

PACK RATS'



PACK RATS

CLUB CALL: W3CCX

MT. AIRY VHF RADIO CLUB, INC.

CHEESE BITS



MT. AIRY VHF RADIO CLUB., "THE PACK RATS", PHILADELPHIA, PENNSYLVANIA W3CCX
NET FREQUENCIES: 50.125, 144.150, 222.125, 224.58/222.98, 432.110, 903.100, 1296.100 MHz
AFFILIATED CLUB: AMERICAN RADIO RELAY LEAGUE ARNS

Meetings: Third Thursday of each month at 8:00 PM
Southampton Free Library, 947 E. Street Road
Southampton, Pennsylvania 19866

VOLUME XXXIII

FEBRUARY 1991

NUMBER 2

THE PREZ SEZ

By the time everyone reads this, the contest will be old news and the memories will be implanted. I want to say it was a great club effort! All of the planning and preparation paid off and now it's on to the next project. Make a notation in your shack to correct any problems which you encountered, and plan to correct these things now, while it's still fresh on the mind. This will make future operating and contests easier and more enjoyable. I know my band switching has to be improved at my shack and I guess I'll have to get on 6 meters, Hi! Band conditions were not so hot at my QTH and signals were in and out all weekend. On 432 and 220 the W8's were there for an instant and gone... next year!

Please remember to check in on the 220 low-end net now at 222.125 MHz. Let's make some noise around 222.1 on Tuesday evenings also. We need to establish ourselves and spread the word. So get cracking on retuning.

For people interested in long term dates, our annual Ladies' Night banquet will be on May 4th at the Mill Race Inn, Holland, Pa. The menu letter will be forth coming.

Come to this month's meeting to hear the wow's and the ugh's of the contest at the annual crying towel meeting. Bring a load of tissues!

The Pack Rats will operate from Camelback Mountain for the 1991 June VHF Contest. There will be a planning meeting at the QTH of Phil, WA3NUF on February 24 to get a running start on set-up and strategy. Contest Chairman Dave Mascaro, WA3JUF would like to hear from any of you who wish to participate. Camelback offers a site within reasonable drive time for all club members, and there are many various jobs available.

73, and Listen for the weak ones!
Dave, N3CX

FEBRUARY MEETING PROGRAM: Annual Crying Towel program, 8PM at Southampton Youth Center
MARCH MEETING PROGRAM: Annual Homebrew Night, 8PM at Southampton Library. (finally!)

Pack Rats CHEESE BITS is a publication of the Mt. AIRY VHF RADIO CLUB, INC. Philadelphia, Pa. and is published monthly. SUBSCRIPTION RATE - \$7.00 PER YEAR

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DEADLINE FOR ARTICLES AND SWAP SHOP IS THE 20TH DAY OF THE MONTH. NON-COMMERCIAL SWAP SHOP ITEMS - FREE OF CHARGE.

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WA3AXV RON WHITSEL (2 YRS)
K3EOD AL BOBLITT (2 YRS)


MONDAY NIGHT NETS	NET CONTROL
7:30 PM - 50.125	W3CL
8:00 PM - 144.150	W2EIF
8:30 PM - 222.125	WC2K
8:30 PM - 224.58/R	K3ACR
9:00 PM - 432.110	WA3AXV
9:30 PM - 1296.100	WA3NUF
10:00 PM - 903.100	N3AOG

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W3ZD, DAVE ZIMMERMAN
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CALENDAR OF COMING EVENTS

By Harry Brown, W3IIT

FEBRUARY

- 9 January Contest wrap-up session at the QTH of Bob, WB2YEH. Session starts at 10AM. Bring your log(s) and an appetite... lunch will be served. If you haven't already, get your logs and checksheets to your team captain or directly to Chairman Bob.
- 9 Birth of Brendan Behan, Dublin 1923
- 12 Lincoln's Birthday
- 13 Ash Wednesday
- 14 Pack Rat Board of Directors meeting at the QTH of Al Boblitt, K3EOD. Meeting starts at 8PM. Call 215-742-3312 for directions. All interested members welcome.
- 16-17 ARRL International DX Contest, CW. See December QST page 100 for rules.
- 17 LIMARC Hamfest at Electricians Hall, 41 Pineland Rd., Melville, NY. Talk-in: 146.25/.85
- 18 Washington's Birthday (observed)
- 21 Regular meeting of the Mt. Airy VHF Radio Club at the temporary site, Southampton Youth Center. Consult your map from December, check in on the club repeater, or call a club officer for directions. The theme for the evening will be our annual "Crying Towel" session. The best story of what went wrong during or in preparation of the January contest wins the coveted "Crying Towel". All friends and interested parties are welcome to come enjoy the evening with us.

