


CENTRAL OKLAHOMA RADIO AMATEURS
COLLECTOR AND EMITTER



50¢

SECOND CLASS MAIL
Postmaster, see page 3

Volume 17
SEPTEMBER 1991
Number 199

HAM HOLIDAY 1991 de AA5GI

Well folks, it's all said and done with Ham Holiday 1991. It is history and we all survived.

This years convention was a huge success. Attendance was 1439, up from 1012 in 1990, an increase of 427.

This year nine (9) dealers, including three new ones, set up in the new dealer area. We also had two manufacturers attend, ICOM and ALINCO. There was also five (5) "used" dealers, two of which were new. During the weekend I had a chance to visit with each of the dealers and they complimented us on the location and the attendance.

The flea market was bigger than ever with a total of 150 plus tables rented with plenty of activity there on Sunday.

I would like to take this opportunity to thank everyone that helped or headed a committee. Baron N5PQK with publicity, Linda N5OJP with non-technical programs and the banquet, Jerry N5AUH and Tom K5LDI with pre-registration, Don KB5ABS with flea market, Tom K5LDI and ACARC with bingo and anyone else that I have forgotten,

THANK YOU!!!

I want to again thank the 1400+ people that attended because all that we do - is for you and your enjoyment.

Last but not least, let's get it going and work for bigger and better HAM HOLIDAY for 1992.

HISTORY OF AN AMATEUR CALL

Wilke "Bill" Cruse W7AY had W5KE for his call, while he was at the Aeronautical Center, from 1947 to 1951.

Bill has been in touch with Ellard Foster, the present W5KE, by mail and on the air.

A friend of Bills researched old call books and supplied the following about the call W5KE:

FIRST listed in June 30 1921 callbook. Wayne J Cargile, 209 2nd St., McAlester OK was licensed to use it for 30 watts 1922-1923.

SECOND C. O. Parsons, 415 Birch St, Deming NM used it 1927-1928.

THIRD D. M. Dorhes, 1425 Josephine St, New Orleans LA had it in 1931 and at Gretna LA in 1928.

Bill was listed in the 1948 callbook with QTH, 2716 NW 47, OKC.

Ellard got the call in 1968 after passing his Extra Class exam and paying the FCC twenty dollars.

CIMARRON MAKES THE NEWS Family Catches Father's Infectious Ham Radio Bug

Fairview Trio Gets Amateur Licenses

By Michael McNutt
Enid Bureau

FAIRVIEW — Curt Briggs has a family of hams.

Curt, his wife, Melody, and their 9-year-old daughter, Morgan, each have amateur radio licenses.

Waiting in the wings are 6-year-old Kelcie, who can decipher Morse code better than reading a book, and Audrey, 5.

Both watch and listen as their older sister or one of their parents operates a ham radio rig in a utility room and talks with people as close as down the road or as far away as another continent.

"Kelcie's already got about half of her (Morse) code down," Melody said.

Curt says he had no idea the ham radio bug would infect each member of his family when he picked up on the hobby slightly more than a year ago.

With the help of Leo Peil, a friend and ham radio instructor from nearby Canton, Curt was able to whiz through five separate license tests, obtaining the highest rating, an expert technical license, in just over a year's time.

Melody has a technician's license, or the second level, while Morgan last month succeeded in getting the novice, or entry level ham radio license, by deciphering at least 25 Morse code characters in a row.

But Morgan hopes to be on the same level as her mom shortly. She plans to take a test later this month for the technician's license.

Morgan, who aspires to be an archaeologist when she grows up, says she became interested in ham radio through her parents.

She wants to keep learning and eventually try for an ex-



— Staff Photo by Michael McNutt

Morgan Briggs, 9, and her father, Curt, speak to another ham radio operator from their Fairview home.

pert technical license so that she can talk on more frequencies.

With each higher license, a ham radio operator legally can transmit on more bands and frequencies as additional radio theory is learned and the rate of taking down Morse code is increased.

Morgan, who has talked with amateur radio operators in Brazil, Chicago and Arizona, says she hopes one day to make contact with a ham radio operator in Greenland.

"I'd like to talk to somebody in Greenland if there is anybody there," she said. "I'd like to know a little bit about it. Everybody says it's ice cold."

While young for her age to have a ham license, Morgan is not the youngest in the country to earn a novice license. Youngsters as young as 7 have earned ham radio licenses and there are more than a dozen licensed 8-year-olds in the Unit-

ed States.

She is among the youngest in the state and the only fourth-grader in Fairview to be a licensed amateur radio operator.

And she still gets some startled responses when she makes contact on the radio band and tells them her age.

"They say, 'Really, I didn't know that. You sound like a 10- or 11-year-old,'" Morgan said.

For Christmas, she is hoping to get what are called QSO cards — about the size of post cards — that ham radio operators send to each other acknowledging and dating their radio contacts.

Curt, meanwhile, is considering building a radio "shack" for his family of hams so that they have more room to operate their radio equipment.

So far, they have been able to share but the time is fast approaching when Curt will have to make out his wish list for additional ham radio units.

The Daily Oklahoman

Central Oklahoma Radio Amateurs Inc.

MINUTES

All Clubs Co-operating To Advance Amateur Radio

23 JUL 91

The Meeting was called to Order at 7:35 pm with President Frank AA5GI in the Chair and the following Directors and Guests present representing 8 of the 16 member clubs:

AOARC - Tom Mangham K5LDI • MORI - Ellard W. Foster W5KE
Ted Anderson NY5W • OCAPA - Lee Allen N5KXI
76ERS - Jerry Sproul N5AUH Baron Bieber N5PQK
Jim Buswell N5BEQ Bob Paddock N5PVM
Wheatstraw-Joe Lynch N6CL • SCARS - Donald Schader KB5ABS
EARC - Phil Wolfenbarger N5HIP • EARS - Steve Hamlin KG5IP
C&E ED - Joe Harding WA5ZNF Jim Richardson N5OHL
Linda Richardson N5OJP

Visiting were Susan Frank N4DAX, Chuck Wilhite K5NK, Hank Blackstock WA5JRH, Bob Ashby W5HXL and Taneya Hamlin.

The Minutes of the June 91 Meeting and the Report of the Treasury were accepted as distributed.

REPORTS: VEC - Phil N5HIP will prepare for 1,200 at ONE SESSION, Chuck K5NK relayed other VE's preferences for later schedule time;
C&E - Editor Joe WA5ZNF continues trials with the Postal Service.

HAM HOLIDAY #18

PUBLICITY - Baron N5PQK circulated a print of the tee-shirt design for this year and consensus was reached on three colors;

FACILITIES, DEALERS/AWARDS, PROGRAMS - Frank AA5GI described the needed addition of the building next door with a total cost below Lincoln Plaza's; the Grand Award will be an ICOM IC-735, the Pre-Registration Award will be an ICOM IC-726 but the Scholarship Raffle item will be an ICOM Dual-Band Handheld; there are 19 confirmed New and Used Dealers scheduled; 26
35

PRE-REGISTRATION - Jerry N5AUH reports 675 to date, a record;

REGISTRATION - Steve KG5IP will have operations at Days Inn Friday evening from 6 to 8, at Fair Park 8 to 5 Saturday and 8 am Sunday as needed;

TALK-IN - the volunteers will have Fairgrounds maps available;

NON-TECHNICAL PROGRAMS - Linda N5OJP mentioned Stress Managing; Fire Safety and Square Dance at the Barbecue Dinner and Zoomobile for Kids; Lee N5KXI announced the OKDXA Luncheon Noon Saturday at Heritage House; Joe N6CL reported the QCWA Breakfast set for 8 am Sunday at Days Inn, 2801 NW 39, choice of ala carte or buffet;

BINGO - three report ready;

BANQUET - Barbecue Buffet, Lions' Club, 4123 NW 10, \$8.50;

FLEA MARKET - Donald KB5ABS reports ready and waiting;

SECURITY - Phil N5HIP reports ready;

SCHOLARSHIP - needs a continuing CHAIRPERSON.

The next Meeting is scheduled for 27 August 1991.

Annual - HAM HOLIDAY - Oklahoma City

This Meeting was adjourned at 8:58 pm. Secretary, N5BEQ, Jim.

