

PACK RATS'



PACK RATS

CLUB CALL: W3CCX

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CHEESE BITS



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(50.2, 145.2, 221.4, 432.03 & 1296.3 Mc)

AFFILIATED CLUB: AMERICAN RADIO RELAY LEAGUE

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

VOLUME XIV

OCTOBER, 1972

NUMBER 10

THE PREZ SEZ

I would like to express my thanks to our new Editor and Printing Staff for the fine job they performed in getting out last months Cheese Bits. The behind-the-scenes details that went into the effort are quite exciting as you will find out if you talk to those involved. Nice job fellas and gal!

Our program chairman, WA3AXV, Ron, has some excellent programs lined up for us this year. One of the more stimulating ones will be K2RIW in November. His talk will be on Apollo Monitoring. This will be a good chance to meet one of the most creative people in Amateur Radio today!

By the time you read this, Hamarama will have come and gone. I would like to thank the Committee for their fine job in organizing this affair. I'm sure it will be a success.

Our Membership Chairman reports that openings in the Club do exist, so if you know of a good V.H.F. er extend an invitation to our meeting and membership.

The weather is getting just nice for outdoor work and, therefore, a good time to make all of those antenna modifications -- January will be here before long.

73,

K3BPP, Walt

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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 - 9:00 P.M.
432.03 - 9:30 P.M.
1296.3 - 10:00 P.M.

FRIDAY NIGHT NET: ATV NET

439.250 - 19:00 Hrs.

OFFICERS: 1972 - 1973

PRESIDENT: K3BPP, Walt Bohlman
VICE-PRES.: W3FQD, Dick Huntzinger
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CORRES. SEC.: W3SAO, Francis Brick
REC. SEC.: W3BIV, Carl Barish

DEADLINE FOR ARTICLES IS THE
GENERAL MEMBERSHIP MEETING.

DIRECTORS:

W3CJU, Don Hampton
WA3AXV, Ron Whitsel
WA3NGK, Harry Brown
K1SFF/3, Tony Souza
K3ZSG, Bill Murphy
K3CIV, Ralph Hersh
(Ex. Officio)

PACK RATS' CHEESE BITS is a
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CHEESE BITS may be reprinted,
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NEW MEMBER: WA2HVD,
Richard E. Bokern, Sr.
XYL - Virginia
1779 Longfellow Dr.
Cherry Hill, N.J.
08003

RETIRED LIST: K3AA, Lewis Clement
72 Palm Club
Pampano Beach,
Florida 33062

WA3NFV, Daniel L. Mitten
323 Riverdale Drive
Rocky River, Ohio 44116

FLASH!! W3HK, George Van Dyke, Jr.
SCM Eastern Pa. and Pack Rat
elected President Penn Wireless
Association.

NEW PRODUCTS OF INTEREST TO HAMS

Lyn. W3NSI

1. Pre-Scaler, Heath Kit Co.

The model SM 114A is designed to be used ahead of a low frequency counter to increase the frequency coverage to 600 Mc. When used with a counter good up to 15 Mc., such as the #200 Heath Kit Unit, the pre-scaler would be used to divide the input signal by 100. This would mean that to measure your 432 transmitter, using the SM 114A, the counter would read 4.32 Mc. The unit is available now, assembled only, but could be expected to appear later as a kit. Price: \$365.00.

2. FM Receiver Kit - 6 or 2 Meters

A complete kit for either 6 or 2 meters FM except for speaker, volume and squelch controls, is now available from Hamtronics in Rochester. By drilling the mounting holes, the constructor can save \$5 or buy the kit for \$54.95 in single units, with a discount available to clubs. The receiver is mounted on a 5 x 5 1/2 inch PC board, equipped for one channel, however a 6 channel adapter is \$9.95 extra and can be hooked up to the main board. For those who need great quantities of audio, a 5 watt add on amplifier is \$19.50 (wired and tested). Hamtronics also makes a 6 and 2 meter pre-amp unit using 2 FETs in a circuit which provides 15-25 DB gain. Kits are \$6.00, and wired units are \$10.00.

Hamtronics, Inc., 182 Belmont Rd., Rochester, N.Y. 14612.

CALENDAR OF COMING EVENTS

Syllabus by Lee, K3MXM

October starts our indoor club meetings and all will be held at the Community Center. We have a new program chairman, Ron Whitsel, WA3AXV, and he has set up some very interesting programs, so keep that third Wednesday Evening of each month open!

