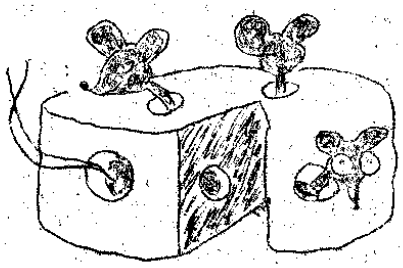

PACK RATS' CHEESE BITS

MT. AIRY V.H.F. RADIO CLUB INC., PHILA., PA.
(50.2, 145.2, 221.4, 432.3 & 1296.4 MC.)
CLUB CALL: W3CCX
AFFILIATED CLUB: AMERICAN RADIO RELAY LEAGUE
EDITOR: HELEN BRICK, XYL, W3SAQ
MEMBER: AMATEUR RADIO NEWS SERVICE
MEMBER CLUB: DELAWARE VALLEY COUNCIL of AMATEUR RADIO CLUBS

MEETING NOTICES: LAST PAGE

VOLUME VIII | NOVEMBER 1965 | NUMBER 8

OUR PREZ SEZ

I just returned from the Penn-Jersey Club Auction and it is amazing the way a small club can run such a successful affair. It must swell the club coffer a good degree. Pack Rats seen there were, K2QOS, K3JJZ, K3EOD, W3IXL, W2LZA, W3MFY, W3MVF, K3HSS, W2AXU, WA3CAG W3OHY and maybe a few others. A big treasury can be a big asset and this could be a great way to build one up. Keep it in mind.

It looks as though code sessions will be a reality. W3CL will be the kick-off keyer.

Look inside for a way to easily get a free year's dues.

With the January Contest approaching, all members should keep their ears tuned to the various nets for the latest dope. Please co-operate with your coordinator so that his job will be a bit easier.

A most interesting meeting will be held in November with K3AA reminiscing of the past and K3MAW speaking on Moonbounce.

The December meeting is our only 'closed to guests' meeting and I expect all club members to be in attendance.

W3ELI and K3WEU were on the Red Benson Show last week and I heard they carried themselves admirably. We look forward to hearing a tape of the show in the near future.

73,
K3GAS, Doc

****

SILENT KEY

W3CFS, EDWARD ALBERT

SUNDAY, OCTOBER 24, 1965

His voice is silent, His beam unturned, Heaven has given him the the rest he has earned.

"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 PUBLISHED IN "CHEESE BITS" MAY BE REPRINTED, UNLESS SO STATED, AS LONG AS PROPER CREDIT IS GIVEN.

DEADLINE FOR ARTICLES: 20th of the month.

ALL INFORMATION SHOULD BE SENT TO THE EDITOR: HELEN BRICK, XYL, W3SAO
821 W. Lindley Avenue,
Phila., PA 19141
215- DA. 4-7524

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Phila., PA 19117
215- ME. 5-1078

AWARDS CHAIRMAN:
W2EIF, JOSEPH KILGORE
#5 Sunnybrook Court,
Stratford, NJ 08084

DIRECTORS' MEETINGS are held on the second Wednesday of each month at designated locations.

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

OFFICERS: 1965 - 1966

PRESIDENT: K3GAS, DOC CUTLER
VICE-PRES: W2EIF, JOSEPH KILGORE
COR. SEC.: W3SAO, FRANCIS BRICK
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W2AXU, JOHN POWER
W3ELI, GEAORGE VAN DYKE, JR.
K3HSS, CHARLES LUSTICK
K3CIV, RALPH HERSH
(EX-OFFICIO)

****

NOVEMBER BIRTHDAYS

K3ABK, Sam; K3WEU, Paul; K2QOS, Mike; K3BRJ, Jack; W3IHT, Doc.

Congratulations, and may God grant you life to have many more.

****

PHILA. COUNTY AREC

K3FYS, MOLLIE SILVERSTEIN, E.C.

REGULAR MEETINGS: First Wednesday of each month at 8:00 P.M.

PLANNING MEETINGS: Last Wednesday of each month at 8:00 P.M.

Telephone alerting system will be used for locations.

SET REPORT

SET this year was more successful than last year, but a lot has to be done to remedy our mistakes.

Especially to be commended are; K3WEU, Paul Behrmann; WN3EDU, Pat O'Brien, the lovely YL from Ingles House; K3HNP, Dave Heller; K3IGN, Bud Heilbron; K3NSN, Chuck Waugh, on 10 meters, K3EEQ, Jim Landy, on 2 meters; the two mobiles, WA3CNQ, Howard Gandy and K3VBA, Charles Monahan; K3ZXO, Vince Kelly; W3ELI, George Van Dyke and his XYL, Gracie, WA3BJQ; our members and the many amateurs who participated.

K3ZXO, Vince and his friend Bill both helped quite a bit with the handling of traffic and recording same. At one time, Vince was net control on 10 meters and alternated between 6 and 10 meters.

On Wednesday, November 3rd, we will have a brief meeting covering the results of SET and then have a film, "Though the Earth Be Moved", which relates a dramatic story of the Alaskan Earthquake of March, 1964, and the three days of crisis that followed. The importance of an emergency communications system is made evident throughout the film. YL's and XYL's, friends and neighbors are invited, and refreshments will be served.