<p>1. AERONAUTICAL CENTER ARC Meets: First Thursday, Flight Standards Building, FAA, South MacArthur 7:30 pm. PR Doug Teachman, W0DXA 392-5458 S/T Ted Anderson, NY5W 685-4016 AsVP Harold Todd, WA5VAQ 685-3685 Asvp Charlie Greene, WA5JGU 943-5631 Editor: Jack WB5SUN</p>	<p>11. EDMOND AR SOCIETY Meets: Odd Months, 3rd Sunday, 2:00 pm, Edmond EOC; Dinner, Even Months, 3rd Friday PR Tommie Guinn, KA5WAV 341-3886 VP Mike Delaney, KB5HXT 341-7847 SE Jim Richardson, N5OHL 524-0456 TR Aldon Sage, KB5LIC 341-8978 Editor: Mike Delaney, KB5HXT 341-7847</p>
<p>2. CENTRAL OKLAHOMA VHF Meets: 11:00 am, 3rd Sat., Favorite's Cafe, 3701 S. Western, OKC PR Jack Muse, WB5ZKZ 691-1152 VP Fred Boardman, W5NL 427-2505 SE Joe Buswell, K5JB 732-0676 TR Ellard Foster, W5KE 789-6702 Editor: Joe Buswell, K5JB 732-0676</p>	<p>13. KAY COUNTY ARC Meets: 7:00 pm, Third Thursday, Sep-May, Pioneer Vo-Tech, Ponca City, OK PR John Spoon, WB5YSX VP Marsh Pronneke, WA5UB S/T Gary Robison, WB5WMD 765-9727 Editor: Dave Land, KD5FX 762-8616</p>
<p>3. MID-OKLAHOMA REPEATOR, INC. Meets: First Tuesday, 6:30 pm social, 7:30 meeting, Skyline Cafe, 1631 S.E. 15th PR Steve Cornman, KB5CDF VP Jim Buswell, N5BEQ SE Robert Moose, N5QKI 843-6438 TR Toy Graham, N5QOK 632-0225 Editor: Stewart Holly, KD5DL 737-3700</p>	<p>14. CIMMARON ARS Meets: 7:30 pm, second Thurs., WX5Y Playhouse 827 S. 13, Fairview PR Curt Briggs, N5PHO (405) 227-4641 VP Terry McCall, N5MLT (405) 227-3672 SE Dennis Painton, WK5V (405) 764-3599 TR Nadine Painton, N5FMH (405) 764-3599 Editor: Jack Day, NN5Z (405) 227-3462</p>
<p>4. OK CITY AUTOPATCH Meets: 7:30 pm, third Tuesday, Salvation Army, N.W. 50th & Penn. PR Jim Bartlett, KA5PSF 359-1299 VP Baron Bieber, N5PQK 557-1664 SE Ken Goddard, WA5DTL 946-4973 TR Mac Macdonald, K2GKK 672-4947 Editor: Baron Bieber, N5PQK 557-1664</p>	<p>15. SOUTH CANADIAN ARS Meets: 9:30 am, Second Saturday, Red Cross Bldg., North OU Campus, Norman PR Dorinda Skaggs, N5IUA 799-5363 VP Steve Wolfe, N18W 329-0203 TR Charles McCown, WB5UUX SE Ken Brown, N5KUK Editor: Ken Brown, N5KUK</p>
<p>5. OKLA. UNIVERSITY ARC Meets: 7:30 pm, Second Tuesday (Sep-May) 119 Wilson Center, 1334 S. Jenkins PR Frank Donaldson, N5IQJ 329-4172 VP John Wustenberg, KE5N 325-2382 S/T Jim Greenshields, WD5HPU 321-9981 Editor:</p>	<p>16. EDMOND AR CLUB Meets: 7:00 pm, Second Monday, Various locations. PR Mark Northcutt, WD5DYI 755-4672 VP Wendell Cochran, WB5ISO 943-4308 S/T Kay Northcutt, WD5DYJ 755-4672 Trustee: Dennis Orcut, WB5ISN 340-0034</p>
<p>6. ALTUS ASSOCIATION Meets: 7:30 pm, Second Thursday, North Main Fire Station, (CD) Altus PR Loren Simms, WA5CBF 477-0921 VP None S/T Jim Molledahl, KB5LS 482-5308 Editor: Jim Molledahl, KB5LS 482-5308</p>	<p>18. GREAT PLAINS ARC Meets: 2:15 pm, First Sunday, Home of N5LRR, 2914 Osage Drive, Woodward PR Bob Bayles, WB0GAX, Woodward 254-3561 VP Andy Taylor, N5LRR, Woodward 256-4017 SE Rod Ford, WB5OVT, Gage 923-7683 TR Freida Patterson, N5EOX, Woodward 256-2111 Editor: Phillip Perry, N5QCN 938-2453</p>
<p>7. BICENTENNIAL (76er) ARC Meets: 7:30 pm Second Tues., 1801 N. Lincoln Blvd., Parking in Rear PR Hank Stokes, KB5XM 376-1067 VP Chad Drewery, N5QIQ TR Bill Skipper, KB5BS 392-4612 SE Jack Conley, AA5VU Editor: Not Filled</p>	<p>20. CENTRAL OK COMPUTER ORG. Meets: Second Saturday, 12 Noon, Oscar Rose College, Midwest City PR Don Fox 733-8480 VP Patrick Roberts, KA5ZYM 681-5220 S/T Martin Schiel Editor:</p>
<p>9. WHEATSTRAW ARC Meets: 2:30 pm Second Sunday, Location Varies, see Club Section for Details PR Edgar Engbrecht, WO5B, Okarche 263-4411 VP Neal Kappus, N5KCO, El Reno 262-1551 S/T Joe Garland, WA5FLT, Calumet 893-2660 Editor: Ralph Wilder, WZ5PFK, Watonga 623-5421</p>	<p>CENTRAL OKLA RADIO AMATEURS Meets: 7:30 pm, Fourth Tuesday, Salvation Army, Penn & NW Highway, OKC, (Back Door) PR Frank Tassone, AA5GI 341-1124 VP Dorinda Skaggs, N5IUA 799-5363 SE Jim Buswell, N5BEQ TR Tom Mangham, K5LDI 677-5291 Editor:</p>
<p>10. Oklahoma DX Association Meets: Quarterly - Hamfests, DX Net Saturdays - 1600 UTC-7.195 MHZ, Box 88, Wellston, 74881 PR George W. Adkins, AD1S VP Darrell Reed, KF5DA SE Paul Harrop, WB5NDN TR Paul Wardell, N5PYD Editor: George W. Adkins, AD1S 356-4101</p>	<p>Vol.17 SEPTEMBER 1991 No. 199</p>

PLEASE help us keep your information up to date. What time, where, when, who are your officers, editors, and their phone #. Check YOUR entry, it can be changed.

If there appears to be a mistake - check with your club official. We can't do anything about it. Below is a sample label.

4	90/01	2
WILSON, MIKE WA5RTY		
1234 W 49		
McCLOUD OK 74851		

The "4" means Autopatch Club, 90/01 means he is overdue. The "2" is for postal rates.

Dear Subscriber:

If your address label has a SAD FACE it means that you are due to renew your subscription or your club dues and you will continue to get the C&E for three months then, sorry but post office rules say that we must cancel you until you pay up.

Likewise

if

you

see

a

RED X here

this will be your last C&E until you renew.

Dear Secretary/Treasurer:

When you want a change of any sort to your membership just remember...fill out a slip (COMPLETELY). Watch for the DATE you received their money and the date subscription expires. Have your slips, or list of deletions, to me by the 22 of each month. If there is anything about C&E subscriptions that you need to know, get in contact with:

Joe Harding, 9211 N. Council #216, OKC, OK 73132, Telephone 720-1019

POSTMASTER:

Send form 3579 to:

CORA,

9211 N. Council

Apt. 216,

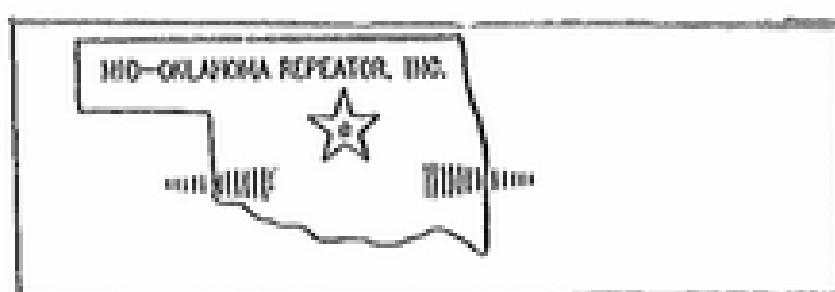
OKC, OK 73132

CORA Collector & Emitter (USPS 116-150) is published monthly by CORA, INC., 9211 N. Council, Apt. 216, OKC, OK 73132.

Second Class postage paid at Okla. City OK. Sub: Cora Member \$4.20, Paid subscription: \$7.00 per year.

