



LARA Newsletter

Volume 3 - Issue 10 October 11th, 2018



Breakfast & Club Members Meetings - October, 2018

Breakfast

- 6 - Saturday @ 8AM Site A.
- 13 - Saturday @ 8AM Site A.
- 27 - Saturday @ 8AM Site A.

Business

- 20th - Saturday @ 8AM Site C.
- Please Note Special JOTA

Location for Meeting

Conner Pavilion in Lewisville Park Lake - 600 Sandy Beach Rd.

Breakfast

Saturday @ 8AM Site A.

Key:

- Site A.** - Mill Street Diner, 727 S Mill Street, Lewisville, TX 75057
- Site B.** - Lewisville Central Fire Station Training Room
188 N. Valley Parkway
- Site C.** - Conner Pavilion, Lewisville Park Lake, 600 Sandy Beach Rd.

Association Contact Information:

Mailing Address: P.O. Box 292282
Lewisville, TX. 75029
Email Address:
W5LVC.Club@gmail.com

Check us out:

Facebook: facebook.com/w5lvc/



Minutes for the Monthly Club and Officer's Meetings may be viewed on our website w5lvc.org.



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Editor: Ron Bath
KG5VIS
aro.kg5vis@gmail.com



Have You Got a Story Idea?

Your entry may be emailed to arokg5vis@gmail.com NLT 09/09/18 by 5 PM. All entries shall contain the following information:

- Name:
- Call Sign:
- Date:
- Story Idea:
- Picture (optional):

JOTA



Don't forget LARA's JOTA event, the 61st annual BSA Jamboree on the air on Saturday, October 20th, 10:00 AM - 5:00 PM at Conner Pavilion in Lewisville Park Lake, 600 Sandy Beach Rd.

2017 - 2018 Officers & Support

President

Ron Ford, KF5OMH (972) 742-7839
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Vice President

Mike Reitz, W5EVT (214) 535-1368
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Public Information Officer

(Vacant)

Webmister—W5LVC.org**Newsletter Editor**

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Association membership is open to all persons interested in amateur radio. Join at any meeting, by mail or on-line through our web site. Annual dues are \$25 individual, \$30 family.



From The Presidents Shack

The highlight of the September meeting was a presentation by Andrew, KE5GDB, on repeaters. It was very informative and we all got to see the hardware behind a repeater. Many thanks to Andrew for getting up and about at such an early hour on a Saturday morning

Speaking of presentations, all of the presentations from this year's meetings where there was a visual presentation have now been posted on the web site. They are located following the minutes of each month's meeting on the **Meeting Minutes** page. If you were unable to attend a meeting you can now see the presentation that was delivered.

LARA is in need of a Public Information Officer to help publicize the association and our various activities. This is an appointed position, not an elected one so there is not a requirement for an election. What does the PIO do, you ask? The position is responsible for keeping the club calendars up-to-date, setting up an information table at our various events and publishing notices of our events through print and social media. There is no need to be a Journalism major to be successful in this position; it just requires a little enthusiasm for our hobby. Surely some one of the membership would like to step up and fill this position. If you are that person, please contact me via phone 972-742-7839 or email rfavcon@verizon.net. Do I sound like I'm begging? I'm about to that point so please become more active and step forward.

Tim, WZ5TM, is interested in forming a Radio Telescope and Satellite Communications group. If this facet of our hobby is of interest to you or you would like to learn more contact Tim at timmonk@gmail.com.

Do you have some stuff laying around that you would like to get rid of? Bring it out to the 4th Quarter Tailgate Swap Meet on November 17 at Rev. Alvin Turner Sr. Park 700 Hembry & Birch in Lewisville. If you have nothing to sell come out and see if there isn't something you would like to spend your money on. You just never know what worldly treasurers one might find.

We will be conducting a Technician class the weekend of December 8 & 9. Dale, WA5WNI will be the instructor for this session and the VE testing session will be held on Sunday afternoon, Dec. 9. This is a date change for the December test session. If you know of someone who is interested in obtaining their license and joining us in this fun hobby give them a copy of the flyer that appears elsewhere in this newsletter and/or direct them to the following link to sign up for the class -- <https://goo.gl/forms/SwzDaTGU8Z92DUQ93>.