The meeting will be held at the Community Center, Bustleton Avenue, and McGee Street at 7:45 P.M.

73, K3FYS, Mollie Silverstein
EC. Phila. Co. AREC

****

EDITOR'S CORNER

As you can see, the typewriter has returned from the "hospital" and is coming along quite well, thank you.

First things first, and so this issue will contain first the articles that were missing from the last issue. It is a pleasure not to have to grab the stencil and guide it as I turn the platen. I found out that the platen and it's roller had and arguement and went their separate ways. No one knows 'how'cum'.

****

PHYSICISTS CHILL 'TIN SANDWICH' RADIO WAVES 'FROZEN OUT'

By Gary Brooten

Microwave radiation has been squeezed from a very cold "tin sandwich" by University of Pennsylvania physicists, it was reported Monday.

The success was matched almost simultaneously by a team of Russians working from the same three-year-old theory About the physical phenomenon called "superconductivity".

OPENS NEW FIELDS

Besides boosting the theory, the tin sandwich could open the door to a

(next page)

whole new family of electronic applications, according to a report by the American Institute of Physics.

These could include a non-jammable "passive radar" to detect emmissions, new types of transmitters for communications and some computer developments.

The scientists were Drs. Ronald N. Langenberg, Doublas J. Scalapino and Barry N. Taylor, and Robert E. Eck, who work in Penn's Laboratory for Research on the Structure of Matter at 33rd and Walnuts Sts. Their experiments were discussed in Physics Today, a publication of the AIP.

LOSE RESISTANCE

For more than a year, the Penn group has been pursuing this new trail on the wierd frontier of super-super-cold, where many ordinary laws of physics seem to be suspended.

At temperatures near absolute zero (minus 459 degrees faherenheit), many materials lose their resistance to the flow of electricity completely and become "superconductors".

Three years ago a British graduate student predicted that electrical current could be made to "tunnel" between two super-conducting layers separated by a nonconducting layer, and-among other things-could produce very short "radio" waves.

CHILLED BY HELIUM

Penn's "sandwich" contained two layers of tin (which is a superconductor) divided by a layer of tin oxide (which is not). The researchers use liquid helium to chill the device enough for the tin to become superconductive.

A magnetic field (weaker than that of a common horseshoe magnet) was used to induce the "tunneling" motion of electrons, and the unit produced detectible radiation.

This radiation is of high interest because it had an "in-between" wacelength-a wavelength not easily produced, shorter than the short radio waves used in radar but longer than infrared, or "heat" waves.

AID TO DETECTORS

By making suce a wavelength easily producible, the "tin sandwich" could presage its use as a new communications channel.

Applied in reverse, moreover, the principles of the "tin-sandwich" could lead to highly sensitive radiation detectors in wavelengths bordering on infrared. Thus they open a new path to infrared sensing, a vital military, scientific and medical technique.

From the Phila. Inquirer, Tuesday, Sept. 7, 1965

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GUIDANCE SIMPLIFIED

Author Unknown

Contributed by; K3PXT, Carmen Diodati

Introduction:

The following are excerpts from a report explaining, in simplified terms, the operation of typical guidance system.

Discussion:

"The missle knows where it is at all times. It knows this because it knows where it isn't. By subtracting where it is from where it isn't, or where it isn't from where it is (whichever is greater), it obtains a difference, or deviation. The inertial guidance system uses deviations to generate corrective commands to drive the missile from a position where it is, to a position where it isn't, arriving at the position where it wasn't, it now is. Consequently, the position where it was, is the position where it wasn't, and it follows, the position where it was, is the position where it isn't; in the event that the position where it now is is not the position where it wasn't, the system has acquired a variation (variations are caused by external factors, and the discussion of these factors is not considered within the scope of this report), the variations being the difference between where the missile is and where the missile wasn't. If variations are to be considered a significant factor, it too may be corrected for by the use of the Mark 2 system; the missle must know where it was also. The "through process" of the missile is as follows: Because a variation has modified some of the information which the missilbe has obtained, it is not sure where it is. However, it is sure where it wasn't (within reason), and it knows where it was. It now subtracts where it should be from where it wasn't (or vice versa) and by differentiating this from the algebraic difference between where it shouldn't be and where it was, it is able to obtain the differnece between its deviation and its variation which is called Error. . .

THE AMATEUR AND ARITHMATIC

By K3PXT, Carmen J. Diodati

The amateur to be more versatile and proficient must apply to his advocation the basic branches of arithmatic. He must add, subtract; multiply and divide - not numerically, but literally.

Each day he must strive to add to his realm of experience; addidtional knowledge, wisdom and skills. He must add the tools of knowledge; curiosity and the means ofsatisfying this curiosity by means of questioning, investigation and the perusing of literature. For these are the tools of learning.

He must add the tools of friendship; patience, understanding and tolerance to those less skilled, less experienced and less wise. He must aid those who seek to gather from him the benefits of his experience, his knowledge and of course, his wisdom. In so doing, he adds to amateur radio additional prestige, ability and pleasure.

