

December 2018

K5PRK Newsletter



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If you missed November Meeting

Fan Dipole Builds

Officers

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W5SPK

Vice President: Tim
Johnson, K5TCJ

Secretary: Daryl
Morgeson, AF5QJ

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Watson AF5QK

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Campbell, W5ADC

Communications
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Moravec, AE5IB

Webmaster John
Hatch, KF5BSS

Public Relations:
Brian Trant, KF5VFM

Newsletter Editor:
David Abshire,
KG5NAV

Letter from Editor

HO HO HO What a wonderful time of the year. Trees are starting well ok have lost most of their leaves, which have ended up in my yard 😊. Lights to hang presents to wrap people to visit and company holiday party to attend. That brings me to the most important Holiday Party the K5PRK Holiday Party, it will be at Furr's this year (see events for more details). I like to say that this Newsletter is packed with all kinds of great information, I have been busy yet again with family and friends, oh and shopping. I have been trying to stay on Santa's Nice list because I want a new HF radio. Santa if you are reading this newsletter it would be the Yaesu FT-991A (hint hint).

Charlie Chrissey - KG5NAN has written a great article on building a fan dipole. I already

support one of his extraordinary 2m & 70 cm j-pole antenna and look forward to building one these dipoles for the new HF rig that I hope Santa brings me this year.

There were a lot of members that renewed their membership last month via PayPal if you have not yet renewed your membership dues you should try doing so via PayPal. Click on the link for more <https://k5prk.net/members/dues/>

November meeting was held at Plano Presbyterian Hospital. I myself have mixed feelings about it. I can see the benefits of have the meeting at the hospital, but at the same time I am selfish and can see why I would want to keep the meeting at the Church. I still have to spend some time and think about it.

Happy Holidays David - KG5NAV

Upcoming Events

Jingle Bell Run

December 2nd

Dallas Marathon

December 9th

PARK Board Meeting

December 10^h 7:00 pm

PARK Christmas Party

December 17th 7:00 pm

Meals on Wheels

December 25th

So, what all happen at the November Meeting?

Well that's just it I will share my thoughts on the meeting at the hospital and then I will share the meetings minutes with you. You're all welcome to come to the next board meeting. I don't like crowded places and confined area. I was one that never felt claustrophobia but as I get older, I enjoy my space more and more. The room felt like it was over ran, crowded and unorganized more just because of lack of preparedness. You would think as ham radio operators are always talking about being ready, we would have been more prepared. There seemed to be a lot of questions being asked in the meeting. The only question in the end that I felt is important is will this help the club and I don't mean financially, I mean will this help the club stay a vital part of the community? Will it help the club grow in a direction that the club was intended to? Now the minutes from the club meeting. Per our Secretary Daryl Morgeson – AF5QJ.

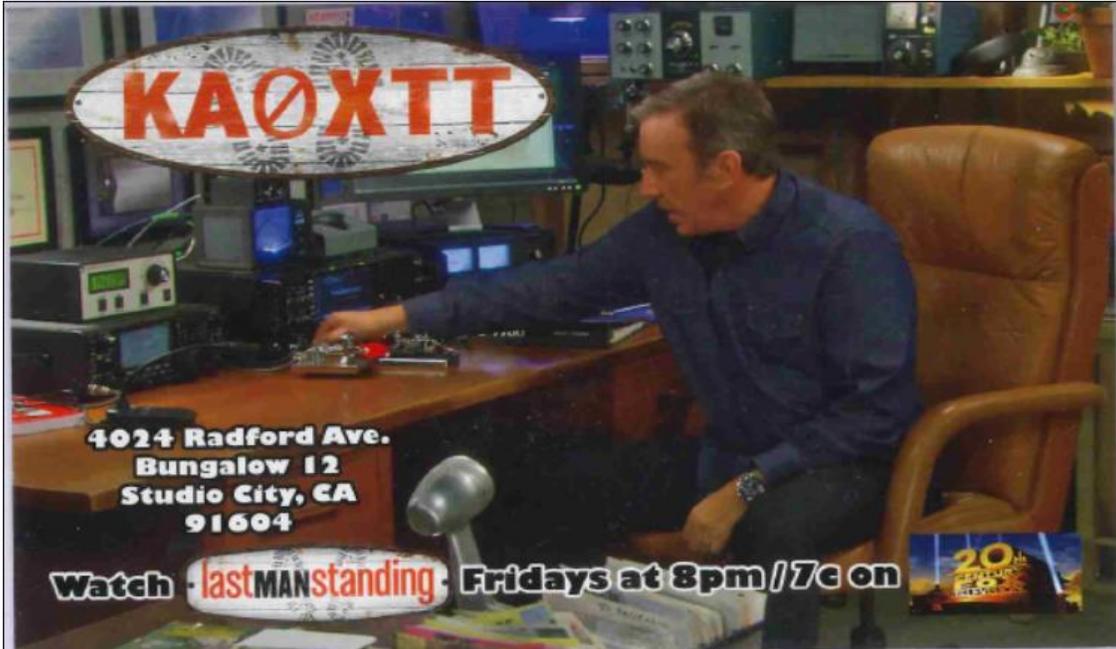
Meeting opened at 19:00

Board members present were, Sean Kelly, Daryl Morgeson, Ross Watson, Brian Trant, Tony Campbell, Kip Moravec, David Abshire.

