

July, 1973 Issue

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Typesetter	Jim Mauro, WA2DNL
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***** CLUB NOTES *****

6M AREC-----50.9-----Sunday-8 PM Local Time
10M Rag Chew-----28.8-----Fridays-9:30 PM
Novice Arc -----21.115---Mondays-8:30 PM
Friendship Net-----7.2650---3rd Sunday---1:00 PM

***** PICNIC JULY 14 ---LAKE GARRISON *****

QRZ de W2SUA

Having been around amateur radio for quite a while qualifies me, I believe, to comment on the ARRL Field Day participation.

A dedicated group of GCARC members, too numerous to mention here, combined manpower and skills to produce one of the best field day efforts I can recall, and I have seen a lot of 'em.

Good campsites, no mosquitoes, great antennas, no rain, (until 2 hours after shut-down), good generated power, great weather, (not too warm), 1st class generator maintenance and supply crew, fine operators, good loggers, just plain hard working hams shooting for a good score, And they got it, over 1,000 contacts on 5 bands.

To chronicalize each and every outstanding achievement by individual operators would require too much space. Suffice to say the champs are still champs- the old stand bys are still the most needed in any effort, but something has been added! I speak of the novice effort-and rightly so because they scored over 60 contacts-a score far better than previous novice stations ever turned in. I have to name Jim Buzby, WN2GJH and Mark Wilson, WN2 OSQ for the record. These boys had a station and antenna rigged for the task-all business.

My congratulations to the novices and all the rest of the gang that made field day a real accomplishment.

See you all at the club picnic-July 14th.

"Shorty"

*****CLUB PICNIC*****

Don't forget to pack the entire family into the mobile unit and head on down to Lake Garrison (abt 8 miles South of Glassboro) on Saturday, July 14th. Plan to arrive anytime after 10A.M. (or earlier). John, WB2GKH and John, WA2MEM, have promised a special treat for the kiddies and good WX for the hams and XYL'S Let's try to beat our turnout last year of some 60 GCARC "people" (bring your relatives along too if your unlucky enough to be stuck with em, HI) Don't forget to bring along your ticket, but if you lost it, forgot it, didn't get one, etc. just see WB2GKH when you arrive and he will fix you up with a new ticket (don't forget to fix him with \$1.50). So let's all pray for NO RAIN and plan to have a relaxing day.

*****NEW MEMBER*****

Welcome back to former club member Darral Nerron, WB2BVW, who has rejoined following several years off-the-air while completing his schooling. You may fail to recognize Darral, as he is sporting a new "face mask" and doesn't resemble the former whiz kid from the Williamstown crew. Good to have you back, Darral.

*****FD, 1973*****

Our prexy has ably commented on our FD activities elsewhere in this issue and just some supplementary data is intended here. Needliss to reiterate, Rick, WA2OLS, is to be congratulated on heading-up one of the best FD's ever for GCARC. Opinion seems to be we have located a great location for our future field days. Jim, WA2DNL, did a perfect job with the generators and again Bill, WB2PVI, made available the gasoline.

Although the final score is not yet in (next month), we scored over 1,000 QSO's with the 80 M crew, headed up by W2FBF and WB2FJE, leading the pack with nearly 500 QSO's. They were ably assisted by WB2OCR and WA2ECB. "Robin Hood Newman" fired his trusty "goose" shaft far into the sky (followed by a thin spinning-rod line) and "presto", they had an inverted VEE nearly 100 ft. up. Over at the 40 M site (where WA2NPD and WA2DNL held forth), "William Tell Wood", taking his cue from Robin Hood, similarly fired a "shaft" over the tallest oak, and, after some initial faulty marksmanship, broken fish line, and anxious moments during retrieval of arrows, the W2SUA dipole was displayed proudly erected between two trees--the dipole about 50' above ground. W2AFZ, WA2OLS, WB2OER, and WA2VAT (even with a Sunday AM "dead" CW band) all helped garner over 300 QSO's. 20 M chairman Bill, WB2FIF, assisted by WA2AIH, WA2AXJ (others?) erected an impressive 2-element beam and, although the 20 meter band appeared to be nearly dead at times, still managed an impressive (over 100) QSO's. They are to be congratulated for a real FB job--especially since it was the first time for Bill as band chairman. The 6 M crew with WA2MEM, WB2BZY, WA2SEA, and WB2GKH at the controls, also erected an impressive 5 element beam and worked everybody on 6 M that could be worked. The outstanding job turned in by our novices has already been mentioned and a short 2 M FM burst was turned-in by new club member Wayne, WA2DBS, working from within his car. Many thanks to Mrs. WB2FJE and WA2DNL, (others?) for providing chow for ops in addition to their own and to all other XYL's who permitted their OM'd a few hours away from the home QTH. - In all, we had about 30 GCARC members who, in some way, helped out. See the rest of you next year.

