

SPARKS

P.O. Box 342768 * Memphis, Tennessee 38134-2768 * Volume 23 * December 2017



Welcome to the Delta Amateur Radio Club

Visit our home on the web at w4bs.org

Email: darc4you@gmail.com

Facebook: <https://www.facebook.com/darcmem>

Newsletters: <http://w4bs.org/Sparks/>

W4BS

REPEATER SYSTEM

146.820 ^{-107.2}	* 147.360 ^{+107.2}
146.625 ^{-107.2}	443.200 ^{+107.2}
224.420 ^{-107.2}	
144.390 Digipeater	*Fusion

This month's meeting begins at 7pm on December 12, 2017, at Ellendale Church of Christ, 7365 Highway 70 Memphis, TN (1 ½ miles north of Highway 64 (Stage Road)).

Note: We will not have FCC testing or HQ 101 or a program at the December club meeting.

Members are asked to bring a covered dish or dessert to share with ham friends. Delta will supply two hams (the kind you eat), coffee, soft drinks, plates, and utensils.

FCC testing, HQ 101, and a program will resume with the January club meeting.

Congratulations to those who passed exams during Delta's November, 2017, test session: new Technicians Matt Forbis, KG5WDG, James Kelley, KN4HYD, Caitlyn Kelley, KN4HYE, new Generals Bill Shaeffer, KN4HYF, and Timothy Harris, N4TFZ, and new Extra John Wofford, KA5CAV. Note that Bill passed both his Technician and General exams in one evening. Nicely done, Bill!

November Election Results

Submitted by Dan Lasley, NE7JN



(L-R, back row), Steve Evans, KM4VYA, Joe Lowenthal, WA4OVO, Scott Adams, KM4PMU, Bob Van Keuren, KM4SEB, Steve Frazier, KK4VPT, and Kevin Zent, K4KLZ. (L-R, front row) Linda Laseter, KJ4CTX, and Bob Vawter, KW4RJ.

In last month's meeting, the following members were elected to positions for 2018:

President	Steve Frazier, KK4VPT
Vice President	Bob Van Keuren, KM4SEB
Secretary	Steve Evans, KM4VYA
Treasurer	Linda Laseter, KJ4CTX
Director of Training	Joe Lowenthal, WA4OVO
Director of Publications	Bob Vawter, KW4RJ
Director of Meetings & Special Events ...	Scott Adams, KM4PMU
Director of Programs	Kevin Zent, K4KLZ

Please thank these folks for volunteering to lead the club in 2018!

President's Corner

Submitted by Ken Laseter, KI4AOH

Merry Christmas, everyone!

Before I get started with club business, let me take this opportunity thank each and every one of you for allowing me the honor of serving as your club president these past two years. I have enjoyed each and every moment. I continue to be amazed at the collective knowledge and capabilities possessed by our members. You are truly the best group of people I have ever had the opportunity of working with. Thank you so much.

My favorite meeting of the year is this month's annual potluck dinner. I can already see all that delicious food spread on the tables with lots and lots of desserts. Did I say LOTS of desserts! I can't wait. So, come join us and bring a covered dish for the pot-luck table. We always have fun and nobody leaves hungry. I think Linda has more prizes to give away.

Let me take this opportunity to thank all the current board members who are stepping aside at the end of the year. It has been a pleasure working with each of you during this past year, or two. You have served tirelessly and have always been there when we needed that little extra to get the job done. I sincerely appreciate your willingness to take time away from your families and work schedules to serve the Delta Club and the advancement of ham radio.

I would also like to welcome our new directors to the board. Although I am stepping down, I'm not leaving. I will continue to support each of you and the Delta Club as best I can. So, Tuesday night, when you see them, please take time to welcome them to the board, thank them for volunteering, and offer your support and assistance in making their transition a pleasant one.

Please don't forget that next month is the annual Swamp Stompers Ultra Marathon at Shelby Forest State Park. We do need 10 – 12 volunteers. If you are interested, please let me know.

As always, please don't forget to check into the Delta Club information net on the 146.820 repeater at 8:00 pm each evening, and when you check-in, make sure to thank the net control operator for taking time from their family and busy schedule to call the net for us. They are some of our most valuable assets!

If you have not renewed your club membership for 2018, now is the time. Linda, KJ4CTX, will be glad to accept your renewal application and cash, check or money order, either at a club meeting or via snail mail.

See you at the meeting Tuesday night!

73
Kenneth Laseter
KI4AOH

Treasurer's Report

Submitted by Linda Laseter, KJ4CTX

DELTA AMATEUR RADIO CLUB

Monthly Treasurer's Report

For month ended November 30, 2017

Submitted by Linda Laseter Treasurer

CHECKING ACCOUNT

BEGINNING BALANCE

BEGINNING BALANCE as of November 1, 2017 **\$3,247.61**

INCOME

Date		Amount	
11/14/17	Membership 2017/18	\$ 20.00	
11/14/17	Membership 2018	\$ 60.00	
11/28/17	Membership 2018	\$ 350.00	
TOTAL INCOME		<u>\$ 430.00</u>	\$ 430.00

EXPENSES

Date	Check #	To	Description	Amount	
11/07/17	1435	Linda Laseter	Door Prizes	\$ (284.03)	
11/13/17	1436	US Postal Serv	PO box rental - 6 mo	\$ (83.00)	
11/14/17	1437	Scott Adams	Refreshments	\$ (71.64)	
TOTAL EXPENSES				<u>\$ (438.67)</u>	\$ (438.67)

ENDING BALANCE as of November 30, 2017 **\$ 3,238.94**

CERTIFICATES OF DEPOSIT

	Maturity Date	Balance as of	
Certificate of Deposit #1	10/10/2018	10/13/2017	\$ 10,534.98
Certificate of Deposit #2	10/19/2022	8/27/2017	\$ 10,120.05

TOTAL DARC CASH ASSETS **\$ 23,893.97**

This Month's Board Meeting Minutes
December 5, 2017, submitted by Dan Lasley, NE7JN

Attendees: Steve Frazier, KK4VPT, Scott Adams, KM4PMU, Bill Stevens, WC9S, Dan Lasley, NE7JN, Ken Laseter, KI4AOH, Linda Laseter, KJ4CTX, Len Grice, W4MKS, Bob Van Keuren, KM4SEB, Bob Vawter, KW4RJ, Barri Munday, WB4SWP, Steve Evans, KM4VYA, and Joe Lowenthal, WA4OVO. Absent: Kevin Zent, K4KLZ.

Ken called the meeting to order at 7:00 pm.

Linda gave the Treasurer's report and passed around a letter from the ARRL acknowledging the club's donation to their emergency go-box fund. Board members voted to give a \$300.00 donation to the church for our use of their facilities and include a thank you letter from club members. Len will write the letter.

Joe said training for the General class has ended with 6 class members attending. Bill Shaeffer, KN4HYF, passed both Tech and General exams in one sitting. Joe needs at least five people for the Extra class beginning Jan 13th through Feb 27th, excluding Jan 27th. A Tech class will be held March 3rd-April 7th.

Board members voted for Ham of Year, New Ham of the Year, and Elmer of the Year.

Scott Adams discussed preparations for the feast at the December meeting.

Dan told the group that the revised web site, W4BS.org, is operational.

The January, 2018, HQ 101 topic will be on WinLink.

A motion to adjourn was made and seconded at 8:10 pm.

Minutes of Last Month's Club Meeting

November 14, 2017, submitted by Steve Evans, KM4VYA

Club President Ken Laseter, KI4AOH, opened the meeting at 7:00 pm and reminded everyone to sign in and drop a ticket in the bucket. Introductions were then made by name and call sign.

Secretary's Report: Ham Hilliard, W4GMM, moved to approve the previous meeting minutes as recorded in Sparks, second not recorded; the minutes were approved by acclamation.

Treasure's Report: Ham moved to approve the Treasurer's report as recorded in Sparks, second not recorded; the report was approved by acclamation.

VEC testing: Tonight's VE testing produced 2 new Technician Class Licensees, 3 new General Class Licensees, and 1 new Extra class Licensee.

Training: Joe Lowenthal, WA4OVO, mentioned a tentative Extra class beginning January 13 and running for 6 Saturdays. If not enough sign up, he will be holding another Technician Class starting in January at EMHC Ambulance on Appling Way. Otherwise, a Technician class will start March 3rd for 6 Saturdays from 9am to 1pm. Joe also reported progress with the General Class currently in session.

Appreciation was voiced for all Veterans in attendance.

Pat Lane, W4OQG, told us that Kidde Fire Extinguisher Company has a recall in effect.

Events: John Reiners, KN4BVH, Emergency Coordinator (EC) for ARES in Shelby County spoke on the need for volunteers to fill stations in the December 2, 2017, St. Jude Marathon.

Elections: Ken Laseter, KI4AOH covered the elections for Delta Club. He then introduced the candidates and called for any other nominations; none were offered. With the nominated candidates all running unopposed, Ham moved to elect the candidates by acclamation. There was an unrecorded second, members voted unanimously, and the nominees were thus elected.

HQ 101: Ham Hilliard, W4GMM, asked members to be thinking about what future topics should be covered, and requested that people give him some ideas.

Tonight's presentation was on Running a Ham Radio using Solar Power. The Presenter was Joe Sanders, KM4JXS. A copy of his presentation can be found [here](#).

Drawings: Numerous prizes (running the gamut of antennas to a flat screen TV) were won in tonight's ticket drawings. Congrats to all!!!

The meeting adjourned at 8:40pm.

Last Month's Program

Submitted by Dan Lasley, NE7JN, contributions from Joe Sanders, KM4JXS



Last month our own Joe Sanders, KM4JXS, told us about solar powered ham radios, a subject Joe has been interested in since 2014.



Above, Joe demonstrates a large, rigid solar panel (50 watts), a smaller, rigid solar panel (25 watts), and a foldable solar panel (20 watts).

Solar Block Diagram



This slide from Joe's presentation shows the components of a solar powered ham radio system: one or more solar panels, a solar controller, a rechargeable battery, and the radio itself.

Joe says, "In Ham Radio applications 25, 50, and 100 watt panels are typical, based on the radio load requirements and portability. Solar panels typically output 15 - 21 volts because some drop in voltage occurs between the solar panel and the solar controller via the connectors and the length of the connecting wiring."

The ham's first thought here would be something along the lines of "21 volts??? My HF radio wants to see less than 14 volts!"

