideas will be
presented and discussion will be welcomed from the
floor.

November 10

Board of Directors Meeting

November 17

Meeting, WOLJCC - Program, Antennas-What and how to do
adjustments before the ice and snows of winter set in.
Measurements and new designs will be presented.

OTHER NOTEWORTHY DATES AND EVENTS

October 6

Warminster Amateur Radio Club Auction, 8:00 P.M.
Warminster Branch Hatboro Saving and Loan Bank

October 24

Gaithersburg Hamfest

October 24

Penn Wireless Association Annual Auction
Fairless Hills Community Center
Fairless Hills, Pa. K3JQH, Chairman

NEW PRODUCTS OF INTEREST TO HAMS

BY LYN, W3NSI

1. FM Transmitter Kit 2 M

The RMV Electronics company has available a 5 Watt, 4 frequency, 2 M transmitter kit, including all parts except crystal. Unlike the ARRL unit, which is now in kit form from HAL and B & W, this unit uses a separate oscillator for each channel, which makes zeroing the crystals much simpler than if one has to use a wafer switch. The unit, operated on 13.6 VDC will draw 1 amp when the output is 5 watts. Type HC 18U 9 mc. xtals are used. Unit size is 3" x 7" and it is built on a double-sided glass epoxy board. Sixteen transistors and 9 diodes are used. Price = \$59.95

RMV Electronics Box 283 Wooddale, Illinois 60191

2. Light Weight Solder Gun

Ersa of W. Germany is now importing through Edsyn Inc. in Calif. a 150 watt light weight solder gun which features a 10 second warm up. Unlike the Weller type gun, this unit does not have a loop tip, but rather a straight tip that requires no filing or shaping during its life. Weight of the unit is 7 oz including the ac cord !!!!! Normal operating power drops to approximately 80 watts for continuous soldering. Price = \$8.55

Edsya Inc. 15954 Arminta Street, Van Nuys, California 91406

3. Antenna Hardware

PAL Marketing has a line of aluminum fittings available, which could be of interest to the ham who likes to build his own. The type BM2 mount is intended to be clamped to the top of a mast-1 1/4" in diameter. This mount has five holes, one on top, and the other four spaced at 90 degree intervals on the side, so that radials for a ground plane antenna may be installed. The stud holes are 3/8" 24 threads, but adapters are available for other sizes of rod and tubing. The type BM 3 mount is a very fancy item designed to be the foundation for constructing a broadband discone antenna in the range 27 Mc to 1000 Mc. The top section is insulated by ceramic pilars, and the two aluminum castings incorporate 10-3/8" holes and locking set screws. The top piece would connect to the center conductor of the coax lead, while the braid would connect to the section fastened to the top of a 1 1/4" mast. This bottom unit provides the proper skirt flair angle. It is possible to construct an antenna covering from 28 mc to 250 mc, or from 50 mc to 450 mc, using this mount. Instructions are included with the mount for using in proper cutting of elements.

PAL Marketing P.O. Box 3298 Santa Monica, California 90403

Price = BM2 \$8.50

BM3 \$24.95

2 METER REPORT

BY JOE, W2EIF

The two meter band has been holding up very well during the summer. During August and September, operation at the low end of the band (144.110) has included nightly operation of stations from Virginia to New Hampshire and Toronto, Canada. These QSO last sometimes to 2:30 in the A.M.!! There was an opening in the early morning hours (Tuesday, August 17th). The opening was the result of a duct which extended from Iowa and Kansas into New England. It lasted approximately two hours. A new record was established on 432 Mhz when Pete (K1PXE) worked WØDRL in Kansas with very good signals. If you don't believe it, ask Pete to play his tapes of the contact.

