RF News

BATON ROUGE AMATEUR RADIO CLUB
P.O. BOX 4004, BATON ROUGE, LA 70821
brarc.org

2019/03

PRESIDENT
Bill Smith, KE5TA

VICE PRESIDENT
Todd Huovinen, AB5TH

SECRETARY
Brett Hebert, KG5IQU

TREASURER
Tom Harrell, KE5LVQ

DIRECTORS
Jennifer Bordelon, K5NMT
Thornton Cofield, K5HLC
Jerry Clouatre, AG5AY
Ken Shutt, W5KQ
Robin Hudson, KK5RH
Vernon Morris, AA5O
Brook Samuel, N5DGK

REPEATERS

146.790 -

444.400 + PL TONE 107.2

CLUB NETS

BRARC PUBLIC SERVICE NET
SUNDAY 8:30 PM
146.790 (PL TINE 107.2)

ARES NET
SUNDAY 8 PM
146.790 (PL TONE 107.2)

10 M NET
MONDAY 7:30 PM
28.450 MHZ USB

Greetings All:

I think we can all agree that the last two Skype Presentations were a big hit. A big “attaboy” out to both Todd, AB5TH and Robin, KK5RH. You guys hit a homerun. Thanks. The board is attempting to have more of these presentations soon. Please let us know if you have any suggestions on persons/organizations who would be willing to participate. Another idea is spotlighting individual ham stations using power point presentations. You may be approached and asked to spotlight your shack.

Jerry Clouatre started a CW activity group. Several of our members meet at prearranged times on prearranged band frequencies. If you are interested, please contact Jerry for more information. I hope to see you there.

In closing, spring can bring on foul weather events. Let’s hope they are minor ones. However, whether they are large or small, these events are where amateur radio can be extremely helpful to the community. If there is a need, I encourage all to jump in to help. Keep those Hand Helds charged.

A Word from the President
Bill Smith, KE5TA

ARRL
The national association for
AMATEUR RADIO®

Are you a member?

The American Radio Rely League, ARRL, is the only national organization representing Amateur Radio in the United States. As a member you support thousands of other ham radio enthusiasts shaping the hobby today.

Find out more information about joining, as well as the benefits you can enjoy with membership, at https://www.arrl.org/join-arrl-renew-membership

REMINDER:

Annual Club Dues are **DUE**!
$25
Checks, cash or credit cards are accepted at any club meeting.

NEW OPTION! Pay online at brarc.org

Last Reminder! Please make sure your dues are paid for 2019

Upcoming Events

HAMFESTS

MARCH 22-23, 2019 - GREATER HOUSTON HAMFEST, ROSENBERG, TX
APRIL 13, 2019 - MOBILE HAMFEST, MOBILE, AL
APRIL 27, 2019 - NORTHEAST LA HAMFEST, WEST MONROE, LA
MAY 17-19, 2019 - DAYTON HAMVENTION, DAYTON, OH
JULY 20, 2019 - SLIDELL EOC HAMFEST, SLIDELL, LA

CLUB MEETINGS/VE SESSIONS

MARCH 26, 2019 - CLUB MEETING, BLUEBONNET LIBRARY 7 PM - HAM SHACK PRESENTATIONS
APRIL 2, 2019 - BRARC BOARD MEETING, FAIRWOOD LIBRARY 6:30 PM
APRIL 25, 2019 - VE SESSION, MAIN LIBRARY 2ND FLOOR 6 PM
APRIL 30, 2019 - CLUB MEETING, BLUEBONNET LIBRARY
6 PM VE TESTING SESSION (ARRIVE BY 5:45 PM)
7 PM CLUB MEETING

CONTESTS/OPERATING EVENTS

MARCH 29, 2019 - USS KIDD VIETNAM VETERAN'S DAY W5KID ACTIVATION
APRIL 6, 2019 - MISSISSIPPI QSO PARTY - CW, PH, DIG
APRIL 14, 2019 - ROOKIE ROUNDUP - SSB

NETS

BRARC PUBLIC SERVICE NET - SUNDAY 8:30 PM 146.790 (PL TONE 107.2)
ARES NET - SUNDAY 8 PM 146.790 (PL TONE 107.2)
10 M NET - MONDAY 7:30 PM 28.450 MHZ USB

CW Practice

Our letters may run together with no spacing between the words. Or like some of us, spacing in the middle of the words. There might even be long periods of silence, leaving the other operator to wonder if to call 911. When we give a signal report, we might have a few extra dots on the 5. Our most used Q signal is QRS and our most used character is eight dots (or 10 or 12 - whatever it takes).

So even though we make lots of mistakes, we have a lot of fun! We now have 15 hams participating in our 'Slow Code' sessions. After we send a text with the frequency and time to one of our buddies, it becomes like the commercial, "Can you hear me now?" We've done some interesting things, too. Things like bumping the tuning knob in the middle of a QSO and trying to quickly find that frequency again, or sliding our key off the desk on to the floor while sending. Makes for some interesting conversations! It doesn't matter, because once you get it in the log, you're an official CW operator.

Join us! Just send me your contact information (cell phone and email) and I'll add you to our growing list and you too can have fun in this very friendly group of CW operators. You don't have to be fast. You just have to know all the numbers and letters, or at least the important ones. Right now we're doing one-on-one scheduled QSOs and we are going slow, whatever speed you need. So if you're on the list, pick someone and text them to schedule a QSO time and frequency. Try to work everyone on the list. Get brave and just call CQ and see who answers! Soon we may try our hand at a NET. We might even want to have some sort of contest. And don't forget that very special certificate (suitable for placing in a manila folder and putting in your file cabinet) verifying at least 10 QSOs on CW with 10 different club members. Hope to catch you on the air!

For more information, contact Jerry, AG5AY at 225-276-0721

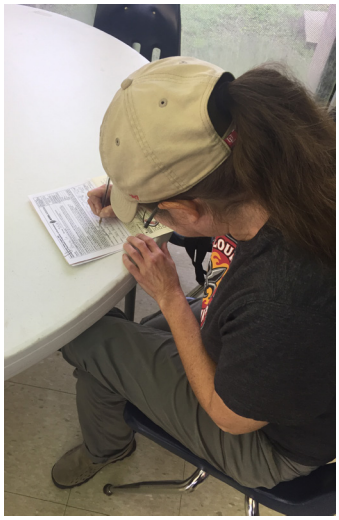
Rayne Hamfest

March 8-9, 2019 in Rayne, LA

Vernon, AA5O, Robin, KK5RH and Todd, AB5TH manning the BRARC table.

Brett, KG5IQU, Synomen, KG5IRS, Ric, KF5KEL and Galen, KF5BET catching up.

Buddy, N5BUD trying to make a sale.



VE Tester who came in with no license and left an EXTRA!!

Do you spot Ken, W5KQ in all of the swap table fun??

Brook, N5DGK, Robin, KK5RH and Brett, KG5IQU hoping their call signs are picked for the top prize.

