



The LOCAL OSCILLATOR

November 1995

The Publication of the Panhandle Amateur Radio Club

Matt Carpenter-KC5CGT

Guy Pigg-WZ5C

The year in review from the Executive Committee.

And more in this months issue.

Here is a list of frequencies and time for local nets:

P.A.I.N. Net-146.66 Mhz-8:00 pm, Sundays.
Cloud Chases Net (RACES)-146.92 Mhz- 8:00 pm, Mondays.all
Sidewinders 2M SSB Net-144.2-8:00 pm, Mondays.
ARES Net-146.52 Mhz-8:00 pm, Thursdays.
Panhandle Traffic and Emergency Net-3.933 MHz - 00:00 UTC, Daily.
MidWest Section, AMSAT Net-3.840 MHz -9:00 pm, Tuesdays.
(Times are Central unless indicated.)

Here are dates and times for activities and meetings in November.

Tuesday, November 7th - Regular Meeting, 7:30 PM at Amarillo Public Library (SW Branch).
(VEC Testing at 6:00 PM)
Saturday, November 11th - Vetran's Day Parade, 10:00 AM in Downtown Amarillo
Tuesday, November 14th - ARES Meeting, 7:30 PM at Polly's Resteraunt on I-40 & Bolton.
Tuesday, November 21st - Randall County ARES, ?? at Main Fire Station, Canyon.
Tuesday, November 28th - RACES meeting 7:30 PM at Old Police Academy.
(Central Time unless indicated)

Events at Club Station for November.

CONTESTING SEASON IS OPEN!

November 4-5, ARRL CW SWEEPSTAKES
November 18-20, ARRL PHONE SWEEPSTAKES
November 25-26, CQ WW CW DX CONTEST

Presidents Letter

Wow, is it November already? The year sure has gone by quickly. Guy informs me that there will not be room for a president's letter in the December edition so this will be the last time I get to write to you. I think we have a lot to be proud of in 1995. The PARC ran a very successful Field Day through the hard work of its members. Thanks goes to Dick (N5AE), Chip (N5LTC) and his wife Janet, and many others who turned it into the good time we all had. I know I enjoyed Field Day.

Another big step that has taken place is the complete overhaul of the 94 repeater. Thanks to the hard work of Brett (N5SQK) and others the 94 machine is once again the flagship repeater of the Golden Spread. A very special thanks goes out to all who donated time and or money to this effort without your generosity this project would have never gotten off the ground. Please take a look at the list of contributors and thank one when you see one.

We also added a repeater to our fold in 1995. Concerns for the financial burden of maintaining all of the repeaters forced the club into voting to close this machine. It was thought closing this machine would help support all of the repeaters, thereby guaranteeing that the 2 meter machines would remain open. Revenue from the machine goes into the club's tech fund which is used for repairs and maintenance on all of the club's equipment. Much to everyone's surprise this repeater has already put more money in the tech fund than all other sources combined.

In conclusion I would like to remind you that election time is approaching. Several of our officers will be forced to step down by the bylaws. I think you should consider running for an office. It's a good way to contribute to the club and your fellow amateurs. If you've always thought the club should do this or the club should do that being an officer is the best way to get the ball rolling. So if Ronnie (N5ZLU) or Aaron (KJ5ER) calls tell them you will run. Or better yet call one of them and volunteer.

CU on the Radio,
73, Joe - KA0YOS

P.A.R.C. MEMBERSHIP RATES

Full and Family	\$25.00 per year
Associate (Non-Voting /Newsletter only)	\$8.00 per year
UHF Repeater Access	\$15.00 per year (Club Member)
	\$30.00 per year (Non-Club)

NEWSLETTER SUBMISSIONS

All articles are due by the 20th of the month.
You may send them via the following:

Internet: guy.pigg@radio-online.com

BBS: The Lumber Yard (806) 381-8247
(Must be registered user)

By phone: (806) 372-8462 (An answering machine)

In care of: Panhandle Amateur Radio Club
P.O. Box 10221
Amarillo, Texas 79116

444.475 Closed PARC Repeater Authorized User List

KA0YOS Joe Mayfield
KB5VLE Terry Mayfield
N5SQK Brett Sims
KJ5ER Aaron Sims
WB5QLI Ken Hanson
KB5VLW Terry Whitaker
KC5DTA Dan McCabe
N5UPC Randy Baker
N5UXW Sherri Baker
N5VRN Leland Carpenter
W5RXC Jim Wilhite
WA5UUS Ron Mashburn
K5WZF John Lisman

Minutes of P.A.R.C.
Oct. 3, 1995
Amarillo Technical Center

Meeting brought to order by President, Joe, KA0YOS.