SWAP SHOP

CONDUCTED BY: W3ZRR, Ray Whitehead
7329 Shelborne Street
Philadelphia, Pa. 19111
215 - RA 2 - 4786

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TA-33 Beam Jr.
Price = \$40.00
CONTACT: Joe Reed, WN3QNS
16 E. Fornance St.
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279-1517

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Price for the package = \$110.00

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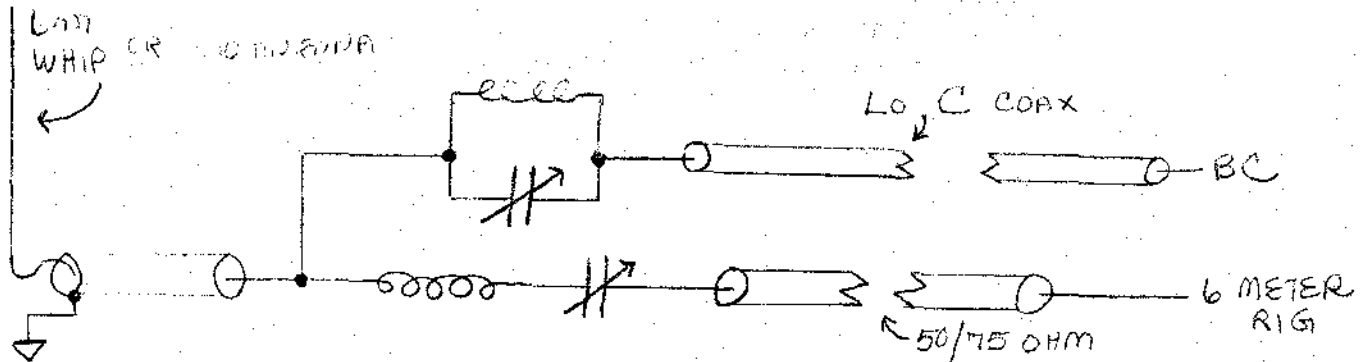
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CONTACT: K3GAS, Doc Cutler
7815 New 2nd Street
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ME 5-1078

6M AND BC ON THE SAME ANTENNA

You have a broadcast whip on the car and desire to go 6 meters. If the antenna can be extended to 45 inches, it can be used as a quarter wave whip on 6 meters and as a BC antenna at the same time.

Use the following schematic to construct a frequency diplexer to accomplish the above.



L1 & C1 form a series 6 meter tuned circuit whose impedance is low at 6m and high at BC frequencies. It then passes the 6 m info and blocks the BC signals.

L2 & C2 form a parallel 6 m tuned circuit whose impedance is high at 6m and low at BC frequencies. It passes BC signals and blocks 6 meter signals.

The length of low Capacity coax between antenna and diplexer box should not exceed 12 inches and the shorter the better. The coax to the BC receiver should be low capacity (the stuff that comes with the antenna) and short as possible. The coax to the rig should be any 50 or 75 ohm coax of any convenient length.

C1/L1 should have a large L/C ratio. Use about 1.7 uh and a 10 uuf trimmer. Make the coil and then connect the coil and trimmer in parallel. Set the trimmer mid range, and using a GDO compass or squeeze the coil to get resonance at 6m. Then re-connect C1/L1 as shown in the schematic.

C2 & L2 should have a small L/C ratio. Make L2 about .2 uh and C2 a 100 uuf trimmer. Dip to 6m after construction.

Build in any convenient container. After construction, tune C1 for minimum transmission loss. The xmitter signal will not be significantly affected by the diplexer.

You can now listen to WOR and xmitt or receive on 6 at the same time. The same circuit may be used on 10m by using 10m L&C values.

de K3HNW/W3URT

"CHANNEL 13 3/4"

By Paul J. Rilling, WA3HIT/WA3OSS

It was July 4, 1961, at 4:20 p.m. Ron, K3ZKO had just walked in his shack. At that instance, we proceeded to give him a call at 50.2 MHZ. He answered us and became the operator of the first TV station contacted by WA3HIT. The QSO lasted for 40 minutes. At times, there were other stations in there too. WA3PUL, who was in the mobile, stopped in at Ron's QTH and wound up on TV. WA3QOM broke in because he couldn't copy the vidio, and, K3GAS, Doc, broke in to report that vidio and audio was 5-9 at his QTH. (Too bad K3OBY wasn't around).

K3ZKO was the only station transmitting TV pictures and thus was the star attraction of the QSO as well as many other QSO's. Recently, Ron boosted his power to 100 watts to make him the most powerful TV station in the Delaware Valley. "All well and good" you might ask. "But how do we go about copying Ron on TV." Now we arrive at the point where I can begin my story.

