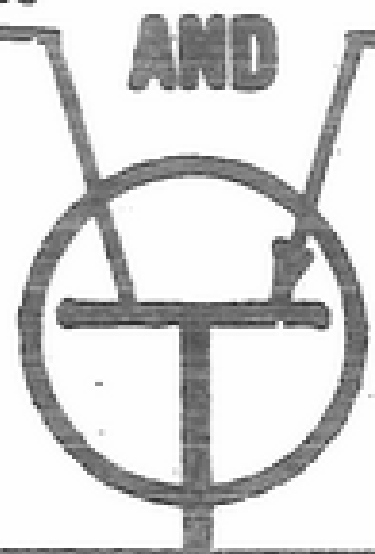


Central Oklahoma Radio Amateurs

COLLECTOR AND EMITTER

SINGLE COPY

25¢



JULY

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Vol. 2

No. 18



Southgate
INN

OKLAHOMA

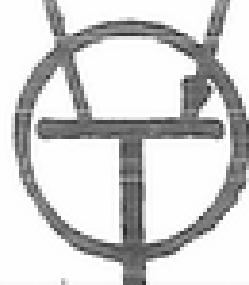
HAM HOLIDAY

AUGUST 7-8

"A SIGN OF GOOD TIMES"

Central Oklahoma Radio Amateurs

COLLECTOR AND EMITTER



Published monthly by CORA, Inc. 1020 Arthur Drive, Oklahoma City OK 73110. Subscription \$1.50 a year. Address communications to: CORA C&E, Box 15013, Okla City OK 73115. Contents may be reprinted without prior permission if credit is given to CORA Collector & Emitter.

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Managing Editor Joe Harding, WA5ZNF 737-1044

Central Oklahoma Radio Amateurs, Inc. (CORA) is a not-for-profit association of radio amateurs, founded for the promotion of interest in amateur radio communication and experimentation, for the advancement of the radio art and of the public welfare and operates to enhance the cooperation of member clubs in sponsoring activities of mutual interest to the clubs and all radio amateurs.

President	Ken Kendrick	WB5ECJ	751-4917
Vice President	Bob Ashby	W5HXL	942-5375
Secretary	Ellard Foster	W5KE	789-6702
Treasurer	Bob Williams	WB5LHR	789-0987

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OCVHF Editor	Joe Buswell	WA5TRS	732-0676
OKCAP Editor	Don Moore	WA5FFK	787-5189
EARC Editor	Dennis Orcutt	WB5ISN	341-4200

PARTICIPATING CLUBS FOR CORA COLLECTOR & EMITTER:

AERONAUTICAL CENTER AMATEUR RADIO CLUB

Postal Station 18, Okla City OK 73169

Meets: 8:00 PM First Friday each month
Flight Standards Bldg, FAA Aero Center
Club Station W5PAA

Pres	Al Prince	WB5KCU	789-1160
V-P	Bill Hulse	W5UGZ	376-2125
Sec/Tr	Bill Oliver	K5KDR	329-6333

OKLAHOMA CENTRAL VHF AMATEUR RADIO CLUB

323 NW 10th, Okla City OK 73169

Meets: 8:00 PM third Friday each month.
American Red Cross Bldg 10th & Hudson
Club Station W5LOW

Pres	Tom Stinson	W50ZE	942-3714
V-P	Ken Ford	WB5KHU	528-8770
Sec	Joe Buswell	WA5TRS	732-0676
Treas	Ellard Foster	W5KE	789-6702

MID-OKLAHOMA REPEATOR

Meets: 8:00 PM Tuesday of first full week
in month. Okla City EOC 4600 N Eastern
WR5AJP 34/94 WR5ADF 07/67

Pres	H. O. Townsend	WA5MLT	329-4426
V-P	Chet Hazlewood	W5GDL	427-1439
Sec/Tr	John Huckaby	K5QDR	672-4706
DUES: Sid Gerber, 829 E Bouse MWC 73110			

OKLA CITY AUTOPATCH ASSOCIATION

Meets: 7:30 PM 3rd Tuesday, Bi-Monthly,
Oklahoma Military Academy 36th & Grand
WR5ACB 22/82 147.81/21

Pres	Frank McCollom	WB5JBL	751-3577
V-P	Larry Dillard	WB5CWB	685-4065
Sec/Tr	Jim Denman	WB5EOL	681-6048
7705 S Charlotte Dr OKC 73159			

OKLAHOMA UNIVERSITY AMATEUR RADIO CLUB

202 W Boyd, Room 219, Norman OK 73069

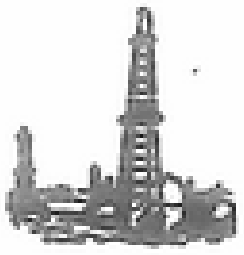
Meets: 7:30 PM Alternate Tuesday STUDENT
UNION Rm 161 (W5TC WR5AFW 146.28/88)

Pres	Paul Thompson	WB5EEY	321-6265
V-P	Wayne Smith	WB5FEX	325-6391
Sec	James Koerner	WA5JTJ	634-3713
Treas	Mike Salem	WA5EPK	321-5453

EDMOND AMATEUR RADIO CLUB

Meets: 10:00 AM first Saturday of odd
numbered month, 3220 N. Santa Fe (GE)
WR5AHG 147.63/03

Pres	Larry Dillard	WB5CWB	685-4065
V-P	Bart Wortham	WA5JUJ	751-9536
Sec/Tr	W. H. Thompson	W5UVI	348-1475



MID-OKLAHOMA REPEATER INC.

The Long Wire

h.o. townsend - WA5MLT
President MORI

Gee . . . so many things to report, I guess I should start at the top . . .

With a saddened heart, I have to report the passing of Mr. Tom Mauldin, founder and President of Radio Store, Inc.

Although not an amateur, Tom came in close contact with many of us daily through his business. Tom was a man who enjoyed his work and family very much. In the last couple of years, he has expanded the store to better serve Amateurs, prospective Amateurs and those interested in electronics. His insight to expand has certainly filled a void in the Oklahoma City area. We will miss him.

Tim, his son WA5LTM, and the family have asked that we not send flowers; however, they have asked those who wish to express their sympathy may contribute to a Memorial Scholarship Fund in Tom's honor. The Fund will be used to further a student's education in electronics. This should be a fine tribute and I am sure it will be of great value to a deserving individual.

On to item number two.

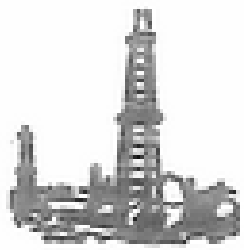
Hello, Hello is this the FCC? Yes! Say, you gents don't wait around do you? You do things in a big way. . . So much for the dialogue with the very real Federal Communications Commission.

It seems as though the FCC has taken some action regarding some parts of Docket 20282 which we all became familiar with last year. Referencing ARRL Official Bulletin 594 June 11, 1976, our Bi-Centennial year. As read and reported by Leonard, WA5FSN, our ARRL SCM.

1. Conditional class Licensee's will grandfather to General class.
2. Novice class Licensee's will have a power increase to 250 - watts; the License will be renewable; the one year waiting period between License Laps will no longer be in affect.
3. No more exams by mail, except: (a) Novice and (b) some shut-ins. No Conditionals or Technician (c) class Licensees.
4. Technician (c) class Licensees Grandfather to Technician class.
5. Technician class Licensees will assume Novice class CW privileges to include the 250 watt power level.
6. 250 - watts will be the maximum power level used by any class of Amateur while operating in the Novice portion of the Band.
7. The number of distinct classes is reduced from 10 to 5.

So, there you have it. The early reaction from some of the fellows on 40-meters this week has been favorable. The Conditional's that I have talked to are as glad to have a decision as much as the good news, about Grandfathering. Personally, having been a Technician (c) for almost 10 years, I would think the Technicians are extremely pleased to acquire some usable CW privileges. Heck, I think I'll try for my Technician license all over. The Novices should be happy, not only from the power increase but also knowing the Kilowatt CW stations won't kill them any more. Hi. These new changes go into effect July 23, 1976, our Bi-Centennial year. It might be noted that these are preliminary actions or reactions to Docket 20282 and others may be forth coming. Who knows! If so, let's hope those changes will be as palatable.

In other tid-bits, I have been quoted as saying, "it might take all summer to paint the Chigger-Ranch" (QTH)! Since last Saturday's ladder fall, it may indeed. Glad to report no broken bones; however, my left leg looks as though "Ted-the-Terrible" had me in a super leg-lock. After three days of sick leave,



MID-OKLAHOMA REPEATER INC.

the thing that concerns me the most is going back to work. I sure hope I can soon. I have enjoyed homing on 40-meters, I may sell my 75 and 20-meter inverted V's. However, laying flat of the back is not much fun Hi! especially knowing I have the rest of the Chigger Ranch to paint. Thanks to my XYL for all of the pampering. She has really treated me like the King she lets me be!

Enclosed in our section this month is an article taken from the Amateur Radio Instructors Bulletin published by the Wichita, Kansas Amateur Radio Club, with Bill, W4GF author. The article reviews the growth of Radio Amateurs by class. A very interesting article.

A word of special thanks goes to Mrs. Carol Shuttles, Science Demonstrator of Southwestern Bell Telephone Company. Carol presented the program at our June meeting. The program centered around some past, present, and future ways the Bell System transmits our telephone conversations. She also mentioned the fact that this is the Centennial year celebration for the tele-phone instrument. If you missed the meeting, you missed one of the best programs of the year. Carol we thank you for being so gracious and for the most professional presentation.

A REBUTTAL

The following is a rebuttal to an article appearing in last month's Collector Emitter by Bill, WA5RAQ. His article portrayed a so-called Aggie Calculator. My remarks shall be brief.

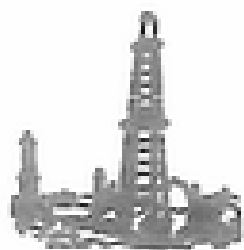
During the year of 1976, Texas A & M University is proud to celebrate several special events. 1976 is A & M's Centennial year of providing some of the best qualified men and women for industry and the military. Texas A & M was the first Land-Grant College in the state of Texas. Through her 100 years of existance she has produced more professional military personnel than any other University or Military Academy. A & M was one of, it not the first to incorporate a cyclotron into its Engineering Program for Research and educational benefits. The University is well noted nationally as one of five Land-Grant educational institutions employing a complete fleet of ships for oceanography research. The Mercury Astronauts received flight computer training here. Such notable figures as Dr. Zener are among its list of professors.

Finally, A & M's Amateur Radio Station, W5AC, celebrates its 50th year of affiliation with the American Radio Relay League. W5AC was licensed in 1912, sixty-four years ago. The station is governed by Memorial Student Center Radio Committee. Equipment behind the call sign includes: Collins 75S-3B and 32S-3; Henry 2K-2, HY Gain TH6-DX (up 70-feet); 300 foot long wire; SB104.

H. O. Townsend, WA5MLT
President MORI
Class of 1966

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Free Testing
Most Electronic
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from us

Kelly's
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MID-OKLAHOMA REPEATOR INC.

Minutes of the June, 1976 MORI meeting

The meeting was called to order at 2001 by president H. O. Townsend, WA5MLT. H. O. has talked to W5OEC about handling some of the prizes for HAM HOLIDAY coming up August 7 & 8. W5PDH made a report on HAM HOLIDAY & field day events coming up also this month. All help would be appreciated.

Some thought should be given to get intruder group set up to get these choppers and messer uppers off the air. Some of these even mess up our nets such as storm net when bad weather comes up.

Fred Wright, K5HFN, made mention that Clegg will sell the MARK 3 with club frequency installed for 15 or more members for \$170 each. Their regular price is \$189.50.

Our guest speaker for the night was Carol Suttles from Southwestern Bell Telephone Company. She gave us a very interesting talk on what the phone was and is now and will be like in the future, such as the pocket phone that will give Star Trek a run for their money. She also told us that this was the first group that knew what she was talking about when several frequencies were mentioned.

After the speech meeting for next will be an informal type of regular meeting for all who want to come.

Sure missed a lot of members and did not find out until too late after meeting that Mel Zuck, WA5OPP, was sick in the hospital at Midwest City. He is out now but had a spell of loss of balance. Thanks to his wife, WB5SIP. We hope he gets back soon.

See every one next month.

John Huckaby, K5QDR, Sec.Treas. MORI

07/67 AUTOPATCH Two phone numbers have been added to the 07/67 autopatch:

Highway Patrol 478-1688
Weather 685-5577

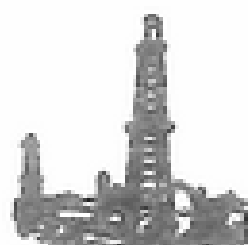
See June C & E, page 36 for details.

NEXT MORI MEETING will be 8 PM, Tuesday, July 6 at the EOC, 4600 N. Eastern. This will mostly be a fun-type meeting where we will just eye-ball and yak. Any last minute HAM HOLIDAY business may also be conducted.

ENTHUSIASM, with a moderate degree of wisdom, will carry a man farther than any amount of intellect without it. The men who have most powerfully influenced the world have not been so much men of genius as men of strong convictions and enduring capacity for work, impelled by irresistible enthusiasm and invincible determination - Sidney N. Bremer in June '76 CHEER. - - - - These bits of wisdom and humor are courtesy of Frank, W5PDH. He sends me CHEER each month.

FOR SALE: STANDARD walkie talkie with speaker mike, touchtone pad, charger and leather case. Fully crystalled and 10 Watt amplifier - \$225.00 - - Carl Horowitz, WB5QNK, 360-1819.

RIP OFF. Hint from T.V. newscast: Record the serial number of equipment installed in your car, so you can get it back if it is stolen and later recovered by police.



MID-OKLAHOMA REPEATER INC.

* * * NUMBER OF AMATEURS INCREASES * * *

Bill Grenfell, W4GF

The one-year change in the number of the various classes of amateur operator licenses reveals some interesting trends. The statistics furnished by the FCC's Amateur and Citizens Division, plus the gain or loss in numbers and percent, as of the end of business in February, follow:

Operator Class	02-28-76	02-28-75	gain/loss	percent
Extra	14,490	13,506	+984	+7.2%
Advanced	67,636	62,462	+5174	+8.2
General	80,313	82,924	-2611	-3.1
Conditional	25,633	26,775	-1142	-4.2
Technician	51,644	49,294	+2370	+4.8
Novice	24,154	21,302	+2852	+13.3
Total	263,890	256,263	+7627	+2.9

The Novice gain is encouraging and let's hope it will continue to climb. Local enrollment in classes for would-be Novices indicate a strong increase or interest in this class. A high percentage are from Citizens ranks who are apparently after something better than what they can get out of the 11 meter band and have become convinced that the amateur privileges are well worth the effort required to qualify.

It is evident that the additional privileges must be a significant factor in the continued healthy growth of the Advanced and Extra Classes, at the expense of the General Class total. Perhaps the recent deletion of a one-year longevity in a lower class eligibility requirement will attract even more into the Extra Class in the future.

Because there is hardly any Conditional Class territory left in the 48 contiguous states, that class continues a steady decline through natural attrition.

The high in the General Class numbers (108,742) came toward the end of 1967 when the effect of "Incentive Licensing" began to be reflected in the operator class totals. The General Class total has been declining since then. Almost simultaneously, the Advanced Class total bottomed at 36,691 and has been climbing rather steadily since that low.

While it may be too early to be certain that a long term trend of increase in licensed amateurs has started, it looks likely, and should continue if the present efforts to qualify new amateurs continues.

