



ARRL Standard



Pray for our
Troops



God Bless America!

QUA/HAMnews

July 2019



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HAPPY FOURTH OF JULY

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Bluegrass Amateur Radio Society, Inc.
P.O. Box 4411, Lexington, Kentucky 40544-4411
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"Ham News" was first published by Bobby Foster, WA4ZSQ, in August, 1972; the parent newsletter, "QUA," was first published in March, 1947

QUICKY NOTES

Accessing the Club's web page: <<http://www.BluegrassARS.org>>.

Telephone Number for the Shack (basement of the Red Cross Building): (859) 231-0974.

Subscribe to ListServ: Send an eMail to: bars-request@lsv.uky.edu; in Subject line type Subscribe plus <your call sign>

Post notes to the Club List Serv: <bars@lsv.uky.edu>.

The July program will be a discussion on Lightning Protection and will be presented by Jim Bacher



Reports of the RECORD OF THE BY LAWS COMMITTEE MEETINGS will not be published in the newsletter due to length. Contact Secretary Bruce Campbell to obtain a copy of the reports.

CENTRAL KENTUCKY HAMFEST SATURDAY AUGUST 10, 2019

QUA/HAMnews

July 2019

Meeting Notice

Bart Breeding/KB4FEE,
Chair, Newsletter Committee
Bluegrass ARS, Lexington, Kentucky

The general meeting of the Bluegrass Amateur Radio Society, Inc., will be held Monday, July 1, 2019, at 7:30 PM, in Meeting Room B, second floor of the Red Cross Building, 1450 Newtown Pike, Lexington.

The program will be about Lightning Protection and will be led by Jim Bacher. Do you have a topic you would like a program on or a program you would like to present? Do you have a home brewed project you have built? Bring it and show it off! Question? Ask it! Maybe your question isn't one about a Club activity or function, maybe you are having a problem getting some newly acquired equipment set up and operating correctly, or you have an antenna with radiation problems. Regardless of your question, problem, or suggestion, bring it to the Club meeting.

The Club shack is open most Saturday mornings for anyone to operate the Club's stations, or to bring pieces of equipment out to be tuned or checked, or to learn about Amateur Radio, or to just sit around and talk just drop in, no appointment necessary. Bluegrass Amateur Radio Society's ham shack is located in the basement of the Red Cross building at 1450 Newtown Pike Lexington, KY 40511. Entrance is down the steps (look for the BARS banner hung on the railing) at the North Side of the building.

DUE TO CONSTRUCTION ON THE PLAYGROUND NEAR SHELTER #2, OUR ANNUAL PICNIC WILL BE HELD AT SHELTER # 4 AT SHILITO PARK IN SEPTEMBER

Welcome to our new members:

Tyler Dreaden, KM4FKR
Jenny Dreaden, KM4FKS
David Emmitt, KEOON
Roger Covert, KN4TJJ
Robert M. Hisle, KN4DKD

Now is the time to update your contact information with John Barnes. The clubs needs to make sure we can contact you. Also, if you have not paid your dues for '2019, they are due.

Call for Nominations - Ernie Farmer Memorial Award

Nominations are requested for the person you feel meets or exceeds the below-listed qualities as related to amateur radio and its many diverse and varied activities. Nominations should be sent to Andrew Cook/KF4OWP, President, Bluegrass ARS, Inc., PO Box 4411, Lexington, Kentucky 40544-4411 (KF4OWP@gmail.com).

The person selected from your nominations will be honored during a special award ceremony held during the BARS Annual Picnic, on September 9, 2019. Many arrangements must be made, so do not put this off.

Rules

1. This award is to be presented during the annual Family Picnic.
2. The call for nominations must be published in the Bluegrass ARS newsletter three consecutive months prior to the deadline for nominations, which is thirty (30) days prior to the picnic. Any nominations received after that date (August 9, 2019) will not be considered.
3. Nominations must be in writing and signed, or by e-mail with submitter's name clearly shown, with specific and adequate information describing why the nominee should be considered.
4. Areas of consideration:
 - a. Involvement in public relations.
 - b. Operating excellence.
 - c. Involvement in public service.
 - d. Assistance to prospective and/or licensed amateurs.
 - e. A combination of these for the general furtherance of amateur radio.
5. The President shall appoint a committee of no less than three to consider nominations and select the winner. The committee shall select the winner within two weeks after the deadline and procure an appropriate plaque in sufficient time to permit presentation at the Picnic. Also, the committee will write a letter of commendation outlining the reasons for the award. This is to be presented along with the plaque.
6. The winner will be notified prior to the hamfest to permit acceptance of the plaque and the letter and attendance at the Picnic.
7. The name of the winner and the contents of the commendation letter will be published in the Club newsletter following the Family Picnic.

(Due to an oversight, we will only make this announcement two months prior.)

The following persons have previously been selected by their fellow Hams as possessing the characteristics listed in the Call for Nominations. You probably recognize many of the names and call signs because Previous Winners of the Ernie Farmer Memorial Award they are always there when needed and do not hesitate to get involved.

- | | |
|--|--|
| 1979 - Sam Humphries/WA4KKV | 2001 - Ron Dodson/KA4MAP (Webster, Kentucky) |
| 1980 - William Alcock/W4CDA (Danville) | - James Craig McKechnie/KE4FFQ |
| 1981 - Bill Shepherd/W4AUZ | 2002 - Lou Berry/AG4LB, and |
| 1982 - Mike Mahlbacher/WA4UQA | Pat Spencer/KD4PWL |
| 1983 - Ed Bono/WA4ONE, and | 2003 - John Bell/K4RBH (Honorary |
| Harry Bradshaw/W4TPB (SK) | Presentation, SK), |
| 1984 - Bill DeVore/N4DIT | Fernie Williams/KE4MAI and |
| 1985 - Ed White/KD4TQ (SK) | Jerry B. Young/WA4WWH |
| 1986 - Scott Hackney/KI4LE | 2004 - Tom Mansfield/KG4TND |
| 1987 - Nan Muth/AA4UN, and | 2005 - Darryl Bennett/KD4CSW |
| John Boyers/W8OM (Plain City, Ohio) | 2006 - Greg Cross/WA8FJK |
| 1988 - No nominations received | 2007 - Margueritte Williams/KE4MAJ |
| 1989 - Bill Woodward/KC4CHF (SK), | 2008 - Jeanie Dalton-Pugh/KB8QLC |
| and Jim Odom/WA4GHQ | 2009 - No nominations received |
| (now AC4FP, SK) | 2010 - No nominations received |
| 1990 - John Thernes/WM4T (Covington) | 2011 - Brad James/WA4HBM |
| 1991 - John Crutcher/KC4DUU | 2012 - Pete Clough/WD4GPO |
| 1992 - Bobby Rolph/KB4QNR | 2013 - Pat Hayden/AI4W |
| 1993 - Ralph Herndon/KN4DF | 2014 - Glenn A. Dawson/AK4HA |
| 1994 - Johnie Watson/KC4JNR (now NA4J) | 2015 - No nominations received |
| (SK Feb 2013) | 2016 - Joseph Wallace/KE6IVK |
| 1995 - Paul Mitchell/N4DUE | 2017 - Christopher Gay/KU4A |
| 1996 - Bill Fuqua/KO4WW (now WA4LAV) | 2018 - David Richardson/WA9KHZ |
| and Jim Muth/N4CGQ | |
| 1997 - Steve McCallum/K4URX | |
| (W2ZBY) (SK) | |
| 1998 - Harry Sparks/KN4S | |
| 1999 - None awarded | |
| 2000 - Ron Ritchie/KF4MOM | |

Lightning Primer

by

Glen E. Zook, K9STH

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<https://drive.google.com/file/d/0B1q-psx-lp3IwM0E5WGVjb2VlVDQ/preview>