Not to worry, Joe has that covered!

What is a Solar Controller?



A solar controller, charge controller, or charge regulator is a voltage and/or current regulator. It regulates the voltage and current coming from the solar panel(s) going to the battery to maintain the optimum battery charge without overcharging.

In another of Joe's slides, he handles the potential overvoltage issue by using a solar controller to regulate the voltage and current as seen by the battery and the load, your expensive radio!

Battery Types



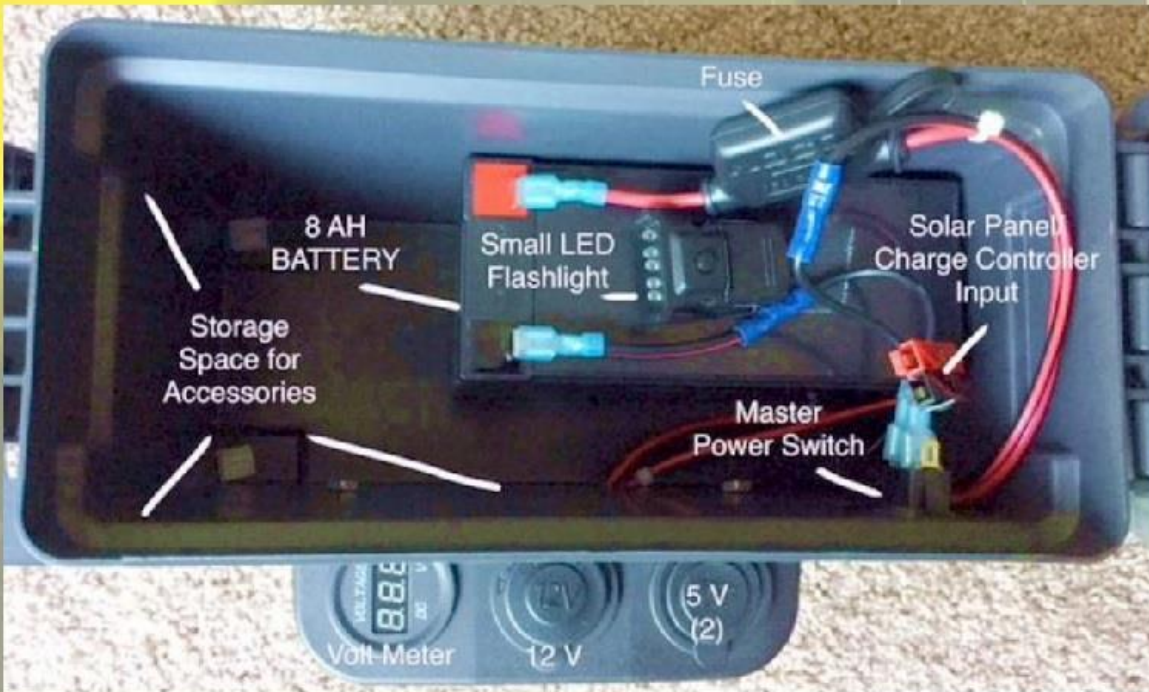
*8 Ampere Hour
35 Ampere Hour
Or Larger
Sealed Lead Acid/AGM
Marine Lead Acid*

** Automotive Batteries not recommended **

Graphics not to scale

In addition to the obvious differences in power capacities, Joe reminded us that not all batteries (e.g., automotive batteries) are suitable for use in a solar power system.

HT Go Box Inside



Joe's presentation included a description of an HT Go Box he built with a plastic Harbor Freight ammo box.

There are safety considerations to keep in mind with batteries and Joe covered well these considerations.

Thanks to Joe for an interesting and useful presentation and for allowing Delta to host his [presentation](#) on the club web site.

Delta Club Web Site Updates

Submitted by Dan Lasley, NE7JN

Delta has an updated web site, hosted on a different server, and located through a new domain. Thanks to Bob Vawter, KW4RJ, for providing the new web server and to Ray Miller, AA4UK, for providing the new domain, w4bs.org. We also thank Ken Gregg, K4DIT, for providing the original web server, and Tommy Thompson, KD4TJO, for providing much of the original content.

You can easily find information at the updated web site, which is w4bs.org. Note that W4BS is the call sign assigned to Delta Amateur Radio Club.

If you have questions on the updated web site, let [me](#) know.

2017-18 NASA On The Air Special Event

Submitted by Dan Lasley, NE7JN

Ham club stations at NASA facilities will be celebrating a number of anniversaries from December, 2017, through December, 2018, including Apollo 17's 45th anniversary, the founding of NASA in 1958, various first launches of ISS components, and the 50th anniversary of Apollo 8.

<https://nasaontheair.wordpress.com> says, "The club stations at the various NASA centers and facilities plan to be on the air with special events to celebrate these milestones and we are offering commemorative QSL cards and a special certificate indicating how many centers you worked on various bands and modes may be downloaded."

The states involved include Alabama, California, Florida, Maryland, New Mexico, Mississippi, Ohio, Texas, and Virginia. If you work these nine states, you are 18% of the way toward WAS!

The club stations plan to offer additional special events during 2018; check the web site for updates.

The 2018 ARRL International Grid Chase

Submitted by Dan Lasley, NE7JN; information from
ARRL Delta Division Director David A Norris, K5UZ

If you enjoyed working the 2014 ARRL Centennial event or the 2016 National Parks on the Air event, you should enjoy next year's ARRL International Grid Chase event. Here is David's brief introduction to the event:

"A new and exciting operating event will kick off on January 1, 2018, at 0000 UTC ..., when the ARRL International Grid Chase gets under way. The year-long event hopes to build on the success of the highly successful 2016 National Parks on the Air (NPOTA). The objective is to work stations on any band (except 60 meters) in as many different Maidenhead grid squares as possible, and then upload your log data to ARRL's Logbook of The World (LoTW). Registration is free, and it costs nothing to use LoTW. Many hams are familiar with grid squares from the VHF/UHF and satellite realms, and everyone lives in one. ARRL's VUCC is based on grid squares, and some contests on HF, as well as on VHF and UHF, also use them as a scoring factor."

David also says, "Complete details of the ARRL International Grid Chase will appear in the December, 2017, issue of QST. The digital edition is available on Friday, November 10."

You can read the entire announcement [here](#). In mid-November, David announced via email that the "International Grid Chase will allow use of 630 and 2200 Meters."

The International Grid Chase promises to be an interesting event.

November HQ 101

Submitted by Dan Lasley, NE7JN

In the November HQ 101 discussion, Ham Hilliard, W4GMM, covered setting up an HF station and DX operations. As mentioned on page one of this month's Sparks, we will not have an HQ 101 session at the December club meeting.

Join us upstairs at 6pm on the next Delta Club meeting night, Tuesday, January 9, 2018, for our next HQ 101 session, which will be on an overview of [WinLink](#), an all-volunteer project of the non-profit [Amateur Radio Safety Foundation, Inc.](#)

If you would like to see an introduction to the WinLink Global Radio Messaging System, check out this [video](#).

Amateur Hardware Update

Article and image submitted by James Butler, KB4LJV

Lots of our portable equipment uses batteries. Buying non rechargeable batteries can be expensive. Rechargeable batteries are the way to go. AA and AAA are the most common sizes for our equipment. Luckily these chargers are available on Ebay at great prices. The chargers can charge Nicad or NiMH types. These chargers can also charge from 2 to 16 batteries at the same time depending on the charger you buy. These chargers have microprocessor control circuitry to monitor the charging and protect the batteries while allowing for a fast charge. You can also find chargers with batteries included for a complete system. Do an Ebay search for "Battery Charger" to see all the units they have.



Amateur Packet Update

Submitted by James Butler, KB4LJV

If you have an outside antenna and want to protect equipment from damage you only have a couple of options. Disconnect coax from radio during all storms or use a coax surge protector. One company which makes a first class protector is Alpha Delta. Their line of TT3G50 surge connectors connect in line with the coax to ground voltage surges and protect equipment. If the surge protector takes a lightning strike which damages the protection gas discharge tube, you simply unscrew the old unit and put in a new one. The inline surge protector also comes with N type connectors or PL259 depending on your needs. You can also get the unit sized for different maximum RF power levels. If you are looking for a coax surge protector then check out these from Alpha Delta. Their web address is <http://www.alphadeltacom.com/>.

Avoid These LED Floods!

Submitted by Dan Lasley, NE7JN



I recently bought these LED floods from Costco. When I tested one in a lamp in the shack, I discovered the LED generated about 6 dB of noise across a number of HF bands! Needless to say, they went back to Costco! When you purchase LED or CFL bulbs, check them by listening to an empty frequency on your HF rig and repeat for each band. Don't accept noisy bulbs!

Delta Ham License Training, 2017

Submitted by Joe Lowenthal, WA4OVO

There is no charge for classes, but the student is responsible for the purchase of the license manual and the \$15 ARRL FCC examination fee.

Licenses Earned in 2017 from Delta Classes

19 Technician

3 General

6 Extra

If you are interested in attending a training class, send an email to [Joe Lowenthal](mailto:Joe.Lowenthal@arrl.org) with the desired class name in the subject line, along with your name, email address and cell phone number in the text.

The new [Technician question pool](#) is effective July 1, 2014, through June 30, 2018. You will need the [ARRL Ham Radio License Manual 3rd Edition](#) to study for the Technician exam.

The new [General question pool](#) is effective July 1, 2015, through June 30, 2019. You will need the [ARRL General Class License Manual 8th Edition](#) to study for the General exam.

The new [Extra question pool](#) is effective July 1, 2016, through June 30, 2020. You will need the [ARRL Extra Class License Manual 11th Edition](#) to study for the Extra exam.

Current Class

General Class 4-17 is being held on six Monday nights from 6:15-9:30pm at EMHC ambulance company training room, 6972 Appling Farms Pkwy. There are seven students in the class. Two other students had to withdraw from the class.

Congratulations to Bill Shaeffer, KN4HYF, who earned his Tech and General licenses early at the Delta Club meeting on November 14th. The Delta Club ARRL VE team will be available for FCC testing on December 11th at 7pm.

The instructors are Joe Lowenthal, WA4OVO, Keith Barton, KT4EP, Len Grice, W4MKS, Barry McDonald, W5CJ and Pat Lane, W4OQG.