*One of the Finest Shoe Repair Shops
in the Oklahoma City area*

ORTHOPEDIC WORK

GLEN OAK CENTER SHOE REPAIR
Bill Sorrels

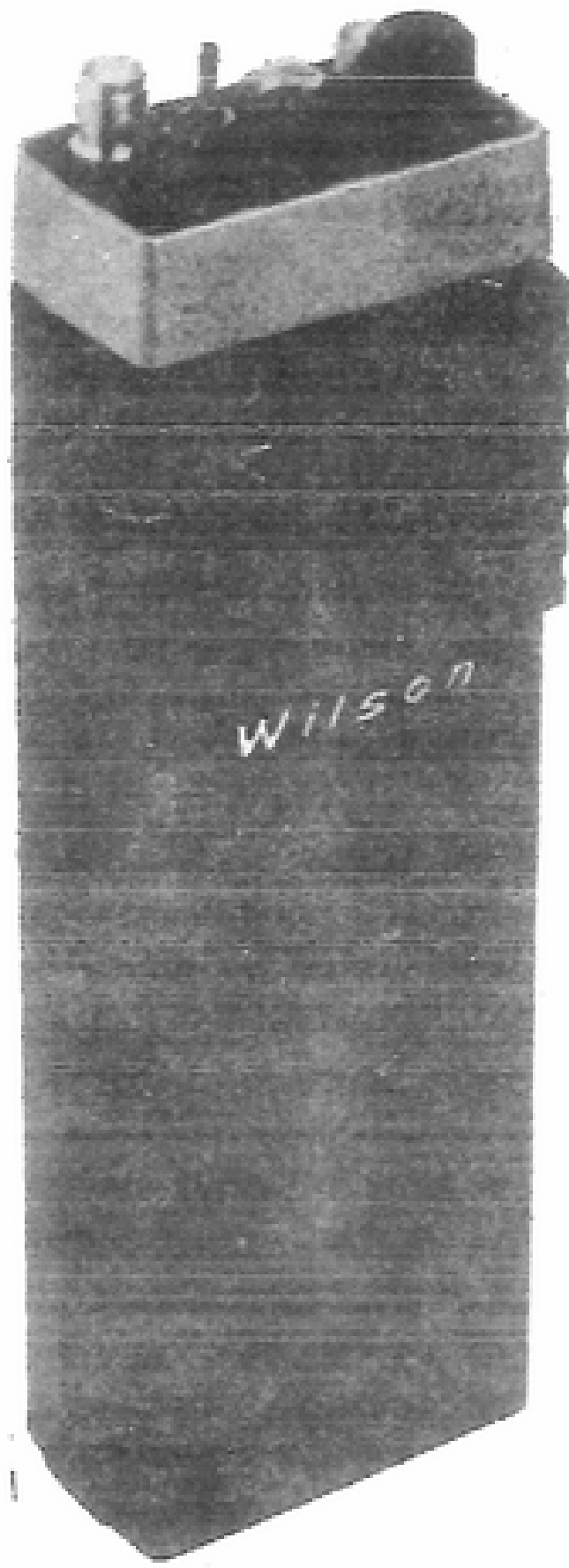
23rd & Rockwell - 7140 NW 23rd

BETHANY

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CAN
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1405SM
HAND HELD
5 WATT
TRANSCIVER
144-148 MHz

- 6 Channel Operation
- Individual Trimmers on all TX/RX Crystals
- All Crystals Plug In
- 12 KHz Ceramic Filter
- 10.7 and 455 KC IF
- .3 Microvolt Sensitivity for 20 dB Quieting
- Weight: 1 lb. 14 oz. less Battery
- Battery Indicator
- Size: 8 7/8 x 1 3/4 x 2 7/8
- Switchable 1 & 5 Watts Minimum Output @ 12 VDC
- Current Drain: RX 14 MA TX 400 MA (1w) 900 MA (5W)
- Microswitch Mike Button
- Unbreakable Lexan® Case



TEAR ON THE DOTTED LINE, OR SEND THE WHOLE PAGE, TODAY

PRE-REGISTRATION FOR OKLAHOMA HAM HOLIDAY & STATE A R R L CONVENTION
SOUTHGATE INN - OKLAHOMA CITY - 7 & 8 AUGUST 1976

NAME _____ Call _____ Lady _____

Street _____ City _____ State _____ Zip _____

Mail check (\$3.00 per person registered) to HAM HOLIDAY, Box 20567, Oklahoma City OK 73120.
Letter must be postmarked NO LATER THAN 2 August to be eligible for the pre-registration award for which you are eligible whether you are in attendance or not. Register as many people as you wish. Just list and enclose \$3 for each.

FREE Fleamarket tables will be reserved by number. Non-Commercial only. RESERVE ME A FLEAMARKET TABLE. ☐

We will stay at Southgate Inn. Reserve (Single) (Double) for me. Dates ☐

We expect to utilize the BUFFET Saturday evening. ☐

We WILL make the BUFFET Sunday before the awards. ☐

YOUR TICKETS WILL BE HELD AT THE RESERVATION DESK UNLESS YOU SEND s.a.s.e.!



STOP THE PRESS - FLASH!

CONGRATULATIONS TO DENNIS, WBSISN & HIS
YL, SANDY FOR THEIR NEW LITTLE HARMONIC.
A LITTLE GIRL, BORN JUNE 19, CAME JUST IN
TIME TO MESS UP DENNIS' MIND SO WE THOUGHT
WE WOULD HELP HIM BY MAKING UP HIS PAGE!
- THE OTHER CORAL & E EDITORS -

Laughing matter

As his harried wife tried with little success to settle their infant twin daughters for the night, the young husband loudly voiced his total opposition to women's liberation.

"I don't know why the women are complaining, anyway," he said finally. "It's as true today as it ever was: 'The hand that rocks the cradle rules the world!'"

"Oh?" called his wife from the nursery. "Then why don't you come in here and rule the world for a while -- I'm exhausted!"

The energy crisis is teaching us how many absolute necessities we may run out of that our forefathers never imagined anyone needing in the first place.



"Confound it, he's on all channels!"

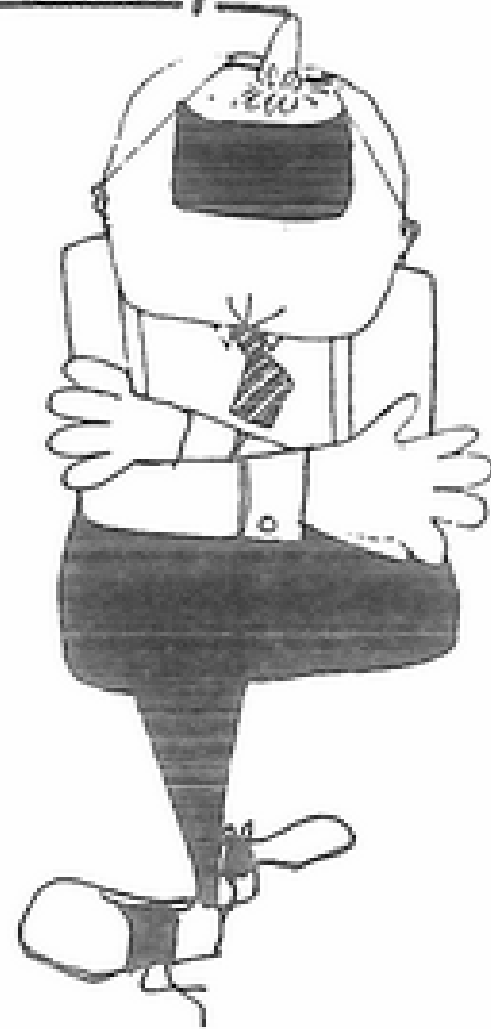
"I'm afraid I've lost my wallet!" George wailed.

"Did you look in all your pockets?" asked his friend.

"All but one," said George.

"For pete's sake, man, why don't you look in that one?"

"Because if it isn't there, I'll know I've lost it!"



He: "My alma mater turned out some great men in my time."

She: "Really? When were you graduated?"

He: "I wasn't graduated -- I was turned out."

A man walked into the dentist's office with a towel wrapped around his jaw and knotted on top of his head; it covered most of his face.

"My word," laughed the elderly dentist, "I haven't seen anyone with a toothache wearing a get-up like that in 40 years!"

"What toothache?" retorted the man. "This is a stickup!"

A no-nonsense type woman boarded the bus. "Let me off at Broadway," she instructed the driver.

"Certainly, ma'am," he replied.

Every block or two thereafter, the woman loudly reminded the driver not to forget to let her off at Broadway. She finally demanded, "How will I know when we get to Broadway?"

"By the smile on my face, lady," sighed the driver.

Fourth-grader's definition of water: "See-through liquid stuff that turns dirty when you wash your hands in it."



"Just cut the gray ones."

When two cars collided at a lonely crossroads, both drivers were shaken up. After a while, one said, "It so happens I have a bottle of wine in my trunk. Would you like a little to help calm your nerves?"

The other said it was a good idea and, when the bottle was produced, took a healthy swig. The first driver then corked the bottle and started back to his car.

"Aren't you going to have a little wine, too?" asked the other.

The first driver shook his head. "Not until after the police come," he replied.

Overheard: "Some self-made man! That shoestring he started out on was the one his grandfather used to bundle his stocks and bonds."

Hear about the employee who prayed for a raise? The boss got wind of it and fired the culprit for going over his head.

A woman marrying her fourth husband was greeted by an old friend who remembered the first three:

"The first was a banker, the second an actor, the third a minister -- and now you've married an undertaker. How is it you've picked men in such varied professions?"

"One for the money, two for the show," replied the bride, "three to get ready. . . ."

Then there was the cannibal who was expelled from school when they caught him buttering up the teacher.



Club NEWS

W5LOW
The Elmer Goshier Memorial
Station

MINUTES OF JUNE MEETING

MEETING WAS CALLED TO ORDER 8:05 PM. JUNE 18, 1976 BY PRESIDENT TOM, W5OZE, WITH 17 MEMBERS AND GUESTS PRESENT.

IT WAS MOVED AND PASSED THAT MINUTES FOR MAY MEETING BE ACCEPTED AS PUBLISHED IN CORA C&E.

TREASURER ELLARD, W5KE, REPORTED THE CLUB WAS SOLVENT.

IT WAS WITH REGRETS THAT THE ANNOUNCEMENT WAS MADE THAT LEON PULIS, K5MJY, JOINED SILENT KEYS SINCE LAST MEETING. FLOWERS WERE SENT BY THE CLUB.

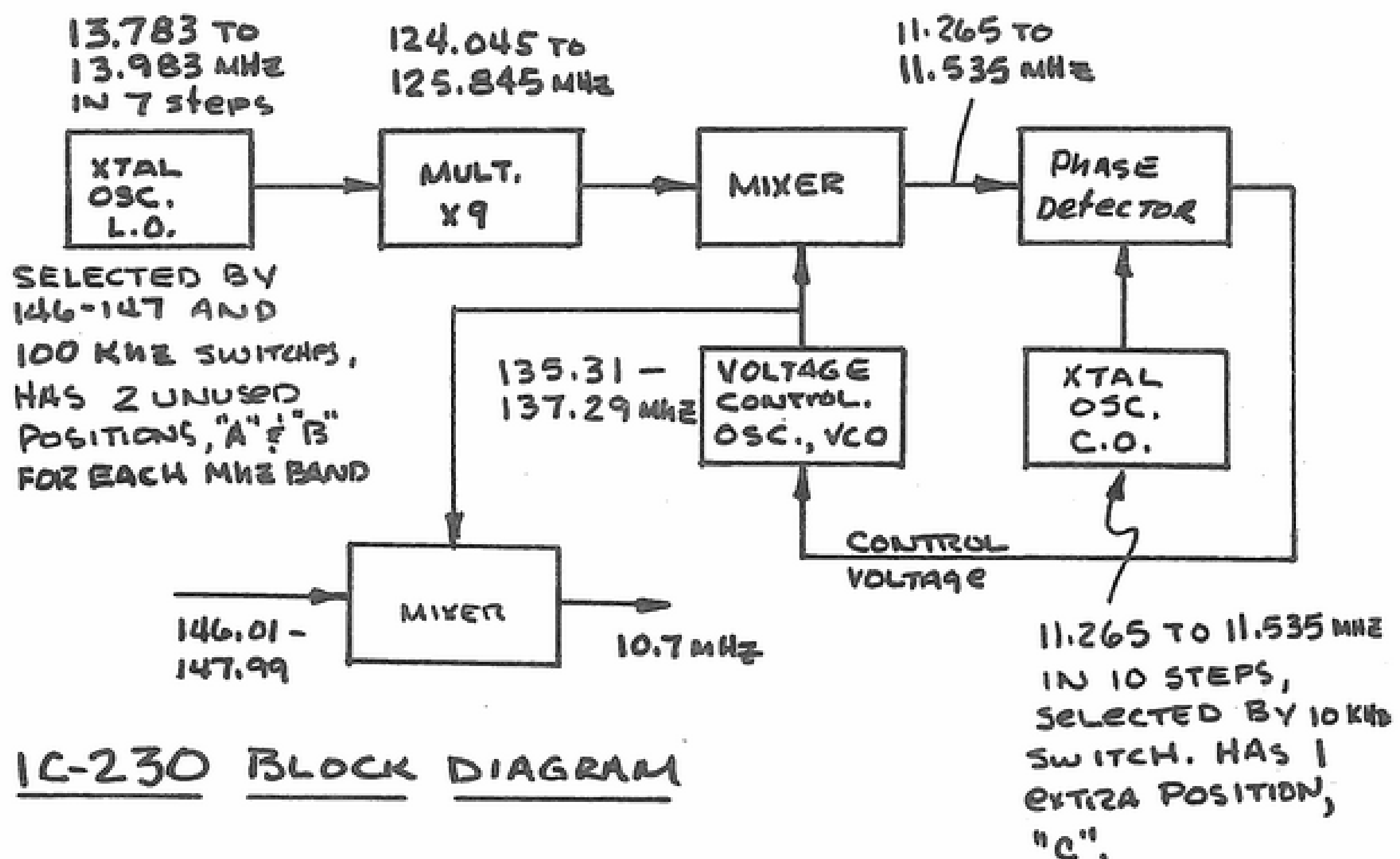
PLANS FOR LOADING UP FIELD DAY MATERIAL, TRANSPORTING IT TO THE SITE AND SETTING UP WERE DISCUSSED.

BOB, W5HXL, ENTERTAINED THE GROUP WITH SLIDES OF PLACES HE AND HIS YL VISITED RECENTLY ON A CAMPER TRIP TO THE WEST COAST. THE ONLY THING THAT MARRED THE PROGRAM WAS PICTURES OF SOME OF THE LOCAL UGLIES, TAKEN AT PREVIOUS FIELD DAYS, THAT SOMEHOW GOT SLIPPED IN WITH THE BEAUTIFUL PICTURES.

THE MEETING WAS AJOURNED AT APPROXIMATELY 9:30. IN FAVOR OF COFFEE, DONUTS AND MORE FB QSO'S. JOE, WA5TRS, SEC'Y

IC-230, A, B, AND C'S OF

ICOM EAST PREPARED INSTRUCTIONS ON HOW TO UTILIZE THE A, B, AND C POSITIONS ON THE IC-230 TRANSCEIVER AND DISSEMINATED THEM AT THE DAYTON HAMVENTION. CONDENSED HERE IS A SUMMARY OF THE INSTRUCTIONS WITH SOME EXPLANATION OF HOW THE IC-230 ARRIVES AT A SPECIFIC RECEIVER FREQUENCY.



NOTICE FROM THE DIAGRAM OF THE FREQUENCY DETERMINING PARTS OF THE CIRCUIT THAT THERE ARE TWO CRYSTAL CONTROLLED OSCILLATORS. ONE IS CALLED L.O. AND THE OTHER, C.O. CRYSTALS IN THE L.O. ARE SELECTED BY THE 146-147 MHz SWITCH AND 100 KHz SWITCH (LEFT HAND KNOB). CRYSTALS IN THE C.O. ARE SELECTED BY THE 10 KHz SWITCH (RIGHT HAND KNOB). ADDITION OF ANOTHER CRYSTAL IN THE L.O. POSITION GIVES YOU TEN ADDITIONAL FREQUENCIES, SPACED 30 KHz APART. ADDITION OF ANOTHER CRYSTAL IN THE C.O.



Club
NEWS

WSLOW
The Elmer Goddard Memorial
Station

POSITION GIVES SEVEN ADDITIONAL FREQUENCIES OF 300 KHZ SPACING. THERE ARE FOUR SPARE SOCKETS AVAILABLE FOR THE L.O. TWO CAN BE SELECTED WITH THE MHZ SWITCH ON 146 AND TWO MORE CAN BE SELECTED WITH THE MHZ SWITCH ON 147. A & B ON THE 100 KHZ SWITCH SELECTS ONE OF TWO CRYSTALS FOR EACH MHZ POSITION. SEE THE INSTRUCTION MANUAL FOR SOCKET LOCATIONS.

FROM THIS YOU CAN SEE THAT THERE ARE TWO WAYS TO GET ON AN ODD BALL FREQUENCY. THE TABLE SHOWS THE VOLTAGE CONTROLLED OSCILLATOR (VCO) FREQUENCIES OBTAINED AT VARIOUS POSITIONS OF THE 146-147, HUNDREDS AND TENS SWITCHES. BLANK ROWS AND COLUMNS ARE PROVIDED FOR YOU TO FILL IN YOUR OWN NUMBERS! OF COURSE, IF YOU WANT TO SPLIT-SPLIT YOU CAN USE THE "V" POSITION AND PUT A 11.255-12.255 MHZ SIGNAL INTO THE THING AND GO ANYWHERE YOU WANT.

MHz	X 100 KHz	X10 KHz	1	4	7	0	3	6	9	2	5	8	C	PLL LO	
														XTAL	X9 FREQ
146	0		135.31	34	37									MHz	MHz
	1					40	43	46	49					13.783	124.045
	2									52	55	58			
	3		61	64	67										
	4					70	73	76	79					13.816	124.345
	5									82	85	88			
	6		91	94	97										
	7					136.00	03	06	09					13.849	124.645
	8									12	15	18			
	9		136.21	24	27									13.883	124.945
	A														
	B														
147	0					30	33	36	39					13.883	124.945
	1									42	45	48			
	2		51	54	57										
	3					60	63	66	69					13.916	125.245
	4									72	75	78			
	5		81	84	87										
	6					90	93	96	99	137.02	05	08		13.949	125.545
	7														
	8		137.11	14	17									13.983	125.845
	9					20	23	26	29						
	A														
	B														
PLL	CO		11.265	11.295	11.325	11.355	11.385	11.415	11.445	11.475	11.505	11.535		VFO	MHz 11.255~12.255

THE EQUATION FOR RECEIVED FREQUENCY IS: RECEIVED FREQUENCY = 10.7 + L.O. FREQ X 9 + C.O. FREQ.

