



ARRL Standard



Pray for our Troops



God Bless America!

QUA/HAMnews

February 2020

CONTENTS



Quicky Notes 1

Meeting Notice 1

Hey, Which Coaxial Cable should I Use?..... 2

Summary of BARS Ebay Sales..... 4

Scheduled of Volunteer Examinations for 2020..... 5

Special Directors' Meeting Report of January 6-2-20..... 6

General Meeting Minutes for January 6, 2020..... 7

Agenda for February 3, 2020 meeting..... 8

Program Schedule for 2020..... 9

Treasure's Report as of December 31, 2019..... 11

Contest Corral for February 2020..... 12

Meeting Schedule for Area Clubs, Exam Schedule..... 13

Calendar of Ham Radio Activates for February 2020..... 14

Published and Distributed Monthly by the



Bluegrass Amateur Radio Society, Inc.
P.O. Box 4411, Lexington, Kentucky 40544-4411
Club Station K4KJQ
MARS Station AAV4CAB

Glenn E. Welman/KF4NB
Memorial BBS
145.010 and 145.090

Web Page: <http://www.bluegrassars.org>
E-mail: bluegrassars@hotmail.com

K4KJQ
146.160/.760

ATV Repeater: KY4ATV
Input: 439.250 // Output: 923.250

WA4HBM
147.765/.165

"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 February program will be a discussion about FT 8 digital mode. The discussion will be led by Chris Gay.



Below you will find the Club's Ebay account for the sale of the surplus equipment. Copy the URL into your browser and take a look at the items we have up for auction.

<https://www.ebay.com/sch/bluegrassars/m.html>

QUA/HAMnews

February 2020

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, February 3, 2020, at 7:30 PM, in Meeting Room A first floor of the Red Cross Building, 1450 Newtown Pike, Lexington, KY.

The program for February will be about

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.

Fayette County ARES Coordinator - Sandy Gragg

The Fayette County ARES net has resumed. Remember the Fayette County ARES net every Tuesday at 8:30 pm on the 146.94 repeater. We are looking for more folks that would help share in the net control. If you would like to Help, contact Sandy KM4PJU, at 859-699-0035

NEW MEMBERS

Chris Gay KU4A
Jeff Sweda WU8F

The March 2020 meeting is the annual Skywarn presentation by the National Weather Service. Special start time is 7:00 pm due to the material.

Come join in with your friends on the:
KY-QRP NET
Tuesday evening at 8 pm
on the 146.760 repeater, negative offset and no PL tone

We will offering a Technician License Class beginning with an organizational meeting on February 19, 2020 at 7 pm at the Red Cross Blding classroom A. The classes will be on Wednesday evenings at 7 pm and will last about 10-12 weeks. Books are available for a cost of \$23.81. Please exact change or check payable to BARS.

Hey, Which Coaxial Cable Should I Use?

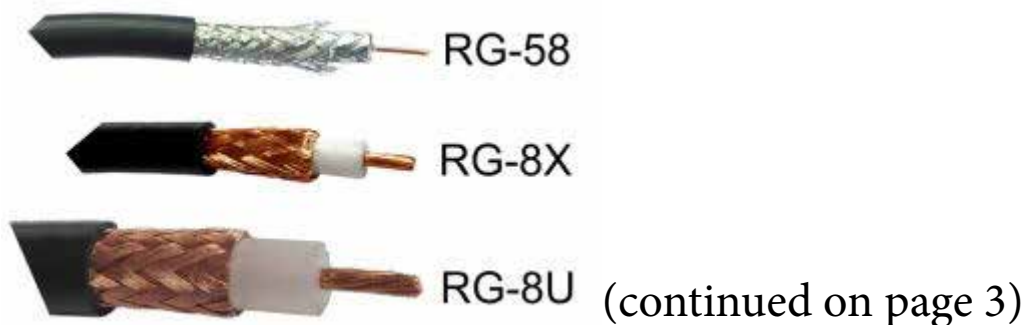
<https://hamradioschool.com/coaxial-cable-use/>

Coaxial cables are the most popular form of transmission line for getting our signals to and from our antennas. There are many types of cable to choose from and it can be confusing to choose the best one. In this article, we'll cover the most common choices of cable to get you started. We'll focus on the most popular cables, with 50 ohm impedance to match the output impedance of our transceivers.

Here's the really simple, short story:

Type	Diameter	Usage
RG-58 type	0.194 in	Standard cable for mobile installations
RG-8X type	0.242 in	Larger and lower loss than RG-58 but still convenient for shorter cable runs and j jumpers, Up to 50 feet in length at 50 MHz or below (Rule of Thumb)
RG-8U type	0.405 in	Up to 25 feet in length at 146 MHz (Rule of Thumb) General purpose coaxial cable, best for long cable runs

Comparison of three commonly used types of coaxial cable



(continued on page 3)

(continued from page 2, coaxial cable)

At one time, RG-58, RG-8X and RG-8U were military standards but now these terms are used rather loosely and refer primarily to the size of the cable. Accordingly, I added "type" to the term to indicate that it is not a precise standard.