*****CHANGES OF ADDRESS*****

Your new membership list (from last month) already needs a couple of alterations. The new WB2WAK QTH has just arrived (wish it were closer to W2-land). So pse. cpy.

Paul Callaghan, WB2WAK/4

Also, effective July 6th, Ray Metzger will set up station

at his new QTH.

*****LES BELLES*****

Our annual club picnic will be held this month. Usually there is more food around that can be shared and for those anxious to try something different here is a suggestion:

Apricot Jelly Roll (by K1VLV-Alice)

Cake:

3/4 cup cake flour
 1/2 tsp. baking powder
 1/4 tsp. salt
 3 eggs (separated)
 3/4 cups sugar
 2 tbs. cold water
 1/2 tsp. vanilla

Filling:

2 tsp. plain gelatin	Few grains salt
3 Tbsp. cold water	2-1/2 cups unpeeled apricot halves
2 Tbsp. corn starch	1 Tbsp. butter
2 Tbsp. sugar	

Method--Cake:

Sift flour, measure and resift with baking powder and salt. Beat egg whites until almost stiff, gradually beat in half the sugar continuing to beat until whites are very stiff and smooth. Beat yolks with water, gradually adding rest of sugar until mixture is thick and light-colored. Roll into whites, add flavoring, fold into dry ingredients. Spread out in jelly roll wax paper lined pan (9-1/2 x 13-1/2). Bake at 400 degrees F for 12 min., loosen sides, turn out on towel sprinkle with confectioners sugar. Trim crisp edges, roll up snugly; wrap in towel and place on cake cooler until cold.

Filling--

Sprinkle gelatin over cold water. Combine cornstarch, sugar and salt; stir in little juice from apricots until smooth, then add rest of juice, apricots and butter. Bring to 2 or 3 min. stirring constantly. Remove from heat and stir in softened gelatin. Cool until thick but not set. Unroll cake, spread with apricot mixture and roll up again. Wrap in wax paper and chill. Serve plain or with whipped cream. Serves 6 to 8 people.

---See you at the picnic--73's Rose Ellen, WA2FGS

*****BUDGET COMMITTEE APPOINTED*****

In accordance with our constitution, president W2SUA announces the appointment of the following to this year's budget committee: Jim, WB2OER; John, WB2JZX; and Harry, WA2SEA. If anyone has any suggestions as to how you think we should be spending the club money, be sure to pass them along to the committee.

*****AREC XMTR HUNT SUCCESSFUL*****

Harry, WA2SEA, reports that the 6 M AREC net has closed for the summer (on a regular basis) but will continue to meet informally at 9 P.M. on Tuesdays at 50.9 Mhz. The final activity was a xmtr hunt (good participation from mobiles and with help from base stations) with Wayne, WA2DBS, heading the "charge". See you all Sept. 9th. on regular sked.

WA2FGS AND W2CDZ ATTEND WASHINGTON D.C. MEETING

Rose Ellen, WA2FGS, and OM Bill, W2CDZ, attended the 27th annual convention of the Armed Forces Communications and Electronics Assoc. at the Sheraton Park Hotel. Besides viewing many pieces of new and interesting gear, they had the pleasure of hearing Barry, K7UGA, one of the guest speakers.

*****RAMBLINGS OF A GHOST WRITER*****

I am a Ham. I participated in all of the stages necessary to become one. Even to the stage of bootlegging. My education has been self-taught. Believe me, its tough going, learning this way. But I can assure you of one thing, I haven't forgotten those early lessons. Nor have I forgotten how hard it was for me to save up the dimes and pennies so necessary to purchase the wire and miscellaneous articles I needed so badly. I detest the person who comes forward in a sing-song voice and tells the world that he would like to belong to the FCC and get one of those amateur radio stations, but its too hard.

The time was 2.00 P.M. on a Wed. of the third week after I started to wind some rather poorly coils, and tying them together and not bothering to solder any joints. I hadn't learned what solder was or how to use it at that time. My interest was at a pitch-so strong that it refused to let me quit, and after many tries I heard music and the only code I heard was some government station sending dots and dashes that somehow didn't make any sense to me.