Recognize This?

Submitted by:Jim, N5IB

Any ideas about what this might be? Keep reading for more information about this item.

If you have any unique items that you would like featured, send them to the email address listed above! We'll show and you can tell!

March Club Meeting

Submitted by Thornton Cofield, K5HLC

The March 26th BRARC Club Meeting presentation will highlight the ham station configurations of three club members:

Jerry Clouatre, AG5AY

John Krupsky, WA5MLF

Jon Reise, WA9JBR

These members will present their individual configurations including transceivers, amplifiers, antennas, etc. They will also share how they arrived at those selections with a question and answer period to follow.

Radio Loan Program

The BRARC Radio Loan Program provides new hams the ability to get on the air quickly without the expense of purchasing their own radio. It's a way to get familiar with settings and functions before deciding which ones are important to you when ready to buy your own rig.

A variety of radios are available for loan to BRARC members for a 90-day period. Visit the club website to view equipment and complete the application.

ICOM IC-730
HF Transceiver Package

This package includes a power supply, microphone, external antenna tuner and G5RV antenna.

IC-2100H
VHF FM Transceiver Package

This package includes a power supply, microphone, external magnetic mount 144MHz mobile antenna.

YAESU FT-50R
Dual-Band Hand-Held Transceiver

This package includes an NC-60B charger.

Elmers

The term "Elmer" was inspired by a ham radio operator named Elmer P. "Bud" Frohardt Jr, W9DY. In a 1971 column in QST, Rod Newkirk, W9BRD, wrote about how Bud took the time to help and mentor new Amateur Radio licensees. He wrote, "We need those Elmers. All the Elmers, including the ham who took the most time and trouble to give you a push toward your license, are the birds who keep this great game young and fresh." Because of the time he invested into new operators, Bud was able to interest many people in "science, radio, DX, CW and electronics."

The BRARC has some members that are available for mentoring and answering questions from new hams, or anyone who may need some additional information.

Buddy Brown, N5BUD **Paul Catrou, WA4MXT**

No need to be shy when you need help. Along with these Elmers, the BRARC has a wealth of experienced operators who will help - all you have to do is ask. To help with this, simply email your questions to elmer@brarc.org

For those of you with all of that experience, share it with others. Encourage our new members with your expertise!

Source: arrl.org/news/elmer-inspiration-elmer-bud-frohardt-jr-w9dy-sk

USS KIDD
W5KID Activations

BRARC operates Special Event Stations aboard the USS KIDD on military holidays. The USS KIDD is a Fletcher-Class Destroyer (DD-661) on the banks of the Mississippi River in Baton Rouge. The USS KIDD station uses a Yaesu FT-450D, running 100 W and a MFJ-969 antenna tuner, feeding a long wire strung from the mast. Club members have also operated inside the Louisiana Veterans Museum. The USS KIDD, W5KID is an excellent way for Technicians or new Generals to gain some HF experience, with an experienced Ham showing you the ropes! Come and join in the fun.

The following dates are scheduled for operating aboard the USS KiDD:

March 29	Vietnam Veterans Day
May 27	Memorial Day
June 1-2	Museum Ships Weekend
July 4	Independence Day
Nov 11	Veterans Day
Dec 7	Pearl Harbor Day

Times and dates may vary. Sign up sheets for operating times are available at club meetings. Contact Dave Thomas, K5CGX at 225-572-7836.

10 years ago...

The following article was printed in the **April 2009 edition** of the RF News:

USS KIDD

The month of March was light on ham activity. We gave one demonstration to 75 scouts. The continuting size of the groups keeps us from using the ship's ham radio. All of our activity has been in the Kidd museum building.

We got permission to mount an antenna on the roof of the building so actual contacts could be made. Matt Anderson and Buddy Brown put up a mast and pulley on the rooftop air conditioning building that allowed us to hang a dipole. Running the cable was a daunting task but they fed one down to the common area of the museum lobby. It currently requires a tuner but it works well. Thanks to David Assaf for the donation of RG8X cable to make the project possible.

We have been provided space in the storage room of the museum where we will store a low band rig and associated accessories. We will also use the storage space for the hundreds of QSL cards received over the years.

One demonstration this month made the antenna a proven assett. Two more are scheduled for the month of April. Russ Allor N5ADF

Meet, Eat, Drink

Breakfast

There are several opportunities to get together with BRARC members. The coffee consumption is grand, as are the topics of conversation. Hope to see you there...we'll gladly push another table together for you!

WEDNESDAYS at 7:30 AM
The Warehouse
12328 S. Choctaw Dr.
Baton Rouge

FRIDAYS at 7:00 AM
Frank's
8353 Airline Hwy.
Baton Rouge

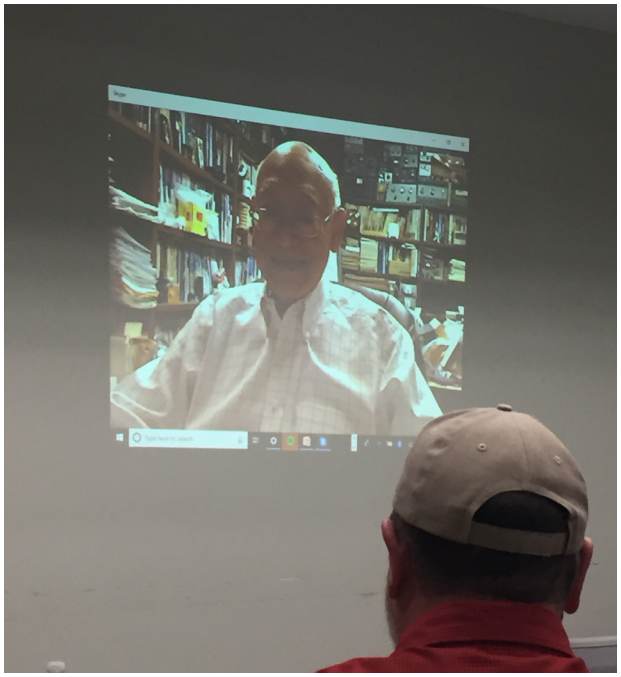
SATURDAYS at 6:30 AM
James Grill
205 Florida Ave
Denham Springs

A N D

The Warehouse
12328 S. Choctaw Dr.
Baton Rouge

February Club Meeting

BRARC sends thanks to Martin Jue, K5FLU of MFJ Enterprises for providing an informative and entertaining program at the February 26th club meeting.



Equipment For Sale

The pictured equipment is for sale (as is):

IC745 with power supply
Clipperton QRO 1.5 K amplifier
MFJ VERSA TUNER 1.5 K
Icom Desk Mike

$600 for all equipment

Contact Bill Smith, KE5TA, at 225-388-9056.