All three of these cable types will handle 100W or more at frequencies below 500 MHz, which covers most ham transceivers. If you are running more than 100W, you should check the power specification of the cable you are using. Times Microwave Systems has a very handy online calculator for coaxial cable specifications, which I used for the calculations in this article.

Signal Loss

All coaxial cables will attenuate the signal as it travels down the cable and the signal loss can be significant. For example, 3 dB of signal loss means that you lost half of the transmit power as it propagates down the line. This loss applies for both transmit and receive... we'll get less power out to the antenna and we'll have less signal showing up at the receiver.

The cable loss will be determined mostly by the size of the cable (bigger is better), the dielectric used in the cable (the insulator between the center conductor and the shield) and the frequency of operation. As an example, consider a 100 foot run of cable for use at 146 MHz, which is high enough in frequency and a long enough run such that we'll see some significant losses. According to the Times Microwave calculator, 100 feet of RG-58 style cable produces a loss of 5.5 dB, which means that only 28% of the power gets through the cable. (The percent power delivered is shown as Cable Run Efficiency in the calculator.) This is not good, so we would rarely (never?) want to use RG-58 for that long of a cable run.

COAXIAL CABLE - ATTENUATION & POWER HANDLING CALCULATOR

Created Cable Data

Product:

Frequency (MHz):

Run Length (Feet):

PRODUCT PERFORMANCE PARAMETERS

Attenuation:	5.5 dB/100ft	18.2 dB/100m
Average Power:	0.24 kW	
Cable Vp:	88 %	
Nominal Td:	1.54 nSec/ft	5.05 nSec/m
Capacitance:	26.6 pF/ft	84.4 pF/m
Typical Connector Loss:	0.02 dB/pc	

CABLE ASSEMBLY PERFORMANCE

Cable Run Attenuation:	5.5 dB
Total Cable Assembly Loss:	5.6 dB
Cable Run Efficiency:	27.9 %
Cable Run Time Delay:	151.94 nSec

(continued on page 4)

(continued from page 3, coaxial cable)

The Times Microwave Systems attenuation & Power Handling Calculator is a convenient online tool for comparing coaxial cable options.

Changing the cable to RG-8X drops the loss to 4.5 dB, which is only a minor improvement. (4.5 dB loss corresponds to 36% of the power makes it through.) However, using RG-8U type cable decreases the loss to 2.4 dB (58% of the power makes it through the cable), so clearly the larger cable size has an advantage.

Now let's change the dielectric. LMR-400 is a popular cable that has the same diameter as RG-8U but with a lower loss dielectric (Foam PE). The 146 MHz loss through 100 feet of this cable is 1.5 dB, or 0.9 dB better than ordinary RG-8U. A loss of 1.5 dB means that we still lose 30% of the power.

Now let's see what happens when we change the frequency of operation. If we use our 100 foot run of LMR-400 on the 20m band (14 MHz), the loss is only 0.5 dB. This means that 90% of our signal power makes it through the cable. You can use the Times Microwave System calculator to try out different combinations of cable length, cable style and operating frequency.

You can get a little more technical info about coaxial cable loss from this Question of the Week article.

Other Specifications

There are a few other cable specifications that you may be concerned about, depending on application. Cables with solid center conductors are less flexible than those with stranded center conductors. The dielectric material and the outer insulating jacket can also affect the flexibility of the cable. For portable operations, I make it a point to get cable that is rated "flexible" because it is easier to handle and deploy. Direct burial cable has a durable outer insulation that will withstand being buried in the ground. The type of outer shield used in a cable can vary widely, with some cables providing much more shielding and isolation than others.

This is a quick introduction to choosing the right cable for your amateur radio station. I hope it points you in the right direction. Its always a good idea to buy quality cable from a reputable supplier and to read the specifications for that exact cable type.

73, Bob K0NR

SUMMARY OF BARS EBAY SALES 10/2017-12/2019

	OVERALL # of Total Period Auctions	Total Net Income	Expenses	Income
-----	-----	-----	-----	-----
2017	0	0.00	-599.60	-599.60
2018	1	63.74	-1962.38	-1898.64
1H2019	0	0.00	-1106.00	-1106.00
7/2019	0	0.00	0.00	0.00
8/2019	4	1485.45	-180.08	1305.37
9/2019	6	314.33	-631.80	-317.47
10/2019	12	762.08	-122.48	639.60
11/2019	29	5119.24	-1377.14	3742.10
12/2019	12	3235.79	-1413.92	1821.87
	-----	-----	-----	-----
	64	10980.63	-7393.40	3587.23