OCTOBER

- 1 Pack Rat Hamarama, Jamison, Pa. All plans are in, you have received all the publicity, so just plan to attend. Whether you are a buyer, a seller, a lucky prize winner, or just a looker we have something for you.
- 8 East Coast SSB Dinner, Buck Hotel, Feasterville, Pa. 2 to 5:30 p.m. Cocktails, eyeballs, etc. Roast Beef Dinner. \$6.00 per at 5:30 p.m. Reservations with WA2QPC "Slim" - 12 DeKalb Ave., Plainfield, N.J. 07063
- 11 Board of Directors Meeting QTH, ELSFF/3, Tony Souza, Ottsville, Pa. Directors and interested parties invited. Directions will be furnished.

CALENDAR OF COMING EVENTS

CONTINUED

- 15 Auction - Trenton, New Jersey. Delaware Valley Radio Association Sunday, October 15, 1972, 12:00 noon til. At Ewing Township VFW Hall, Post 7298 (near Campus of Trenton State College), Green Lane, Trenton, N.J. Donations 50¢. Added features, Antique wireless display, Rtty display on air, etc.
- 18 1st Indoor Club Meeting, West Oak Lane Jewish Community Center, Thouron and Sedgwick Streets, Phila., Pa. 8:00 p.m. Guest Speaker of the evening: Mr. Al Ruben, K3AUH "Pacemaker Evaluation" Demonstration and talk on one aspect of the growing field of medical electronics. To you younger members and guests this is a whole new exciting area that has more and more openings for electronic trained personnel. Guest are cordially invited. Coffee hour follows the meeting.
- 22 Gaithersburg Hamfest. One of the bigger Hamfests along the East Coast. MARS displays, ESCAR meeting, huge flea market, prizes, etc. Well worth attending.

NOVEMBER

- 8 Board of Directors Meeting.
- 15 General Club Meeting. Guest of the Evening, Mr. Dick Knadle, K2RIW. "Apollo Reception" Talk on Amateur techniques for receiving direct APOLLO broadcasts from the moon. Actual tape recordings made by K2RIW.

DECEMBER

- 20 General Club Meeting, CLOSED MEETING. Preparations for January Contest. WA3NGK, Harry Brown, Contest Chairman.

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Ron, WA3AXV

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John Glasford, K3CJV, TU 7-0460.

K3IUV needs 2 schmatics on an Ancient Atwater Kent Radio Model #37 Phone. 947-4483

WA3HIT is looking for old copies of "Television" magazine- 1928, 1933 era. Phone. 722-4411



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THE FINDLAY CONNECTION

By WA3BIV

On September 9, 1972, while most Rats were considering the SJRA Hamfest, K3ZKO, K3DLS and myself were embarking on an expedition to Ohio to attend the Findlay Hamfest. On word of WA3LNH, we left with high hopes. We drove from 7:00 p.m. Saturday till 4:30 a.m. Sunday. (An hour to eat at Brook... something or other, Pa.) We arrived on the scene of a motel party gathering partiers via 146.94. Partied 'till 8:00 a.m.

The scene at the Hamfest at the start wascrowded!!! "Why, we've been flea marketing since 4:00 a.m.", said one K9. "Buying stuff you can't see.", said someone. "Hell, no", was the answer, "been using flashlights".

So went the Findlay Hamfest. And as it went, so did the Harvey Wells transmitters (160 thro 2 meters), and the R-390 receivers, and the Command sets, and the Atwater Kent 1930 radio, and not to mention the PARTS. Good parts, big parts, little parts. There were parts in places I didn't even know there were places.

"Why this is the Largest Hamfest I've ever seen!", I heard said. "This is only 1/4 the size of the Dayton affair", was the reply.

See it here, next April, THE DAYTON RECONNECTION.

Oscar VI Amateur Satellite launch scheduled for October 9th at 1714 Zulu. Alternate launch if October 9th is scrubbed will be on odd numbered days until the 17th. It will be heard in the North East area (Conn.) at 6:23 p.m. on the 9th. In this area look for it at 9:00 p.m. and 9:00 a.m.

Input frequency - 145.95 Mhz. ± 50 KC. at 3 db points. Band width ± 120 KC. at 10 db. points.

Output frequency - 29.5 Mhz. ± 50 KC.

Beacon on 29.450 Mhz. and 435.10 Mhz. for code and telemetry storage. Set your beam so return from satellite of your own signal is undistorted.

For additional information, write and send self-addressed envelope to:

AMSAT, P.O. BOX 17, WASHINGTON, D.C.