Since I have been asked to provide to the subscribers of the Glowbugs reflector a treatise on lightning including grounding techniques, prevention techniques, as well as theory, I am submitting the information in a series of postings. There are several reasons for this including the length of the manuscript and the time it takes to prepare the information. In addition, the size of an E-Mail is definitely limited by the reflector. There are numerous opinions on the subject of lightning as well as on the related, but completely separate, subject of r.f. grounding. I am not implying that the ideas expressed by me are the only way of doing things. However, they have proven their worth over a number of years of implementation in the field. First of all let me set forth my credentials: I have been a licensed amateur radio operator for over 42 years and have held a commercial radiotelephone operator's license for over 39 years. My college degree is from the Georgia Institute of Technology, better known as "Georgia Tech". In addition, I hold certification from the Personal Communications Industry Association in the two-way radio field. Also, I have certification as a Registered Communications Distribution Designer that is administered by the Building Industry Consulting Service International. This is "akin" to, but definitely not the same as, a Professional Engineer but specializes in the communications industry and is recognized on an International scale, not just statewide as the PE. I have been officially employed in the telecommunications industry since 1965 when I was a junior in college. For over ten years I was employed at Texas Utilities (now "TXU") with primary responsibilities for their two-way and microwave radio systems. In addition, for the last five years of employment I also handled inspections, etc., of the

infrastructure data wiring, , etc. In May of 1999, TXU basically eliminated the telecommunications department and since then I have been doing consulting, writing, and even repair of "boat anchor" amateur equipment for others. I have been presenting talks and seminars on lightning protection and r.f. grounding for a number of years to various organizations including amateur radio groups. My presentation was video recorded this past summer and is now available (or so I am told) to colleges and universities for use in their education processes. Now, to get started on the subject of lightning: First of all, each and everyone have been "hit" by lightning at some time in their life. In fact, many people are "struck" at least several times a month, if not daily! Impossible you say! No, just walking across a carpeted floor or sliding across the seat of an automobile produces "static electricity". When you reach for a "grounded" object, a small "spark" is drawn from you to that object. That is nothing more than a lightning strike! A simplification of the mechanics of a lightning strike consists of a charged mass (usually, but not always a cloud bank) that moves into an area. Since nature likes to remain in balance, the presence of this charged mass causes an opposite polarity charge to start to be drawn from the Earth. When the potential of the differences between these two oppositely charged masses reaches certain intensity, the equalization of potential (the reduction to zero voltage) takes place. This equalization is better known as a lightning strike. When anything is erected above the surface of the Earth, it starts "attracting" energy from an area that is approximately a circle with a radius of twice the height of the item. For example, if a vertical antenna is erected that has a height of 50 feet, it "attracts" energy from a circle with a radius of 100 feet (or diameter of 200 feet). Now, the cross-sectional area of a tube with a diameter of 0.75 inches and a wall-thickness of 0.32 inches (this is a very common size used in vertical antennas) equates to an area of 0.075 square inches. This is the total surface area from which the energy has to be dissipated. The area from which the vertical is "drawing" energy is 31,416 (to the

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the nearest square foot) or 4,523,899 square inches. The ratio of the 0.075 square inch "radiating surface" to the area from which the energy is drawn is 60,318,647. If a charge equal to 1 volt per square inch is "acquired" from the surface of the Earth, this becomes over 60 million volts per square inch at the top of the antenna! That is one "heck of a" potential to be equalized. There are two definite theories in the area of lightning protection. The first is to take whatever precautions are necessary to prevent a strike (and there are definitely some). The second is to ground the "hell" out of everything to allow a strike to be taken without doing any damage. My ideas are to take the precautions against taking a strike and then grounding everything "just in case"! Frankly, there is nothing that will insure absolutely that you will never take a lightning strike. However, there are relatively simple things that you can do to cut this possibility by 99.99 percent. Contrary to popular belief, lightning does not start from the sky, but starts from the "ground up". The vast majority of the equalizing charge does come from the charged mass in the sky. However, the strike actually starts from the ground in the form of a "feeler". If you can keep these "feelers" from starting, you will keep lightning from striking. How to do this will be covered in the next installment.

If "feelers" do not start, there will not be any chance of a lightning strike. Therefore, if at all possible, dissipation devices should be installed on the antenna structure. Unfortunately, if the antenna is a single vertical, it is extremely difficult to install a dissipation device unless it is also used as a "top hat" loading device and the antenna itself must be grounded (shunt feed, etc.). When a tower, mast, pole, etc., is used, then such devices can be installed with no effect on the antenna(s). The purpose of a dissipation device is to dissipate the charge "acquired" by the antenna system before it reaches the potential where a "feeler" is formed. This is accomplished by having a relatively large surface area at, or near, the top of the structure to "handle" the charge ("spline ball"). Or, in the case of a dissipation Or, in the case of a dissipation As the charge is acquired, the dissipation device

"bleeds" off the electricity into the atmosphere. In some cases, during periods of extreme activity, the dissipation device may actually "glow" (corona forms). This is fine! When a corona is present, there is no chance of a "feeler" starting. Dissipation devices need to be installed on each leg of a tower, not just one leg. They need to go at the top, or within a foot or two of the top of the tower. However, they do not have to go on the mast, etc., that comes out of the top of the tower. If the tower is less than 100 feet in height, normally one set of dissipation devices will suffice. At about 100 feet, two sets should be used, one set "half way up" and the other at the top. With heights over 150 feet, dissipation devices should be installed every 75 feet starting from the ground level. "Spline balls" are available from a number of commercial sources and cost from over \$100 upwards. These are normally constructed of stainless steel and consist of a large number of metal strips connected to a central point. Dissipation brushes are also available commercially and can be easily constructed by the amateur radio operator for about \$5 to \$10 each. In addition, some persons have been able to find steel brushes made for chimney sweep activities for about \$15 each. However, I have never been able to find these! The construction of dissipation brushes is easy. If the brushes are to be mounted at the top of the tower (sticking "straight up"), then a 12 inch long piece of 3/4 in diameter galvanized electrical conduit (e.m.t.) is used. Two "notches" 1 inch long are cut at right angles in one end. Using galvanized electric fence wire (available in 1/4 mile reels at home improvement centers for under \$10) the brush is constructed. Cut about 150 lengths of wire, 15 inches long, from the fence wire. Put a hose clamp that fits the 3/4 inch conduit around the notched end. Then, with all the wires held together, insert the fence wires into the conduit. Next, tighten the hose clamp. Then, using acid core solder and a propane torch, solder the conduit and the wires together. To attach the dissipation brush to the tower, use two metal hose clamps and tighten well. Since the purpose of these devices is to "drain" the charge, the physical connection of the hose clamps

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between the tower (or mast) and the dissipation brush is sufficient. If it is installed on a wooden pole, then a ground wire (12 gauge is normally sufficient) will have to be run. For brushes to be used on the sides of the tower (or they can be used on top as well), take an 18 inch long piece of conduit and bend it about 45 degrees 6 inches from one end. Then cut the notches at the other end. Follow the instructions above for building the dissipation device. Remember to make one device for each leg of the tower. Installing these devices will help considerably in preventing a lightning strike. However, there is nothing that will insure that you will NEVER take a strike. But, by installing dissipation devices you will cut your probability of taking a strike by about 99.99 percent.

The next installment will cover proper grounding techniques for tower legs, etc., and for the grounding of coax before it enters the shack. Direct grounding of the tower, mast, etc., is of prime importance for lightning protection. Even if dissipation devices are installed, they are not 100 percent effective in eliminating the prospect of a lightning strike. Therefore, additional precautions must be taken "just incase" you take a strike. First of all, NEVER use a ground intended for r.f. for lightning protection (conversely, never use a lightning ground for r.f.). The methods use for getting a good r.f. ground are different from those used to get a good ground for lightning protection.

Each tower leg MUST be grounded separate from the other legs. This can be accomplished by driving solid copper-clad steel rods into the ground at least six inches outside of the concrete pad on which the tower is mounted (or is actually "in") directly in-line with the tower leg. Next, use #6, or heavier, copper wire for the ground wires. It doesn't really matter if the wire is insulated or not. For this purpose, stranded is better than solid. It is not the current carrying capability of the wire, but the fact that solid wire is more easily distorted which definitely affects the lightning protection ability.

