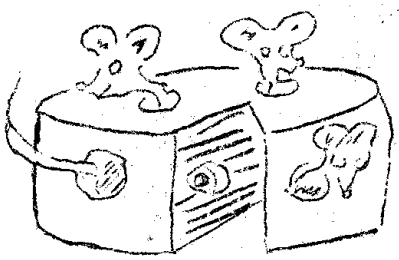

PACK RATS' CHEESE BITS

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

CLUB CALL: W3CGX

AFFILIATED CLUB: AMERICAN RADIO RELAY LEAGUE

MEMBER CLUB: DELAWARE VALLEY COUNCIL OF AMATEUR RADIO CLUBS

MEETING NOTICES: LAST PAGE

VOLUME X NOVEMBER 1967 Number 9

OUR PREZ SEZ

Yep! Contest time is breathing down our necks once again. You may have gotten your questionaire from your coordinator already. If not, you will soon. Please give the matter your attention now so that the affairs of the contest may proceed smoothly.

Charlie, K3HSS, our Vice-President is also the January contest committee chairman. All the coordinators have been selected and the first organizational meeting has been held. Several more have been scheduled, and your committee will be hard at work trying to make this our biggest and best effort. Charlie has asked that each of us take a few moments to consider what we might do to make our individual score a bit better. This is the one activity of the year where our club has no equal, but there must be ten thousand VHF hams around the country who would like to be part of a group that would beat us! Only by each of us resolving to improve just a little bit can we be sure that this will not happen.

Take a look at the shack right now. Think of what might make a few more contacts -- CW? --- foot switch? ----- VOX? ----- another band? ---- each of us has a separate problem, and maybe talking it over with another member can help generate a few ideas. How about visiting someone who does better than you and find out how he does it? I'm sure you will find no secrets and nothing very mysterious -- just a bit of planning and work will do it.

Incentive licensing is here, gents, and whether we like it or not the new regs will have some effect on us. A reprint of the rules was available at the last meeting and if you are interested, check with me or the last issue of QST for the details.

Incidently, I talked to two fellows who took the Amateur Extra exam last week and they tell me the written part is not nearly as difficult as they had believed. Both of them passed very handily after a couple week's study. 'Course you must get over the 20 wpm code lump first, but that's almost as sure as sunrise with regular daily practice.

An interesting facet of the extra ticket -- number 49 was issued in 1952 -- number 297 two weeks ago -- and number 300 this week -- from the Philly office that is. It shows that more fellas are getting interested now that we have some privilege being offered as a reword for the work.

73, W3LHF, Dave

W3LHF, Dave

Pack Rats' CHEESE BITS is a publication of the Mt. Airy V.H.F. Radio Club, Inc., Philadelphia, Penna. and is published monthly.

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DEADLINE FOR ARTICLES IS THE 20TH OF EACH MONTH.

ALL INFORMATION SHOULD BE SENT TO:

ELLIOTT T. WEISMAN, K3JJZ
8533 ALGON AVENUE
PHILADELPHIA, PA. 19152
215 - PI 2-3525

TRUSTEE OF CLUB CALL: W3CCX

W3SAO, FRANCIS BRICK
821 W. LINDLEY AVENUE
PHILADELPHIA, PA. 19141
215 - DA 4-7524

PRINTER AND SUBSCRIPTION MANAGER:

K3GAS, DOC CUTLER
7815 NEW SECOND STREET
PHILADELPHIA, PA. 19117
215 - ME 5-1078

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.

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.

