

PACK RATS'



PACK RATS

CLUB CALL: W3CCX

MT. AIRY VHF RADIO CLUB, INC.

CHEESE BITS



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

AFFILIATED CLUB: AMERICAN RADIO RELAY LEAGUE

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

VOLUME IV

NOVEMBER 1970

NUMBER 11

OUR PREZ SEZ

Things are really happening these days. K3ZPN (he doesn't like those call letters so that's why I use them), Lloyd, will have 220 on at the new QTH shortly, followed, we hope, by the rest of the station. K3BPP, Walt Bohlman, and K3IPM, Stan Smith, are formulating January Contest plans. Check the last issue of CHEESE BITS for your group and coordinator.

The 1296 crew is actively at work improving the gear. Just listen to the 432 net and find out what's happening on 1296. W3CL, Harry Stein, got his welded tower section back, and by the time this issue goes to press K3GAS, Doc Cutler, will have had his tower lowered for repairs. If he holds true to form like some of the other Pack Rats, it won't go back up until there is two inches of snow on the ground.

K3MXM, Lee Cohen, and yours truly got one of the towers installed at Inglis House and hope to get the other one up shortly. WB2SZK, Randy Bynum, got engaged, just like we said he would. How about that! Lots of luck Randy and Della.

K3EOD, Al Boblitt, is making a list of all his gear that needs repair prior to contest. Guess who his repairman is? As we get closer to contest you will start to hear them come out of the woodwork. The signals you very rarely hear during the year. If you doubt that this is true, count how many "hello test" you hear on the air in October, November and December compared to February, March and April. Busy time is here, what are YOU doing?

K3JJZ, E1

DEADLINE FOR ARTICLES IS THE GENERAL MEMBERSHIP MEETING.

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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 - 9:30 P.M.
432.3 - 10:00 P.M.

OFFICERS - 1970-1971:

PRESIDENT: K3JJZ, ELLIOTT WEISMAN
VICE-PRES.: W3CJU, DONALD HAMPTON
TREASURER: K3GAS, DOC CUTLER
CORRES.SEC.: W3SAO, FRANCIS BRICK
REC. SEC.: WA3BIV, CARL BARISH

DIRECTORS:

K3KTY, JOHN TATE
K3MXM, LEE COHEN
WA3LNH, CHARLES BENAVIDES
K3UJD, MARIO FONTANA
K3BPP, WALTER BOHLMAN
K3CIV, RALPH HERSH
(Ex-Officio)

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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* * * * *

DID YOU KNOW

On Saturday, December 5, 1970, the Philmont R.C. will have a dinner dance at the Treadway Inn, St. Davids, Pa. For tickets contact K3KNH, Irwin Miller, 1446 Devereaux Avenue, Philadelphia, Pa. 19149 (CU 9-1086).

K3DMA, John Taylor, is at Penn State for his Masters Degree in Astronomy. New address:

008 Nittany 29
University Park, Pa. 16802
814, 865-3830

WA3HVL, Don DeRosa, and his XYL, Barbara, are the proud parents of twin boys born August 29. David Craig weighed in at 4 lb. 15 oz. while his brother Kenneth Joseph tipped the scales at 4 lb. 13 1/2 oz. W3IA, Tom Coyne, is a little under the weather.

* * * * *

ARRL BULLETIN NR 292, October 8, 1970

The Senate Commerce Committee heard testimony October 8 concerning Senate Bill 1466 which would allow amateur radio operation by future United States citizens. Senator Barry Goldwater, K7UGA, spoke in support of the bill which he had introduced. Other supporters at the hearing included FCC Chairman Dean Burch, ARRL President Bob Denniston WØDX, ARRL General Manager John Huntoon W1RW and ARRL General Counsel Bob Booth W3PS. Further information will appear in the December issue of QST AR

THE BIG 1296 STORY

As most of you are aware, the Mt. Airy V.H.F. Radio Club and the East Coast V.H.F. Society attempted to break the point-to-point distance record on 1296 MHz. The East Coast group set up on Cape Cod, while the Pack Rats traveled to Cape Hatteras. There the Pack Rats operated portable/4 on 80, 40, 2 meters, and 1296.

To make a long story short, the basic objective was not fulfilled. That is, no solid contact was established with WA2WEE/1, although brief bursts of signals were heard in both directions. Despite this fact, a tremendous time was had by all the members that participated. Several families (XYLs and kids) attended, and it was almost as if the Pack Rats were invading Cape Hatteras. The stories that could be told would fill a daily newspaper. To give you an idea of some of the events, the following are the recorded comments of Walt, K3BPP.