It will depend on how far out the ground rods

are from the tower legs as to how high they should be attached to the tower. The further out the rods, the higher you have to go on the tower. The "angle" between the ground wire and the tower should not be greater than 30 degrees, and the smaller the angle, the better it is. Remove about two inches of insulation from each end of the wire if it is insulated. Next, attach the wire directly to the tower leg using a good, heavy, type of clamp (these are available at home improvement centers). Do NOT use the "hole" in the clamp that is provided for wires, but clamp the wire directly to the tower leg (the end of the wire that is clamped will be up). Some people like to "CAD weld" these ground wires, but I do not like to do this. Bring the wire downward in a very gentle "arc" to the ground rod. Using a similar clamp as on the tower leg, clamp the ground wire directly to the ground rod. What ever you do, do not have any arc in the ground wire with less than a 12- inch radius. Never reverse direction of the ground wire even the slightest (lightning will not usually follow the wire if the radius is less than about 10 inches and will "jump" to "who-knows-where"). Any "right" angle in your ground system will cause the lightning charge to go elsewhere. This is one of the reasons that I do not like using CAD welds for the attachment of the ground wire to the tower (it puts a "right" angle in the system). Also, especially on the smaller diameter tubing towers that are the most commonly used on amateur systems, CAD welding can greatly weaken the strength of the tower leg if not properly done. Coax should be grounded at the top and bottom of the tower. This includes Heliax, and any other type of shielded cable. This can either be accomplished by purchasing grounding kits from Andrew, or other cable manufacturer, at a significant cost, or by making your own for less than 50 cents per connection. I choose to make my own! Remove about 1 inch of the outer sheath of the coax (baring the shield). Next, take a length of braid (like has been removed from an old piece of RG8/U, etc.) about 6 inches to 12 inches long. Using a small hose clamp, clamp this braid to the shield of the coax. Then, use the very cheap black

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plastic tape (the 39 cents a roll stuff - do not use any 3-M product) to tape the connection very well to waterproof it. In a week, or so, of exposure to the sun, this "cheap" tape "congeals" into a sticky, "gooey", waterproof mass. The "good" 3-M tape comes loose when exposed to the elements. Decibel Products used to include a roll of this "cheap" tape with every one of their commercial antennas to waterproof the connections. I have taken apart connections that were over 20 years old waterproofed with this type of tape. They looked just like they had been made (no corrosion, etc!). When each of the coax cables has had a ground wire attached, then attach these to one of the tower legs using two hose clamps to hold them in place. Do the same thing at the bottom of the tower. If there is over 10 to 15 feet between the tower and the entry into the building, then another ground should be put on the shields of the coax cables. This ground should be attached to some type of ground plate, or, they can all be connected together and brought through a single ground wire to another ground rod driven at the side of the building. If properly done, there is no reason to disconnect your antennas whenever a thunderstorm comes into the area. Frankly, my antennas have been up over 29 years and they are never disconnected. I have had no damage at all. My primary tower has a 3-element 20 meter monobander, a DB-1015 for 15 and 10, a 2-element homebrew yagi for 12 meters, a 3-element six meter, and stacked 11-element beams (2 each) vertically polarized for 2 meters. My secondary tower has a 7-element 2 meter yagi, 11-element 222 MHz yagi, and 3-element 6 meter yagi installed. None of these has ever taken a strike. Remember that good grounds are not "pretty". You NEVER want a large angle bend. You NEVER reverse the direction of the ground.

HAM SHACK LIGHTNING PROTECTION
HAM SHACK LIGHTNING PROTECTION
 BY HAL MYERS K4JHM

<http://www.nfarl.org/lightningProtection.html>

First of all, let's get some basic concepts in mind. The thing that "gets" OUR equipment is the voltage difference between the various conductors coming into the equipment, not the magnitude of the voltage. Let's just take a simple modem as an example. It has two sets of conductors coming into it: the power and the 'phone line. If you get a transient on one of these conductors but not on the other, then there will be a potential difference between the two sets of conductors. This is what zaps the device. In the case of our ham equipment, we will usually have three sets of conductors, the power, the antenna and the 'phone or data line from a modem which is tied to the 'phone line. It is important to keep the voltage difference between all three sets of conductors at a reasonable voltage. You may have noticed that usually the 'phone service drop terminates at the Network Interface Device which is usually mounted close to the power service drop at the electric meter. There should be a driven ground rod at that point and both the power common (neutral) and the D (which contains a lightning arrester) are connected to this ground rod. The intention here is that if lightning hits the power line (or 'phone line) at the street and the resultant transient comes down your service drop, since both the power and 'phone lines are connected to that same ground rod with short leads, from that point on into your house, the potential difference between the power and 'phone conductors will be low enough that nothing gets damaged. (Usually it works.)

Now, we add a third conductor, our antenna system. Ideally, we should route it into the house right there at the electric meter with a lightning arrester also tied to that common ground rod, now all three sets of conductors should ride at roughly the same potential (limited by the break over value of the various lightning arrestors) whenever a transient entered the system on any one of the three sets of conductors.

Now, we add a third conductor, our antenna system. Ideally, we should route it into the house right there at the electric meter with a lightning arrester also tied to that common ground rod, now all three sets of conductors should ride at roughly the same potential (limited by the break over value of the various lightning arrestors) whenever a transient entered the system on any one of the three sets of conductors.

We hardly ever do that for a variety of valid reasons. But we go to the other side of the house, drive one or more ground rods and bond all of our ham equipment together; we now have two (independent) ground systems. These two ground systems (one at the electric service entrance and one at our ham shack) are separated by the width of the house (maybe anywhere from 20 to 100 feet of earth).

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Bluegrass Amateur Radio Society (BARS) General Meeting Minutes of June 3, 2019 Red Cross Building, Lexington, Ky.

Program: Prior to convening the meeting, David Richardson, W9KHZ, presented the Club's plans for the 2019 Field day activities which will be held on June 22nd -23rd at Shelter#2 in Veterans Park. Set-up time is scheduled for 10:00am Saturday.

The June, 2019, BARS General Meeting was called to order at 8:05pm by President Andrew Cook, KF4OWP.

Self-introductions were made by sixteen(16) licensed members, which composed a quorum, plus two licensed visitors.

Club and Members' News.

Jodie Wells is newly licensed WB4LKQ.

Treasurer's Report – John Barnes, KS4GL.

Five new membership applications that were recommended by the Board of Directors at their May meeting was presented for Dr. Tyler Dreaden, KM4FKR, and Jenny Dreaden, KM4FKS; David Emmitt, KE4OON, Roger Covert, KN4TJJ, and Robert M. Hisle,

KN4DKD, Phillip Fraley, WA4VYK. Bob Brown, KI4JWK, moved, and J.B.Young, WA4WWH, seconded for acceptance of the membership application, which was approved by unanimous vote.

The summary treasurer's report of amounts in bank accounts statements as of May 31, 2019, are:

Checking account:

General fund:	\$7,967.89
Coax/repeater:	804.98
Education:	1,815.25
	\$10,588.12

PayPal account:	3,360.36
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Savings account:	201.06
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Total balance of accounts:	\$14,149.54
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James Schlessler, WA9MED, moved and Bill Weaver, WE5P, seconded to accept the treasurer's report, which was approved unanimously.

Committee Announcements.

Contest – Pete Kragh, K2UPD: (no announcements).

Education – Bill Fuqua, WA4LAV: Five(5) new Technician Class License Study Manuals are available.

Emergency Preparedness - Sandy Gragg, KM4PJU.

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Program Schedule for 2019

David Richardson/W9KHZ, Chair, Program Committee
Bluegrass ARS, Lexington, Kentucky

The following programs are scheduled for 2019. Your input and suggestions for programs for 2019 are needed. Call David Richardson, W9KHZ at 869-983-1380 or e-mail at daveinlex3@gmail.com/.

Month	Topic	Presenter(s)	Comments
✓ January	"Winter Field Day" January 26-27, 2019	David Richardson/W9KHZ	
✓ February	CERT Program	Shelly Bendall LFUCG	
✓ March	SkyWarn National Weather Service, Louisville, KY	Joe Sullivan	
✓ April	Portable Go-Kit	David Richardson/W9KHZ	
✓ May	Antenna Theory and Design	Bill Fuqua/WA4LAV	
✓ June	"ARRL Field Day" June 22-23, 2019	David Richardson/W9KHZ	
July	Lightening Protection	Jim Bacher	
August	"Hamfest" August 10, 2019	David Richardson/W9KHZ	
September	Annual Family Picnic	Bill DeVore	Shelter#4, Shillito Park, LEX
October	Discussion of By-Laws and SOP changes		
November	Report of Nominating Committee	Additional discussion on By-Laws and SOP	
December	"Annual Auction"/Election	Andrew Cook	

Meeting Schedules for Area Clubs, Exam Sessions, etc.