OFFICERS -- 1967-1968:
PRESIDENT: W3LHF, DAVID ZIMMERMAN
VICE-PRESIDENT: K3HSS, CHARLES LUSTICK
CORRES. SEC'Y.: W3SAO, FRANCIS BRICK
REC. SEC'Y.: K3ZPN, LLOYD SCHOENIG
TREASURER: W3MVF, DAVID BLOCH

DIRECTORS: K3JJZ, ELLIOTT WEISMAN
W3MFY, PRESTON FUNK
W3KKN, ERNEST KENAS
K3UJD, MARIO FONTANA
K3CIV, RALPH HERSH
(Ex-Officio)

* * * * * * * * * * * * * * * * * * * *

PHILADELPHIA COUNTY ARPSC:
E.C.: W3PST, WOODY HALDEMAN
1732 LONEY STREET
PHILADELPHIA, PA. 19111
215 - RA 5-1106

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

ARRL BULLETINS

NR 134, September 21, 1967
The annual ARRL cross indexed Net Directory is now ready for distribution, in a new convenient size. Copies are being mailed to those who have requests on file. If you have previously made such a request, and have received an acknowledgement card, please do not request another Net Directory. All others wanting a copy should mail or radio a request to the ARRL Communications Department, 225 Main Street, Newington, Connecticut 06111. Be sure to include your zip code with your return address. Please mention the call of the station transmitting this bulletin and the frequency you copied AR

NR 135, September 28, 1967
The United States has concluded a reciprocal operating agreement with Venezuela, effective October 3. Amateurs of one country visiting or residing in the other may obtain permission to operate their own amateur stations there. This 30th reciprocal agreement, along with Trinidad, supplements the list appearing on page 70 of August QST AR

NR 136, September 28, 1967
Following up the FCC Report and Order in Docket 15928, the Commission has already begun to issue Novice licenses with a two year term. Responding to a League request, FCC also has corrected the new rules for two letter calls. Extra class licensees who held either a regular combination license or an operator only license at least 25 years ago are equally eligible, effective November 22, 1967 AR

Extracted From NR 137, September 29, 1967
The following nominating petitions have been filed by members for league directors and vice directors:
Atlantic Division for Director -
Andersen K3JYZ, Breiner W3ZRQ, Crossley W3YA, Mann W2SEI
Atlantic for Vice Director -
Bieberman W3KT, Carr W3LDD, McConaghy W3EPC, Pfeil W3KJJ, Smith WA2KNO

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DID YOU KNOW

That Sunday, 11/12/67, the Pack Rats will hold their last transmitter hunt of the season. Hiders are W3MFY, Press and W3OZP, Bill. Starting time 1:00 pm 50.25 mc. and 144.2 mc. Call in time 3:00 p.m.
That W3BNY, Walt and W3AJS, Ed both old buddies of W3CL, Harry had a reunion at the last Pack Rat meeting.
That K3MXM, Lee and WA3ERQ, John are the new refreshment chairmen.
That 55 were present at the last general meeting.
That K3HKK, Bob at State College, Pa., is starting an SSB net Wednesday evenings at 9:00 p.m. 50.12 mc.

TWO METER ACTIVITY

W3LHF, David Zimmerman

Two meters has never been a band where things happened with a great big splash unless you count the days back before six meters and the techs got rolling along. In those days, I can recall at least eight or nine rock-crushing signals any evening with our now departed king of two, W3IBH, leading the pack. In more recent times, the rarer stations come and go without much fanfare. A lot of the choice DX is worked on CHARLIE WHISKEY and only a few of the gang seems to pay any heed to the weak chirping going on down on the low end. Very unfortunate, too. DX on two seldom comes in like a lion as it does on six, sporting a southern drawl to boot! No, you must listen on two, and even search around a bit, but seldom does a month go by that I don't hear a few signals that surprise me.

This month's choice tidbits are VE3ASO and VE2LI who is an old timer on this band. Both stations are on from about seven to nine on most evenings. Point your beams almost due north and listen for other stations working them. Last I heard from either station, our friend Ed, W1HDQ, was working them in turn. Also heard WA8RFU for about ten minutes one night but he did not come back to me. Only other Michigan station I've heard has been via the Aurora. Heard some reports of several short displays this month but missed out because of the excessive time I have been spending revamping a portion of my rig.