Planned Classes

Extra Class 1-18 will be held on 6 Saturdays from January 13th to February 24th from 9am to 1pm at EMHC ambulance company training room, 6972 Appling Farms Pkwy except for

January 27th. If you are interested, send an email with your name, call sign, email address and cellphone number to [Joe](#) with subject line: Extra Class

Tech Class 2-18 is being planned from March 3rd to April 7th on six Saturdays from 9am to 1pm at EMHC ambulance company training room on Appling Farms Pkwy. If you know someone interested, have them send an email with Subject line: Tech Class and name, email address, and cellphone number in text to [Joe](#).



General Class 4-17 (left to right) Robert KN4FVT, visitor Jim, K4XO, Jennifer, KF4DZF, Jack, KN4FDK, Edward, KM4VXX, visitor Dan, KN4FBJ, Janet KN4FBI, and instructor Keith, KT4EP. Absent Tony, KN4FBK, and Bill, KN4HYF. Photo by Joe Lowenthal, WA4OVO.



Joe. WA4OVO. on Series and Parallel Circuits.

Photo by Len Grice. W4MKS.



Pat, W4OQG, showing off the spectrum analyzer during the antenna shootout with (standing, left to right) Janet, KN4FBI, Bill, KN4HYF, and Jack, KN4FDK.

Photo by Len Grice, W4MKS.

Support This Ham Vendor
Submitted by Dan Lasley, NE7JN



The 2018 hamfest season is quickly approaching. If you see Jon Rohde, KC9AXZ, the RF Adapter Guy, at a hamfest, buy with confidence. Jon is a great guy and very helpful!

Each year Jon attends about 50 hamfests and travels more than 80,000 miles!

Adios

Submitted with great appreciation by Dan Lasley, NE7JN

After two years as Director of Publications, this is my last issue of Sparks. I'm on 40 meters with a number of good friends almost every morning and when I'm signing out for the morning, I often say, "The magic of ham radio is that it makes time disappear." By that I mean I sign in, say a few words about this or that, sign out, and discover that an hour or two have simply vanished.

In the same way, my duties with Sparks have made the last two years simply vanish! I've learned much about a wide range of topics, I've met some incredibly interesting and talented people, and I've had great times at hamfests, special events, public service events, ham club meetings, swap meets, and more.

I wouldn't take anything for the last two years, although I'd surely consider a cashier's check for one million dollars from John Beresford Tipton. Michael Anthony, where are you? (If this paragraph makes no sense, ask your parents.)

It's impossible to create a single issue of Sparks, much less the last 24 issues, by myself! I can't thank every individual who contributed, but I do want to thank Delta's Board of Directors for their contributions, advice, and corrections; David Webb, KV4QI, for helping me transition into the role and for excellent advice from time to time; my Elmer, Jim Cissell, KI4I, for providing lots of ideas and immeasurable assistance in many ways; Richard Martin, K4DXF, for helpfully pointing out a U.S. flag that appeared in Sparks only had 11 stripes and for saying (I'm paraphrasing here) that members needed a magnifying glass to read my Delta Club sign-in sheets; Marc Tessier, KM4YWV, and James Sanderson, KM4YWT, for their astounding electronic Enigma; hamfest vendor Satellite Sam Adams, KG4JMN, and his XYL, Liz, both remarkable, kind, and generous folks; and Sparks contributor for **eons**, James Butler, KB4LJV. What a grand slam, James! I hope the readers appreciate and enjoy your contributions as much as I do.

I salute Danny Banks, KJ4FXZ, for the strength and courage to recover from a life threatening health issue. Several months ago, Danny told me, "Radio is good therapy. It forces me to talk well." As I've heard Danny say countless times on Delta's 146.820 MHz net, I'd like to "relay in" Doris, KJ4THA, and acknowledge her support of and help with OM Danny during his recovery. Danny, I'm proud to say you are one of the strongest people I know.

Johnnie Spotts, W6HTY, first president of the Delta Amateur Radio Club, rejoined the club during my tenure. Welcome back, sir!

Energetic author, lecturer, and builder Glen Popiel, KW5GP, has made presentations to Delta in each of the last four years. Someone, quick, invite Glen back for the spring of 2018!

Sadly, some in the ham community have become Silent Keys in the last two years. Bob Gruner, W4UFT, I know you're back up to 55 wpm on that heavenly key. Your friends miss

you. We also lost Annabelle Munday, WA4VVD, Dr. Edgar Ray "Ed" Franklin, W4KIB, Brandon Perry, KJ4FYD, Don Savage, KA4BMI, Warren Stone, W4OBS, Roger Stallings, AK4QQ, Phil Julian, W4PRJ, Bernie Mintz, KE4IVP, Denise Ganucheau, KJ5DG, and Brenda Stauffer, KE4MKK. Our thoughts and prayers go out to the families of these Silent Keys.

At least 99% of the hams I've met (whether in person or over the air) are decent, law-abiding, patriots; these are qualities that are disappearing all too quickly in this country. Kudos to the ham community for continuing to represent those parts of Americana that made us the most amazing nation in the history of the planet.

In 2016 I heard Amanda Nash, KM4MSC, say something that will stick with me for a long time. Someone asked Amanda why she wanted to learn Morse code. "Because," she replied, "not everyone can do it." Good for you, Amanda!

I twisted lots of arms to get folks to contribute to Sparks. Thanks to everyone who contributed, and especially to Hugh Wardlaw, WB4SLI, and to Warren Zimmer, KC7ND, each of whom contributed several articles with no arm twisting!

Finally I want to thank Pat Lane, W4OQG. There was never a time Pat was too busy to answer a technical question, and he never rolled his eyes, no matter how dumb the question. Thank you, sir.

Thanks, everyone, for your support. I'm looking forward to more time on the air, to dabbling in the digital modes, to becoming proficient with CW, and perhaps to building a ham-related gizmo or two. I leave Sparks in the very capable hands of Bob Vawter, KW4RJ. Bob, if the ham community helps you as much as they have helped me, Sparks will be a piece of cake!



The assistant operator, Natasha, K9DOG, naps after helping with a soldering job.

YL News

Submitted by Linda Laseter, KJ4CTX

YL NET – Please join us each Saturday night at 8:45 p.m. on the 146.820 repeater for the YL Net. We enjoy hearing from you.

We continue to have a number of regular YLs check in and several OMs have checked in. We really appreciate your support OMs and hope you will continue to check in with us. We are also very thankful to Perry, N4PSH, and David, KM4SEC, for their support of the YL Net and their announcement of the YL Net each Saturday evening on the Delta Club Information Net.

YL LUNCHEON – This month the YL luncheon was at O’Charley’s on Brunswick Road. We had a good turnout and the YL’s had fun talking and enjoying various items from the menu.

We continue to try and improve our luncheons and welcome any suggestions you might have for upcoming programs or a restaurant suggestion. There will be a few changes beginning in 2018.

First we will continue to serve homemade meals at our program luncheons. This was a big hit with the YLs and the OMs as well.

Secondly, starting in January the door prizes will be funded from our program luncheon donations. In the past YLs have kindly brought a gift the month after they won the door prize due to the fact that we do not collect dues and we had no monies in the YL treasury.

Thirdly, we are planning two special door prize drawings in November. 1) Each time you check in on the YL Net in 2018, a ticket will be placed in a “Special” November drawing for you. 2) We will also have a “Special” drawing for those who attend our luncheons. Each time you attend a luncheon a ticket will be placed in the drawing for you. Both drawings will be held at the November, 2018, luncheon. Please note that you must be present at the November luncheon to be eligible to receive the “Special” luncheon door prize, but you do not have to be present to receive the “Special” YL Net door prize. **SORRY OMs THIS IS FOR YLs ONLY!**

We had two door prizes in November. Kate, KJ4KUL, won one of the door prizes which was a beautiful red multi colored vase. She was excited and said she really loved it! Then Doris, KJ4THA, won the second door prize, a lovely snowman tray thanks to a generous donation from Betsy, KD4KOM.

Speaking of door prizes I failed to mention that Janice, KX4BB, also won a door prize at our October program meeting. It was a Nebo Transport 12 volt rechargeable flashlight. The gift was perfect for Janice. She was pleased and said it would come in very handy.

Our January luncheon will be January 13, 2018, at Macaroni Grill. More information about this will be in the January Sparks.



(L-R) Doris, KJ4THA, Janet, KN4FBI, Ann, WB4FAA, Kate, KJ4KUL, Gale, KI4VDI, Linda, KJ4CTX, and Betsy, KD4KOM.

W1AW to begin scheduled transmissions on 6 meters

Submitted by Dan Lasley, NE7JN

The ARRL recently sent an email which reads, in part, "... January 2, 2018, W1AW will add 6 meters ... to its regular CW code practice, and CW, digital and phone bulletin transmission schedule." According to the email, W1AW hasn't had a regular presence on six meters since late 1989. The email also says, "In addition to providing regularly scheduled transmissions on 6 meters, another goal is to act as a beacon on 6 meters, especially from the Northeast US."

If you hear the W1AW beacon on 50350 KHz, that means you could be hearing a number of other stations from the area as well.

You can read the complete email [here](#).

Amateur Radio Training in the German Democratic Republic

Submitted by Dan Lasley, NE7JN, contributions by Jim Barnes, N4VOK

Those of you who lived through the Cold War will recognize the German Democratic Republic by its better known name of East Germany. I've always thought the name "German Democratic Republic" demonstrated a case of bitter irony, as it was neither [democratic](#) ("pertaining to or characterized by the principle of political or social equality for all") nor a [republic](#) ("a state in which the supreme power rests in the body of citizens entitled to vote and is exercised by representatives chosen directly or indirectly by them").

International politics aside, Jim Barnes, N4VOK, recently gave me a three page article from a 1972 issue of 73 Magazine. The article is entitled "Amateur Radio Training in the German Democratic Republic" and was written by Herbert Gotze, DM2HGO, President of the Radio Club of the D.D.R. (the initials, in German, mean German Democratic Republic).

This is an interesting, very well written article! If you would like to read the article, go to the [73 Magazine archive](#) and scroll down to page 253. Note that the editors of 73 made an error in publishing the article; page 253 ends with a completed sentence but page 254 begins in the middle of a sentence.

It would be interesting to interview Herr Gotze for this article; sadly, neither his name nor his call sign appear at [qrz.com](#). Given that the article appeared 45 years ago, he may be a Silent Key.