Thanks!
John Barnes KS4GL
BARS Treasurer

Schedule for Volunteer Examinations in 2019-20

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 [Ferne Williams/KE4MAI](mailto:ke4mai@arrl.net), ke4mai@arrl.net, 859-652-3393 (www.bluegrassars.org)
 Danville - Liaison [John Wulf/K4FT](mailto:johnk4ft@gmail.com), johnk4ft@gmail.com, 563-505-0339, Wilderness Road ARC, http://www.wrarc.com
 Georgetown - Liaison [Ron Malinowski/WX4GPS](mailto:wx4gps@arrl.net), wx4gps@arrl.net, 502-542-8252
 WCARS VEC: Lexington - Liaison [Marguerite Williams/KE4MAJ](mailto:ke4maj@arrl.net), ke4maj@arrl.net, 859-489-6274 (www.bluegrassars.org)
 W5YI VEC: Winchester - Liaison [Darrell Epperson/AC4YD](mailto:AC4YD@arrl.net), AC4YD@arrl.net, 859-771-1834

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

Date and Time	VEC	Location
Feb. 8, 2020, 10:00 am	Ferne Williams/KR4MAI	Red Cross Blding, Lexington, KY
Mar. 14, 2020 10:00 am	Ron Malinowski/WX4GPS	Georgetown Police Dept., Georgetown, KY
Mar. 17, 2020 7_00 pm	Margie Williamson/KE4MAJ	Red Cross Blding, Lexington, KY

Please find below the link to the Club's Ebay Account. Copy it into your browser and check out the items the club has up for auction.
<https://www.ebay.com/sch/bluegrassars/m.html>

**Bluegrass Amateur Radio Society (BARS)
Directors' Special Meeting Minutes of January 6, 2020.
Red Cross Building, Lexington, Ky.**

A Directors' Open Special Meeting was convened on January 6, 2020, to complete BARS business from the scheduled Directors' Meeting on December 16th that was postponed due to lack of quorum. The meeting was called to order at 7:00pm by President Brad James, WA4HBM.

In attendance were:

- 1st Vice President – Bob Brown, K14JWK;
- 2nd Vice President – David Richardson, W9KHZ;

Treasurer – John Barnes, KS4GL;

Secretary – Bruce Campbell, KM4EHU;

Directors-at- Large – Tim Kunkel, KF4MPM, and Bill Fuqua, WA4LAV; which constituted a quorum.

Also present were Bart Breeding, KB4FEE, Bill Weaver, WE5P, and Don Stoutenberg.

Treasurer's Report – John Barnes, KS4GL.

1. Two new membership applications were received from Chris Gay, KU4A, and Jeff Sweda, WU8F. David Richardson, W9KHZ, moved and Bob Brown, K14JWK, seconded for approval of the applications to be presented to the membership for acceptance at the immediately following January General Open Meeting which was accepted without objections.

2. The Summary Treasurer's Report from bank accounts as of November 30, 2019, indicated:

Checking account:

General fund:	\$8,407.30	
Coax/repeater:	804.98	
Education:	1,601.19	\$10,813.47
PayPal account:	3,556.66	
Savings account:	201.30	
Total balance of accounts:		\$14,571.43

This treasurer's report was formally accepted at the December 2nd Open General Meeting and now recorded in these Directors' Meeting minutes.

President Brad James, WA4HBM, proposed that:

- 1) Bart Breeding, KB4FEE, be designated as web-master responsible for online club information.
- 2) David Richardson, W9KHZ, be named as shack manager.
- 3) Bart Breeding, KB4FEE, be shown on the ARRL annual report as club contact for 2020.

These recommendations were adopted by general consent without objections.

Other items of discussion included:

- 1) The club telephone system will be evaluated.
- 2) An electronic lock will be considered for the outside door.
- 3) Insurance coverage for the club will be reviewed.

With no other business at 7:29pm, Secretary Bruce Campbell, KM4EHU, moved, that the meeting be adjourned which was accepted by general consent without objections.

Recorded and submitted by:

Bruce Campbell, KM4EHU
Secretary



**Bluegrass Amateur Radio Society (BARS)
General Meeting Minutes of January 6, 2020
Red Cross Building, Lexington, Ky.**

The January 2020, BARS General Meeting was called to order at 7:31pm by President Brad James, WA4HBM.

Self-introductions were made by thirty(30) licensed members and four(4) non-licensed member amateur radio operators, which consisted a quorum, plus one(1) licensed and

one(1) non-licensed visitors.

Club and Members' News.

No members' activities were reported for this month.

Program.

David Richardson, W9KHZ, presented the plans for the Winter Field Day activity on the weekend of January 25-26. Personal computers will be down-loaded with logging software on Saturday morning, January 4th, in the BARS room at the Red Cross building. The club station will be set-up at the Kentucky Horse Park in the primitive campground area. Set-up will start around 10:00am and operation will begin at 2:00pm. Pack-up for the club station will be Sunday morning after the event.

Treasurer's Report – John Barnes, KS4GL.

Three membership applications were presented for Chris Gay, KU4A, and Jeff Sweda, WU8F. Bart Breeding, KB4FEE, moved, and B Bill Weaver, WE5P, seconded for acceptance of the membership applications which was approved by unanimous vote.