Volunteer examinations are held in or near Lexington on a schedule that has tests in central Kentucky every month of the year. Schedules for area sessions, plus meetings, etc., are as follows:

The Bluegrass Amateur Radio Society, Inc. (Lexington) - (Fernie Williams/KE4MAI (ARRL - \$15.00) and Margie Williams/KE4MAJ(WCARS- \$10.00)), with Darrell/AC4YD in Winchester and Richmond (W5YI), John/K4FT in Danville (ARRL), and Ron/WX4GPS in Georgetown (ARRL - \$15.00), have a schedule to offer an exam monthly in Lexington/central Kentucky. (See schedules on page 9 of this newsletter). ARRL sponsored tests are held the second Saturday of the month, 10:00 AM in the Red Cross Building, Meeting Room "B", 1450 Newtown Pike, Lexington (except the August session is the Saturday of the second weekend of the month and is held at the site of the Central Kentucky ARRL Hamfest), and WCARS sponsored sessions are held the third Tuesday of the scheduled month, 7:00PM in Meeting Room "A" in the Red Cross Building, 1450 Newtown Pike, Lexington. Contact Margie/KE4MAJ at 859-489-6274 or email to ke4maj@arrrl.net. Go to <<http://www.lexkywcars.org>> for information.

Winchester (W5YI VEC) - They are located in the Clark County EOC, 200 Maryland Avenue, Winchester, Kentucky. Their 2019 schedule (10:00AM): Saturday, January, 12, Saturday, April 13, Saturday, July 13, and Saturday, October 12. Contact Liaison Darrell Epperson/AC4YD, AC4YD@arrrl.net, 859-771-1834

Danville (ARRL VEC) - Test sessions are fourth Saturday in January, April, July and October at 10:00 AM. Liaison John Wulf/K4FT, johnk4ft@gmail.com, 563-505-0339, Wilderness Road Amateur Radio Club, American Legion Post 46, 45 Spears Lane, Danville, KY 40422 - Repeater 145.310 (100 pl).

Georgetown (ARRL VEC) - Liaison Ron Malinowski/WX4GPS, wx4gps@arrrl.net, 502-542-8252, Georgetown Police Dept, 550 Bourbon St., Georgetown (for dates see schedule on page 4 of this newsletter).

Radio Theory and Construction Workshop - Each Saturday 1:00-3:00 PM in the Bluegrass ARS Education Center, basement of the Red Cross Building, 1450 Newtown Pike, Lexington. Contact Bill Fuqua/WA4LAV at (859) 272-9523 or wa4lav@arrrl.net.

Versailles/Woodford County - The Woodford County Amateur Radio Club meets the first Wednesday of each month at 7:00 PM in the Versailles Fire Station No. 2 on Big Sink Pike (38°3'34" N 84°43'11"W). Anyone interested in amateur radio is cordially invited. Also, visit their web site at <<http://www.ky4wc.org>>. You may contact Todd Rose/KE4YAH (atrose@windstream.net).

Fayette County ARES Net - Wednesday, 9:00 PM, 146.940 (-600 Tone 88.5) repeater.

Amateur Television and Specialized Communications Net

- An informal meeting is held every Sunday evening at 9:00 PM (local time)

on the 146.760 (-600 offset) repeater in Lexington.

Kentucky Six-Shooters Net - Wednesday evenings at 8:00 PM six meters FM on 52.525 MHz (vertically polarized). David Jordan/KI4AWZnet control; and, Daily Six-Meter FM Ragchew net 7:00-9:00 PM on 52.525MHz (vertically polarized). James Peel/KG4VAR net control.

KY-QRP - Temporarily canceled.

Scott County Amateur Radio and Emergency Service Club (SCARES) - Meetings are the third Saturday each month, 9:00 AM in the Solarium room at Georgetown Community Hospital, 1140 Lexington Road, Georgetown. Check in to their weekly simplex net Tuesdays at 7:00 PM on 146.685 (PL 141.3).

Central Kentucky ARS (Richmond-Berea) - Meet the Third Thursday each month in the Madison County EOC, Richmond, Kentucky, at 7:00 PM. Talk-in on 146.865 (-600, PL-192.8 Hz) and 145.370 (-600, PL-192.8 Hz) repeater for location, directions to meeting site, or other information.

Greater Mason County ARA meeting, 7:00 PM, second Tuesday each month, Maysville Community College Science Building.

Pioneer ARC (Winchester) - Fourth Tuesday each month, Golden Corral Restaurant, 7:00 PM (eat at 6:00), except March 26 meet at Christview Christian Church (SkyWarn). Talk-in/info on 145.430 (-600, T-203.5).

Jessamine Amateur Wireless Society (Nicholasville) - Meet Second Monday each month, 7:00 PM, St. Joseph/R.J. Corman Ambulatory Care Center, 1250 Keene Road (U.S. 27 Bypass south to intersection with 169; turn at the light.) Talk-in on the 145.490 (T-123.0).

The Jessamine County ARES Net - Tuesdays at 7:30 PM, 145.490 Repeater, Gary Britten W4GNB net control..

The Madison County ARES Net, Monday at: 7:00 PM, 146.865 (pl 192.8). Everyone is invited to check in. . . Wilderness Trail Emergency Net, Wednesdays, 8:30 PM, 146.715 (pl 100.0). . . Glenn/KO4OL.

The Southeast Kentucky ARC - meet at the Laurel County EOC, 168 Substation St, London. Meetings on odd number months (Jan, Mar, etc.) are on the Second Tuesday at 6:00 PM; meetings on even number months (Feb, Apr, etc.) are the Second Saturday at 11:00 AM. Talk-in on 147.180 (PL-74.4) for directions tor other information. District 11 Skywarn Net meets Sundays at 8:00 PM on 146.925 (-PL- 79.7) and is linked to 147.180 (PL-74.4) and other repeaters in and close to the area. District 11 ARES Net meets Mondays at 9:00 PM on 146.925 (PL-79.7) and is linked to 147.180 (PL-74.4) and other repeaters in and close to the area.

Please send any changes or corrections to these notices to my attention, Bart Breeding/KB4FEE, in care of Bluegrass ARS, Inc., PO Box 4411, Lexington, KY 40544-4411, or e-mail to aratat291@twc.com.

07/20/2019

Big Sandy Amateur Radio Club Hamfest

Location: Louisa, KY

Type: ARRL Hamfest

Sponsor: Big Sandy Amateur Radio Club

Website: <http://bsarc.org/>

The club would like to thank Bill Cotter, N4LG for the donation of equipment to the club.

Schedule for Volunteer Examinations in 2019

Harry Spark/KN4S,*
Bluegrass Volunteer Examiners
kn4s@kn4s.com

The exam schedule for 2019 follows nearly the same format as past years. The scheduling is for Lexington/Fayette County and the sessions in Danville, Georgetown, Winchester, and Richmond hamfest. The Bluegrass Amateur Radio Society-sponsored ARRL exams will continue to be held on the second Saturday of the second month of each quarter (except the August Session will be the date of the Central Kentucky ARRL Hamfest in Lexington), and the WCARS sessions remain as they were last year, Tuesday evenings quarterly.