He must add the tools of labor, the soldering iron, the tin snips and the drill, along with the other necessary hand tools. Then seek the time and the will to use them--only then can he know the elation and the pride which comes with the statement; the rig here is home brew.

The amateur must sit back and review his operating habits. Has lidism become a part of operating technique, has courtesy and consideration towards his fellow amateurs and neighbors, given way to egotism, scorn, disgust and anger? He must weigh the good and the bad, then subtract those traits which do not comply with good practice and the Golden Rule. Only by respecting the rights of others can the amateur in turn, gain their respect. He must subtract the desire to procrastinate - he must not put off until tomorrow that which he can do today, whether it be a higher class license or a new rig. For only those goals which are started today are completed tomorrow. Yes, subtraction has its place in amateur radio. Most important, it is one of the few times subtraction does not diminish. Subtraction of the bad from the good results in a tremendous gain, not only for the individual who does the subtracting, but for the entire ham fraternity.

The amateur must also multiply. He must multiply the good he can do and the services he can render for his community via amateur radio. He must multiply by words, deeds and actions the advancement of his advocation so that when his key is silent - he too may be revered as we, today, revere those pioneers who contributed to advance the art, so that we today, enjoy the fruits of their labor. To them belongs a debt of gratitude - not only fromradio amateurs, but the entire world. May we do the same for those who follow us.

The many aspects of amateur radio run a complete ga mut. The wise ham divides his time so that he savours all. How else can he know his preferences? True, he may meet with failures, but he must try, and, if necessary, try again until he succeeds. For only with success can he swell with pride for his accomplishments. He must divide his time not only for his own satisfaction and pleasure, but for the welfare of his home and his community. As his community benefits, so does his country; as his country benefits, so will its people.

The amateur, with the use of this arithmatic can be an asset and a source of pride in his community. Only when he succeeds in fulfilling these arithmatical requirements can he progress to equations. He can then equate - positive deeds to a more positive ham.

****

WHAT'S NEW? By WB2PHV, Hank Hankinson

Presently before the Senate Sub-committee on communications, there is a bill being examined which would grant the FCC broad powers to regulate the manufacturers of devices that contribute to the high noise level on the radio spectrum. The ARRL has, through it's attorney, testified before this committee in general support of the bill with the exception that the ARRL is in favor of a more stingent control. In particular, the construction of extremely high voltage transmission lines in residential areas, with their high noise levels, were mentioned. Amateur radio operation in some of these areas is almost impossible due to interference from power lines, appliances and industrial equipment. The FCC has explained the need for such legislation and made mention of electronic door openers, certain electronic toys, high powered heaters and radio and television receivers. ARRL urges favorable action on the bill. (Senate bill 1015)

From "Crosstalk", Gloucester County ARC, N.J. Editor: K2JKA, Jack Layton,

****

The EC and I would like to thank K3A8K, Sam, for seeing that traffic regarding AREC meeting, got through on the Monday night nets the night after burying his Son-in-Law. Our sympathy to Sam and his family.

WAVELENGTH

By W2EIF, Jo Kilgore

I was tuning across one of the VHF bands a few days back and chanced on a QSO which involved the discussion of a $\frac{1}{2}$ wavelength of coax cable. There seamed to be some divided opinion and some confusion.

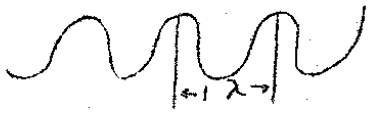
In order to satisfy my own curiosity about a subject which should be relatively simple, a short invertigation was made. The results of the study is now passed on to you for whatever it might be worth.

Many of you will no doubt be well aware of the subject of discussion and need read no further. I'm sure that there are a few of the club members who may benefit from this short discussion.

First How do we establish a wavelength? We start by knowing two things; (a) the speed of light and (b) that radio waves travel at the same speed as light.

The speed of light has been very accurately measured as 299,796,000 meters per second. (This is also 180,000 miles per second)

What is a wavelength? - it is the distance between 2 adjacent wave peaks of the radio frequency wave, thus



The symbol for a wavelength is the Greek letter λ.

To find the dimensions of a wave length we divide speed by frequency, or in

$$\frac{\text{Meters/second}}{\text{Cycles/second}} = \frac{\text{Meters per second}}{\text{Cycles per second}}$$

The seconds cancel out of the equation and the result is meters per cycle, or the length of 1 cycle (wavelength) in meters.

Let us perform this operation;

$$1\lambda = \frac{299,796,000 \text{ meters per second}}{\text{Frequency in cycles}}$$

To reduce this to more practical terms, divide top and bottom figures by 1 mc (10^6) and we have $\frac{299.796}{Fmc} = 1\lambda$

Now, a meter is 39.37 inches long, so

$$1\lambda = \frac{299.796 \times 39.37}{Fmc} = \frac{11803}{Fmc} \text{ inches}$$

This is the formula for the length in inches of 1 wavelength at a frequency of Fmc IN FREE SPACE.