Well, I was on my way determined to have one of those stations where I too could send and know what the other guy was saying. Beginning to study and learning the code was my next step-boy, did that code come hard! I had no one to study with me, so the

only practice I got was when I tried to make heads or tails out of the signals I was receiving on the broadcast bands in the form interference. This took me three weeks--everyday--before I was even able to copy one letter. Es, Is, Ss, and T's gave me the first indication that at last I was getting somewhere with the code.

With perserverance I determined I knew enough of the code. I went up to take the test; that speed sounded more like thirty words a minute instead of the ten I thought I could copy. Result--I flunked! Disappointment instead of discouraging me made me try harder to learn the code better. This time I went up knowing that I could copy 15 words/per--what happened? the same thing only instead of the speed sounding like thirty words per, it sounded like forty. Result--flunked again. What was happening to me? I came home and copied as well as I ever did. In the meantime I was brushing up on the questions from a booklet I had and trying to make sure if I ever got past the code, I certainly wouldn't flunk the theory. After the necessary waiting time before I could again give it another try, I presented myself to the Examiner. His remarks were, "what, again?" Before he gave me the examination he told me to sit down beside his desk. "I know you are determined to get your license, but you are too tense and nervous. I want to talk to you for a while to get you over your nervousness." He talked about everything but radio for twenty minutes. Then he said, "I am going to try something". He started giving me the code via earphones and all the time kept talking to me about things irrelevant to radio. In a short time I realized that I was copying code and didn't hear one word he said. Result--I passed not only the code but also the questions as well.

How does one give praise to someone who realizes the difficulty one is having doing something and then takes the time and knows how to help and what to do? I went through the experience. I got my ticket. Not as easy as some, but, I GOT MY TICKET AND STATION CALL. If I was able to get it, I believe anyone who has the desire and perseverance can do the same.

That's what I mean when I say--"I AM A HAM." I am proud to be one--You can too.--You can earn the right just as I did.

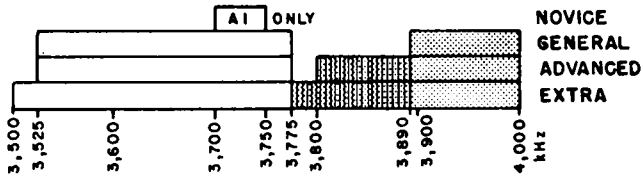
One thing more I will never forget what I went through to get my ticket, and I will never do anything to jeopardize this privilege. I hope that you will think twice before allowing anything to cause your loss of operating privilege.

73's es CUL.....Ghost Writer

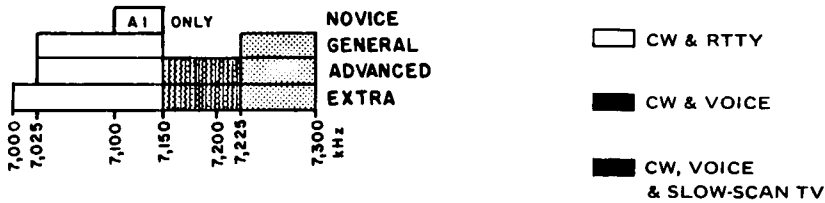
(ed. note: good lesson to be learned her for all aspiring hams-to-be)

G C A R C F R E Q U E N C Y C H A R T

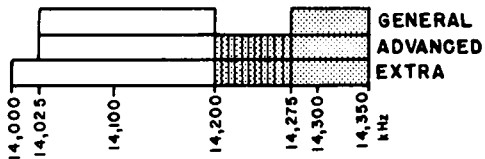
80 METERS



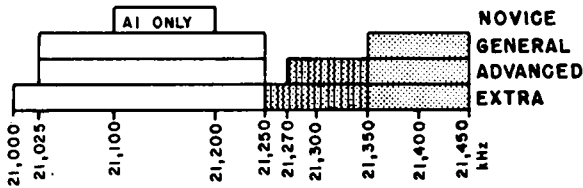
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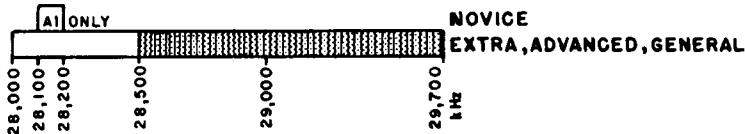
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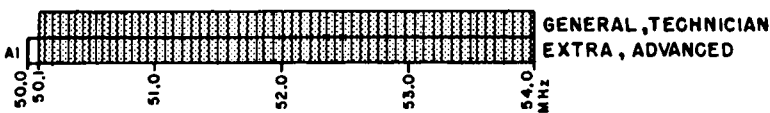
15 METERS