Test Session Locations

Lexington*	Winchester**	Danville	Georgetown
Red Cross Building	Clark County EOC	Amer Legion Post 46	Georgetown Police Dept
1450 Newtown Pike	200 Maryland Ave	45 Spears Lane	550 Bourbon Street
Lexington KY 40509	Winchester KY 40391	Danville KY 40422	Georgetown KY 40324

* August, Bluegrass ARS Hamfest, Eastland Shopping Center, Lexington, Kentucky

** September, Richmond Hamfest, Madison County Fairgrounds, Richmond, Kentucky

Contact Information

ARRL VEC: Lexington and BARS ARRL Hamfest test sessions - Liaison **Fernie**

Williams/KE4MAI, ke4mai@arrl.net, 859-652-3393

(www.bluegrassars.org)

Danville - Liaison **John Wulf/K4FT**, johnk4ft@gmail.com, 563-

505-0339, Wilderness Road ARC, <http://www.wrarc.com>

Georgetown - Liaison **Ron Malinowski/WX4GPS**,

wx4gps@arrl.net, 502-542-8252

WCARS VEC: Lexington - Liaison **Marguerite Williams/KE4MAJ**,

ke4maj@arrl.net, 859-489-6274 (www.bluegrassars.org)

W5YI VEC: Winchester - Liaison **Darrell Epperson/AC4YD**,

AC4YD@arrl.net, 859-771-1834

TEST SESSION FEE: ARRL - \$15; WCARS - \$10; W5YI - \$14

Date and Time	VEC	Location
Saturday, July 13, 2019	10:00 am	W5YI Winchester
Saturday July 27, 2019	10:00 am	ARRL Danville **
Saturday, August 10, 2019	10:00 am	ARRL Lexington(Hamfest)

**Location change: Third St. Methodist Church, 119 S. 3rd St., Danville

(continued from page 8, General Meeting, 06-03-19)

1) A "Ham Radio 101" presentation will be given at the Fayette County Emergency Operations Center on June 4th for those ham radio operators who are CERT certified.

2) Plans to restart the ARES Net include scheduling volunteers for net control.

3) A simplex net exercise is being tentatively planned for sometime in July.

Hamfest – David Richardson, W9KHZ: August 10th at the Jack-Pot Bingo Hall in the Eastland Shopping Center.

Newsletter – Bart Breeding, KB-4FEE: Nothing to announce.

Program – David Richardson, W9KHZ: The July program will be "Lightening Protection".

The August program will be "Hamfest".

Public Relations and Membership – Bart Breeding, KB4FEE:

A "Ham Radio 101" presentation will be given at the Village Branch Library on July 5th.

Repeater – Andrew Cook, KF4OWP: Nothing to announce.

Shack – David Richardson, W9KHZ: Antenna maintenance activities will resume after Field Day.

Repeater – Andrew Cook, KF4OWP: Nothing to announce.

Shack – David Richardson, W9KHZ: Antenna maintenance activities

will resume after Field Day.

Volunteer Examinations – Fernie Williams, KE6MAI:

(no announcements).

Historian - Bill DeVore, N4DIT: Nothing to announce.

Librarian – John Barnes, KS4GL: Nothing to announce.

MARS – Harvey Fry, AA4HF, and Barry Jackson, WB4N:

(no announcements).

Trustee: Shack – Andrew Cook, KF4OWP: Nothing to announce.

VHF Repeater – Andrew Cook, KF4OWP: Nothing to announce.

Bylaws – Andrew Cook, KF4OWP: The Bylaws committee is meeting

each month at 6:00pm before the General Meetings and the Directors' Meetings to revise the current Bylaws. The committee meeting is open to all BARS members for input and discussion.

Special Interest Groups News.

Twenty-three(23) to Thirty(30) ham radio operators will be needed for Health and Welfare communications coverage of the Independence Day, July 4th, Bluegrass 10K in Lexington. Anyone interested in participating should meet at the old Shriners' Hospital at 5:30am. The event is scheduled to be over around 10:00am. Contact Bill DeVore for additional information.

Old Business.

(none)

(continued on page 13)

Bluegrass Amateur Radio Society (BARS) Directors' Meeting Minutes of May 20, 2019 Red Cross Building, Lexington, Ky.

The May, 2019, Directors' Meeting was called to order at 7:33pm by President Andrew Cook, KF4OWP.

In attendance were:

1st Vice President – Bill Fuqua, WA4LAV
2nd Vice President – David Richardson, W9KHZ;
Treasurer – John Barnes, KS4GL;
Secretary – Bruce Campbell, KM4EHU;
Directors-at- Large – Mark Elliott, KN4HVX, Tim Kunkel, KM4MPM; plus MARS Representatives Barry Jackson, WB4N, and Harvey Frye, AA4HF, and also Bart Breeding, KB4FEE, and Mike Saulsbury, WB0JBO.
Treasurer's Report – John Barnes, KS4GL.
Five(5) new Membership Applications were recieved:
Tyler Dreaden, KM4FKR, and Jenny Dreaden, KM4FKS;
David Emmitt, KE0ON, Roger Covert, KN4TJJ, and
Robert M. Hisle, KN4DKD.
David Richardson, W9KHZ, moved, and Mike Saulsbury, WB0JBO, seconded that the application be accepted and presented at the June general membership meeting, which was approved without objection.
Summary Treasurer's Report as of March 31, 2019:
Checking account:
General fund: \$8,312.46
Coax/repeater: 804.98
Education: 1,934.29
\$11,051.73
PayPal account: 3,360.36
Savings account: 201.02
Total balance of accounts: \$14,613.11

Tim Kunkel, KM4MPM, moved, and Mark Elliott, KN4HVX, seconded that the treasurer's report be accepted and was approved without objection.

Secretary's Report – Bruce A. Campbell, KM4EHU

1. A copy of the current Bylaws was sent to new member Phillip Fraley, WA4VYK.
2. A letter of acknowledgement and thanks was sent to member Bill Cotter, N4LG, for donation of test equipments.
Committee Reports.
Contest: Pete Kragh, K2UPD. David Richadson, W9KHZ, reported that the Field Day event will be at Shelter#2 in Veterans Park on Saturday and Sunday, June 22nd 23rd. Set-up will begin at 10:00am and operation will start at 2:00pm and continue to Sunday morning.
Education: Bill Fuqua, WA4LAV. Few students have been attending Saturday sessions now that school is out for the summer.
Emergency Preparedness: Sandy Gragg, KM4PJU. No report.
Hamfest: David Richardson, W9KHZ. Nothing to report.
Newsletter: Bart Breeding, WB4FEE. Nothing to report.
Program: David Richardson, W9KHZ. The July Program will be changed from DMR to Lightening Protection.
Public Relations and Membership: Bart Breeding, WB4FE.
Bart Breeding, KB4FEE, and David Richardson, W9KHZ, are scheduled to present a "Ham Radio 101" seminar for CERT (Community Emergency Response Team) certification at the Cisco Road Lexington Fayette County EOC on June 4th, and also a similar presentation for a general program at the Lexington Public Library Village Branch on July 13th.
Repeater: Andrew Cook, KF4OWP. Nothing to report.
Shack: David Richardson, W9KHZ. Antenna maintenance and replacements activities are continuing.
HF Liaison: David Richardson, W9KHZ. Nothing to report.
VHF Liaison: Tim Kunkel, KF4MPM. Nothing to report.
Volunteer Examinations: Fernie Williams, KE4MEI. Nothing to report.

Historian: Bill DeVore, N4DIT. Nothing to report.

Library: John Barnes, KS4GL. Nothing to report.

MARS: Harvey Frye, AA4HF, and Barry Jackson, WB4N. Nothing to report.

Trustee: Andrew Cook, KF4OWP. Nothing to report.

Bylaws: Andrew Cook, KF4OWP. Secretary Bruce Campbell, KM4EHU, Reported that the revisions to the Bylaws are reaching the point that they will soon be ready to submit to the Directors' for preliminary approval before they are presented to a general membership vote for adoption. The Bylaws committee meeting is open to any interested BARS member.

A set of BARS Standard Operating Procedures is being formulated at the Bylaws Committee meetings, and input is welcome from members.

Old Business:

The disposition and disposal of the donated equipment was discussed.

New Business:

The need for separate band filters on the rigs in the shack to reduce strong field strength interference was discussed.

Upcoming BARS Schedule:

June 3rd, 6:00pm - Bylaws Committee Meeting.

June 3rd, 7:30pm - BARS General Meeting.

Program: Field Day, David Richardson, W9KHZ.

June 17th, 6:00pm - Bylaws Committee Meeting.

June 17th, 7:30pm - Directors' Meeting.

June 22nd – 23rd – Field Day at Veterans' Park.

July 1st, 6:00pm - Bylaws Committee Meeting.

July 1st, 7:30pm - BARS General Meeting.

Program: Lightening Protection.

July 4th, 5:30am – Health and Welfare Communications

Assistance for the Bluegrass 10K event.

July 15th, 6:00pm - Bylaws Committee Meeting.

(continued on page 12)

(continued from page 10,
Directors Meeting 5-20-19)

July 15th, 7:30pm - Directors' Meeting.