YAESU FTdx 1200 with FFT-1 upgrade

Like New - Only 3 years old
$900

Contact Buddy Brown, N5BUD, at 225-573-2111

Tower for Sale - All items as priced & must be picked up
Rohn 25
4 straight and 1 top (approx. 50ft) with a short or long section for concrete, with house bracket - no rotor plate
$400

also:
Rohn HDx-45 free-standing tower
$150

Spaulding HDx-45 free standing tower (pre-Rohn buyout)
$150

additional loose sections of Rohn 25 available
$ price varies on condition of tower sections

Contact Tyrone Burns at 985-687-2139

MFJ 949E Antenna Tuner

Used one time, Paid $150 new
$90

Leave Message for Paul, WA4MXT, at 225-444-5307

More Equipment For Sale

The RF News received a list of equipment that Dave Cohen, N7TC, is wanting to sell. The complete list with notes about each item was emailed to members in early February. Below is the itemized list without the detailed notes. Please contact Dave for more information at tdavid26@cox.net.

Manufacturer	Model	Asking Price
Hallicrafters	SX101 Mk III	$125
Hallicrafters	SX-117	$150
Hallicrafters	HT-37	$75
Hallicrafters	SX-110	$75
Hallicrafters	Various	Negotiable
Collins	75S3	$175
Collins	75S1	$100
Collins	32S1	$125
Collins	R388	$150
Motorola	R390A	$175
National	NC-125	$125
National	HRO-50T	$150

Manufacturer	Model	Asking Price
National	HRO-60	$175
National	NC-183	$150
National	NC-183D	$100
National	Various	Negotiable
Drake	R4B	$150
Drake	MS4	$75
Drake	2B	$150
Drake	2AQ	$100
Drake	T4X	$150
Drake	AC-3	$100
Johnson	Ranger	$150
Heathkit	GR-81	$75
Heathkit	IB-28	$50
Heathkit	AR-2	$75

Recognize This? from page 6

Mystic Crystal Revelations

Jim Giammanco, N5IB

Physics Shows the Way

Jacques and Pierre (husband of Marie) Curie discovered the piezoelectric effect in 1880, wherein an electric potential (voltage) is generated when certain materials are subjected to mechanical stress. The name is derived from the Greek – piezein – meaning to squeeze or push. Though some have, perhaps uncharitably, suggested that the name PIEzoelectricity might have been coined to honor PIErre.

Gabrielle Lipman quickly used a mathematical theory developed to describe the process to predict that the converse effect should also appear. And, sure enough, in 1881 The Curie brothers confirmed it. When an electric potential difference was applied to those piezoelectric substances, they underwent an observable mechanical deformation.

Figure 1. Arkansas quartz crystals

Some of the materials found to exhibit the piezoelectric effect were crystals of quartz, topaz, tourmaline, Rochelle salt, even crystals of common cane sugar. Early on, quartz and Rochelle salt (KNaC4H4O6-4H2O) showed the most promise for engineering applications. An early development, near the end of World War I, was a device to generate brief, intense pulses of underwater sound - the beginnings of SONAR. By 1917, researchers at Bell Labs had designed a valve (vacuum tube) oscillator using a Rochelle salt crystal. By 1921 oscillators controlled by quartz crystals were in use. [1]

Radio Engineers Turn to the Task

To set the stage: since the advent of wireless at the very end of the nineteenth century, the frequency of oscillation of electronic circuits had been controlled by the resonances of inductor-capacitor (LC) tuned circuits. LC oscillators were subject to changes in resonant frequency (drift) due to temperature variations, mechanical disturbances, and interactions with interconnected circuits. It was difficult to set a transmitter to a specific, predictable frequency so that a receiver could be reliably tuned to receive the signal. Imagine trying to operate a radio net with several participants when each station's receiver and transmitter were drifting up and down in frequency. Likely as much time was spent on the "can you hear me now?" checks as on actually passing messages.

The quartz crystal oscillator was to change all of that. An oscillator stabilized by a quartz crystal would maintain its frequency within a few tens of cycles per second (hertz, in today's parlance) even in the face of temperature and mechanical disturbances. The earliest adopters of crystal oscillators were AM radio broadcast stations and ham radio enthusiasts. Of these, the hams were the larger commercial market, since the few hundred broadcasters only needed a couple of crystals each, but the thousands of hams wanted several different frequencies available for use. Some hams even made their own crystals.

Commercial manufacture of quartz crystal units began as very much a small business proposition. They were handmade, one at a time, in garages, basements, and small workshop enterprises across the country. In all of 1941, only about 100,000 crystals were produced in the USA. The best, and most plentiful, raw quartz for making radio crystals was quarried in Brazil. A small amount, but of good quality, was taken from the region around Hot Springs, Arkansas.

WAR!

December Seventh, Nineteen Forty-One, is a date that lives in infamy. The USA was plunged into the war that was already in full rage across the sea. The Army (including the Army Air Forces), Navy, Marines, Coast Guard, and Merchant Marine were going to need radios, lots and lots of radios, and those radios would need quartz crystals. Signal Corps Major James D. O'Connell said at the time, "Without crystals you have radio, with them, communications." [2] Uncle Sam needed crystals, not by the tens of thousands, but by the tens of millions. Where would they come from?

It fell at the beginning to the Army Signal Corps to coordinate the mammoth effort that would be needed to supply the crystal needs of the forces. Later the War Production Board (WPB) took over the task. Small companies would have to become big ones, almost overnight. Basement workshops would have to grow into factories. And of course, there was the quartz. The Army and WPB moved to corner the world market on radio-grade quartz, buying up all current stocks, and contracting for the entire future output of the Brazilian quarries. Denying quartz to the Axis Powers became a prime mission of the economic warfare plan. Even the British were forced to obtain quartz from the USA. [2]

The fragmented, almost cottage craft that had produced just a few thousand crystals per month in 1941 rapidly grew into a coordinated industry of over 150 companies by the end of the war, able to produce more than two million crystals every month. Feeding this crystal beast required ten million pounds of raw Brazilian quartz, thousands of workers (very many were women), and some three hundred million dollars. One of the many WPB posters prominently displayed in crystal workshops depicted a GI with a sharp quartz crystal spear skewering Hitler, Mussolini, and Tojo over the edge of a cliff and exhorting, "Give us the crystals and we'll put the . . . --- -. . . 's on the run!"

A knotty problem that had to be overcome was the "aging" phenomenon. When crystals began to be issued in large numbers to combat units, many of their crystals were found to gradually decrease in activity over time, or to stop oscillating altogether. The units sent to the pacific were particularly susceptible, and that pointed the finger at humidity as the culprit. Finally a combination of acid etching (hydrofluoric) during manufacture, and meticulous sealing and moisture proofing of the holders tamed that gremlin. The crystal marked "G" in **Figure 2** bears the moisture proofing verification.

Throughout the war years, and in the decades that followed, research continued to find ways to make the most efficient use of the scarce quartz resource. An obvious way was to shrink the size of the quartz wafer needed. **Figure 2** shows a progression of crystals in their holders from the 1930s into the twenty-first century.