Any of the gang who may have heard me on three or more spots on the band at the same time, please accept my apologies. That was my new VFO, and it sure is giving me a bad time. I heard a guy in NNJ complain one night that things were bad enough when I clobbered him on one spot on the band, but that three signals from Johnsville was too much. Of course, I agree with the chap and I'm busy correcting the monster right now.

Listen for K3UJD on two with his revamped SSB rig. Sure a potent sig over here, Mario.

73 for now and let's have a few reports.

Dave

* *

HOW TO WIN A PACK RAT CERTIFICATE

The Mount Airy VHF Club of Philadelphia (Pack Rats) will award a beautiful hand colored certificate if you follow these rules:

1. If you live within 50 miles of City Hall, Philadelphia, work 30 Pack Rats (any and all bands 50 through 1296 may be used).

2. If you live more than 50 miles from City Hall, Philadelphia, only 10 contacts are required.

3. Separate certificates can be obtained by working all contacts on one band; for example, 30 contacts each on 50, 144, 220 and 432 will produce four certificates.

4. If you work 50 Pack Rats during the January VHF contest, a special certificate is awarded.

5. No cards are needed: just list the stations and date of contact and send to Jo R. Kilgore, W2EIF, #5 Sunnybrook Court, Stratford, New Jersey.

* *

HOW ARE RESISTORS MADE?

WA4HIZ, Ralph Shaw, via HAM FAX

How many of you know what materials are used in making resistors or how they are made? The small, one watt or so, resistors are made from a thin film of carbon which is deposited onto a slug of ceramic material. Powdered carbon and slugs are placed in a special type of jug about the size of a gallon bottle and heated until the whole assembly is red hot. While the jug is being heated, it is also rotated so that the slugs are continuously agitated in the carbon. The amount of carbon deposited is dependent on the temperature of the assembly and the length of time it is held at that temperature. The longer the exposure time, the lower the resistance.

The resistor slug has a small film of gold deposited on each end and the leads are soldered to the gold. To get the resistance to an exact figure, the slugs are placed in a lathe and the carbon surface cut in a spiral. After the proper resistance is attained, the resistor is packaged and coded.

K3HSS, Charley, Program Chairman

HOME BREW NIGHT

The program for the November meeting has been designated as "Home Brew Night." It has proven to be an interesting evening in the past with excellent participation by the members. In addition to the previous announcements, I am repeating my requests that if you have built some item, large or small, that would interest a ham, bring it in. Many of the comments and ideas generated by the review of the items could benefit both the builder and the inquisitor in present or future building efforts. There will be knowledgeable people present who might have the answer to your problems. Let's all participate and make it a night to remember.

* *

I FOUND IT

K3GAS, Doc Cutler

I have been asked to relate how, after coming in last in our transmitter hunts, I was able to find the last one in comparatively quick time. The secret lies in the use of a receiver with a sensitive S meter. The mobile antenna was a Halo with no real directional quality. A good fix was obtained from the home QTH and transferred to a good map. Loretta, my XYL, did the driving and I watched the S meter. We went along the fix route as near as possible and at one point we had a high meter reading. We followed the fix almost to the end of the boundary and found that our reading was down, so we returned to the spot where the S meter reading was the highest. It was now to be decided to put ourselves in the place of the transmitter hider and take that direction. To the right was open territory, to the left, on the map, was rough terrain around a reservoir. Putting myself in the place of Dave, WA3CAG, I was certain the transmitter would be in, on, or around water, so we went left and came upon the site. The transmitter itself was about 50 yards from the refreshment truck so we borrowed Preg's sniffer and found the transmitter which was well camouflaged. I was accused of using a special type of sniffer which actually turned out to be a cigarette lighter.

* *

SOME THOUGHTS ABOUT AMPLITUDE MODULATION (AM) VS. SINGLE SIDEBAND (SSB)

W2AXU, Jack Power

Two-thirds of the total amplitude modulated power is in the carrier under perfect conditions and only one-sixth in each sideband. Actual AM voice transmission never attains this theoretical efficiency figure. In practice, each sideband contains perhaps a tenth of the total transmitted power during modulation. The carrier continues at 2/3 of the total maximum power even when no information is being transmitted, such as during pauses between words and sentences.