Mark your calendar for December 15 at 7:00 PM and plan to attend our annual Christmas Party. This is a dinner affair to be held at the Korner Café at 921 W. Main St. in Lewisville. We'll have a White Elephant gift exchange so if you want to participate please bring a wrapped gift valued at a maximum of \$20.00 for each person who wishes to participate. If you are bringing a child please bring a gift for them clearly marked with their name. In addition, if you are bringing a child please notify Ron Swain, KG5VIV so we can be prepared for them. Individual food orders will be from the regular Korner Cafe menu. Each family is responsible for their own tab. Questions can be directed to Ron Swain, KG5VIV, at 210-410-2008 or Ironswain@gmail.com.

Can you believe that Christmas is but 70 days away? Well, Santa is gearing up to be on the air talking to children, young and old, on December 21 and 22, 6:00 – 8:00 PM utilizing the 145.170 repeater. If you would like to help with this event contact Mike, W5EVT at 214-535-1368.

Hope to see everyone at the membership meeting on Oct. 20. **This meeting will be held at Conner Pavilion at Lake Park and NOT the fire station. See the map below for the location of the pavilion.** Bring a guest along with you to receive a chance to win a gift certificate to Ham Radio Outlet.

DIRECTIONS:

From the intersection of N. Mill St. and Lake Park Rd take Lake Park Rd east following the JOTA signs. Turn left on the road between the soccer and baseball fields. Proceed to the north where the street terminates in a parking lot. Park in this lot and follow the path to Conner Pavilion. Talk-in will be on the 145.170 repeater if you have trouble locating it. If you are mobility limited contact Mike, W5EVT, at 214-535-1368 for parking instructions.



KF5OMH

Treasurer's Report

September

September was a busy month, financially speaking. Income came from dues and t-shirt sales. We had several large expenses though none were unexpected. The \$200 to ARRL renewed our liability insurance. This insurance is important to protect the club when we hold events. As an ARRL-affiliated club we are able to take advantage of a much lower rate. The other big expense involved preparations for JOTA such as signage. We will have additional expenses in October as we support this important event. Club assets have been adjusted for the loss of a laptop computer that is no longer functional.

September 2018

LARA Treasurer's Report – September 30, 2018

Checking Account

Beginning Balance		\$3,635.69
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Income

Dues	\$12.50
Donations	\$0.00
ARRL memberships	\$59.00
Stickers	\$0.00
Shirts	\$25.00
Equip. Sales	\$0.00
Total Income	\$96.50

Expenses

Fees	\$0.00
ARRL	\$200.00
JOTA	\$118.02
Miscellaneous	\$12.00
Total Expenses	\$330.02

Ending Balance	\$3,402.17
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Petty Cash (Included in balance)	\$3.00
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CLUB ASSETS

For Sale	\$0.00
Stock (Not for Sale)	\$689.95 Computer loss -\$100
Loaner Equipment	\$1,395.00

\$2,084.95

LARA NET VALUE

\$5,487.12



WA5WNI's High Proof Homebrew

WA5WNI

Dale Chatham

Dale.Chatham@gmail.com

So, you want to design and create your own Printed Circuit Board (PCB).

This month, I will discuss the software to ease the process of entering a schematic diagram and creating a PCB from the schematic. Software to do this falls into the general category of "Electronic Design Automation" or EDA.

The process of printed circuit board creation falls into two steps, "schematic entry" and PCB creation. Schematic entry requires that the software know the components you wish to use in your design. In the language of EDA, they are "symbols". With the plethora of electronic components (pull up the catalog at mouser.com or digikey.com for examples). Ideally, every component you wish to use would exist in the software's libraries. This is a near impossible criteria to meet, so the next best thing is for the EDA tool to be supported by manufacturers of the devices of an online community.