CLOSE EXAMINATION SHOWS THAT THERE ARE TWO UNKNOWNNS THEREFORE, YOU HAVE TO PICK ONE AND CALCULATE THE OTHER.

LETS ASSUME WE WANT TO WORK SOME SPLIT CHANNELS STARTING AT 146.625. LET C.O. EQUAL 11.265 BECAUSE THE FIRST POSITION OF THE TENS SWITCH SELECTS THAT FREQUENCY. PLUG INTO THE EQUATION: 146.625 = 10.7 + L.O. FREQ. X 9 + 11.265

REARRANGING:

$$\text{L.O. FREQUENCY} = \frac{146.625 - 10.7 - 11.265}{9} = 13.851111 \text{ MHz}$$



Club
NEWS

WSLOW
The Elmer Gooder Memorial
Station

THIS CRYSTAL INSERTED IN SOCKET A WILL GENERATE:

DIAL READING

146A1
146A4
146A7
146A0
146A3
146A6
146A9
146A2
146A5
146A8

RECEIVER FREQUENCY

146.625
146.655
146.685
146.715
146.745
146.775
146.805
146.835
146.865
146.895

THE PROGRESSION CAN BE CONTINUED WITH A CRYSTAL OF 13.88444 IN THE B POSITION.
THE SPLIT FREQUENCIES WILL CONTINUE

146B1
146B2

146.925
146.955

ETC.

TWO MORE SETS OF TEN FREQUENCIES EACH CAN BE GENERATED BY ADDING TWO MORE CRYSTALS
IN THE 147 A & B POSITION SOCKETS.

(NOTICE HOW ICOM OWNERS COUNT . . . 1, 4, 7, 0 ETC. YOU NEW ICOM OWNERS HAD BETTER
JUST MAKE A TABLE AND TAPE IT ON THE RIG).

IF YOU WANT, YOU CAN SELECT A SETTING OF THE 146-147 MHZ SWITCH AND GROUP OF SET-
TINGS FOR THE 100 KHZ SWITCH (0, 1, 2, or 3, 4, 5, ETC) AND CALCULATE A CRYSTAL TO
PUT IN THE C POSITION TO GET A SPECIFIC FREQUENCY. FOR EXAMPLE, A DIAL READING OF
146.9C MAKES L.O. X 9 EQUAL TO 124.945. (SEE THE TABLE). IF THE DESIRED RECEIVE
FREQUENCY IS 146.985, SUBSTITUTION INTO THE EQUATION GIVES $146.985 = 10.7 + 124.945$
+ C.O. FREQUENCY. C.O. FREQUENCY IS 11.340 MHZ.

WITH THIS CRYSTAL, VARIOUS COMBINATIONS OF THE 146-147 MHZ SWITCH AND 100 KHZ
SWITCH WILL GIVE

RECEIVER FREQUENCY

146.085
146.385
146.685
146.985
147.285
147.585
147.885

DIAL READING

146(0, 1 or 2)C
146(3, 4 or 5)C
146(6, 7 or 8)C
146.9C or 147(0 or 1)C
147(2, 3 or 4)C
147(5, 6 or 7)C
147(8 or 9)C

TRANSMIT FREQUENCIES ARE STILL SELECTED AS USUAL, PLUS OR MINUS 600 KHZ, OR SAME
AS RECEIVED FREQUENCY.

IF YOU WANT SOME OTHER TRANSMIT OFFSET, YOU HAVE TO SACRIFICE ONE OF THE STANDARD
OFFSET CRYSTALS IN THE MIXER MODULE. THERE IS A 10.7 MHZ CRYSTAL SOLDERED IN FOR
DIRECT FREQUENCY OPERATION. EITHER IT, OR ONE OF THE PLUG-IN CRYSTALS USED FOR
OFFSET (10.1 AND 11.3 MHZ) HAVE TO BE REPLACED.

SPECIFICATION FOR ALL THESE CRYSTALS IS THE SAME:

HOLDER TYPE = HC-25
TOLERANCE = .0025%
LOAD CAP = 20PF
CRYSTAL IMPEDANCE = 15 OHMS
"AT" CUT

ICOM DOES NOT MAKE SPECIAL CRYSTALS FOR THIS KIND OF MESSING AROUND.

BECAUSE OF THE HIGHLY SELECTIVE NATURE OF SOME OF THE CIRCUITS IN THE PLL, THE
UNIT WILL NOT OPERATE BELOW APPROXIMATELY 145 MHZ. IT APPEARS THAT SIMPLEX OPERA-
TION IN THE 148.00 OR 148.3 MHZ IS POSSIBLE AND TRANSMITTER OPERATION 600 KHZ
HIGHER IS POSSIBLE.

JOE, WA5TRS

THE OKLAHOMA LIAISON NET
OLZ NEWSLETTER

JUNE 4 1976

IN MAY, THE OLZ CW NET HAD 225 CHECK-INS AND HANDLED 72 MESSAGES.
THE OLZ NET MEETS DAILY ON 3682 KHZ AT 0000Z OR 7:00 PM, LOCAL TIME.

DAVE DIERKER, WB5RLR WILL BE BACK UP NCS ON THURSDAYS FOR CHARLES
WA5JGU WHO WILL BE ON VACATION. DAVE WILL ALSO BE BACK-UP FOR THE
NCS ON MONDAY NIGHTS.

THE FIFTH REGION NET, RN5, WHICH MEETS AT 0030Z (7:30 PM) DAILY WILL
MOVE THEIR EARLY SESSION TO 7095 KHZ STARTING SUNDAY, JUNE 6 1976.
THE LATE SESSION AT 9:30 PM WILL REMAIN ON 3645 KHZ.

PHIL, WB5PVL HAS EARNED HIS SECTION NET CERTIFICATE SO IT WILL BE
IN THE MAIL IN THE NEAR FUTURE. IN ORDER TO EARN THIS REGOGNITION
IT IS NECESSARY TO CHECK INTO THE OLZ NET AT LEAST ONCE A WEEK FOR
THREE CONSECUTIVE MONTHS.

CHECK-INS FOR MAY WERE AS FOLLOWS:

W5ADC . . . REEDY22	WB5NKC . . . ARLEY . . .6
W5BYC . . . ED7	WB5NKD . . . PAT . . .26
WB5EEY . . . PAUL2	WB5NXO . . . BILL . . .28
WB5EAY . . . FAY19	WA5OGC . . . OLIVER . . .8
W5FW . . . DICK3	WB5OYU . . . TED . . .11
WB5HQX . . . MIKE6	WB5PVL . . . PHIL . . .12
WA5JGU . . . CHAS6	W5YZA . . . RUSS . . .1
WB5KVQ . . . DICK9	WB5LHG . . . AL . . .6
WB5KGP . . . KEVIN9	W5RB . . . GIL . . .24
WB5RLR . . . DAVE8	

THIS IS A GREAT BUNCH TO WORK WITH AND I APPRECIATE THEIR WORK.
73 FOR NOW AND HOPE TO SEE YOU ON THE NET.

Harold G. Gilbertson
H A GILBERTSON W5RB
NET MANAGER

RESTRUCTURING

FROM HR REPORT, JUNE 15, 1976:

FCC'S FIRST ACTION ON RESTRUCTURING WAS TAKEN LATE LAST WEEK AND NOVICES AND TECH-
NICIANS BECAME THE PRINCIPAL BENEFICIARIES. THIS FIRST REPORT AND ORDER ON DOCKET
20282 LIBERALIZES BOTH LICENSE CLASSES' PRIVILEGES BUT APPEARS TO REJECT THE "DUAL
LADDER" APPROACH TO RESTRUCTURING THAT WAS SUCH AN INTEGRAL PART OF THE DOCKET'S
ORIGINAL PHILOSOPHY.

TECHNICIAN CLASS LICENSEES RECEIVE THE MOST SIGNIFICANT BENEFIT IN THE FORM OF FULL
NOVICE PRIVILEGES -- CW ON 80, 40, 15 AND 10 METERS. NO OTHER TECHNICIAN PRIVI-
LEGES WERE CHANGED AT THIS TIME, SO IT'S STILL POSSIBLE THAT 10 METER PHONE AND/OR
EXPANSION OF TECHNICIAN FREQUENCIES ON THE BOTTOM OF TWO OR SIX METERS MAY BE PART
OF EXPECTED LATER ACTIONS ON 20282. TECHNICIAN EXAMS WILL NO LONGER BE "MAIL OR-
DER," EITHER -- THE REPORT AND ORDER MAKES ADMINISTRATION OF TECH EXAMS AN FCC
FIELD OFFICE JOB.

NOVICES RECEIVE TWO BENEFITS UNDER THE JUST ANNOUNCED RULES CHANGES. POWER LIMITS
FOR NOVICES HAVE BEEN RAISED TO 250 WATTS, AND A NOVICE WHO HAS FAILED TO UPGRADE
DURING HIS TWO-YEAR LICENSE TERM WILL BE PERMITTED TO CONTINUE AS A NOVICE BY TAK-
ING ANOTHER NOVICE EXAM -- THE REQUIREMENT FOR A ONE-YEAR DELAY BEFORE GOING FOR
ANOTHER NOVICE LICENSE HAS BEEN DROPPED. THE NEW 250 WATT NOVICE POWER LIMIT AC-
TUALLY APPLIES TO NOVICE FREQUENCIES, BY THE WAY -- ANY STATION OPERATING IN THE

NOVICE SUB BANDS WILL BE LIMITED TO 250 WATTS REGARDLESS OF WHAT CLASS LICENSE HE HOLDS.

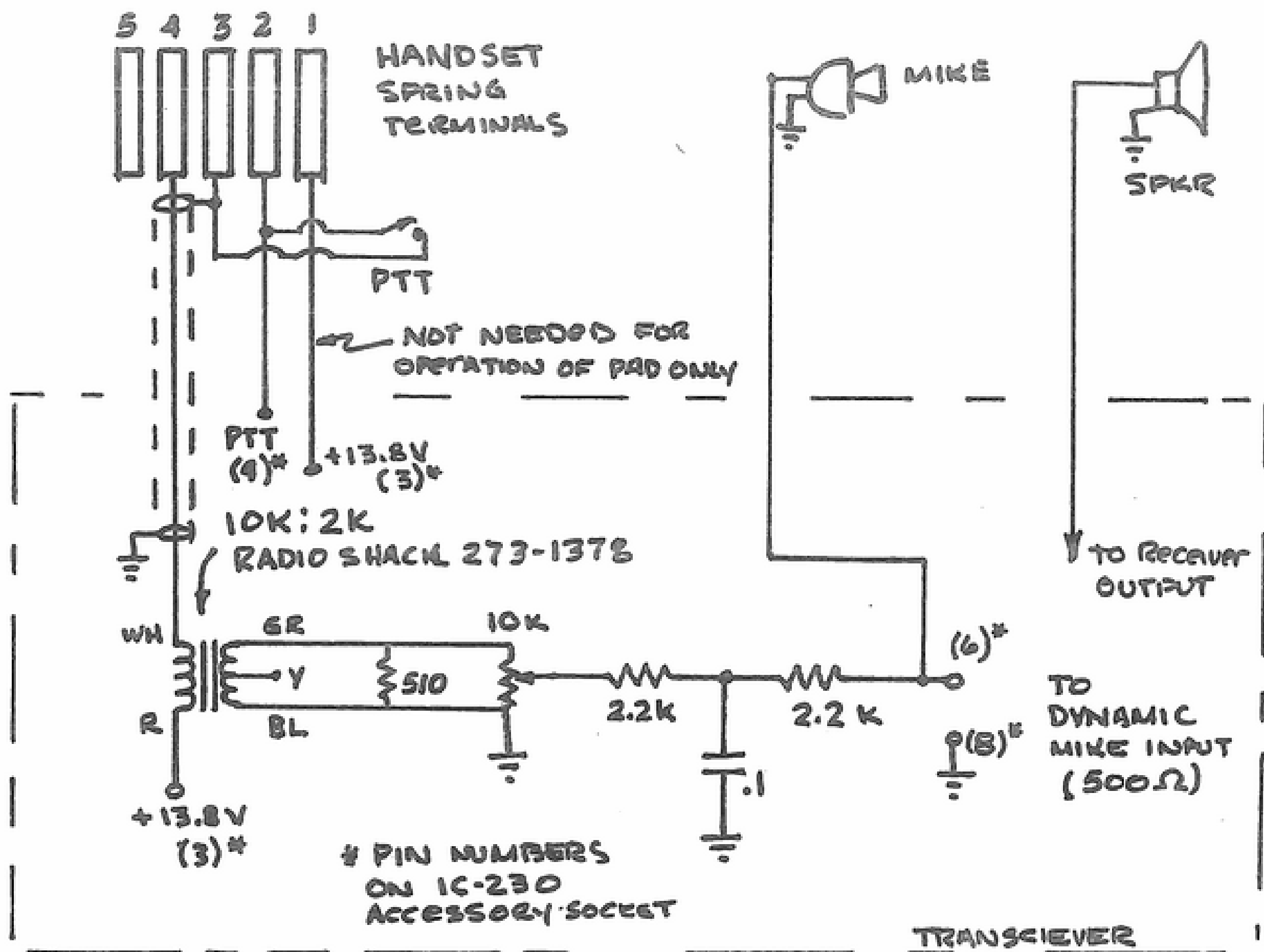
ALL "MAIL ORDER" AMATEUR EXAMS EXCEPT NOVICE ARE EFFECTIVELY BEING ELIMINATED. THE ONE EXCEPTION THAT WILL REMAIN IS FOR AN APPLICANT WHO CANNOT TRAVEL BECAUSE OF MEDICAL REASONS AND WHO CAN BACK IT UP WITH A PHYSICIAN'S STATEMENT. ALL OTHERS (EXCEPT NOVICES) WILL BE REQUIRED TO TAKE THEIR EXAMS AT AN FCC FIELD OFFICE, REGARDLESS OF THE DISTANCE WHICH THEY MAY HAVE TO TRAVEL TO GET THERE. ALL APPLICANTS WHO DO NOT ALREADY HOLD A NOVICE OR HIGHER CLASS AMATEUR LICENSE WILL ALSO BE REQUIRED TO TAKE AND PASS ELEMENT 2 (THE NOVICE WRITTEN EXAM) ALONG WITH THE HIGHER CLASS TEST. ELEMENT 2 WILL ONLY BE GIVEN AFTER THE HIGHER CLASS TEST HAS BEEN TAKEN AND PASSED, HOWEVER, TO AVOID BURDENING THE FIELD OFFICES WITH GIVING NOVICE EXAMS TO APPLICANTS WHO REALLY DIDN'T EXPECT TO GET A HIGHER CLASS LICENSE BUT WANTED TO AVOID THE ADDED DELAYS IN GETTING A MAIL ORDER NOVICE LICENSE.

ALL PRESENT CONDITIONAL AND TECHNICIAN (C) LICENSE HOLDERS WILL BE "GRANDFATHERED" INTO STRAIGHT TECHNICIAN AND GENERAL CLASS LICENSES AS THEIR PRESENT LICENSES COME UP FOR RENEWAL. NO REEXAMINATIONS WILL BE REQUIRED, WHICH SHOULD MAKE AT LEAST A FEW PRESENT LICENSE HOLDERS BREATHE EASIER!

THE EFFECTIVE DATE FOR THE NEW RULES CHANGES IS JULY 23 -- A NICE "CHRISTMAS IN JULY" PRESENT FROM THE FCC! (SEE ALSO PG 3, ED.) W9JUV

TWO WAYS TO GET DIAL TONES

THE FIRST WAY: IF YOU JUST WANT TO GET DIAL TONES OUT OF AN INTEGRATED CIRCUIT TRIMLINE PHONE, NO INTERNAL MODS ARE NEEDED. CONNECT AS SHOWN. IF YOU HAVE AN IC-230, CONNECT TO PINS 3, 6 AND 8 AS INDICATED.



DIAL TONE VOLTAGE ACROSS THE PRIMARY OF THE TRANSFORMER IS APPROXIMATELY .7V RMS FOR EACH TONE. WITH THE POTENTIOMETER NEAR THE CENTER OF ITS RANGE, THIS VOLTAGE IS REDUCED TO APPROXIMATELY 6 MV AT THE OUTPUT OF THE RC NETWORK (MIC INPUT).

THE RC NETWORK DOES 3 THINGS:

- A. ATTENUATES THE TONES TO MIC LEVEL.
B. PREVENTS UNDUE LOADING OF MIC.