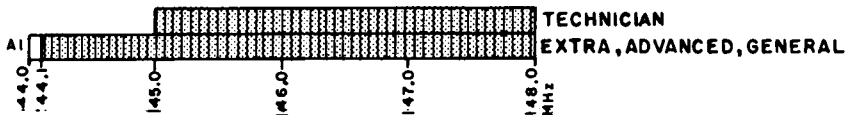
10 METERS



6 METERS



2 METERS



New U.S. amateur suballocations effective November 22, 1972. Conditional Class privileges are the same as General Class. (See page 78, November 1972 QST.) Copies of this chart are available from ARRL Headquarters. Send a stamped, addressed envelope and ask for the "Member's Guide to the U.S. Ham Bands."

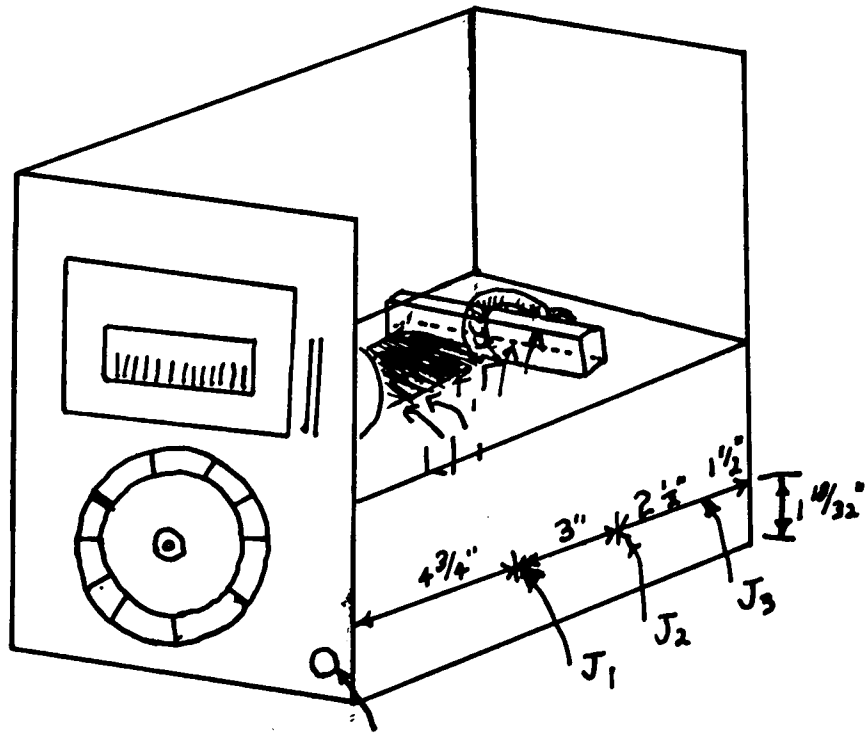
IDEA-BY

JOHN KULL

WB2GKH

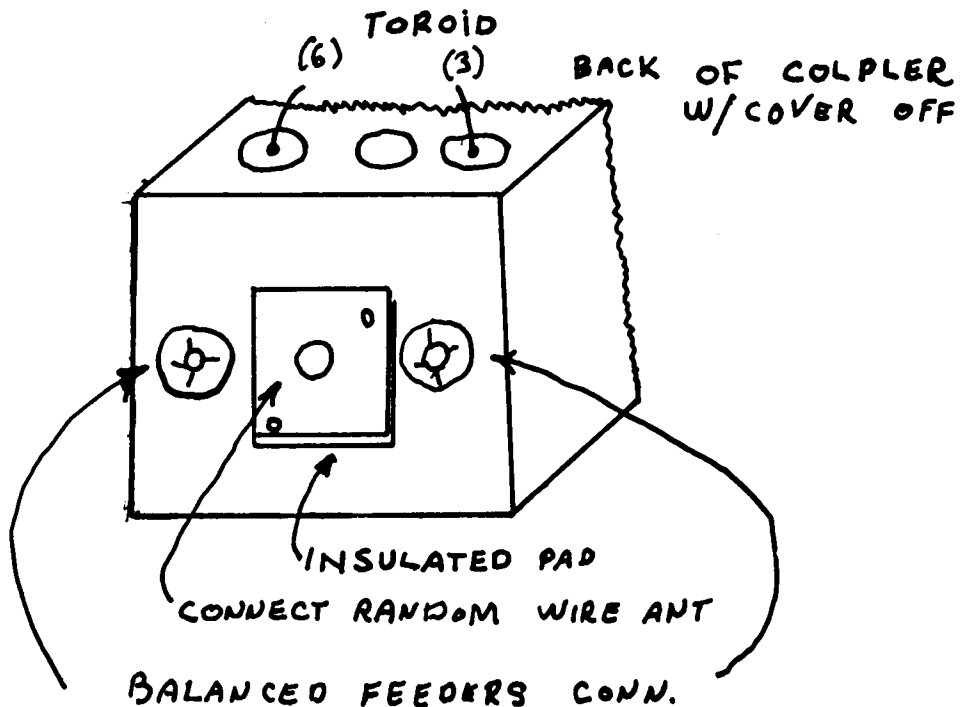
SKETCH "A"