MARCH

- 2 SPRINGFEST '91 Hamfest sponsored by Shore Points Amateur Radio Club will be held at Holy Spirit High School, Absecon, NJ. Doors open 9 AM. Talk-in: 146.385/.985 and 146.52.
- 3 York Ham and Computer Springfest at the Dover Fire Hall, Dover, Pa. Talk-in: 146.37/.97 and 147.93/.33.

JANUARY CONTEST REPORT

CONGRATULATIONS PACK RATSI The contest has been over for about a week and with only 37 rough scores recorded, our club score is just about as good as the total last year. Pack Rat participation soared to the highest level in recent years, a really super team effort! Final results will be published next month. The contest wrap-up meeting will be at my QTH on Saturday, February 9, at 10AM. Coffee, donuts, and lunch will be served. Plan to attend if possible. And, don't forget the "Crying Towel" meeting this month. We have some very "unique" prizes this year. 73, Bob, WB2YEH.

PROPAGATION REPORT
By Paul Drexler, WB3JYO

The Winter months are traditionally sparse for VHF propagation enhancement. The Solar Flux has been high (180 - 210) but stagnant over the last 6 weeks. Solar conditions have been extremely quiet with no significant changes or events. It is this "stale" condition which propagation experts blame for the lack of high frequency band openings. As of this writing, solar flares have been reported and the flux has shot up to nearly 300 on the index. Keep an ear on 6 meters for F2 and 50/144/220 for the Aurora after-effects of the flares.

Tropo enhancement was briefly observed during the January 7th 220 Pack Rat net with both K1PXE and N4HB at several S units stronger than normal. No such enhancement was observed, however, on the 432 net which followed.

On Sunday, January 13, Pack Rats N2SB and K3EOD got in on a brief 6-meter opening to the Midwest and West Coast. Bob worked several W6's running only 6 watts to a 5-element yagi. This proves once again what can be done with low power, a good antenna, and good conditions!

On Monday evening, January 14, KE8FD (EM89) checked into the 220 net and later worked WB3JYO, N4HB, and WD40. The band was slightly up and he was S4 into net control. Following the net, he was worked on 432 by WC2K, and said he look this way in the contest.

Mother Nature spared East Coast VHFers this year for the January contest weekend of the 19th and 20th - weather was unseasonably warm without rain, snow, or ice! The same low pressure system which brought snow to us on the 21st precluded any extended tropo openings during the contest. Conditions on all of the VHF/UHF/SHF bands were just about dead average for Winter. N3BBI reports some weak 6-meter E-skip on Saturday afternoon as well as "plenty of scatter" Sunday morning. On the higher bands, short duration tropo was observed Sunday morning at 1400 - 1500z to the South and later at 2300 - 0000z to the Northeast. Did you work any DX during these periods? If you were on-the-ball you did!

Look for new beacons on the 903 and 2304 bands. KB3NQ/B is located in Langhorne, Pa and can be heard on 903.085 and 2304.085 MHz. N3CX reports progress on his 3456 MHz beacon which should be in operation very soon. Note that the Rats are relocating general operation from 222.1 from 220.1. The West Coast has been at 222 for years and hopefully the Midwest, South, and Northeast will follow us up the band. Show the band planners that we're serious about settling in a protected segment, once and for all. CU on 222.1!