August 5th, 6:00pm - Bylaws Committee Meeting.

August 5th, 7:30pm - BARS General Meeting. Program: Hamfest.

August 10th, 7:30pm - Hamfest.

August 12th, 6:00pm - Bylaws Committee Meeting.

August 12th, 7:30pm - Directors' Meeting.

With no other business at 8:40pm, David Richardson, W9KHZ, moved, and, Mark Elliott, KN4HVX, seconded that the meeting be adjourned, which was approved without objection.

Recorded and submitted by:

Bruce Campbell, KM4EHU
Secretary

(continued from page 7, Ham Shack Lightning Protection)

Earth is not a "conductor", it is a "resistor". The value of the ground resistance between the ground rod at the service entrance and the ground rod at our ham shack may be anywhere from 1 ohm to 1000 ohms, depending upon the distance, the type of soil and the amount of moisture in the soil.

Lets take a best case and say the resistance between the two ground rods is 1 ohm. When lightning hits the power line out front *or* the antenna out back, the strike may peak at 100,000 volts or more. This voltage difference shows up across the 1 ohm resistance between your two lightning rods. This voltage difference is going to show up at the equipment between the power connections and the antenna connections. Fortunately most lightning strikes don't hit the power line right outside our house or our antenna directly. Most of the time, it hits some distance away so the transient is attenuated some as it travels toward out house. So, we have a smaller transient to contend with which normally comes in on the power service drop and is grounded at the meter. If your equipment is grounded at the other side of the house with a second ground rod(s), then there will be a voltage difference between the AC going to your rig and the rig grounding system as the transient dissipates through the earth.

If you have a three wire power plug on your equipment, most of the voltage difference will show up between the chassis and the antenna connections. If you have a two wire power plug on your equipment, most of the voltage difference will show up between the AC incoming lead to the rig and the rig chassis.

Take your pick where you want the transient to show up. I'd rather have it between the chassis and the antenna, there are usually more clearances and higher voltage insulation at that point than there is between the power cord and the chassis. Of course, bonding all the ham equipment together keeps the voltage difference from showing up between the various pieces of equipment.

If it is practical to bond the two ground rod systems together with a relatively short, straight, low impedance conductor, you have a chance of holding the voltage difference between your two ground systems at a reasonable level. Remember these transients contain high frequency components so that all bends in the ground conductors constitute series inductance which will tend to isolate the two ground systems and defeat the purpose of attempting to bond them together. This does, however have a benefit, other than lightning protection, in that it makes sure that there is no voltage difference between the two grounding systems and consequent ground loop currents from flowing under normal operating conditions. When a lightning storm approaches, disconnect all your antenna leads and through them out into the middle of the back yard. Unplug all of your equipment from the power lines. Unplug all your modems, etc. Obviously, this seems to be ridiculous advice, unless you can see that the lightning is really, really close. Remember that sound travels about 1100 feet per second, so the time between when you see the flash and hear the thunder allows you to estimate the proximity of the lightning. So, yes single point grounding is the ideal but remember that includes not only all of our ham equipment, it should also include our AC power and phone systems at that single point. My preference. is 3 wire ground plugs on all power cables, then you know where the majority of the voltages are going to appear rather than it being a crap shoot where it will show up using 2 wire power plugs.

(continued from page 10, General Meeting, 06-03-19)

New Business.

The Board of Directors, at their April meeting, recommended that Loretta Colvin be granted an Honorary Lifetime Membership for her long-time continuing support and involvement in BARS activities. Bill DeVore, N4DIT, so moved, and John Barnes, KS4GL, seconded the motion, which was approved unanimously.

With no other business at 8:45pm, James Schless-er, WA9MED, moved, and Bob Brown, KI4JWK, seconded, that the meeting be adjourned, which was approved without objection.

The next BARS scheduled meetings and activities:

Bylaws Committee Meeting: Monday, June 17th, 6:00pm.

Directors' Meeting: Monday, June 17th, 7:30pm.

Field Day: June 22nd – 23rd at Veterans' Park.

Bylaws Committee Meeting: Monday, July 1st, 6:00pm.

BARS General Meeting: Monday, July 1st, 7:30pm.
Program: Lightning Protection.

Bylaws Committee Meeting: Monday, July 15th, 6:00pm.

Directors' Meeting: Monday, July 15th, 7:30pm.

Bylaws Committee Meeting: Monday, August 5th, 6:00pm.

BARS General Meeting: Monday, August 5th, 7:30pm.

Program: Hamfest.

Hamfest: Saturday, August 10th.

Bylaws Committee Meeting: Monday, August 19th, 6:00pm.

Directors' Meeting: Monday, , August 19th, 7:30pm.

Picnic: Monday, September 9th, Shillito Park Shelter#4.

Recorded and submitted by:

Bruce A. Campbell, KM4EHU
Secretary

“Liberty is the breath of life to nations.”

– George Bernard Shaw

“Our country is not the only thing to which we owe our allegiance. It is also owed to justice and to humanity. Patriotism consists not in waving the flag, but in striving that our country shall be righteous as well as strong.”

– James Bryce

As we express our gratitude, we must never forget that the highest appreciation is not to utter words but to live by them.

– John Fitzgerald Kennedy



BLUEGRASS AMATEUR RADIO SOCIETY, INC.
INCOME, EXPENSES, AND ACCOUNT BALANCES
as of May 31, 2019

	Checking Account	PayPal Account	Savings Account	Total
INCOME:				
ARRL Dues	0.00	0.00	0.00	0.00
BARS Dues	60.00	0.00	0.00	60.00
Coax/Repeater	0.00	0.00	0.00	0.00
Donations	30.19	0.00	0.00	30.19
Education	0.00	0.00	0.00	0.00
Hamfest	0.00	0.00	0.00	0.00
Interest	0.00	0.00	0.04	0.04
Sales Tax	1.81	0.00	0.00	1.81
Miscellaneous	0.00	0.00	0.00	0.00
Total	92.00	0.00	0.04	92.04

EXPENSES:		
ARRL Dues	0.00	0.00
Coax/Repeaters	0.00	0.00
Donations	316.00	316.00
Education	119.04	119.04
Election	0.00	0.00
Equipment	0.00	0.00
Field Day	0.00	0.00
Hamfest	0.00	0.00
Insurance	0.00	0.00
Miscellaneous	95.57	95.57
Newsletter	0.00	0.00
Picnic	25.00	25.00
P O Box	0.00	0.00
Sales Tax	0.00	0.00
Telephone	0.00	0.00
Total	555.61	555.61

ACCOUNT BALANCES

	April 30, 2019	May 31, 2019
Checking Balance*	11051.73	10588.12
PayPal Balance	3360.36	3360.36
Savings Balance	201.02	201.06
Total Balance	14613.11	14149.54

* Fund-specific balances in Checking Account

General	8312.46	7967.89
Coax/Repeater	804.98	804.98
Education	1934.29	1815.25
Total Checking	11051.73	10588.12

Lightning protection for antennas

<https://www.jpole-antenna.com/2013/03/29/lightning-protection-for-antennas/>

I originally wrote this article on March of 2012, but over the past year this topic has been one of the most searched blog posts on my site. Lightning safety is an important topic, so I revisited the information, updated it and present it again at the top of my blog.

When you look at my all copper J-Pole antennas, you would assume that they are more susceptible to lightning strikes than fiberglass encased vertical antennas. But in actuality, they are no more or less dangerous than any other antenna. The recent outbreak of severe weather and tornadoes drives home the message that your antenna system needs to be protected from lightning strikes.

"Any antenna can act as a giant lightning rod." Lightning is a product of thunderstorm development. As thunderstorms develop, the ice crystals inside a growing thunder cloud become electrically charged. When the static charge becomes so great that the insulating air around the crystals can't contain it; the charge is released as a lightning bolt. The lightning will seek the path of least resistance and strike the closest grounded object. Any antenna can act as a giant lightning rod.

Lightning protection for amateur radio antennas To protect yourself, home, and your radio equipment you need to install some basic lightning protections into your antenna system. Most lightning protection systems serve two purposes: to channel lightning's electrical energy to a suitable ground, and to keep lightning energy from entering your home.