The input to the schematic entry program is human input. Components are selected and connections are made from pin to pin of the components. An additional parameter of a component is its footprint. This is what it looks like on the printed circuit board. As an example, take a small PIC microcontroller. It is available as a dual inline package (DIP) device, or as several types of surface mount architecture (SMA) chips. In all, for a component there may be a half dozen or more footprints. Even simple components such as capacitors have a number of packaging options, radial or axial leads and a variety of sizes, not to mention the different types of capacitors: ceramic, tantalum electrolytic, ... This data are then converted into a netlist. The netlist is the basic map of components and interconnections in a textual, machine usable format rather than the graphical format of the schematic entry program. This netlist is then read into the PCB creation program. It is initially presented as the footprints with

Makerspace

“fly lines” to indicate the connections. Typically, these fly lines are a mess and are referred in the initial state as a “rat’s nest” for some rather obvious reasons if you’ve ever seen one.

The next step is called “place and route”. The footprints are placed and the fly lines are routed between them to make the traces on the circuit board. The traces can exist on a single side of the PCB, two sides in the case of a double sided PCB up to as many as at least 8 layers, likely more. It is within the scope of the amateur PCB maker to do double sided boards. Four would be a stretch, but possible with more than a little bit of care.

Some software has features called auto place and auto route, Sometimes in one step, auto place and route. No expert electronic engineer would trust a machine to do this task on a complex board. However, for an amateur it can be a good starting point.

There are a number of packages potentially available. Prices range from free to license fees approaching millions of dollars per year. I suspect we all want to stay toward the free end of the software spectrum. As with many such things, Wikipedia.com has an excellent comparison of EDA software: https://en.wikipedia.org/wiki/Comparison_of_EDA_software.

My personal, albeit somewhat biased criteria for software selection includes price, availability of symbols and footprints, ability to run on multiple platforms (specifically Windows and Linux) as well as the restrictions (or lack thereof) placed on the software.

In my opinion, there are three good options, Eagle, gEDA and KiCAD. All run on Windows, Linux and Macintosh. Eagle has been around the longest. It is widely supported and is free, but limited to two layers and 100mm x 80mm boards (about 4 inches by 3 inches). For \$169, you can design 6 layers of 160mm x 100mm boards, or about 7 x 4 inch boards limited to 6 layers.

Both gEDA and KiCAD were designed on Linux and ported to Windows and Mac. As such, they are both Free Open Source Software (FOSS) and disturbed under various open software licenses. gEDA used to be the gold standard for FOSS EDA software. KiCAD has overtaken it for any number of reasons, not the least of which is the adoption by one of the more popular window managers available for Linux.

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Eagle probably comes with a richer library. This is all but moot, though, as there are several excellent sources for symbols and footprints, including some component manufacturers. Most support Eagle and KiCAD directly. There is an excellent web source for symbols and footprints: <https://www.snapeda.com/kicad/>. Many different EDA software versions are supported.

There are also a number of PCB houses that distribute free software. However, if you use this software, you usually have to use the PCB house. The software locks you into a single source for your PCB. Using the output to make your own PCBs can be difficult.

If you want to use a PCB house, the three packages I listed will produce files to send to the PCB house, usually “Gerber” files. A PCB house will require several files, one per copper layer, one for silk screening, one for etch resist, one for drill holes, etc.... If you are producing your own PCBs, chances are you want an image format.

What to do with the output of your EDA process? There are a number of options. One is to send to a PCB house. This is the easiest solution, but also the most expensive, perhaps. There is usually a setup fee on top of the per board fee. More boards, lower fees, but expect to pay between \$50 and \$100 for one or two boards. That is \$25 to \$50 a board. Some charge for each drill hole. At 100 boards, the price drops to perhaps \$5.00 per board. Prices vary. The less expensive places are in China. Expect a few week or more turnaround time.

On the other hand, a number of options exist if you wish to make your own PCBs:

1. CNC router. This method takes the gerber files and either uses them directly or via an intermediate step and grinds the copper off of the board where it is not wanted. Using this technique to produce a board for a 64 pin SMA component with pads at .05 inch or less spacing is usually less than acceptable and is subject to the “play” in the router.
2. Photolithographic. This method creates a negative image of the PCB. This image is then used to photographically create a printed circuit board by painting the board with an etch resistant

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which is sensitive to ultraviolet light. The negative is placed on the sensitized board and exposed to ultraviolet light. The UV exposure causes the etch resist to harden. The board is then immersed in a solvent which dissolves the unexposed etch resist. The board is then placed in an etchant, typically an acid bath or a bath of Ferric Chloride which eats the copper off the board in the unexposed areas.