TID-BITS

- Let's pray and hope that the war in the Persian Gulf comes to a quick and victorious conclusion, with the safe return of the heroes of the Allied forces.
- Condolence to Bob Fox, W3GXB, and family on the recent passing of Bob's mother.
- Yardley Beers, W6JP, friend of the Pack Rats, sends along copies of two articles recently published in Colorado amateur newsletters on the subject of microwave theory. It's real good reading and copies are available upon request from WC2K.
- Terrestrial VHF+ is a new VHF and above newsletter available from editor and publisher John Carter, K0IFL. John is well known for the superb job he does with the production of the 2 Meter EME Newsletter, widely circulated throughout the world. Those who subscribed to VHF/UHF and Above, which is apparently out of publication, may be interested in John's new NL. For a sample, contact: John Carter, K0IFL, P.O. Box 554, Union, Missouri, 63084 or call 314-742-4879.
- K4QIF, Rusty, who is well-known on the 432 and 1296 bands, has moved from FM16 to FM07. Expect to hear good signals from him once he's set up at the new QTH.
- Tom Richmond, WB2IEY, 220 SSB/CW enthusiast and FN30 beacon operator, sends a well-written detailed proposal to the VUAC on a 222 MHz band plan. Tom seeks FCC legislation which would protect a SSB/CW sub-band in the same manner that CW sub-bands are established on 6 and 2 meters. Copies available from WC2K.

COMMERCIAL AD

LOOP YAGIS: 902 MHz 33 element \$89 kit, \$109 assembled and tested. 1296 MHz 45 element \$89 kit, \$109 assembled and tested. 1296 MHz 55 element "Super Looper" \$99 kit, \$124 assembled and tested. 2304 MHz 45 element \$75 kit, \$89 assembled and tested. Also available: element and hardware kits for above. 2 and 4-way power dividers. Discount on complete arrays. Solid state linear power amps, 13 VDC: 1296 - 8W in 35W out \$315, 1W in 20W out \$265, 4W in 70W out \$695. GaAs FET preamps: 902 MHz .8dB NF \$90, 1296 MHz .8dB \$90, 2304 MHz 1 dB max NF \$140. SHF SYSTEMS no-tune transverter kits, w/144 MHz IF now available for 903 through 3456 MHz. Write or call for complete catalog. DOWN EAST MICROWAVE, Bill Olson, W3HQT, Box 2301 RR-1, Troy, Maine 04907. For information and orders telephone (207) 948-3741.

HAM RADIO PROTECTION BILL INTRODUCED IN HOUSE

From W5YI Report 1/15/91

On January 3, Congressman Jim Cooper (D-TN) introduced HR 73, the Amateur Radio Spectrum Act of 1991. "Amateur radio operators tell me that they have already lost over 100 MHz of spectrum due to decisions by the FCC, and I don't want to see them lose any more", he said. The bill would amend the Communications Act -- the 1934 legislation that created the FCC -- to prevent the agency from squeezing hams out of spectrum without compensating them with equivalent spectrum.

While there is no immediate threat of FCC reduction of amateur spectrum at this time as there was with the recent reallocation of 220 - 222 MHz, more re-shuffling of the radio spectrum is possible. The proposed Emerging Telecommunications Technologies Act (ETTA) would require the government to transfer some of its spectrum over to the FCC for reallocation to the non-government sector. The actual users of that recovered spectrum have never been specified. However, some amateur bands shared with government operations could be affected by ETTA.

HR 73, if signed into law, could mitigate the impact on the Amateur Service of any spectrum reorganizations. "Under HR 73, the FCC won't be able to give away ham radio bands to some special business interest and leave ham radio operators in my district and across America high and dry," Cooper said. If the FCC sees a need to use ham radio frequencies for another purpose, my bill will require the FCC to transfer ham operators to other frequencies that are just as good.

"If the FCC tried to take away a television station's spectrum, broadcasters would scream bloody murder and fight all the way to the Supreme Court," he said. "But since amateur radio operators don't have the kind of money and muscle for a long court battle, the FCC has chipped away at their spectrum. I've come to believe that amateur radio operators are a valuable national resource, and I hope to see that they keep the necessary radio spectrum to enable them to be around for many years to come."

The bill is designed to amend the Communications Act to state "The FCC shall not diminish existing allocations of spectrum to the amateur radio service after January 1, 1991. The FCC shall provide equivalent replacement spectrum to the amateur radio service for any frequency reallocation after January 1, 1991." Congressman Cooper has been deeply involved in telecommunications issues on Capitol Hill. One interesting example in which he played an important role was Alternative Operator Services legislation, which requires long-distance companies that serve pay telephones to treat consumers fairly and to disclose pricing and service information. Lower long-distance rates are also expected as a result. It is recommended that amateurs in support of HR 73 write their congressman and ask them to support the bill, especially those congressmen who members of the House Telecommunications and Finance Subcommittee. Members from our area include: Don Ritter (Pa), Matthew Rinaldo (NJ), Norman Lent (NY), and Rick Boucher (VA).