Sean started us off with the Pledge of Allegiance than he introduced Dodd Day the Hospital Emergency Manager of Presbyterian Hospital of Plano. Mr. Day welcomed us, told of emergency exits. Explained as the Hospital was concerned, we get to be there under the auspices of Emergency Response mandate. Offered to provide what we need to hold meeting and give testing. Sean brought up the list of topics for the meeting. The meeting discussion of changing location, December Christmas Party, January Jay Urish to present status of Section and take questions, asked for ideals for topics for the 2019 year. Daryl asked for QSL cards for display, passed report on last class to mike Pruden. Ross reported a balance of \$9039.00, updated balance from dues 9106.13. Ross urged members to pay early dues. David asked for articles for Newsletter. Club gave positive input to David for a great job. Kip reported that Winlink was down, checking repeaters working, he informed of need for Dallas Marathon, several positions still needed. Tony reported on events, the Meals on Wheels on Thanks giving day, December 2nd is the Jingle Bell Run need operators and generators, December 8th The Plano Christmas Parade, December 9th Dallas Marathon, and December 17th The K5PRK Christmas Party at Furr's 6pm meeting starts at 7pm. Auto streaming moving to repeater soon. Brian reported on the Christmas Party at Furr's Cafeteria, and the General Class report Mike Pruden had 8 students all passed good results still a 100% passing record. Reid showed some of Les old pictures of operations. Ollie spoke on need for volunteers to help sending meals to hurricane victims. He passed out on where to go to help pack meals. Open discussions on meeting location. Here were some of the cons of meeting at the hospital, longer distance for some, use of the projectors and cables for laptops, room layout in question, moving chairs and tables as we need, limited exit in case of emergency, testing location. Concerns about becoming a hospital club or stay PARK. Now a list of pros, good opportunity for club to grow, possible new mew members, individual members to chance to grow new skills, possible new members form the area, room can be configured to our needs, parking garage covered, nets we can participate in, possible antenna space in future. Nell made a Motion to adjourn and David seconded it. Meeting was closed at 20:40

This Month's QSL Card is from Brian Trant - KF5VFM

Share pictures of your ham shack or a neat QSL card. We all like looking at other ham shacks or QSL cards. Seen in some cool ham shacks . You can also email your QSL cards of contacts that you have made in the past. Share them with other members in the club. What the furthest contact that you have made?



KAØXTT

Confirming QSO With:
KF5VFM

DATE DAY
FRIDAYS

UTC	MHz	RST	MODE
04:00	FOXTV	5-9	HDTV

Comments:

Thanks for the contact and thank you for watching the show! We're glad we're back too.

73
KAØXTT

Support those that support K5PRK

- Main Trading Co.
<http://www.maintradingcompany.com/>
2246 Bonham St., Paris TX., 75460
- Poor Richard's Café
<http://www.poorrichardscafe.com/>
2442 K Avenue Plano, TX., 75074
- Cavanaugh Flight Museum
<http://www.cavanaughflightmuseum.com/>
4572 Claire Chennault, Addison TX., 75001
- Bavarian Grill
<http://www.bavariangrill.com/>
221 West Parker Rd., Plano TX., 75023
- Bullet Trap. INC.
<http://www.bullettrapinc.com/>
2608 K Avenue, Plano TX., 75074
- Furr's Fresh Buffet
<http://www.furrs.net/>
1900 North Central Expressway Plano 75074
- Country Burger
<http://www.countryburgertx.com/>
3115 W. Parker Rd. #500, Plano TX., 75023
- Plano Super Bowl
<http://www.planosuperbowl.com/>
2521 K Avenue, Plano TX., 75074
- Two Rows Classic Grill
<http://www.tworows.com/>
711 Central Expressway, Allen TX., 75013
- Greek Isles Grille and Tavern
<http://greekislesgrille.com/>
3309 N. Central Expressway #370, Plano TX., 75023
- Chartered Financial Strategies LLC (Sean Monohan)
Tax Services - Business and Individual
<http://www.cfscorp.net/>
4686 McDermott Rd. #206, Plano TX., 75024

Repeaters

The Plano Amateur Radio Klub operations five repeats, which are located in Allen, Texas about 180 feet above ground level. All licensed amateur operators are welcome to join us on the air, all repeaters are open.