September 16 - Lloyd stopped by at 6:15 p.m. and we loaded the two 10 ft. sections of tower, the dish and numerous odds and ends in hopes of being prepared for any possible breakdown short of having the dish fall off the truck on the bridge tunnel and go into the bay.

At 7:30 the truck was unpacked and reloaded to include one 100 watt 1296 transmitter, golf clubs and crab pot. A few last items were picked up at W3ZD's and then Lloyd was off for Wildwood, New Jersey, to "woop it up" for a couple of days. Dan and Lloyd left some time Thursday night and arrived at 5 a.m., and, of course, there was a mixup in the accommodations and Lloyd and Dan ended up with the best pad in the place. (The slight mixup involved Dan and Lloyd banging on the room of K3IUV's kids, waking them up and nearly scaring them to death. Next, they banged on the door of K3IUV and XYL and they're lucky I didn't have a shotgun with me!! - Bert)

September 18 - The K3UJD group struggled out of bed about 6 a.m. and were on the way at 6:25 with 68328 on the odometer which, of course, we forgot to look when we arrived at about 3:30 p.m. Stopping for breakfast at 9:30, all just about starved, we got instructions to the last adult refreshment stand in Delaware, back one-half mile to "Brownies". Since there is no tax in Delaware, a small service charge is added which is about four times the amount of most tax!

Over bridge tunnel in fine shape, look for Route 64. Look for 64 South - never found so we get off, recalculate and get on Route 13 South. Find Route 168 okay - rest is easy, just drive, drive and drive. Stop just outside of Kitty Hawk for supper - fantastic seafood.

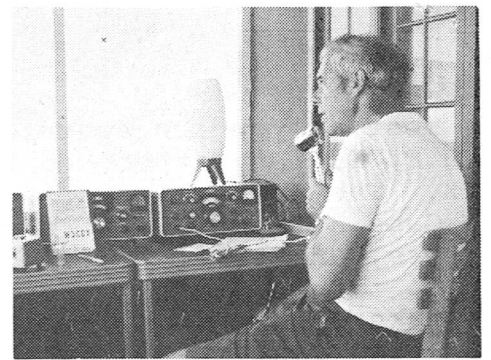
Just as we were about to decide the whole thing was a joke or we were on the wrong road, out of the sand dunes like a mirage, there appeared the Hatteras Island Motel.

Upon arrival, everyone looked as if they were really enjoying the area. The reservations were straightened out and the dish and tower were carried up on a sand dune a few hundred yards from the sleeping quarters. This distance seemed like a mile by the end of the weekend. The dish was erected the next morning along with the rest of the equipment. K3UJD is rediscovering microwave ovens - using the dish feed for a transmitter load R.F. cooked crabs anyone?