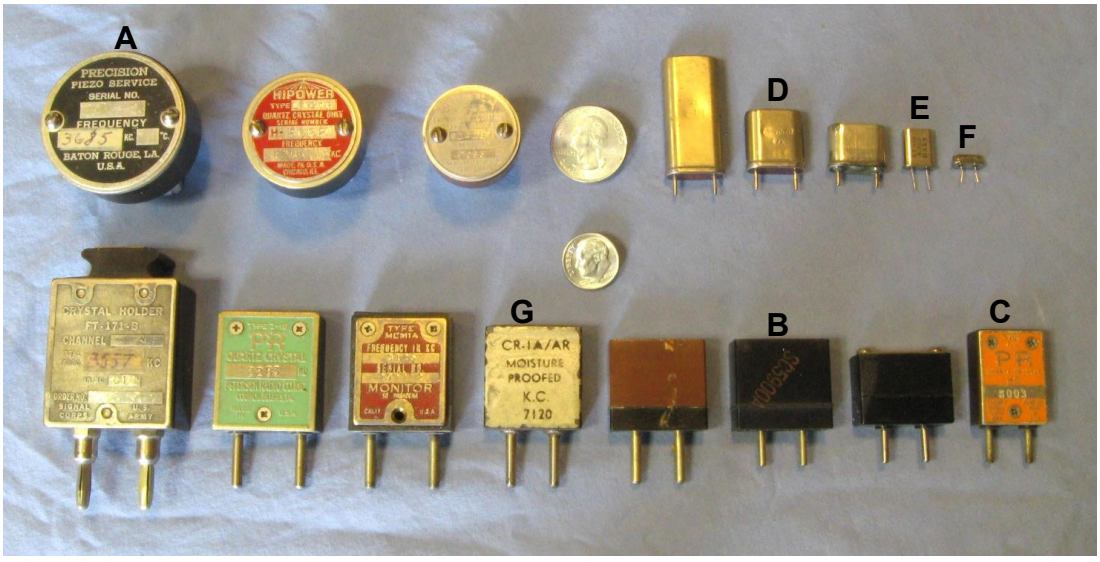


Figure 2. Progressively smaller crystal packaging:
Postwar hams (1940s through 70s) commonly used the FT-241 (B) and FT-243 (C). The hermetically sealed, metal encased HC-6 (D), HC-49 (E) and HC-49S (F) became the standards in later years.

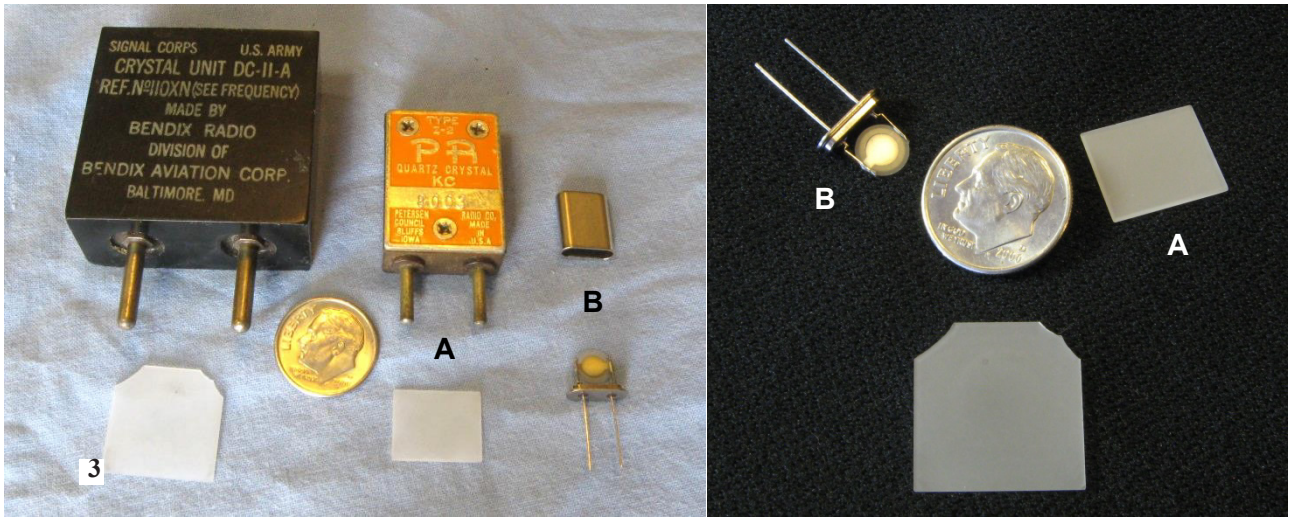


Figure 3. The shrinking quartz wafer. Compare the quartz blank in an FT-243 holder (A) to the thin quartz disk with the plated-on metal contacts found in a present day HC-49 holder (B).

Baton Rouge Pitches In

Not many are aware that, among the many ways wartime Baton Rouge "did its bit," quartz crystal units from Baton Rouge went to war. The story seems to begin in the Roaring Twenties. The 1924 US Department of Commerce directory of amateur radio operators lists then 16 year old Cecil E. Pearce, at 427 Asia St. in Baton Rouge, as being assigned call sign **5ASJ**. [3] Until 1927 hams did not use a "W" or "K" call sign prefix. Before long young Cecil would start a radio crystal business, apparently as a sideline to his principal occupation as an optician. The lens grinding machines would be easily adaptable to cut and polish quartz.

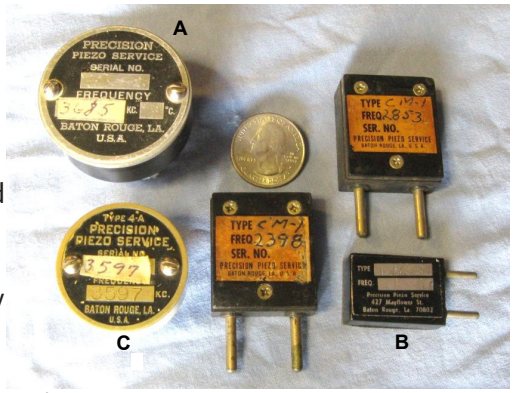


Figure 4. Crystal units produced in Baton Rouge

In June of 1933 a small advertisement appeared on page 69 of the American Radio Relay League journal, **QST**. **Precision Piezo Service**, of that same 427 Asia St in Baton Rouge La., offered crystals made from the "best Brazilian quartz," accurate to 0.05% in frequency, cut for the 40 meter ham band, for just $8.00 each, supplied in a Type 4 holder ("A" in Figure 4). In 1933 the Federal Minimum Wage was set at $0.25 per hour, an electrical worker made less than a dollar an hour. And that $8.00 is equivalent to $155 today.