Unfortunately, or fortunately, depending upon the viewpoint, we are not in free space and the material immediately surrounding the wire slows down the radio wave and the physical length of our wire or cable is shortened. How much it is shortened depends on the material velocity factor (V) which is a fraction, always less than 1, by which we multiply our formula so it becomes

$$1\lambda = \frac{11803}{Fmc}V$$

(V) or velocity factor can be obtained from handbooks or cable manufactuerers catalogs,

For $\frac{1}{2}\lambda$ we us half the formula

$$\frac{1}{2}\lambda = \frac{5902}{Fmc}V \qquad \text{and} \qquad \frac{1}{4}\lambda = \frac{2950}{Fmc}V$$

Now, for example - Suppose we want to know the length in inches of a $\frac{1}{2}$ of coax cable with polyethelene insulation at 50.5 mc. The velocity factor (V) for this cable is 0.66

Applying our formula $\frac{1}{2}\lambda = \frac{5902}{50.5 \text{ mc}} \times 0.66" = 77.13$ inches (use $77\frac{1}{8}$)

The dimension should be end of braid to end of braid, with 1 inch of center conductor exposed at each end.

Knowing the above factors, you can now figure your own baluns for any frequency. It is useful also for calculating $\frac{1}{4}\lambda$ transformers for matching purposes.

****

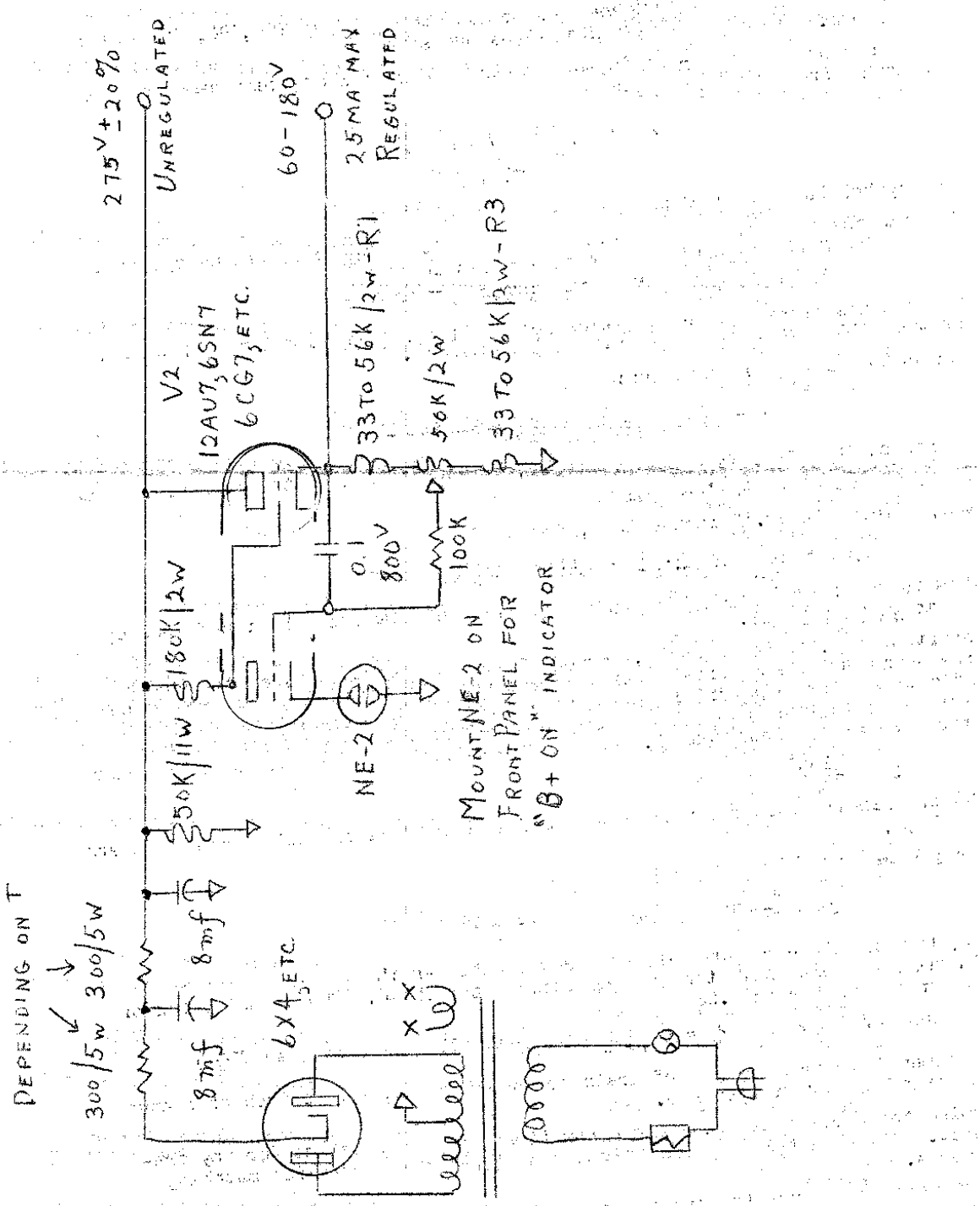
That ends our backlog of material from the October issue. We shall now proceed with the material for the November issue. Thank you for being so patient, and I hope that from now on "Cheese Bits" will be up to par again.

