

Lewisville Amateur Radio Association



W5LVC UPCOMING EVENTS

October Business Meeting

Saturday, Oct. 21, 0800 at

Connor Pavilion at Lake Park

Talk in on 145.170 (PL 110.9, -.600)

Boy Scout Jamboree on the Air

Saturday, Oct. 21, 1000-1600 at

Connor Pavilion at Lake Park

Talk in on 145.170 (PL 110.9, -.600)

Weekly Nets

Information and Help Net

Wednesday, 7:00 PM on 145.170 (PL 110.9, -.600)
repeater

General & Extra Study Net

Saturday, 7:30 PM on 145.170 (PL 110.9, -.600)
repeater

Saturday Breakfast (except 3rd Saturday)

Tierney's Café & Tavern

208 E. Main St., Old Town Lewisville

Association Contact Information

Mailing address: P.O. Box 292282
Lewisville, TX 75029

Email address: W5LVC.Club@gmail.com

Membership Questions/Issues contact
Ron, KF5OMH, at club email address or
972-742-7839

Web Site: W5LVC.com

Check us out
Facebook [facebook.com/w5lvc/](https://www.facebook.com/w5lvc/)
Twitter [@W5LVCCLUB](https://twitter.com/W5LVCCLUB)

Calendar of events: [Click Here](#)
and scroll down to Upcoming Events

Lewisville Amateur Radio Association is a 501(c)(3)
organization

LARA NEWSLETTER

Volume 2, Issue 10, October 14, 2017

Words From the President —

October is very busy month for LARA. Hopefully, everyone can come out to our various events and join in the fun.

On Oct. 7 & 8 Jim, K5VZ conducted a Technician class. All of the students who completed the class and took the test are now licensed operators. (See new members area on following page for names and call signs). Thanks to Jim for giving up his weekend to conduct the class.

Tomorrow, Oct. 14, is our special event station at the Lewisville Fire Department Open House at Central Fire Station. This is a good opportunity to come out and call CQ for a while. We'll be mailing special QSL certificates to all the contacts we make at this event.

Next Saturday, Oct. 21, is the Boy Scout Jamboree on the Air (JOTA) event at the Connor Pavilion in Lake Park. Remember to park in the lot at the end of Turtle Trail. Talk-in will be on the 145.170 repeater if you need help.

Many thanks to Operations Director, Mike, W5EVT, and his right hand helper Jim, WB8YWA for all their time and efforts in planning and organizing these two events.

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[CROSSWORD PUZZLE](#)

[REPEATERS](#)

2017-2018 Officers & Support

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Steve Kline, W5JK 972-679-6288

Public Information Officer

Ron Bath, KG5VIS 817-980-3165

Newsletter Editor

Ron Ford, KF5OMH 972-742-7839

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Association membership is open to all persons interested in amateur radio. Join at any meeting, by mail or

Ham Trivia

From where did the term "73" originate?

1. Air Traffic Controllers?
2. The railroads?
3. Old AM radio signoffs?
4. Western Union telegraph?

Extra Pool Question

What is the minimum number of bits required for an analog-to-digital converter to sample a signal with a range of 1 volt at a resolution of 1 millivolt?

- A. 6 bits
- B. 10 bits
- C. 4 bits
- D. 8 bits

Answers to Trivia and Pool questions at bottom of next page—no fair looky, looky.

New PIO

So what is a PIO? The Public Information Officer is the club's link to the outside world. This individual "sells" the ham radio hobby to the general public. The two biggest tasks are issuing press releases on the various club activities and manning the PIO table at our events. So, what's on the table? Not food, but all various kinds of handout material where we hope to interest individuals in joining our hobby.

Ron Bath, KG5VIS, has graciously volunteered to fill this important role. Ron has been a member of LARA for the past few months and attended the recent Technician class. He has a varied background in many different venues of public communications. Please welcome Ron to his new position and give him any assistance he may need.