RIGHT SIDE OF COUPLER



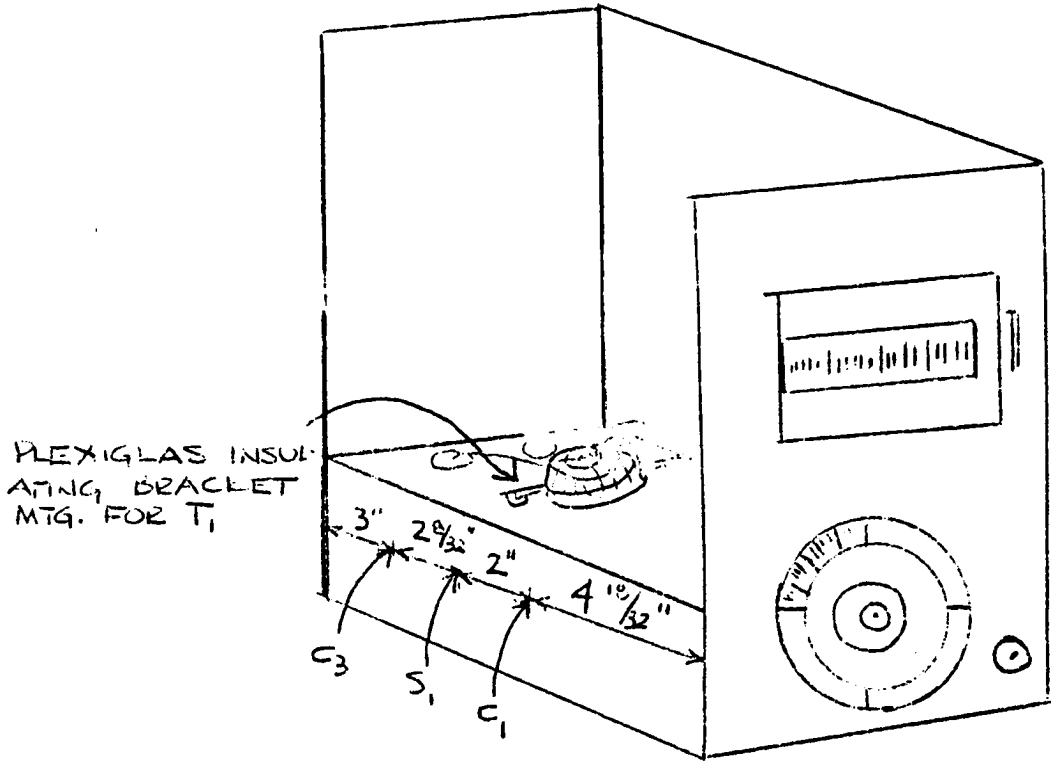
C₂ ROTOR DRIVE KNOB

SKETCH "B"