147.180 MHz + (PL 107.2) K5PRK VHF Voice Repeater

444.250 MHz + (PL 79.7) K5PRK UHF Voice Repeater

441.575 MHz + DStar UHF Digital Voice Port B

1295.000 MHz – 20.000 DStar 23cm Digital Voice Port B

1255.000 MHz DStar 23cm Digital Data

Four Band Fan Dipole Project

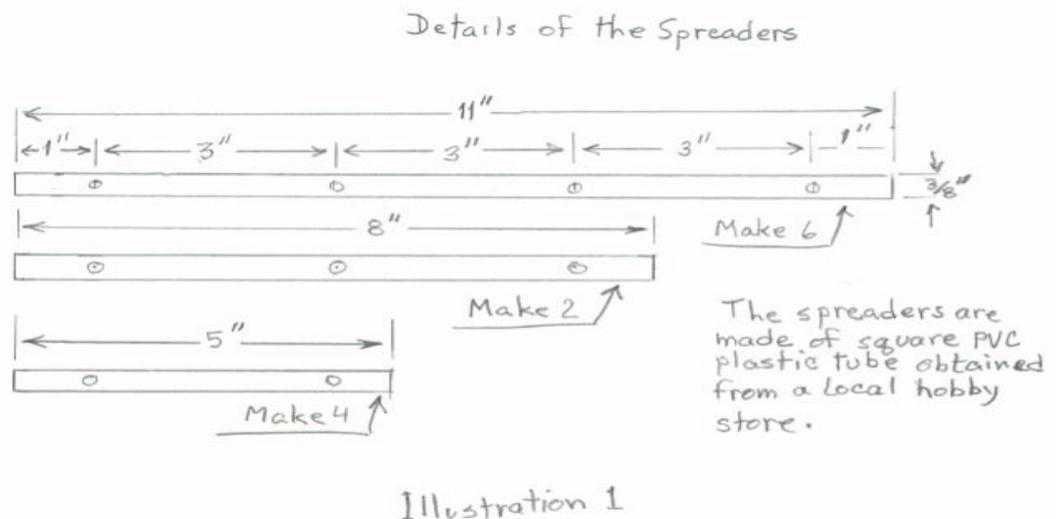
By Charley Crissey - KG5NAN

Like many projects this one began simple and over time grew into something more elaborate and complex. My initial plan was to throw up a single band resonant dipole for 40 meters. My reasons for choosing a wire dipole were simple, wire dipoles offer good performance, cost little and are not difficult to build. In fact, my project started life exactly that way, but before long I wanted to operate on more bands and I started to consider ways to accomplish that goal. Expanding my 40 meter dipole into a 4 band fan dipole seemed to be the most practical way to get the job done.

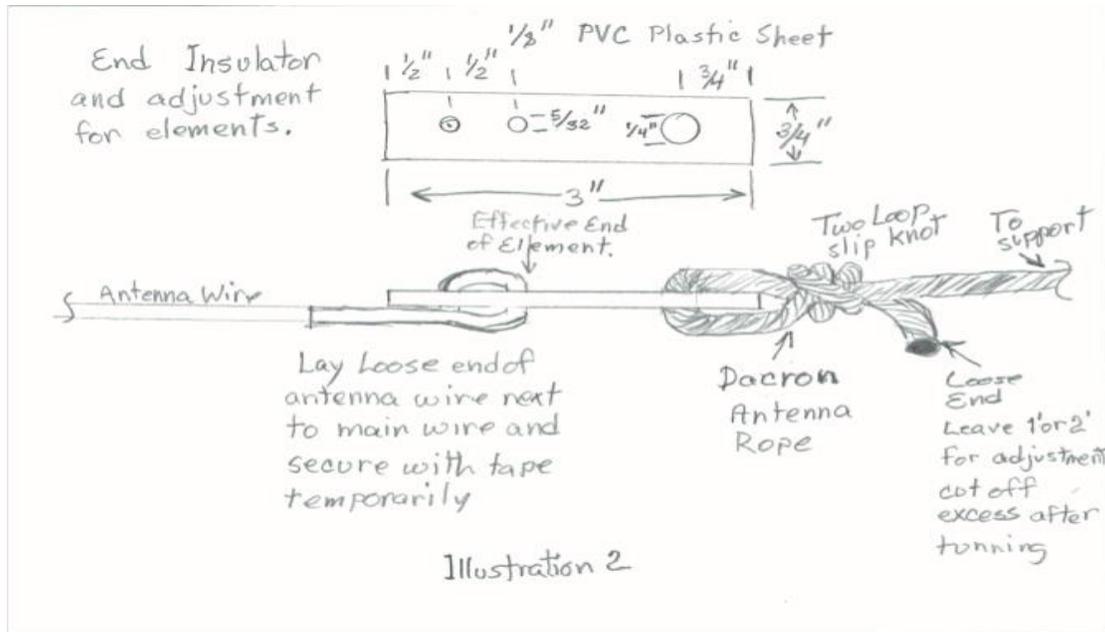
All well thought out, projects start with a detailed plan and a complete list of materials. The bill of materials for my antenna is not provided here, because there is an abundance of materials to choose from that will perform as well as those I used. I do, however, recommend the following; Use a high quality vinyl jacketed antenna wire, choose UV resistant PVC for the spreaders, and use only stainless steel hardware. Additionally, I selected a commercially available 1:1 current balun for the center of my dipole.