WELCOME NEW MEMBERS

LARRY WILSON, WW5LS
 JAY SANFORD, KE5BCP
 TOM QUINN, KG5VIU*
 DAMIAN ESTEVES, KG5VIT*
 RON SWAIN, KG5VIV*

*THESE THREE GENTLEMEN ATTENDED OUR RECENT TECHNICIAN CLASS AND SUCCESSFULLY COMPLETED THE TEST

TECHNICAL DIRECTOR'S CORNER

BY: JIM, WB8YWA

Information and Tips on why I value my Volt Ohm Meter and Digital Volt Meter

One of the most useful pieces of test gear in the shack is a VOM (Volt-Ohm Meter) and a DVM (Digital Volt Meter). Both have a purpose and even though you can use either one for all measurements, having both is a must for me.

Let's discuss the VOM first. You can either purchase new ones from Amazon from \$18 to \$160 or you can find use ones at Ham Fests. Triplett and Simpson are two of the better brands, but what I use the VOM for any will work just fine. Before the age of the digital display you used a VOM or VTVM to measure the following and still can without exact accuracy:

- AC and DC voltage
- DC Amps and Milliamps
- Ohm in resistance

Meter would be a multi scale so division could be spread across the meter face.

Today I use the VOM to measure continuity checking the following:

- Coax connection for opens or shorts.
 - * Set meter to RX1
 - * Take black and red lead and touch center of coax connectors on each end and meter should peg showing continuity. There is a sensitivity adjustment for setting the meter.
 - * Now put leads on ground/shield part of connector and check for same continuity.
 - * Now put one lead on center and the other on shield ground and there **should not** be any continuity.
- Tracing wires in a bundle.
 - * Mic cords and connectors.
- Checking for shorts in bundle of wire.
 - * Mic cords and connectors again.
 - * Testing relays as to what is NC (normal close) and NO (normal open) and coil connectors. (There will be a resistance of the coil).
- You have multiple coax cables in shack out to tower and they are not labeled.
 - * Put jumper wire on coax in shack across center and shield, go out to tower and find coax that is shorted.
- Checking for grounds.
 - * You install ground strap to your tower and then to ground rod. You can check if there is any resistance between tower leg and the ground rod. Thus making sure strapping clamp is working and bonded as it should.
- Testing electronic components:
 - * Diodes (out of circuit)
 - ◇ Since diodes only pass dc voltage one way you can easily check if diode is okay is by first putting each lead on each wire of diode. Will have continuity or will not. Now swap the leads with each other and you will have the reverse of first test showing diode is good. If either open or both show short, diode is defective.
- Electrolytic Capacitors
 - * First make sure capacitor is discharged by shorting both leads to each other. This is with capacitor removed or at least with **power off**.
 - * Then like diode above, put one lead on each lead. You should see meter starting rise. Swap leads and again you will see meter start at zero and rise. This shows that capacitor is okay. If open or shorted it is defective.

Now you can look — Trivia: 2 Quiz: B

- Resistors.
 - * Can use VOM but Digital is much more accurate.

Meter can be used for AC and DC voltage checks, but like resistors above using a digital meter will be more accurate than the VOM.

Below is a picture of my Simpson 260 VOM. Waited many years to find this at a ham fest at a reasonable cost. I use this all the time on the bench.



Now we will go into the Digital Volt Meter.

Like the VOM these can be purchased from Amazon from \$6 to \$500 or you can find used ones at Ham Fest.

Fluke is a standard others copy, but others will work for what we do.

What I use the digital volt meter for:

- Measuring DC voltages.
 - * Working on equipment schematic will show voltages at different test points to help in trouble shooting.
 - * Adjusting power supplies to match car voltage of 13.8 volts.
- Measuring AC voltages.
 - * Checking house voltages.
 - * Checking transformers (watch for voltage levels you are checking and the setting on the meter.)
- Measuring Resistors
 - * In the digital & IC (integrated circuits) world and a lot of times you need to have two exact resistor values. You can measure within an .x value to find a matching pair without buying expensive precision resistors.
 - * I have trouble seeing different colors, so even though I know the resistor color code it is easier to double check by just measuring it.

- Measuring either AC or DC AMP, mA and uA.
 - * Check to see if your equipment is using correct current.
 - * Determine fuse size needed if equipment is unmarked.
 - * Shunts are available for measuring high current devices.