As a reminder, here is how to find articles easily in 73 Magazine's archive:

1. Go to <http://www.qsl.net/kb9mwr/files/ham/73.html>, scroll down to "73 Magazine Index" and look around for an article of interest. Note the year and month of publication.
2. Paste <https://archive.org/details/73-magazine-YYYY-MM> into your browser, but replace "YYYY" with step 1's four-digit year and replace "MM" with step 1's two-digit month.

When the web page comes up, click on the PDF link.

Old Man's Portable or Permanent 40M Easy Antenna

Submitted by Walter Legan, KA4KXX, Orlando, FL

As I have aged, dealing with slingshots and craning my neck up at tall trees trying to spot and snag a suitable limb has gone from a happy challenge to a painful chore, so last year through experimentation I discovered an easy to build and use antenna that would resonate at a height of only 10 feet.

Then after Hurricane Irma destroyed my primary and backup 40 meter dipoles which were mounted at heights of 35 and 25 feet, I found that my ten foot high antenna was just as effective, and decided that my slingshot days are over. So now I have a stealth version mounted along my backyard fence to serve as my permanent 40 meter antenna (I no longer need a backup antenna because repairs are so simple and quick), and a high-visibility model that I can easily erect in any wooded park within 15 minutes for our monthly Central Florida QRP Club outings.

After reading several articles about NVIS antenna designs which required anywhere from 1 to 3 ground radials parallel to the antenna, my experiments showed no radials were necessary in the region where I live (which has sandy soil with low conductivity), although one configuration did reduce the noise level substantially, but at the expense of reduced bandwidth and tedious tuning. The bottom line: my antennas are standard 40 meter dipole configuration, except they are mounted ten feet above the ground and shortened until resonance, resulting in a length of about 60 feet, instead of the usual 67 feet. No loading coils are needed, but I always employ a choke type balun because they seem to make calibration easier and performance more consistent.

For portable operation, instead of a constant ten foot height I usually mount the center at 12 feet which allows each end to be mounted lower as an Inverted Vee, for a ten foot average height, with the same results. When tuned to 7170 kHz the SWR is about 1.05, so since the bandwidth is 500 kHz I can work both the CW and Phone portions of the band without an antenna tuner. It is now very easy for me to find a single 12 foot high limb in the woods somewhere, use my golf ball retriever, fishing rod, or a step stool and a senior citizen "grabber" to drop a weighted line over that branch, and quickly hoist the center section of my antenna.

Then I just add ropes to the ends of the antenna and wrap those ropes around appropriately-positioned trees at about a six foot height, leaving the antenna ends at 7 - 9 feet high. For my backyard installation I have PVC pipes painted forest green at each end of the fence (left photo, next page), with a smaller beige CPVC pipe (leftover from a re-plumbing project) holding up the center and the RG58 feedline to the house (right photo, next page).

For choke baluns I only trust the designs listed at <http://karinya.net/g3txq/chokes/>. Specifically, for my backyard antenna I use the first choice on the list, which is seventeen turns of RG58 on an FT240-43 toroid. For a portable QRP antenna four turns of RG174 on binocular 2x FB-31-1020 would be a good light-weight choice.

A digital antenna analyzer is essential for quick and accurate tuning of an antenna like this, so I use a SARK-100 which cost me about \$85 on Ebay, shipping included. There is an [excellent manual](#) and there are newer, lighter, and smaller versions now available at even lower prices.

For any of you fellow hams who are of a certain age and who are looking for an easy 40M NVIS antenna, I suspect that with some experimenting you might achieve similar success in other soil conditions.



Walter has PVC pipes painted forest green at each end of the fence (left photo) and a smaller beige CPVC pipe holding up the center and the RG58 feedline to his house (right photo).

Photos by Walter Legan, KA4KXX.

Editor's note: Walter, a suspected chronic overachiever, is also featured in the "Battle of the Grounds" article later in this issue.

Note to a future Delta Club Board of Directors group: you may wish to get Walter to join the club and ask him to be the Director of Publications!

The Trials and Tribulations of Learning Morse Code

Submitted by Dan Lasley, NE7JN, with the assistance of many CW experts!



As I mentioned in a prior issue of Sparks, I am on my third attempt to learn Morse code. The first two attempts failed miserably. As Winston Churchill urged the United Kingdom in one of his famous World War II speeches, "Never, never, never give up."

This is one of the secrets of learning the code: never give up. Winnie also said, "I have nothing to offer but blood, toil, tears and sweat." Those of us who are trying to learn the code don't face the trials and tribulations of the United Kingdom in WWII, but the lesson to learn from Winnie is perseverance, never-ending perseverance.

Here are my prior CW references in Sparks:

May, 2017

- Page 8: Glen Popiel, KW5GP, says his Arduino-based Random Code Practice Oscillator is one of the most often built projects in his first book.
- Page 31: Harold Crouch, KC9SZC, suggested using [Learn CW Online](#) as a way to learn CW. With this very cool site, you can paste text and get back an mp3 file of the equivalent CW!

June, 2017

- Page 12: If you use iambic paddles, check out the [iambic paddle guide](#) by our own Ray Miller, AA4UK.
- Page 24: [WebSDR](#) allows you to copy CW even if you don't have an HF radio.

July, 2017

- Page 26: Here's a [CW decoder](#) based on the ubiquitous Arduino processor, including source code so you can experiment with it.

September, 2017

- Page 18: Learning CW: The Law of Contiguity by Ian Fulton, G4XFC. Among other useful topics, Ian suggests investigating the [Farnsworth/Koch](#) method.

[October, 2017](#)

- Page 18: The [Seiuchy CW Aid](#).
- Page 27: CW in the form of a [chart](#) and a [graphical representation](#).
- Page 27: The NCDXF/IARU Beacon Network's [transmission schedule](#). I offer a trick for copying a 22 word per minute call sign even if you know little or no Morse code.

Here are other sources on learning the code:

[A Basic CW Operating Manual](#) by Dan Stegner, KBOOBU. This is an excellent four page introduction to CW as you'll hear it on the air. This is a **must read!**

[The Art and Skill of Radio-Telegraphy](#) by William Pierpont, NOHFF (SK), is a 211 page treatise on learning the code. You probably won't read the entire article but if you at least read parts, you **will** learn something. Thanks to Bill Hunt, WA8OKR, for the reference.

[U.S. Army Morse Code Practice Records](#) presents a scratchy introduction to the teaching methods used by the army in WWII. Listen to the whole thing; you **will** learn something. Thanks to Jim McLean, K4XO, for the reference.

[Dits and Dahs, the ABCs of Morse Code Operating](#) by Ed Tobias, KR3E, is a succinct, 71 page introduction to becoming a proficient CW operator. Thanks to Janice Shaner, KX4BB, for giving me a copy of this book and for regular CW practice sessions on the air.

I sought a few words of wisdom on learning CW from hams I know. Here is what they offered to the potential new CW operator:

Pat Lane, W4OQG: "Practice, practice, practice. Use the W1AW code practice sessions."

Glen Ellis, K4KKQ, about learning CW: "I hear CW as a musical language, full of rhythm, organized, beautiful. I frequently tap my foot while listening to CW as background music in my shop. It reminds me of Buddy Rich, the virtuoso drummer from the big-band years." About gaining CW speed: "I counsel everyone not to worry about speed. All my DX is 7 wpm [words per minute]!"

Bob Wertz, NF7E: "I have 96 countries confirmed on CW and now have 338 DXCC mixed entities confirmed!! Not bad as I only need ONE more which is Bouvet Island (3Y0Z) and there is a DXpedition going there in January/February, 2018! If I can work them at that time, I will be at the top of the ARRL honor roll!! I am pretty excited about that!! There is a secret that my Elmer taught me about how to work DXpeditions using CW if you are not a great CW operator. That is to get an automatic memory keyer and pre-record your call and responses." Bob uses his Kenwood TS850S to record three phrases for DXpeditions: "In the first memory I put in "NF7E - NF7E". In the second memory I put in "599 AZ DE NF7E TU" and in the third memory I put in "NF7E". If I hear a DXpedition calling CQ, I hit memory #1 to reply to his CQ. If he calls me back, and if I can pick out my call letters and understand

he is calling me, then I hit memory #2. That is it! That will make the contact and get you a new one. However, if he comes back to me and says anything else, for the most part I cannot copy him, unless he is doing about 10-12 wpm. That has never happened to me on any DXpedition. Try that! It works and as you go along, it does get easier to work them!"

Sparks readers may remember a reference to Bob, NF7E, in "[2016 Route 66 On The Air](#)" in the [September, 2016](#), issue of Sparks, pages 18 and 19.

Jim McLean, K4XO: As Bob mentioned above, there are currently 339 DX entities. Jim is a dedicated DX enthusiast with confirmations of all 339 mixed-mode DX entities, all 339 confirmations via phone, 338 confirmations via CW, and 329 confirmations via digital modes. He says of CW:

"My own personal secret method was to look at something and send that name in code within my mind. I would see a car and it became dah-dit-dah-dit dit-dah dit-dah-dit. Even while reading I would send letters and words silently in code or sometimes out loud. No code practice tapes or radio necessary that way! First you learn sending your letters, build your speed a bit and finally you are ready to practice receiving code in your head. The first time you recognize a letter of code over a speaker gives you a great feeling that you are on your way! Later, head copy comes easy so that you may not feel the need to write anything on paper. Personally, I think CW is best for DXing and contesting but you will find regular CW QSOs and even rag-chews on that mode."

In addition to Jim's link (above) to U.S. Army Morse Code Practice Records, Jim also suggested reading [Morse Code: A Staple in the Navy IW \[Information Warfare\] Toolkit](#).

Ray Miller, AA4UK: "Decide if you really want to dedicate the time to learn the code; once learned, it's something you don't forget and is easily refreshed. Most never carry through, or even get started, it takes the right person to learn CW. Use a modern automated training program or device to make it easier. Learn at a really fast character speed. Learn the characters all mixed up. Don't ever write them down or look at them. Just learn a few characters and really know those before learning any more."

Robert Spann, K4RAS: "Practice! Get a key and send from a book. As you drive, spell out road signs in CW." Robert says CW QSOs often end in "TU dit dit." TU is shorthand for thank you and the two ending dits (E E) signal the end of the QSO. Robert says another shorthand method is sending 5NN, meaning an RST of 599. Sending 5NN is quicker than sending 599.