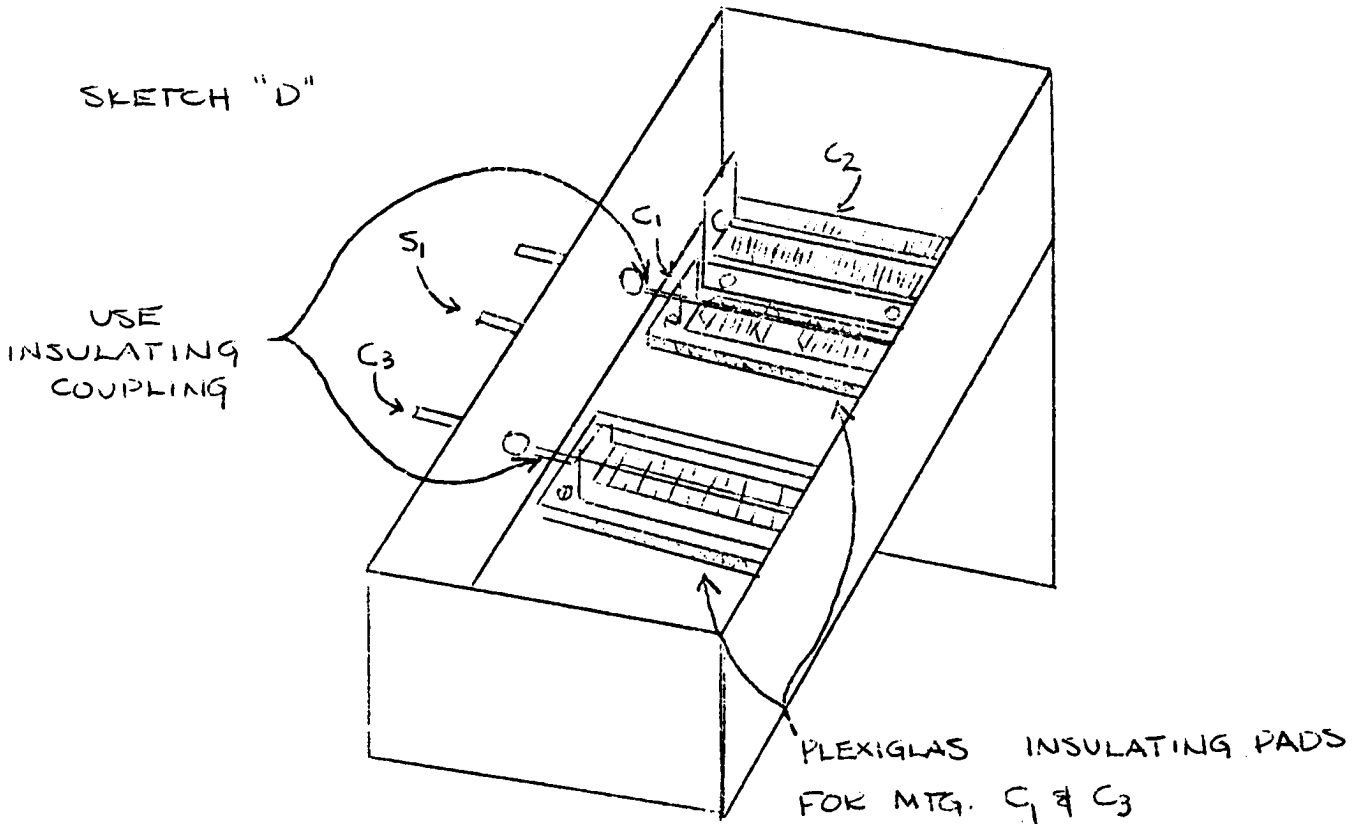


USE ANT BINDING POST FEED THRU INS. OF BC 458 B

SKETCH "C"