The summary treasurer's report of amounts available in bank deposits as of December 31, 2019, was not ready for presentation.

Committee Announcements.

Bylaws Committee: Bruce Campbell, KM4EHU, announced that a set of BARS Standard Operating Procedures will be formulated as needed on an on-going basis to provide details for the various operations of the club's activities. Suggestions for procedures are welcome from any and all club members.

Old Business.

_None.

New Business.

- 1) Cal Smith, WX1ATC, and Loretta Colvin accepted the task as tellers to count the ballots for adoption of the proposed revised Bylaws that, if approved, would be in effect retro-actively as of January 1, 2020. They reported thirty-eight(38) ballots received and counted, with thirty-four(34) FOR; zero(0) AGAINST; and four(4) ABSTAINING.

Bart Breeding, KB4FEE, moved and Suzanne Meyer, KN4ZIG, seconded that the ballot count be accepted for

adoption of the revised Bylaws, which received unanimous consent.

- 2) Sandy Gragg, KM4PJU, presented the findings resulting from a summary audit of BARS financial activities. No irregularities were found and suggestions were presented for future fiscal reports. Jodie Wells, WB4LKQ, presented a suggested format for reporting e-bay sales of club equip-

ment. Both of these items are to be reviewed at a subsequent Directors' Meeting.

With no other business at 9:04pmpm, Bart Breeding, KB4FEE,, moved, and Bill Weaver, WE5P, seconded, that the meeting be adjourned, which was approved unanimously.

The next BARS scheduled meetings and activities:

Winter Field Day: Sat-Sun, Jan.26-27, Ky Horse Park.

Directors' Meeting: Monday, January 20th, 7:30pm.

BARS General Meeting: Monday, February 3rd, 7:30pm.

Program: (FT8, Chris Gay, KU4A).

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

BARS General Meeting: Monday, March 2nd, 7:00pm.

Program: National Weather Service,
Severe Weather Spotting.

Cave City Hamfest: Saturday, March 7th.

Directors' Meeting: Monday, March 16th, 7:30pm.

Recorded and submitted by:

Bruce A. Campbell, KM4EHU

Secretary



Bluegrass Amateur Radio Society (BARS)**General Meeting Agenda****February 3, 2020**

- I. **Call meeting to order.**
- II. **Recognition:**
 - a. **Welcome and self-introduction of members and visitors.**
 - b. **New licensees.**
- III. **Trivia Question: Terry Layman, N6OKR.**
- IV. **Program Presentation: FT8 - Chris Gay, KU4A.**
- V. **Members' news (time permitting).**
 - License upgrades.**
 - Birthdays this month.**
 - Sick-call.**
 - Expeditions and travels.**
 - New equipment acquisitions, and used equipment for sale or trade.**
 - Moves and relocations.**
 - ARRL and other clubs' news.**
- VI. **Treasurer's report - John Barnes, KS4GL:**
 1. **New membership applications: Scott Johnson, (no license)**
 2. **Financial.**
- VII. **Old Business.**
 - a. **Donated equipment status.**
 - b. **Antenna maintenance activities.**
 - c. **Audit recommendations report.**
 - d. **Winter Field day report.**
 - e. **Open discussion.**
- VIII. **New Business:**
 - a. **Red Cross Donations.**
 - b. **Refreshments during March Severe Weather Watch Program.**
 - c. **Open Discussion.**
- IX. **Committee chair comments and announcements: (time permitting)**
 - a. **Technician Class License Test Study Classes - Bart Breeding, KB4FEE.**
- X. **Special Interest Groups and Service Groups comments and announcements: (time permitting)**
 - a. **Winter Field Day Report - David Richardson, W9KHZ.**
- XI. **Trivia Question Results.**
- XII. **Next BARS Meeting Schedules (at Red Cross Building, Newtown Pike, Lexington, Ky.):**
 - February 17th, 7:30pm - Directors' Meeting.**
 - February 19th, 7:00pm - Technician Class License Test Study Class.**
 - March 2nd, 7:00pm - BARS General Meeting .**
 - Program: Severe Weather Watch. Ron Malinowski, WX4GPS, and Joe Sullivan, Nat'l Weather Service. (early start time 7:00 pm)**
 - March 7th - Cave City Hamfest.**
 - March 16th, 7:30pm - Directors' Meeting.**
 - Other important dates.**
- XIII. **President's comments and announcements.**
- XIV. **Motion for adjournment.**

“Is life so dear, or peace so sweet, as to be purchased at the price of chains and slavery? Forbid it, Almighty God! I know not what course others may take; but as for me, give me liberty or give me death!”

Founding Father Patrick Henry

“America was not built on fear. America was built on courage, on imagination and an unbeatable determination to do the job at hand.”

President Harry S. Truman

“If ever a time should come, when vain and aspiring men shall possess the highest seats in Government, our country will stand in need of its experienced patriots to prevent its ruin.”

Founding Father Samuel Adams

Let every nation know, whether it wishes us well or ill, that we shall pay any price, bear any burden, meet any hardship, support any friend, oppose any foe to assure the survival and the success of liberty.