CRYSTAL ORDERING INFO FOR 222 MHz MMT

To move your 220/28 Microwave Module transverter to 222.0, the following information should be helpful. Choose a source of crystals (International Crystal Manufacturing Co. or Jan Crystal etc) and supply them with all of the following information:

Crystal frequency - 97 MHz. ($97\text{MHz} \times 2 = 194\text{MHz} + 28\text{MHz} = 222.0\text{MHz}$)

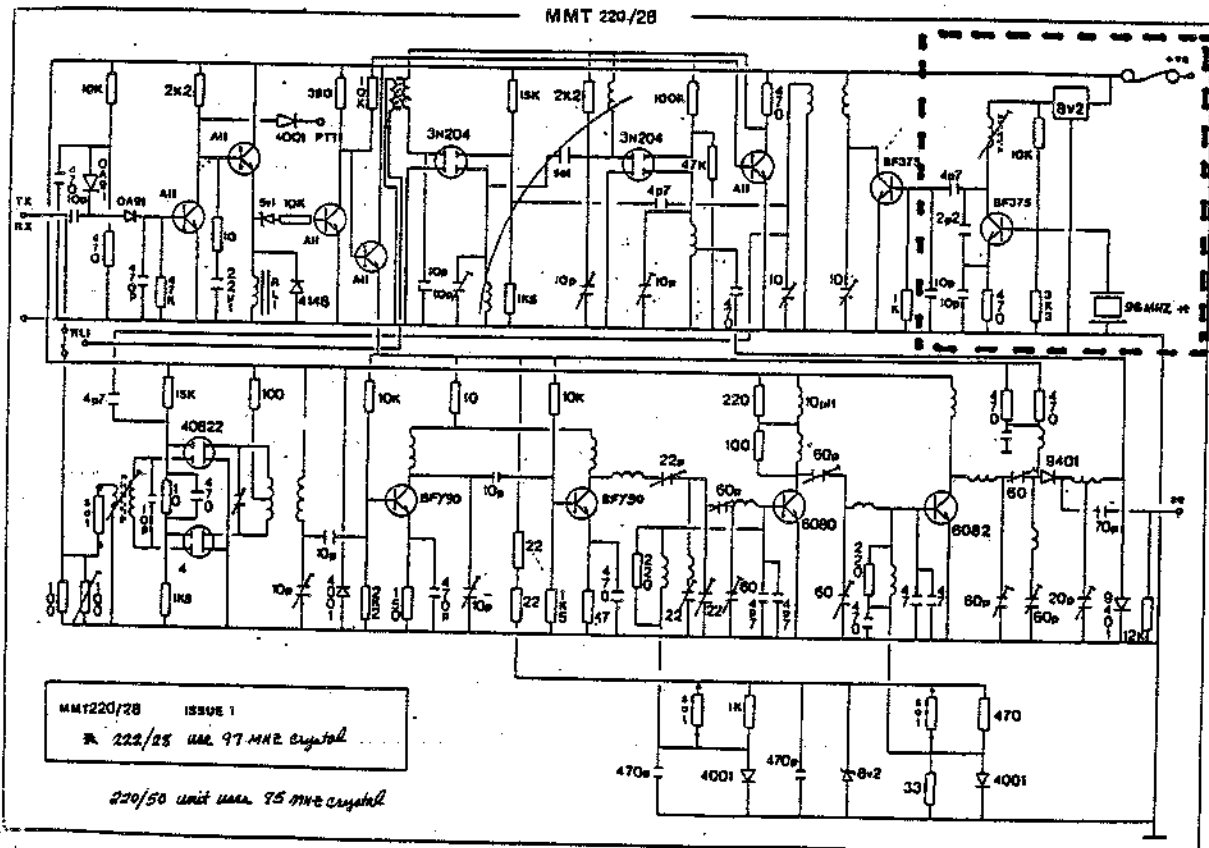
Crystal holder type - HCL8/U (wire leads)

Manufacturer's oscillator description - A zener-controlled crystal oscillator using a high stability 5th overtone crystal provides a high degree of accuracy and frequency stability for the transverter. The output is fed into a buffer amplifier stage producing sufficient local oscillator drive for both transmit and receive. Maximum frequency error at 222 MHz = 1kHz. Typical drift at 222 MHz = 1 kHz/hour. Frequency sensitivity over voltage range 11 - 13.8 VDC = 50 Hz.