Below is a picture of my Fluke 87 III. I use this all the time, would not be without it when out in the RV, in the Ham Shack, at the Test Bench and around the house.



Both of my meters are at the high end in cost, but I have been doing this for over 45 years now, worked in the electrical / electronic field so I am spoiled to good test equipment. With that said, I purchased both of these used and saved.

ARRL MEMBERSHIP

ARRL is the national association for **Amateur Radio** in the US. Founded in 1914 by Hiram Percy Maxim as The American Radio Relay League, ARRL is a noncommercial organization of radio amateurs. ARRL numbers within its ranks the vast majority of active radio amateurs in the nation and has a proud history of achievement as the standard-bearer in amateur affairs. ARRL's underpinnings as Amateur Radio's witness, partner and forum are defined by five pillars: Public Service, Advocacy, Education, Technology, and Membership.

A *bona fide* interest in Amateur Radio is the only essential qualification of membership; an Amateur Radio license is not a prerequisite, although full voting membership is granted only to licensed radio amateurs in the US.

For as little as \$49 you can join ARRL. If you join or renew through LARA a portion of the dues are retained by the club. Contact Ron KF5OMH for details and/or membership applications.

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VARIOUS TIDBITS

CWOPS CW ACADEMY—Recently there has been a resurgence in amateur radio operators wanting to get involved in CW but they haven't had much success in learning the skill. Here's a tool that you might be interested in — <http://www.cwops.org/cwacademy.html>

There is no cost or obligation to participate in CWops CW Academy Classes and membership is not required. Enrollment is open to anyone with the desire to learn or improve their proficiency in Morse Code.

Please Note: CW Academy training and mentoring for Beginners and those with Morse Code experience needing help are offered three times a year, in two-month increments: **Jan-Feb; Apr-May; Sep-Oct**

HF Nets — at a recent breakfast gathering one of our members asked if there was a list of HF Nets. The answer to that is YES THERE IS. Here is the url — http://www.n1yz.com/HFNET_LIST.HTM. Not only is this a list of nets and the times they operate but there is also the associated web site for each of the nets.

The ARRL Online Net Directory shows Amateur Radio nets that have been registered with ARRL Headquarters net directory database. It primarily covers nets that are of interest to Amateur Radio operators in the United States and Canada. Worldwide coverage nets and maritime service nets are featured (as are National Traffic System Area and Region Nets) in the database. You can search the database for a particular net [here](#).

Spot the Station — Watch the International Space Station pass overhead from several thousand worldwide locations. It is the third brightest object in the sky and easy to spot if you know when to look up.

Visible to the naked eye, it looks like a fast-moving plane only much higher and traveling thousands of miles an hour faster! On this link <https://spotthestation.nasa.gov/> you can enter your city and drill down to a list of opportunities to see the ISS. So, if you see it can you talk to it...well, maybe. On this site you can also sign up to receive emails when the ISS will be viewable from your location.

Do you know how to hook up with the ISS? Here's a great piece of information — <http://www.ariss.org/contact-the-iss.html>. The Amateur Radio on the International Space Station site is full of a lot of interesting info.

Special Events

Alaska Purchase 150th Anniversary

Oct 1-Oct 31, 0001Z-2359Z, KL7RST, Kotlik, AK. North Country DX Association. 14.280. Certificate & QSL. North Country DX Association, 486 Town Center Place Apt 313, Columbia, SC 29229. Join Alaskan operators to celebrate the 150th Anniversary of the 1867 Alaska Purchase and formation of the Department of Alaska. Special recognition will be given for stations who contact us on October 18th which is the day Alaska became part of the USA. For Information contact Donn Gallon KL7DG. Contact info is on the KL7DG qrz.com. I will be at the NW DX convention in Spokane in Aug. www.qrz.com/db/kl7rst

Happy Halloween!

Oct 27-Oct 29, 0000Z-2359Z, W9H, Waukesha, WI. Westside Radio Club. 3.860 7.260 14.260 21.260. QSL. ATTN: Happy Halloween, PO Box 54, Sussex, WI 53089. Please join the WestSide Radio Club in celebrating Halloween on the airwaves! QSLs can be sent to QRZ address of KX9M before 12/01/17.