Postmaster: Send form 3579 to: CORA, 9211 N. Council, Apt. 216, OKC, OK 73132.

Editor: Joe Harding WA5ZNF 720-1019
Circulation: Bob Graham WB5NSV 677-8685



BOX 88, MOSCOW:

What will happen to the most famous QSL address in hamdom? The events in the Soviet Union these past few weeks may not shut down the Soviet QSL bureau, but will undoubtedly change the way your QSL cards are routed.

During the failed coup attempt the Baltic states of Lithuania, Latvia and Estonia declared their independence, and other Soviet republics are seeking greater autonomy. The postal clerk for Box 88 must be pulling his hair out!

So, where do you send your QSL cards? Glasnost did open up the system, a little, when it authorized direct mailing to Soviet hams, so if you know the address you might try that route. You could also query the DX ham for a good address, or you could use the ARRL outgoing QSL bureau, and let them try to figure it out.

MORE NEWS YOU CAN USE:

It came and went without much of a whimper, but we can't use the lower two megs of the 220-MHz band anymore. As of August 27 the band from 220 to 222-MHz reverted back to the FCC to be divvied up to commercial interests. So far, reports the FCC, amateurs are complying with the order to vacate.

THANKS, CORA:

...for another fine Ham Holiday. This year the event was held at the state fair grounds, so it was easier for out-of-towners to find, and it had plenty of free parking. About the only complaint was about the rotten acoustics in the seminar halls. But, if you've ever been to the Dayton Hamvention, you know that they have the same problem there.

I went looking for a copy of Maxwell's new antenna book, "Reflections," and an old copy of Hearle's "The Easy Way," and struck out on both. What I did find were some pretty interesting issues of old ham rags. A lot of what they did in "the old days" makes good reading, and the circuits are always applicable. Maybe we

can cover a few of the bygone topics in future columns.

TECHNICAL STUFF:

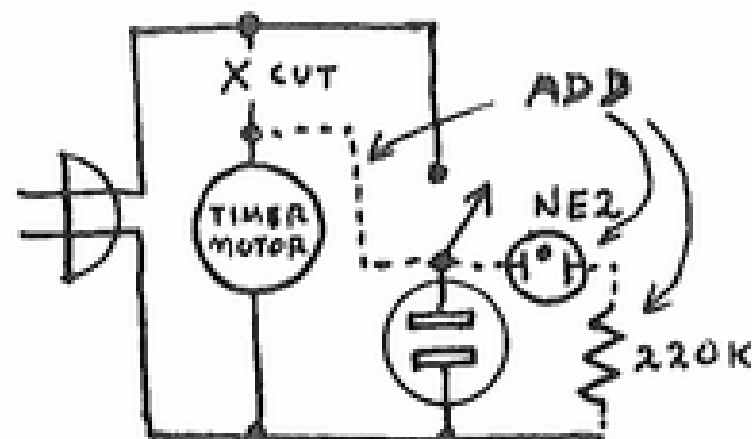
If you were lucky enough to get a new handy talky at Ham Holiday, you'll be happy to know that your battery should last you until about this time next year--if you take care of it. On the other hand, if your battery is more than a year or so old, it may be about time to invest in a new one.

NiCd batteries typically have a useful life of about 300 or so charges--then they just wear out. This assumes, of course, that they are not overcharged or otherwise abused. Overcharging, for example, heats the electrolyte, which dries it out. You may still see the correct voltage, but the battery's capacity is severely diminished.

Battery manufacturers typically recommend 14 to 16 hours for the charge time.

Unless you are a creature of habit, it's hard to follow these recommendations without help. One hint is to try one of those 24-hour "security" timers; setting the "on" time to the recommended duration. You're safe--as long as you remember to disconnect the battery before the timer cycles on again.

One recommendation is to find a timer you can open and modify. Basically, you'll want to use the timer to control its own motor. In the circuit below the timer stops completely after the set time, and must be manually reset for the next recharging cycle. The neon bulb is optional, but it does show if the timer is still charging:



NiCds are funny beasts--they have idiosyncrasies that we must understand in order to use them to their full advantage. Overcharging is just one of them. Another idiosyncrasy is their fondness for memory.

The memory effect results

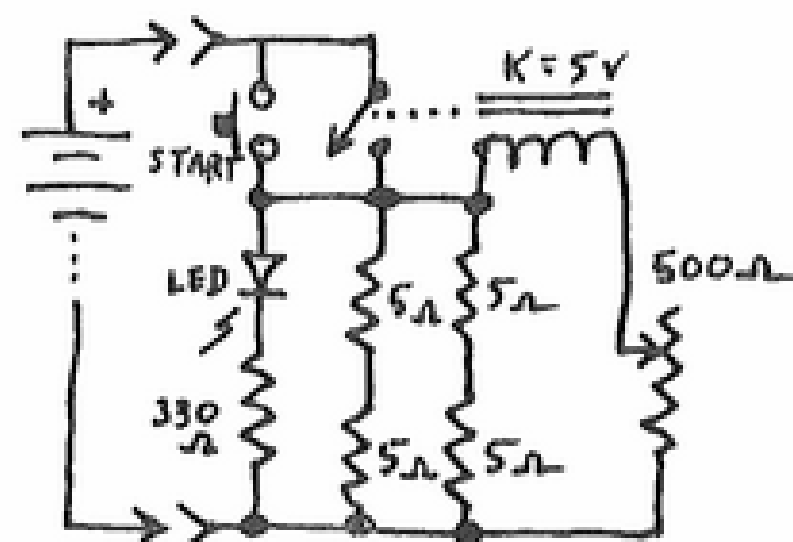
from discharging the NiCd at about the same rate every time it's used. After awhile, the NiCd begins to think that this is its rated capacity, and refuses to give any more of itself.

There is a controversy about how to defeat a NiCd's memory effect. One camp says to completely discharge the battery between recharges; another camp cautions against it.

The second camp cites that complete discharging may lead to cell reversal--in other words, the weaker cells in a battery will be "reverse charged" with the current remaining in the stronger cells. A reverse charged cell can lead to all sorts of problems, and may eventually short itself out.

Therefore, the second camp recommends that a battery be discharged to only about 0.9 to 1-volt per cell. This makes a lot of sense, since a NiCd is already near the end of its capacity at that voltage.

The June issue of "CQ" shows how WSPFG discharges his batteries. He uses a Radio Shack 275-243 relay and a RS 271-226 pot to switch the battery through a 10-ohm 20-watt load, adjusting the pot so that the relay drops out when the battery voltage reaches about 1-volt per cell. Here's the schematic:



Another idiosyncrasy of NiCds is their ability to self discharge. A lot of us have already discovered this when we fully charge our spare batteries, only to find they don't work too well when we get around to using them.

At normal temperatures, a NiCd cell will discharge at a rate of about 1% per day, even if it just sits on the shelf. That equates to a loss of 27% of its capacity per month!

How can we deal with this? Constant charging is one way,

Continued Next Page

CIMARRON

John Anderson Holmes has said: "He who has eight things but lacks one is poor if he dwells on the one, while he who has one thing but lacks eight is rich unless he dwells on the eight!"

I am therefore, going to dwell on the eight that were at CARA's August 8th meeting, rather than the ones who were absent. Absenteeism is rampant these dog days of summer...people on the golf course, people in the hammock at home, people on vacation! It's getting so that only a watermelon feed or home-made ice cream has the power to get a crowd together.

President Curt Briggs chaired a meeting at which only John Medley K5NBNQ, Jack Day NN5Z, Terry McColl N5MLT, Ruth Simpson WX5Y, Reeta Martin KA5SLY, Betty Day KA5RTW, and Ray Barnes AB5Z answered the roll call!

Many things were discussed...Repeaters, Novice schools, Field Day results, Desert Storm and the price of groceries. No action was taken on any topic, nevertheless it was good just to get together and chew the fat. It was especially good to have Reeta back after a long absence!

I received a card from Vern KA5SZD reporting that he and Fran are safely settled among the Louisiana Coonies. Cajuns, that is. He said, "It rains a lot here"! A real understatement, if ever I heard one.

Ray reported that his annual motorcycle jaunt to the great Northwest covered almost 5,000 miles. Each time he and Sue log those record runs he always says, "Never again"! And every summer he hears...and answers, the call of the wild goose! Ray has calluses on his calluses!

Well, hopefully, September will bring us all back together again and CARA will return to the land of the living. Don't forget...the WX5Y Playhouse, September 12th.