After designing the antenna and listing all the materials down to the last nut and bolt, I went shopping. I purchased everything I needed from HRO, a local hardware store and a hobby store. Though my antenna was completed in two phases, single band 40 meter dipole and expansion into a four band fan dipole, I will describe the construction in a single stepwise procedure.

The first order of business was fabricating the spreaders used to keep the elements evenly spaced. These were made from $\frac{3}{8}$ in square PVC tubing sourced at my neighborhood hobby store. I drilled $\frac{5}{32}$ in holes in the tubing for the wires to pass through, the holes are spaced 3 inches apart starting 1 in from the end. I made 6 spreaders 11 inches long with 4 holes each (3 per side), 2 spreaders 8 inches long with 3 holes each (1 per side), and 4 spreaders 5 inches long with 2 holes (2 per side) (see illustration 1).



Next, I made the insulators for the ends of the elements, these were made from $\frac{1}{8}$ in sheet PVC cut into strips $\frac{3}{4}$ in wide and 3 inches long. I drilled 2 holes $\frac{5}{32}$ in in one end spaced $\frac{1}{2}$ in apart and $\frac{1}{2}$ in from the end. On the opposite end I drilled a single $\frac{1}{4}$ in hole $\frac{3}{4}$ in from the end (see illustration 2). I made 10 of these though only 8 are needed (4 per side).



Next, I cut wires for each element of the antenna, 2 at 33 $\frac{1}{2}$ ft (40M), 2 at 17 ft (20M), 2 at 11 $\frac{3}{4}$ ft (15M) and 2 at 8 $\frac{3}{4}$ ft (10M). The cut length was determined using the formula for a free space $\frac{1}{4}$ wave, $\frac{236}{f_r}$ (in MHz) + .5 ft. I prepared the wires for attachment to the BALUN by stripping 6 inches of insulation from one end of each wire then twisted and tinned the end of each wire to prevent fraying while working the connections. This completed the prep work and I proceeded to the actual assembly of the antenna. I prefer to work indoors but it seemed that it would be easier to work on the antenna where there would be ample room to stretch it out to its full length. So, I suspended the BALUN from the eave of my house, at a back corner, and laid out the 40M wires in opposite directions from that point with the stripped ends toward the center.

I threaded the spreaders on to the 40M wires in the following order from center outward, 3 - 11 in, 1 - 8 in, and 2 - 5 in. Next the 40M wires were connected to the anchors of the BALUN. The wire is passed through an un-insulated crimp type wire splice (#10), through the eye of the anchor and back through the wire splice. The splice is positioned against the jacket of the wire and the free end pulled up leaving a $\frac{3}{4}$ in loop around the anchor then crimped (see illustration 3). There should be about 3 inches of wire left over forming a pigtail for connection to the electrical connection of the BALUN. A screw terminal (un-insulated) is applied to the end of the pigtail, crimped and soldered and secured to the BALUN electrical connection with a screw and nut (see illustration 3). The free end of the wire is fitted with a homemade insulator and enough rope to reach a convenient anchor attached to the insulator (see illustration 2). Fold back 3 in of wire at the insulator (see Illustration 2). I pulled both 40M wires taut and attached my antenna analyzer to the input of the BALUN. As expected, the wire was resonant below the low end of the 40M band. I noted the resonant frequency and carefully measured the length of the element (from eye of BALUN to end of element). I then multiplied the length in ft by the frequency of resonance and then divided the product by the desired resonant frequency to determine the new length. The formula is as follows:

Please take a moment and remember the Silent Keys.

Armando Cosentino – N2HGO, Armando was a member of the Plano Amateur Radio Klub for a couple of years. He got his license in 1998 and upgraded to a General license in 2008. He passed away November 12th, after his wife passing three weeks earlier. He passed away of a broken heart. Armando was a good man.