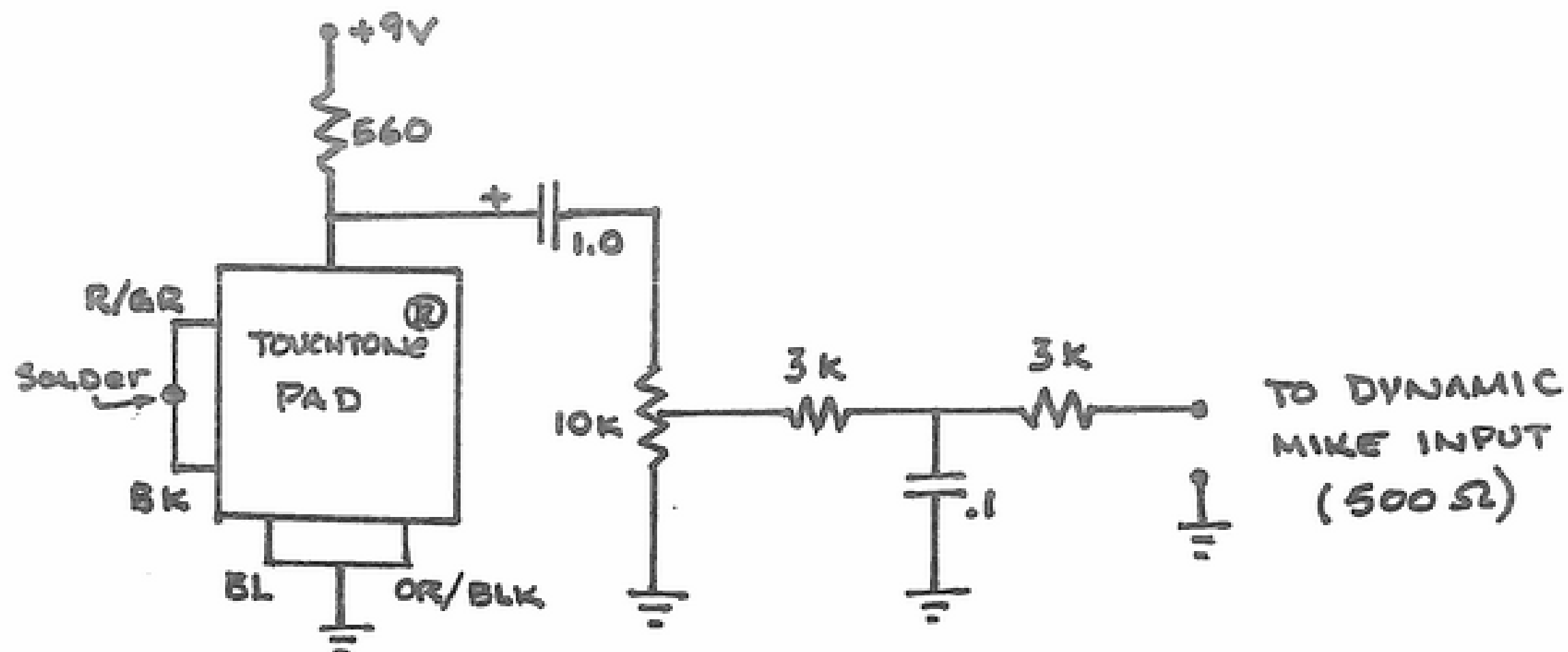
C. ROLLS OFF THE HIGH FREQUENCY TONES SLIGHTLY TO HELP COMPENSATE FOR THE LOW FREQUENCY ROLL OFF IN THE IC-230 (AND OTHER TRANSCEIVERS). THIS WAY, NO INTERNAL MOD OF THE IC-230 IS NECESSARY.

VALUES ARE NOT CRITICAL. THE 2.2K RESISTORS CAN EASILY BE 3.9K. THIS WILL STILL ALLOW PLENTY OF OUTPUT AND WILL MORE NEARLY COMPENSATE FOR THE ROLL OFF OF LOWS IN THE IC-230. INCIDENTALLY, THE CIRCUIT WORKS JUST AS WELL WHEN SUPPLIED WITH 9V INSTEAD OF 13.8.

HOW DOES THE INTEGRATED CIRCUIT GENERATE THE DIAL TONES? VERY ACCURATELY! THE GREATEST FREQUENCY ERROR I MEASURED WAS LESS THAN 0.3%!

IF YOU WANT TO TALK AND LISTEN WITH THE HANDSET ADD THE MIKE, SPEAKER, PUSH TO TALK SWITCH, AND CONNECTION FROM SPRING CONTACT #1 TO 13.8 VOLTS. THE MIKE IS A DYNAMIC CARTRIDGE (500 OHMS) FROM A TAPE RECORDER MIKE. DISCARD ORIGINAL MIKE BUTTON AND CONNECTOR CONTACTS. THE SPEAKER IS THE ORIGINAL HANDSET RECEIVER BUT THE CONNECTIONS TO IT ARE REMOVED AND IT IS RECONNECTED AS SHOWN. THE HANDSET LAMP IS CONNECTED BETWEEN SPRING TERMINALS 1 & 2 AND WILL LIGHT WHEN PTT SWITCH IS CLOSED. BE SURE TO REPLACE ORIGINAL LAMP WITH 10-12 VOLT VERSION.

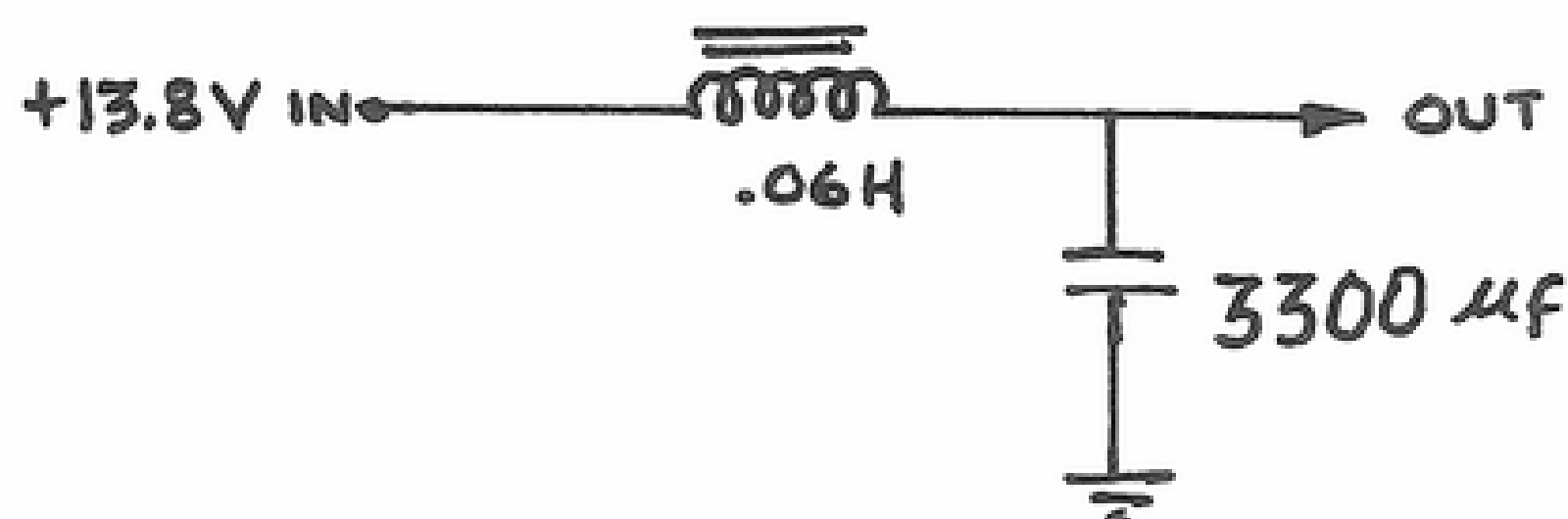
THE SECOND WAY: BY WAY OF CONTRAST, THE HOOKUP FOR A CONVENTIONAL LC TOUCHTONE PAD IS SHOWN BELOW. THE CIRCUIT IS QUITE SIMILAR TO THE ONE USED WITH THE TRIMLINE INTEGRATED CIRCUIT PHONE, BUT A 560 OHM RESISTOR IS USED INSTEAD OF THE TRANSFORMER - JUST ANOTHER WAY OF DOING ESSENTIALLY THE SAME THING.



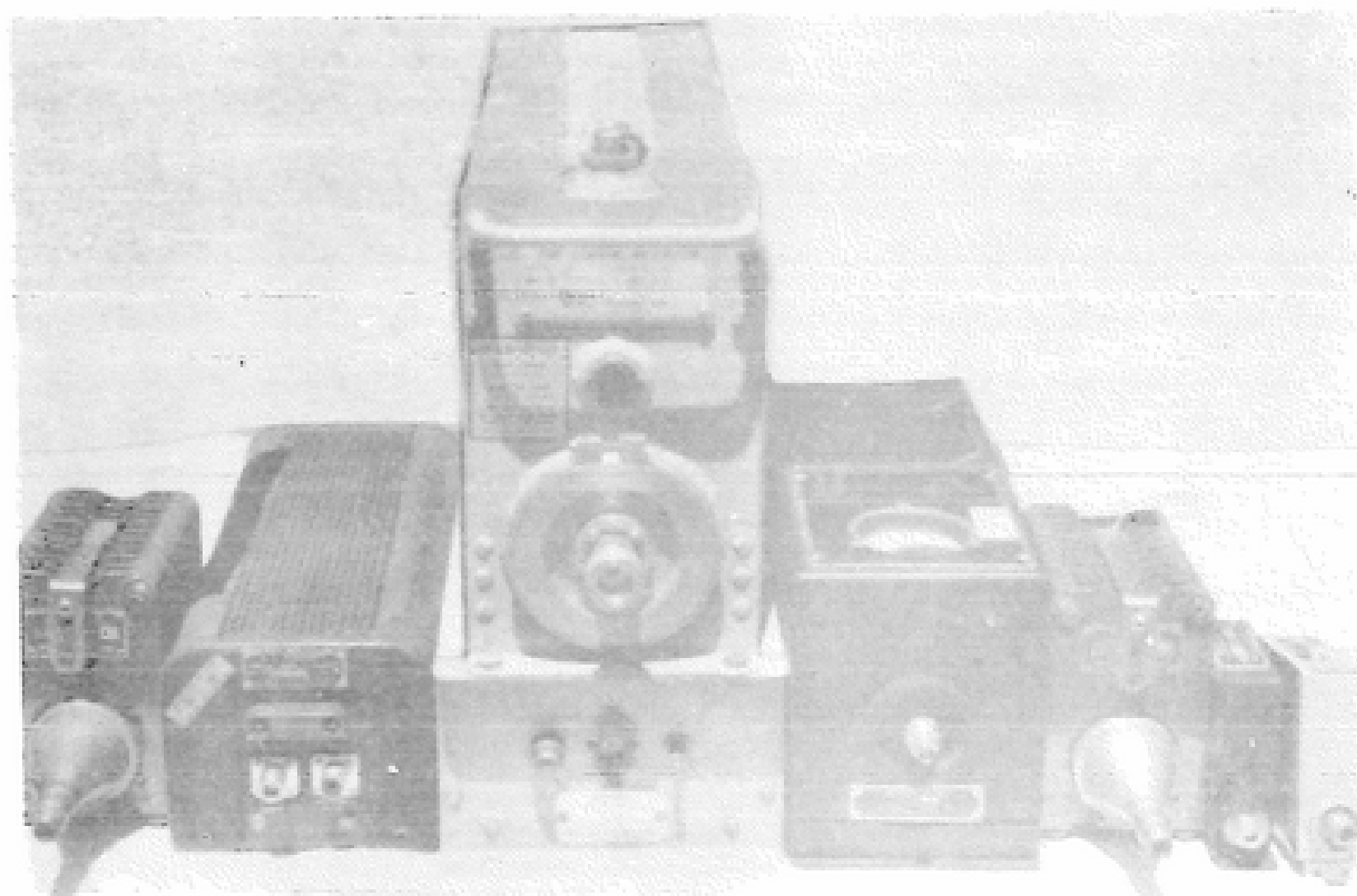
HOOKEUP INSTRUCTIONS FOR THE OLDER TRIMLINE HANDSET WITH COILS CAN BE FOUND IN AUGUST, 1974, 73 MAGAZINE, PAGE 37. GENE, WSGC

Eliminating Alternator Whine

I tried several cute ways of eliminating the alternator whine/hash in my '73 Chevrolet Pickup. None worked. Finally, I resorted to this circuit.



The choke is somewhat of a brute because it has to carry the full current of your transceiver (about 3A for an IC-230). The resistance must be low to avoid dropping too much voltage across it. This circuit will give better than 40 db attenuation to the alternator whine and effectively knocks it out. GENE, W5GC



EXCESS ELECTRONICS

ELLARD'S EX EL

PHONE 789-6702

5905 NW 42ND

OKLAHOMA CITY

ELLARD'S EX EL (W5KE) WILL HAVE LOADS
OF GOODIES AT OKLAHOMA HAM HOLIDAY

ADDITIONS - CORRECTIONS TO OFFICIAL CURA ROSTER

W5EMB	John Whitten	6716 S Drexel	Okla City
WB5IMT	David Nelson	Rt 2 Box 160	Tuttle OK 381-3057
WA5KDZ	Mel Perkins	506 Cottonwood	Ardmore OK
WB5KHC	Tom Owens	1285 Bellaire	Lewisville TX436-7875
WA5LWZ	Raymond Roton	1521 Carol Dr	Edmond OK 341-6123
WB5KRD	Fred Morton	305 Wadsack (Apt G)	Norman OK
WA5LKS	Jim Kelly	4748 SE 27	Del City OK 672-2272
WB5LYI	Art English	9604 NE 10	Midwest City
W5MMG	Ted Newcomb	11216 N Brauer	Okla City
WA5NMK	George Lee	2410 NW 34	Okla City 946-2754
WB5OHY	Lyle Hohenstein	204 N Eastern	Shawnee OK
WB5OLO	Paul Abel	2005 N McKinley	Shawnee OK
K5POX	Margaret Jackson	Rt 1 Box 214B	Lexington 527-5994
WB5PYH	James Brooks	6604 S Villa	Okla City 685-5478
WA5RPP	Sam Barrat	2347 Finley Rd	Okla City 751-1170
WB5SQC	Orville Halley	Rt 2 Box W31	Tuttle OK

There it is as promised. Look at your roster, make corrections or file this with it. If your entry is wrong notify Joe, WA5ZNF 737-1044

CB HEADQUARTERS

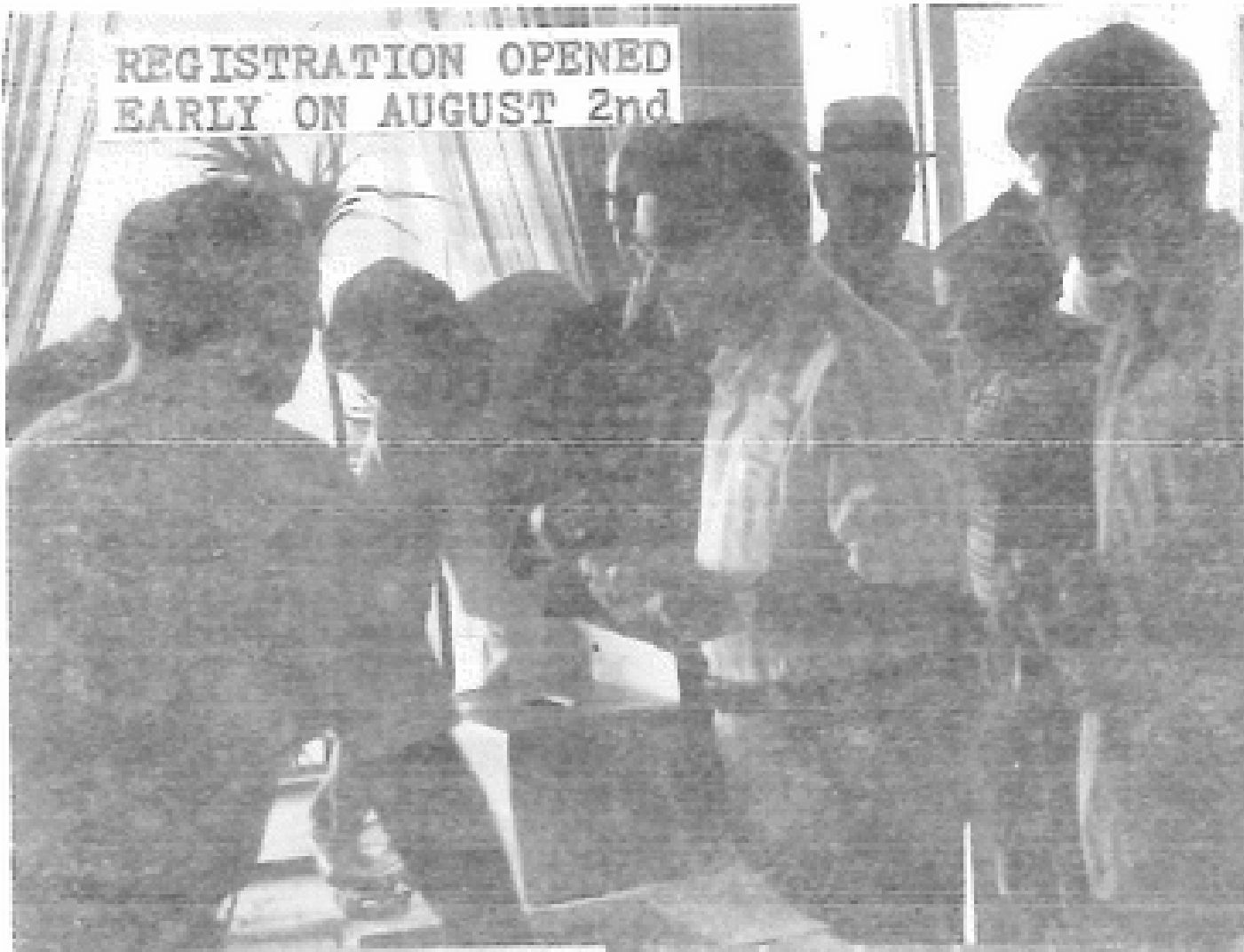
We have the White Knight and the
Rubber Duck here in the DeVille
South Shopping Center.