Remember the article "Save that Converter?" It was run in parts in Cheesebits from February to May, 1971. It wound up with a proposal of a rather unusual experiment. I was hoping to copy the 432 net with the aid of my UHF converter as well as some local hams (i.e. K3HSS, K3OBY). Well, the experiment failed. Why? Finally I boiled it down to one of two reasons. (1) The convertor didn't tune down to 432 like I thought it would and/or (2) I probably wouldn't have been able to copy the net anyhow (regardless of frequency) since I don't have a grid dip oscillator (to narrow the bandwith). The final test came on May 10th. I called Ron on the land-line and asked him to get on TV. After much adjustment on the TV set and the convertor, I still couldn't pick up Ron's TV signal. Finally, we called it quits. He agreed to modify my convertor so that it would be able to pick up 439.25 MHZ. The process is rather easy to do if you know how (unfortunately, we don't). It involves adjusting the coil by twining one or two screws. Ron had to take our convertor to his shack where he could aline it correctly. He worked on it from June 28 to July 3rd. On the evening of July 3rd, we gave him a call and he told us all was A o.k. He dropped it off the next day. Before he came over, he turned on his station to make sure we could copy his signal. When we hooked up the UHF convertor, we noticed we were able to copy his picture but no sound. This didn't bother us at the time. I also noticed other things too. Channel 17 was coming in on 23, channel 29 on 35, channel 48 on 56, and channel 52 on 60. One has to expect this when a convertor is modified. I hope Philadelphia never puts channel 80 on the air. Well, Ron peaked the final and started to head for home. Meanwhile, my mother came into the shack and wanted to know what channel I had on. I told her "Channel 13 3/4." Then I explained that it was ham television. It seems that all ham TV stations operate at 439.25 MHZ and are crystal controlled. It makes them easier to find and they don't have to worry about being right on frequency. Thus, we call this TV channel "Channel 13 3/4". Then Ron got home and we proceeded with our QSO as

CONTINUED ON PAGE 3

described in the beginning of the article. Picture at 439.25 - sound at 50.2 MHZ. We transmitted at 50.2 also. Excellent reception. Mother was very impressed. She told me afterwards that it was like watching a rebirth of television. She got the feeling that she got when TV first began. Also, it was something out of science-fiction. The fact that I could see as well as hear the station I was in QSO with, like the astronauts talking to Houston.

The next day, was July 5th. My brother called at 1:00 p.m. and said he would be down at 3:00 in order to take me swimming at a friend's pool. At 2:55 p.m., the phone rang again. It was Ron. He had his TV station on and wondered if I would like to take a look. So I did. Just then, my brother walked in. I explained what I was doing and he was very interested. When I got K3ZKO - TV tuned in I was in for a surprise. It wasn't Ron. As it turned out, Lee, K3MXM was visiting Ron's shack. The QSO lasted 5 minutes. My brother was very impressed. When I came home later that night, I noticed K3ZKO - TV was still on the air and we again hooked up for another QSO.

On July 11th, I was in QSO with K3JJZ/3, telling him about my TV experiments when Ron broke in and told me he was working on a new amplifier which would boost his power to 100 watts. He would give me a call when he was ready and we agreed to operate the audio crossband. At 9:30 I got his call. I went on 51.1 MHZ and he went on 146.58 MHZ. I was AM and he was FM. The radio, naturally, was on Channel 13 3/4 or 439.25 MHZ. Also, this time I used a 2 meter beam connected to the UHF convertor. His signal was almost as good as channel 17, but I still couldn't copy his audio at 439.25 MHZ. (Since I do not have an outdoor UHF antenna, I have to make do with what I have, thus the use of the 2 meter beam).