John F. Kennedy

Electricity can be dangerous. My nephew tried to stick a penny into a plug. Whoever said a penny doesn't go far didn't see him shoot across that floor. I told him he was grounded. Tim Allen
tim-allen-quotes

Program Schedule for 2020

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

The following programs are scheduled for 2020. Your input and suggestions for programs for 2020 are needed. Call David Richardson, W9KHZ at 859-983-1380 or e-mail at daveinlex3@gmail.com/.

Month	Topic	Presenter(s)	Comments
✓ January	“Winter Field Day” January 25-26, 2020	David Richardson/W9KHZ	
February	FT8 Digital Mode	Chris Gay	
March	SkyWarn National Weather Service, Joe Sullivan, Louisville, KY		start time is 7 pm
April	TBA		
May	TBA		
June	“ARRL Field Day” June 20-21, 2020	David Richardson/W9KHZ	
July	TBA		
August	“Hamfest” August 8, 2020	David Richardson/W9KHZ	
September	Annual Family Picnic	Bill DeVore	Shillito Park, LEX
October	TBA		
November	Nominating Committee Report		
December	“Annual Auction”/Election	Brad James	

I ♥ QRP



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

	Bank Checking Account	PayPal PayPal Account	Bank PayPal Account	Bank Savings Account	Total
INCOME:					
ARRL Dues	0.00	0.00	0.00	0.00	0.00
BARS Dues	290.00	0.00	0.00	0.00	290.00
Coax/Repeater	0.00	0.00	0.00	0.00	0.00
Donations	0.00	3338.68	0.00	0.00	3338.68
Education	23.81	0.00	0.00	0.00	23.81
Hamfest	0.00	0.00	0.00	0.00	0.00
Interest	1.10	0.00	0.00	0.02	1.12
Sales Tax	0.00	0.00	0.00	0.00	0.00
Miscellaneous	0.00	0.00	0.00	0.00	0.00
Total	314.91	3338.68	0.00	0.02	3653.61
EXPENSES:					
ARRL Dues	0.00	0.00	0.00	0.00	0.00
Coax/Repeaters	0.00	0.00	0.00	0.00	0.00
Donations	169.00	1340.31	0.00	0.00	1509.31
Education	0.00	0.00	0.00	0.00	0.00
Election	0.00	0.00	0.00	0.00	0.00
Equipment	0.00	0.00	0.00	0.00	0.00
Field Day	0.00	0.00	0.00	0.00	0.00
Hamfest	0.00	0.00	0.00	0.00	0.00
Insurance	341.84	0.00	0.00	0.00	341.84
Miscellaneous	147.56	0.00	0.00	0.00	147.56
Newsletter	0.00	0.00	0.00	0.00	0.00
PayPal Fees	0.00	0.00	0.00	0.00	0.00
Picnic	0.00	0.00	0.00	0.00	0.00
P O Box	0.00	0.00	0.00	0.00	0.00
Sales Tax	0.00	0.00	0.00	0.00	0.00
Telephone	0.00	0.00	0.00	0.00	0.00
Total	658.40	1340.31	0.00	0.00	1998.71

ACCOUNT BALANCES

	July 31, 2019	Aug. 31, 2019	Sept. 30, 2019	Oct. 31, 2019	Nov. 30, 2019	Dec. 31, 2019
Bank Checking*	10396.88	11988.44	11466.94	11297.82	10814.90	10359.19
PayPal PayPal	20.09	728.46	941.03	1654.33	3122.43	5233.02
Bank PayPal	3636.32	3636.32	3630.36	3556.66	6264.82	6264.82
Bank Savings	201.14	201.18	201.22	201.26	201.30	201.32
Total	14254.43	16554.40	16239.55	16710.07	20403.45	22058.35

*** Fund-specific balances in Bank Checking**

Account	July 31, 2019	Aug. 31, 2019	Sept. 30, 2019	Oct. 31, 2019	Nov. 30, 2019	Dec. 31, 2019
General	7752.65	9606.08	9084.58	8915.46	8408.73	7929.21
Coax/Repeater	804.98	804.98	804.98	804.98	804.98	804.98
Education	1839.25	1577.38	1577.38	1577.38	1601.19	1625.00
Bank Checking	10396.88	11988.44	11466.94	11297.82	10814.90	10359.19

Thanks!