Catalog description (ICM only): #473460 HA26C 97.000000 MHz \$16.95ea
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International Crystal Manufacturing Co.
10 North Lee, Oklahoma City, Oklahoma 73126-0330
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Enclose copy of circuit diagram:



CENTRAL STATES VHF SOCIETY CONFERENCE

The 25th Central States VHF Society Conference will be held July 25, 26, 27, and 28 at the Sheraton Inn in Cedar Rapids, Iowa. This year's CSVHF Society president, Rod Blocksome, KØDAS, and his staff are planning both an excellent and varied series of activities and technical presentations. It should also be noted that this year marks the 25th anniversary of the CSVHF Society and will be well celebrated by all. With these points in mind, the 1991 CSVHFS Conference promises to be no exception to the high quality and superb technical presentations for which these events are traditionally famous for. The conference is open to all members as well as non-members. It is a must attend event for both the inexperienced and experienced VHF/UHF operator. Rod and his staff are still looking for a "few good men" to speak at the conference and/or submit technical papers for the proceedings. Those interested should contact either Rod Blocksome, KØDAS, 609 East View Drive, Robins, Iowa, 52328 (319)393-8022 or Ron Neyens, NØCIH, 8616 C. Ave. Ext., Marion, Iowa, 52302-9524 (319)377-3207.

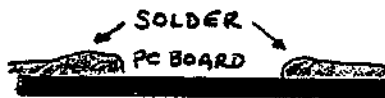
MICROWAVE UPDATE 1991

The North Texas Microwave Society will be hosting the 1991 Microwave Update Conference. The Conference will be held October 18th and 19th at La Quinta Inn in Arlington, Texas. The La Quinta Inn, formerly known as the Roadway Inn, was the site for the 1987 Central States VHF Society Conference. This location is a half mile Southwest of the 1989 update site. Courtesy van service is provided to the airport and for the XYL activities. Nine restaurants are within easy walking distance and a flat \$51 + tax will be the room fee. Al Ward, WB5LUA, is handling the technical talks and Kent Britain, WA5WJB, will be handling the other activities. In addition to a fine slate of technical talks, planned activities include a Saturday night Bar-B-Q banquet, Thursday surplus tours, and the Third Saturday Fleamarket at the Tandy facilities in Ft. Worth. Start putting together those Proceedings notes; we plan to make this the best and biggest Microwave Update thus far.

PROPER SOLDERING OF CHIP COMPONENTS

Install chip capacitors and components using a low-wattage soldering iron of 50 or 60 watts. A reflow-type soldering technique MUST be used and the soldering iron tip MUST NOT be allowed to touch the chip capacitor end metallization.

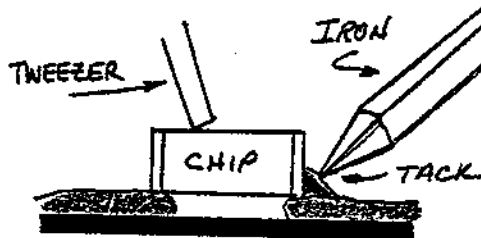
- 1.) TIN AREA WHERE CHIP IS TO BE INSTALLED



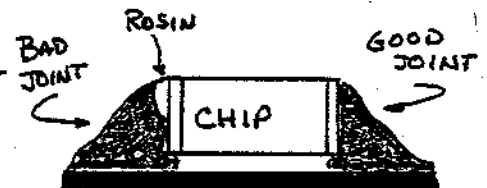
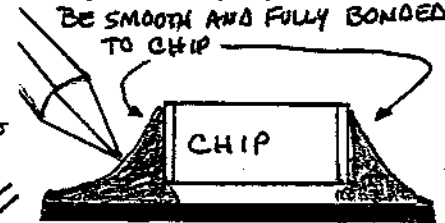
- 2.) PLACE CHIP ON BOARD