TRADES ARE CONSIDERED ON SOME EQUIPMENT

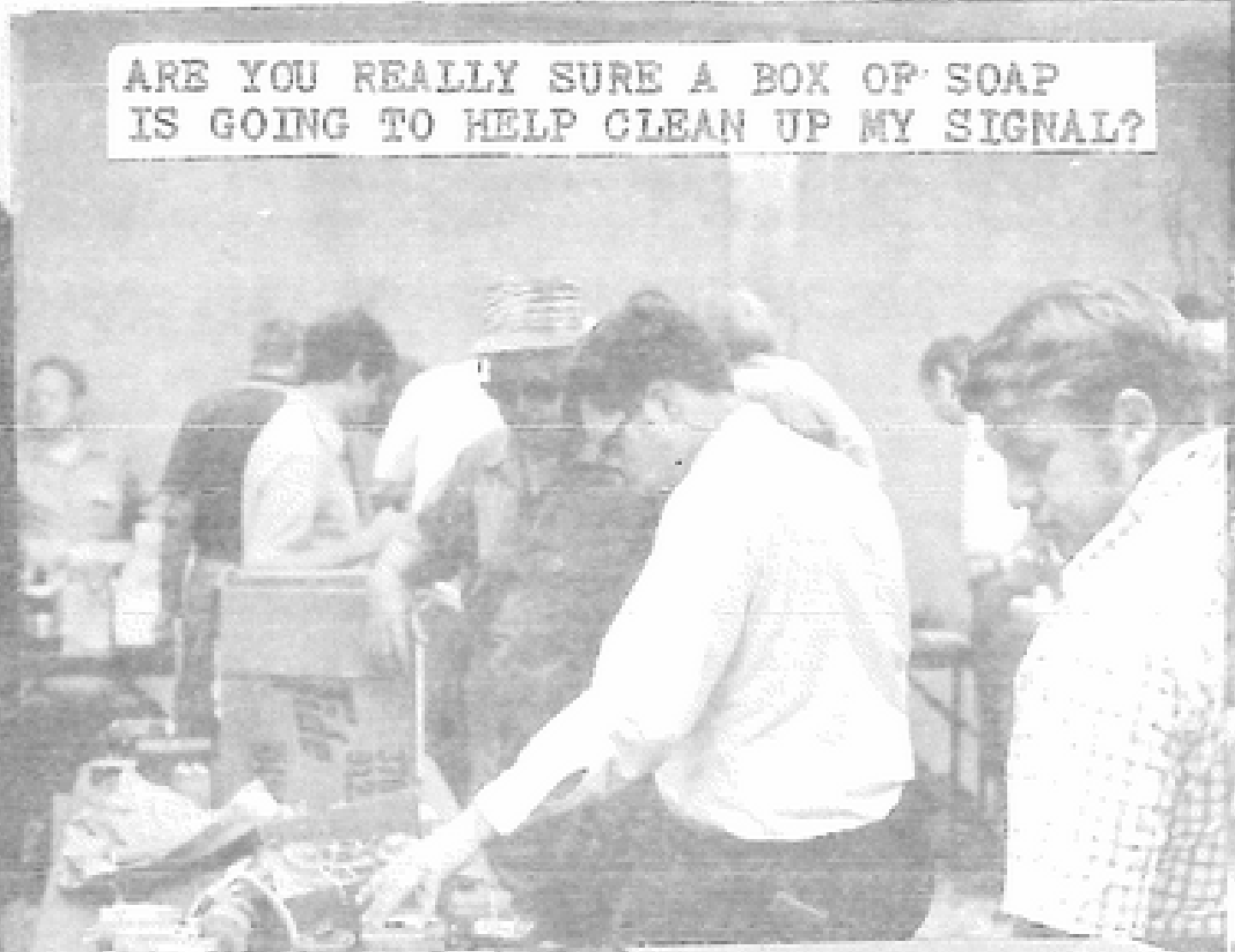
SOUNDS OUTWEST, INC.

7918 NW 23rd - BETHANY - 787-3710
OPEN MONDAY THRU SATURDAY 10 to 8

W5HFU Will be in and out of the store



REGISTRATION OPENED
EARLY ON AUGUST 2nd



ARE YOU REALLY SURE A BOX OF SOAP
IS GOING TO HELP CLEAN UP MY SIGNAL?



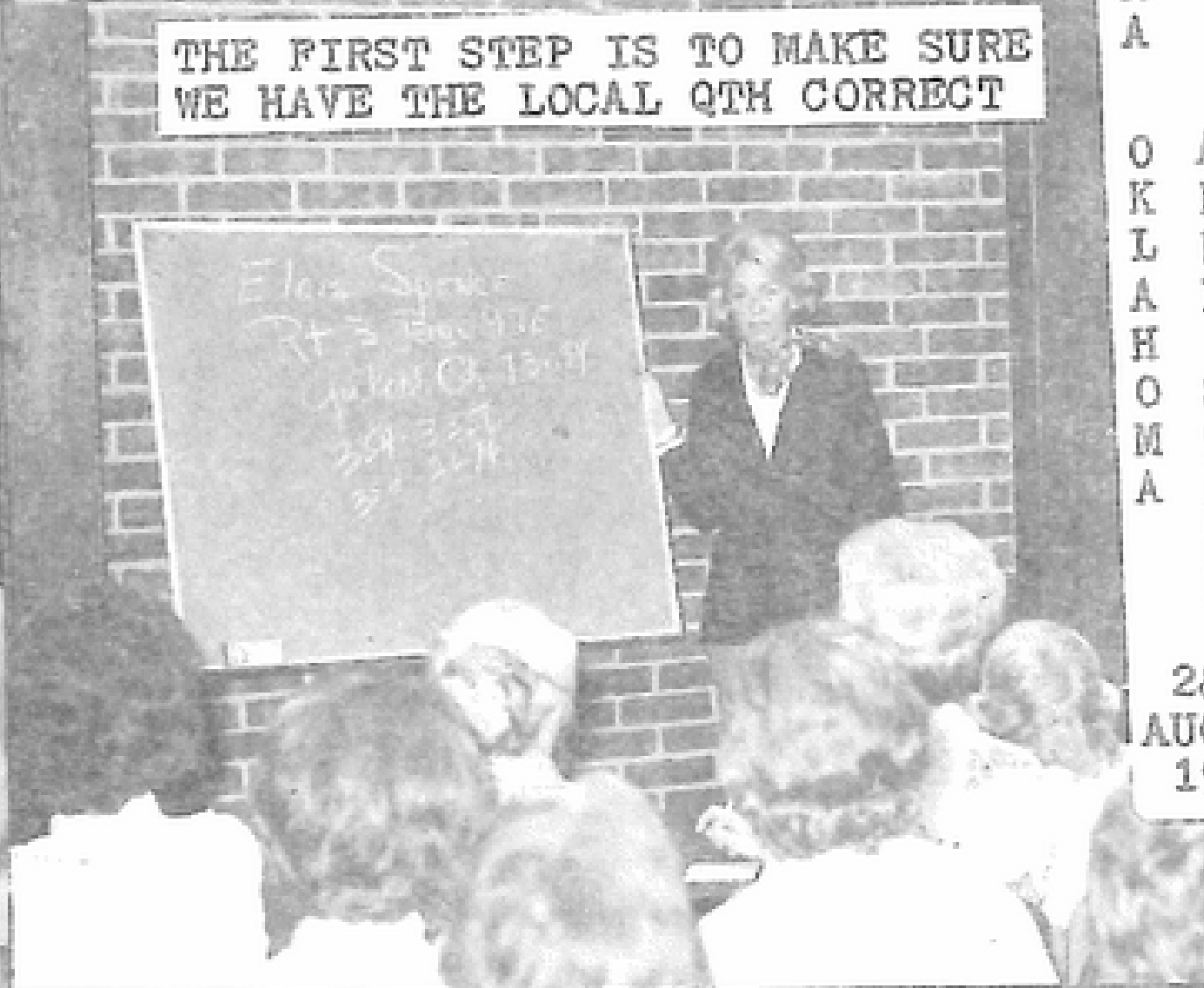
NOW WE'LL DRAW FOR
THE LUCKY WINNER OF
A CUP OF COFFEE



JUST AS SOON AS WE
GET THE PA WORKING
WE WILL INTRODUCE
THE NEXT SPEAKER.



A VARIETY OF ARTS AND
CRAFTS WERE DISPLAYED
FOR THE YLs AND XYLs



THE FIRST STEP IS TO MAKE SURE
WE HAVE THE LOCAL QTH CORRECT



THERE SEEMED TO BE
NO END TO THE DRAWINGS



NOW WE HAVE A
QUESTION FOR THE
GENTLEMAN IN THE
UPPER BALCONY

O H
K L A M
A H O M A
O A R
K L R
A H L
H O S
O M T
A A
E
2&3
AUGU
197

GATE INN

QRM BEFORE THE AFTERNOON'S
PROGRAM BEGAN



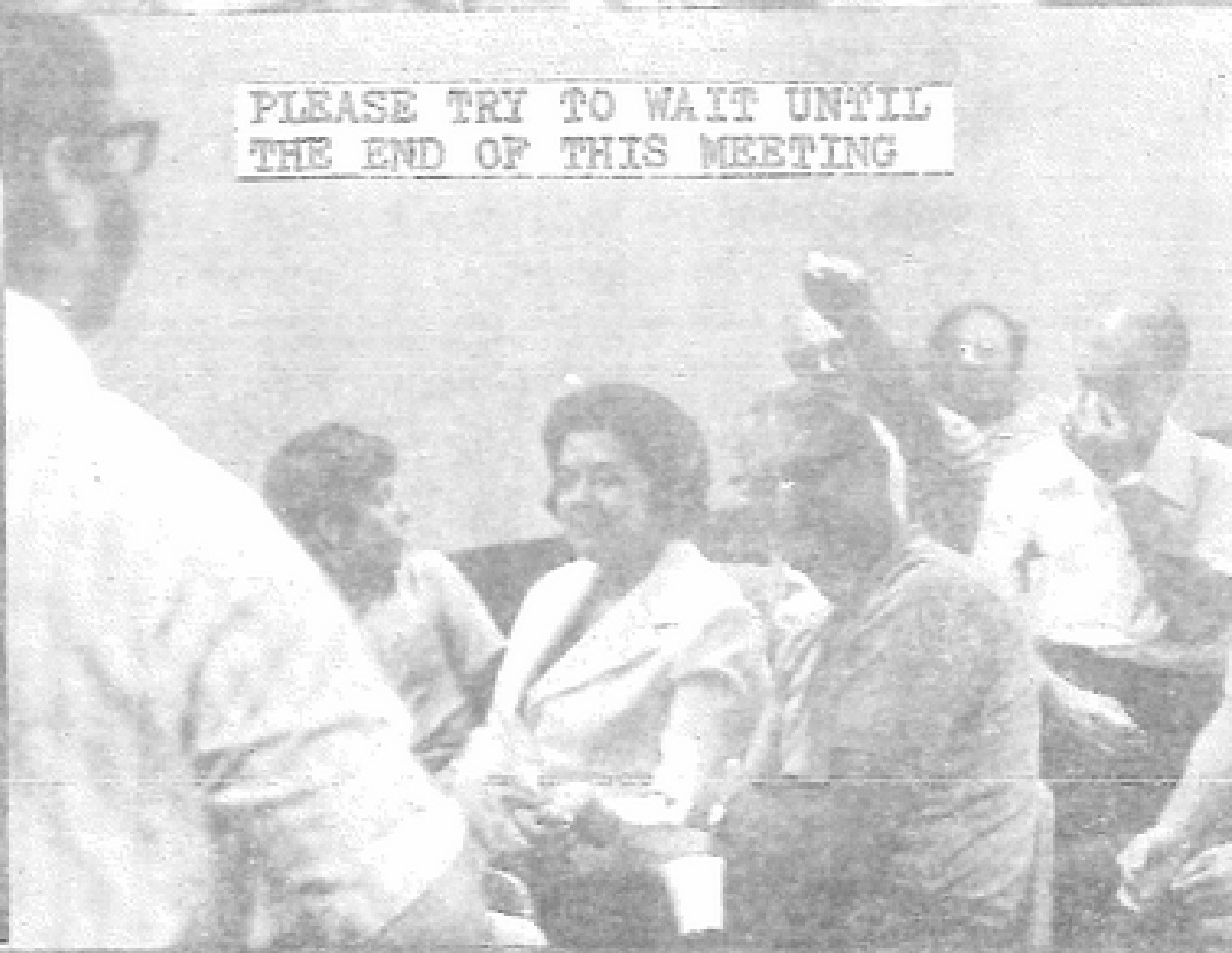
I REALLY DON'T KNOW WHAT
IT IS EITHER. ASK CHARLIE.