Previous minutes were read by Brett N5SQK, and accepted.

Treasure's report was read by Aaron, KJ5ER and accepted.

Brett, N5SQK, gave a report on the 146.94 machine. The hard-line feeding the antenna needs to be purged. The audio fading was discussed. Joe, KA0YOS, reported that N5LSJ, was looking for help with the Veteran's Day Parade on Oct. 14th, a Saturday. Joe is organizing volunteers.

Joe, KA0YOS reported that there is an Executive committee meeting scheduled for Oct. 18th at A.T.C. Any member is welcome. Items for discussion include: Financial Audit, Elections, Christmas meeting and elections.

Ronnie, N5ZLU, is heading up an effort to fill slots for next year's officer's.

Those interested in the VE3ONT EME effort can see Joe, KA0YOS for additional information.

Guy, WZ5C, reported that the Club HF set is being repaired due to a faulty relay.

W5AYX visited from Waco and discussed some of the WACO Club's activities. He also requested help from area amateurs in moving and handling traffic in and around the city. He relayed a request from AB5JY, CAL in Levelland that we consider filing station traffic reports.

Next month's program will be a Ham Radio Balloon launch at the library.

Meeting adjourned.

Minutes of Executive Meeting

A very brief executive meeting was held on the 18th of October, 1995. No real business was decided upon, but several reports were made. It was reported the "Golden Corral" was going to be the meeting site for the December 5th meeting. The meeting time has been moved forward to 6:30pm for those wishing to eat. The December meeting will be kept very brief and is intended to be a social gathering.

Ronnie Kerr reported that the nominating committee is hard at work and ballots should be printed in the Oscillator before the December meeting. It was noted that only paid up members can vote in the election!

The audit committee has been appointed and will give a report at the December meeting. Club regulations will force several of our officers to step down including our treasurer.

The meeting lasted until about 7:30pm. Afterwards there was a discussion of contest operating from the club station, antennas, and other amateur topics.

73, Joe

W5WX STATION NOTES

by Guy Pigg, WZ5C

Well here we are. The end of another calander year and the wake of the wind that has been caused by all the activity is still going. What a year this has been! Let's say a big thanks to all the folks who either put in a few dollars, put in some sweat or both. Bret, N5SQK has pretty much placed himself the caretaker of the 94 machine. As he will mention in his final year-end review, much has been done and we still have lots to do. What about our 66 machine and the HF station? As far as 66, all we plan on for the moment is battery backup for both the controller and repeater. We still must decide on what to do with the old 94 equipment. The HF station is under some repair and maintenance. As of the time of my little writeup, the TS-440 is still in the shop. Hopefully, it will be back soon for all the contest comming up.

What next? We still have a UHF machine to talk about, I still haven't heard any interest on what more we can do with the HF station, the packet station needs some attention, and there are still plans on an internet-packet gateway. These items will be expanded on later around the first of the year. Let me or anyone on the teck or exec committee know your thoughts.

CONTEST! Yes we are in the running for all the major contest comming up this month. As of the time I'm writing this, the CQWW Phone contest is winding down. I did participate at the club station with help from Dave, KK5KK, who loaned out his TS-850. Myself, Dave-KK5KK, and Lonnie-KK5IH will submit a club log. Our log will be for the W5WX CONTESTERS AUXILIARY. Kinda catchy huh... So if there are other events that you want to participate in, let me know. By the way, there are plans in the works for a W5WX station special event. Stay tuned!

73, Guy-WZ5C, W5WX Station Manager.

Digital rules clarified

The FCC, responding to a request from the ARRL, has clarified its rules regarding Amateur Radio stations' use of digital codes.

The ARRL, in a letter to the Commission, said that some amateurs had expressed concern about the propriety of using the CLOVER, G-TOR, and PacTOR codes on the HF bands (below 30 MHz), because FCC rule 97.309(a) "appears to authorize" only Baudot, AMTOR, and ASCII codes. The League told the Commission that it had worked with the developers of CLOVER, G-TOR, and PacTOR to document the technical characteristics of those codes, and asked the FCC to remove any doubt about their legality on the HF bands.