Prices declined as crystal rigs became the norm in ham radio. The July 1940 **QST** ad (**Figure 5**) asked just $3.50 for that 40 meter crystal in the smaller 4-A holder ("C" in **Figure 4**). July 1940 also marked the last QST ad for Precision Piezo Services. Presumably government contracts were taking over a larger part of the business. In 1949 Precision Piezo Service was listed in the published Federal Regulations as one of the suppliers of crystals approved by the FCC for commercial broadcasting.

Figure 5. QST ad, June 1940

Wayne Gordon, K5DF, ex K5EOA (SK) once recalled that, as a teenage ham in the 1950s, he would bicycle over to the Pearce house to watch Cecil grind a crystal to order. He had an apparatus that allowed the crystal frequency to be accurately measured without having to remove the quartz blank from the polishing machine. We know that Precision Piezo was still selling crystals at least as late as 1963. The crystal marked "B" in **Figure 4** bears the address 427 Mayflower 70802, and the Post Office only started using ZIP codes in July of 1963. Sometime between 1939 and 1963 Asia Street apparently became Mayflower Street.

There is some evidence that Cecil Pearce became a Silent Key in 1972. [4] A lovely old home still stands at 427 Mayflower Street in Baton Rouge, now sheltering a law office.

Figure 6. 427 Asia (Mayflower) Street today. Google Earth street view.

References:
[1] https://en.wikipedia.org/w/index.php?title=Piezoelectricity&oldid=885465262
[2] **Crystal Clear**, by R. J. Thompson, Jr. IEEE Press, 2007, ISBN978-0-470-04607-7
[3] **Amateur Radio Stations of the United States**
US Dept of Commerce, Bureau of Navigation, Radio Service, June 30 1924
[4] Social Security Death Index

Spring is in the Air!

I love the spring weather! This is my favorite season of the year. I hope that you are enjoying the new format of the RF News . As the editor, I edit the content that I receive. A very big THANK YOU goes out to Jim, N5IB for his article about crystals and their local connection to Baton Rouge. I hope you take the time to read it, as well as thank Jim the next time you see him. I look forward to getting articles and pictures from more members. If you aren't able to submit an article, feel free to submit topics that you would like to know more about or see covered. I welcome all feeback and suggestions.

Please make plans to attend the club meetings (all at the EBRP Bluebonnet Library) in the upcoming months. We will begin this month collecting information and taking photos for the BRARC Directory. If you prefer to choose your own photo, please email it to me at the address listed below. I have already received a few this way, so keep them coming.

Synomen Hebert, KG5IRS

Synomen is the newest Editor of the RF News. Please send all articles or information you'd like to see in the next issue to her at: rfnews@brarc.org

Getting Licensed

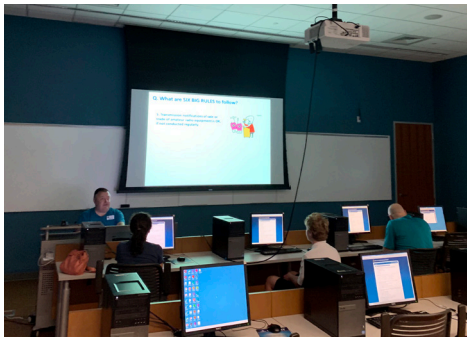
Baton Rouge

Technician Licensing Classes

An Amateur Radio Operator Technician Licensing Class is scheduled to start on Thursday, March 7, 2019 at the East Baton Rouge Parish Main Library on Goodwood Boulevard. The classes begin at 6 pm and will be held on Thursdays in the 2nd floor Technology Lab. The classes will conclude on April 25, 2019. There is no fee for the course.

The recommended text for the classes is Stu Turner's HamRadioSchool.com Technician & General License Course. Anyone interested in learning about Amateur Radio is welcome to attend.

Date	Topic(s)
3/7/19	0.0 Before We Begin 1.0 Operating your Radio
3/14/19	2.0 FCC Rules & Regs
3/21/19	3.0 Things to Do 4.0 Wavelength, Frequency, & Bands 5.0 Signal Propagation
3/28/19	6.0 How Radio Works 7.0 Antennas
4/4/19	8.0 It's Electric
4/11/19	9.0 Hamtronics 11.0 Space Contacts
4/18/19	10.0 Digital Modes 12.0 Avoiding Interference 13.0 Safety
4/25/19	VE Test Session



Visit http://brarc.org/education/license-classes/ for more information on the classes.

For information on Amateur Radio visit arrl.org and brarc.org.

Future VE Sessions

Baton Rouge - Thursday, April 25, 2019 6 PM at EBRP Main Library
Tuesday, April 30, 2019, 6 PM at EBRP Bluebonnet Library
Lafayette - First Tuesday of each month, 6 PM at Lafayette Science Museum
Hammond - Last Sunday of each month, 2 PM at North Oaks Diagnostics & E. Brent Dufreche Conference Center

Youth Yak

This month's contributor: **Logan Hebert, KG5LLM**

On the Fox Hunt Again...

I was excited to return to the Rayne Hamfest this year and was anxious for the Fox Hunt to begin. Having come in 2nd place last year, I was hoping for a similar outcome. Once the transmissions started, I was searching for it under tables and in boxes. The transmission lasted about 3 seconds every couple of minutes. I had a lot of fun exploring the room with my HT in hand. The 2018 location was hidden inside a pole and I wondered if it might be hidden in something similar this year. I convinced myself that it couldn't be and was surprised to find it in a very similar position again.

I came in second place again. Kirby, KI5EE, repeated his first place finish being the first to find it. The 2nd place finish came with a prize of 50 raffle tickets. I'd forgotten what a great idea it is to have one of those stamps with your name and call sign... Dana, AD5VC, shared that another great idea is to use the free address labels that you often get in the mail. I will try to remember that for next year, but this time I got some help from my sister Brynn, KG5KRV and my mom, KG5IRS to write my name and call sign on the tickets.

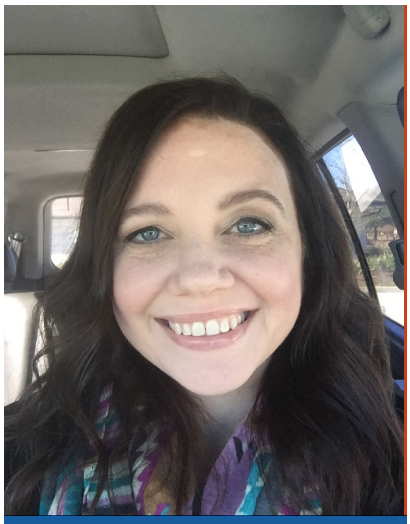
I am already looking forward to the Rayne Hamfest next year. Hope some of you will join me in the fun!

This is where the Fox was hidden

Coming Soon

The BRARC Board is very interested in publishing a Directory of its membership. This is a great resource for us to have to get to know our members, as well as putting a face with a name. In March, April and May, we will be collecting data and photos to be included in the directory. Be on the lookout for more information at upcoming Club meetings. And no dodging me when I try to take your picture!