VHF REPORT

Jo, W2EIF

Sorry I missed the last issue (vacation) but hope this one makes up for it. The month of August and so far September has produced some very excellent VHF/UHF openings. Openings continued on 6 meters but at a diminished pace. The big news is of 2 meters. August 3rd and 4th and 9th produced the best auroras heard in years. Stations from South Carolina around to Missouri, Iowa, Minnesota and Wisconsin could be worked. The 6th produced a tropo

CONTINUED

opening into Ohio and Indiana from this area (New Jersey) and for the 3rd year in a row, August 17th produced an excellent tropo opening from the East Coast into the States beyond the Mississippi River. There is considerable evidence that there are many openings that go unnoticed because of lack of activity. The September QSO Party produced some excellent opening. 6 Meters thru 432, no doubt these may have gone unnoticed except for the contest activity! Saturday nite, September 9th produced an opening on 2 meters into Ill., Tenn., Ky, Indiana, etc, with good action also up through 432! Sunday nite, September 10th was the big nite. 6 Meters opened particularly to the NYC area. Two Meters opened later and I was able to work Iowa and Wisconsin with vy. excellent signals. The midwestern boys including Western N.Y. had upwards of 30 sections on 2 meters! The two meter band up thru 432 at least, was open into the Cincinnati area on the 16th. I worked K8DEO on 432 and the big prize was K4JBV in Ky on 220 Mhz. The bands should be observed closely during August, September and October if you are interested in DX on 2 meters and above!

P.S. W8YIO Manchester, Michigan worked K4QIF in Norfolk, Va. on 1296 Mhz for what is probably a new record!!

EDITORS CORNER

Elsewhere in this issue, W3ZD wrote a moving eulogy on the recent passing of Tom Coin, W3IA. I want to add a bit of nostalgia to that write-up.

During the late twenties in Philadelphia, it was a common sight to see traffic police control the flow of vehicles by the use of a hand operated semaphore (sometimes the whole business rested under a huge umbrella) When riding in a "flivver" with a gang of Hams South on Broad and before approaching the intersection of Walnut Street, one had only to send 3IA on the horn. A burly cop would jump out from under that umbrella as cross traffic came to a screeching halt and we were ceremoniously waved thru - what a thrill!! A bit later in time, when I became a junior petty officer in a newly formed Naval Communication Reserve Unit, it became necessary to supplement our radio operating experience with some military close order drill. A gruff Chief Radioman was the drill master -- Tom's booming voice could be heard the length of the armory floor as he barked out orders for "squads east and west". We could never figure out how such a touch cop could become transformed into a pleasant "fist" on the air. We will all surely miss the "Old Man" ---

HARRY, W3CL

Te-

...with some skill

1972 CENTRAL STATES VHF, CONFERENCE SYNOPSIS

By Jack Power, W2AXU

The Central States VHF Society held their annual VHF/UHF conference in Overland Park, Kansas on 18, 19 and 20 August. The weather was hot (100°) and clear. The humidity matched the temperature. There were 105 VHFers registered from all call districts. This was the largest attendance of the six conferences held. The conference started on Friday morning with a talk by WQEYE on "TV as VHF/UHF Propagation Alert." The technique makes use of the reception of TV signals at a distance of 800 to 1000 miles to alert a VHF or UHF operator of good band conditions from 50 to 432 Mhz. Good antennas and connectors are required as well as the use of good VHF/UHF techniques. Recordings of the TV carriers are useful for periods when one can't be around in person. Aircraft and lightning scatter will be observed. An excellent slide presentation and discription of the DX pedition to Caicos Island/ VP5KS was given by W4GDS and WB4BND, two of the participants. Mel Wilson, W2BOC/W1DEI, recipient of the first Chambers Award given by the Society to a member for his outstanding contributions to amateur radio in VHF/UHF, continued for the second year his saga of the Es. His articles in QST early last year are interesting reading. Mel has been researching Es and aurora for many years. With regard to aurora, Mel is sticking his neck way out by making some aurora predictions for the rest of this year. Watch the following dates: Oct. 21 to 24, Nov. 1 (low probability), 15-20, 25 or 26 and Jan. 12 or 13. Mel would appreciate having reports of the Es of June 8, 1972. They should consist of stations worked, times, direction of antenna, if known and any notes you made regarding conditions. W5SXD and K5WVX made a presentation of their efforts towards their now history making 50 Mhz moonbounce contact complete with tapes. Ed Tilton, W1HDQ was present and discussed the use of 2 meter FM demonstrating some useful kinks for mobile operation when using rental cars. Dr. Don Olson of the University of Minnesota discussed "Aurora". He has made a deep study of the subject and presented many slides including many of the very recent big aurora of late July. K2RIW, Dick Knadle discussed his 432 Mhz amplifier and his reception of the Apollo 15 and 16 astronauts from the moon. John McKinnon of NOAA, Boulder, Col., gave a very interesting discussion on solar flares. It was very timely because of the great solar flares in July. WA6HXW and K2UYH discussed 432 Mhz moonbounce techniques. W2AZL and W0LER described the first 432 Mhz meteor scatter QSO and W4FJ gave a short discription of satellite relay of WWV time signals. The banquet Saturday night was attended by 137. The highlights of the evening were a tribute to W6NCZ, John Chambers in whose memory the Chambers Award is given, by W1HDQ; a very fine talk by Harry Donnols, W2TUK, the President of the ARRL and the presentation of the Chambers Award by W2BOC to W1HDQ, Ed Tilton for his many years of devotion and contributions to VHF/UHF. Ed's thank you remarks impressed me very much. They were simple and to the point. "It's nice to smell the flowers." It was a great conference with most of the well knowns in amateur VHF/UHF present. It is undoubtedly THE VHF/UHF Conference of the year. It is a shame more of the Pack Rats don't try to make them. Next years conference will be in Minneapolis, Minn. Aug. 17, 18 and 19. It will be hosted by W0LER, John Fox.