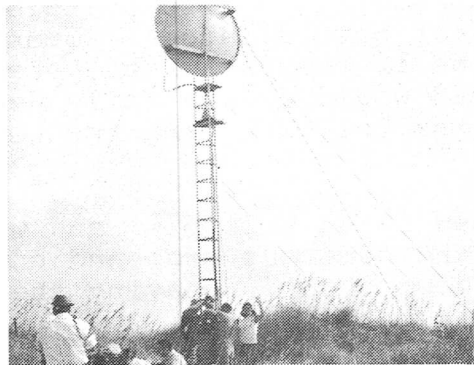
Continued on Page 4



K3BPP INSPECTS CAMARA LENS
K3UJD, W3FDQ AND WA3NVF
ASSEMBLE DISH



W3ZD OPERATING HF LIAISON STATION



DISH IN PLACE
K3IGX (WITH HAT), WA3NVF & K3ZSG
AT RECEIVER, K3UJD, W3FDQ, K3BPP
AND HARRIET, XYL OF K3IUU, AT TOWER

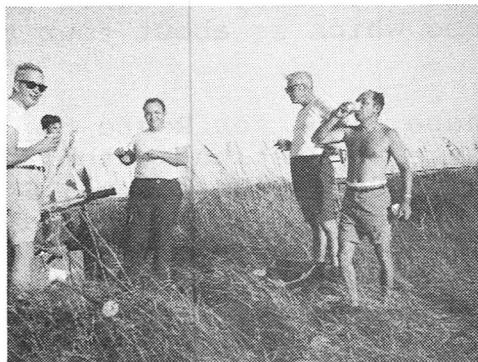


CARRYING THE TOWER UP THE SAND DUNE
FROM LEFT TO RIGHT: WA2KOI/K3ZPN,
WA3NVE, K3UJD, W3ZD, K3ZSG & K3IPM

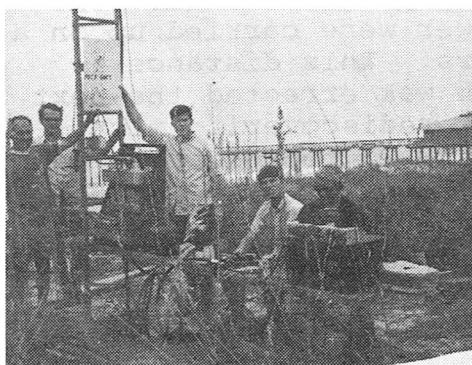


BERT(K3IUU) WITH XYL, HARRIET,
WA3NVF AT RECEIVER, WA3LNH/KØZZM
HOLDING UP TOWER, K3UJD TOPLESS
K3IPM AND W3FDQ IN BACKGROUND

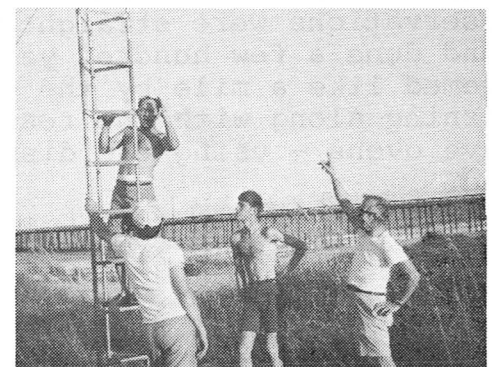
COFFEE (HI, HI) BREAK
FROM LEFT TO RIGHT: W3FDQ,
K3ZSG, WA2KOI/K3ZPN, W3ZD
AND HIC, MARIO, K3UJD



DE W3CCX/4 CALLING CQ 1296
LEFT TO RIGHT: K3UJD, K3BPP
K3ZSG, WA3NVF AND W3FDQ



K3UJD CLIMBS TOWER WITH K3IPM
"SUPPORTING". WA3NVF STRIKES
BODYBUILDING 'POSE' AS W3FDQ
TELLS MARIO "THEY WENT THAT WAY"



THE BIG 1296 STORY (Continued)

1296 operation started early in the afternoon. Good signals copied at 6:10 but were very fast - 1296.037 - wrong freq. Very strong 10 meter signal, of course. About 4 p.m. transmit 10 minutes, receive 10 minutes.

W3VIR also on. Very short bursts of signals were heard from W3VIR and WA2WEB/1. About midnight we started to organize the shifts and go all night long. The classic comment of the night shift (K3IUUV) was "Look at those nuts over on the pier fishing at 5 a.m." said in all sincerity!

No results, so everyone decided to shut down at 10 a.m. so we could get home at a reasonable hour. Just 15 minutes after the dish was down K3IUUV, Bert, came running across the Hatteras Island Desert saying WEB worked JNG and signals were getting stronger - too late!

We continued to pack up and left about 12 o'clock, caught two one hour traffic jams in Dover and 73 bridge. We made it home before K3UJD's double vision turned into triple vision.

People on the trip: K3IUUV and family; W3ZD and family; K3IPM, XYL and baby sitter; W3FQD and XYL; K3ZSG; WA3LNH; WA2KOI (K3ZPN); WA3NFV; K3DLS and Glenn; K3IGX; K3BPP; K3UJD and XYL.

Very many thanks go to W3CL, W3KKN, W3TNP, K1SFF/3 for their tremendous H.F. liaison work.

Conclusions

- Operate at least 2 full cycles morning, noon and night, especially at noon on hot days - there seems to be a trend over a water path.
- Knowledge of frequency \pm /KC at least.
- No FSK.
- No drift.
- Try to have half way set up at least with receive gear - and H.F. communications.
- Try to meet agreed schedules.
- Don't drive home Sunday night with little sleep the night before.

Well there you have it. If it sounds like work, it was. If it also sounds like fun, it was that also. Dave, W3ZD, did an excellent job in setting us up on 80 and 40, using a KWM-2, with dipoles on the beach. Many others contributed equipment of various types. On two meters, we had no trouble working WA2WEB/1 (about 475 mile path). We also worked Scranton, Pa., Maryland, Virginia, North Carolina, and New Jersey. The only club member worked on 2 meters was Joe, W2EIF.