BE THERE OR BE SQUARE! 73 NN5Z

AMATEUR RADIO & COMPUTER SWAP SHOP WILL BE HELD SEPTEMBER 14 STARTING AT 8:00 AM AND UNTIL NOON. MIDWEST CITY COMMUNITY CENTER. JUST NORTH OF THE INTERSECTION OF RENO & MIDWEST BLVD. AN EVENT OF CHOCTAW ARC.

Why do ducks dive?

They want to liquidate their bills.

Pilot: Do you wanna fly?

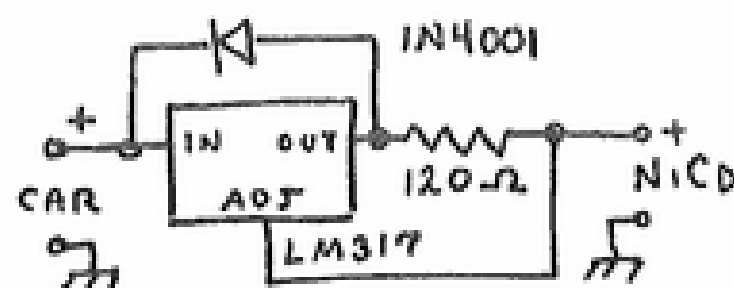
Passenger: Sure!

Pilot: Well, wait a minute and I'll catch one for you.



but only if we do it right. Remember, overcharging is one quick way to ruin a battery.

Some manufacturers recommend trickle charging rates of about 1 to 3 percent of the battery's capacity. For a 500 mA battery, this means 5 to 15 mA trickle charging is safe. You can build such a charger using an LM317 voltage regulator. The circuit below provides a limited 10mA charge with a voltage drop of only 1.25 volts:



It's always wise to have a fully charged spare battery in the glove box or trunk of your car, and the circuit above can keep it that way. You can also charge a NiCd using your car's electrical system. The circuit above, with a 24-ohm resistor, will provide 50mA to charge a battery in 14 to 16 hours. Since the current is greater, use a heatsink on the regulator.

But, alas, the battery will eventually die, usually one cell at a time (the weak link theory). You can locate and replace the dead cells, but it's probably not worth it--the other cells will die soon enough. Start with a new battery.

One final word. Operating a rig while its battery is recharging isn't a great idea. The load on the charger might be too great, and it could burn itself out. The battery might not get a full charge. And a 60-Hz hum will modulate your signal.

Consider this; over the useful life of your handy talky, the batteries may be your costliest investment. Don't take them for granted!

- KD5DL

JACK: I thought you weren't going to smoke anymore.

JAKE: I'm not.

JACK: But you're smoking as much as ever!

JAKE: Well, that's not any more, is it?

USE SIMPLEX

All of us know how much fun it is talking on your local club repeater. Yes, they do greatly extend the range of HT's, mobile rigs, and base units. However, let's not forget about the choice of using FM Simplex. Two ragchewers can easily tie up a repeater when others are waiting to contact another station or use the "patch". Many hams are polite and will not "break-in". This would be the ideal time to QSY to a Simplex freq. Now most of you are probably going to say that "we can't do it because we are too far apart". You will be surprised at how far you can talk on simplex. Using my HT, I have talked many times 7 or 8 miles away from another ham. With a mobile car rig you can easily get out 10 to 12 miles and more. Listed below are some frequencies you can try. Naturally, you need to stay away from repeater input or output freq. or you will get your toes stepped on.

144.35-144.50

145.50-145.80

146.52 National Simplex Freq.

146.53-146.58

223.42-223.60

223.50 National Simplex Freq.

446.00 National Simplex Freq.

73, JIM N5OHL, listening 52

OK DX Continued

radio DXing. We meet quarterly at major hamfests around the state of Oklahoma. Dues are \$10 per year. You may write for an application by sending an SASE to OKDXA, Box 88, Wellston, OK 74881. You receive the Collector & Emitter newspaper each month containing the OKDXA article. Someday you will get a membership card and certificate (we are waiting for N5PQK to design it for us.) You get to brag to all your friends that you are an OKDXA member and with that how can you go wrong? If you are new in DX, we would like to invite you to join us. If you would like more information, stop by the Saturday morning net and visit with any of the officers or members. We will make you feel welcome unless you are a grump. Until the next pileup, see you on PacketCluster or on 40 meters. Good DX de AD1S.



OKlahoma DX Association

ZA and XZ DXpeditions...Where and When?

The big news in DX over the past few months has been the on-again, off-again rumor of planned expeditions to ZA, Albania and XZ, Mynamar (formerly Burma). To date, rumor is all we have to show to the worthy DXer. However, YA0RR was recently in the United States and in addition to passing his Extra Class license examination in one sitting, Romeo showed everyone that he in fact had written permission to operate from XZ and his paperwork had been pre-approved by the DXCC desk of the American Radio Relay League! With all this proof in hand, it seems imminent that Romeo will put on an expedition from XZ in the very near future. Look for this one as a sure thing before the end of 1991.

The ZA effort is another story. At least two separate and competing (?) groups of operators from Hungary were allegedly in Albania as recently as 22 August 1991. Apparently one or both groups had licenses, but couldn't obtain "written permission to operate". At first blush, this sounds a little bizarre, but even here in the good ole U.S.A. we have separate operator and station licenses; the only difference is that we obtain BOTH from the same source. Such is not the case in many developing countries where the bureaucratic power is shared, intermingled and often jealously guarded. A prospective amateur operator may have to kiss up to several governmental officials before locating the right person to rubber-stamp all of the various "mandatory" forms. Let's face it, government bureaucracy feeds on itself, whether it be in the United States or any other nation. What makes licensing unique in countries like Albania and/or Burma is the fact that the requested license may be the FIRST license of this type EVER issued by that government official; of course he/she is going to be extremely cautious before affixing their signature

on a document that could later result in the loss of their prestigious government job! In the meantime, we wait patiently and read the DX bulletins carefully.

DX bulletins, anyone?

Speaking of DX bulletins, one of the best I have seen is to be found on all of the PacketCluster nodes in Oklahoma and Arkansas. The Ohio/Penn DX Group put out a fine DX bulletin and make it available on Packet via the BARF (?) net. It is faithfully posted by K2GKK and is then forwarded to all PacketCluster nodes. It is very complete and much more current than the WIAW DX Bulletin which also is posted on the Cluster nodes. If you are not yet on PacketCluster, you are really missing out! We now have four nodes in Oklahoma and we are linked to at least 8 other nodes in Arkansas and Texas. As many as 100 users MAY be checked in to the cluster at any one time. Most of the nodes now use the Version 5.2 software which really expands user involvement in programming the cluster to fit your needs. The V5.0 PacketCluster Users Manual is now available at the Oklahoma Comm Center. Pick one up the next time you stop by.

Oklahoma DX Association News

KF5DA presented sample T-shirts at the DX Association meeting at Ham Holiday 1991. The first order of the shirts was filled almost immediately and if you ordered a custom shirt with your name and callsign, they are now available at the Oklahoma Comm Center. The shirts look great and I am sure that Darrell will be placing a second order in the near future. Don't forget that the next regular meeting of the Oklahoma DX Association will be held in conjunction with Texoma Hamarama in October. KF5DA and N5PYD will be contacting the Texoma folks to coordinate a meeting place...(or else we'll meet under a tree someplace).

**WEEKLY DX net - 7.230 Mhz
Saturday, 1600 UTC !!!**

Wow, the band conditions have really been stinko. You can tell when folks in Oklahoma can't hear each other on 40 meters in the middle of the day... at least that's the

excuse I have heard for the past few weeks regarding the weekly OKDXA net. Ladies and gentlemen, let's set our clocks NOW...at 1600 UTC, lets all pretend that XZ0RR is on 40 meters. Tune your transceiver to 7.230 Mhz (that's 11:00 a.m. local time) and listen for net control KF5DA! Participation was excellent this Spring but dropped off in the Summer. Get your DX stories ready and join us for this FUN informal net on Saturday mornings. See you there!

SPEAKING of OCTOBER...

I was speaking of October, wasn't I? There are a lot of DXpeditions coming up soon by members of the Oklahoma DX Association. The following are expeditions that I know about. If I have missed somebody, please call and let me know so I can mention your trip in coming issues of the Collector & Emitter.

1.) Fully one-third of all licensed amateurs will flee to Old Mexico around the end of October for a contest weekend...callsign has been assigned but I can't find it in my notes; sorry, Claude. Anyway, you'll recognize them by their accents...in the CQWW phone contest 26-27 October.