Single sideband techniques permit substantial savings in transmitter size, cost and power consumption for a given information-carrying power. Only one sideband is emitted and only in the presence of a modulating signal. More important, no carrier at all is emitted in a SSB transmission. The receiver supplies a local signal which is injected with the SSB signal to take the place of the carrier. The mixing of these signals produces the audio components of the modulation. Such transmissions occupy less than half the spectrum space of a conventional AM transmission.

I was listening to the two meter net the other Monday night and I heard Harry, W3CL, answer someone's question as to how much power Dave, W3LHF, was using. Harry stated that Dave was "using a well modulated 500 watts." Let's look at Dave's "well modulated" 500 watt AM transmitter. Under 100% modulation conditions the total power is the carrier power plus the power in each sideband. Now that 500 watts is input power. Assume 60% efficiency, so that means 300 Watts of output power, 100% modulation, under sine wave conditions, we have 1-1/2 times the carrier power (450 watts) or 75 Watts in each sideband. Complex wave forms such as speech do not contain as much average power as a sine wave for the same peak amplitude. The sideband power with speech, for the same percent of modulation, will average only about half the power as that of sine wave modulation. It is the peak envelope amplitude, not the average power, that determines the percentage of modulation.

The carrier wave carries no intellegence because it is not affected by the modulation. It therefore just goes along for the ride to create beats of varying frequencies in your receiver and to hold up your "S" meter needle so you can say Joe Blow in "40 over 9". Terman, in Radio Engineering, states that with less than 100% modulation the total wave energy that is contained in the intellegence-bearing sidebands will rapidly decrease as the percent of modulation is reduced. Therefore, in amplitude modulation, the highest possible percent of modulation should be used.

Now back to that 300 Watts of carrier power. If this 300 Watts was the available peak output power of a single sideband transmitter, its capability in a SSB system would equal to Dave's using a 1000 watt rig "fully modulated". Compare the size, cost and power consumption of the two systems.

Back in 1968, before the actual discovery of people modulation, K3ZPN, Lloyd, was building his kilowatt rigs for six and two. The little known story of what Lloyd contributed to this mode of transmission is now being told and the Pack Rats deserve first hand information.

First, let us visualize Lloyd's shack. Rack mounted 6 and 2 meter transmitters with a common modulator. In a separate rack, set of power supplies; 2000 V at 2 amps for the finals, a good bit of power plus, 1000 V for the modulator, 300 V for the drivers and assorted other voltages for the other associated equipment. Lloyd and the equipment just fit into the shack. As a point of interest, Lloyd hid the peanuts in there during directors meetings so Harry (W3CL) was frustrated because he could not get to them. We had the quietest meetings.

Then the day came when Lloyd made the final hookup - the supplies to the transmitters. This was the morning after the night before, or the day after Ladies Night where Lloyd and a few others (we won't mention names, Jo) got kinda plastered (like in plaster of Paris) -- good and tight). Well, it seems that Lloyd hooked up all the power to the finals on 2 meters and forgot to hook up the antenna. When he put B+ on those tubes without drive or antennas, things really started to happen; but not the way you may think. As Lloyd looked into the transmitter to see what was wrong, all that power seemed to reach out to grab him. A bright film of light formed around him. All around him. Slowly he started to dematerialize and float toward the power tubes.