Jim Cissell, KI4I: "It was 1975 when I first heard my call sign coming back after a CQ. I still remember how nervous I was. I qualified for the 5 wpm test and did a lot of guessing during those first contacts. I'm sure I was well below 5 words per minute with all the pauses in my sending and copying the other station. Learning CW is not difficult, just different. CW operators do NOT decipher the code. They RECOGNIZE it. Perhaps you have recognized a favorite song on the radio, having only heard a note or two as you tune across the dial. Each code character, although composed of just dits and dahs, has its own distinct sound. Learning just a few of these CW sounds per day will soon have you making words and then

sentences. The buddy system is still a great way to learn code. Your buddy can help you work through those problem characters. Plus, you can holler across the table and say "wait, what was that?" CW is alive and well and it's not just old timers out there operating.

Many of the code operators I work on the bands are licensed less than three years and have decided to see if they could learn some code. Some are hams who have come back to CW after many years. There are many code programs on the computer these days that make it almost a game to learn."

Bill Hunt, WA8OKR: "Over the years practicing code in fits and starts and learning it the old way of learning the letters by DITS AND DAHS (AKA counting the elements) of a letter proved to be a method that makes learning slow and makes for a lot of speed plateaus. Morse code learning is a lot like learning to play a musical instrument. The fastest way to improve speed and accuracy is regular practice each day.

The first idea is to forget reading a page of letters, numbers, and punctuation marks saying the dits and dahs to yourself. Using methods like code tapes from Jerry Zilliak, KB6MT, makes a good start for the first step because of the format used. They are available in both tape and CD format I believe.

Other items that help are the ARRL CW practice sessions on the air and using their text files from their website to play text files in programs for the PC or other computers. The G4FON Koch Method Trainer and FLdigi are two that I have used after I had been trying with the old beginners method.

It has been recommended that you practice an hour or more a day; I found that it does not have to be all in one session. Many times I will be working in something else and have the practice files playing and I am listening to code while I do another project. This is a way you can learn even if you do not have a license yet. If you have a license and you want to improve, the [Straight Key Century Club](#) is a good place to practice your sending as well as copying the code.

The one thing to avoid is to not write anything down; during practice on a letter by letter basis, you should try to copy as much in your head as possible. The whole idea for reliable head copy is to be receiving the code as if you were in a talking QSO. This is why the sound pattern code practice is the best and quickest way to increase the copy speed.

The other effective method is to also have a straight key and a code practice oscillator to practice sending to yourself or you and a partner send to each other as if on the air.

It is good to work your way up and after you get comfortable with the letters and short words then you should do your practice at speeds just above your comfort level and drop back if you need to in order to progress. I used to listen to W1AW bulletins; they are sent at 18WPM. This is a great help to getting faster at copy.

Part of the practice sessions must be the sending practice along with the copy practice as separate practice sessions. Sending from a magazine article to yourself is good sending help

with numbers, names and other details. Another idea is to record your sending and then play it back to try to copy your own fist!"

Larry May, K4QZF: A quick encouragement to maintain your CW speed. First licensed in late high school, (many moons ago) my first QSOs were on 80M CW with a converted ARC-5 army surplus station. The excitement of those first contacts on snowy days is still felt. Then on to AM, Extra class, SSB, digital modes, etc., resulting in years of lost CW speed.

However, there was hope. I practiced regularly for a while and built my speed back up to a passable level. It seems that once established, CW speed can be rebuilt fairly rapidly with regular practice, just like you learned it.

I have recently had to start rebuilding my speed again and find that practice using the [ARRL's online CW practice files](#) complete with an array of speeds, and accompanying text files, provide a variety of easy to use practice sessions.

So, go ahead, branch out, try everything Ham Radio has to offer AND keep your CW speed at the level you wish, by simple regular practice. It's a great hobby, have fun and enjoy - at your speed."

Ken Faria, NTOY: Here is how I studied to pass the General CW test soon after I passed the 5 WPM Novice test. At the time, I had 5 kids so I had to work two (and sometimes three) part time jobs to feed'em all and pay the bills as best as I could. One of those jobs was driving for Yellow Cab in Colorado Springs, CO. While driving and when parked waiting for dispatch to give me a fare, I would send to myself in my head EVERY license number and/or billboard sign that I could see. I would mentally send it as quickly as possible so that I would learn the code at a fast speed which theoretically should make it easy to receive it at a slower rate, but if one learns it at a slow rate, then I believe one has to RE-LEARN IT at a FASTER RATE.

It worked - after about two weeks of studying like that EVERY AVAILABLE MINUTE of the day, I took the Greyhound bus to Denver where our nearest FCC office was and passed the 13 WPM code test but flunked the written (back then there wasn't any volunteer testing program). I had to take a bus back to Denver again a month later before I passed the written, then wait approximately 3 months for my new upgrade to General license to come in the mail. Back then (1973), you had to wait for the actual upgrade to come in the mail BEFORE you could use your new privileges. When in the Coast Guard radio school (in Petaluma, California, where some of the movie "American Graffiti" was filmed) two years later (1975), I increased my code speed to 36WPM at 90% copy (according to my graduation certificate) by imagining myself ALONE in the middle of a dark movie theater while looking at the movie screen and imagining the letters being typed for me in white letters across the movie screen, not caring about any missed characters. In the six months' time that radio school lasted, I went from about 15 WPM to 36 WPM LARGELY DUE TO THE FACT THAT THE COAST GUARD TAUGHT ME HOW TO TYPE and by using this "movie theater receive method." So there were actually two methods I used while learning CW."

Now that the experts have spoken, here are my thoughts as someone who has struggled and is still struggling with learning Morse code and trying to become proficient in both sending and receiving.

Many proficient CW ops say you need to spend initially about half an hour a day practicing sending and receiving CW. Believe them. If you plan to become a CW op by spending a few minutes practicing every week or so, you are planning to fail.

Find a method (e.g., tapes, a program or application, listening on the air, practice sessions with an Elmer, etc.) which works for you in learning the code. It's quite possible the first method you try (or the second or the third) may not work, but a different method may work. The method that worked for me was listening to digitized tapes.

Learn the characters initially at a rate of **at least 15 words per minute** (and faster than 15 wpm is better). The secret here is to have a significant gap between each of the 15 wpm (or higher) characters. See [Farnsworth speed](#) and [Speed and Farnsworth Timing](#).

The most commonly used letters in English (in order of frequency) are E, T, A, O, I, N, S, and H. Once you master these letters, you are well on your way to copying CW because these eight letters (about 1/3 of the alphabet) comprise about 64% of the letters in English words. If you add just two more letters, R and D, you'll be able to copy almost 75% of the letters in English words.

Once you have mastered some of the Morse code characters, tune around the HF bands (7.0 to 7.125 MHz is active day and night), find a slow CW QSO, and try to pick out some letters. This will not be easy at first; you may even think it's impossible. Remember the words of Winston Churchill! At first I would hear some combination of a dit and/or a dah and I **could not** tell whether I heard dit-dah (A), dah-dit (N), dit-dit (I), or dah-dah (M). I eventually got past this problem.

If you don't have an HF transceiver, visit the [WebSDR](#) site and pick out a receiver that you can tune to one of the HF CW bands. Unless you are multi-lingual you probably want to pick a U.S.-based receiver. If you don't hear a good selection of CW signals, pick a different band (40 and 20 meters have a significant amount of CW activity) or a different receiver.

One magic day I was listening to 40 meters and when I heard dah-dit-dah-dit dah-dah-dit-dah as "CQ" and not as dits and dahs, I was jumping for joy! I slowly (**and I mean slowly**) began picking out other characters. The next characters that I heard as letters and not as dits and dahs were R (dit-dah-dit) and K (dah-dit-dah). At some point A (dit-dah) and N (dah-dit) jumped out of the speaker, as did S (dit-dit-dit) and O (dah-dah-dah). It's probably more than coincidence for me that these letter pairs are Morse opposites. Your mileage may vary.

Many CW authorities urge the beginner to learn to "head copy," meaning copy the characters in your head rather than writing them down. Head copy didn't work for me; I had to write down the characters. Now I'm slowly beginning to head copy bits and pieces (e.g., short words such as IS, TO, OF, MY and repeated letters such as LL), but that is about the limit of

my ability to date. If you can head copy, do it! If you can't, write'em down. You have to accept that different people learn with different techniques and at different rates.

I've noticed that most CW ops have a good "fist" (i.e., the lengths of their dits and dahs and the spacings between characters and words are consistent and correct). If you hear a lousy fist, move to a different CW QSO. In the early stages of learning CW, it's not productive to disambiguate lousy code or to deal with key clicks or other signal imperfections.

Pat and other CW experts have told me when they hear multiple CW signals, they can follow one and ignore the rest. Trying to do that drives me nuts; I'll look for another CW QSO instead.

When I first began to hear some characters rather than all dits and dahs during CW QSOs, the process was so frustratingly difficult that I couldn't listen for more than about five minutes at a time. Now that I'm beginning to copy some words at slow Farnsworth speeds and parts of words at faster speeds, I can try to copy CW for 20 to 30 minutes at a time. At some point my brain begins to short out and I know it's time to take a break!

Here is a list of the things I need to improve:

- I can copy whole words only at slow Farnsworth speeds.
- I can never copy a call sign correctly the first time I hear it. Although there are patterns to call signs, the content is mostly arbitrary, thus making perfect copying more difficult.
- Sometimes when I send B (dah-dit-dit-dit) it sounds more like TS (dah dit-dit-dit). Other letters have similar faults. Oddly, V (the reverse of B) sounds ok.
- I have not learned well the material in [A Basic CW Operating Manual](#) (mentioned above). Do as I say, not as I do!
- I've experimented with an iambic keyer and paddles, but I make too many mistakes to use it on the air.

If you want to learn CW, I strongly urge you to try it. The difficulty is amazing but so are the rewards!

Thanks, Winnie, for your V (dit-dit-dit-dah) for victory.