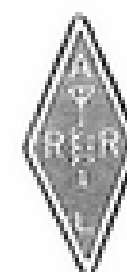
2.) WE5I and AD1S are scheduled to travel to Wake Island (KH4) on or about 22 October 1991. They will operate mucho CW, RTTY and AMTOR from Wake until 26-27 October 1991 when they will join the fray on CQWW weekend. We will make a point to operate the LOW bands a lot, so look for KH4/WE5I and KH4/AD1S. QSL to OKDXA.

3.) WV5S, NJ1V, N5RJM, WORRY, N5CG, WE5I and AD1S will operate from the Republic of Palau in February 1992 and will be involved in a multi-multi contest operation from KC6 at least one weekend. Possible callsign will be KC6WS and others that hopefully will be received shortly from the good folks in Koror. QSL for the contest station will be via OKDXA.

ABOUT OKlahoma DX Association

We are a statewide organization designed to enhance interest and activity related to amateur

Continued Next Page



FCC WARC Recommendations Include Improved 40-Meter Band for Amateurs

At an open meeting June 13, the FCC adopted its recommendations for U.S. proposals to the 1992 World Administrative Radio Conference. The recommendations, contained in a Report in General Docket 89-554, include the realignment of the amateur and broadcasting bands at 7 MHz to eliminate the overlap between the two services, while retaining 300 kHz of bandwidth for amateurs by shifting the amateur allocation down 100 kHz and broadcasters up 100 kHz.

The 40-meter recommendation is similar to what the U.S. proposed at the 1979 WARC, but had to settle for the status quo when there was insufficient support for the proposal in other countries. In fact, at WARC-79 the Amateur Service held onto its Region 2 allocation of 7100 to 7300 kHz by only a slender thread. The new recommendation still faces an uphill battle abroad; the HF spectrum below 10 MHz houses many competing interests, and reductions in existing allocations to the fixed service (which is likely to bear the brunt of any broadcasting expansion) will be resisted by many countries' delegations. Even if adopted, a number of years would pass before implementation; the U.S. is proposing an effective date in the year 2007!

Changes in HF Broadcasting Proposed

The FCC recommendations for the HF bands below 30 MHz are essentially unchanged from the Second Notice of Inquiry (November 1990 *QST*, p 42). They call for substantial expansion of HF broadcasting bands (though not as much as some broadcasters want) and the phasing out, in 15 years, of double-sideband AM in favor of reduced-carrier single-sideband emission in the HF broadcasting bands. The use of reduced-carrier SSB will require a new generation of shortwave receivers.

In explaining why it did not respond favorably to a proposal by one commenter for the expansion of HF broadcasting at the expense of the amateur 80 and 40 meter bands, the FCC said: "We agree with the ARRL regarding the importance of these bands and believe that the impact of the loss of these bands on the amateur community would be severe, greatly limiting their ability to provide reliable international emergency and disaster communications. We therefore reject this proposal."

The FCC Report contains good news regarding the 420-MHz amateur band. A proposal to reallocate the 420-421 MHz portion of the band for use by low-earth-orbit (LEO)

Senate Bill Introduced

On June 25 Sen. Albert Gore (D-TN) introduced U.S. Senate Bill S.1372, an essentially identical version of House Bill H.R. 73, the "Amateur Radio Spectrum Protection Act of 1991." Initial co-sponsors of the Senate bill were Sens. Joseph Lieberman (D-CT) and Carl Levin (D-MI). More information will appear in the next *The ARRL Letter* and in August *QST*.

mobile satellites has been abandoned in the face of opposition, including that of the League and AMSAT.

The only other amateur band directly affected by the recommended U.S. proposals is the 2300-2450 MHz band, which is being eyed by a number of services. A mobile satellite uplink at 2390 to 2430 MHz is proposed, but the secondary amateur allocation would remain (along with the footnote provisions that permit amateur satellites to use 2400-2450 MHz) on a secondary basis. Some spectrum between 2300 and 2390 MHz also is proposed for digital audio broadcasting (DAB), both satellite and terrestrial, but the exact frequencies have not yet been determined. There may also be a "domino effect" from aeronautical flight test telemetry that may be moved to 2430-2450 MHz from lower-frequency bands, should the latter be reallocated for DAB. Broadcasters are skeptical of the practicality of a DAB allocation at 2300 MHz, preferring frequencies near 1500 MHz that are now in use in this country for aeronautical flight test telemetry; aerospace interests are fighting hard to retain them.

The U.S. proposals for WARC-92 are now due in Geneva. Considerable coordination between the three domestic players — the FCC, the National Telecommunications and Information Administration (NTIA), and the Department of State — already has taken place. However, it is still possible that the final U.S. proposals for the conference will differ in some respects from the FCC recommendations.

The proposals of other countries are expected to begin surfacing shortly.

For background see "WARC 92 — What it Means to You" in June *QST*, page 17.



VHF Club
NEWS

W5LOW
*The Elmer Gockler Memorial
Station*

Minutes of August Meeting

...There aren't any, heh! This was the month of the annual watermelon feed, and it went off pretty well at Bethany Lyon park, with a couple of dozen members from the VHF and Aeronautical Center clubs munching away. Thanks to those who arranged for the place and watermelons!

One of the arrangers, Jim, K5VRL, is at home recovering from surgery. I understand he is doing pretty well. Steve, W5VCJ, is not doing so well. Fred, W5NL, called to tell me that he was in the Edmond Hospital, recovering from pneumonia and a stroke. We wish both of you guys get better quick! Joe, K5JB, Secretary

Hardware Month

Last month I report on the software homebrewing that keep me busy in my ham shack. This month, I specialized in hardware hacking activities.

I guess my first brush with the soldering iron started with repair of a lightning damaged PacComm Tiny-2 TNC that was running at K2GKK-5's station on 146.050. Mac, and Elmo, W5JCB, are supporting this critical station that provides access services for the local packet bulletin boards. When the station took a hit, Mac tore into things to start fixing them up. He did a nice job of isolating a couple of bad parts on the TNC, and then called for help, so he could proceed with repair on the radio. Since I had a spare I could rob parts from for testing it was a lot easier for me to work the TNC over than him. It didn't take long to get it perking, but it did take a lick. Parts costs were about \$70.00.

Since I was on the phone ordering parts from PacComm, I made an impulsive purchase. I bought a couple of gadgets called "Radio Multipliers", which audio bridges for TNCs.

At Ham Holiday, I was talking to Joe, WA5VMS, from Muskogee, about how the Rose/Texnet switch was set up at Okemah. He said that on the VHF side, both the Rose and the Texnet were sharing the same transmitter. This wasn't new to me, since I have often paralleled TNCs to a single transmitter,

but I asked how in the world the Rose switch could connect to the Texnet switch without using an external digipeater. He said he bridged the audio from the TNCs' transmit circuits to their receivers' circuits. A light bulb turned on! Of course, why hadn't I thought of that!

("Bridge" is a term often used in telephone and broadcast business as device where multiple circuits are brought together in such a way that everyone on a circuit can hear everyone else.)

I did some doodling to see what would make a good bridge circuit when I remembered that PacComm sold such a device. When I was on the phone, I got that buying impulse. The "store-bought" ones are kind of pricey (\$90.00) for a homebrewer, but what the hay? They have more switching features than I really need (like capability to add microphone and speaker to the bridge) and have switchable automatic audio level controls, but it is kind of nice to pull something out of the box and plug it in. Well, making cables took half a Saturday, but the circuit board sure made the hook-up neat. On my .01 transmitter, the TCP/IP, the Rose switch, and even my little mailbox, can all talk to each other without having to digi from an external station, like WD5HJL-1 (OKC).

You may be wondering why in the world I would want to do that anyway. You see, one of the TNCs is accessible over the telephone, and by dialing it up I can check my mail, and generally see what's going on around town.

My next hardware project was to upgrade my original TNC-2 from 16k RAM to 32k so I could put the latest version 1.1.7b TAPR operating program in it. This is one of the first TNC-2 kits sold; one with the four LEDs on the front, and it had already been modified from the original 8k RAM capacity. I call it Lazarus, because it took a lightning hit and had all its silicon scrambled. When I repaired it, I replaced every integrated circuit in it except the receiver demodulator (XR-2211) which was only wounded. The only thing wrong with it was that the pin that tells the world that it is locked onto a signal didn't function correctly. The only effect was that the data carrier detect LED didn't illuminate. Until the 1.1.7b firmware upgrade, that was no problem. Howie, the programmer, made a change to keep the receive decoding part of the circuit from working unless there was a data carrier detected. Oh

great! Now I had to find an XR-2211 somewhere.

I still have a TNC-1 lying in a heap where I left it after a lightning hit. I tried its XR-2211 and it still worked! Great! I was afraid for awhile that I might have to dust off one of the old RTTY demodulators and unsolder an XR-2211. Those devices must be tough as a boot!