THE OLD MAN IS GONE

By W3ZD

One meets in the course of his life many people, and usually, they come and they go, but every so often an individual comes by who must be classified as unforgettable..they made a large stir which swirls along after they are gone...and when you pause to reflect, it seems there are just not many people around like this. Just such a man was Thornly M. Coin, WBIA, who passed away on the afternoon of September 1, 1972. He was known to most of us as Tom, and his activity was limited by poor health during most of the time he was in our Club. Yet, he had a spirit that just could not be dampened, and he attended every event that he could crawl or be carried to, and you could just tell by looking at him that HAM radio was a part of him and he thoroughly enjoyed every bit of it.

I first met Tom in the late forties when he was a Philadelphia Police Sgt. riding his District in a patrol car and occasionally acting as precinct desk Sgt. It is hard to imagine this kindly soft spoken man in these roles, but I am told he was very good at these positions. I have also been told that he was not always as mild as he appeared to us, but then the days he directed traffic at Broad and Walnut Streets in Philadelphia and the days he pounded a Philadelphia police beat would tend to roughen one a bit. Tom was in the Naval Reserve during World War I and served in Europe with the Marines and was wounded during the battle of Belleau Wood in such a manner that part of where he sat was missing. His description of it was much better! He was a Signaller in the service and this puts him in the era of the birth of Ham Radio. I don't know when he first got his ticket, but I do know a few things about his burning interest in Ham Radio during the last twenty-five years and of the many youngsters he helped during this time.

The job that Tom had brought him into contact with many people and he was liked by all. He had a genuine interest in people, and as is usually the case, they responded by catering to his interests which mainly centered around radio. People gave Tom things, so many things at times that Tom was often embarrassed; he said it looked like he was asking for things which was not true. The result of this was that you could seldom leave Tom's shack without taking something along. Tom was a great builder and salvager, and at times he had literally tons of used and surplus material around that he was pressing to dispose of. And give it away he did. There must be about a hundred or so young hams and aspiring hams who were given their first boost from items from Tom's shack. I met about a dozen during the time I lived near him; I'm sure that many took advantage of him, yet he never complained, and in fact I don't recall Tom ever having an unkind word to say about anyone.

THE OLD MAN IS GONE CONTINUED

One friend took a coax relay down that Tom needed for a construction project and left with a grape box full of "spare" tubes and a 50 watt theatre amplifier.

Tom's shack was in the basement with a very steep stairway. During the past ten years Tom was bent over from a variety of crippling afflictions, yet his interest in Ham Radio and in building was so great that he went into the shack many times each day when able, and each trip was a great effort, made in the manner of one climbing a steep ladder.

Tom was active on the HF bands all his life, and particularly enjoyed CW. His fist was excellent, and he was one of the few people around who still sent once in a while with a "cootie" key. I won't try to describe this, but the output was distinctive, a swing like was seldom heard.