S	W	A	N		S	P	E	C		R	A	D	I	O
S	A	B	A		C	O	I	L		E	G	E	S	T
B	E	T	A		A	M	M	O		L	I	F	T	S
					C	O	M	P	A	N	I	E	S	
	P	E	P	U	P		C	E	R	A	M	I	C	S
Z	I	P		T	E	N		D	O	S		N	O	W
E	R	S	E		R	E	S		N	E	S	T	L	E
N	A	I	R	A		T	I	C		S	T	O	L	E
I	N	L	E	T	S		G	U	S		U	N	I	T
T	H	O		B	O	X		T	E	C		E	N	S
H	A	N	D	O	F	F	S		N	A	N	D	S	
					S	T	A	R	T	E	D	B	Y	
R	E	P	O	T		M	A	N	S		M	A	G	I
S	T	E	N	O		R	C	V	D		P	E	E	N
T	O	T	E	M		S	K	Y	E		H	A	M	S

USCG Auxiliary 78th Anniversary

Nov 7-Nov 13, 0000Z-0000Z, W2ANQ, Freeport, NY. USCG Auxiliary Station Jones Beach. 18.120 14.220 7.190 3.890. QSL. William Dahl, 3813 Verleye St, Seaford, NY 11783. Direct only SASE. wdahl@optonline.net or www.qrz.com/db/w2anq

The Lincoln: Gettysburg Address 154th Anniversary

Nov 10-Nov 20, 0900Z-0900Z, W1G, East Berlin, PA. WO4L. 18.155 14.265 7.185 3.830. Certificate & QSL. Robert, Hess, East Berlin, PA 17316. For a Beautiful full color 11x14 Certificate or QSL or both info is on QRZ <https://www.qrz.com/db/w1g>

Veterans Day

Nov 10-Nov 12, 1423Z-1423Z, K8V, Iron Mountain, MI. Mich-A-Con

ARRL Band Plan (includes 630M and 2200M)

US Amateur Radio Bands

US AMATEUR POWER LIMITS — FCC 97.313 An amateur station must use the minimum transmitter power necessary to carry out the desired communications. (b) No station may transmit with a transmitter power exceeding 1.5 kW PEP.



KEY

Note: CW operation is permitted throughout all amateur bands.
 MCW is authorized above 50.1 MHz, except for 144.0-144.1 and 219-220 MHz.
 Test transmissions are authorized above 51 MHz, except for 219-220 MHz

- █ = RTTY and data
- █ = phone and image
- █ = CW *only*
- █ = SSB phone
- █ = USB phone, CW, RTTY, and data
- █ = Fixed digital message forwarding systems *only*

E = Amateur Extra
 A = Advanced
 G = General
 T = Technician
 N = Novice

See ARRLWeb.org at www.arrl.org for detailed band plans.