Example of Directory Info:



Synomen Hebert
KG5IRS

Year First Licensed:	2015
License Class:	Extra
Birthday:	March 26
Cell Phone:	225-572-1572
Email:	Kg5irs@brarc.org
Special Interests:	10m Net Monday

YOUR NAME HERE
CALL SIGN

Year First Licensed:	
License Class:	
Birthday:	
Cell Phone:	
Email:	
Special Interests:	

YOUR NAME HERE
CALL SIGN

Year First Licensed:	
License Class:	
Birthday:	
Cell Phone:	
Email:	
Special Interests:	

I am excited about putting this together. I have included the membership application in this issue. Please submit if you haven't updated your current information. The biggest hurdle will be getting all of the photos. If you have a photo you would like to use, feel free to submit it to me at rfnews@brarc.org

BRARC Directory

Around the Bands

FCC Invites Comments of ARRL Technician Enhancement Proposal

The FCC has invited public comments on ARRL's 2018 Petition for Rule Making, now designated as RM-11828, which asks the FCC to expand HF privileges for Technician licensees to include limited phone privileges on 75, 40, and 15 meters, plus RTTY and digital mode privileges on 80, 40, 15, and 10 meters. Interested parties have 30 days to comment. The Technician enhancement proposals stemmed from the recommendations of the ARRL Board of Directors' Entry-Level License Committee, which explored various initiatives and gauged member opinions in 2016 and 2017.

"This action will enhance the available license operating privileges in what has become the principal entry-level license class in the Amateur Service," ARRL said in its Petition. "It will attract more newcomers to Amateur Radio, it will result in increased retention of licensees who hold Technician Class licenses, and it will provide an improved incentive for entry-level licensees to increase technical self-training and pursue higher license class achievement and development of communications skills."

Filing Comments

Those interested posting brief comments on the ARRL Technician Enhancement proposal (RM-11828) using the Electronic Comment Filing System (ECFS) should access FCC Electronic Comment Filing System Express. In the "Proceeding(s)" field, enter the number of the PRM, i.e., RM-11828 (using this format), complete all required fields, and enter comments in the box provided. You may review your post before filing. All information you provide, including name and address, will be publicly available once you post your comment(s). For more information, visit "How to Comment on FCC Proceedings."

Specifically, ARRL proposes to provide present and future Technicians with:

- phone privileges at 3.900 to 4.000 MHz, 7.225 to 7.300 MHz, and 21.350 to 21.450 MHz.
- RTTY and digital privileges in current Technician allocations on 80, 40, 15, and 10 meters.

The ARRL petition points out the explosion in popularity of various digital modes over the past 2 decades. Under the ARRL plan, the maximum HF power level for Technician operators would remain at 200 W PEP. The few remaining Novice licensees would gain no new privileges under ARRL's proposal.

ARRL's petition points to the need for compelling incentives not only to become a radio amateur in the first place, but then to upgrade and further develop skills. Demographic and technological changes call for a "periodic rebalancing" between those two objectives, ARRL maintained in his proposal. The FCC has not assessed entry-level operating privileges since 2005.

The Entry-Level License Committee offered very specific data- and survey-supported findings about growth in Amateur Radio and its place in the advanced technological demographic, which includes individuals younger than 30. It received significant input from ARRL members via more than 8,000 survey responses. "The Committee's analysis noted that today, Amateur Radio exists among many more modes of communication than it did half a century ago, or even 20 years ago," ARRL said in its petition.

Now numbering some 384,500, Technician licensees comprise more than half of the US Amateur Radio population. ARRL stressed in its petition the urgency of making the license more attractive to newcomers, in part to improve upon science, technology, engineering, and mathematics (STEM) education, "that inescapably accompanies a healthy, growing Amateur Radio Service."

ARRL said its proposal is critical to develop improved operating skills, increasing emergency preparedness participation, improving technical self-training, and boosting overall growth in the Amateur Service, which has remained nearly inert at about 1% per year.

The Entry-Level License Committee determined that the current Technician class question pool already covers far more material than necessary for an entry-level exam to validate expanded privileges. ARRL told the FCC that it would continue to refine examination preparation and training materials aimed at STEM topics, increase outreach and recruitment, work with Amateur Radio clubs, and encourage educational institutions to utilize Amateur Radio in STEM and other experiential learning programs.

Source: http://www.arrl.org/news/fcc-invites-comments-on-arrl-technician-enhancement-proposal

If you would like to read the Petition of Rule Making, click this link:
https://ecfsapi.fcc.gov/file/1022823795806/2018%20Entry%20Level%20License%20PRM%20FINAL.pdf

Amateur Radio Question Pools

The next pages contain questions from the Amateur Radio Question Pools maintained by the NCVEC. Technician, General and Extra are included. Try to answer as many or as few as you like. You may be surprised at how many or how few you are able to answer with confidence. The goal is to activate those neurons and have them warmed up. This may help have an explanation on hand when a prospective or recently licensed operator requests some assistance with an area they do not quite understand.

Good Luck

The Question Pools are developed and maintained by the Question Pool Committee (QPC) of the NCVEC by FCC instruction and Part 97 Rules & Regulation : Sec. 97.523 Question pools All VECs must cooperate in maintaining one question pool for each written examination element. Each question pool must contain at least 10 times the number of questions required for a single examination. Each question pool must be published and made available to the public prior to its use for making a question set. Each question on each VEC question pool must be prepared by a VE holding the required FCC-issued operator license.

The question pools are normally valid for 4 years and the current Question Pools are as follows:

Element 2 - Technician - Effective July1,2018 until June 30, 2022
Element 3 - General - Effective July 1,2015 until June 30, 2019
Element 4 - Extra - Effective July1, 2016 until June 30, 2020

Each FCC Element or question pool consists of at least 10 times the number of questions required for a single examination and is released to the public normally 6 months prior to becoming effective for use in examinations to allow plenty of time for publication and study. Each element or pool has a syllabus that is broken down into main subelement sections(normally 10) and an unlimited number of sub-topic sections under each subelement. Each subelement is numbered with a prefix designating the Element number, example T1, T2 etc, followed by the subtopic letter for the section of each subelement, example T1A,T1B, etc.

The 3 parts of a Question Pool Element Syllabus are:
1. SubElement (T, G, E)
2. SubTopic (T1A, G1A, E1A etc)
3. Questions and Answers (T1A01, G1A01, E1A01 etc)

The actual questions are numbered in a format that reflects the element, subelement and subtopic section of the syllabus where the question is found, example: T1A01 etc. Each pool is released with the exact questions and 4 multiple choice answers and the correct answer for each question is designated in ( ) just after each question; Example: T1A01 (D) some with a rules reference [97.xxx] after the correct answer letter. On the actual exam, the correct answer letter in parentheses, and any rules citations do not appear with the question number.