STELLHORN JUNKBOX SPECIAL

REGULATED POWER SUPPLY

From "Bandspread" Editor, WØIKQ, Bob Noyer, Cedar Rapids, Iowa

NOTES: Unregulated B+ to V2 should be min. of 100V higher than max. regulated voltage required. Juggle R1 and R3 for desired adjustment range. NE-2 firing voltage limits obtainable variation in regulated output voltage. Use additional V2's for greater current.



SOMETHING FOR NOTHING ? ? ?

By K3HWZ, "Grandpop" Bill

There is no such thing as "something for nothing", but there is an opportunity for every member of the Pack Rats to really achieve satisfaction with very little effort. Cheese Bits needs your articles. The last two issues are classic examples of how thin our little publication can be when it is not properly supported by the members of the club. Proof of this was the receipt of an exchange magazine from one of our friendly clubs out in Kansas, who took note of the fact that one of our recent issues was particularly thin as no fill-in material had been used and, except for a few very scant articles, the balance consisted of meeting notices and swap shop bulletins.

You do not have to be a writer of considerable merit to participate in this very interesting work. Actually, you do not even have to write about radio or electronics. Any and all of the activities participated in by the Pack Rat members - from photography to swimming, through gardening and home building projects - would provide an interesting article for perusal in Cheese Bits. If you have recently purchased a bit of surplus equipment and have gone through the modifications as indicated by various publications, or if you have put in some innovation of your own, the results and the effort expended summarized in a small article would prove not only interesting, but valuable reading, for Pack Rat members.

Of course, there is the additional ultimate satisfaction of feeling that you have put something down in black and white on paper, transmitted it to the editor and it was printed. The budding young author blossoms out in full bloom. As you can see by the foregoing, a little effort will bring forth many returns and, last but not least, at the end of the year a vote of the Pack Rat members will indicate their choice for the best article of the year. The recipient of this award will receive a paid-up membership card for one year. Only $6.00, it is true, but what do you expect from a Pack of poor, little Rats.

Let's get on with it and feed the kitty --- cheese, or otherwise, is always welcome by the editor.

Ed. note: Here is the quote from the "Ham Monitor", Editor, WØIHP, Egypt Mandrell, Pretty Prairie, Kansas

One paper which has always been nice and fat, published this last month with only copy sent in by the readers - it was so thin and under nourished it looked like the leavings after a kid's picnic. Unquote.

****

ARRL BULLETINS

NR 28, October 7, 1965

Attention DXers. Announcement is hereby made of the addition to the ARRL Countries List of St. Peter and St. Paul Rocks. Located some 600 miles Northeast of Natal, Brazil, St. Peter and St. Pauls Rocks is territory belonging to Brazil. Acceptance of this territory is in accordance with point 2 (a) of the criteria, see July 1963 QST DXCC note. Confirmations for contacts with St. Peter and St. Paul Rocks may be submitted for DXCC credit starting January 1, 1966. Confirmations submitted before January 1, 1966 will be returned without credit.

AR

NR 29, October 15, 1965

In recent years, amateurs have been electrocuted and others have suffers injury, caused by failure to bypass capacitors in the primary circuit of AC power supplies. This type of accident can be avoided by the use of a common ground system linking all equipment chassis to a water pipe or other good ground connection. If you will send a stamped self addressed envelope, with a note to ARRL reporting the bulletin station copied, you will receive a copy of the Safety Code and Safety Supplement. Address your request to the ARRL Communications Department, 225 Mais Street, Newington, Conn. 06111. Switch to safety and stay alive.

AR

****

DID YOU KNOW

THAT W3OR, Alan Vincent fell from his tower the other week and is in Taylor Memorial Hospital, Ridley Park, PA in critical condition? Send cards to him at his home address: W3OR, Alan Vincent
Box 263, R.D. #1,
Sycamore Mills Road,
Glen Mills, PA 19342

God grant you a speedy recovery, Alan.

ARRL VICE-DIRECTOR'S NOTES, W3ECP, E.S. VAN DEUSEN

From: October "Auto Call", Editor: W3NL, Andy Anderson

It is apparent, from conversations and arguements overheard, that the FCC's interpretation of Section 97.81 and others regarding the use of licensed equipment by amateurs other than the one to whom licensed, needs clarification. The true interpretation as made by the FCC is that:

(a) when the licensee is present in the station and a visitor is permitted to use the equipment, the visitor may use the licensee's call, OR, with the permission of the licensee, may use his own call with the portable designator.

(b) when the licensee has granted permission to another licensed amateur to use the licensee's equipment and the licensee is not present while the visitor is operating, the visitor must use HIS call with the portable designator.

(c) in the case of a Club station, the Trustee of the station may grant the authority to use the station equipment to any licensed amateur and he may also grant authority to such individual to use his (the non-Trustee) own call with the portable designator, although the Club call should normally be used.

(d) in any case, station operation must conform to the limitations imposed by the FCC Rules on the class of license held by the individual who is using the equipment, regardless of the fact that the licensee may hold a higher grade of license.

The key to this interpretation seems to be the term, "under the control of" as it appears in Section 97.81 of the Rules. Club stations are an exception to the Rules, since the control need not be exercised by the Trustee at all times; he may delegate control to another licensee.