Tom was a kindly gentleman with a huge heart and a great spirit that will live on in the memories of many of those who knew him. I for one consider it an honor to have known him, and I am glad for the knowledge that he died peacefully.

TID BITS

Harry Brown, WA3NGK has been appointed Chairman for the January VHF Sweepstakes. The dates for the SS are January 6, 7 1973. You will be hearing more later.

Pack Rat Horace Deacon, W3AJF was awarded his 50 years in Ham Radio Certificate at the last meeting of the Delaware Valley Chapter, QCWA. To celebrate, Deac is erecting a 60 foot light pole tower in his back yard.

Condolences to Lee Cohen, K3MXM on the recent passing of his Father.

K3AFT, former Pack Rat, Joe Mortimer has retired, and lives in Tuckerton, N.J. Thanks for the items for our White Elephant Sale, Joe.

Did you know that Pack-Rat Jerry Tessler, W2GIA, was on NBC's "What's My Line" on September 15, 1972. You looked great Jerry!

K3AA, Lewis Clement, our most senior member is moving to Florida.

WA3NFV, is moving to Ohio and getting married. Congratulations Danny.

Lou, WA3MIX, is attending Penn State this Fall. Best luck Lou!

WA3BIV, Carl our Recording Secretary, landed a new job in Hammonton, N.J. Carl will be joining the "sandpipers" from Clementon, N.J.

FROM ARRL DIRECTORS LETTER NO. 1438 DATED
SEPTEMBER 8, 1972

THE FEDERAL COMMUNICATIONS COMMISSION has adopted extensive changes in the rules governing the Amateur Radio Service, to provide for the licensing of repeater stations and to make a number of other changes, particularly in the area of station identification, portable/mobile operation, and station log-keeping. The effective date is October 17, 1972.

Changes Affecting All Amateurs

Primary Station License For All.

There are several new classifications of station, according to location and use. In the future, every operator must have a primary station license, so that every amateur will have a call sign. Normally, the primary station license will be issued for the amateur's home address. However, those amateurs not having a permanent address (or those whose permanent address is outside FCC's jurisdiction) should furnish the address of a relative or friend who will receive and forward mail to the licensee. There are additional station privileges, some of which may be combined with a primary station license: Repeater station, Control station, Auxillary link station and Secondary station. At this point we suggest you have a look at the various definitions in Section 97.3. Repeater stations will have a special call sign beginning with WR, and will not be combined with another station license. A secondary station is one at a vacation home, place of business, etc., up to now described as an additional station; the latter term now will include all those special uses we mentioned above.

Which Call To Sign.

In these new rules, the Commission returns (hooray, hooray!) to a tradition in amateur radio it abandoned a few years back. Every permanent collection of radio apparatus constituting an "amateur radio station" must have its own license, and its call sign will be used whenever the station is on the air. In other words, when you visit W1XYZ you sign his call, not your own as portable. Presumably, this also means - as it did in years past - that an amateur can't check out the station of a future ham under the guise of "operating portable."

There's another important change. If the visiting (control) operator holds a higher class of operator license than the station licensee (or trustee), he may if he wishes use the subband privileges to which he personally is entitled, but must then sign a dual call. 'Til now, a visiting amateur could not operate the station beyond its owner's class of privileges. Three examples under the new look:

- 1) WN6ABC operates W7XC - uses Novice bands, crystal control. telegraph, 75 watts or less input, and signs W7XC.
- 2) W7XC returns the visit; operates WN6ABC; uses Novice privileges, signs WN6ABC.
- 3) W7XC visits again; this time wants to use phone on 3820 KHZ; now he signs WN6ABC/W7XC.

ARRL DIRECTORS LETTER CONTINUED

Both the station licensee and the control operator will be responsible for the proper operation of the station.

Visitors Not FCC-Licensed.

Under the new rules, the licensee may permit any person to participate in amateur radio communication from his station, provided that a control operator is present and continuously monitors the radiocommunication to ensure compliance with the rules. The specific mention of radioteletype and radiotelephone in this connection has disappeared, along with the words requiring the licensed operator to throw the switches and sign off. Accordingly, it should be possible for instance, to let a visiting JA, or perhaps a shipboard operator, work cw from your station, when a U.S. ham is present as control operator. Visiting XEs and VEs, for example, can probably sit in on your club's FD operations, too, if the logging operator meets the qualifications of control operator to supervise these QSO's.

Technicians Get More Space.