After he finished with me, Ron proceeded to contact other ATV stations. (One in Doylestown, the other in New Brunswick). We couldn't copy either, however, we noticed something odd was happening to the signal of K3ZKO-TV. By turning the fine tuning knob of the TV set all the way clockwise, I noticed I could pick up Ron's audio, however, it was not with the picture. It was a little higher and no picture was present. Then I continued to turn the fine tuning knob clockwise. Something clicked. The fine tune was back to the original position before I adjusted it. When I found this out, I turned it back counterclockwise. It clicked again. Now for a real test. Could I get it to click "halfway?" Or could it hold in a locked position before it clicks all the way. I noticed by turning the knob slowly I could pick up a far better position at the "clicking" position. If the knob would hold in this position, I probably would be able to pick up video and audio together. The knob held and I was able to pick up video and audio of K3ZKO, TV. I called Ron to tell him this and he was very surprised. It shouldn't be since I don't have a grid-dip oscillator.

CONTINUED ON PAGE 9

"CHANNEL 13 3/4" CONTINUED FROM PAGE 8

Nevertheless, a major hurdle was cleared. The next day I found I could pick up the 450 MHZ link of the WA3BKO repeater and the WA3KUR repeater (both for FM use.)

This concludes my TV experiments for a while. On July 26th I embarked on a three week musical tour of Europe. My next project is to put up an outdoor UHF antenna (does anyone have an extra antenna around?) And then TV transmitting equipment. I hope to be on TV within the year. Meanwhile, there are 17 TV stations operating on channel 13 3/4. The following is a list of stations you can receive:

<u>PHILADELPHIA</u>	<u>DOYLESTOWN</u>	<u>HUNTINGDON VALLEY</u>
K3AEH - TV	W3CJU - TV	K3IUV - TV
K3GAS - TV ¹		
K3IHA - TV ²	<u>LAFAYETTE HILLS</u>	<u>HOLLAND</u>
K3WJB - TV	W3HKZ - TV	WA3NFV - TV
K3ZKO - TV		
	<u>RICHBORO</u>	<u>NORRISTOWN</u>
<u>IVYLAND</u>	K3FEN - TV	W3NWJ - TV
K3UJD - TV		
	<u>NEWTOWN SQUARE</u>	<u>NEW JERSEY</u>
<u>EXTON</u>	K3KFL - TV	K2SVX - TV, Cinniminson
W3EFG - TV		K3KVT - TV, New Brunswick
		K2OJL - TV, Trenton

1 - Coming Soon

2 - Transmits in color

In closing, I would like to say that you shouldn't tamper with an all-channel TV set. If you have such a set and want to copy ham TV, it is best to get a convertor and modify it to 439.25 MHZ. Also, this is regular TV, not slow scan so any TV set should be able to pick up ATV with high quality pictures with little if any problems. Hope to see you on TV soon!

73,

Paul, WA3HIT/WA3OSS



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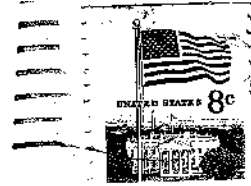
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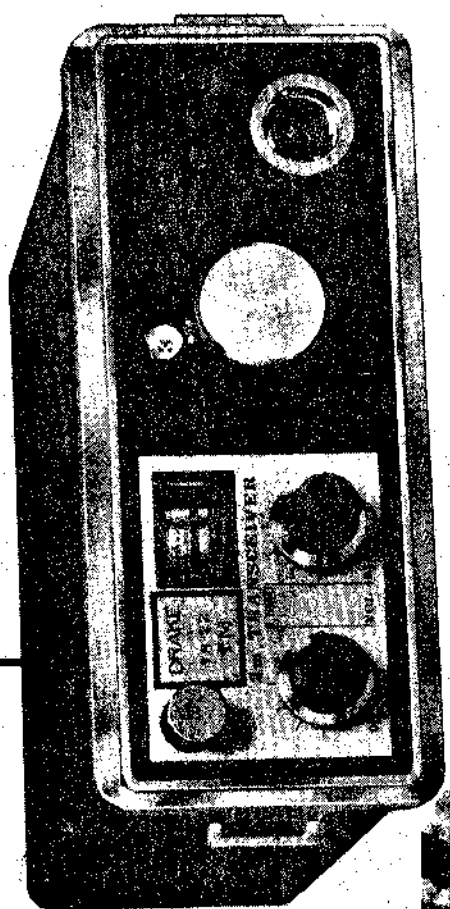
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