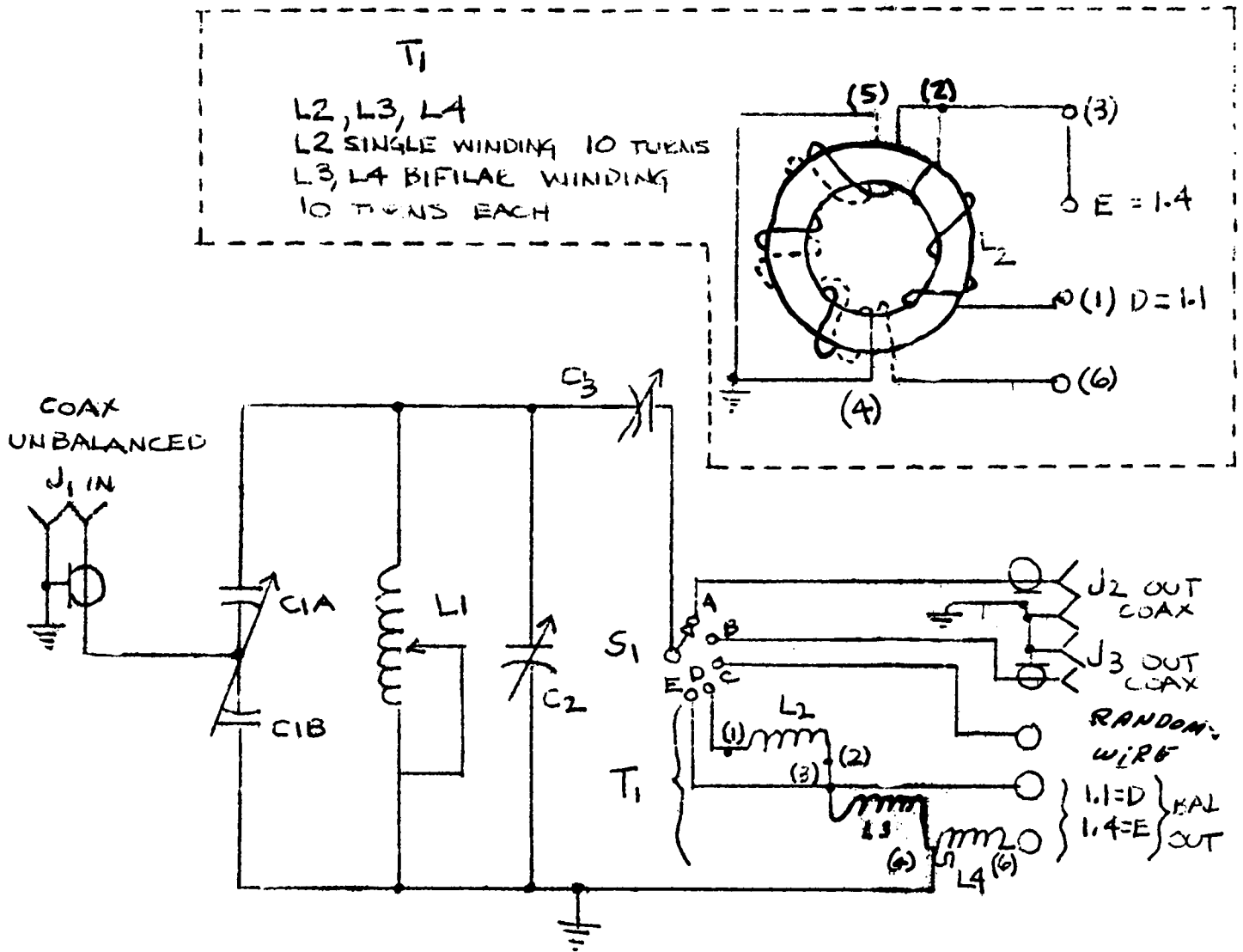


SKETCH "D"



SKETCH "E"

COUPLER SCHEMATIC



J1, J2, J3

C1 AB

L1

C2

C3

S1

T1(L2,L3

coax chassis conn S0239

cardwell (100pf section) .030" spacing (see text)

Ant. coil in BC458A leave in place (modify gnd see text)

BC458A amp plate cap C65 leave in place

BC458A amp plate cap C67 (reposition@ see text on mtg.)

ART13 control box (use single wafer, 10 (ten) position SW.)

ADIMON ASSOCIATES kit (1 KW. balun)

The Amidon coil is mounted about an inch above the chassis on a clear plastic strip for insulation. Now we can get down to the business of wiring.

Remove the antenna switch lead from the left side of the roller inductor and connect this end of the inductor to the left side stator of C-1a via the feed thru insulator (top left front of BC 458 chassis). Make certain that both ends of L-1 roller rod are well grounded. Solder a jumper from the free end of L-1 winding (right side of coil) to the buss wire spider-make sure you have a good ground at this point. Scrub the coil, roller and roller rod with a stiff tooth brush and carbon tet or equivalent. Now, starting with a connection from J-1 to the rotor of C-1, complete wiring in accordance with schematic "E". Use #22 and #18 buss wire and make short symmetrical leads. After completion, check wiring and solder joints, slide BC 458A bottom and top covers into position.