The FCC agreed, saying that the use of the three modes does not conflict with its objective of preventing the use of codes or ciphers intended to obscure the meaning of the communication.

As a result, the FCC added a paragraph (4) to Part 97.309(a) to read: (4) An amateur station transmitting a RTTY or data emission using a digital code specified in this paragraph may use any technique whose technical characteristics have been documented publicly, such as CLOVER, G-TOR, or PacTOR, for the purpose of facilitating communications.

Satellite Roundup!!!!

Enter the picosats! I hope everyone has heard of microsats. They are the 16 inch on a side satellites pioneered by hams and now used by everyone from the military, to massive commercial interests, oh by the way hams still use them too. Pioneering hams gave us the microsats which in turn gave the world such handy things as GPS and the soon to be working iridium phone system.

Well, they're at it again! Enter the era of the picosats. What is a picosat? I'm glad you asked. A picosat is a BASEBALL sized (that's right BASEBALL (not softball)) sized satellite. Hams / students from the Navy's post graduate college have constructed these latest OSCAR's to lead the way into another new technology.

These "birds" or should I say "chicks" are scheduled to be tossed from the shuttle's cargo bay in 1996. The current picosats will provide telemetry back on their environment as well as carry some elementary data storage capabilities. Future designs range from regular store and forward satellites (like the current microsats), to camera carrying imaging systems. The possibility of "bent pipe" picosats is also being discussed. A bent pipe satellite simply returns what ever type of signal that is sent to it. It redirects signals "like a bent pipe".

What are the problems associated picosats. Well, building anything that small isn't easy. But the biggest problems are heat and power constraints. The area for solar cells on a baseball size object is quite limited making power budgets very tight. The small size also rules out carrying batteries of any size. Heat transfer from active components can also be a problem in such a small area.

If we look at these problems one at a time they can all be addressed. Surface mount technology and VLSI (Very Large Scale Integration (many functions built into one tiny chip)) have made building very small useful items quite possible. Solar cells are not up to giving us what we are used to in terms of output power on such a small bird, but advances in DSP (Digital Signal Processing) have made it possible to hear weaker and weaker signals this coupled with the lower background noise at microwave frequencies make the signal paths workable. These satellites will probably have to "sleep" when not in direct sunlight. Heat transfer can addressed by simply spinning the satellite allowing the heat to be radiated out when that side is exposed to deep space.

What are the advantages? Well, it's a lot easier to hitch a 500 gram ride than a 500 Kilogram ride. The satellites can be built cheaply making a whole network possible. The cost could even allow for redundant satellites. We could orbit satellites for lots of different interests (packet satellites, ATV satellites, dxing networks, etc). The possibilities behind this idea are staggering!

So, next time someone asks your opinion of picosats let them know your ideas!

73, Joe

Veteran's Day Parade !!!

Volunteers are need to aid in communications for Amarillo's veteran's day parade. The parade will be held on Veteran's Day (Saturday Nov 11th) in downtown Amarillo. The parade will start at 10:00am so volunteers will before then. Communications is expected to be handle on 2 meter simplex and you will need to provide your own radio. If interested please contact Joe Mayfield (KA0YOS) at ka0yos@amsat.org or 359-5884 (no calls after 9:00pm please). Come join the fun as we serve the community and remember the vets.

FIX 94 IT'S DONE

I want to thank our Club Members who participated in the Fix 94 project. There has been a bunch of you and it's been an enthusiastic project. Let's review what's been done. We have essentially a brand new antenna installed at 450 feet on the Channel 7 tower. We have a commercial quality RF platform (GE Master II) repeater and we have a top of the line Link controller with autopatch. Not shabby for a bunch of hobbyist's.

It was amazing how fast we raised the money for the project. To date we have raised \$1743.00. Thus far we have spent \$1367.40 on the following items: antenna harness, Link Controller. Many thanks to those that dug in their pockets. We have 375.60 remaining.

Are we really through? No not really. It's kind of like raising a kid, many times you think you are never through. We will implement the following items as time allows: Improved audio, we still have a little too much white noise; Hardline, we need to replace about 70feet of coax with hardline; Intermod, we will install an intermod filter and try to eliminate the interference without (hopefully) affecting receiver sensitivity; autopatch, we will try to assign all club members a speed dial number that want one and we will implement a 911 dial function for open use. We will try to do these items with the money that's left. Ken, WB5QLI has volunteered some hardline, along with Dan, KC5DTA. I've built an intermod filter for trial soon, so who knows we might finish up and have some money left.