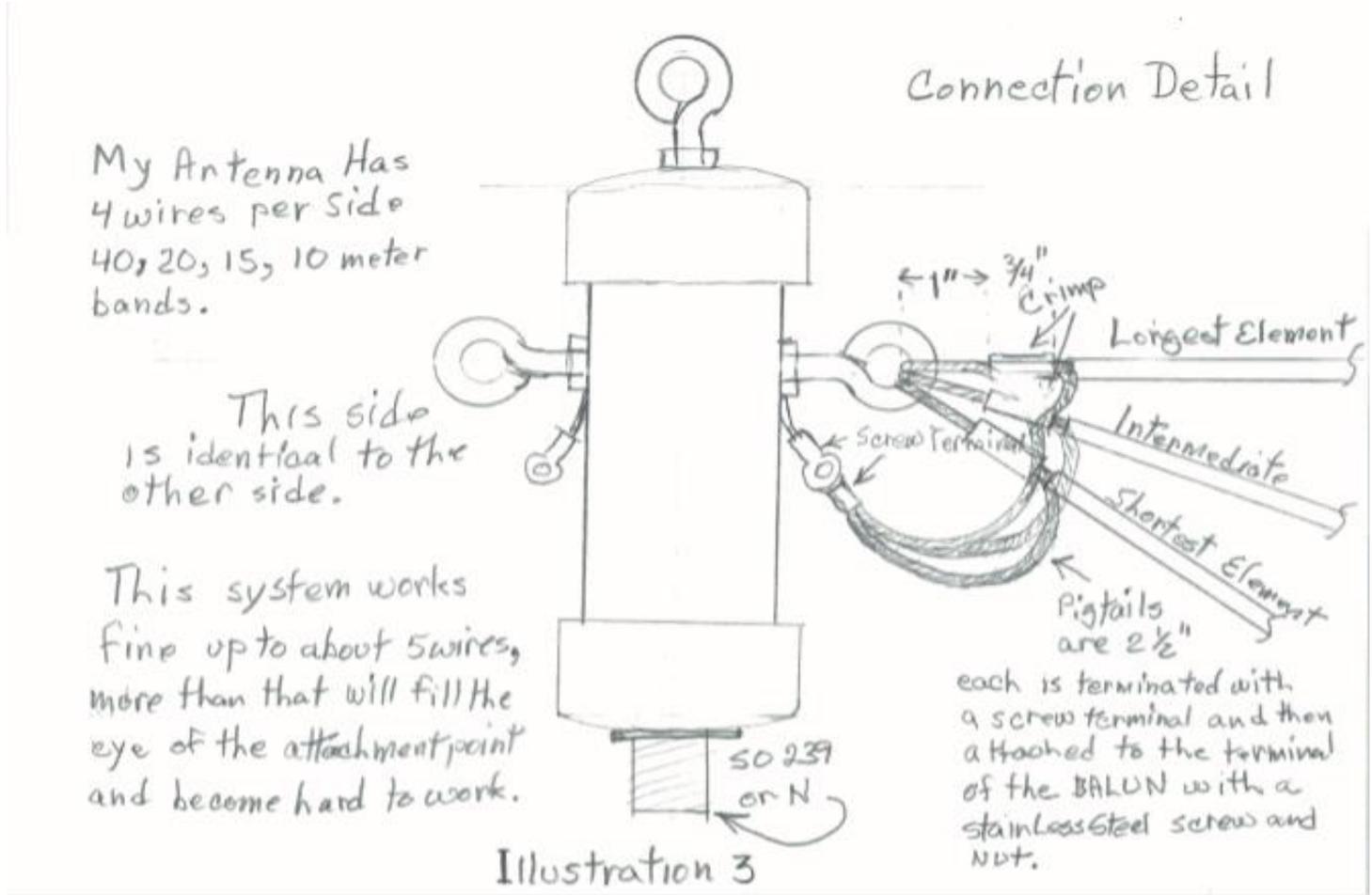
$l_t = f_r \times l_r / f_t$ where:

f_r = resonant frequency in MHz

l_r = resonant length in feet

f_t = target frequency in MHz

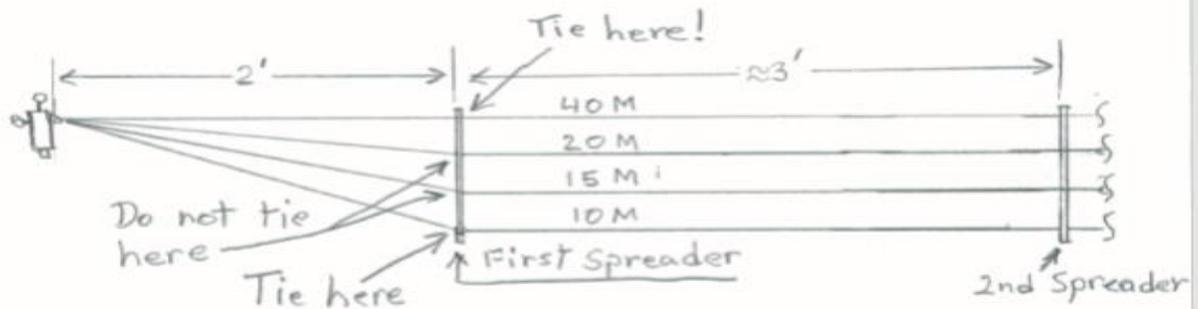
l_t = target length in feet.



I adjusted (shortened) the element length by the indicated amount and retested. The resonant frequency was slightly above the center of the band, but close enough for initial tuning and I knew the resonance would shift when I added additional elements and also when it was hauled up to its final height of 30 ft. at the center.