ARRL We're At Your Service

ARRL Headquarters:
 860-594-0200 (Fax 860-594-0259)
 email: hq@arrl.org

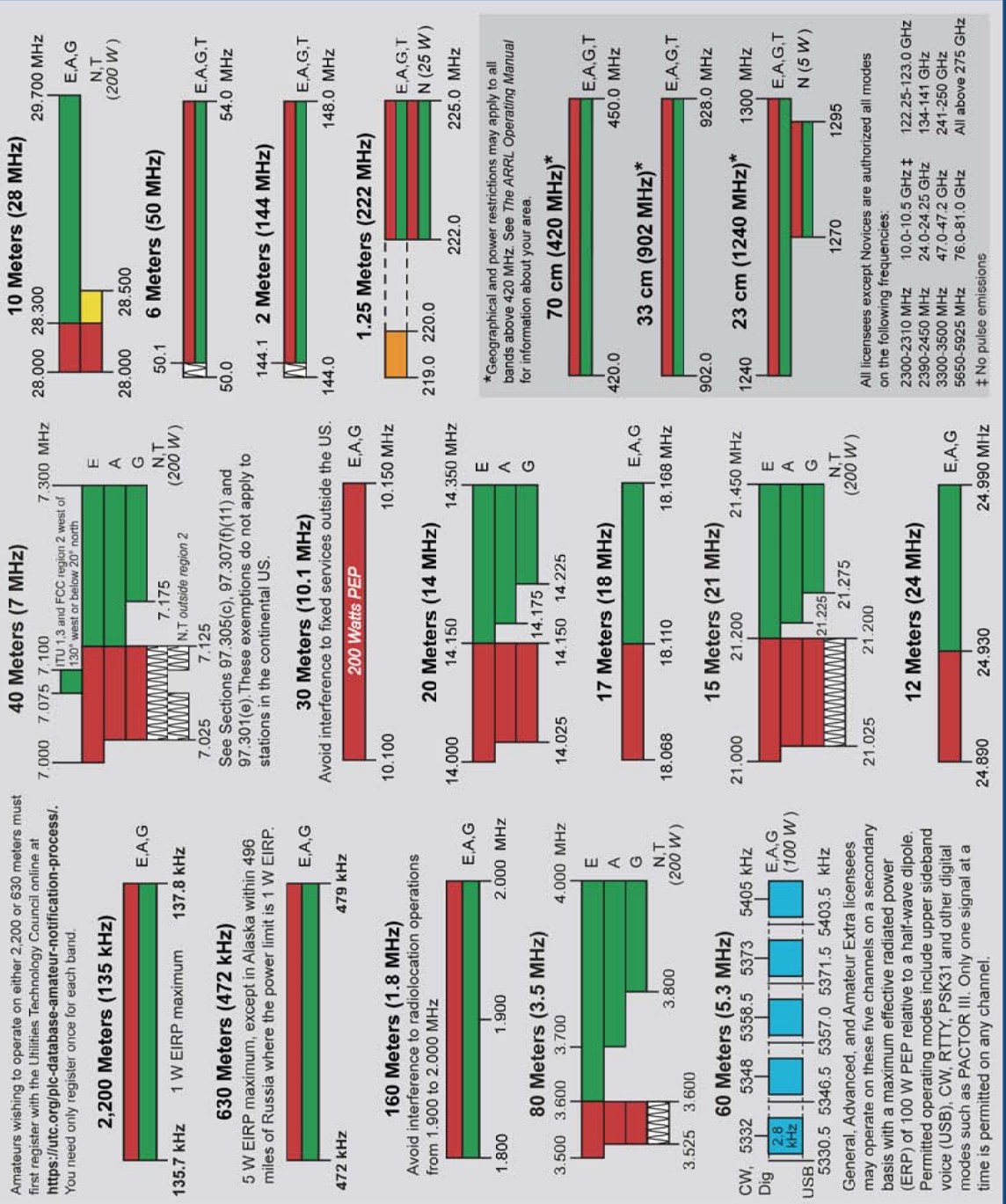
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Meeting Minutes

Recorded by: Tim, WZ5TM

The location of the September LARA meeting was moved from the Central Fire Station to Central Park the morning of the meeting. This was due to a conflict for our usual room with the Girl Scouts holding CPR training.

President Len Shipp, KC5MPX, called the meeting to order at 8:22 AM the Central Park Pavilion.

Officers in Attendance:

President: Len Shipp, KC5MPX
 Vice President: Jim Lavin, K5VZ
 Secretary: Tim Monk, WZ5TM
 Treasurer: Ron Ford, KF5OMH

Attendance:

- Members:
 - Lee Norup, K5WXR
 - Scott Boutwell, KG5RJR
 - Steve Kline, W5JK
 - Ron Bath, None
 - Brad Ulmer, KC5MPY
 - Walter Logan, AG5CF
- Guests:
 - Rick Alverson, W5RPA

Meeting Minutes from Last Meeting

Correction to printed August 2017 minutes:

Jim Horton's, WB8YWA, call sign is incorrect.

Motion to approve the August 2017 meeting minutes as printed for the August 2017 meeting, with corrections.

Motioned by: Ron Ford, KF5OMH

Seconded by: Walter Logan, AG5CP

Approved by the Members

The June 2017 Meeting Minutes were read to the members in attendance by Jim Lavin, K5VZ.

Motion to approve the June 2017 meeting minutes.

Motioned by: Ron Ford, KF5OMH

Seconded by: Scott Boutwell, KG5RJR

Approved by the Members

Treasurer's Report

Ron Ford, KF5OMH, presented the Treasurer's Financial Report.