I'll end on a note of thanks to Ernie, W3KKN, and his XYL, Bert, W3TNP, for the tremendous effort they put in at home maintaining a clear channel on 80 and 40 meters. The effect on our "S" meter when Ernie came on had to be seen to be believed!

Will we go again next year? Probably!

K3IUUV, Bert

NEW PRODUCTS OF INTEREST TO HAMS

1. Midland International 3 Band VHF/UHF Monitor Receiver (#13-920)

This new unit is all solid state and covers the following ranges: 30-50 Mc, 148-174 Mc, 450-470 Mc. The 450-470 Mc band being included in this receiver, is what makes it so much different from other receivers now on the market. Crystal channel operation is available on the lower two ranges (one channel on each band). Other features include squelch, AC or DC operation, and built in speaker.

2. Janel Labs, P.O. Box 112, Succasunna, New Jersey 07876

The Model 432 CA covers the 432 Mc band using crystal control and 6 silicon bipolar and mosfet transistors. For 28 Mc IF, a crystal freq. of 101 Mc is used, yielding a clean injection signal. Other IF freq. are used and normally stocked, including 14-18, 26-30, and 50-54 Mc. The unit appears to be well built on a printed circuit board, using small cavities in the RF section. The converter is contained in a cast aluminum box, and has a built in AC supply, zener regulated. (Price - \$64.95)

3. Eddystone Receiver 990R

This VHF communications receiver, while rather expensive (\$1295) has many features to make it interesting to hams with fat wallets. It covers 27 Mc-240 Mc in four ranges, AM, FM and CW, is fully transistorized, can be operated from built in AC supply or from 12 VDC, and is built into a compact cabinet measuring 16 1/2 x 5 1/4 x 13 1/2 deep. Several other receivers are available from this British Co., Inc., one unit covering 230-870 Mc (transistorized).

Information can be received from Marconi Instruments, 111 Cedar Lane, Englewood, New Jersey 07631.

73
W3NSI, Lyn

SAFETY??

During one of my frequent early morning QSOs with Alan, W3OR, the topic turned to tower climbing. Alan, who is 68 and still climbing his tower, remarked that he thought the exercise kept him in great physical condition.

Now, as some of you know, Alan fell out of the tower from the 60 ft. level about five years ago. Needless to say, it was touch and go but Alan credits most of his remarkable recovery to the perseverance of his XYL, affectionately called Backscatter.

Well, knowing all of the above, I asked Alan if he had any doubts about climbing the tower after he had his fall. His answer was a classic: "I feel safer climbing the tower than I do driving an automobile."

I guess it's all in how you look at it.

K3JJZ, Fuzzy Lip *

* The Fat Rat strikes back

SWAP SHOP

Conducted By: W3ZRR, Ray Whitehead
7329 Shelborne St.
Phila., Pa. 19111
215 - RA 2-4786

FOR SALE

- SR-46 with matching VFO \$150
CONTACT: WB2BVW, William J. Farr
18 Eldrige Avenue
Williamstown, New Jersey

FOR SALE

- HQ170A with clock and speaker and
6 meter nuvista preamp - new condi-
tion
- 6/10/15 meter transmitter VFO con-
trolled, 1000 watts NFM, 650 watts
AM, 100% MOD. Air cooled, all
mounted in 3' rack, includes D-104
mike and stand
- 5 el telrex 6 meter beam with RG8U
cable
Package deal, will include many extras.
BEST OFFER

CONTACT: K3DXC, Mel Spiegel
7972 Gilbert Street
Philadelphia, Pa.
LI 8-3522

FOR SALE

- 4 - 8 el 144 mc beams Telrex design
fabricated from hard aluminum alloy,
stainless hardware. Perfect!
\$5 each

CONTACT: W3ZD, Dave Zimmerman
520 Centennial Road
Warminster, Pa. 18974

FOR SALE

- 1 Johnson Viking Ranger II 160
thru 6 meters, with electronic TR
switch and vibroplex key - Mint
Condition \$90
- Ameco TX62 with VFO and Dow key
relay - Mint Condition \$110
- 1 Ameco 2M converter with nuvista
preamp and power supply 7-11 Mc IF
\$15 with TX 62

CONTACT: WA3CND, Howard Candy
4013 Benton Street
Philadelphia, Pa. 19136
624-6812

FOR SALE

- 1 R-48 rcvr w preamp
- 1 Tecraft 220 xmitter
- 1 Power supply
- 1 Amplidyne Labs 220 Mc conv.
Total for all \$75

CONTACT: K3MPZ, Ralph Hairshine
1408 Wedgewood Road
Wilmington, Delaware

MEETING NOTICES

The next Directors Meeting will be held at the QTH of W3SAO, Frankie Brick, 821 West Lindley Avenue, Philadelphia, Pa., at 8 p.m. on November 11.