John Barnes KS4GL

BARS Treasurer

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

Contest Corral

February 2020

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 Date-Time	Finish Date-Time	Bands	Contest Name	Mode	Exchange	Sponsor's Website
1 0000	2 2359	1.8-UHF	Vermont QSO Party	CW Ph Dig	RS(T), county or SPC	www.ranv.org/vtqso.html
1 0001	2 2359	28	10-10 International Winter Contest, SSB	Ph	Name, mbr or '0,' SPC	www.ten-ten.org
1 1200	2 1159	1.8-28	Black Sea Cup International	CW Ph	RS(T), ITU zone, Black Sea club info (if any)	bscc.ucoz.ru
1 1200	2 1200	3.5-28, 144	F9AA Cup, CW	CW	RST, serial	www.site.urc.asso.fr
1 1200	2 2359	3.5-28	Mexico RTTY International Contest	Dig	RST, XE state or serial	www.rtty.fmre.mx
1 1400	1 2359	1.8-28	Minnesota QSO Party	CW Ph Dig	Name, county or SPC	www.w0aa.org
1 1400	1 2359	1.8-28	FYBO Winter QRP Sprint	CW Ph Dig	RS(T), SPC, name, power, temperature	arizonascqrptions.apps-1and1.com
1 1600	1 1900	3.5	AGCW Straight Key Party	CW	RST, serial, class, name, age	agcw.org/index.php/en
1 1600	2 2359	1.8-28	British Columbia QSO Party	CW Ph Dig	RS(T), BC District or SPC	orcadxcc.org/bcqp_rules.html
1 1700	1 2100	3.5-28	FISTS Winter Slow Speed Sprint	CW	RST, SPC, name, mbr or power	fistsna.org
2 0000	2 0400	3.5-14	North American Sprint, CW	CW	Other station's call, your call, serial, name, SPC	ncjweb.com
3 2000	3 2130	3.5	RSGB 80-Meter Club Championship, SSB	Ph	RS + serial	www.rsgbcc.org/hf
4 0200	4 0400	3.5-28	ARS Spartan Sprint	CW	RST + SPC + Power	arsqrp.blogspot.com
5 2000	5 2100	3.5	UKEICC 80-Meter Contest	Ph	4-char grid square	www.ukeicc.com
6 1800	6 2200	28	NRAU 10-Meter Activity Contest	CW Ph Dig	RS(T), 6-char grid square	nrau.net/activity-contests
6 2000	6 2200	1.8-50	SKCC Sprint Europe	CW	RST, SPC, name, mbr or power	www.skccgroup.com
8 0000	9 2359	3.5-28	CQ WW RTTY WPX Contest	Dig	RST, serial	www.cqwprrty.com
8 1000	9 1000	1.8-28	SARL Field Day Contest	CW Ph Dig	RS(T), number of xmtrs, category, province or "DX"	www.sarl.org.za
8 1100	8 1300	7, 14	Asia-Pacific Spring Sprint, CW	CW	RST, serial	jsfc.org/apsprint/aprule.txt
8 1200	9 1200	1.8	KCJ Topband Contest	CW	RST, JA Prefecture/District code or continent	www.kcj-cw.com
8 1200	9 1200	1.8-28	Dutch PACC Contest	CW Ph	RS(T), province or serial	pacc.veron.nl
8 1200	9 2359	1.8-50	SKCC Weekend Sprintathon	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
8 1400	10 0200	All (no WARC)	YLRL YL-OM Contest	CW Ph Dig	Serial, RS(T) SPC	ylrl.org/wp/yl-om-contest
8 1500	9 1500	1.8-28	OMISS QSO Party	Ph	RS, SPC, mbr (if any)	omiss.net/Facelift/qso-party.php
8 1700	8 2100	3.5-28	FISTS Winter Unlimited Sprint	CW	RST, SPC, name, mbr or power	fistsna.org
8 1900	8 2300	1.8	RSGB 1.8 MHz Contest	CW	RST, serial, District code (if any)	www.rsgbcc.org/hf
9 1300	9 1700	3.5, 7	Balkan HF Contest	CW Ph	RS(T), serial	hamyo.ro/balkanhf2019
9 1400	12 0800	1.8-144	Classic Exchange, Phone	Ph	Name, RS, SPC, radio manu/model	www.classicexchange.org
10 0100	10 0259	3.5-14	CQC Winter QSO Party	CW	RST, SPC	www.coloradoqrpclub.org
10 0100	10 0300	1.8-28	4 States QRP Group Second Sunday Sprint	CW Ph	RS(T), SPC, mbr or power	www.4sqrp.com
10 1300	14 2359	All (no WARC)	ARRL School Club Roundup	CW Ph	RS(T), Class (I/C/S), SPC	arrl.org/school-club-roundup
12 0130	12 0330	3.5-14	NAQCC CW Sprint	CW	RST, SPC, mbr or power	naqcc.info
12 2000	12 2130	3.5	RSGB 80-Meter Club Championship, Data	Dig	RST, serial	www.rsgbcc.org/hf
14 0000	14 2359	1.8-7	PODXS 070 Club Valentine Sprint	Dig	Name, OM/YL, SPC	www.podxs070.com
15 0000	16 2359	1.8-28	ARRL International DX Contest, CW	CW	WVE: RST + SP; non-WVE: RST + power	www.arrl.org/arrl-dx
15 1200	16 1159	1.8-28	Russian PSK WW Contest	Dig	RST, 2-letter oblast or serial	www.rdrclub.ru
15 1900	15 2059	1.8-28	Feld Hell Sprint	Dig	RST, mbr, SPC, 4-char grid square	sites.google.com/site/feldhellclub
15 2300	16 2300	1.8-14	AWA Amplitude Modulation QSO Party	Ph	Name, SPC	www.antiquewireless.org
17 0200	17 0400	1.8-28	Run for the Bacon QRP Contest	CW	RST, SPC, mbr or power	qrpcontest.com/pigrun
19 1900	19 2030	3.5	AGCW Semi-Automatic Key Evening	CW	RST, serial, year first used a bug	agcw.org/index.php/en
21 2200	23 2200	1.8	CQ 160-Meter Contest, SSB	Ph	WVE: RS, SP; DX: RS, CQ Zone	cq160.com/rules.htm
22 0600	23 1800	3.5-28	REF Contest, SSB	Ph	RS, Department/Prefixed or serial	concoeurs.r-e-f.org/contest
22 1200	23 1200	3.5-28	UK/EI DX Contest, CW	CW	RST, serial, District code (if any)	www.ukeicc.com
23 1400	23 1700	3.5-14	SARL Digital Contest	Dig	RST, serial	www.sarl.org.za
23 1500	23 1700	3.5-28	High Speed Club CW Contest	CW	RST, mbr or "NM"	www.highspeedclub.org
24 1300	25 0400	1.8-28	CQC Challenge	CW	RST, name, SPC, rig	qrp-labs.com/party.html
26 0000	26 0200	1.8-28	SKCC Sprint	CW	RST, SPC, name, mbr or power	www.skccgroup.com
26 2000	26 2100	3.5	UKEICC 80-Meter Contest	CW	4-char grid square	www.ukeicc.com
27 2000	27 2130	3.5	RSGB 80-Meter Club Championship, CW	CW	RST, serial	www.rsgbcc.org/hf
29 1200	1 1159	1.8-28	Russian WW Multimode Contest	CW Ph Dig	RST(Q), oblast or serial	www.rdrclub.ru
29 1300	1 1300	3.5-28	UBA DX Contest, CW	CW	RST, serial, province (if ON)	uba.be/en/hf/contest-rules
29 1500	1 0159	1.8-50	South Carolina QSO Party	CW Ph Dig	RS(T), county or SPC	scqso.com
29 1800	1 0559	3.5-28	North American QSO Party, RTTY	Dig	Name, state/DC/province/country	www.ncjweb.com
29 1800	1 0559	3.5-28	NA Collegiate Championship, RTTY	Dig	Name, state/DC/province/country	www.w9smc.com/nacc