I did spend an evening wrestling with a ground loop problem that affects my IC-22S on 146.415, and always has. I have some hideous AC fields around my place and sensitive amplifier circuits have always been a problem to keep isolated, but this one is a puzzler. I'll report more on it after I get it solved once and for all.

There were a couple of software happenings this month too, I guess. No sooner had I thought the TCP/IP computer program project was a wrap when Steve, N5OWK, came along with some good ideas. He had a notion that since his Kantronics KPC-4 had two ports, he ought to be able to use both of 'em. I agreed, and give him some pointers to code that deals with multiple ports. His first idea was to issue a command to the networking code to tell it which port on the KPC-4 he wanted to use. We called this new command kport, and added it to the disks I was preparing for TAPR distribution. Then about three days later he sent me a new driver for the KPC-4 that lets him use both ports simultaneously. He is still testing it, and its ramifications. We probably won't send it to the TAPR library until the next release, which shouldn't be for a couple of months, at least.

Last night, I succeeded in doing something in the Unix version of the TCP/IP networking code that I have wanted to do from the outset. Since Unix is a multi-tasking operating system I wanted to let net run in the background while the terminal was used for other things. When I put it in the background in such a way that I could recall it to the foreground, it wouldn't run. I finally figured out why, and fixed it!

J, KB0QJ, bought an extra terminal so he could run net on one port and do other things on another. I showed him how he could now run as many as 16 things on those two terminals at once! That will make an old man out of him in a hurry, heh!

Well, it has been a good month, and a good summer, so far! Joe, K5JB

UNDERSTANDING BASIC THEORY

WHY IS AN ANTENNA?

Hugh Winter, W5HD

It's always been something of a mystery to me how we manage to take power out of a transmitter and push it out into space. It's only a little less mysterious how a wire hanging out in space picks up an electromagnetic signal and transforms it into electrical impulses in a receiver. It is still a mystery, but here is an attempt to visualize the whole thing.

Start with two conservation laws: (1) Energy can be neither created nor destroyed. It can only be changed in form. (2) Electrical charge can neither be created nor destroyed. Charges interact in space to create electrical fields.

Consider any transmitting antenna. For example, a quarter-wave vertical working against ground or radials. Charges in the form of high frequency currents are introduced into the antenna wire and create a varying electric field between the antenna and ground. But an electrical field in a current carrying conductor creates a magnetic field around the wire, and a varying magnetic field in turn creates a varying electric field. There is a continuing interaction between the fields as they move out into space.

So what the antenna has done is to transform a varying current into a varying electromagnetic radiation. Assuming we have a varying wave shaped current flow in the antenna, we will produce a wave shaped electromagnetic radiation field. The antenna has, so to speak, changed electrical energy into electromagnetic radiation energy. It is thus a transducer and is analogous to changing the electrical energy fed to a motor into mechanical energy of the armature rotation.

In a sense we have coupled the antenna circuit to space . . . for maximum energy transfer, the impedance of the driving source must be equal to that of the driven element. Can we envision such a concept as the impedance of space. I think so.

Consider a point source of electromagnetic wave - not too unreasonable when we are a distance from the source. It radiates equally well in all directions. If we connect all the equal phase points on a given wave (for instance, all the wave crests or all the wave troughs) the point source is at the center of a kind of wave front shell constituting a geometric sphere.

Now the power density at any part of the wave area can be expressed as

$$P = \frac{W}{4\pi R^2} \quad (1)$$

(Remember your solid geometry formula for the area of a sphere) P (Greek letter rho) is the power density in watts per square meter, W is the radiated power in watts, R is the radius of the wave front shell in meters and Pi is our old friend 3.1416.

The electrical field strength of an electromagnetic field E (Greek letter eta) a distance R (meters) from a power source (W) is:

$$E = \frac{\sqrt{30 W}}{R} \quad (2)$$

Remember Ohm's law where:

$$W = E^2 / Z \quad (3)$$

In a radiation field we have something similar to W and to E. From these quantities we derive a factor we can call the impedance of space. From our equations (1), (2), (3) for energy density and field strength we calculate:

$$Z = \frac{E^2}{W} = \left(\frac{\sqrt{30 W}}{R} \right)^2 / \frac{P}{4\pi R^2} = 120\pi = 377 \text{ OHMS}$$

So all we have to do for the efficient transfer of power is to match the impedance of the antenna to the impedance of space. Which is the basic objective of thousands of antenna configurations.

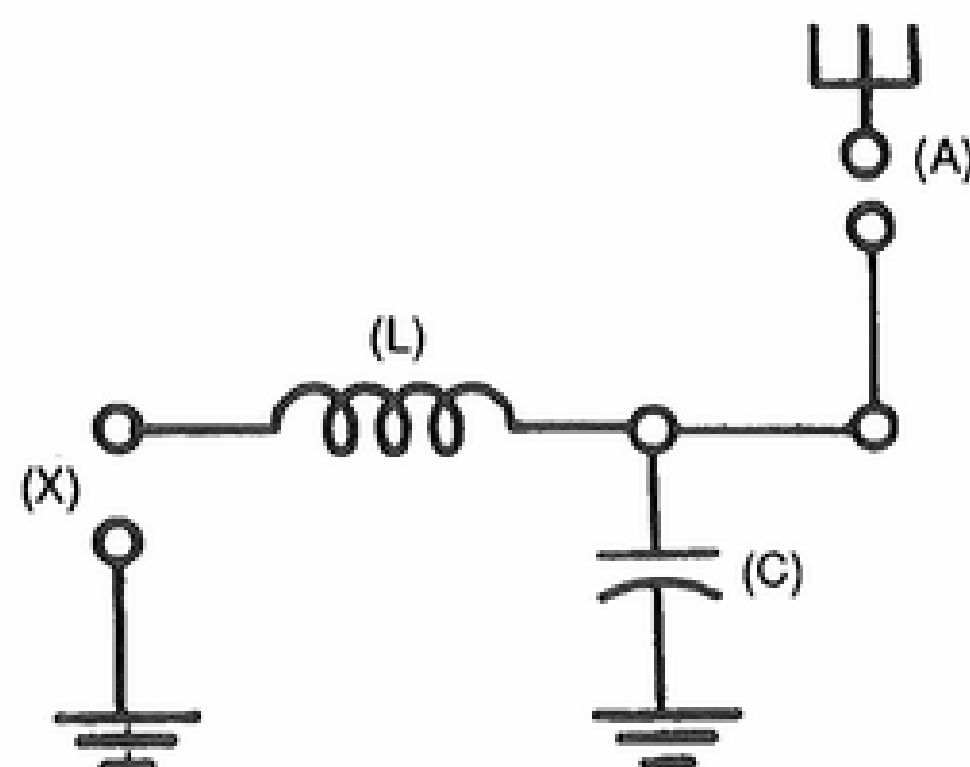
Editor's Note: This has been the first of what we hope will be a goodly number of explanations of basic electronic theory. QCWA Vice President, Hugh Winter, W5HD has authored this one. What we would like for you to do is to follow through his reasoning and do the simple math involved in reaching the value of the impedance of space as he has done. There will be more for us in the Summer QCWA Journal. (If we can talk Hugh into it)!

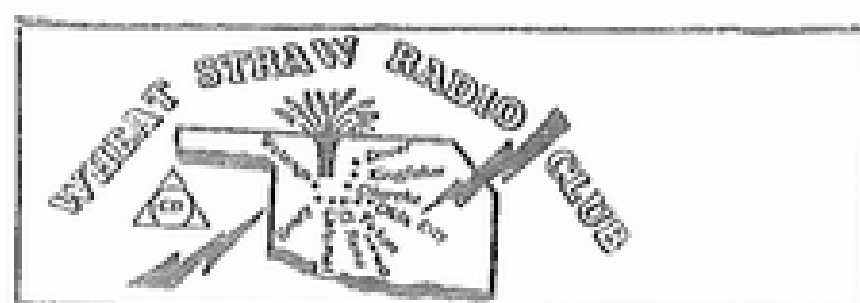
ON CAPACITORS

In the winter Journal we published a story on capacitors - who would ever have thought that 2 pieces of tinfoil and piece of glass could be so complicated. More coming in the Summer Journal!

A SIMPLE PROBLEM TO TINKER WITH

Below we have shown a circuit of an antenna and a matching network. At point (A) the antenna impedance has been measured to be $70 + j100$ ohms. The capacitor (C) has a reactance of $-j111$ ohms and the inductor (L) has a reactance of $+j32$ ohms. Your problem is to calculate the impedance that would be measured at point (X). When you have completed your work send it to Headquarters. We will publish, in the Summer QCWA Journal, all of the answers received together with the correct answer to the problem.