3. Laser exposure of photoresist. As above, except instead of using a photographic negative, an ultraviolet laser in a CNC machine is used to expose the photoresist. Once exposed, development of the board and etching is as it is in the photolithographic method.
4. Toner transfer. A positive mirror image is printed on special paper with a laser printer. The special paper is either designed for the purpose or often inkjet photographic paper. The printed paper is then placed face down on the PCB and heat is applied by an iron, laminator or other means. Xerographic toner consists of graphite and microscopic plastic particles. The heat causes the plastic to melt and adhere to the PCB. The paper is allowed to cool and is washed in water which causes the toner to release from the paper. The toner is thus “transferred” to the PCB and etching is done as above.
5. Direct inkjet printing. This is done by replacing the ink cartridge in an inkjet printer with special ink. A special adapter is required which is placed into the CD printing device of an inkjet printer. The board is then printed directly. The ink is dried, typically in an oven. At this point, the board is etched.
6. Laser paint ablation method. The PCB is painted with a paint, typically black, but likely any color will work. The paint is allowed to dry. A negative image of the PCB is created and fed to the laser. This causes the laser to “print” the dark areas which ablates the paint from the areas where you wish to remove copper. The board is then etched. There are two types of lasers that can be used, a CO2 laser which can be had for around \$400 on eBay, or a near ultraviolet laser on a CNC base. The laser itself can be cheap, ranging in price from a surplus Blu-ray player to a hundred dollars for a 15 watt blue laser. The entire unit can be purchased on eBay for around \$250.

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I have used method #1, photolithography. The results are excellent if you use a process which produces dense transparencies. Using a laser printer to print on overhead projector transparencies usually results in a negative in which the dark areas are not dense enough. I am currently working on method #5. It appears to have the most promise of the methods 2 – 5.



Club News - If you've received good news to share with us in the event you've received your new license, gotten married or won the lottery, etc., please share it with our club members. Email your Good News to aro.kg5vis@gmail.com.

Our club secretary Ron Swain and his wife have been hard at work planning for our Christmas party event.

LARA Christmas Party

Date: December 15th

Time: 7:00 PM - 9:00 PM

Location: Korner Cafe

Address: 921 W Main St, Lewisville, TX 75067

The annual fire station open house will is:

Saturday October 13th from 10:00 AM until 4:30 PM

Lewisville Fire Department Training Room located at 188 North Valley Parkway.

J.O.T.A. - We are still looking for volunteers - Please show your support for the Boy and Girl Scouts and contact our Vice President Mike Reitz - W5EVT, if available, at w5evt@sbcglobal.net

Our Vice President Mike Reitz and his team have been busy making preparations for our annual Scouting Jamboree-on-the-Air event with the Boy and Girl Scouts of America. This is an annual event providing an introduction to the wonderful world of amateur radio. It will be held at Conner Pavilion at Lake Park on Lake Lewisville on Saturday, October 20. Operating times will be 10:00 – 17:00.

Our Operations Director Dale Chatham - WA5WNI is working on a special page for our website called "Makerspace". It would feature DIY articles about electronic and mechanical projects of interest to our amateur radio operators. Dale is thinking that a section listing resources available to our club members including mill/lathe, hammer/drill, band saw, antenna analyzers, all manner of cnc, CO2 laser, cnc routers, etc. would be of value. One of our members recently mentioned to Dale that no "how to" article for masts is readily available. It is strongly suspected that Dale is about to change that.

PIO (Public Information Officer) - The search is on for a new PIO. If you would consider serving in this capacity as PIO please contact Ron Ford at rfavcon@verizon.net for consideration.