Next, I measured out from the BALUN eye 2 ft, positioned the first spreader at that point on the 40M wire and secured it with a plastic wire tie (see illustration 4). Then I threaded the 20M wires through the 2nd hole in all the spreaders spacing them out roughly equally along its length. Then I attached an end insulator and rope in the same manner as the 40M element, the rope extends back to a point a few inches beyond the end of the 40M element. The rope is tightened just enough to prevent sag in the 20M wire and not induce sag in the 40M wire. I repeated the tuning procedure on the 20M element and out of curiosity checked to see the effect on the 40M element which was now slightly lower than before. I resisted the urge to re-adjust the longer element choosing instead to add the remaining elements first.

1st Spreader Positioning



Leave all spreaders except the 1st free to float until final tuning is complete.

Illustration 4

The remaining elements were added and adjusted using exactly the same procedure as the first 2 elements. The ropes for the for the 15M element extend only to the end of the 20M element and of course the 10M rope extends to the end of the 15M element. The antenna was now complete and roughly tuned.

I elected to attempt a single final tuning of all the elements at one time, so I hauled the BALUN to the top of the mast and checked the resonant frequencies of all the elements at the same time. Then I calculated the adjustments needed to put them on my desired frequencies and lowered the antenna. After making the adjustments I hauled the antenna back to the top and re-checked the resonant frequencies. Resonance was so close to the desired frequencies as to render additional tuning unnecessary.

I lowered the antenna one last time and pulled it taut. Starting at the outboard end of the antenna, I positioned and secured the spreaders at the ends of each element and secured with a plastic wire tie at the top and bottom holes only leaving the intermediate holes to float freely. Intermediate spreaders as in the case of 20M and 10M elements are secured only at the top end. With the antenna complete and tuned I trimmed the excess wire at the end of the elements leaving a few inches for future adjustment and secured them with 2 plastic ties each. I also cut off any excess rope just to tidy things up. Before hauling the antenna back up I painted the whole shebang with light gray paint to blend with the sky, the mast is also painted light gray. I have good neighbors, but I figure why offend if it can be avoided.

My results are excellent, I have a 1.5 - 1 SWR bandwidth of 500 kHz on all 4 bands so I can operate without a tuner on 40, 20 and 15 meter bands and cover the whole 10 meter band with the built-in tuner of my radio. As for performance, I have been logging contacts on 40 meters and 20 meters despite marginal band conditions. Add to that, generally favorable signal reports, even from Italy and Hawaii, and I think I have a keeper. Of course, except for the SWR and bandwidth measurements the indicators are subjective, and your results may vary.

Up Coming Events in December

December 2nd - Jingle Bell Run Be part of the longest-running, holiday-themed 5K race series anywhere - and fight with us to conquer arthritis!

The Arthritis Foundation's original Jingle Bell Run is a fun way to get decked out and be festive, while racing to raise funds and awareness to cure America's #1 cause of disability. Put on your favorite holiday costume. Tie jingle bells to your shoelaces. 'Tis the season to live it up and be jolly for a reason! Bring a team of friends, family and co-workers to run or walk, spread smiles and good cheer ... and be a Champion of Yes! 100 percent of your registration fee and fundraising efforts go to this great cause.

December 9th - Dallas Marathon The Dallas Marathon is a nonprofit organization with a focus on promoting health and physical fitness through running events and related activities. Established in 1971, the history of the organization encompasses tremendous growth and produces what has become Dallas' largest and Texas' longest running marathon, the BMW Dallas Marathon, as well as the Half Marathon, the SMU Cox School of Business Relay and several other events throughout race weekend.

December 17th - K5PRK Christmas Party Make sure you mark your calendar, you don't want to miss the K5PRK Christmas Party at Furr's Start eating and setting at 6:00 pm and the meeting starts at 7:00 pm. Make sure you come early to get a good seat and get plenty to eat. Located at 1900 N. Central Expressway, Plano TX., 75074.

December 25th - Meals on Wheels It's the most wonderful time of the year, and we need your help to make the holiday season brighter for the seniors of Dallas County. Join us in celebrating this season of giving by getting involved in our holiday programs. <https://www.vnatexas.org/i-need-help/meals-on-wheels>

December 25th - Christmas Day

by Chris Codella, W2PA

1/10/2008

Chasing DX

Across

1. Old freq. units
4. HH-land
9. Fourteen ____ (weight)
14. Enable, as a weapon
15. Over
16. Signs
17. Expected
18. John Glenn's ride
19. "that ____ for the course"
20. With 22, 55, 56, and 61 across - What you collect for 35 across
22. See 20-across
23. The 18 and 21 MHz bands?
24. "Is that really necessary?"
26. New fangled rigs (abbr.)
27. Work on GUIs and others
30. This began, the July after 24-down
31. An ARRL section official, in 1-land (abbr.)
33. All but KH6 and KL7
35. You need more than 999 for this award
38. Power units
39. One of the things Elmers do
40. School org.
41. One place where the DX might be listening?
42. Heading 180 from NC
46. 9H operator, probably
49. Early radio parts manufacturer
50. 1960's TV host, with Martin
51. Open wire (line)
54. Equipment reviewer, sometimes
55. See 20-across
56. See 20-across
57. What many towers are made of