Submitted by, W2AXU, Jack Power

****

FOOD FOR THOUGHT

(Ed. Note: Since November is the traditional month for Thanksgiving, I wish to pass along the following from two of our exchange papers.)

MY CREED, By Dean Alfange

From "Tennessee Ham", Editor: W4WHN, Max Arnold, via Amateur Radio News Service Bulletin.

"I do not choose to be a common man. It is my right to be uncommon, I seek opportunity to develope whatever talents God gave me - not security. I do not wish to be kept a citizen, humbled and dulled by having the State look after me. I want to take the calculated risk; to dream and to build, to fail and succeed. I refuse to barter incentive for a dole. I prefer the challenges of life to the guaranteed existence; the thrill of fulfillment to the stale calm of utopia. I will not trade freedom for beneficience nor my dignity for a handout. I will never cower before any earthly master nor bend to any threat. It is my heritage to stand erect, proud and unafraid; to think and act for myself, enjoy the benefit of my creations and to face the world and boldly say --'This, with God's help, I have done.' All this is what it means to be an American."

****

AND IT COST SO LITTLE

From "Florida Skip", Editor: W4IYT, Andy Clark

If you want to harvest a crop of happiness, the surest way is to plant a field of good deeds. One kind act done each day will reap a hundredfold of joy. Kind deeds are the soothing and effective lubricant which, poured on the frustrations of life, give double joy. Real happiness does not consist so much in being served as in being servant. Kindness is an overflow of self on others, and we achieve happiness by making others happy.

A warm press of the hand, a sympathetic glance, a cheerful greeting ---small things, to be sure, but they yield rich dividends in human happiness.

Albert J. Nimeth, O.F.M.

****

LASER RAYS SOLD IN KITS FOR STUDENTS, From the Inquirer, October 4, 1965

The Laser may well become a hobby before it becomes a tool of industry.

A California company said Sunday it has started selling Laser hobby kits for use by high school and college students.
The kits, says Electro-Optical Systems, Inc., of Pasadena, a subsidiary of Xerox Corp., can be built from instructions in several hours.

LASER RAYS (cont'd)

The Laser beam in this kit doesn't compare with the Laser that nearly split James Bond in twain in the movie "Goldfinger", but a spokesman for the company says its version can be used in at least 15 different experiments.

Laser technology is still in its infancy and is still far too expensive for use in industry. Laser beams, however, have been used to cut through metal, to weld detached retinas to eyeballs and in communications.

A sopkesman for EOS said the $500 Laser kits might help the Laser to achieve a breakthrough simply by their use in high school and college laboratories.

One of the 15 experiments described in a book accompanying the kit is the measurement of distance using a Laser beam. The beam is thrown against an object and then bounced back. A photo cell and oscilloscope then are able to determine how far the distance between the beam's starting point and where it was aimed.

A spokesman for the West Coast electronics company said the Ruby Laser machine will weigh 25 pounds. He described the machine as a "wonderful research tool", and declared that schools and colleges, as well as military research installations have expressed interest in it.

(Editor's musing: Wonder if they will include a warning as to the extreme danger of the Laser beam?)

****

CALIFORNIA OPTIC SCIENTISTS TRY to TAME an ERRANT LASER BEAM, By Karl Abraham, From the Evening Bulletin, October 7, 1965

The day when long-distance conversations are carried on beams of light seemed to recede today amid reports that at least one such beam under examination is misbehaving.

A team of scientists has been shooting this intense, narrow beam of red light from a laboratory in Torrence, Calif., to a hill in Palos Verde, five miles away.

The beam of light has not been behaving in accord with physical theories, the team from North American Aviations's Electro-Optical Laboratory reported to the Optical Society of America here.

The light beam is produced by a device called a Laser. The Laser consists of a tube filled with helium and neon gas. When the length of the tube is flooded with a flash of intense white light, the gas first absorbs the energy them emits it from one end in the form of a single burst of intensely pure red light.

The emitted beam is extremely narrow. Lasers using either gas or certain crystals that behave similarly are not being explored for many practical uses.

On the hill five miles from the Laser transmitter, the scientists set up two kinds of detectors.

One consisted of an eighth-inch diameter lens. The other was a 40-inch diameter mirror to collect the light. Both devices were linked to electronic tubes that could sense the incoming light of the Laser.

First the scientists found that the intensity of the received light fluctuated very strongly, sometimes reaching 20 times the average intensity. This would be equivalent to having the loudness of a telephone voice suddenly increase twentyfold.

****

LIGHT BEAM TRAPS 'LIGHT FANTASTIC' By Gary Brooten. From the Inquirer, October 7, 1965

A step toward trapping the "light fantastic" for radio or television broadcasting was reported Wednesday.

It is a new device capable of detecting 100 million tiny changes every second in the intensity of a beam of light.

This is fast enough to sort out 25 television programs being broadcast simultaneously on such a beam, according to two scientists from the Radio Corp. of America's David Sarnoff Reaserch Center in Princeton, N.J.

Science already knows how to create the light beam needed for such a purpose the high intensity, highly-focused light beam of the LASER ("light amplification by simulated emission of radiation"), invented only five years ago.