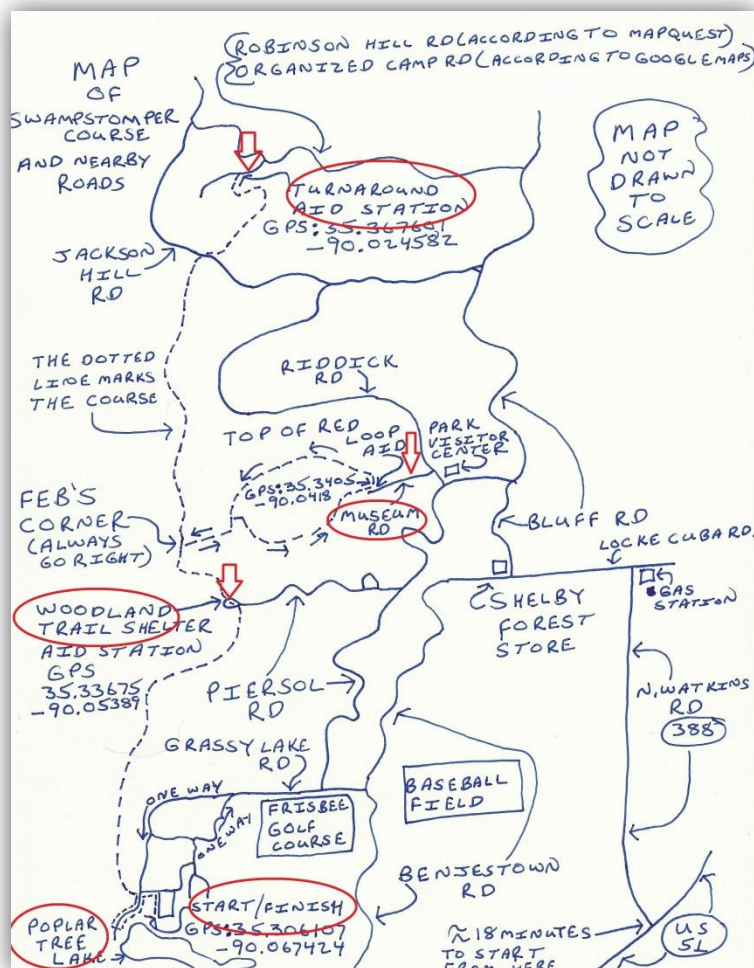
Many thanks to everyone who contributed to this article. I admire your abilities and accomplishments in CW!

I want to extend a special thank you to my Elmer, Jim, KI4I, and to Bill, WA8OKR, for continually pushing me to develop CW skills.

Ham Volunteers Needed for Swamp Stompers Event

Submitted by Dan Lasley, NE7JN, contribution by Keith Barton, KT4EP

Every year Delta provides communications for the Swamp Stompers event held in Shelby Forest. The next Swamp Stompers event will take place on Sunday, January 14, 2018. Ken Laseter, K14AOH, will be heading up event communications and will need a total of eight to ten volunteers.



In this event, we help coordinate a bunch of crazy people who run 25 or 50 kilometers through mud in rough terrain during perhaps the coldest part of winter! Unlike the runners, this is an easy event for us, and they feed us a great lunch.

Speaking of food, the volunteers meet for breakfast before the event at 6:30 am at the [Shelby Forest General Store](#), 7729 Benjestown Road, Millington, TN 38053. If you volunteer, please join us for breakfast. Owners Kristin and Doug serve some exceptional chow!

Here is a small-scale map of the event. The January, 2018, Sparks will provide a larger map. If you've never volunteered for Swamp Stompers, it's a fun event!

If you are interested in helping, please contact [Ken](#).

Battle of the Grounds

Submitted by Dan Lasley, NE7JN, with contributions from
Ken Faria, NTOY, and Walter Legan, KA4KXX

It should be no surprise that Florida is the lightning capital of the United States. "Florida has [more lightning](#) than any other state in the United States. In an area from Tampa to Orlando ... there can be as many as 50 [lightning strikes] per square mile per year." This area of Florida is called "[Lightning Alley](#)."

While the best defense against lightning is to avoid a strike, if a ham has exposed antennas, there are ways to mitigate against lightning strikes. The morning 40 meter group has two members from Lightning Alley, Ken Faria, NTOY, and Walter Legan, KA4KXX. Ken and Walter have chosen different methods of lightning mitigation. I'm presenting both methods and I'll start with Walter's method because it's the shorter of the two, then show Ken's method.

Several months ago Ken emailed the 40 meter group a number of photos and detailed explanations of his method. (Below Walter refers to this series of emails as "Ken's magnificent Mailbox Antenna Grounding System.") Ken's mass of material is too large to include in a single issue of Sparks, so I'll begin Ken's method below and continue it on the club web site.

If Walter's name or call sign are familiar, it may be due to an article entitled "Homebrew is alive and well!" in the [October, 2017, Sparks](#), pages 23 and 24. This article described Walter's six watt SSB homebrew rig, to which he later added CW. Let's begin with Walter's minimalist approach to grounding.

Walter says, "I very much enjoyed reading Ken's magnificent Mailbox Antenna Grounding System article in his emails. However, as a counterpoint, along the lines of my minimalist approach to ham radio, I will describe the extremely simple cobbled-together poor-man's system I use to tempt lightning.

In the following photo, note that my dipole antenna comes into the house through the bottom of two copper pipes located above my telephone outlets, and is shown connected to my transceiver. (Also visible in the picture is masking tape to keep bugs out of the bottom pipe and a cork in the top pipe for the same purpose.)

I have a 10 megohm resistor connected across the antenna terminals of the transceiver, so there is never any static charge buildup, although there is no connection to earth ground, either. When a storm approaches, I merely disconnect my antenna from the transceiver and plug it into the vertical 4-place strip which is mounted to the desk. There, both terminals are shorted together and also connected to the red wire which is clamped to the top copper pipe.



Photo by Walter Legan, KA4KXX.

Immediately outside the house that top copper pipe is connected to a ground rod, the telephone company radial ground wire, and the copper water pipe system that eventually connects to the electrical panel ground on the other side of the house. Although cheap and not constructed to the National Electric Code, all I can say is that when combined with prayer and good luck, this simple approach has worked well so far..."

While Walter protects a single dipole and transceiver, Ken protects a 10 meter vertical, an inverted V, and a 6/15/40 meter dipole, plus radio equipment in two rooms which he calls Studio A and Studio B.

Ken says of his grounding system described below: "It's worked well for me since 1995, which was the last time that I ever disconnected ANYTHING! I simply ground all of my antennas and turn off the power strip which controls my radios whenever I'm not actually on the air!"

In Ken's description, after numbering the photos he decided some were duplicates or nearly so and decided to omit those photos.

Here begins Ken's description of his Mailbox Antenna Grounding System.



Photo #1. This photo and the remaining grounding photos in the article by Ken Faria, NTOY.

Photos 1, 2, and 3 show the installation of the 2" ground strap to the inside and outside of the aluminum mailbox.



Photo #2.



Photo #3.

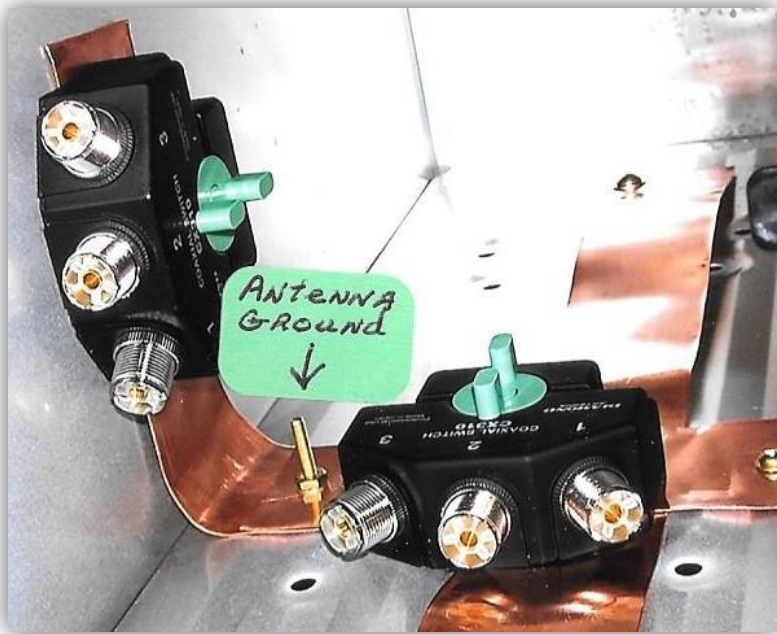


Photo #5 shows the Diamond antenna switches after mounting.

Photo #5.



Photo #6 shows the coax seal which seals the polished/cleaned copper strap and brass screw ground connection and the bear tape is used to seal the crack at the bottom of the mailbox door while still allowing the door to open and close. This seals a large crack preventing "rain splash" and ants/spiders/critters from making their home in your outdoor mailbox and switchbox.

Photo #6.

Note: due to the size of this article, please read the entire article, with updates, [here](#).

Prize Winners at November's Delta Club Meeting
Submitted by Dan Lasley, NE7JN, photo by Art Barnett, WA4PSS



Delta kicked off the holidays by giving away prizes during the November meeting. The happy winners are (L-R), Dan Lasley, NE7JN, Bill Shaeffer, KN4HYF, Andrew Dandridge, KCOBDX, David Webb, KV4QI, Grand Prize Winner Adrian Moseley, N4EMO, Michael Knight, KK4IOH, David Jackson, KM4SEC, Bill Fullerton, AF5HA, Joe Sanders, KM4JXS, Danny Banks, KJ4FXZ, and Jim Cissell, KI4I.

Odds and Ends

Submitted by Dan Lasley, NE7JN

CW contests and special events

- Dec. 9-10, ARRL 10 meter contest, starts 0000 UTC Saturday, ends 2359 UTC Sunday. See <http://www.arrl.org/10-meter>
- Dec. 31, Straight Key Night is held every January 1 from 0000 UTC through 2359 UTC. See <http://www.arrl.org/straight-key-night>

SSB contests

- Dec. 9-10, ARRL 10 meter contest, starts 0000 UTC Saturday, ends 2359 UTC Sunday. See <http://www.arrl.org/10-meter>



Do you remember any of these part numbers? LM317, 7805, LM301, LM311, LM386, MC1458, NE565, CA3080, MC1496, NE602, XR2206, 74LSxxx, 74HCxxx, 4000-series, CD4046, 6502, 6800, Z80, 2N2222, 2N2907, 2N3904, 2N4401, MPF102, 2N3055, IRF510, 2N7000, and 1N4148. In "[Retro ICs that Will Never Die](#)," author Lou Frenzel, W5LEF, says they are all alive and kicking!

electronicdesign.com image



When I saw the headline, "[Weird IP networks: Internet via birds and ham radios](#)," I thought it would be a hatchet piece on ham radio. I'm pleased to say I was wrong!

networkworld.com image



Servo Magazine's "Basics of Soldering," parts [one](#), [two](#), and [three](#). If the Servo folks haven't released part three, try again later in the month.

servomagazine.com image

2017 St. Jude Marathon

Submitted by Dan Lasley, NE7JN

Delta Amateur Radio Club supports a number of public service events each year. Delta's largest public service event, both in terms of participation by the ham community (more than 70 hams) and in the size of the event (more than 25,000 runners), is the St. Jude Marathon. [WREG](#) reports that the 2017 marathon, held this year on December 2, not only raised more than \$10.3 million, but also attracted a crowd of about 40,000 supporters.