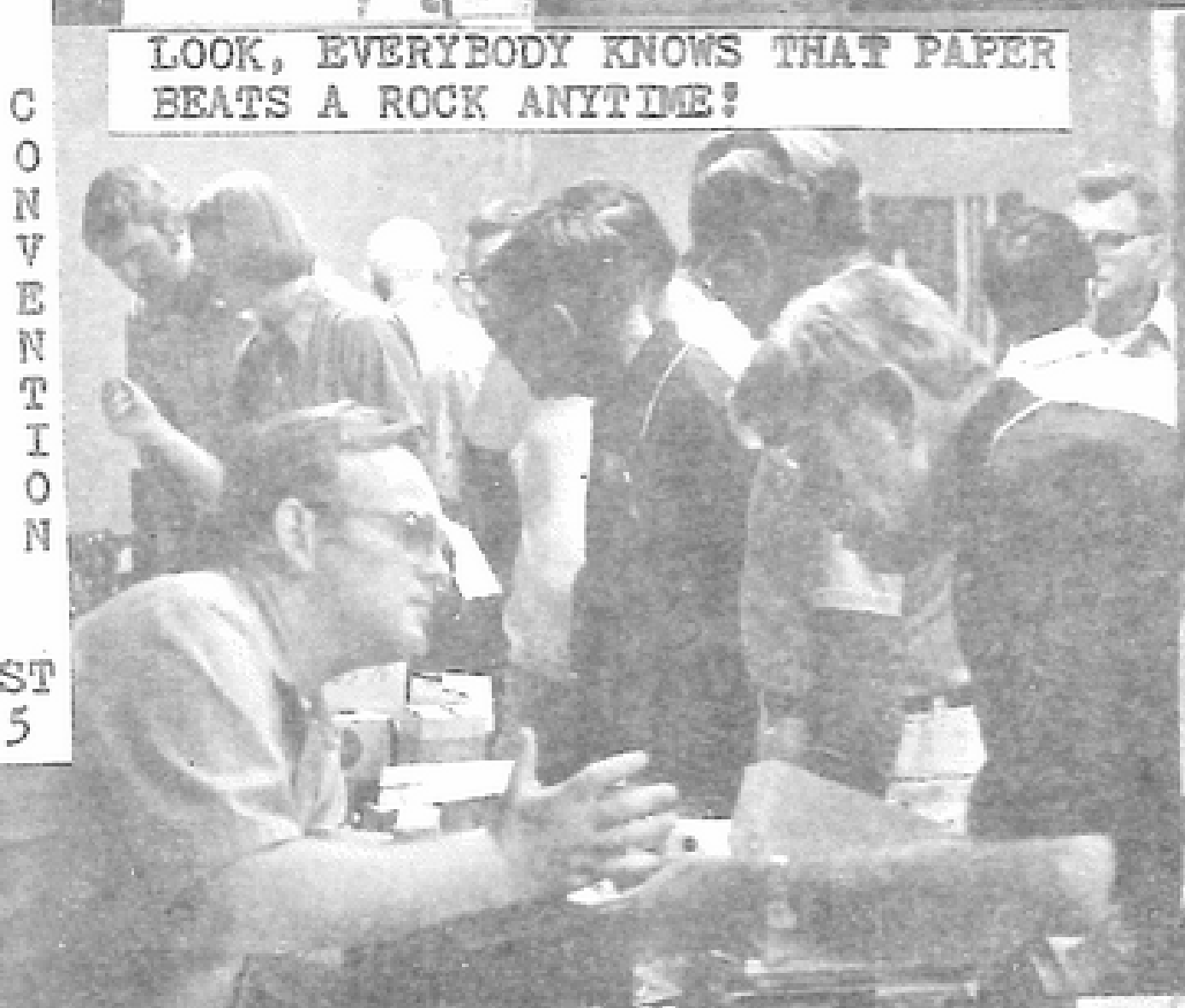
OKLAHOMA'S LIEUTENANT
GOVERNOR MAKES A POINT



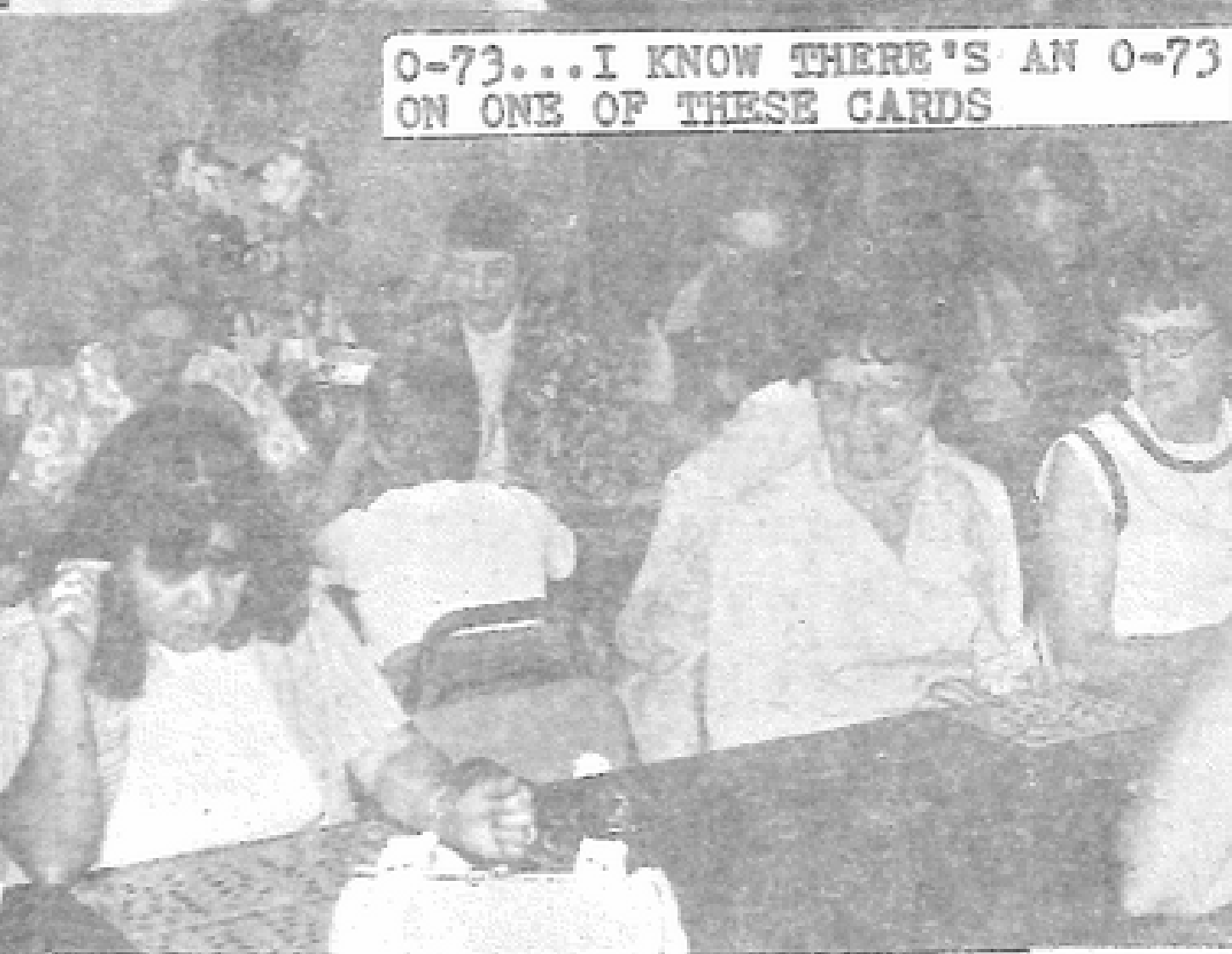
PLEASE TRY TO WAIT UNTIL
THE END OF THIS MEETING



LOOK, EVERYBODY KNOWS THAT PAPER
BEATS A ROCK ANYTIME!



O-73...I KNOW THERE'S AN O-73
ON ONE OF THESE CARDS

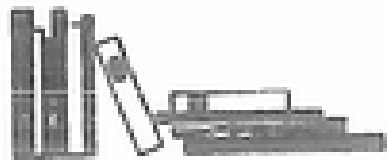


CORA PRESIDENT WB5ECJ
GETS THINGS ROLLING FOR
THE GRAND PRIZE DRAWINGS



SCENES FROM LAST YEARS HAM HOLIDAY

EVERYONE HAD A BALL - IN FACT THE PHOTOGRAPHER GOT TO HAVING SO MUCH FUN THAT HE DIDN'T GET AROUND TO COVERING EVERYTHING THAT HAPPENED. THERE WAS SOMETHING FOR EVERYONE, NEARLY A PRIZE FOR EVERYONE, AND YOU CAN LOOK FORWARD TO MORE OF THE SAME 7 AND 8 AUGUST.



TECHNICAL REVIEWS

W 5 J J



AMATEUR RADIO, Apr, gives design considerations for linear amplifiers. Don't miss the "April Foo;" ad for a device that transliterates the spoken word into International Morse code!

ELECTRONIC TECHNICIAN/DEALER, May, courtesy of W5KE, details the techniques of servicing CB transmitters; these can be applied to some extent to maintenance of amateur gear.

73, Jul, describes a low-power solid-state transmitter and has an outstanding article on feedline matching devices....even tells (truthfully) why they're needed! Also there's a bit on a VHF converter for use with an advertisements-band radio receiver. Don't miss Wayne's father's account of early flying!

QST, Jun, gives design info on helical resonators, presents basic principles of radio waves, tells how to build a linear-loaded beam for 14 MHz, talks more on ICs, describes a converter for picking up WWV on an amateur-band-only receiver, starts the design of a super receiver, follows that with other-band converters for that receiver, and has its usual batch informative news on a variety of subjects.

HAM RADIO, Jun, (It's a crying shame such a good magazine is stuck with such a punk name!) has first-class info on VFO design, a world of insight into the many forms of FM demodulators, an analysis of a new (to the USA....it's been in British magazines for years) speech processor, and all sorts of delectable tidbits on a variety of subjects.

CQ, May, has Delta Loop Antenna by ZL10I, Easy to Construct DX Antennas by W6SAI, Relay Realities by W5JJ, and 160-Meter Vertical Antenna by WBØCGR. W9EGQ tells how to restore old transmitters for Novice use.

SPARK GAP TIMES, Mar/Apr, presents an entrancing account of the Navy's new ELF program. That, in case you've forgotten, entails transmission on frequencies much lower than the audio spectrum used in radio communication.

POPULAR ELECTRONICS, Jul, shows how to use a hand-held calculator to solve simple electronic problems. An article on TV antennas has some useful carry-over into the realms of amateur radio. Another article compares the utility of CB vs 2-m amateur radio, pointing out that the latter depends much upon the availability of repeaters.

RADIO-ELECTRONICS, Jul, relates a rare case of the FCC seizing illegal CB equipment. The USA is the only country I know of that does not routinely confiscate all illegal equipment! An article on CB antennas has much info useful to radio amateurs and a very minimum of the fiction that usually permeates such writings.

CLEGG DEAL FOR GROUPS OR CLUBS. This offer applies to the Clegg Mark 3, 2 meter transceiver, 12 channels, 15 watts. Group purchase plan.

<u>Quantities</u>				<u>Price each</u>
1	to	3	- - - - -	\$189.50
4	to	7	- - - - -	180.00
8	to	14	- - - - -	175.00
15	+	-	- - - - -	170.00

CRYSTALS: 52/52 furnished. One channel in addition to 52/52 included when buying at group prices. Additional channels: \$8.00 per pair. Shipping cost paid by Clegg.

Clegg, 208 Centerville Road, Lancaster, Pa. 17603.

H A M H O L I D A Y

AUGUST 7 - 8, 1976

MAKE IT A MINI VACATION FOR THE FAMILY
ENJOY THE FULL FACILITIES OF SOUTHGATE INN
A NEW DIMENSION IN LUXURY
SWIMMING - GAMES - POOL SIDE DINING - RELAXING
IN THE AIR CONDITIONED MALL

SOUTHGATE CLUB - MEMBERSHIP INCLUDED WITH REGISTRATION
LIVE ENTERTAINMENT - DANCING

FOR THE LADIES

- ARTS & CRAFTS - DISPLAYS - DEMONSTRATIONS - FLEA MARKET
To arrange for your display, contact Helen Williams,
6400 N. W. 30th Terrace, Bethany, OK 73008 (405) 789-0769
- VISIT CROSSROADS MALL - FREE BUS TRANSPORTATION
- COWBOY HALL OF FAME - CONDUCTED TOUR \$1.50 - FREE BUS
- BINGO - \$1.00 PER CARD
- LADIES HOSPITALITY ROOM - OPEN FULL TIME

FOR THE HAMS

- TECHNICAL PROGRAMS
Large Yagi Antennas (Charles Carroll W1GQO
Utilization of 220 MHz Band (Editorial Assistant QST
Special Repeater Controls Bob Pace WA5CJG
- COMMERCIAL DISPLAYS - FLEA MARKET
- GUESSING GAMES - QLF CONTEST
- TECHNICAL AND GENERAL INTEREST MOVIES

FOR ALL

- BLUEGRASS MUSIC CONCERT
- QCWA BREAKFAST
- BANQUET AND AWARDS

ALL TYPES OF
ELECTRONIC PARTS

WORLD WIDE ELECTRONICS

PHONE 525-9897

1715 NW 16TH

OKLAHOMA CITY

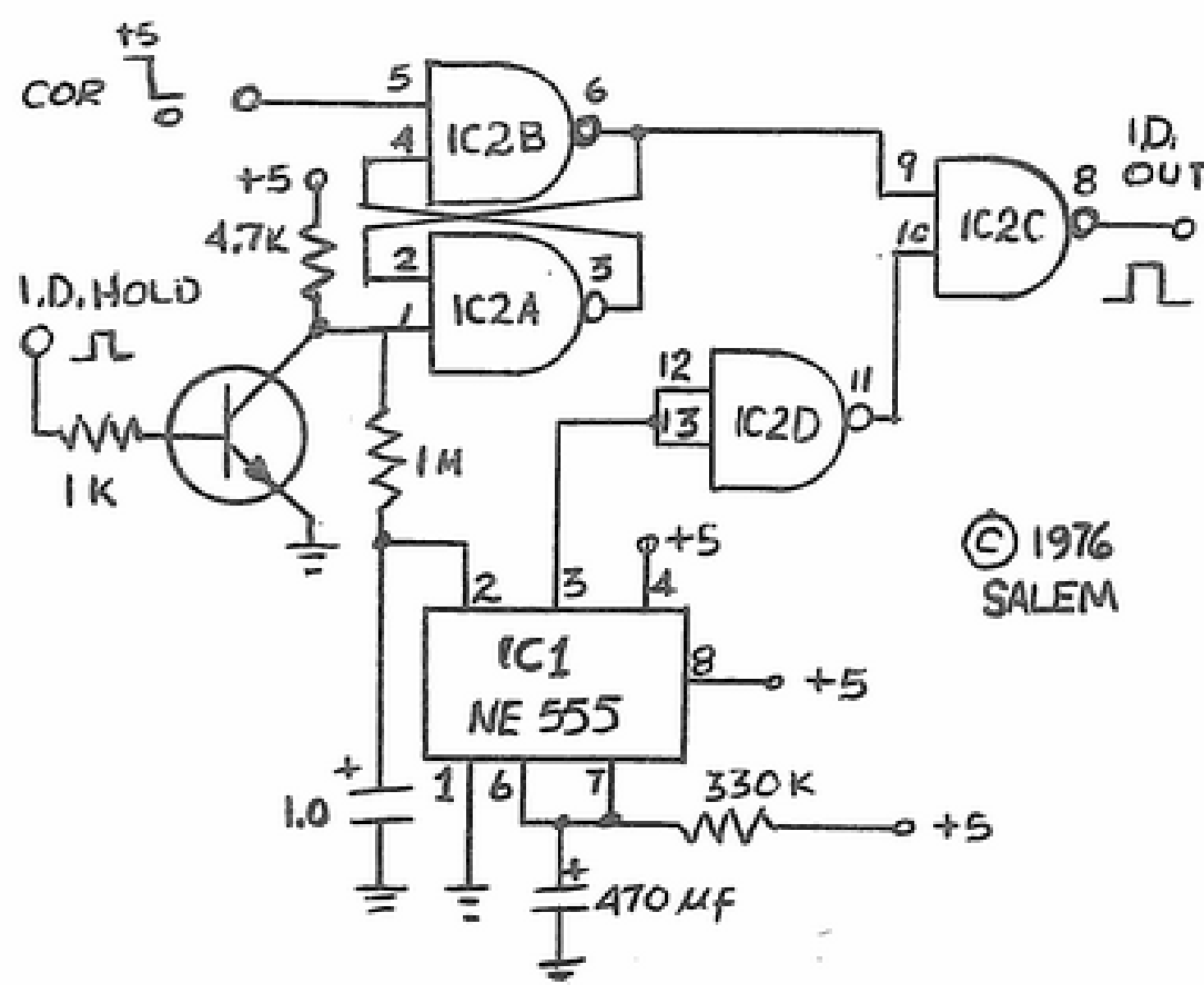
HOW TO CONTROL A REPEATER IDENTIFIER OR "A FINE I. D. ea"

Repeater control circuitry may not be of interest to all members of CORA, but an occasional explanation of how a particular repeater subsystem works might be the springboard for a special project. The technical discussion should also be helpful in understanding digital circuitry. With this concept firmly in mind (and at the urging of WA5TRS), I present the following discussion regarding the circuitry used for timing the I. D. at AF5AFW in Norman. Actually this is no coincidence. WA5TRS and myself had just concluded a discussion on such matters in regards to the 34/94 and 07/67 systems of MORI and their nasty habits of identifying twice in a row. He told me how he had modified the circuit to prevent this and I began to describe our control circuitry to accomplish the same which has been in service since February 1974. After a brief discussion, we came to the conclusion that with a few minor circuit differences, the law of isolated parallel cultural development (that's for all you Trekkies) applies equally well to design evolution.

The project for a timer began after I had laid out a PC card for I.D.er based on a circuit published by K2OAW (73 Magazine, February 1973, p. 27). There have been several versions of this circuit kicking around. WA5AOB produced a similiar board for MORI and have seen another version produced by K5HMD with twice the capacity for RTTY. Now that we had a keyer, we needed a timer and level reducer. Some clubs have avoided the problem of level reduction by simply inhibiting the I.D. command until the COR was released. I felt that this was unsatisfactory because the conversation on the repeater will generally cease until the I.D. is complete (Amateurs being the polite people they are). I wanted the I.D. to be as unobtrusive as possible. So WA5JXX and myself set the following parameters:

1. If a single kerchunk occurs, the I.D. would sequence once and once only. If no other kerchunks after the I.D., no I.D. would occur again.
2. As long as the system remained in use, the I.D. would continue to sequence, but never more than once every 3 minutes.
3. When the conversation ceased, the I.D. would sequence one more time at the end of the regular 3 minute period, then remain silent until the COR was activated again.

Having a penchant for rolling our own and not purchasing one of the commercial versions, WA5JXX and myself came up with the following solution.



IC1 - NE555 Q1 - 2N2222 or equ.
IC2 - 7400

Very briefly, here's how it works. xmtr keys when COR goes low. I. D. hold goes high when I. D. sequences. I. D. out must go high to start I. D. IC2B & A form RS latch. p. 10 of IC2 is initially low. p. 6 goes low when COR goes low. I. D. then starts. I. D. hold keys transmitter and resets RS latch. 1 meg resistor and 1 ufd slows NE555 in starting to eliminate race condition that occurs. WA5TRS solved this by trying to last baud of I. D. er. When IC1 times out and COR has set RS latch again during timing, I. D. will sequence again and continue as long as repeater is in use.

Our initial circuit includes a tone generator, a level reducer utilizing op amps and those nifty CMOS switches (CD4016) and a 5 V. regulator (LM309). For you purists notice that both the R & S inputs of the latch can be low at the same time, an illegal condition, but since the last state is known, there is no problem. Any questions, give me a call. If there is any interest, I describe some of our other circuits, including a complete 16 digit touchtone decoder which eliminates a lot of the usual problems with PLL decoders.

WA5EPK



PRESIDENT'S CORNER

The meeting for June was held on the 15th, as scheduled, at 7:30 p.m. The meeting place was the Oklahoma Military Academy, Northeast 36th and Grand Boulevard. We had a nice turnout, and about 30 members and guests were present. One guest, Zack, WB50PI, won a touch-tone pad as a door prize; the club trustee, Jay, K5CE, won the other one. Bob, K5PJU, reported that the new GE transmitters were in place and 22-82 was operating on the new GE transmitter and GE receiver. As soon as a new power supply is finished, most likely by the time you read this, the 81-21 will be operating and both systems will be exactly alike with the same coverage. The autopatch is not scheduled to be put on 81-21 until the system has had a good burn in. Club trustee, Jay, K5CE, reported that he was pleased with the way members had come forward and offered their services to the technical committee. We want to say "amen"! Also, very few members have turned me down when I have approached them to do specific jobs and mostly for very good reasons. The members present gave a vote of approval for the 450 MHZ technical committee to proceed with a first-class repeater to be mounted on Channel 5's tower at 1,400 feet. This will give excellent coverage on 450 and should encourage members to get going on their 450 rigs. The Edmond Amateur Radio Club has offered the Autopatch Association the location that is theirs on Channel 5's tower. This type of cooperation is encouraging, and they are due a vote of thanks! The stepchild of the club, as far as repeaters go, is still alive, although not always well. 6 meters is on 52.680 input - 52.525 output, and the power is about 250 watts out. We who are on 6 meters are having a lot of fun with it. It makes a good "skip shooter" when the band is open.