Checking Beginning Balance:	\$2,324.00
Checking Ending Balance:	\$2,351.00

Savings Beginning Balance:	\$31.66
Savings Ending Balance:	\$31.66

Club Assets Balance: \$3,000.00

Motion to approve Treasurer's Financial Report as presented.

Motioned by: Jim Lavin, K5VZ

Seconded by: Ron Bath, NONE

Approved by the Members

LARA's 501(c)3 has been approved by the IRS. Accordingly our tax exempt number is valid. Talk to Ron Ford, KF5OMH, for information on using these numbers.

Steve Kline, W5JK, with the help of Ron Ford, KF5OMH, completed the audit of LARA's books. Everything looks to be in good shape.

A motion was made to accept the audit findings.

Motioned by: Jim Lavin, K5VZ

Seconded by: Unknown

Approved by the Members

Technical Report

Len Shipp, KC5MPX, presented the Technical Report.

The 145.17 Repeater is operating properly.

The 220 Repeater is currently down.

No motion was made to approve the Technical Report,

Jim Lavin, K5VZ, will hold a repeater management course, probably sometime in November.

Watch the web site for sign up opportunities.

Operations Report

Len Shipp, KC5MPX, presented the operations report.

Operations for the next couple of months include the Lewisville Fire Department Open House on Saturday, October 14, 2017, It will be held at the Central Fire Station, 188 North Valley Parkway, Lewisville, Texas from 10AM to 3PM. We will be operating 2 stations from one of the Fire Departments RV vehicles.

On Saturday, October 21, 2017, LARA will hold its Club Meeting at Conner Pavilion at Lake Park followed immediately by the Boy Scouts Jamboree on the Air. We will be running 2 stations under the Connor Pavilion from 10AM to 4PM, although the Boy Scouts set no 'official' hours. We will setup right after the club meeting.

There will be a Technician Licensing Class on October 7th and 8th. The class will run from 8AM to 5PM on Saturday, and 8AM till the Testing Session at 2PM on Sunday. Both the class and the testing session will be held at the Central Fire Station, EOC room, 188 North Central Parkway, Lewisville, TX,

The Operations Report was not brought up for approval.

Old Business

The Tailgate Swap Meet was a bigger success than the first one, with more people and more merchandise. Discussion of timing for the next Tailgate Swap Meet centered around a quarterly meet, giving us the next one in November sometime.

New Business

The Parity Act that is currently in Congress is NOT acceptable to Amateur Radio. Contact your US Senators and Representatives to let them know to vote NO on this bill. Be careful, the ARRL is FOR this bill even though it is a bad bill.

It is possible a Texas only Parity Act can be moved through the Texas Legislation in their next session. Check the various web sites for more information.

Presentation

Lee Norup, K5WXR, gave a very interesting presentation on ARDEN. It included information, hard show and tell, and software presentations. Thank you Lee for this excellent information.

Junk Boxes

Both boxes have been returned.

Box 1 – available

Box 2 – Ron Ford, KF5OMH

Motion to adjourn the meeting at 9:28AM.

Motioned by: Jim Lavin, K5VZ

Seconded by: Ron Ford, KF5OMH

Approved by the Members

Hereby submitted:

Tim Monk, WZ5TM,

Secretary

October 10, 2017

VEC Report

Testing session was conducted October 4, 2017 following a two day Technician class instructed by Jim Lavin, K5VZ.

Total of six (6) applicants including walk-ins were tested. Four applicants successfully upgraded to Technician class. They are:

1. Ronney L. Bath
2. Damian A. Esteves Mena
3. Thomas Quinn IV
4. Lawrence R. Swain

Congratulations to all of the new upgrades, as they await official notification in the FCC database. Welcome to the world of amateur radio.