Picture I.D. for Website - We would like to have your photograph listed on our website members page. Please view this page and if you do not have your picture there please consider adding it. You may email a .jpg photo file as an email attachment to aro.kg5vis@gmail.com. If you prefer, we will take your picture at any club meeting for you. Just make your request known to Ron Bath - KG5VIS.

A new page is being added to our newsletter in this edition. It is titled "Getting to Know You". You may remember the the 1956 hit musical "The King and I". "Getting to Know You" was a much loved song by Rodgers and Hammerstein. The opening lyrics were "Getting to Know You, getting to know all about you". We plan to feature the personal profiles of 4 members in each future issue. Why 4 you ask? Because, with our current number of club members at 49, it would take 49 months or over 4 years to feature all of us. We hope you like this new addition and enjoy getting to know each other better. We only featured 3 members this month, and hope to be up to our goal of 4 next month.

Special Recognition

A word of thanks goes out to our Operations Director Dale Chatham WA5WNI for his creativity in promoting new ideas and plans to add new services and features to our clubs website w5lvc.org. Thanks to both Dale and our Vice President Mike Reitz - W5EVT, for their hard work in the area of public relations and advertising to further plans for the 61ST ANNUAL BSA JAMBOREE ON THE AIR (JOTA) through their efforts in providing effective and interesting public relations within the media and organizations within our community and beyond.

**Don't forget LARA's JOTA event,
The 61st annual BSA Jamboree on the air
Saturday, October 20th
10:00 AM - 5:00 PM
Conner Pavilion in Lewisville Park Lake**

New Club Member

Where Are You???

Sorry gang, but there are no new club members to report this month.

We are seeking new members for our club folks. Please know that we welcome all those interested in amateur radio.

Our organization will become enriched by new members from the ranks of ladies and young people as well as



When you find someone in our club deserving of congratulations or special recognition please send your email recommendation to: aro.kg5VIS@gmail.com for publication in our next newsletter.

“Getting to Know You”



Ron Bath KG5VIS is retired from the DOD (Department of Defense) and NRC (Nuclear Regulatory Commission), having served as an electronic countermeasures specialist and IT (Information Technology) specialist. After government service he fulfilled the position of field service engineer with Symbol Technologies, servicing laser equipment throughout the United States. Ron has performed the roles of actor, scriptwriter, director of photography, editor, director and producer in motion pictures, television, and commercials in recent years. He lives in Lewisville, Texas and has been a member of LARA for 2 years.

Hobbies include Robotics, photography, Martial Arts, writing and music. Plays trumpet, guitar (6 string and bass) and keyboards (synthesizer).

Ron and his wife Ellen celebrated their 50th wedding anniversary in August of this year. They were high school sweethearts in Kansas City, Missouri and remain best friends. They have two grown children, a son, and a daughter with two grandchildren.

Ron enjoys participating in our amateur radio club as former PIO (Public Information Officer), and presently as editor of our monthly newsletter and webmaster of our clubs website w5lvc.org, and feels that you are some of the finest men and women he has had the pleasure to share his life with.



Tracey Edwards AB5TE works as a senior analyst at Securus Technologies where she has been for the past nineteen years. She is a native Texan that can trace her roots to the Republic of Texas days and currently lives in Highland Village.

Hobbies include reading, learning anything that is interesting at the time, fishing, CERT and ARES.

Tracey and her husband Jack were married in January of 1990 and have lived in several places due to his being in the United States Navy. They met in high school and have been together ever since with a grown son and daughter. She is still waiting for grandchildren.

Tracey is very glad to be a member of LARA and very much appreciated the warm welcome and enjoys the easy camaraderie the group shares and hopes to be a part of that for a long time.

“Getting to Know You”

Page 2 of 2



Ron Ford, KF5OMH, is retired from American Airlines Aircraft Maintenance division when he was the Product Manager for the Boeing 757 and 767 fleets. He opted for early retirement in order to avoid being caught up in a bankruptcy filing. After retirement he joined a co-worker in an aviation consulting firm which kept him busy for the next 10 years. After permanent retirement in 2013 he had time to enjoy his model railroading hobby and joined in the amateur radio hobby.