The next Regular Meeting will be held at the West Oak Lane Jewish Community Center, Sedgewick and Thouron Streets at 8 p.m. on November 18. Topic to be announced.

SEVEN MONTHS TO GO - 15th Anniversary Dinner - Buck Hotel - May 8, 1971

2 METER REPORT

The band has been very good this Fall up through the middle of October. Have had many QSOs with W1YTW in Maine W1JSM, K1VHS/1 and WA1JTK in New Hampshire; and many others in Rhode Island, Massachusetts and Connecticut. The Pack Rat meeting of September 16 coincided with a big opening to the West, so good that K9HMB in Illinois worked WA2FGK NNU for a 723 mile hop on 220. So we were all at the meeting such luck!! Mel, W2BOC of New York has supplied some predictions for aurora openings as follows: October 7, 10, 22, 27, November 2, 11, 21, December 4, 12, 17, 22, 23 and January 1. His predictions are pretty accurate, but also look a day either side.

W2EIF, Jo

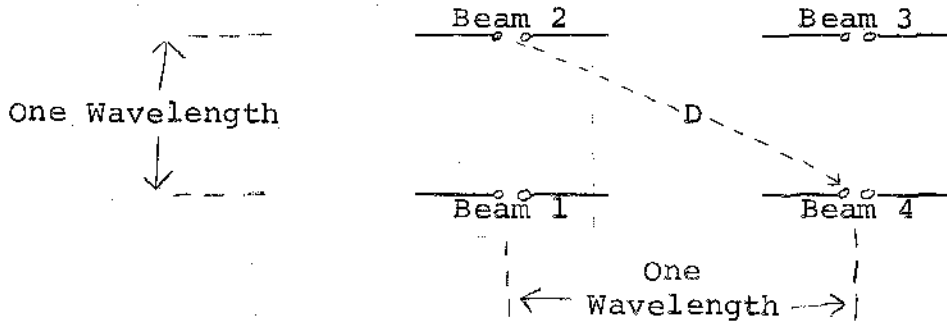
THE TRANSISTORS SHOWN BELOW REPRESENT ONLY A SMALL FRACTION OF THOSE AVAILABLE. MOST ARE UNITS WHICH ARE SPECIFIED FOR VHF/UHF USE. IF YOU HAVE AS MUCH TROUBLE AS I DO IDENTIFYING ITEMS AND LOCATING THEIR BASE DIAGRAMS, YOU WILL APPRECIATE THE INFO. WZEIF.

TRANSISTOR	POLARITY	CASE		TYPE	NF AT MHZ		FIG NO.	BASE CONNECTIONS	
		N-METAL	P-PLASTIC		MOS-MOSFET	J-TFET			
AF239	PNP Ge	M		-	6	800	1		
UC734	N	M		J	4	400	3		
T1534	N	P		J	2	100	5		
T1588	N	P		J	3.5	200	6	FIG 1	FIG 2
2N404	P	M		-	-	-	13		
2N706	NPN (SI)	M		-	-	-	11		
2N918	NPN (SI)	M		-	-	-	1		
MPS 918	NPN (SI)	P		-	6	60	12	FIG 3	FIG 4
2N2857	NPN (SI)	M		-	4.5	450	1		
2N347B	NPN (SI)	M		-	4.5	400	1		
2N3823	N	M		J	2.5	100	3		
2N4223	N	M		J	5.0	200	9	FIG 5	FIG 6
2N4416	N	M		J	4.0	400	3		
2N4417	N	M		J	4.0	500	7		
2N5045	N	DUALS		J	2.0	200	14		
2N5078	N	M		J	3.0	200	3	FIG 7	FIG 8
2N5245	N	P		J	2.0	100	6		
2N5397	N	M		J	3.5	400	3		
2N5457 (MPF103)	N	P		J	AUDIO		6		
2N5458 (MPF104)	N	P		J	AND		6	FIG 9	FIG 10
2N5459 (MPF105)	N	P		J	SWITCHING		6		
2N5484	N	P		J	3 2	100 200	6		
2N5485 (MPF106)	N	P		J	2	100	6	FIG 11	FIG 12
2N5486 (MPF107)	N	P		J	2	100	6		
2N5668	N	P		J	2.5	100	6		
2N5669	N	P		J	2.5	100	6		
2N5670	N	P		J	2.5	100	6		
3N128	N	M		MOS	5.0	200	3		
3N140	N	M		MOS	4.5	200	9		
3N141	N	M		MOS	-	-	9		
3N151	P	M		MOS	-	-	9		
3N152	N	M		MOS	3.5	200	3		
3N154	N	M		MOS	5.0	200	3		
3N159	N	M		MOS	3.5	200	3		
40673	N	M		MOS	4.5	200	9		
MFE 2000	N	M		J	3.5	400	8		
MFE 2001	N	M		J	3.5	400	8		
MFE 3005	N	M		MOS	4.5	400	9		
MFE 3006	N	M		MOS	4.5	100	9		
MFE 3007	N	M		MOS	4.5	200	9		
MPF 102	N	P		J	2	100	6		