Technician Class licenses will be able to operate in 145.0-148.0 MHz. Obviously, this change is intended mainly to facilitate expanded repeater operation; however, it would also apply to other operations by Techs as well. (So far, this is the only portion of the 1969 League request for expanding Technician Class privileges to the entire band to be granted by FCC.)

Notification Of Portable And Mobile Operation.

The burden of notifying district FCC engineers on portable or mobile journeys has been lessened considerably. All amateur stations (except military recreation stations and Auxillary link stations) may operate as portables or mobiles. Whenever an amateur station is (or is likely to be) in portable operation at a single location for a period exceeding 15 days, the licensee will give advance written notice of such operation to the designated FCC engineer-in-charge. But, ordinarily, a mobile station is no longer required to notify FCC in advance of an extended trip! (There is some indication, though it is not spelled out, that a mobile station operating out of a single temporary location more than a hundred miles from home and for more than 15 days without returning home - e.g., a college student at school for a semester - should continue to notify as before.)

The required notice is a bit shorter than before; thus, after the effective date of these changes you should secure revised ARRL Forms S-43s rather than using the ones you've stockpiled.

Logging Simplified.

A written log must be maintained for each amateur radio station. The log needs: call sign and signature of the licensee; the signature of the control operator on duty and the call sign of his primary station, if he is other than the station licensee; the location of the station (mobile stations enter "Local" when within 100 miles of home and otherwise, the locations of the first and last QSO each day); the input power, type of emission and frequency or subband in use. These items need be entered only once until there is a change.

ARRL DIRECTORS LETTER CONTINUED

Other entries for all stations which may be recorded in a form other than written but which can readily be transcribed by the licensee into written form: dates of operation; names of persons other than the control operator using the station either directly or indirectly, as for instance by phone patch (but repeaters don't need to do this!); a notation of third party messages - apparently again including phone patch traffic-including names of participants and a brief description of the content; the calls of each station actually contacted (mobiles and repeaters are exempt from this! Control stations enter the call of each station in the control link, and an auxillary link station enters the call of its associated station); all stations shall enter the times the station is put into or taken out of, service. Stations other than mobiles, repeaters, control stations and auxillary link stations should also enter the times of commencing and terminating each exchange of radiocommunication.

In other words, a large part of your daily log - even for DX chasing in the hf bands - can simply be talked onto a tape. Mobiles no longer need to remember, until the next stopping place, the hams they've worked. And as we see it, repeater operators no longer need their recorders! The requirement for technical maintenance logs, proposed for repeaters back in 1970, was not adopted. Wisely, FCC decided that since the licensee is fully responsible for the technical performance of the station; as such, he will perform whatever maintenance and repair is necessary to keep it legal. But all licensees must keep on hand all components of their logs for a year, written or recorded.

Miscellaneous.

Where mechanical devices are used to send the call sign of a station in International Morse Code, the speed will not exceed 20 words per minute. Though this is primarily for repeater operators, it could apply also to RTTY stations and contesters.

For years the Communications Act of 1934 as amended has contained the caution that only the minimum power required for communication should be used. This is now mentioned in Section 97.67(b) as well. It applies to all of us!

The "banned list" of countries who don't want us communicating with their amateurs is now specifically mentioned in the amateur rules: Section 97.89 (a) (1) permits communication by amateurs "with other amateur stations, excepting those prohibited by Appendix 2." Unfortunately perhaps, an amateur still has the responsibility for keeping up to date with the latest FCC bulletin on the subject of banned countries; no list actually appears in the rules.

Amateurs are again warned that abuses of phone patches, manual or automatic, for transmission of commercial or business traffic, may lead to rules designed to curb abuses. Self-policing is far better in this area, fellows; let's all watch this in transmissions from our own stations. Incidentally, FCC has beefed up its definition of permissible amateur communications thusly: "Amateur radiocommunication. Non-commercial radiocommunication by

ARRL DIRECTORS LETTER CONTINUED

by or among amateur radio stations solely with a personal aim and without pecuniary or business interest.

Changes Applying to Repeaters and Remotes will appear in a later Cheese Bits.