The controller we have is capable of implementing voice mail with an upgrade that cost's an additional \$400. I think we should get most of the above items behind us and then see how much interest there is in the voice mail. If that is a feature you would like to see, let me or Guy know, we'll try to gauge the interest, and maybe we could be ready to try it in about six months. Who knows if we can get through and not spend much more money, we nearly have enough.

Another exciting item related to the 94 repeater is the auxillary receiver that is being installed by Club member, Charlie, KB5VLV. Charlie is going to install an auxillary receiver/directional antenna on his tower that will cover south amarillo and west down highway 60, this should provide excellent reception as well for downtown Canyon. This is a voluntary effort on Charlie's part, which he is funding himself, and is not costing the Club or the Fix 94 project any money. Say thanks to Charlie for his volunteer effort.

So for now we're going to close out the fundraising for the Fix 94 project. We will publish the contributor list this month for the last time and say thanks. Hope you enjoy the new 94. It's yours so use it...
N5SQK

W5WX 146.94 Repeater Commands

1* Time

2* Date

3* Read Battery Voltage

4*(enter up to 10 DTMF digits)* DTMF CHECK

101* PL ACCESS Mode (88.5)

102* Remove PL ACCESS MODE (tone required to remove)

94 AutoPatch codes

301*xxxxxx* bring up autopatch with number xxx-xxxx.

302* close auto-patch

(Note: The * character is part of command to be entered.)

**WSWX REPEATER SYSTEM UPGRADE
FIX 94 PROJECT DONATIONS**

WA4NXI COLEMAN WINGATE - \$100.00
N5SQK BRETT SIMS - \$100.00
N5MGU JEROLD McCOWAN - \$250.00
KC5JIF REDDY BIGGS - \$250.00
KK5KK DAVID WILLIAMS - \$100.00
N5UPC RANDY/SHERRI BAKER - \$63.00
KB5WIO JIMMY BURKHALTER - \$50.00
N5YXN CARL JEANS - \$50.00
KC5DKQ ROBERT McKEE - \$25.00
K15VR DALE HALL - \$100.00
N5VRN LELAND CARPENTER - \$50.00
W5CKR JIMMY FOWLER - \$50.00
KC5KCA DENNIS SCHLEGEL - \$50.00
KA5KHY BILLIE LOVE - \$25.00
WB5QLI KEN HANSON - \$50.00
W5SR BEN POLLARD - \$25.00
KC5CGT MATT CARPENTER - \$50.00
KC5OMK MONTE DENNY - \$100.00
KB5VJW TERRY WHITAKER - \$50.00
N5SXJ ROBERT MACMILLIAN - \$50.00
W5PSZ LUTHER ADKINS - \$50.00
W5UGQ/UGR MAURICE & ELIZABETH SPROUL \$25.00
KB5EY BILL BRAIN \$50.00
KC5EZO DON BRISTOW - \$30.00

Total amount of donations: \$1743.00

EXPENSES TO DATE

Antenna Harness DB Products - \$200.00
RLC-2 Controller - \$1167.40

Remaining - \$375.60

Call for microwave hams

A professional microwave engineering group will include Amateur Radio for the first time in its symposium.

The Institute of Electrical and Electronics Engineers' Microwave Theory and Techniques Society (IEEE MTTS) will hold its 1996 International Microwave Engineering Symposium in San Francisco June 17 to 21, 1996. The sponsors have approved and will officially sponsor a microwave Amateur Radio reception and swap meet, according to Jeffrey Pawlan, WA6KBL, who is active in the Society.

Licensed amateurs who have a bona fide interest in VHF-microwave experimentation as well as all Symposium attendees will be invited to the reception.

Also planned for the reception are live demonstrations of attendees' microwave equipment and antennas. The organizers hope to arrange live 2-way demonstrations of amateur stations on all bands from 2.4 to 76 GHz. Amateur Radio microwave clubs also are invited to display information on their activities, members' stations, and newsletters.

Those interested in participating should contact Pawlan as follows: electronic mail: jpawlan@pawlan.com; 24-hour facsimile: 408-371-4302; or write to 14908 Sandy Lane, San Jose, CA 95124.

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**AMATEUR RADIO.....IT'S NOT JUST A
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