Some people who don't have their way are mature enough to go along with the majority and for what's best for the group, however, some see this as a direct challenge to them personally and strike back in a vindictive manner - undermining the efforts of those who are working to advance the club. Sometimes the malicious acts are bordering on outright sabotage. In view of this, the members reviewed the club constitution and bylaws at the last club meeting and decided that we had the means to remove any member who did not have the club's best interests at heart and who was creating problems, either by working against the club or by actions that would normally be grounds for loss of license by the F.C.C. These complaints are to be given to the executive committee for consideration, and if they see grounds for removal, then it will be brought before the membership and will take a two-thirds (2/3) majority vote by those present at a regularly scheduled meeting.

Remember, the August meeting is for election of new club officers. A nominating committee chaired by Jim Stanberry, K5TZS, and with Deeds, WB5ADN, and Royden, WB5KDC, will present a slate of candidates at that meeting. Any member can nominate from the floor. The only requirement is that previous approval of the nominee is required. See you August 17th at 8:00 p.m. at the Oklahoma Military Academy!

WB5JBL

LICENSE CLASSES WILL BE STARTING IN SEPTEMBER. ANYONE INTERESTED IN HELPING CALL JOE BUSWELL, WA5TRS, 732-0676, HOME, OR 325-4172 AT WORK. I WOULD LIKE TO HAVE SEVERAL CLASSES START SIMULTANEOUSLY IN VARIOUS PARTS OF TOWN, NOT NECESSARILY ON THE SAME NIGHT OF THE WEEK. SUCCESS OF SUCH A SCHEME DEPENDS ON THE AVAILABILITY OF INSTRUCTORS. IF I HAVE TO DO IT MYSELF, OR WITH ONLY ONE OR TWO HELPERS, THERE WILL ONLY BE TWENTY STUDENTS ALLOWED THIS GOLDEN OPPORTUNITY THIS FALL. DONT WAIT, CALL ME NOW OR MAKE A NOTE TO DO IT TONITE. A PLANNING MEETING WILL FOLLOW. JOE, WA5TRS

FOR SALE: HW-202, 2-METER TRANSCEIVER. 94/94, 34/94, 16/76, 07/67, 22/82. \$131.50. RICH VANNI, WB6FYL/5, 677-8193.



INSTRUCTOR CERTIFICATION

THE ARRL HAS PROPOSED TO THE FCC THAT THE CONCEPT OF INSTRUCTOR CERTIFICATION BE EXPLORED. THIS PROPOSAL HAS RECEIVED INFORMAL ACCEPTANCE FROM THE FCC, AND FORMAL CONCURRENCE IS EXPECTED SHORTLY. THE CONCEPT IS THAT PROPERLY PREPARED INSTRUCTORS USING A WELL-DESIGNED AND FCC APPROVED INSTRUCTIONAL PACKAGE, COULD GRADE THE NOVICE WRITTEN EXAMINATION IN A SIMILAR FASHION TO THE WAY THEY CURRENTLY GRADE THE NOVICE CODE TEST. THIS IDEA WOULD REDUCE ANY POTENTIAL FOR LICENSING ABUSES WHILE IMPROVING THE QUALITY OF AMATEUR INSTRUCTION AND STREAMLINING THE ADMINISTRATIVE PROCEDURES INVOLVED IN APPLYING FOR A LICENSE.

THE TRAINING PROGRAM ITSELF, NOT THE STUDENT MATERIALS, IS WHAT WILL HAVE FCC APPROVAL. THE TRAINING PROGRAM CAN THUS BE USED WITH ANY STUDENT GUIDE OR LICENSE MANUAL. THE PROGRAM IS BEING PRODUCED BY PROFESSIONAL EDUCATORS AT THE ARRL, WITH THE ASSISTANCE OF MORE THAN TWENTY FIVE EXPERIENCED INSTRUCTORS AND AMATEUR RADIO TEACHERS THROUGHOUT THE COUNTRY. THE LEAGUE WILL DUPLICATE THIS PROGRAM AND DISTRIBUTE IT TO PERSONS INVOLVED IN AMATEUR RADIO INSTRUCTION. THE DISTRIBUTION OF THIS PROGRAM WILL NOT BE LIMITED TO ARRL MEMBERS OR CLUBS, BUT WILL BE GENERAL, FOR THE BENEFIT OF THE ENTIRE AMATEUR COMMUNITY.

THE EXACT DETAILS OF THE METHOD OF INSTRUCTOR CERTIFICATION ARE SUBJECT TO POSSIBLE CHANGE, BUT THE GENERAL IDEA OF REDUCING THE POSSIBILITY OF ABUSE OF THE LICENSING SYSTEM HAS BEEN VERY WELL RECEIVED BY THE AMATEUR COMMUNITY. THE INSTRUCTOR, IN ADDITION TO RECEIVING TRAINING BY THE ARRL, WILL MEET CERTAIN OBJECTIVE CRITERIA. THE CRITERIA CURRENTLY BEING CONSIDERED ARE: ADVANCED OR EXTRA CLASS LICENSE, FIVE YEARS EXPERIENCE AS A GENERAL OR HIGHER CLASS LICENSE, AND A PERSONAL RECOMMENDATION BY A PUBLIC OR AMATEUR RADIO OFFICIAL. THIS LIST MIGHT INCLUDE LEAGUE OFFICERS, RECOGNIZED MANUFACTURERS, PUBLIC SERVICE PERSONNEL AND FCC EMPLOYEES.

NOTE THAT THERE WOULD NOT BE A REQUIREMENT FOR LEAGUE MEMBERSHIP OR ARRL SPONSORSHIP IN THIS PROGRAM. THIS IS A PUBLIC SERVICE OF THE LEAGUE FOR THE GROWTH AND CONVENIENCE OF THE AMATEUR SERVICE. ANY OTHER GROUP THAT COULD PRODUCE A SIMILAR PROGRAM AND DISTRIBUTE IT FREE OF CHARGE WOULD BE WELCOME TO DO SO. THE LEAGUE IS DOING THE JOB NOW BECAUSE IT HAS THE COMMITMENT TO THE AMATEUR SERVICE, THE FINANCES (THE PROPOSED BUDGET FOR THE PROGRAM IS OVER 100,000) AND THE VAST VOLUNTEER APPARATUS TO DO THE JOB EFFECTIVELY.

THE PURPOSE OF THIS PROGRAM IS TO GREATLY IMPROVE THE QUALITY OF INSTRUCTION INTO THE ENTRY LEVEL OF THE AMATEUR SERVICE, AND TO MAKE IT ADMINISTRATIVELY SIMPLER TO OBTAIN AN AMATEUR RADIO LICENSE, WHILE MAINTAINING AND EVEN RAISING THE QUALITY OF THE APPLICAND. IN ADDITION, THIS PROGRAM WILL ALLOW UNDER THE PRESENT SYSTEM.. ONE EXAMPLE IS A SPECIAL TEMPORARY AUTHORITY TO ALLOW THE NEW NOVICE TO GET ON THE AIR IMMEDIATELY AFTER PASSING THE TESTS, SIMILAR TO THE SYSTEM RECENTLY ANNOUNCED FOR THE CB SERVICE.

THIS PROGRAM WILL GREATLY BENEFIT EVERYONE IN AMATEUR RADIO MANUFACTURERS WHO WILL HAVE MORE BUSINESS, THE INDIVIDUAL AMATEUR WHOSE POSITION AT ARC IS STRENGTHEND BY THE INCREASED NUMBERS OF AMATEURS, AND MOST IMPORTANTLY THE NEW NOVICE, WHO WILL HAVE FAR SUPERIOR TRAINING AND PREPARATION BEFORE HE GETS ON THE AIR.

TAKEN FROM THE AMATEUR RADIO INSTRUCTOR'S BULLETIN JUNE 1976

The following letter is from one of the outlying communities who depend in part on our Severe Storm Warning Network. I know sometimes we think we are not appreciated for what we are doing, and we are encouraged by feedback from the various people we are trying to help.

**SEMINOLE CIVIL DEFENSE
AND DISASTER UNIT**

P. O. BOX 307
SEMINOLE, OKLAHOMA 74868

J. Barstow Gilkey
Director

Warren F. Schroeder
Assistant Director

April 27, 1976

Mr. Jim Denman
Secretary/Treasurer
Oklahoma City Autopatch Association, Inc.
7705 Charlotte Drive
Oklahoma City, Oklahoma 73159

Dear Mr. Denman:

As the Director of the Seminole Civil Defense and on behalf of our entire staff and personnel, we would like to express our sincere appreciation for the service you people render our area during severe weather.

We certainly appreciate the way you have responded to our request for weather information through Mr. Wallace McRay (WA5ZAN) when we ask him to contact radar control for approaching weather. He has informed us of your well coordinated program through Mr. Gary England of Channel Nine and the Oklahoma City Autopatch Association during the severe weather season. Please relay to all those involved how much we do appreciate your effort in protecting the lives of our citizens even though the severe weather front might have passed your immediate area but still poses a threat to those east of you such as Seminole County.

Mr. McRay is our Communications Coordinator and will again be requesting needed information when severe weather approaches our area. We in turn will relay through him to you any severe activity that occurs in our area that might be of assistance to Mr. Gary England. We are in direct contact with the Highway Patrol, Sheriff's Office, City Police, as well as our own Civil Defense advance runners.

Thanks again for assistance your organization has rendered to Seminole and our surrounding cities.

Sincerely yours,

J. Barstow Gilkey

J. Barstow Gilkey
Director of Civil Defense
Seminole, Oklahoma 74363

AND A GOOD TIME WAS HAD BY ALL

THAT WAS THE STORY TOLD BY EVERYONE WE TALKED TO AFTER LAST YEARS HAM HOLIDAY AND GOING BY THE TWO PAGES OF PICTURES OF LAST YEARS ACTIVITIES WHICH APPEAR ELSEWHERE IN THE PAPER IT MUST BE SO.

THE PROGRAM COMMITTEE HAS BEEN BEATING THE BUSHES AND HAS COME UP WITH SOME SUPER ATTRACTIONS

AS WE FOUND OUT THE LAST COUPLE OF YEARS MOST OF YOU ARE PRONE TO DO A LOT OF EYEBALLING SO THE

PROGRAMS HAVE BEEN SPREAD OUT WITH MORE TIME BETWEEN THEM SO YOU WON'T MISS ANYTHING

WE WILL HAVE AN ARRL SPEAKER FROM NEWINGTON, CHARLIE CARROL, WHO WILL HAVE TWO TECHNICAL PROGRAMS - ONE ON 220 MHZ REPEATERS AND THE OTHER ON LARGE YAGIS FOR DX.

LOTS OF LADIES WERE PRESENT LAST YEAR AND THIS YEAR THEY WILL HAVE THEIR OWN HOSPITALITY ROOM AND SWAP TABLES

FOR CRAFT WORK AND SO FORTH BUT NO RADIO GEAR.

THEY WILL ALSO HAVE SPECIAL LADIES AWARDS THAT WON'T HAVE TO BE TRADED TO THEIR HUSBAND OR BOY FRIEND BUT WILL ALSO BE ELIGIBLE FOR THE OTHERS PLUS PRE-REGISTRATION AND GRAND PRIZE - THAT'S IT TO THE LEFT - A 50 FOOT ROHN 25 TOWER.

THE GOOD FOOD WE HAD LAST YEAR IN THE BUFFET LINES WILL BE THERE AGAIN AND AS OF THE TIME THIS IS BEING PREPARED THE SAME LOW PRICE OF \$2.95 WILL HOLD.

ONCE AGAIN WE PROMISE - NO SPEECHES - BEFORE THE AWARDS ON SUNDAY. COME EARLY AND EAT THEN BE PREPARED TO CARRY THE LOOT HOME. IF A CREW CAN BE ROUNDED UP TO ERECT IT THE 50' ROHN TOWER WILL BE USED FOR THE TALKIN FREQUENCIES OF 146.34/94 & 146.22/82 AND THEN THE LUCKY PERSON WILL GET TO TAKE IT DOWN - HOPE THERE IS HELP AVAILABLE. HI'

PRE-REGISTRATION FORMS WITH SPACE TO RESERVE MOTEL ROOM - WE WILL DO IT FOR YOU OR JUST CALL OR WRITE SOUTHGATE INN.

SWAP TABLES IN THE FLEA-MARKET ARE AVAILABLE TO REGISTRANTS-NO COST.

SEE YOU AT SOUTHGATE INN, I-35 SOUTH & 51st, AUGUST 8 & 9

SAM, W5HAZ

ED SANDERS

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ADD THIS SIMPLE POSITION CONTROL TO YOUR ANTENNA ROTATOR

My original goal in building this rotator control system was to produce an inexpensive, self-correcting, minimum parts, antenna rotator design. I think I accomplished this for the most part. I have found, however that the control system is simply adapted to almost any rotator head (motor assembly), and is an improvement to most.

When used as a rotator control this position control system has several advantages to recommend it.

SELF CORRECTING - Should the antenna be turned by the wind (or any other force than the control system), the motor will automatically be turned on to correct the antenna direction. Even if the control power has been off.

ADJUSTABLE TURN DISTANCE - By varying the gear (or wheel) size on the position sense potentiometer (Pot_1) almost any reasonable number of antenna revolutions can be obtained (because of antenna feed line problems, 1 revolution is generally used).

QUIET - No "clunk-clunk" noises banging around the shack.

ADJUSTABLE "SLOP" OR "DEAD ZONE", (system gain) - By varying the op-amp feedback resistance (R_f), the distance through which either pot, can be turned before activating the rotator can be adjusted.

INEXPENSIVE - This entire control system can be built from most junk boxes, since almost any component can easily be substituted. (There are few critical values.)

SIMPLE CONSTRUCTION - Simple point to point wiring with no critical layouts or steps.

CIRCUIT OPERATION AND THEORY.: Figure 1 is a circuit diagram of the position control system. Both potentiometers are used as simple voltage dividers, which provide position reference voltages (one controlled by the antenna rotator head, the other by the operator). The op-amp circuit (IC_1) serves as a summing junction, and amplifies the algebraic sum of the two reference voltages. This amplified sum voltage is used to turn on one of the transistors, which closes its respective relay. Which transistor and relay combination is turned on is determined by the sum voltage polarity. If one relay is wired to turn the rotator motor in one direction, and the other relay is wired to turn the rotator in the other direction, the antenna will seek a zero sum voltage (both relays disengaged). Turning either pot will take the sum voltage away from zero activating the rotator. LED_1 and LED_2 indicate this activated condition, as well as direction of rotation. Diodes D and D are important to prevent inductive kickback voltages from the relay coil from destroying the transistor.

CONSTRUCTION- Although construction is simple and no special layouts are required here are some points which may be helpful:

When installing C_1 and C_2 be certain to observe the proper polarities. Note that one has its - side grounded, while the other has its + side grounded.

Use a small gear or wheel to mechanically operate Pot_1 with the antenna rotator shaft.

If difficulty is found in locking in on the proper direction, try reversing the DC voltages on one of the potentiometers.

Vary the size of R_f to find the best "dead-zone" for your application (I used 330,000 ohms). A larger R_f means more system gain and less "dead-zone", however too much gain will cause system to become unstable.

Use DPDT relays to break both sides of the rotator power system.

This provides better isolation and grounding for lightning protection.

This system has proven to be reliable and accurate. In fact I have built an entire rotator using this system.