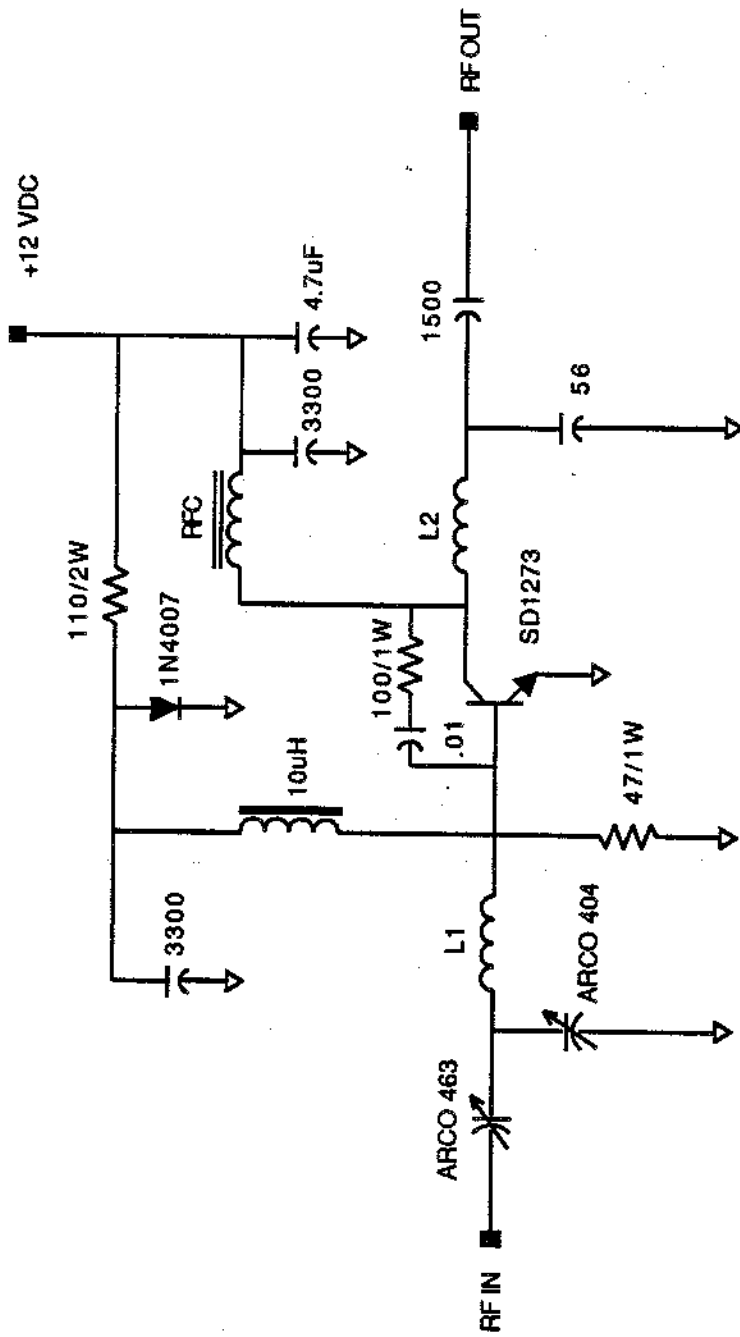
- 3.) TACK ONE SIDE WHILE HOLDING WITH TWEEZERS. BE QUICK.



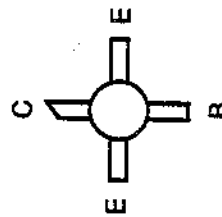
- 4.) SOLDER BOTH SIDES, DO NOT OVERHEAT. SOLDER SHOULD BE SMOOTH AND FULLY BONDED TO CHIP



50 MHz SD1273 LINEAR AMPLIFIER



THOMPSON SD1273

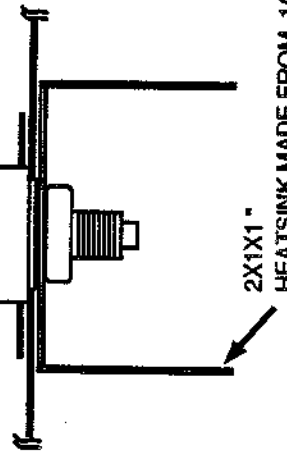


NOTE

- L1 5t #20 AWG, 0.125 ID
- L2 SAME
- RFC 10t #26 AWG on 100 ohm/1W

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