The Question Pool Committee invites submissions for use in all Amateur Question Pools. Currently, the QPC is reviewing and developing a new Element 3 - General Class question pool to become effective Julv 1. 2019. To provide comments or actual questions for consideration to the QPC by email to qpcinput@ncvec.org

SOURCE:NCVEC National Conference of Volunteer Examiner Coordinators webpage http://www.ncvec.org/page.php?id=338

Technician Question Pool July 1, 2018 to June 30, 2022

1. Which frequency is within the 6 meter amateur band? (T1B03)
   A. 49.00 MHz
   B. 52.525 MHz
   C. 28.50 MHz
   D. 222.15 MHz

2. Who must designate the station control operator? (T1E03)
   A. The station licensee
   B. The FCC
   C. The frequency coordinator
   D. The ITU

3. If a station is not strong enough to keep a repeater's receiver squelch open, which of the following might allow you to receive the station's signal? (T2B04)
   A. Open the squelch on your radio
   B. Listen on the repeater input frequency
   C. Listen on the repeater output frequency
   D. Increase your transmit power

4. What are the two components of a radio wave? (T3B03)
   A. AC and DC
   B. Voltage and current
   C. Electric and magnetic fields
   D. Ionizing and non-ionizing radiation

5. What is the purpose of the squelch control on a transceiver? (T4B03)
   A. To set the highest level of volume desired
   B. To set the transmitter power level
   C. To adjust the automatic gain control
   D. To mute receiver output noise when no signal is being received

6. What is the ability to store energy in a magnetic field called? (T5C03)
   A. Admittance
   B. Capacitance
   C. Resistance
   D. Inductance

7. Which of these components can be used as an electronic switch or amplifier? (T6B03)
   A. Oscillator
   B. Potentiometer
   C. Transistor
   D. Voltmeter

8. Which of the following is used to convert a radio signal from one frequency to another? (T7A03)
   A. Phase splitter
   B. Mixer
   C. Inverter
   D. Amplifier

9. How is a simple ammeter connected to a circuit? (T7D03)
   A. In series with the circuit
   B. In parallel with the circuit
   C. In quadrature with the circuit
   D. In phase with the circuit

10. What operating activity involves contacting as many stations as possible during a specified period? (T8C03)
    A. Contesting
    B. Net operations
    C. Public service events
    D. Simulated emergency exercises

11. Why is coaxial cable the most common feed line selected for amateur radio antenna systems? (T9B03)
    A. It is easy to use and requires few special installation considerations
    B. It has less loss than any other type of feed line
    C. It can handle more power than any other type of feed line
    D. It is less expensive than any other type of feed line

12. What is the maximum power level that an amateur radio station may use at VHF frequencies before an RF exposure evaluation is required? (T0C03)
    A. 1500 watts PEP transmitter output
    B. 1 watt forward power
    C. 50 watts PEP at the antenna
    D. 50 watts PEP reflected power

1. Which of the following is a purpose of a beacon station as identified in the FCC rules?
(G1B03) [97.3(a)(9)]
    a. Observation of propagation and reception
    b. Automatic identification of repeaters
    c. Transmission of bulletins of general interest to Amateur Radio licensees
    d. Identifying net frequencies

2. What is required to conduct communications with a digital station operating under automatic control outside the automatic control band segments?
(G1E03) [97.221]
    a. The station initiating the contact must be under local or remote control
    b. The interrogating transmission must be made by another automatically controlled station
    c. No third-party traffic maybe be transmitted
    d. The control operator of the interrogating station must hold an Amateur Extra Class license

3. What does it mean when a CW operator sends “KN” at the end of a transmission?
(G2C03)
    a. Listening for novice stations
    b. Operating full break-in
    c. Listening only for a specific station or stations
    d. Closing station now

4. Approximately how long does it take the increased ultraviolet and X-ray radiation from solar flares to affect radio propagation on Earth?
(G3A03)
    a. 28 days
    b. 1 to 2 hours
    c. 8 minutes
    d. 20 to 40 hours

5. What reading on the plate current meter of a vacuum tube RF power amplifier indicates correct adjustment of the plate tuning control?
(G4A04)
    a. A pronounced peak
    b. A pronounced dip
    c. No change will be observed
    d. A slow, rhythmic oscillation

6. Which of the following can be the result of an incorrectly adjusted speech processor?
(G4D03)
    a. Distorted speech
    b. Splatter
    c. Excessive background pickup
    d. All these choices are correct

7. How many watts of electrical power are used if 400 VDC is supplied to an 800 ohm load?
(G5B03)
    a. 0.5 watts
    b. 200 watts
    c. 400 watts
    d. 3200 watts

8. Which of the following is an advantage of CMOS integrated circuits compared to TTL integrated circuits?
(G6B03)
    a. Low power consumption
    b. High power handling capability
    c. Better suited for RF amplification
    d. Better suited for power supply regulation

9. What circuit is used to process signals from the RF amplifier and local oscillator then send the result to the IF filter in a superheterodyne receiver?
(G7C03)
    a. Balanced modulator
    b. IF amplifier
    c. Mixer
    d. Detector

10. What part of a packet radio frame contains the routing and handling information?
(G8C03)
    a. Directory
    b. Preamble
    c. Header
    d. Footer

11. How do the lengths of a three-element Yagi reflector and director compare to that of the driven element?
(G9C03)
    a. The reflector is longer, and the director is shorter
    b. The reflector is shorter, and the director is longer
    c. They are all the same length
    d. Relative length depends on the frequency of operation

12. Which size of fuse or circuit breaker would be appropriate to use with a circuit that uses AWG number 14 wiring?
(G0B03)
    a. 100 amperes
    b. 60 amperes
    c. 30 amperes
    d. 15 amperes

1. Within what distance must an amateur station protect an FCC monitoring facility from harmful interference? (E1B03)
    a. 1 mile
    b. 3 miles
    c. 10 miles
    d. 30 miles

2. What is a Volunteer Examiner Coordinator? (E1E03)
    a. A person who has volunteered to administer amateur operator license examinations
    b. A person who has volunteered to prepare amateur operator license examinations
    c. An organization that has entered into an agreement with the FCC to coordinate amateur operator license examinations
    d. The person who has entered into an agreement with the FCC to be the VE session manager

3. How is an interlaced scanning pattern generated in a fast-scan (NTSC) television system? (E2B03)
    a. By scanning two fields simultaneously
    b. By scanning each field from bottom to top
    c. By scanning lines from left to right in one field and right to left in the next
    d. By scanning odd numbered lines in one field and even numbered lines in the next

4. How is the timing of JT65 contacts organized? (E2E03)
    a. By exchanging ACK/NAK packets
    b. Stations take turns on alternate days
    c. Alternating transmissions at 1 minute intervals
    d. It depends on the lunar phase

5. Which of the following signal paths is most likely to experience high levels of absorption when the A index or K index is elevated? (E3C03)
    a. Transequatorial propagation
    b. Polar paths
    c. Sporadic-E
    d. NVIS