73's Steve - W5JK

Treasurer's Report

By: Ron, KF5OMH

LARA Treasurer's Report - September 2017**Checking Account**

Beginning Balance		\$2,324.00
Income		
Dues		\$12.50
Donations		\$64.53
Raffle Tickets		\$0.00
Shirts		\$25.00
Total Income		\$102.03
Expenses		
Fees		\$1.03
Repeater		\$0.00
Miscellaneous		\$39.84
Total Expenses		\$40.87
Ending Balance		\$2,385.16

Savings Account

Beginning Balance		\$31.66
Deposits		\$0.00
Withdrawals		\$0.00
Ending Balance		\$31.66

CLUB ASSETS

For Sale	\$250.00
Stock (Not for Sale)	\$710.00
Loaner Equipment	\$2,040.00
Repeater Equipment	TBD
	\$3,000.00

LARA NET VALUE **\$5,416.82**

Crossword

By: Chris Codella, W2PA (used with permission)

Answers elsewhere in this newsletter

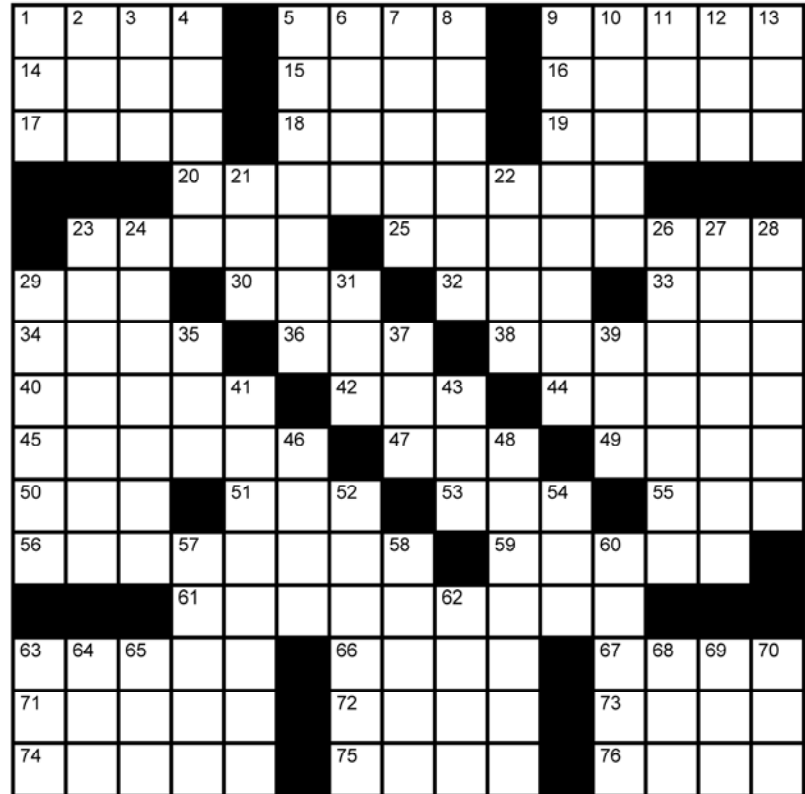
by Chris Codella, W2PA

12/10/2007

Fine Businesses**Across**

1. CA company, started in AZ*
5. Sens., IMD, selectivity, e.g.
9. With 20, 61 and 76 across, the theme of this puzzle, and the * clues
14. PJ6 place
15. Inductor
16. Put out
17. Tester type
18. Magazine contents
19. G-land elevators
20. See 9 across
23. Animate
25. Porcelain, etc.
29. Kind of code
30. TN company, with 53 across*
32. Windows predecessor
33. Immediately
34. GM Gaelic
36. Hi-___
38. Crunch maker
40. 5N currency
42. Tower ring
44. Lifted, so to speak
45. Coastal features
47. Browning, ham, or Grissom, not
49. ___ of measure
50. However, on CW
51. Part of NIB, on eBay, say
53. See 30 across
55. Lt.'s inferior, in the Navy
56. Passings on
59. NORs' cousins
61. See 9 across
63. Transplant, in a way
66. Operates, as in a multi-multi
67. Wise men
71. Kind of pad

72. Xmt'd, opp.
73. Hammer part
74. ___ pole
75. GM island
76. See 9 across
- Down**
1. Bal. mod. prod.
2. QTC test
3. Pertaining to, on CW
4. Civil rights org.
5. Quickly run
6. Partner of circumstance
7. CA company*
8. Replicated
9. FCC does it, to a 2-year vacant call sign
10. OT discrimination?
11. ABC followers
12. Professional suffix