The stream of runners at hydration station 9 seemed endless!



Danielle Humphrey (center, with the yellow badge) was in charge of hydration station 9 (HS9). She and her group of about 50 volunteers did an excellent job in setting up, managing, breaking down, and cleaning up HS9. Danielle is shown shouting encouragement to runners.



The multiple levels of endless cups of water and Gatorade show why this is called a hydration station!

By my count, 77 hams signed up for the event. Some have been hams for more than 50 years, others for less than five months.

Irrespective of how long you've been a ham, thanks to all the hams who participated.

Once again, Roger Schlichter, WR4R, headed up the ham radio communications group. Another well done job, Roger!

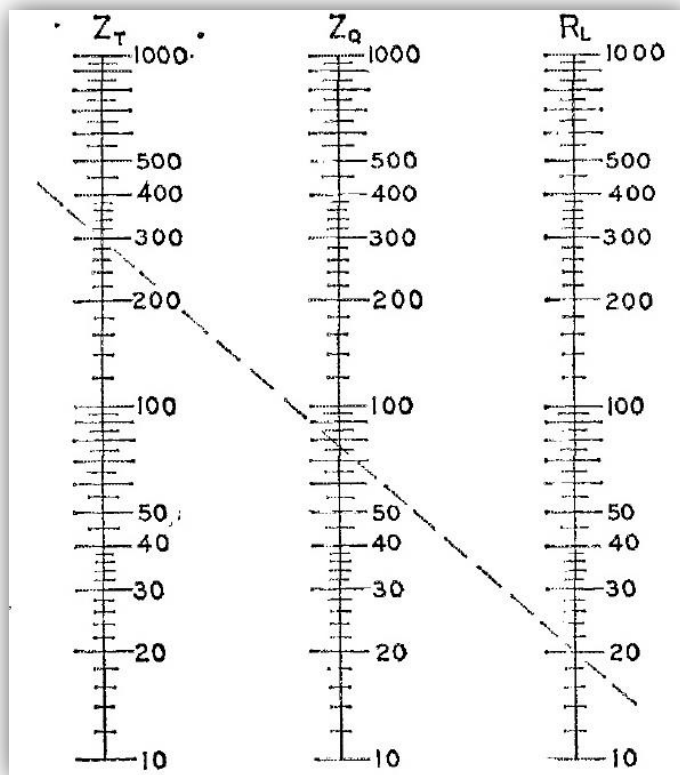
Nomograms

Submitted by Dan Lasley, NE7JN

In the dark ages, when certain [dinosaurs](#) roamed the earth, there were no personal computers, laptops, iPads, handheld calculators, no Internet, none of the related accouterments to which we have grown accustomed. The dinosaurs could be coerced into revealing the solutions to problems, but they voraciously consumed kilowatts of three-phase power, tons of cooling, vast quantities of capital, and enough servants to sink several of the quinquereemes of Nineveh.

So many problems to solve, so few dinosaurs, what to do? The nomogram to the rescue!

[Wikipedia](#) says, "The field of nomography was invented in 1884 by the French engineer Philbert Maurice d'Ocagne (1862-1938) and used extensively for many years to provide engineers with fast graphical calculations of complicated formulas to a practical precision."

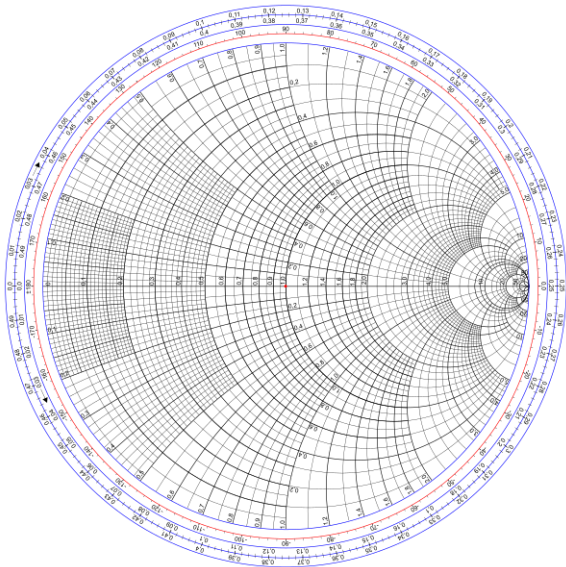


A common type of nomogram is the parallel-scale nomogram. A nomogram from "Simplified Transmission-Line Calculations" by B.R. Hatcher, K1SAW, QST, July 1963, p.17, determines the "characteristic impedance of a quarter-wave matching section when load resistance and desired impedance are known." If you want to match a 20 ohm load to a 300 ohm transmission line, lay a straightedge across 20 on the R_L scale and 300 on the Z_T scale.

Read 75 on the Z_0 scale. No dinosaurs required!

QST, July, 1963, page 17.

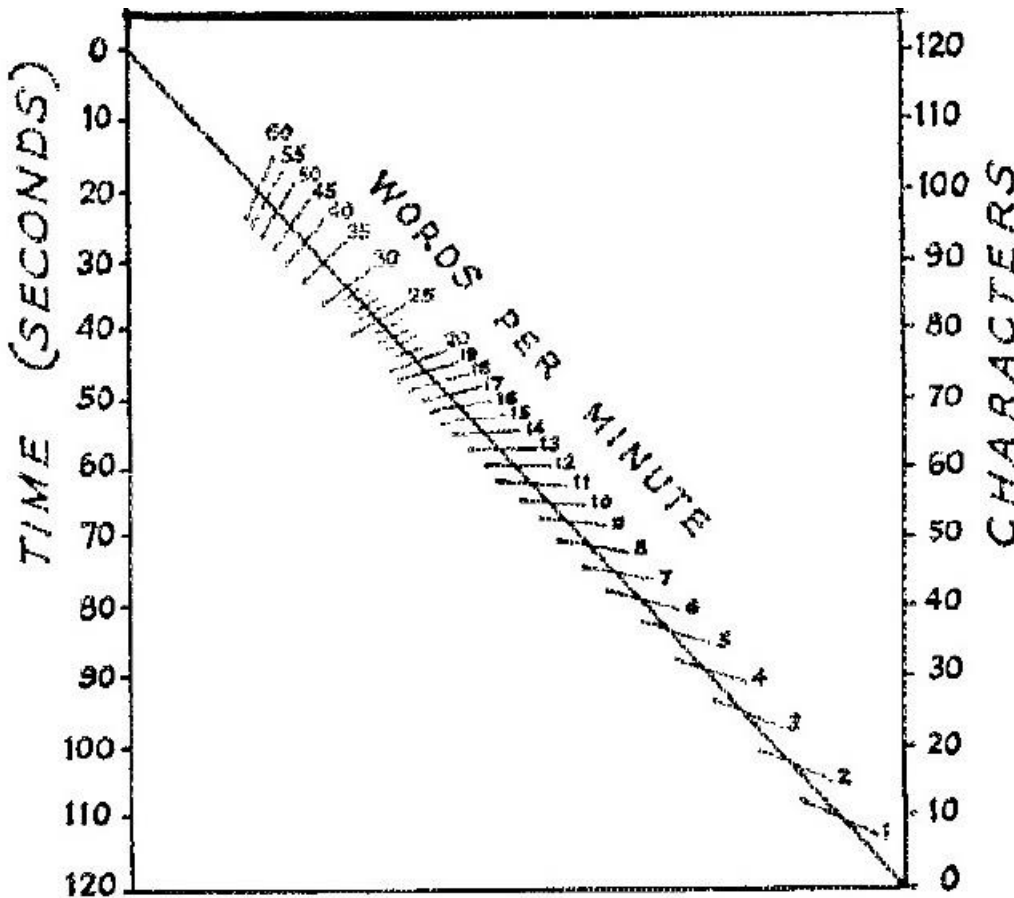
The mathematical techniques behind multiple-scale nomograms are surprisingly complex, but fortunately someone has done that work for us. We can solve transmission line problems until the cows come home by using nothing more complex than a ruler!



Many of you are familiar with another form of nomogram, the Smith chart. [Wikipedia](#) says, "The Smith chart, invented by Phillip H. Smith (1905-1987), is a graphical aid or nomogram designed for electrical and electronics engineers specializing in radio frequency (RF) engineering to assist in solving problems with transmission lines and matching circuits."

Since the readers of this article are hams, you likely already know about the Smith chart.

[Wikipedia Creative Commons Attribution-Share Alike 3.0 Unported image.](#)



In the final example, if you can send Morse code at the rate of 70 characters in 70 seconds, then you are sending about 12 words per minute.

Align a ruler across the left margin's 70 and the right margin's 70, then read about 12 at the intersection.

Unfortunately I don't have an attribution for this example.

I hope you have enjoyed this look back into the dark ages. In spite of their rarity these days, nomograms remain extremely useful computational devices.

December Trivia Quiz

Submitted by Dan Lasley, NE7JN

Club station DK0TU, based in Berlin, Germany, published a very nice, simple [battery charger circuit](#) for a Baofeng handi-talkie. Here's this month's trivia contest: if you examine the circuit closely (or, better yet, refer to a [higher definition version](#)), you'll find you can add one part to make the circuit more bullet-proof and add two parts to increase the effectiveness of power regulation. What are the three parts?

For each of the three parts, you can't simply say, "Add a frammis between points P and Q." You'll have to explain why the frammis should be added. You get bonus points for suggesting reasonable component values.

Scoring:

- three points for correctly identifying each of the added parts and for the correct placement of the part;
- one point for a correct explanation of the necessity of each part;
- one point for suggesting a reasonable component value for each part.