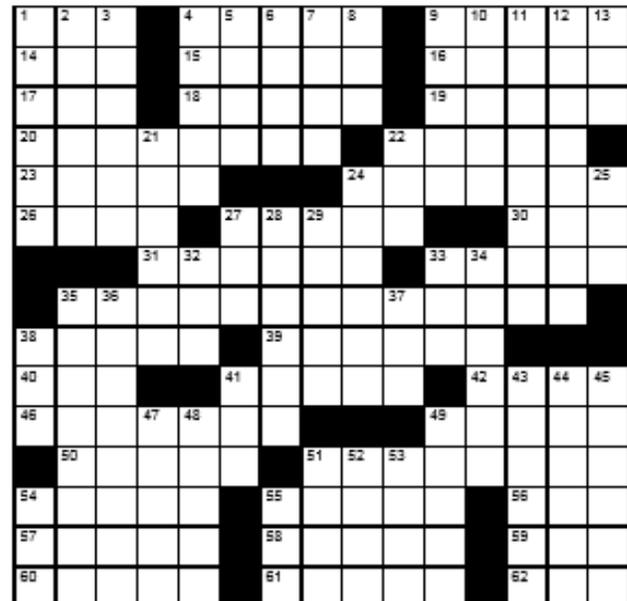
58. The word that explains a UK prefix assignment
59. Digital ckt. family
60. Hamshacks, on Field Day
61. See 20-across
62. Beam heading to work PY from W2

Down

1. "... no space ____."
2. Trimmed, as a dipole (if not a bush)
3. It moves with a signal
4. What an amp also does in the shack
5. Prefix with VOX
6. What an un-keyed transmitter is
7. Some are green, some black, some orange
8. Gives a callsign
9. Nickels and dimes
10. Org. in charge of 43-down
11. What a DXpedition station spends most of the time doing
12. Non-digital, in G-land

13. DOS background job (remember?)
21. Non-ham pesky visitor on FD
22. C in F-land
24. A peak year in cycle 19
25. Some Ukraine prefixes
27. It's between the DSP and the speaker
28. How some DF antennas look
29. Listings for selling small VHF xcvrs
32. MHz predecessor
33. Those in Chile
34. House current, familiarly, if imprecise
35. Like 38-down, but for (other) digital modes
36. Keeps your rig's rock steady
37. A good signal report, in ancient Rome
38. Speed on CW
41. Biggest non-amateur user of radio in the early days
43. Awards for performances by hams in space?
44. Warm tubes and solder resin, among others

45. Pamper
47. What a birdie in your RX sounds like?
48. G-land noblemen
49. Tower-top antenna supports
51. Repeated, it's part of FO0-land
52. 70 city
53. The part of a part you solder
54. Use 3-Down to give out one of these
55. Cute 1960's mobile hamshack



Last month if you cross word puzzle was properly super easy for all the old-timers, if you had problems with it you may not be as old as you think. With out delay here are the answers to Vintage crosswoed puzzel.



Just some last minutes additions

Greg Evens - K5GTX did a wonderful job as Net Control, as the last storm of November rolled through Collin County. Great Job Greg.

I would also like to correct last November Newsletter, I was understanding that the Meals on Wheels was Collin County however as I learned Thanksgiving Day that it was Dallas County. Thanks Michael - K5MFP for reminding me that I had the wrong link to the Meals on Wheels. There were around 360 meals delivered Thanksgiving Day. It was a great feeling knowing I was part of that.



Local and some HF Area Nets

K5PRK Nets

Thursday 8:00PM - General Information Net - We ask participants about their week in ham radio and their thoughts on a question of interest to the ham community. K5PRK repeater, (147.180 MHz, offset +0.600 MHz, tone 107.2 Hz) The Information Net is currently being run by Charlie Chrissey - KG5NAN, Ollie Casteel - AF5QX, Reid Bannon - N5ZT, Michael Payne - K5MFP.

MARC Nets

Sunday 8:00 PM - General Information Net - we ask participants about their week in ham radio and their thoughts on a question of interest to the ham community. W5MRC repeater, (146.740 MHz, offset -0.600 MHz, tone 110.9 Hz).

Monday 8:30 PM - Simplex net - see how far your VHF radio can go without a repeater along with general discussion. 146.540 MHz. Since this is simplex, no offset or tone are required.