The annual covered dish dinner and meeting was held on the Longdale side of Canton Lake. After dinner was served it was time for the meeting. It was called to order by W05B Edgar. There was 31 present including 5 visitors.

Visitors were Harold and Connie Hollenback. At this time they are not radio amateurs, but who knows, the bug may have bitten them. He is retired from the Rock Island. They live in the Longdale area. Harold worked at El Reno with N5IKN Tom Johnson for several years. He and Connie became good friends with Tom and N5ING Bertha.

N5MLT Terry McColl was visiting from Fairview. Terry is the VP of the Cimarron ARC at Fairview. It was the first time I had met him. Terry sometimes checks in to the Wheatstraw Net on Wednesday nights at nine pm central time. (Is that standard time or daylight savings time? ED.)

We appreciate these visitors, their fellowship, and welcome them back at any time. Visitors are always welcome.

The meeting was short. All business was taken care of. A report from the technical committee: the repeater will be replaced before too long with a solid state unit. The present one is still a good machine but the signal is not as strong as it used to be. I can not stress enough thanks and appreciation to the technical committee. They have done an excellent job of keeping it on the air.

Kathy Carlton came a little late, but in time to eat before dinner was put away. A little later Johnny Dudley came and ate. They are Perk Rangers and came as soon as they could after working the park. After the meeting was over they put on the program. The film, *The Vanishing Prairie*, was a story about the prairie dog and a black footed ferret. How the prairie dog would only build on the prairie with the ground level enough so they could see over the grass - for their safety. The main course for the ferret was - prairie dog. The black ferret is about to become extinct. The film was very interesting and well presented. Rangers Kathy and Johnnie always make good talks.

The next meeting will be held in Weatherford. It is our annual Watermelon Feed, it starts at 2:30 pm, Sunday September 8. Tentatively - Mead Park, Main Street, toward the east part of town, turn north on Illinois Street to the park. Visitors Welcome.

WA5PFK Ralph

2 Versions of Country Fried Chicken

1-fryer chicken (3 pounds) or equivalent pieces, 3/4 to one cup buttermilk. (COATING) 1 1/2 cups all-purpose flour, 1 1/2

The South Canadian Amateur Radio Society

SCARS met on August 10th at the Norman Red Cross. The meeting was called to order at about 9:30 by president Dorinda, N5IUA, with 20 members present. The treasurer reported that the account had about \$950 and all outstanding bills were paid to date.

The old business discussion concerned getting a novice license class organized. In the past month, several club members have been approached by people asking about a class. A few members have volunteered to help teach portions of the class but no one has yet agreed to be the coordinator for the class. No starting date has been set.

Some questions were asked about scheduling a VE testing session. It is hoped that a novice class can be held and a VE test held immediately following the class.

Members were reminded that the autopatch functions on the repeater have been closed and that direct access to the autopatch is available for members only.

When the call was made for new business, KB5ABS suggested that the automatic dialer portion of the repeater controller be purged of all non member numbers. A motion was made to this effect and the vote was unanimous. The autodial numbers will be purged each year in February to eliminate the numbers of persons who have not renewed their membership for the new year.

The rest of the new business discussion centered around the desires of the club for

teaspoon salt, 1/2 teaspoon pepper, 1/2 teaspoon garlic powder, 1/2 teaspoon onion powder, 1 tablespoon paprika, 1/4 teaspoon ground sage, 1/4 teaspoon thyme, 1/8 teaspoon baking powder, cooking oil for frying.

Wash and dry chicken pieces with paper towel, place in a large flat dish. Pour buttermilk over chicken to soak at least one hour or overnight in the refrigerator. Combine coating ingredients in a double strength paper bag and shake chicken pieces, one at a time, to coat well. Lay coated pieces on wax paper for 15 minutes to allow coating to dry (will cling better in frying). YIELD: 4 serv.

NOW! The fried chicken is good, but I would make some changes. First I would skin the chicken and strip the fat. After soaking the chicken in buttermilk I would salt the chicken directly on the meat... Change the 1/2 teaspoon to a level teaspoon of garlic powder. Change the 1/4 to 1/2 teaspoon ground sage. we have already tried the recipe and the change would taste better to us, we think. Good eating.

WA5PFK Ralph.

a Christmas party this year. Dorinda called for a show of hands to determine if everyone was interested in having the same type of pot luck dinner as was held last year. Early planning is necessary if we are to have our choice of meeting place and date. The members voted to request the use of the OEC community room once again this year if it is available.

N5KUK discussed a couple of the meetings held at Ham Holiday this year. A meeting of the officers from CORA affiliated clubs was held to discuss the financial problems of the C&E which is now costing more to print and distribute than the fees charged to clubs can pay for. The persons attending voted unanimously to increase the monthly fee for the C&E by five cents per person per month for the rest of this year. Starting with the first edition of next year the fee will be increased by another five cents per person per month. These increases will offset the loss that the C&E has had for the past year and allow the publication to continue to take place on a monthly basis. Also discussed at the meeting were problems in meeting the postal regulations to keep the rate we now have for the monthly mailing of the C&E. All of the clubs were asked to work with Joe Harding, the C&E editor, to make sure that all records are kept up to date so that the mailing requirements can be met.

A meeting of members of ORSI, the Oklahoma Repeater Society Inc., discussed plans for keeping repeater coordination records up to date so that maximum use could be made of the available repeater frequencies. Mailing costs, a major portion of the ORSI operating expense, have increased and the attending members voted to raise the ORSI membership dues to offset this cost.

Most people attending Ham Holiday were very pleased with the location at the fair grounds. The attendance this year appears to have set a record. More space was available for flea market and dealer areas and only a very few problems were encountered. Several SCARS members "scored" at the prize drawing on Sunday and at least three more people from the Norman club would have won nice prizes if they had been present or arranged with someone to hold their tickets.

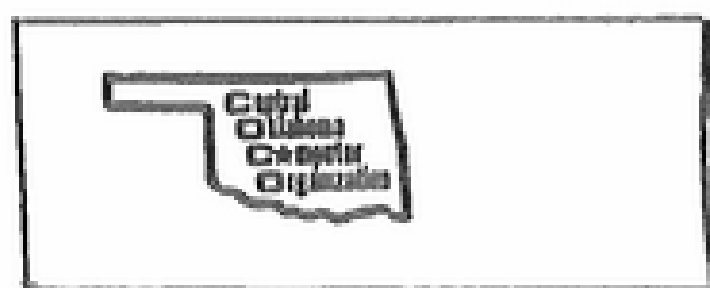
There being no more business to discuss the meeting adjourned at 10:15.

de Ken, N5KUK

NEW LICENSE FORMAT

The FCC has started issuing a new license format. Now you get an 8 1/2 X 11 sheet of paper. At the top is a wallet-sized license, similar in layout to the old license. At the bottom is a 5x8 license "for framing". The whole thing is laser printed. It's printed on white paper with a beige underprinting with a strange pattern.

CAUTION!; laser-printed materials have a tendency to smear in time. We suggest that you have it laminated before carrying it around in your pocket.



The regular August meeting of COCO was held at Rose State. Don Fox, President, and Martin Scheil, Treasurer, were present. Patrick and Dorothy Roberts were absent.

Some money was received as proceeds from the Ham Fest's flea market booth. Martin continued the saga of DOS 5.0 installation. The install was more problem free than anticipated.

Future programs were suggested on Quicken and fancy modem programming. The next meeting will be held in the Business Building at Rose State on September 14, from noon until approximately 3:00. THE CENTRAL OKLAHOMA COMPUTER ORGANIZATION AND ROSE STATE UNIVERSITY ARE OFFERING A HANDS-ON DEMONSTRATION USING WORD PERFECT. THIS SEMINAR FOR NEW OR PERSPECTIVE USERS OF

COMPUTER WORD-PROCESSING WILL BE HELD ON SATURDAY, SEPTEMBER 14, FROM 1 PM TO 3 PM WITH BREAKS. A special emphasis will be given to administration of paperwork in the classroom. The space is limited so anyone interested in attending needs to call Al Ingle at 321-5556 or Dorothy Roberts at 681-5220 to reserve a place. About one-third of the class has been filled.

Lab-Seminar Information

The hands-on demonstration using Word Perfect 5.1 will include: an introductory note to a new class, a sample syllabus with alterations, a note to students/parents merged with a current list of students, a sample bank of test questions that will be used to make a test and an alternate version of that test, and hints on advanced uses of computers.