Assuming an FT-101 transceiver, couple a length of RG 8 coax (as short as possible) from the FT-101 coax output jack to the input of the SWR meter and another length of RG 8 from the output of the SWR meter to the coupler input jack, J-1, again, as short as possible. Now connect your antenna to respective coupler jacks, namely, J-2 or J-3 unbalanced feeders (coax), random wire (end feed), or 30 meter dipole with tuned balance feeders. Assume we have a triband beam (10, 15, and 20 Meters) coax fed and an 80 meter half-wave dipole fed with 300 ohm balanced line. Connect the triband beam to J-2 and the balanced feeder of the 80 meter dipole to the balanced output jacks at the back of the coupler chassis. Switch antenna switch to "A" position. Tune the receiver of the FT-101 to 28.6 Mhz. Find a weak signal, preferably near 28.6 Mhz. and, with the receiver tuned to maximum sensitivity, orient the beam and adjust L-1 to approximately 1 turn. Set C-2 to minimum position on the C-2 dial (4Mhz.) and tune C-1 to resonance. Adjust C-3 for maximum noise or signal. At this time note the FT-101 settings and various dial readings and settings of the coupler in a chart similar to sketch "F". Uncouple the coax at the SWR meter and couple to a 50 ohm dummy load. Load the transmitter into the 50 ohm dummy load and enter the final plate current dial setting and antenna dial setting on the chart. Disconnect the coax from the dummy load and reconnect it to the SWR meter. With the transceiver in tune position, SSB mode, advance the carrier control knob to less than 100 mils. plate current. Switch the SWR meter to forward position and adjust the meter to full scale. Switch the SWR meter to

reverse position and note SWR reading. Now adjust C-2 and C-3 to bring the SWR to 1:1. The adjustment to C-2 and C-3 should be minor and there should be close coincidence between the settings of the coupler found by receiver resonance and position found by minor adjustments to C-2 and C-3. For verification, check the transceiver plate circuit resonance dip for coincidence. Again, there should be close coincidence between the plate tank setting working both into the dummy load and into the coupler. Fill in all of the chart spaces for "triband beam" coupler switch position, frequency, the positions of C-2 and C-3, and, in addition, the readings of the transmitter plate, coupler, and the antenna loading. At this point, advance the FT-101 carrier control to "full on", the output meter to "PO" position, and adjust the SWR meter to full scale in the forward position. Now in the reverse position the SWR should read 1:1. Repeat this exercise on 15 and 20 meters.

Now, assuming we have an 80 meter dipole, short together the shace-end of the balanced feeder and adjust the FT-101 to 7.25 Mhz. You are now adjusting an end fed antenna. Advance S-1 to C position (random wire). Starting with the dummy load, go through the same steps and make the same recordings as with the triband beam. Now switch to the "E" $\frac{1}{2}$ psotopm (S-1 position 5) and, removing the short from the feeder, connect the feeder to the balanced outputs at the rear of the coupler switch. Finally, starting with the receiver tune-up procedure, go through the same steps as with the triband beam and the random wire for balanced output at 3.9 Mhz. on the 80 meter dipole, Remember to keep the power low at all times except during final output power checking.

You will find that to determine the usefulness of the 1:1 or 1:4 impedance switch selection will require a bit of cut and try experimentation, for there are some rather complex things happening simultaneously. Sketch "F" shows the readings on my coupler, antennas, and FT-101. I am sure there will be small variations with other setups. One valuable "rule of thumb", if possible, don't change the settings on the transmitter after it is tuned on the dummy load. If, for instance, after adjusting the coupler, plate current resonance is pulled off its dummy load setting, something probably is wrong at the coupler or antenna end. Keep the transceiver close to its dummy load readings. After generating your set of data you will find a set-up can be made cold and the resultant transmitter operation will be right on the nose with power output and low SWR.

Typesetter's Note:

line 24 should read "E"position.

Jim; WA2DNL

FREQ.	ANT. 136' CF	L1	S1	C2	C1	C3	50 ohm		50 ohm		PLATE DIAL	PRESET DIAL	IP	S W R
							ant dial	ANT DIAL	plate dial	plate dial				
28.650	136' CF	2 1/2 T	5	4	2/3	1/3	4	3	8.5	8.6	9.5	250	1:1	
28.800	16; DIP	2 1/2 T	1	4	1/2	MIN	4	3	8.5	8.7	9.5	250	1:1.1	
21.390	22' DIP	3 1/8 T	2	4	1/2	FULL	3	1	8.3	8.0	7.4	180	1:1.2	
14.296	136' CF	3 1/2 T	5	3.8	3/4	1/3	3	1	7.3	7.25	7.4	250	1:1	
14.298	136' EF	3 1/2 T	3	3.85	1/2	2/3	3	2	7.3	7.2	7.4	250	1:1 1/2	
7.29	136 EF	63/4 T	3	3.5	2/3	2/3	5 1/2	2	5.0	5.1	6.5	250	1:1 1/2	
3.9	136' CF	12T	3	3.5	1/3	1/2	5	5	4.1	4.1	5 1/2	350	1:1	
21.290	136 EF	2 3/4 T	3	4.0	1/4	full	2	1	8	8	8.5	220	1:1	

* Ø = 2 turns