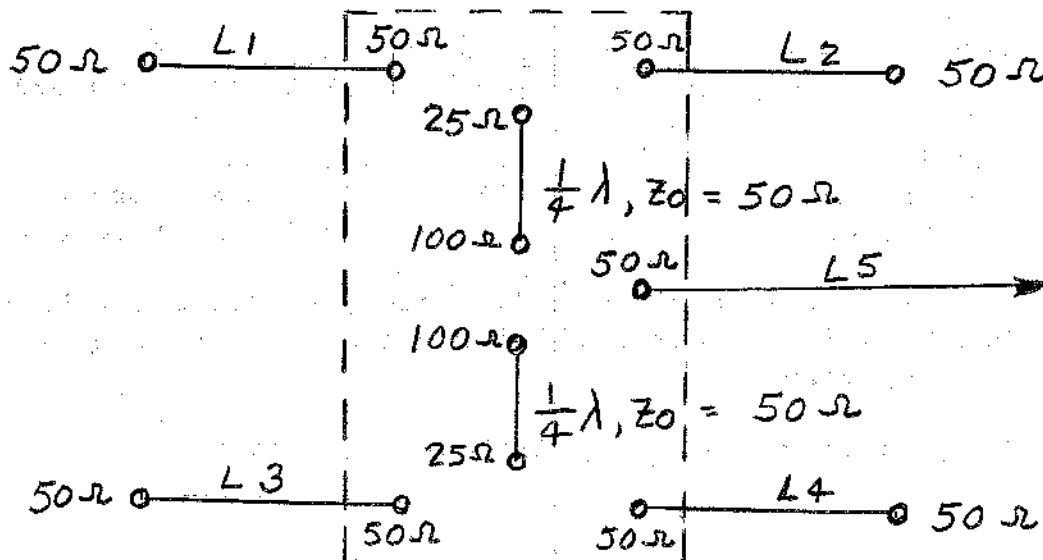
432 MHZ POWER DIVIDER

By Ron, WA3AXV

The 420 Mhz band is a mecca for amateurs who wish to construct elaborate antenna systems without undue strain of both their pocketbooks and towers. A common method of achieving this goal involves the stacking of many smaller arrays to form one high gain antenna system. Such a system requires the effective and efficient distribution of arriving energy in order to fully realize maximum potential performance. This article describes a "power divider" which meets the above requirements and is easily constructed in the home workshop.

The design shown in the accompanying drawing is for use with four identical 432 Mhz antennas, each with a 50 Ohm unbalanced feed. The basic idea could be extended to other bands and impedance combinations.

Basically, the device is two parallel connected quarter wave length coaxial transformers in an integral section of 50 Ohm (Z_0) coaxial line. Each quarter wave transformer steps the parallel combination of the 50 Ohm antennas (25 Ohms) up to 100 Ohms. The transformers in parallel then result in an impedance of 50 Ohms to match the transmission line. The sketch below illustrates the arrangement:



L1 = L2 = L3 = L4 - Any length (Homemade copper hardline)
L5 - Any length (Feedline)

432 MHZ POWER DIVIDER CONTINUED

Construction of the device is relatively simple and requires only a few basic hand tools, electric drill and a soldering torch. All necessary dimensions are given on the diagram. All joints are sweat soldered as you would do for any home plumbing job. The end caps and access hole cover are fabricated from copper flashing material.

One further caution comes to mind. If the antenna ends of the home-made hardline are to be exposed to the weather they must be completely sealed. This can best be done with silicone rubber, remembering to cover all the dielectric material projecting from the jacket. If a 4 to 1 balun is to be used it can be made from the same material as the hardline and likewise, carefully sealed. With a little imagination ordinary type "N" plugs can be mated to the copper hardline if required of your installation. Also, K2KVT has developed a simple gamma type feed system which uses home made hardline. The extension of the dielectric and center conductor, into a concentric metal sleeve, form the gamma capacitor. Food for thought.

This feed system is presently in use at the authors QTH with four commercial 8/8 slot-fed antennas. The installation is very neat in both appearance and performance and should remain as such for many years to come. Keep in mind that the only really unique feature of this device is the construction technique. There are no expensive "N" connectors (except for the feedline) and the system is completely weather proof. The homemade copper hardline is very low loss and will not contaminate nor degrade in performance over the years. Remember, a watt saved is a watt radiated!