Bob Graham, Jr. WB5NSV

PARTS LIST

Schematic on page

Pot_1 & 2 - 10K ohm (linear taper preferred)	R_1 & R_2 - 47 K ohm
R_f - 330 K ohm (or as required)	R_3 & R_4 - 15 K ohm
Q_1 - 2N1304 (Radio Shack 276-2001)	IC_1 - uA741 op-amp or equiv.
D_1 & D_2 - 1N34 (Radio Shack 276-1102)	Q_2 - 2N1305 (Radio Shack 276-2007)
LED_1 & 2 - (Radio Shack 276-096)	Relay $_1$ & 2 - 12 or 15v DC DPDT
T_1 - 25v CT #300ma	Bri $_1$ - (Radio Shack 276-1151)
Note: R_3 R_4 LED_1 LED_2 can be left out or added later.	C_1 & C_2 - 1000uF 25v DC

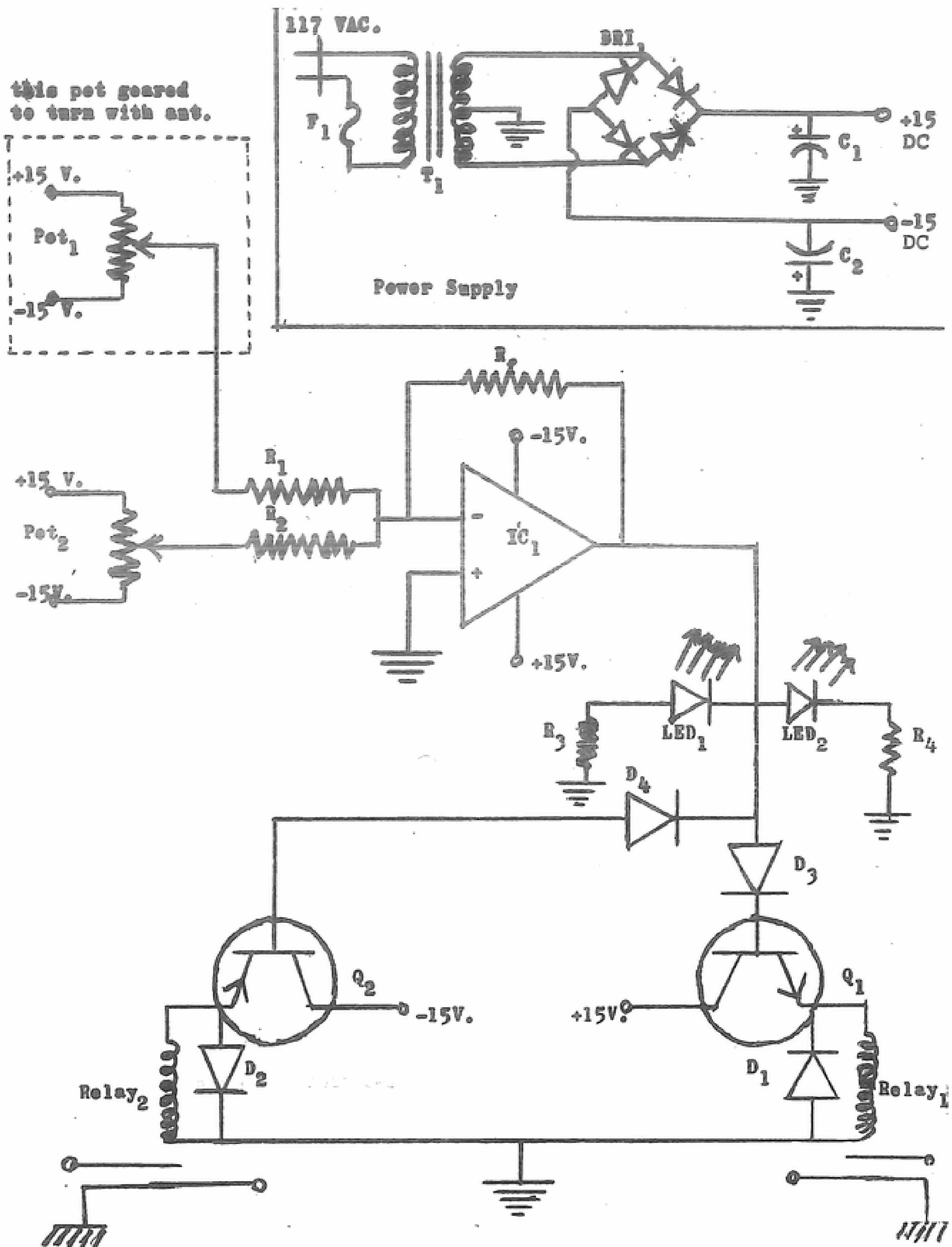


Figure 1.
Position Control System

FOR SALE: New Millen DW Transmatch \$125.00 W5LTJ Bill Jones (405) 721-5334.

I have a good Motorola portable 2 meter transceiver 34/94 12v and AC power supply for \$30. W5BKN Elmer Fields 943-4979

There is still plenty of test equipment and grab bags at W5EEL's place, 310 Steed Street. Call Mrs. Johnson before going over. Phone 732-4908.

DEAR CORA:

~~Letters to the Editor~~

Here is some news and comments from 7 land.

The Johnson Matchbox has been a popular antenna matching device since the early 50s.

Occasionally with certain lengths of open wire transmission line, the unit will not tune properly. To overcome this deficiency, a reactance capacitor can be installed in series with the input link.

The present-day transceivers and most other transmitting equipment have built in antenna transfer relays. Consequently most of the relays have been wired around or removed completely. Remember how noisy they were in the "old days" of AM?

The terminal strip on the rear can be removed and a 2 or 3 section BC variable capacitor, all sections paralleled, mounted on a strip of insulating material installed in lieu.

Admittedly it would be more advantageous electrically to wire the variable capacitor in the ground side of the input link. One quick glance at the wiring configuration discouraged me so the capacitor was wired in series with the input co-axial receptacle and the "hot" side of the link.

The shaft of the variable capacitor was oriented to the left side of the cabinet in order that an insulated knob could be conveniently located for adjustments.

In the K.W. Matchboxes it is possible to install the variable capacitor on the inside back wall. Use a right angle drive and an insulator shaft to run through the front panel. A balanced control knob layout is possible this way.

Once this simple modification has been tried, a person wonders why the manufacturer did not include a variable reactance capacitor in the original design. The modified Match Box now works as well as my "home-brew" tuners.

I have a new Kenwood TS-700A which works very nicely. Would like to have been able to try the Yaesu FT-221 as it has a built-in VOX as well as CW sidetone.

I'm building a "VOV IN A VERY SMALL BOX" for an atlas 180. A 4 Amp, 12V DC supply for Drake TR22C

and a 30 watt amplifier. Also, a 20 amp 12v DC power supply for Atlas. Can anyone help? I need a CW mechanical filter for 51J-3 modified with Collins 3 filter kit. Part No. F500B-08 (or F500B-10).

M. R. Neary, W7KFV/W6MUG, Rt. 2, New Plymouth Idaho 83655

* * * * *

C O R A

C O M M E N T S



At the 28 May meeting of CORA the Edmond Amateur Radio Club participated for the first time. Representatives were WA5FLT and WB5GWB. W5HXL was elected as the new CORA Vice-president to fill the vacancy created by the resignation of WA5ETV. A special get-together will be held at Red Cross headquarters 16 June to address covers for a major mailing of the CORA Collector & Emitter to reach everyone who needs to attend HAM HOLIDAY but isn't a regular subscriber to CORA C & E. A Hospitality Room will be reserved for ladies activities at HAM HOLIDAY. It will be available to them continuously and feature "Craft Swap Tables". Major prizes were discussed. A handy-talkie for pre-registration and a tower for grand prize were leading possibilities. The above are not official minutes. Minutes will be read and amended as necessary at next CORA meeting. Best way to know what goes on at a CORA meeting is to attend. All CORA club members are invited to attend. You missed some delicious cake and pie plus coffee if you weren't there. Next meeting is 25 June, 7:30 PM, at American Red Cross, 10th & Hudson. Watch the calendar on back page for all meeting dates.

Ellard, W5KE, CORA Secretary



THE PRESIDENT'S CORNER

Our thanks to Jerry, W5MCJ, for the program presented at the June meeting. It was very interesting and informative, as well as being authenticated by newspaper articles, as well as a fine display of equipment. We would like to have more programs along this line. If anyone has something to show and tell, please give me a call.

The picnic was not too well attended, even though the weather was the best for several years. We have a couple of homesteaders, Bob W5HXL and Charlie WA5JGU, with their porta-shacks, radios and antenna all set up and operating; then there was Jef WB5GWB and Lloyd WB5HUP having a lot of fun keying up their repeaters. But, the best part was Sunday picnic lunch. Our thanks to the ladies who fixed all the fried chicken and salads that go into making a great spread, and all topped off with a good watermelon, thanks to Lloyd.

Charlie wins the big prize for the largest fish caught (the prize was the fish); although I can't understand why he did not catch a big catfish after the special instructions he received from the gentleman who knew where to fish for them!

Hope for a much better turn out for Field Day, so every one come out and get in some operating time.

Our next club meeting will be delayed for one week, which makes it fall on July 9, so bring a friend and join us for coffee and donuts and maybe Charlie will have his color slides back so we can see what he did on vacation.

Don't forget Ham Holiday August 7 and 8.

A1 WB5KCU

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OKLAHOMA CITY

THE ZANY NEWS FREQUENCY

Joe, WA5ZNF

THE PICNIC WAS FUN, EVEN FATTENING - - I signed the log and intended to count the names but got interested in TRS's wild new T-shirt and just didn't but there was ah good crowd on hand last Sunday at Lake Overholser. It seem stere was two crowds, one on Saturday for the eye balling and with some carryover another one on Sunday for the eating part of the weekend. I talked to several who were making it for the first time and planned to make the Field Day outing which would be held a couple of hundred yards away.

* * * * *

THIS ISSUE OF CORA COLLECTOR & EMITTER IS A LITTLE DIFFERENT - - Though not so much after all, it still has the news of amateur radio in the central Oklahoma area, some technical articles, some entertainment and some advice but as you have probably noticed we interjected some color on the cover and in the calendar. Also if you do not get it regularly you can become a subscriber by (1) Joining one of the six clubs listed on page 2, (2) Subscribing by sending your complete mailing address and a check for \$1.50 for one year. We are sending out Sample Copies to over 400 people as a way to inviting them to attend HAM HOLIDAY, a festive get-together of hams, amateur radio operators, would-be's, disenchanted CBers and some folks who just enjoy the eyeballing, chow and the flea-market. It all takes place in Oklahoma City on Saturday and Sunday, August 7 & 8 at the Southgate Inn, just off of Interstate 35S and 51st street. Find the pre-registration form on another page and mail it in today.

* * * * *

THERE WAS NO PHOTOGRAPH ON THE FRONT PAGE - - Instead there was a line drawing of the Southgate Inn sign. That's one reason, the other is that no one submitted a photograph. CORA C & E now has the capability to make our own engravings so we can use more pictures if you and you will send them in or give them to your favorite club editor along with a story of some kind to go along with it. At the present we can use only black & white photographs so if you have a Kodacolor negative that would make a good cover or on an inside story have your photo-finisher make you a 5x7" black & white. It will work fine. While we are on the subject of contributions: If you are going to submit material, stories, articles, drawings, schematics it would sure help if everything to be reproduced was BLACK or RED and it will photograph fine. Weak typing or pencil will be just that, weak. If you can't come up with a way to meet that submit it anyway and it will be re-done by one of the volunteer staff. Page sizes before reduction are 7 x 11½ inches.

* * * * *

FOR SALE - - A LIKE NEW TR-90 - - Now you have heard of a TR-22, and a lot of other transceivers but haven't heard of a TR-90, you say. Well it's not really a transceiver but more like transportation since I am talking about a Honda Trail-90 motorcycle designed especially for getting out in the woods or country and "tooling" around or for running around town. If you like gears it has 'em - eight speeds forward and one reverse (you do that one with your feet pushing backward) It is just like new and I have enjoyed it but for reasons I wouldn't (or couldn't) put in a family paper I need to sell it. Also have a rack to haul it to the boonies. The price is right. Call or write me.

* * * * *

TECHNICAL REVIEW - - I have recently become interested in "CANS" and thought you might be interested in the results of an experiment that I have been carrying out. One of them was a 10 mfd-20 mfd-40 mfd-200 mfd filter capacitor. It cost \$4.95 and worked when installed in an ailing receiver. The others were 16 flavors of Diet Shasta which I bought on sale. 4 flavors I liked. 12 others just won't hack it.

OKLAHOMA

HAM HOLIDAY

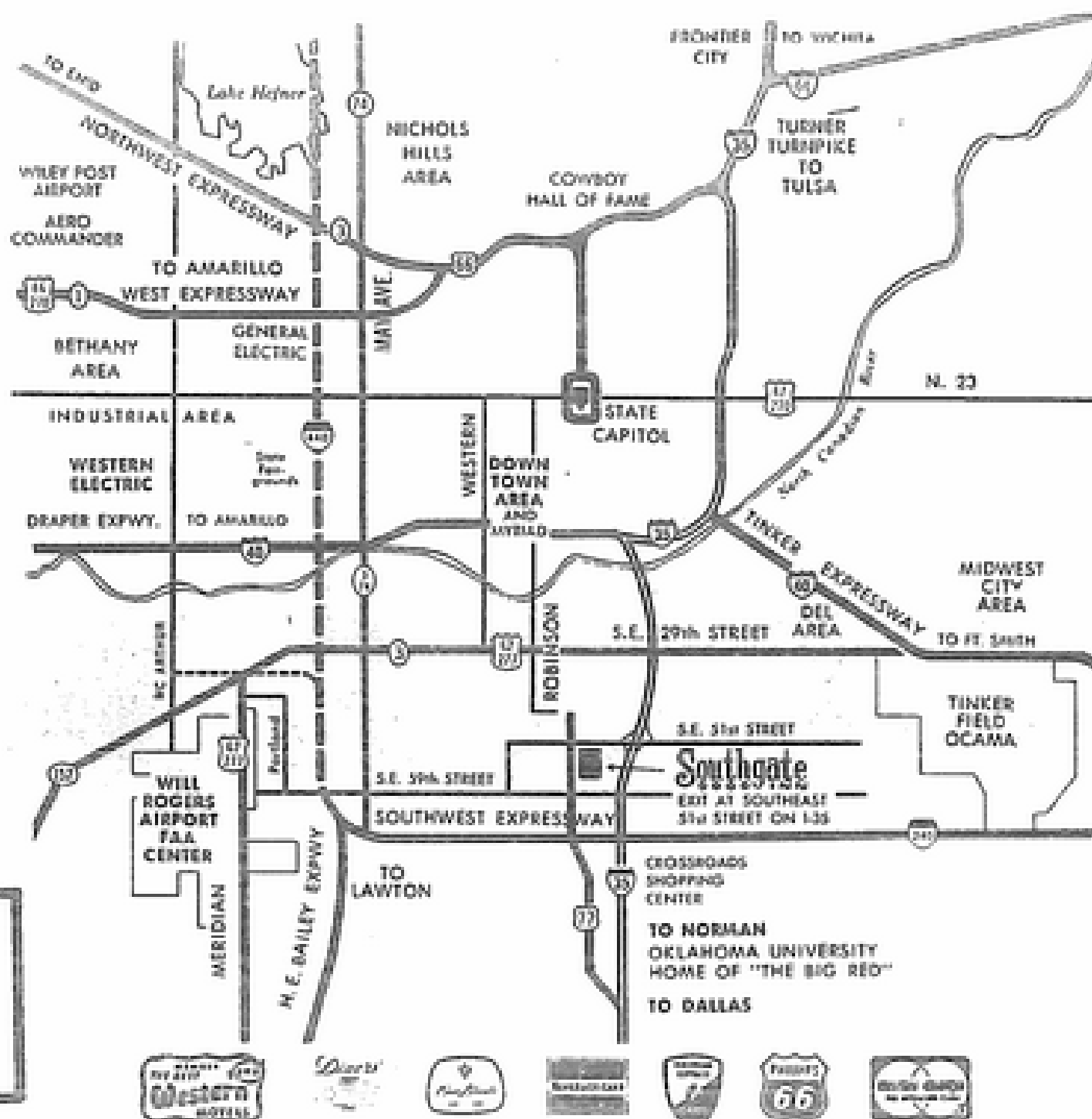
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▶ DISPLAYS

▷ CONTESTS

◇ TECHNICAL PROGRAMS

▶ ARRL HOUR

HOLIDAY NOTES: - -

As in the past there will be awards galore (CORA, Inc. is strictly NON-PROFIT, the clubs don't make a dime and neither does anyone else.) - - In addition to their being eligible for the general awards there will be more awards -- just for the gals - - ladies awards - -not radio gear.




As always awards will be made after each program during HAM HOLIDAY with the really big ones going Sunday after lunch. The PRE-REGISTRATION AWARD IS A ONE-TICKET DRAWING. You or your ticket do not have to be present. We will get it to you, someday. All the other awards will require your identification ticket to be presented - so - if something prevents your being present leave the ticket with a friend.

There are a couple of changes from previous years - - If you want Flea Market space you will have to reserve it on a pre-registration slip - - there is one in this issue.

You may eat ala carte in the restaurant at any time, in case you are dieting or can't make the buffet line.

DO IT TODAY - PRE-REGISTER FOR HAM HOLIDAY

SECOND CLASS POSTAGE PAID
AT OKLAHOMA CITY OK

J U L Y H A M H A P P E N I N G S						
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
SEE PAGE 2 AND/OR CLUB SECTIONS FOR DETAILS.				1	2	3
	5	MORI MEETS	7	8	ACARC MEETS	
11	12	13	14	15	VHF MEETS	17
18	EDIT C+E	20	21	MAIL E+E	CORA 	24
25	26	27	28	29	30	31
AUGUST 1	2	3	4	5	6	H A M HOLIDAY

amateur radio
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Now you can find all of those elusive charts, tables, and data in one place! This 128-page book covers everything from standard resistance values to design values of toroidal cores. Maximum emphasis is placed on tables and diagrams. The 10 chapters are:

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| 1. Math Aids and Tables | 6. Filter Design |
| 2. Time and Frequency | 7. Antennas and Feed Systems |
| 3. Radio Frequency Circuit Data | 8. Catalog of Solid State Circuits |
| 4. L, C, and R Networks | 9. Construction and Testing Data |
| 5. Transformers | 10. Data Potpourri |

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