The winner will be the first person correctly identifying each of the added parts, correctly placing each new part, and explaining why the part is needed. If no one satisfies these requirements, the winner will be the person with the highest point total. All entries must be received at [this](#) email address by 3pm Central time on the afternoon of December 12 (the day of the December club meeting).

The winner will receive a prize at the December meeting. The correct answers will be posted [here](#) after the December meeting.

SPARKS Newsletter & Delta Club Information

SPARKS is published monthly by the Delta Amateur Radio Club and emailed to club members. All information published in this newsletter is provided as a service. While every reasonable effort has been made to ensure accuracy, neither the Delta Amateur Radio Club nor its officers assume any liability resulting from errors or omissions. All correspondence may be mailed to:

Delta Amateur Radio Club * P.O. Box 342768 * Memphis, Tennessee 38184-2768

An alternative email address to offer the Board your suggestions, ask questions, and voice complaints is darc4you@gmail.com.

Please note that you must provide your name and call sign if you're requesting specific actions or personal follow-ups, and also be aware that any profane or mean-spirited comments will be unceremoniously discarded without consideration.

Delta Club Members Can Like Us/Follow Posts On Facebook! Go to <https://www.facebook.com/darcmem>.

2017 BOARD OF DIRECTORS

President

[Ken Laseter, KI4AOH](#)
901-853-0400

Vice-President

[Steve Frazier, KK4VPT](#)
901-218-6385

Secretary

[Barri Munday, WB4SWP](#)
901-756-5259

Treasurer

[Linda Laseter, KJ4CTX](#)
901-268-1766

Director of Training

[Joe Lowenthal, WA4OVO](#)
901-628-4318

Director of Publications

[Dan Lasley, NE7JN](#)
901-827-5049

Director of Programs

[Kevin Zent, K4KLZ](#)

Director of Meetings & Special Events

[Scott Adams, KM4PMU](#)

Repeater Trustee

[Bill Stevens, WC9S](#)

Public Information Officer

[Len Grice, W4MKS](#)
901-488-4195

Immediate Past President

Joe Wray, WD4GXI

Board members beginning their positions in 2017 are listed in *italics*.

Public Service Events

If you are a coordinator for any of these events, please review the listed information. Please [email](#) corrections or additions.

2017 Date	Event	Contact Information
Dec. 2	St. Jude Marathon	Roger Schlichter, WR4R
2018 Date	Event	Contact Information
Jan. 14	Swamp Stompers 50K/25K Run	Ken Laseter, KI4AOH
May 5	March of Dimes March for Babies	Linda Laseter, KJ4CTX
June 16	Diabetes Tour de Cure	Pat Lane, W4OQG
Sep. 22-23	Bike MS: FedEx Rockin' Ride to Oxford	Darrell Sheffield, KK4D
Oct. 6	Bluff City Blues 100 Ride	Ken Laseter, KI4AOH

Tennessee Ham Radio License Plate Submitted by Joe Lowenthal, WA4OVO

The link below is for information and instructions about Tennessee ham radio call sign Emergency/Safety automobile license plates:

<http://www.tn.gov/revenue/article/emergency-safety>

The application can be found at this link:

<http://www.tn.gov/assets/entities/revenue/attachments/f1312601Fill-in.pdf>

As of July 1st, 2017, you must send a copy of or show an ARES membership card to keep from paying the \$25 surcharge for new plates or renewals. If you send a renewal in by mail with the lesser amount and do not include a copy of your ARES membership card, they will return your renewal and check due to insufficient funds.

If you want to become an ARES member, complete an ARES Registration Form FD-98 at <http://www.arrl.org/files/file/Public%20Service/fsd98.pdf>. Send completed form to Shelby

County ARES c/o Joe Lowenthal, 6675 Ashbridge Cove, Memphis, TN 38120 or email to wa4ovo@gmail.com.

If you are not an ARES member and you do not want to pay the \$25 surcharge for renewal, you can get a regular plate for no additional charge. You will need a copy of your previous registration or there is an additional \$3 charge.

If a spouse is also a ham, only one of the couple needs to be an ARES member if the auto is registered in both names. If registered in the spouse's name, the spouse must have an ARES membership card.

The following link from the Tennessee Department of Revenue <https://www.tn.gov/revenue/article/emergency-safety> has the Amateur Radio auto tag information and listed below:

Available to Tennessee residents who hold an official FCC-issued amateur radio license (unrevoked and unexpired). Documentation Required: Application supported with copy of the FCC Amateur Radio license. Cost: Annual fee of \$51.50; Members of emergency, rescue squad and Amateur Radio Emergency Service - \$26.50.

Other Notes of Possible Interest

Submitted by David Webb, KV4QI

It's Time to Renew Your 2018 Annual Memberships! Download the latest Delta Club [Membership Application Form](#). The 2018 membership renewal fee remains a very modest \$20 for an individual, with an additional \$5 fee for family membership. Thanks for Your Active Support of Delta Amateur Radio Club!

Memphis Area VHF/UHF Nets

Updated September, 2016

Name of Net	Freq. MHz	Offset/Tone	Local Time	Day of Week
Delta Club Information Net	146.820	- (107.2)	8:00p	Daily
YL Net	146.820	- (107.2)	8:45p	Sat
Mid-South Barefooted Bullfrog Net	146.535	[simplex]	7:30p	Daily
Secret Service Net	224.780	[no tone]	8:30p	Mon
Elmer Net	145.210	- (107.2)	9:00p	Mon
The Short Winded Net	146.850	- (107.2)	8:30p	Tue
MedMERS Net	146.820	- (107.2)	12:00p	Wed
CERTPlus Net	443.200	+ (107.2)	8:30p	Wed
ARES Training Net	146.880	- (107.2)	9:00p	Thu
Super Sunday Niner Net	927.6125	- (146.2)	8:30p	Sun

Delta Club sponsored Nets are shown in red.

TENNESSEE HF NETS

As of December, 2015

All times are Central Time

Net Name	Freq. MHz	Local Time	Day of Week
Tennessee CW Net	3.563	7:00p	Daily
Tennessee Slow CW Net	3.682	7:30p	Tue-Sun
Tennessee Alternate Phone Net	7.238		As needed
CUSEC (Center for United States Earthquake Consortium)	3.810		As needed
CUSEC (Center for United States Earthquake Consortium)	7.180		As needed

3980 kHz – TN Phone Net

Mon-Fri - 5:40 AM, 6:45 AM & 6:30 PM

Saturday - 8:00 AM & 6:30 PM

Sunday - 8:00 AM only

Holidays - 8:00 AM only

DELTA CLUB ADVERTISEMENTS

See Advertisement Order Form for Instructions.



MID-SOUTH AMATEUR RADIO SUPPLY (MSARS)

6631 Vallendar Cv., Bartlett, Tennessee 38135

tel: 901-371-9700 • fax: 901-266-3374 • web: www.msars.com

CURRENTLY STOCKING

Antennas	Antenna Mounts	Connectors	Coax & Cable
HT	Magnet	UHF	RG-213
Mobile	Trunk Lip	"N"	RG-8/U Mini
Base Station	Roof Mount	SMA	RG-58
HF	Window Mount	BNC	450 & 300 Ohm
Wire	Swivel Ball	RCA	Rotor Cable

LDG Electronics	Accessories	Miscellaneous
Automatic Antenna Tuners	RF Chokes	Gordon West Books
Remote Tuners	Power Poles	Coax Seal
Brand Specific Antenna Tuners	Antenna Switches	Fuse Holders
Baluns	SWR/Power Meters	Remote Tuner Boxes
Ununs	Mic Holders	Dog Bone Insulators

**Owners/
Operators**

**Steve
W5VAA**

**Rosalinda
WN2V**

**Ham
W4GMM**

Mid-South Amateur Radio Supply, (MSARS.COM) is owned and operated by local hams who are dedicated to promoting the hobby and providing help to anyone interested in ham radio. We actively support the local amateur radio clubs and are ARRL members.

MSARS offers free antenna building classes each year and help many new hams with guidance on their first radio, setting up a ham shack, programming a radio and much more. We are proud to be a part of the ham radio community and are *here to help you*.

Please thank our sponsors by using their services and mentioning that you saw their ad in the Delta Club SPARKS Newsletter!

This ad space is available

DELTA CLUB ADVERTISEMENTS

See Advertisement Order Form for Instructions.

DELTA AMATEUR RADIO CLUB

P.O. Box 342768
Memphis, TN 38134-2768

DARC Meeting: Second
Tuesday of every month
at Ellendale Church of Christ
7365 Hwy 70, Bartlett TN



W4BS REPEATER SYSTEM
146.82- 147.36+ (107.2Hz tone)
224.42- 443.20+ (107.2Hz tone)



Ben Richhart
Sales and Service Director

Chick-fil-A at Paragon Place
6282 Poplar Avenue
Memphis, TN 38119
Phone: 901-766-1875
Fax: 901-766-1878
E-mail: ben@cfaparagonplace.com

Please thank our sponsors by using their services and mentioning that you saw their ad in the Delta Club SPARKS Newsletter!

This space is available!

We offer our continued thanks to EMHC ambulance company for generously providing their training room for the many ham radio classes given there.

**Delta Amateur Radio Club
Sparks Advertising Order Form**

Date: _____

Name: _____

Call Sign: _____ Phone: _____ Email: _____

TO PLACE AN ORDER

1. Mark the box below indicating the ad size you are purchasing and the months you want your ad to appear in Sparks.
2. Submit this completed order form and your camera ready ad, via email at sparks@carbheat.net
Make check payable to Delta Amateur Radio Club (DARC) at monthly Delta Club meeting, or send US Mail to club mailing address at P.O. Box 432768, Memphis, TN 38134-2768. Camera ready means that ad copy is exactly as you wish it to appear, scaled to fit within the dimensions specified below. Ads may be submitted in .gif or .jpg format, or submitted as a hard copy (we will scan and place your ad for you).
3. Your ad order and payment must be received on or before the first Tuesday of the **month before** you want it to appear in Sparks.

SPARKS ADVERTISING

FULL PAGE			HALF PAGE			¼ PAGE			BUSINESS CARD		
\$50.00 for 3 Months 7" w X 8 ½" h			\$25.00 for 3 Months 7" w X 4" h			\$15.00 for 3 Months 3 ½" w X 4" h			\$10.00 for 3 Months 3 ½" w X 2" h		
Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	July 2017	Aug 2017	Sept 2017	Oct 2017	Nov 2017	Dec 2017