6. What is the term for the blocking of one FM phone signal by another, stronger FM phone signal? (E4C03)
    a. Desensitization
    b. Cross-modulation interference
    c. Capture effect
    d. Frequency discrimination

7. What is the magnitude of the impedance of a series RLC circuit at resonance? (E5A03)
    a. High, as compared to the circuit resistance
    b. Approximately equal to capacitive reactance
    c. Approximately equal to inductive reactance
    d. Approximately equal to circuit resistance

8. What is microstrip? (E5D03)
    a. Lightweight transmission line made of common zip cord
    b. Miniature coax used for low power applications
    c. Short lengths of coax mounted on printed circuit boards to minimize time delay between microwave circuits
    d. Precision printed circuit conductors above a ground plane that provide constant impedance interconnects at microwave frequencies

9. What special type of diode is capable of both amplification and oscillation? (E6B03)
    a. Point contact
    b. Zener
    c. Tunnel
    d. Junction

10. Which of the following materials is likely to provide the highest frequency of operation when used in MMICs? (E6E03)
    a. Silicon
    b. Silicon nitride
    c. Silicon dioxide
    d. Gallium nitride

11. Which of the following components form the output of a class D amplifier circuit? (E7B03)
    a. A low-pass filter to remove switching signal components
    b. A high-pass filter to compensate for low gain at low frequencies
    c. A matched load resistor to prevent damage by switching transients
    d. A temperature compensating load resistor to improve linearity

12. How does an analog phase modulator function? (E7E03)
    a. By varying the tuning of a microphone preamplifier to produce PM signals
    b. By varying the tuning of an amplifier tank circuit to produce AM signals
    c. By varying the tuning of an amplifier tank circuit to produce PM signals
    d. By varying the tuning of a microphone preamplifier to produce AM signals

13. How is positive feedback supplied in a Hartley oscillator? (E7H03)
    a. Through a tapped coil
    b. Through a capacitive divider
    c. Through link coupling
    d. Through a neutralizing capacitor

14. What is the modulation index of an FM-phone signal having a maximum frequency deviation of 3000 Hz either side of the carrier frequency when the modulating frequency is 1000 Hz?
(E8B03)
    a. 3
    b. 0.3
    c. 3000
    d. 1000

15. In the antenna radiation pattern shown in Figure E9-1, what is the front-to-side ratio?
(E9B03)
    a. 12 dB
    b. 14 dB
    c. 18 dB
    d. 24 dB

16. What is the name of the matching system that uses a section of transmission line connected in parallel with the feed line at or near the feed point?
(E9E03)

    a. The gamma match
    b. The delta match
    c. The omega match
    d. The stub match

Answer Key

Technician	General	Extra
1. T1B03 (B) [97.301(a)]	1. G1B03 (A) [97.3(a)(9)]	1. E1B03 (A) [97.13]
2. T1E03 (A) [97.103(b)]	2. G1E03 (A) [97.221]	2. E1E03 (C) [97.521]
3. T2B03 (B)	3. G2C03 (C)	3. E2B03 (D)
4. T3B03 (C)	4. G3A03 (C)	4. E2E03 (C)
5. T4B03 (D)	5. G4A04 (B)	5. E3C03 (B)
6. T5C03 (D)	6. G4D03 (D)	6. E4C03 (C)
7. T6B03 (C)	7. G5B03 (B)	7. E5A03 (D)
8. T7A03 (B)	8. G6B03 (A)	8. E5D03 (D)
9. T7D03 (A)	9. G7C03 (C)	9. E6B03 (C)
10. T8C03 (A)	10. G8C03 (C)	10. E6E03 (D)
11. T9B03 (A)	11. G9C03 (A)	11. E7B03 (A)
12. T0C03 (C)	12. G0B03 (D)	12. E7E03 (C)
		13. E7H03 (A)
		14. E8B03 (A)
		15. E9B03 (B)
		16. E9E03 (D)

Well how did you do? Are there areas where you would like some more explanation? See one where you could provide a brief explanation that would help others with understanding the concept better? Send a note to elmer@brarc.org or rfnews@brarc.org

Would you like to try some more? Here is a great website that let's you track your progress thorugh the question pools. All you need is an email.
arrlexamreview.appspot.com

...The four words in the Club's logo are Service, Progress, Friendly, and Balanced. Here is a statement of the Club's Code that describes these principles:

BATON ROUGE AMATEUR RADIO CLUB CODE

BRARC members strive to exhibit:

SERVICE with stations and skills always ready for service to country and community. Members offer loyalty, encouragement and support to other amateurs, local clubs, and the American Radio Relay League, through which Amateur Radio in the United States is represented nationally and internationally.

PROGRESS with knowledge of science, well-built and efficient stations and operating practices that are above reproach.

FRIENDLINESS with slow and patient operation when requested, friendly advice and counsel to beginners, kind assistance, cooperation and consideration for the interests of others. These are the marks of the amateur spirit.

BALANCE Radio is a hobby, never interfering with duties owed to family, job, school or community**.**

Adapted from The Radio Amateur's Code http://www.arrl.org/amateur-code which was adapted from The Amateur's Code written by Paul M. Segal W9EEA in 1928

Adopted March 2018 by BRARC Board of Directors.

BATON ROUGE AMATEUR RADIO CLUB

PO BOX 4004
BATON ROUGE, LA 70821
brarc@brarc.org **brarc.org**

☐New Member Application Date: _____

☐ Update Information for Current Member

☐ New Ham, Complimentary 12 Month Membership

Name: _____ Call: _____

Address: _____ License Class: _____

City: _____ State: _____ Zip: _____

Home Phone: _____ Cell Phone: _____

Email: _____

Year First Licensed: _____ Birthday: _____ ARES Member: Yes \ No ARRL Member: Yes \ No

Name and call sign of other Hams in your household: List Phone\Email in Club Directory: Yes \ No

---

Please indicate your areas of interest: Circle\Highlight all that apply

Licensing Instructor	Newsletter Contributor	Net Control Operator	Elmering	DX
Technical Assistance	Publicity/Public Relations	Emergency Operations	Satellite	CW
Antenna Design	Repeater Operations	Public Service	Scouting	Phone
Project Building	Volunteer Examiner	Special Event Stations	Social Events	Digital
Contesting	Internet Linking	Portable Operations	Solar Activity	HF
ARES/RACES	Finance Committee	Software Development	Field Day	VHF/UHF
Traffic Handling (NTS)	Direction Finding/Tracking	Youth Outreach	RFI/TVI	QRP
Other:				

☐ Regular Member: $25 per year
☐ Family of Regular Member: Not Applicable
☐ Student K-12 Member: $10 per year
☐ Unlicensed Member: $10 per year
☐ New Licensee, Complimentary 12 month membership

Dues may be submitted in person at a BRARC monthly club meeting or mailed to the above address. Please make checks payable to Baton Rouge Amateur Radio Club. To pay online email form to brarc@brarc.org


SERVICE
PROGRESS
BR
ARC
FRIENDLY
BALANCED