B = BASE
C = COLLECTOR
D = DRAIN
G = GATE
S = SOURCE
X = CASE
Z = CASE + SUBSTRATE

UNIVERSAL MATCHING HARNESS FOR STACKING 4 BEAMS

Many VHF/UHF amateurs like to use multiple arrays of beam antennas to obtain higher gain and lower angle of radiation. One of the popular arrangements consists of 4 beam antennas stacked 1 wavelength vertically and 1 wavelength horizontally to achieve high gain, low angle of radiation with minimum side lobes. The arrangement is shown in Figure 1. (The feed points only are shown for clarity.)

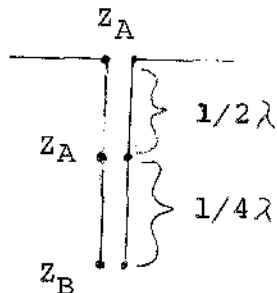


Note that the dimensions vertically and horizontally between feed points is 1 (wavelength) so that the diagonal distance D can be easily calculated.

$$D = \sqrt{1^2 + 1^2} = \sqrt{2} = 1.41 \text{ (wavelengths)}$$

Now it so happens that one of our matching tools consists of 1.5 wavelengths of open wire line. It is also a fact that this value has to be reduced slightly by the velocity factor (97.5% for open wire line) so that the 1.5 wavelength reduces to 1.46 wavelength or just a little more than the diagonal distance between the beam feed points. This is good because all we have to do to keep our harness tight is to change the stacking distance a very small amount either vertically or horizontally or just pull the center of the matching harness a little off center from the plane of the beam feed points.

What I am getting at by the above discussion is that I now have a very nice method of matching 4 balanced feed antennas from a single feed point. Each of the 4 antennas can be thought of as a single antenna, fed by 1/4 wavelength transformer and a 1/2 wavelength of transmission line. Thus



Z_A = Antenna Feed Impedance

Z_B = Impedance at Transmission Line Connection Point

Now how do we use this?

Let us assume that I have purchased 4 swan antennas, which have an advertised feed impedance = 105 ohms. Further lets assume that my feed line from the shack will be 200 ohms impedance (that is RG8U and a balun). Obviously, if I want to stack (parallel) 4 antennas to match into 200 ohms, I must first make each 105 ohm antenna look like 800 ohms at the feed point. (Four 800 ohm antennas in parallel = $\frac{800}{4} = 200$ ohms.)

UNIVERSAL MATCHING HARNESS FOR STACKING 4 BEAMS (Continued)

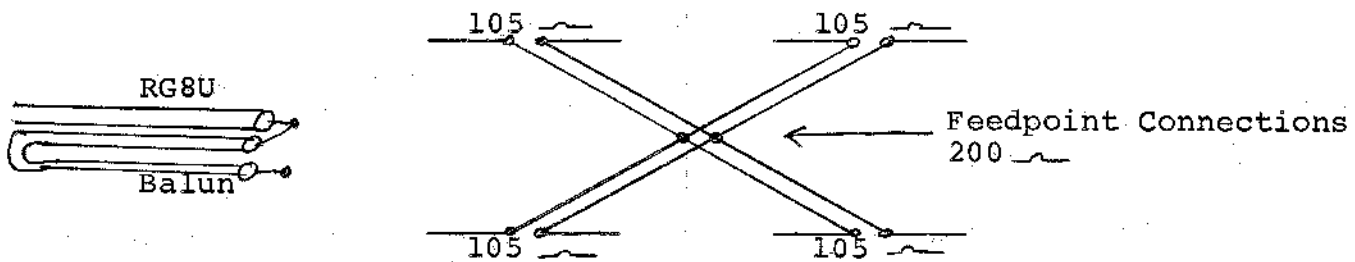
In order to make 105 ohms look like 800 ohms I will calculate and use a 1/4 wavelength of open wire line as a transformer. To do this I refer to the ARRL Handbook.