Channel lightning's electrical energy to a suitable ground

Grounding your tower and antenna system is the first step for lightning protection. All antennas on a single tower or mast should go to a common ground point. If you have multiple towers or masts at your location, then each tower can have it's own ground system. The easiest is to ground your antennas and tower so that a

Volunteers needed for Bluegrass 10K Race

It is time again to plan for this year's Bluegrass 10K Race on July 4. Radio amateurs provide an important communication role during this event by reporting race progress and injuries to participants. Volunteers are needed. You are needed.

We will meet at 6 AM on race day at the corner of Richmond Road and Shriners Lane. From there we will be escorted to downtown, and each person can fall out at their assigned spot. We will use the 146.76 repeater. All you need is an operating 2 meter HT. The race is usually over by mid morning, so you can still spend the holiday with family and friends.

For ARES members and other communication responders this is a good opportunity to keep your skills limber at a low pressure event. I think the local ARES group can receive necessary credit for the event. I will be happy to sign off on required paperwork.

The event is low stress. If you are a new ham, or if you have never participated in a public service event, we welcome you. If you've been out of the game for a while and want to get back in, we welcome you also.

All volunteers will receive a tee shirt.

If you want to volunteer, I need your NAME, CALL SIGN, TELEPHONE NUMBER, AND SHIRT SIZE. I doubt that sizes larger than 2XL are available. If you don't give me your shirt size I will get you an XL. You can also bring a non-ham helper, so make sure you give me their name and shirt size.

Please email directly to me as soon as possible. I must order the shirts and coordinate with race officials well ahead of time.

Any questions? If so just email me directly at kd4csw@twc.com.

Thanks and 73,

Darryl/KD4CSW

To contact the club email info@bluegrassars.org or

DUE TO CONSTRUCTION ON THE PLAYGROUND NEAR SHELTER #2, OUR ANNUAL PICNIC WILL BE HELD AT SHELTER # 4 AT SHILITO PARK IN SEPTEMBER

Bruce Draper, AA5B, aa5b.corral@gmail.com

Contest Corral

July 2019

Check for updates and a downloadable PDF version online at www.arrl.org/contests.

Refer to the contest websites for full rules, scoring information, operating periods or time limits, and log submission information.

Start - Finish Date-Time Date-Time				Bands	Contest Name	Mode	Exchange	Sponsor's Website
1	0000	1	2359	1.8-144	RAC Canada Day Contest	CW Ph	VE: RS(T), province/territory. Non-VE: RS(T), serial	wp.rac.ca/rac-canada-day-contest-rules
1	0001	7	2359	28	10-10 International Spirit of 76 QSO Party	CW Ph Dig	Name, mbr or "0," SPC	www.ten-ten.org
1	0800	7	2000	All (no WARC)	IQRP Quarterly Marathon	CW Ph Dig	RS(T)	www.arimontebelluna.it/contest.htm
1	1900	1	2030	3.5	RSGB 80-Meter Club Championship, CW	CW	RST, serial	www.rsgbcc.org/hf
2	0100	2	0300	3.5-28	ARS Spartan Sprint	CW	RST, SPC, power	arsqrp.blogspot.com
4	1700	4	2100	28	NRAU 10-Meter Activity Contest	CW Ph Dig	RS(T), 6-char grid square	www.nrau.net/activity-contests
4	1900	4	2100	1.8-50	SKCC Sprint Europe	CW	RST, SPC, name, mbr or power	www.skccgroup.com
6	0000	6	0400	3.5-28	FISTS Summer Slow Speed Sprint	CW	RST, SPC, name, mbr or power	www.fistsna.org
6	0000	6	2359	1.8-28	Venezuelan Independence Day Contest	CW Ph Dig	RS(T), serial	yv5rcv.org/reglasindep.aspx
6	1100	7	1059	3.5-28	DL-DX RTTY Contest	Dig	RST, serial	www.drcg.de/dldxrtty
6	1400	7	1400	1.8-28	Marconi Memorial HF Contest	CW	RST, serial	arifano.it/contest_marconi.html
6	1500	7	1500	3.5-14	Original QRP Contest	CW	RST, serial, power category	qrpc.de/contestrules/oqrp.html
6	2000	7	2000	7	PODXS 070 Club 40-Meter Firecracker Sprint	Dig	RST, SPC	www.podxs070.com
10	1900	10	2030	3.5	RSGB 80-Meter Club Championship, SSB	Ph	RS, serial	www.rsgbcc.org/hf
13	0000	13	0400	3.5-28	FISTS Summer Unlimited Sprint	CW	RST, SPC, name, mbr or power	www.fistsna.org
13	1200	14	1200	1.8-28	IARU HF World Championship	CW Ph	RS(T), ITU zone (HQ stations: send IARU Society)	www.arrl.org/iaru-hf-championship
13	1200	14	2359	1.8-50	SKCC Weekend Sprintathon	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
15	0000	15	0200	1.8-28	4 States QRP Group Second Sunday Sprint	CW Ph	RS(T), SPC, mbr or power	www.4sqrp.com
20	0030	20	0230	3.5-14	NAQCC CW Sprint	CW	RST, SPC, mbr or power	naqcc.info
20	0700	20	1459	7-28	Russian Radio Team Championship	CW Ph	RS(T), 3-char code or ITU zone	srr.ru/championat-rossii-po-radiosvyazi-na-kv-rtc
20	0800	20	1400	1.8-7	Trans-Tasman Low-Bands Challenge	CW Ph Dig	RS(T), serial	wia.org.au/members/contests
20	1200	20	1359	1.8-50	Feld Hell Sprint	Dig	RST, mbr, SPC, 4-char grid	sites.google.com/site/feldhellclub
20	1800	21	0559	3.5-28	North American QSO Party, RTTY	Dig	Name, SPC/D.C.	www.ncjweb.com
20	1800	21	2100	50, 144	CQ Worldwide VHF Contest	CW Ph Dig	4-char grid square	www.cqww-vhf.com
20	2100	20	2259	7, 14	SA Sprint Contest	CW Ph	RS(T), serial	sa-sprint.com/rules
21	0900	21	1600	3.5-14	RSGB Low Power Contest	CW	RST, serial, power	www.rsgbcc.org/hf
21	2000	21	2159	14	CQC Great Colorado Gold Rush	CW	RST, SPC	coloradoqrclub.org/contests
22	0100	22	0300	1.8-28	Run for the Bacon QRP Contest	CW	RST, SPC, mbr or power	qrptest.com/pigrun
24	0000	24	0200	1.8-28	SKCC Sprint	CW	RST, SPC, name, mbr or power	www.skccgroup.com
25	1900	25	2030	3.5	RSGB 80-Meter Club Championship, Data	Dig	RST, serial	www.rsgbcc.org/hf
27	1200	28	1200	3.5-28	RSGB IOTA Contest	CW Ph	RS(T), serial, IOTA number (if any)	www.rsgbcc.org/hf
28	1700	28	2100	7-28	ARS Flight of the Bumblebees	CW	RST, SPC, power or Bumblebee nr	www.arsqrp.blogspot.com
29	1300	30	0400	1.8-28	QCX Challenge	CW	RST, name, SPC, rig	www.qrp-labs.com/party.html

All dates refer to UTC and may be different from calendar dates in North America. Contests are not conducted on the 60-, 30-, 17-, or 12-meter bands. Mbr = Membership number. Serial = Sequential number of the contact. SPC = State, Province, DXCC Entity. XE = Mexican state. Listings in blue indicate contests sponsored by ARRL or NCJ. The latest time to make a valid contest QSO is the minute listed in the "Finish Time" column. Data for Contest Corral is maintained on the WA7BNM Contest Calendar at www.contestcalendar.com and is extracted for publication in QST 2 months prior to the month of the contest. ARRL gratefully acknowledges the support of Bruce Horn, WA7BNM, in providing this service.

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FIELD DAY 2019



(continued from page 15,

Lightning protection for antennas

lightning strike will go into the ground and away from your house. Antennas should be ground bonded to the tower and the tower bonded to an eight foot ground rod buried at the base of the tower. 10 gauge solid electrical wire is heavy enough for most antenna systems.