1st and 3rd Mondays 8:00 PM - The NARC Ladies Net -All radio amateurs are welcome. W5MRC repeater, (146.740 MHz, offset -0.600 MHz, tone 110.9 Hz).

Collin County ARES Nets

Collin County Amateur Radio Emergency Service conducts two training nets each month. You do not need to be an ARES member to participate, all radio amateurs are welcome.

1st Sunday 9:00 PM - Collin County ARES - K5PRK repeater, (147.180 MHz, offset +0.600 MHz, tone 107.2 Hz)

3rd Sunday 9:00 PM - Collin County ARES - W5MRC repeater, (146.740 MHz, offset -0.600 MHz, tone 110.9 Hz)

SARA Nets

Wednesdays 8:00 PM - Ham Radio in Sachse - Weekly "On-The-Air" Information Net called "Ham Radio in Sachse". N5LOC Repeater (145.25MHz, PL Tone 141.3Hz, Offset -0.60 MHz)

2nd and 4th Sundays 9:00 PM - Sachse Public Service Net - ARES, RACES & Other Public Service Emergency Responder (like local CERT groups) Training. N5LOC Repeater (145.250 PL Tone 141.3 Offset -0.60MHz)

GARC Nets

Thursday 8:00 PM - Infonet - The Garland Amateur Radio Club holds an informal net open to all amateur radio operators. The net begins with check in and general announcements, followed by general discussion.

K5QHD Repeater (146.66 MHz, PL Tone 110.9 Hz, Offset -0.60 MHz)

HF Nets

Daily Net 11:00 AM - 9:00 PM - The Maritime Mobile Service Network - Anyone licensed ham can check in, this net is focused on assisting those who are maritime mobile and over the years, several distress calls have been handled by this net. 14.300

Sunday 2:00 PM - Amateur Radio Satellite Net - Open net for licensed amateur satellite discussion and updates 14.282

Daily Net - OMISS - Focused on awards, particularly Worked All State (1:30 PM frequency 14.290) (8:00 PM frequency 7.185)

Many more nets are listed here <http://ac6v.com.htm>

North Texas Hospital Net

North Texas Hospital radio club weekly nets check in with area hospitals. Friday mornings (time TBD 8 am or 9 am). Jimmy Dominguez is NCS. 442.400/146.700. Regular splits PL tones 110.9/110.9. All are welcome to check in from your QTH as individual.

If you want to list your favorite net. Please send as much information you can to

KG5NAV@gmail.com

Upcoming Contests for December

With the holidays upon us, this month's contest activity is quite sparse. Still, there are a handful of very fun contests to consider, with a focus on the extremes of 160 and 10 Meters.

This month we have the following major contests:

ARRL 160 Meter Contest - CW - 2200Z November 30th - 1600Z December 2nd

This is an active contest and a chance to make some contacts on the "Top Band" if you have 160M capability. The exchange is 599 + NTX (our ARRL Section).

FT8 Roundup – FT8 – 1800Z December 1st – 2400Z December 2nd. This is the first attempt at a contest using this new digital mode. Exchange is signal report + TX. Because this is a new contest in a new mode, be sure to check out all of the rules here: <https://www.rttycontesting.com/ft8-roundup/rules/>

ARRL 10 Meter Contest – SSB, CW - 0000Z December 8th - 2400Z December 9th. This contest will likely be a challenge due to the generally poor conditions since we are at the bottom of the solar cycle. However, the north-south trans-equatorial path may open at times allowing DX to South America. Sporadic-E is also likely to help propagation at times. This is certainly one of the very best opportunities all year to score some 10M DX. The exchange is 59 / 599 + TX.

ARRL Rookie Roundup – CW -1800-2359Z December 16th. The CW version of a fun short contest focused on rookies licensed less than 3 years and a great easy intro to contesting. Exchange is name + 2 digit year licensed + TX.

RAC Winter Contest – SSB, CW – 0000Z – 2400Z December 29th. This is a lot of fun and a great chance to work our Canadian friends. Exchange is 59/599 + a serial number starting at 001.

Stew Perry Topband Challenge – CW – 1500Z December 29th – 1500Z December 30th. This is another popular contest for 160M only. The exchange is your 4 character Grid Square which in this area is either EM13 or EM12.

Good luck, have fun and Happy Holidays!

NW5Q

Letters to the Editor

I need your help. Please help with the next newsletter. This is the club newsletter, so we need your pictures letters and articles. Let me know what you want. If you feel strongly about an issue and want to let people know what you think, write a letter to the editor. It's simple and democratic. Please be sure to follow these criteria:

- Be courteous
- Stick to the facts
- Be Concise (50 -150 words)

All letters must be signed and provided a call sign if possible. The editor reserves the right to select which letters are published. The editor may also require revisions or removal of parts that do not meet the above criteria or for content deemed inappropriate by the editor. This is the same rigor that the rest of the newsletter is subjected to. Send email to KG5NAV@gmail.com

Thanks
Newsletter Editor