The LASER, dubbed the "light fantastic" when its many potentialities became known, theoretically is capable of creating a light beam to carry all of America's radio and television programs at the same time.

LIGHT FANTASTIC (cont'd)

The program has been to pack the information into the LASER beam, at one end, and to "read" it out at the other.

The newest "reader" device was described by RCA's Drs. Henry S. Sommers, Jr., and Edward K. Getchell at the 1965 annual meeting of the Optical Society of America in the Bellvue-Stratford.

The secret, they said, is to have the light beam received in a small cavity bathed in microwaves, or very short "radio" waves, which vibrate at 10 billion cycles per second.

This creates an alternating electrical field, within which information from the light beam can be converted into microwave information. The microwave information then can be detected and processed by standard equipment.

Besides high speed, Dr. Sommers said, the new system has the advantage of operating with light of any color.

Earlier systems, he said, have been too slow, too insensitive or limited to specific colors which are difficult to generate with a LASER.

****

Did you ever watch a television personality doing a live show, and then see him on tape doing a commercial, and notice the difference in the sound of his voice? The voice is different, but enough of the characteristics remain so that it is recognizable. Well, the same transition takes place on these telephone radio programs where they set up a 6 second delay.

The other day, while writing out meeting notices, I was listening to such a radio program at the same time. Suddenly I heard a voice, and I said, to myself, "That sounds like Cholly." At the end of the conversation the voice said, "I am an amateur radio operator and my call is W3IBH."

****

SILENT KEY

W3IBH, CHARLES CLEMENTS
SUNDAY, OCTOBER 31, 1965

"ALL SOULS 'EVE"

In sorrow, we bow our head,
The Pack Rats' Founding Father
is dead.
No ,more will we hear
That voice with a smile,
"W3IBH, in Mt. Airy,
Number one on your dial."

****

TO ALL ARRL INTRUDER WATCHERS

There is a CW station on approximately 14070 Kc which sends the letter "C" every seven seconds and has been heard to identify as "UMS". The station occasionally sends 5-digit traffic but most of the time is merely holding the frequency as noted above, and appears to be in 24 hours a day.

...would like to have as many reports as possible on this station. (Please include) Report time heard, your measurement of the frequency, and any excerpts of traffic that you may be able to get. Please report on this station each day, if you have the opportunity. 73,

Richard L. Baldwin, W1IKE

****

If you enjoyed the film, "A Walk In Space", you owe your thanks to W5NFO, George Gakoumis, our Rat in Houston, TX.

W3ELI, George and K3WEU, Paul will be on WCAU-Radio on November 15, at 2400 hrs., with more publicity for the Pack Rats and Amateur Radio.

SWAP & SHOPPE

Conducted by W3ZRR, Raymond Whitehead
4534 N. Smedley Street,
Phila., PA 19140
215- DA. 4-5910

FOR SALE: FROM THE ESTATE OF W3UMI, Willie Jones

2 meter Xmtr. (120 watt) Home Brew, 5894 final, Mod. 807 pair
6 & 2 meter Xmtr. (250 watt) Home Brew, 4x150 final. 2 meters not finished.
6 meter Home Brew converter with power supply on 19" rack panel
2 meter Home Brew converter with power supply on 19" rack panel
NC300 Receiver with speaker. Serial No. 4340767 mint condition
ARC5 V.F.O. 7-9.1 with power supply
Lafayette Receiver Model KT-320 factory wired. Not used.
Low freq. rig. Home Brew. Needs some work (500 watts) 4E27A/5-125B final, 811-A modulator. On 19" rack panel
Argonne AR-59 mike and stand
RCA Low imp. mike with floor stand
Astatic WR-20 mike
Coax relay (2)
Blank QSL cards (500)
CDR Rotor Automatic
6 El. 6 meter Telrex antenna
10 El. 2 meter Home Brew antenna with matching harness (2)
60 ft. crank up tower, needs some work
4 ring halo antenna (no mast)
6 meter whip antenna
6 meter halo antenna with mast and mounting bracket
6 meter mobile rig with converter for S.C. with mike. 5763 final
Heavy duty power supply
UTC S-47 transformer, 115V CT 2000 2500 3000

Thor T-26F61 fil. Trans. 117V 15V CT 3 Amp. 26.3V - 3.6 Amp.
Thor output Trans. #22S65
Hi Fi output Trans. Stancore audio out 25 watt 4-8-16 om.
UTC Transformer #S-33
6 foot rack (gray finish in new condition)
19 x 14 black rack cabinet
Setchell & Carlson Inc. BC 1206 Cm (Air craft receiver)
Scope Hickok Model 195-B
Rainbow generator Model 150
Variac 0-130 3 amp.
Mini Box 17 x 5 x 4
Mini Box 12 x $2\frac{1}{2}$ x $2\frac{1}{4}$ gray
Mini Box 13 x $2\frac{1}{2}$ x 4 gray
Alum. mini box 13 x $5\frac{1}{2}$ x $2\frac{1}{2}$
Gray crackel cabinet with cover 14 x 10 x 9
Blue crackel cabinet 8 x 8 x 8
Blue crackel cabinet 16 x $8\frac{1}{2}$ x 8
Alum. chassis 7 x 5 x 3
Alum chassis 7 x 5 x 2
Black crackel mini box 4 x 4 x 2
Gray mini box 17 x 5 x 4
Hoyt meter model 793 0 - 2 DC mil.
Hoyt meter model 793 0 - 1 DC mil.
Ferranti model 211976 0 - 5 milamp. meter

Cap. oil can 1 mfd 2000V
cap. oil can 8 mfd 600V
Cap. oil can 3x4. 0mfd 600V
Triad filter reactor 9Hy 150 mil. 115 ohms.
Philco trans. #32-3268

Miscellaneous parts and tubes:
5 - 4 x 250 tubes
4 - 4 x 150 tubes
2 - sockets for 4x150/4x250
3 - chimney for 4x150/4x250

Items will be sold to the highest bidder.