Keep lightning energy from entering your house

Since the lightning will also follow the coax into your radios, you need to also isolate the coax from the antenna. Lightning arrestors are small devices that are attached inline of your coax feedline. Like a fuse, they are designed to break the connection when a sudden burst of energy comes across them. There are many brands of arrestors on the market. One such, Polyphaser makes lightning arrestors that can do just that job. In lieu of an arrestor, physically disconnecting your equipment from the feedline during the thunderstorm also helps. Lightning energy will follow the feedline, but combined with a proper ground system, damage will be minimal.

The ARRL has a great series of articles on lightning protection for amateur radio stations. I recommend that you read that information and follow their recommendations. Also check with your homeowners insurance carrier about protection levels and limits on lightning damage. Some companies don't automatically cover lightning damage or have certain limits on coverage.

Finally, if you must operate during a thunderstorm, I recommend using a protected antenna, maybe in your attic or located inside your home. Your house will act like a Faraday cage and provide natural protection from the lightning, allowing you to operate without fear of lightning hitting the antenna.



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Letters to the editor, technical articles, items of interest to the Ham community and guest editorials are invited and will be published at the discretion of the editor. Items for sale by members of the Society will be advertised without charge for one issue, and may be resubmitted as often as desired. These ads must be non-commercial in nature.

Articles published in QUA/HAMnews do not necessarily represent the views of the Officers, Board of Directors, editor, or Society membership, nor does publication thereof represent concurrence by the Officers, Board of Directors, editor, or Society membership of the contents of the article. No article will be published unless it is accompanied by the name(s) of the person(s) submitting the material.

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Annual Dues (January 1 - December 31)

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"Membership," click on the option for your preference as below:

Regular Membership: One year - \$20.00; two years - \$38.00; three years

- \$55.00 (Additional family member(s) at the same address \$1.00 each per year)

Associate Membership - \$15.00 (for those who reside farther than 50 miles from Lexington)

Full-Time Student Membership - \$12.00 (for those 21 and under, and no other Club member in the family)

Shack telephone: (859) 231-0974 web page: <http://www.BluegrassARS.org/>

Calendar of Ham Radio Activities for JULY 2019

- Mon 1 Bylaws Committee Meeting, 6:00pm., BARS General Meeting, 7:30pm. Program: Lightning Protection, Jessamine Amateur Wireless Society meeting, 7:00 PM, St. Joseph/R.J. Corman Ambulatory Care Center, 1250 Keene Road, Nicholasville; District 11 ARES
Net 9:00 PM 146.925 (PL-79.7) linked to 147.180 (PL-74.4).
- Tue 2 Amateur Swap Net 145.370 (T-192.8) 8:00 PM; "Casual Communicators Net," 9:00 PM Eastern, 443.325+ MHz;
- Wed 3 Six Shooters Net, 8:00 PM on 52.525 MHz FM (vertically polarized);
- Thu 4 HAPPY JULY 4TH, - Health and Welfare Communications
Assistance for the Bluegrass 10K event. Meeting of Bluegrass ARS Technical Group, 6:30 PM, Education Ctr, basement, Red Cross Building, 1450 Newtown Pike, Lexington; Jessamine Cty ARES Net, 7:30 PM, 145.490 Repeater, Gary Britten W4GNB net control.
- Sat 6 Shack open 9:00-Noon; Radio Theory & Construction Workshop, 1:00-3:00 PM, basement, Red Cross Bldg, 1450 Newtown Pike;
- Sun 7 Amateur Television & Specialized Communications Net, 9:00 PM (146.760 Repeater); District 11 Skywarn Net, 8:00 PM, 146.925 (PL-79.7 Hz) linked to 147.180 (PL-74.4 Hz)\
- Mon 8 District 11 ARES Net 9:00 PM 146.925 (PL-79.7) linked to 147.180 (PL-74.4) and other repeaters in the area.
- Tue 9 Amateur Swap Net 145.370 (T-192.8), 8:00 PM; "Casual Communicators Net," 9:00 PM Eastern, 443.325+ MHz.
- Wed 10 Six Shooters Net, 8:00 PM on 52.525 MHz FM (vertically polarized);
- Thu 11 Meeting of Bluegrass ARS Technical Group, 6:30 PM, Education Ctr, basement, Red Cross Building, 1450 Newtown Pike, Lexington; Jessamine Cty ARES Net, 7:30 PM, 145.490 Repeater, Gary Britten W4GNB net control.
- Sat 13 Shack open 9:00-Noon; Radio Theory and Construction Workshop, 1:00-3:00 PM, basement, Red Cross Bldg, 1450 Newtown Pike; License Exam session, 10:00 am, Clark County EOC, 200 Maryland Ave., Winchester, KYW5YI VEC: Winchester - Liaison Darrell Epperson/AC4YD, AC4YD@arri.net, 859-771-1834
- Sun 14 Amateur Television & Specialized Communications Net, 9:00 PM (146.760 Repeater); District 11 Skywarn Net, 8:00 PM, 146.925 (PL-79.7 Hz) linked to 147.180 (PL-74.4 Hz)\
- Mon 15 Bylaws Committee Meeting: Monday, 6:00pm, Directors' Meeting: 7:30pm.
District 11 ARES Net 9:00 PM 146.925 (PL-79.7) linked to 147.180 (PL-74.4) and other repeaters in the area.
- Tue 16 Amateur Swap Net 145.370 (T-192.8) 8:00 PM; "Casual Communicators Net," 9:00 PM Eastern, 443.325+ MHz;
- Wed 17 Six Shooters Net, 8:00 PM on 52.525 MHz FM (vertically polarized);
- Thu 18 Meeting of Bluegrass ARS Technical Group, 6:30 PM, Education Ctr, basement, Red Cross Building, 1450 Newtown Pike, Lexington; Jessamine Cty ARES Net, 7:30 PM, 145.490 Repeater, Gary Britten W4GNB net control.
- Sat 20 Shack open 9:00-Noon; Radio Theory and Construction Workshop, 1:00-3:00 PM, ; Big Sandy Amateur Radio Club Hamfest, Louisa, KY
- Sun 21 Amateur Television & Specialized Communications Net, 9:00 PM (146.760 Repeater); District 11 Skywarn Net, 8:00 PM, 146.925, PL-79.7 Hz) linked to 147.180 (PL-74.4 Hz) linked to 147.180 (PL-74.4) and other repeaters in the area
- Mon 22 District 11 ARES Net 9:00 PM 146.925 (PL-79.7) linked to 147.180 (PL-74.4) and other repeaters in the area.
- Tue 23 Amateur Swap Net 145.370 (T-192.8) 8:00 PM; "Casual Communicators Net," 9:00 PM Eastern, 443.325+ MHz;
- Wed 24 Six Shooters Net, 8:00 PM on 52.525 MHz FM (vertically polarized);
- Thu 25 Meeting of Bluegrass ARS Technical Group, 6:30 PM, Education Ctr, basement, Red Cross Building, 1450 Newtown Pike, Lexington; Jessamine Cty ARES Net, 7:30 PM, 145.490 Repeater, Gary Britten W4GNB net control.
- SAT 27 Shack open 9:00-Noon; Radio Theory and Construction Workshop, 1:00-3:00 PM, ; License Exam Session, 10:00 am, ARRL VEC, Third St. Methodist Church, 119 S. 3rd St., Danville, KY, Liaison John Wulf/K4FT, johnk4ft@gmail.com, 563-505-0339, Wilderness Road ARC, <http://www.wrarc.com>
- SUN 28 Amateur Television & Specialized Communications Net, 9:00 PM (146.760 Repeater); District 11 Skywarn Net, 8:00 PM, 146.925 (PL-79.7 Hz) linked to 147.180 (PL-74.4 Hz)\
- Mon 29 Bylaws Committee Meeting, 6:00pm., Jessamine Amateur Wireless Society meeting, 7:00 PM, St. Joseph/R.J. Corman Ambulatory Care Center, 1250 Keene Road, Nicholasville; District 11 ARES Net 9:00 PM 146.925 (PL-79.7) linked to 147.180 (PL-74.4).
- Tue 30 Amateur Swap Net 145.370 (T-192.8) 8:00 PM; "Casual Communicators Net," 9:00 PM Eastern, 443.325+ MHz;
- Wed 31 Six Shooters Net, 8:00 PM on 52.525 MHz FM (vertically polarized);