Z Matching Section = $\sqrt{Z_{in} \times Z_{out}}$ which in this case;

Z Line = $\sqrt{105 \times 800} = \sqrt{84000} = 290$ ohms of open wire line.

DO NOT USE 300 OHM TV LINE OR OTHER PLASTIC LINES.

Again from the handbook, 290 ohm line can be made by using No. 12 wires and spacing them, with a few plastic spacers, 0.5 inches center to center. Now I have shown how you make a harness for 1 antenna - how do I do it for 4? Well, if I connect all these 1/4 wave harness' together at the center and extend each one 1/2 wavelength, I have the following:



The harness' for the 4 antennas is now in the form of an "X" and

$L = 1.46 \times \frac{11800}{F_{MHz}}$ inches

The system can be constructed of two, 290 ohm open wire transmission lines of length L, connected at the centers as shown. The system may be fed with 50 ohm coax line and balun as indicated.

This matching harness eliminates the horizontal feed line common to most matching systems. The beams are fed in phase.

W2EIF, Jo Kilgore

FROM THE BOOK RACK
de Paul R. Behrmann, K3WEU/AREA*

HOW TO READ ELECTRONIC CIRCUIT DIAGRAMS (TAB Books No. 510) by Robert M. Brown and Paul Lawrence

\$7.95 hardbound; \$3.95 paperbound. 256 pages including large schematic foldout section. Over 140 illustrations. 9 chapters plus Glossary, Appendix and Index.

With this brand-new guidebook, anyone can quickly learn how to find their way around circuit diagrams (or sharpen their ability to do so).

It is a modern guide of practical value to hobbyists, experiementers, students, and others who want to upgrade their knowledge the easy way.

Continued on Page 9

FROM THE BOOK RACK (Continued)

Beginning with basic components, each type is described (with schematic and pictorial illustrations), making it easy to identify capacitors, resistors, coils, transformers, switches, relays, fuses, circuit breakers, etc., in schematic diagram form. The reader will quickly learn how to identify schematic symbols for such components as crystals, filters, headphones, lamps, meters, microphones, speakers, phono pickups, diodes, transistors, integrated circuits, plus all types of vacuum tubes. Also, in view of the trend toward printed circuit and modular construction, an entire chapter is devoted to present techniques used to indicate sub-unit interconnections.

Then, to clinch understanding, typical full-size schematic diagrams are included. The authors conduct "guided tours" through AM receivers, audio amplifiers, AM-FM tuners, television sets (B & W and color), PA and sound systems, communications equipment, test instruments, etc. Shows how to trace signals from start to finish - component- to-component and stage-by-stage. A valuable source of information and reference data on circuit symbols, terminology, color codes, etc.

Contents: Basic Components - Transducers, Indicating & Miscellaneous Components - Solid-State Devices - Vacuum Tubes - Inter-connecting Devices - Types of Diagrams - Radio and TV Diagrams - Specialized Equipment, Glossary, Appendix, Index.

COLOR TV TROUBLE FACTBOOK: PROBLEMS AND SOLUTIONS (TAB Books No. 519) by the Editors, Electronic Technician/Dealer

\$6.95 hardbound; \$2.95 paperbound. 176 pages, over 150 illustrations.

Here's a complete guide to color TV troubles and solution, arranged by make and model. Every TV service technician should own this all-in-one reference book. Based on material published in the "Colorfax" section of Electronic Technician/Dealer, the information it contains may easily save the reader hours of time repairing a "tough-dog" color TV. Included are details concerning repetitive troubles, field-factory changes, new and unusual circuits and descriptions of how they work, special adjustment procedures and other such pertinent service information.