CONTACT: MR. ALBERT JONES
542 Fairway Terrace,
Phila., PA 19128
215- IV. 3-1941
or,
K3EOD, Alan Boblitt
215- PI. 2-3312

SWAP & SHOPPE (cont'd)

FOR SALE: Johnson 6&2 converter
Johnson 6&2 Xmitter
SP 400 receiver
NC 125 receiver
Freq. meter BC 121 125 Kc to 250 Mc.
TS 174 freq. meter 20 Mc. to 250 Mc.
Mosely V-46 trap vertical
Mascot tape recorder

Dispositon will be at reasonable prices.

CONTACT: W3ISN, Bud Heilbron
215- IV. 2-5084

FOR SALE: 4 element Telrex beam with motor, complete $35.00
Black Widow mobile transceiver. X cond. $175.00

CONTACT: K3FYS, Mollie Silverstein
132 E. Colonial Street,
Phila., PA 19120
215- LI. 804885

SWAP: FOR 2 & 6 METER GEAR
Hammerlund Super-Pro receiver rack mounting, built in power supply, 5 bands, 100-200 Kc., 200-400 Kc., 2.5-5 Mc., 5-10 Mc. Good.
Barker & Williamson Model 650 "Matchmaster", combination S.w.R. bridge and power output meter. Excellent
R.C.A. Senior Voltohmyst, Model WV98C. Excellent
Heath Model FMO-1, F.M. oscillator. Excellent
Heath Model AG9A, Audio Generator. Excellent
Heath Model AW1, Audio wattmeter. Excellent
BC 455 B, 40 meter receiver, with power supply. Excellent
BC 457 A, Transmitter. Excellent.

CONTACT: WB2NDX, Frank Reda
64 Harrington Circle,
Willingboro. NJ 08046
609-871-1309

****

What do you think of a "RAT" who goes to a Dinner-Meeting in Lancaster Co. and after getting there, says to W3ELI and W3SAO, "Let me have $10.00, I left my money at home." I won't mention any names, but Hi Paul.

****

K3ABK, Sam, could stand a bit of cheering up, so how about sending him a "Get Well" card.
K3ABK, Sam Rosenthal
4922 N. Ella Street,
Phila., PA 19120

****

ADDRESS CHANGES:

W3BYB, George Hooper
493 Tennis Avenue,
North Hills, PA 19038

COLLEGE ADDRESS

K3YPL, Nicky Behrmann
Hebrew Union College,
3101 Clifton Avenue,
Cincinnati, OH 45220

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MEETING DATES

1965

DIRECTORS'	GENERAL
Nov. 10	17
Dec. 8	17
1966	
Jan. 12	19
Feb. 9	16
Mar. 9	16
Apr. 13	20
May 11	18
June 8	15

****

REGULAR MEETINGS are held, when possible, at the WEST OAK LANE JEWISH COMMUNITY CENTER, Sedgwick & Thouron Streets, at 8:00 P.M.

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MEETING NOTICES

NOVEMBER 10 DIRECTORS' MEETING

Contact K3GAS, Doc for location.

NOVEMBER 17 GENERAL MEETING

Will be held, Wednesday, November 17 at 8:00 P.M.

Speakers:

K3AA, Lewis Clement,
"OLD DAYS IN HAM RADIO"
and
K3MAW, Oliver Smith
"NEW VISTAS VIA MOON-BOUNCE"

DECEMBER 1 PHILA CO. AREC MEETING

****

NEW MEMBERS

W3CJU, DONALD HAMPTON, XYL, VIRGINIA
500 East Court Street,
Doylestown, PA 18901
215-348-8969

K3VEQ, JOSEPH SILVERMAN (S)
1707 Erlen Road, (Elkins Park)
Phila., PA 19126
215- ME. 5-1629

RETIRED

W2SXO, BILL STITES

****

CW PRACTICE

THURSDAYS, 7:00 to 7:30 P.M., 50.2 Mc.

Code Groups by W3CL.

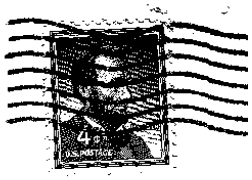
****

W3OHY, Tom, has a fractured ankle. Speedy recovery, Tom, and you will soon be doing the Twist again.

****

PACK RATS CHEESE BITS
821 W. Lindley Ave.
Phila., Pa. 19141

PHILADELPHIA, PA 19 65 18



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

MEETING NOTICE