Before we go on, let's look at the explanation of the experts about what happened. As in magnetism, all the electrons in the metal form in one direction. In this case the fibers in the blood passages in Lloyd's body lined up in the same direction, as did the white and red corpuscles, then hairs on his body and finally the electrons that compose his body. Then the power field started attracting the electrons individaully. After a short while, Lloyd had been completely absolved into an invisible cloud of electrons floating around at the speed of light. Meanwhile in the QTH of K3JJZ, El. The effects of the night before were rapidly wearing off and El started working on that miserable wretch (Harry!) of a 432 rig. At some point of El's probing, he tuned the converter to the natural frequency of Lloyd's electron cloud. Immediately Lloyd;s cloud came from wherever it was into the IF of El's receiver through the demodulator and amplifier and audio stages and into the room. Slowly, the electrons started bumping against each other and coming out of their formation. Then Lloyd started to materialize (red checked shirt and all). As Lloyd was becoming visible, El sat down, #1 son said, "Daddy, did he come over your CQ radio?" Lorraine screamed. #2 son said, "Do you make lines on the TV like my daddy"" El swore never to drink again and Lorraine wondered what was in the orange juice that morning.

Since that event, hams everywhere are trying to duplicate it, the Government will pay millions for the secret, if anyone can discover it, and Lloyd, well Lloyd is a technical advisor to Mr. Spock on board the Starship Enterprise.

* *

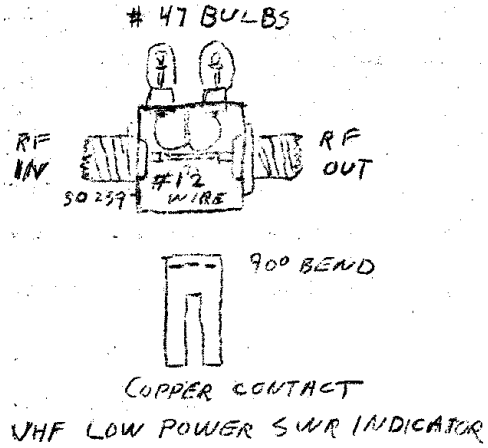
A LOW POWER SWR INDICATOR FOR UHF

K4UGC, Dick Fredricks, FLORIDA SKIP, March 1967

Here is a low power SWR indicator that gives visual indication of conditions of transmission lines and is suitable for use in UHF frequencies up through 1200 MC. It is simple to build and simpler to use.

The diagram is almost self explanatory and is drawn to full scale for easy measurement. The container is any metal box with a detachable cover which can be screwed or bolted down for good electrical contact. Drill holes for the #47 pilot bulbs using a 3/8" drill for a tight fit and solder the bulbs in place. The contact can be copper shim stock and should be soldered to the cover between the two bulbs and bent at right angles to itself so as to form loops in a plane with the wire connecting the two coax connectors. The connectors can be any type that fits your needs and should be centered in the box. The box is a 1-1/2" cube.

When in use the bulb over the input connector should glow brightly while the output bulb should show little or no light. Adjust line and antenna until these conditions exist. The unit can be used in either direction. 1N23C diodes can be used in place of bulbs if the use of a meter is desired but should be insulated from cover. Conductors from the diodes should be shielded and may be switched to show front and reflected current.

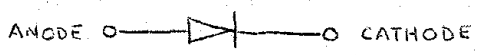


UHF LOW POWER SWR INDICATOR

TRANSISTORS FOR HAMS

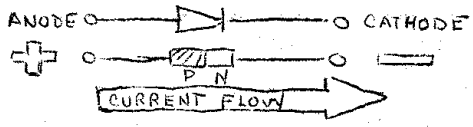
W3QZO, Bob Thomas
from BLURB, July 1966
Philmont Mobil Radio Club, Inc.

Because of space limitations and the desire to cover a great deal of ground about our subject in the next few months, these discussions will be based on explaining design concepts or the basis of fundemental easy-to-remember rules, which if applied, will bring fame and glory in the amateur world. For example, it will often be necessary to decide if the signal across a semiconductor junction is causing the junction to conduct or be cut off. It helps to think of a diode symbol:

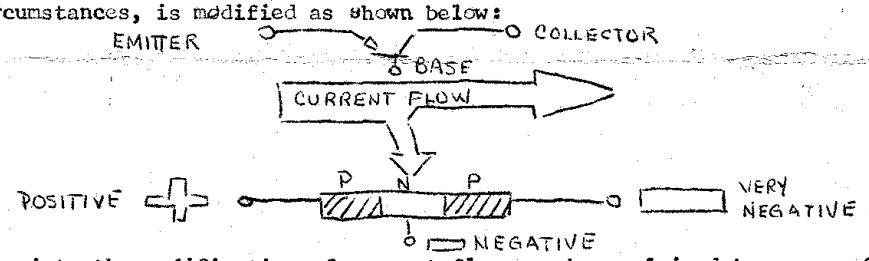


and to remember that the diode passes current only in the direction of the arrow:

Furthermore when we are talking about junction diodes, which most of them are these days, if we could look inside we would find that the anode was made of something called "P" material (because conduction occurs when a positive voltage is connected to it) and that the cathode is made of something called "N" material (guess why). So, whenever you see a diode symbol, remember the following:



If you know anything about transistors this "P" and "N" business may sound familiar because a transistor is basically nothing more than a PN diode to which has been added another slab of "P" material that is intimately associated with the PN junction making up the diode junction. However, although the direction of current flow is still indicated by the arrowhead, the actual path of current, under usual bias circumstances, is modified as shown below:



At this point, the modification of current flow can be explained by means of solid state physics, or you can accept the term "transistor action" and nobody will get embarrased. At any rate, what happens is that most of the current passes right through the base "N" material from emitter to collector. In a typical amplifier situation the current flow into the emitter might be 10 milliamps, of which 9.8 mils might go on to the collector with the remaining 0.2 mils passing out into the base circuit. The ratio of change in base current to change in collector current is called the d.c. beta (ugh!) or even worse, h_{FE}.

$$\text{D.C. CURRENT GAIN} = \text{beta} = \beta = h_{FE} = \frac{\Delta \text{COLLECTOR CURRENT}}{\Delta \text{BASE CURRENT}}$$

In the example above the d.c. β is 49 (9.8 divided by 0.2) and generally speaking the higher the beta, the better the transistor. Manufacturers have various ways of specifying beta: some are speced as "minimum h_{FE}" which tells you that all transistors of that type will have at least a certain current gain; sometimes both maximum and minimum betas are specified (30-100, for example) so you know exactly what range to expect - this is the best way, but you pay for it; sometimes a "typical" value will be given which tells you nothing - the beta could be anywhere from 2 to 3000. When you buy a "Polypack" of transistors at six for a dollar you don't have any say about the beta (d.c. gain). But cheer up, maybe you are getting all of the gradeouts (units that did not fall within the manufacturer's spec limits) that were above the maximum beta.

* *

In case you hadn't heard, hams can get 100 free QSL cards per year by requesting them from:

Pontiac Motor Division, General Motors Corp.
Advertising Department
196 Oakland Avenue, Pontiac, Michigan 48053

SWAP SHOP

Conducted by:
W3ZRR, Ray Whitehead
4534 N. Smedley Street
Philadelphia, Pa. 19140
215 - DA 4-5910

WANTED:
Receiver - 2 meter; converter and 2 meter exciter.
Contact: WA3BIV, Carl Barrish
7948 Thouron Avenue
Philadelphia, Pa. 19150
LI 9-8765

FOR SALE:
1 - Heathkit SSB Transc. HW-22 with PS, PTT Mike, 100 Kc. cal. and connecting cables -- $75.
1 - NC 98 Rcvr. and spkr. -- $55
1 - Gonset 7 band conv., operates 12 V.D.C. -- $20
1 - Heathkit Mohican Transistor Rcvr. GCI-A -- $70
All new or excellent condition.
Contact: W3NSI, Lyn Roland, Jr.
1822 Dallas Street
Philadelphia, Pa. 19126
HA 4-0875

FOR SALE:
2M HB Trans. Xtal cont, 6146 final with 175 watt modulator (807's), match. power supply -- Complete $45
Contact: W3ZRR, Ray Whitehead
4534 N. Smedley St.
Philadelphia, Pa. 19140
DA 4-5910