www.arrl.org February 2020 81

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 WATBNM 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, WATBNM, in providing this service.

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 10 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@arrl.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@arrl.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@arrl.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@arrl.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 - Tuesday, 8:30 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 - Net on Tuesday 8:00 pm 146.760 neg. offset no PL tone

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 17 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/KO40L.

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.

After you've heard two eyewitness accounts of an automobile accident, you begin to worry about history.

Real men don't use instructions, son; besides, this is just the manufacturer's opinion on how to put this together.

Tim Allen

QUA/HAMnews is published monthly by the Newsletter Committee of the Bluegrass Amateur Radio Society, Inc., and is distributed by e-mail only. 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.

Bart Breeding/KB4FEE, 3101 Symons Cir., Lexington, Kentucky 40511 (859) 644-2216 aratat291@twc.com

Standing Committee Chairs:

Contest Pete Kragh/K2UPD (859) 223-9389 (k2upd@aol.com)
 Education Bill Fuqua/WA4LAV (859) 272-9523 (wlfuqu00@uky.edu)
 Emergency Preparedness (Liaison Bluegrass ARS with LFUCG DEM)
 Sandy Gragg/KM4PJJ (859) 699-9934 (sandygragg@gmail.com)
 Hamfest David Richardson/W9KHZ (859) 983-1380 (daveinlex3@gmail.com)
 Newsletter Bart Breeding/KB4FEE (859) 644-2216 (aratat291@twc.com)
 Program David Richardson/W9KHZ (859) 983-1380 (daveinlex3@gmail.com)
 Public Relations and Membership . . . Bart Breeding/KB4FEE (859) 644-2216 (aratat291@twc.com)
 Repeater Andrew Cook/KF4OWP (859) 396-9930 (kf4owp@gmail.com)
 Shack David Richardson/W9KHZ (859) 983-1380 (daveinlex3@gmail.com)
 Volunteer Examinations Fernie Williams/KE4MAI (859) 652-3393 (ke4mai@arrl.net)
 Trustees, Ex Officio Committee Chairs, and Contacts for Special Activities:
 Historian Bill DeVore/N4DIT (859) 273-8345 (billdit@twc.com)
 KY-QRP Group Roger Colvin/KJ4YSY (859) 494-6268 (KJ4YSY@GMAIL.COM)
 Library John Barnes/KS4GL (859) 253-1178 (jrbarnes@iglou.com)
 Shack/Repeater Trustee David Richardson/W9KHZ(859) 983-1380 (daveinlex3@gmail.com)
 HF Liaison to Shack Committee . . . David Richardson/W9KHZ
 VHF Liaison to Shack Committee . . . Tim Kunkle/KF4MPM