What is the advantages of a computer over a typewriter or word processor?

1. Prepare a class' syllabus once and use that manuscript

over, year after year without retyping.

2. Make changes without retyping the whole document, even when they occur in the middle of the manuscript.

3. Check spelling; in addition, add specialized words to the dictionary.

4. There is an easy to use thesaurus.

5. Programs will check grammar, give reading levels, suggest changes, adjust to different styles of writing, and much more.

6. With a word processor, instructors can build a large bank of questions for each unit and choose questions for tests. Instructors easily rearrange questions to make multiple versions that promote student honesty. In addition, make-up tests are easy.

See you at the next meeting and demonstration on September 14, at noon at Rose State in the Business Building.

Jim: Tim, how much after midnight is it?

Tim: I don't know. My watch only goes up to twelve.

Mack: Do you live within your income?

Jack: Good heavens, no! It's all I can do to live within my credit!

Boss: Pat, what are you doing?

Pat: Nothing, sir.

Boss: Matt, what are you doing?

Matt: Helping Pat, sir.

Shannon: What model car do you drive?

Dannon: It's hardly a model. It's more like a horrible example!

KNOCK, KNOCK

Who's there? Sarasota.

Sarasota who?

Sarasota in the fridge? I'm thirsty.



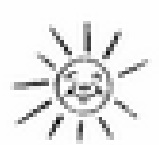
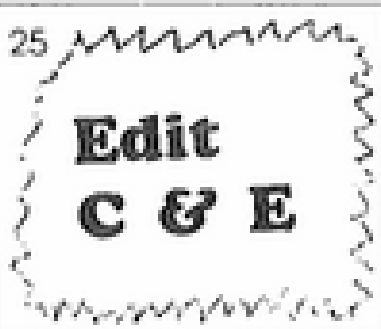
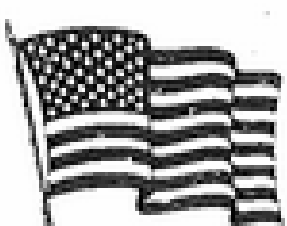


Customer: I bought this suit here a week ago and it already looks rusty.

Clerk: Well, I told you it would wear like iron.

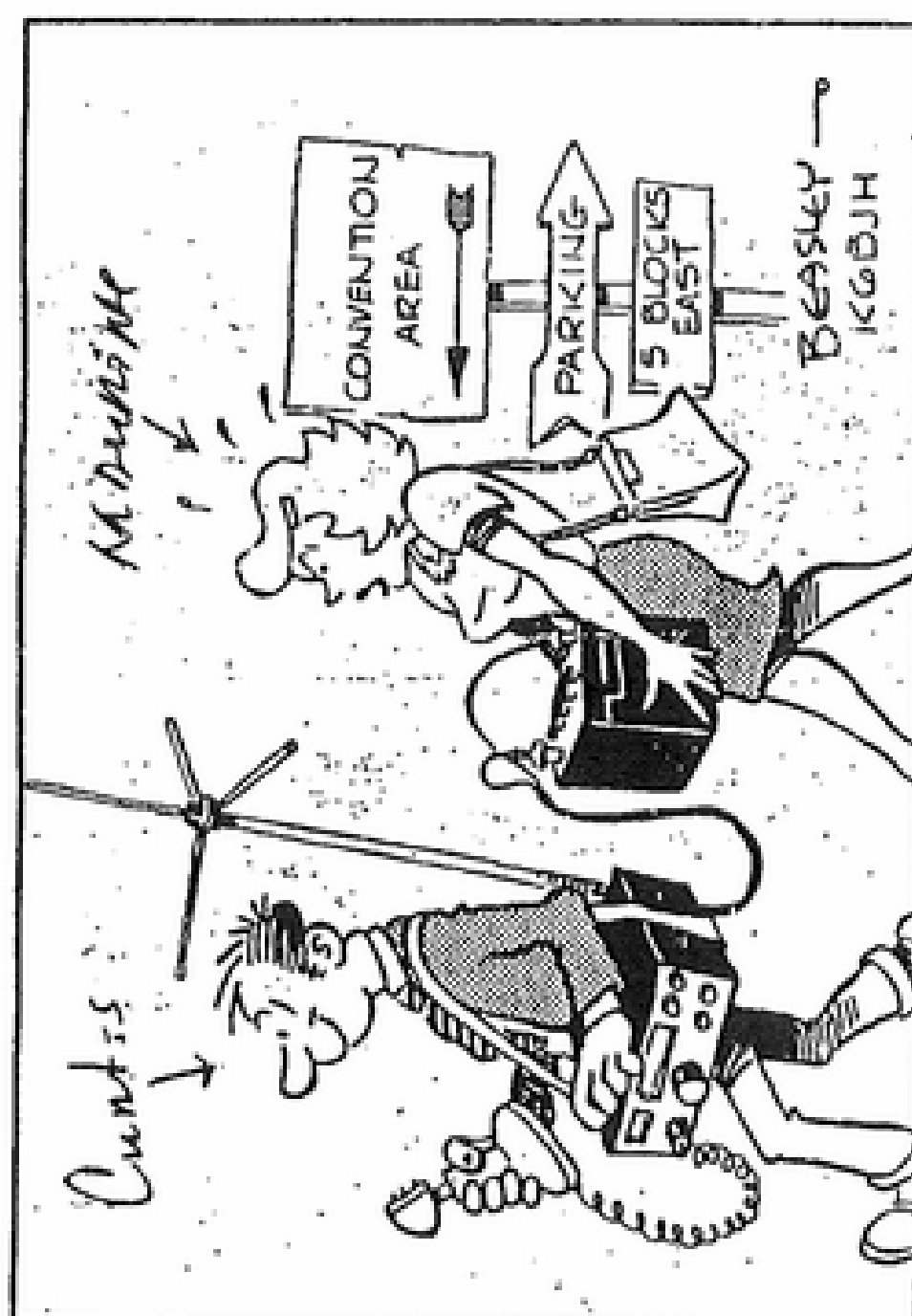
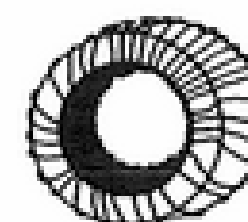
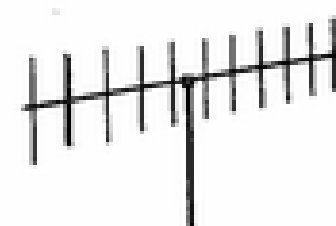
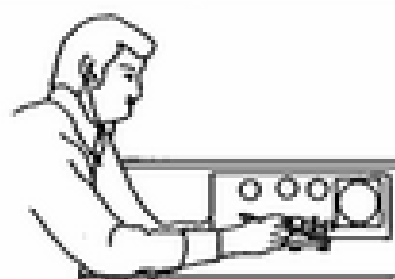
WORD PLAY

What is the difference between a man who has been to Niagara Falls and a man who hasn't?

One has seen a mist, and the other has missed a scene.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 GREAT PLAINS	2 LABOR DAY	3 MORI 	4	5 AERONAUTICAL CENTER ARC	6	7 
8 WHEAT STRAW Watermelon Feast	9 EDMOND CLUB	10 OKLAHOMA UNIV. AARC BICENTENNIAL (76ers)ARC	11 	12 CIMMARON ARS ALTUS ASSOCIATION	13	14 CENTRAL OKLA COMPUTER SCARS
15	16 VE TESTS 6:00 PM SALVATION ARMY 50 & PENN	17 AUTO PATCH	18	19 KAY COUNTY	20	21
22 EARS	23	24 CORA 7:00 PM SALVATION ARMY 50 & PENN	25 	26	27 79	28
29	30 	31			 SEPTEMBER 	

BOSS: You are the slowest man I've ever had on this job! Can't you do it quickly?
SAM: Well, sir, I get tired a lot more quickly than anyone else.



OKLAHOMA TWO-WAY

RELM - REGENCY - MAXON - MIDLAND - YAESU
GE - MOTOROLA - SHINWA - FUJITSU - KENWOOD
SALES - SERVICE - INSTALLATIONS - ALL BRANDS

RENTALS - LONG AND SHORT TERM
COMMUNITY REPEATERS - TRUNKING - SMR

ROHN TOWERS - AMATEUR EQUIPMENT - CELLULAR

FCC LICENSE PREPARATION
USED EQUIPMENT BOUGHT/SOLD

VISA MASTERCARD DISCOVER
HOURS: 8 AM TO 5 PM, MON-FRI. CLOSED NOON TO ONE

WE WANT YOUR BUSINESS

413 NE 38th TERRACE

528-6467

4112