13. Older OMs, or YLs for that matter
21. Connector label, often
22. Soldering implement
23. Toothy fish
24. Permittivity symbol
26. Performed a canticle, e.g.
27. IA company*
28. Candies
29. IL company*
31. On-air group
35. "___ he drove out of sight..."
37. "599 HR - FB ___ OM"
39. QR followers
41. Where most verticals are fed
43. ENN, for example, with "numbers"
46. Horizontal location, during a contest off-time, perhaps
48. What a ham does before identifying
52. Hi-Z low-Z interfaces, say
54. Subway alternative
57. Prefix for a Seoul man, or YL for that matter
58. Four over four, for example
60. Mythological SV YL
62. Little pistol view of a big gun?
63. Rprt.
64. CO company*
65. 70's rock?
68. CA company, originally in WA*
69. SK company*
70. Keyboard key

Area Repeaters

Freq.	Shift	PL	Call	Name
145.1700	-.600	110.9	W5FKN	DCARA-Denton County EOC
145.2100	-.600	110.9	N5MJQ	Metrocrest ARA-Carrollton
145.4000	-.600	110.9	NETARC	Grapevine
145.4900	-.600	85.4	WD5U	Rosston Tower
146.9200	-.600	110.9	W5NGU	DCARA - Denton
146.6200	-.600	110.9	N5ERS	Flower Mound
146.7800	+.600	131.8	WQ5A	Wise County Skywarn*
147.3800	+.600	110.9	K5LRK	LAARK - The Colony
224.000	-1.6	110.9	K5LRK	LAARK - The Colony
224.080	-1.6	110.9	W5LVC	LARA
224.920	-1.6	110.9	AF5RS	AF5RS
441.3250	+5.0	88.5	W5NGU	Portable DCARA repeater
442.7500	+5.0	110.9	KA5R	Trophy Club
444.5125	+5.0	123	KE5UT	Celina
442.1750	+5.0	110.9	NETARC	Southlake
442.600	+5.0	131.8	WQ5A	Wise County Skywarn*
442.6500	+5.0	110.9	N5MJQ	Metrocrest ARA-Carrollton
443.3000	+5.0	110.9	K5LRK	LAARK-C4FM on/ly
443.5250	+5.0	118.8	WA5LIE	DCARA - Denton
443.7375	+5.0	141.3	N6LXX	Rosston Tower
443.8750	+5.0	110.9	NETARC	DFW Airport
444.0500	+5.0	110.9	W5NGU	DCARA-Denton County EOC
444.2250	+5.0	110.9	K5CFD	Coppell
444.7000	+5.0	110.9	NETARC	Southlake
444.8500	+5.0	110.9	N5ERS	Flower Mound
927.025	-25.0	D532	N5ERS	Flower Mound
927.4125	-25.0	432	N5LS	Denton
927.6125	-25.0	110.9	W5NGU	DCARA-Denton County EOC
927.1375	-25.0	131.8	W5FKN	Decatur
1253.6000	none	none	W5NGU-G	DCARA - EOC - D*Star "G"
1293.4000	-20.0	none	W5NGU-A	DCARA - EOC - D*Star "A"
442.9250	+5.0	none	W5NGU-B	DCARA - EOC - D*Star "B"
147.4500	-1.0	none	W5NGU-C	DCARA - EOC - D*Star "C"
1259.2000	none	none	KE5YAP-G	DCARA-Rosston- D*Star "G"
1293.2000	-20.0	none	KE5YAP-A	DCARA-Rosston- D*Star "A"
440.7125	+5.0	none	KE5YAP-B	DCARA-Rosston- D*Star "B"
147.4900	-1.0	none	KE5YAP-C	DCARA-Rosston- D*Star "C"
DIGITAL	=====	=====	=====	=====
144.9100	none	none	W5NGU-4	DCARA Digipeater-Denton
147.970	none	none	K5YX-10	WinLink Gateway
144.990	none	none	KC5GOI	DCARA Digipeater-Rosston
144.990	none	none	KD5EOC-10	DCARA WL Gateway