The content is arranged by brand names, covering every major make of color TV receiver produced during the past several years: Admiral, G.E., Magnavox, Motorola, Olympic, Philco, RCA, Sylvania, Westinghouse, and Zenith. Models and chassis covered are arranged in alpha-numerical order, and a complete cross-reference index is provided so that the specific material needed can be quickly found. In all, over 300 specific items are included.

This quick-reference source provides instant solutions to many color TV circuit troubles, enabling the diagnosis and repair of hundreds of otherwise difficult-to-solve problems.

Brands covered: Admiral, General Electric, Magnavox, Motorola, Olympic, Philco, RCA Victor, Setchell Carlson, Sylvania, Truetone, Westinghouse, Zenith, Miscellaneous.

*Amateur Radio Editors Association

WHAT WE MUST DO TO PREVENT RIOTS THIS SUMMER

From High-Q Flatbush Radio Club

We all remember the riots which took place that summer at the ARRL in Newington Connecticut. We also remember the officers clubbed to death by the general class militants. What a horrible sight it made as the ARRL membership list was burned beyond recognition. To see three thousand hams yelling and spitting was a ghastly thing indeed. The worst sight of all was Wayne Mean yelling into the crowd as he was being dragged into the police van. A cheer went through the crowd as he uttered those famous words, "We shall return". I remember lowering my eyes in shame as the lowly three thousand burned their ARRL membership cards.

With the vast property damage that resulted, and the many injured in the riots, we see that this summer can only be worse. There were many causes for the riot, and many rioters. Elimination of the latter is not very likely, so instead we must look at the causes of discontent. The problem first started nine years ago when the prodding of the ARRL and the FCC passed incentive licensing. This was going a bit too far, but most hams were able to let out their steam by getting into hot discussions on the air. But then came the "SSB Only Law", throwing thousands of hams off the air since they only had A.M. equipment. To top it off, you all remember in 1970, when with the ARRL's help, of course, the FCC passed the "Three Hour Law", which as you know now limits hamming to three hours a day per person. This eliminated a lot of QRM, but a ham couldn't work his buddy across town unless they both had the same three hour schedule.

We must not look at the past and then shrug our shoulders. We must learn from our blunders. An example of this is what the police are doing in New York. If there is a riot this summer, the police will swiftly rush in with Collins rigs to distribute and thereby break up leadership of the militants. We must start at the very root of the problem and give help to the poor novice. Money is needed, and you can start sending your donations immediately. Let there be peace.

WB2SZI, Marv Shuldman

From LERC

The first nine pages of the New Chicago Miniature Lamp Works Catalogue Number CMT-3 provide an excellent technical presentation on subminiature lamps. If you have ever run through a red light without seeing it in time you will find it interesting to know that the spectral luminous efficiency of green is about six times better than red and yellow is about ten times better. It seems that our traffic lights should be red for go, green for caution and yellow for stop. This is a useful catalogue for anyone who uses subminiature lamps. If you want one, write to 4433 North Ravenswood Avenue, Chicago, Illinois 60640.

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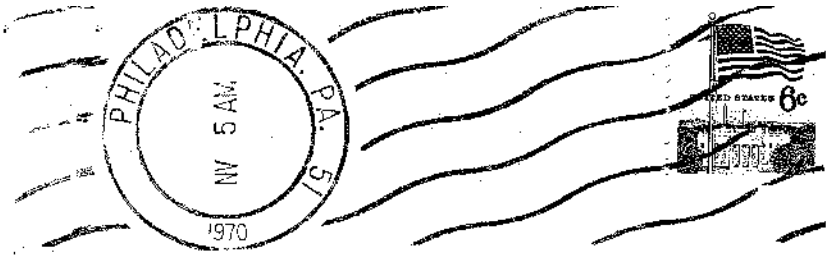
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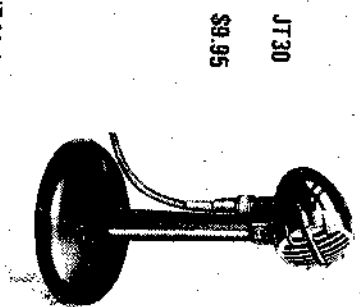
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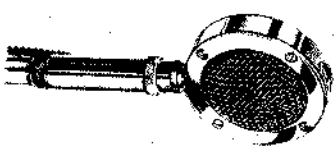
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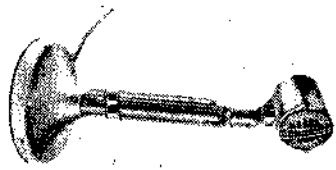
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