Ron and his wife, Beverly, live in Lewisville and will celebrate their 50th wedding anniversary in November. They have a grown son who lives in Highland Village with his wife and twin 12 year old grandsons. Ron and Beverly enjoy spending time with their grandsons and attending their numerous school, scouting, and music functions.

In addition to his activities in amateur radio and LARA Ron is also a member of the Reserve Division of the Lewisville Fire Department and volunteers a couple of days a week at Medical City Lewisville.

He joined LARA shortly after the association was formed and is currently serving as its President. He formerly served as the Newsletter editor and Treasurer. Ron would like to encourage all of the membership to take a more active role in the organization. There are a lot of opportunities in which to be involved. By becoming more involved you'll have the opportunity to meet other members and build new friendships.

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It is titled:

“Getting to Know You”.

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We sincerely hope you like this new addition and enjoy getting to know each other better.

Note: We only featured 3 members this month, and hope to be up to our goal of 4 next month.



HAM RADIO TECHNICIAN CLASS

THE LEWISVILLE AMATEUR RADIO ASSOCIATION
(LARA)

WILL BE HOSTING A HAM RADIO TECHNICIAN CLASS

SATURDAY DECEMBER 8 & 9, 2018

8:00 AM—5:00 PM

AT THE LEWISVILLE CENTRAL FIRE STATION TRAINING ROOM

Get your first (Technician) ham radio license. All students who successfully complete the class and testing will receive their first ham radio compliments of LARA.

Entrance to the training room is at the rear of the building adjacent to the fuel pumps. Test session will be conducted on Sunday December 9 following the class. Fee for the test is \$14.00. The fee is payable in cash, check, or money order. Applicants will need to provide a form of identification, preferably photo ID, if one is available.

There is no age limit for individuals to take this class and test for the Technician license.

The class will be taught using the ARRL Ham Radio License Manual, 3rd Edition. Having the manual for the class is not mandatory but strongly suggested. It is also suggested that students review the manual prior to the class sessions. Manuals can be purchased at ARRL.org, Amazon.com, Barnes and Noble and other local book stores.

Complete the registration form at <https://goo.gl/forms/SwzDaTGU8Z92DUQ93> to register for the class.

Questions? Contact Dale Chatham, 682-597-5217 or dale.chatham@gmail.com.





Ham Humour



MAN FOUND IN HARA ARENA, DAYS AFTER HAMVENTION ENDS



By K5KVN, on the scene

DAYTON, Ohio — A Vermont amateur radio operator was found today in a remote hallway within the Hara Arena complex, three days after the end of Hamvention. Officials at a news conference identified the man as Gerry Mapleshire and described him as being found “disoriented, hungry, and with three days of beard growth.”

Ham Found in Hara Arena Days After Hamvention Ends After medical technicians on the scene revived his blood sugar by providing him a leftover \$6 Hamvention Hotdog, Mapleshire recalled what happened.

“It was shoulder-to-shoulder on the arena floor. I remember a nice-looking lady handing me a free Kenwood cloth bag full of brochures and a lapel pin, then the crowd shifted and I was pushed into the MFJ booth,” said Mapleshire.

He says that’s when his “survival instincts” kicked in.

“I got on my hands and knees and crawled out of the MFJ booth. I got to the arena floor ramp but the crowd was so thick. I somehow ended up in a hall by the loading docks, without my Kenwood bag,” he said.

He wandered through dark hallways trying to find his way out of the vast complex for three days before a maintenance worker found him. “I called for help on 146.520 but no one answered,” said Mapleshire.

Hamvention information deputy Ned Doubtman investigated why his radio call went unanswered. “Turns out he was transmitting WITHOUT a PL tone. Everyone here blocks out QRM by using a PL tone on transmit and receive. It’s no wonder he wasn’t heard,” said Doubtman.

Mapleshire says he’s still recovering from the traumatic experience, but would like to get in touch with someone from Kenwood so he can get his lapel pin.

hamhijinks.com

photo credit: practicalowl via photopin cc



You may address any comments or suggestions to the editor at:
aro.kg5vis@gmail.com



**“There’s nothing about your performance that you need to change ...
other than everything.”**