President:

Brad James/WA4HBM
 427 Southridge Dr., Lexington, Kentucky 40505
 859/293-5893
 sophie16@twc.com

Second Vice-President:

David Richardson/W9KHZ
 1809 Wayland Drive
 Lexington, Kentucky 40505
 859/983-1380
 daveinlex3@gmail.com

Treasurer:

John Barnes/KS4GL
 216 Hillsboro Avenue
 Lexington, Kentucky 40511-2105
 859/253-1178
 jrbarnes@iglou.com

First Vice-President:

Bob Brown/KI4JWK
 2020 Armstrong Mill #2221,
 Lexington, KY40515

Secretary:

Bruce Campbell/KM4EHU
 169 Millwood Drive
 Winchester, Kentucky 40391
 859/744-7608
 bruce_campbell@mymail.eku.edu

Directors-at-Large:

Tim Kunkle/KF4MPM
 426 Blueberry Lane
 Lexington, Kentucky 40503
 859/279-6307, and

Bill Fuqua/WA4LAV
 3395 Greentree Drive
 Lexington, Kentucky 40517
 859/272-9523
 wlfuqu00@uky.edu

Annual Dues (January 1 - December 31)

Payable using Pay Pal - Go to <http://www.BluegrassARS.org>, Click on "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 February 2020

- Sat 1 Shack open 9:00-Noon; Radio Theory and Construction Workshop, 1:00-3:00 PM,;
- Sun 2 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 3 BARS General Meeting: 7:30pm. Program: F T 8
 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 4 Amateur Swap Net 145.370 (T-192.8) 8:00 PM; "Casual Communicators Net," 9:00 PM Eastern 443.325+ MHz; KY-QRP Net 8:00 PM 146.760 repeater no PL tone, Fayette County ARES Net 8:30 pm on the 147.940 repeater with a PL tone of 88.5
- Wed 5 Wilderness Trail Emer Net, 8:30 pm, freq. 146.715, PL 100; Six Shooters Net, 9:00 PM on 52.525 MHz FM (vertically polarized);
- Thu 6 Jessamine Cty ARES Net, 7:30 PM, 145.490 Repeater, Gary Britten W4GNB net control.
- Sat 8 Shack open 9:00-Noon; License Exam Session, 10:00 am Red Cross Bldg, Lexington, KY. Fernie Williamson/KE4MAI Liaison
- Sun 9 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 10 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 11 Amateur Swap Net 145.370 (T-192.8) 8:00 PM; "Casual Communicators Net," 9:00 PM Eastern, 443.325+ MHz. KY-QRP Net at 8:00 PM on the 146.760 repeater and no PL tone; Fayette County ARES Net at 8:30 PM on the 147.940 repeater and PL Tone of 88.5
- Wed 12 Wilderness Trail Emer Net, 8:30 pm, freq. 146.715, PL 100 ; Six Shooters Net, 9:00 PM on 52.525 MHz FM (vertically polarized).
- Thu 13 Jessamine Cty ARES Net, 7:30 PM, 145.490 Repeater, Gary Britten W4GNB net control.
- Sat 15 Shack open 9:00-Noon;
- Sun 16 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 17 Directors' Meeting: Monday, June 17th, 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 18 Amateur Swap Net 145.370 (T-192.8) 8:00 PM; "Casual Communicators Net," 9:00 PM Eastern, KY-QRP Net 8:00 PM 146.760 repeater and no PL Tone; Fayette County ARES Net 8:30 PM 147.940 with a PL tone of 88.5
- Wed 19 Wilderness Trail Emer Net, 8:30 pm, freq. 146.715, PL 100 ; Six Shooters Net, 9:00 PM on 52.525 MHz FM (vertically polarized); Technician License Class 7:00 PM Red Cross Bldg, Lexington, KY
- Thu 20 Jessamine Cty ARES Net, 7:30 PM, 145.490 Repeater, Gary Britten W4GNB net control.
- Sat 22 Shack open 9:00-Noon
- Sun 23 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 24 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 25 Amateur Swap Net 145.370 (T-192.8) 8:00 PM; "Casual Communicators Net," 9:00 PM Eastern, 443.325+ MHz; KY-QRP Net at 8:00 PM on the 146.760 repeater and no PL tone; Fayette County ARES Net at 8:30 PM on the 147.940 repeater and PL Tone of 88.5
- Wed 26 Wilderness Trail Emer Net, 8:30 pm, freq. 146.715, PL 100; Six Shooters Net, 9:00 PM on 52.525 MHz FM (vertically polarized); Technician License Class 7:00 PM Red Cross Bldg, Lexington, KY
- Thu 27 Jessamine Cty ARES Net, 7:30 PM, 145.490 Repeater, Gary Britten W4GNB net control.
- SAT 29 Shack open 9:00-Noon;