FOR SALE:
50 watt mobile rig, BLACK WIDOW receiver/transmitter, (not a transceiver) complete with PTT Mike, speaker, MH power supply 12 volts, all cables and a whip. Ready to go for $135.00
Contact: K3HWZ, Wm. McCutcheon
124 Orchard Lane
Feasterville, Pa., 19047
357-4972

FOR SALE:
UTICA 650 A 6 meter transceiver with VFO and good Astatic mike -- $98
Contact: K3GAS, Doc Cutler
7815 New Second St.
Philadelphia, Pa. 19117
ME 5-1078

FOR SALE:
2 meter transmitter 75W, final 5894, modulator pair of 6146's, self contained P/S, VOX or PPT, VFO or Xtal (4 included) -- First $50
also
Eico 753 SSB transceiver (factory wired) 80-40-20 with P/S speaker comb., NCL 2000 amplifier brand new condition -- Both for $325
Contact: K3IPM, Stanley Smith
133 Hogeland Road
Southampton, Pa.
215 - 355-2867

FOR SALE: (from W3SJ station)
HQ 170 Receiver -- $160; HT-37 Transmitter -- $210; Tecraft 2 meter transmitter and power supply - new -- $65; RME Preselector -- $35
Contact: Gary Blacksmith
7352 N. Bouvier Street
Philadelphia, Pa. 19126
WA 7-7181

FOR SALE:
Heathkit SB 300, 3 xtals, and 6 M conv. $180; HX-30 trnasmitter, 24 W, AM, CW, SSB, VFO -- $100; Clegg 99 -- $80; Viking Adventurer 80-10 M -- $15; D104 -- $15; Turner #250 Mike -- $10
Contact: K3UKW, Tony Musero
1609 S. Iseninger St.
Philadelphia, Pa. 19148
FU 9-1638

FOR SALE:
Clegg 99'r 6-M transceiver with mike excellent condition -- $90; Heathkit Sixer 6-M transceiver with 12V power supply excellent conditioner -- $40
Contact: Frank R. Simmons
1520 Crest Road
Penn Wynne, Pa. 19151
MI 2-8834

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ADDRESS CHANGE
W5NFD/3 George Gakoumis
1265 Old Ford Road
Huntington Valley, Pa. 19006
WI 7-2735
(assigned to W3CL's contest group)

NEW MEMBER
W3PST, Elwood W. Haldeman
1732 Loney St.
Philadelphia, Pa. 19111
725-1106
(assigned to WA3ERQ's contest group)

APPLIED FOR MEMBERSHIP
K3JJO, Waldo R. Nevell
(sponsored by WA3FAA and WA3EPS)
WA3GNV, John P. Elimore, Jr.
(sponsored by W3FGQ and W3ELI)

RETIRED MEMBER
W3KXH, James Spry
422 Princeton Avenue
Philadelphia, Pa. 19135
388-2016

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MEETING NOTICES

November 7: Contest coordinators meeting at the QTH of W3KKN, Ernie Kenas, 2823 Old Welsh Rd., Willow Grove, Pa.

November 8: Board of Diredtors meeting at the QTH of W3MVF, Dave Bloch, 6922 Revere Street, Philadelphia, Pa.

November 15: General meeting at the West Oak Lane Jewish Community Center, Sedgewick & Thouron Sts., Philadelphia, 8:00 P.M. Topic: Home Brew Night
(see atricle by K3HSS, page 4)

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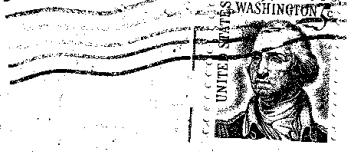
Sincere condolences to W3SAO and family on the death of Frankie's mother, Mrs. Minnie Brick.

PACK RATS CHEESE BITS
8533 ALGON AVE
PHILA. PA.
19152



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

MEETING NOTICE