FROM LERC Amateur Radio Club Bulletin
of September, 1972

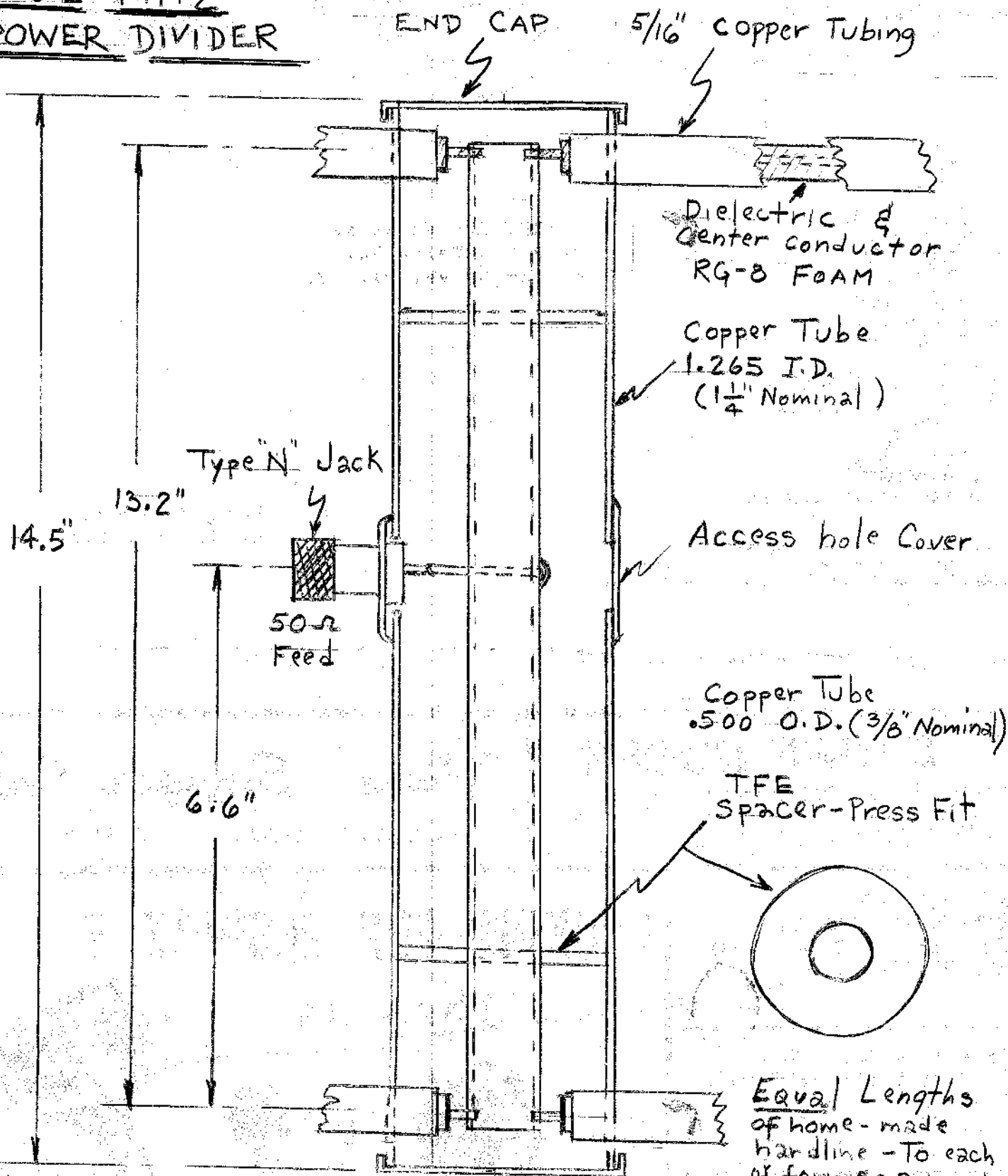
The 4 August 1972 Federal Register (Volume 37, Number 15) states that amateur satellite communications have been internationally approved on:

7.0	-	7.1	Mhz	144	-	146	MHz
14.0	-	14.25	Mhz	435	-	438	MHz (Note A)
21.0	-	21.45	Mhz	21.0	-	24.05	GHz (Note B)

Note A: This spectrum shared with another service; all others are exclusively amateur worldwide. Tele-command required on this spectrum.

Note B: New exclusive worldwide amateur allocation.

432 MHz
POWER DIVIDER

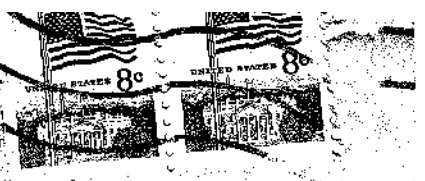
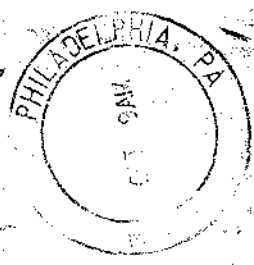


Notes :-

1. All joints sweat Soldered
2. $Z_0 \approx 55 \Omega$ for $\frac{1}{4} \lambda$ impedance transformer

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