

THE NEWSLETTER OF THE KINGS COUNTY RADIO CLUB

KCRC



February 2019

“差不多”

Volume 6, Issue 2^A

Minutes of the February 2019 KCRC Meeting, February 6th, 2019

Our February “Pre-Meeting Question and Answer Session” was a lively affair, with no specific main topic.

The monthly meeting was called to order at 8:05 PM, by our new President, Joseph AC2AE. Also present at tonight’s meeting were Treasurer Richard KA2KDQ, General Secretary Roy AC2GS, Berlotte KD2MYF, Howard N2GOT, Axel KD2OPM, Frank KD2QDU, Ray W2DEA, Melanie KC2LYV, Bob KD2NVB, Al KD2QME, and Alan KD2OMG.

The vote to accept the minutes of the January meeting was passed unanimously.

Treasurer Report—Richard KA2KDQ, reported that our Treasury currently has \$1,749.23 in assets in our bank account, \$213.37 in our PayPal account for a total of \$1,962.60.

Repeater status was discussed by Joseph AC2AE - There is not much new information. The controller will still need to be tweaked, and we are awaiting our Friend of the Club, Andy WA2CDL, to make sure that our repeater is adjusted for optimal performance. Joseph is hard at work designing alternative Internet links to our Repeater, and will be speaking more about this at a future General Meeting.

2 Meter Report—Richard KA2KDQ reported that he is averaging “about a dozen” check-ins weekly. He is operating as Net Control Operator in his car and driving to locations where his signal will be better for the repeater.

10 Meter Report—Roy AC2GS reported that the 10 Meter Net is going well. We need more Net Control Operators. Joseph AC2AE is scheduled for the first Sunday of the month, but due to antenna issues will not be able to operate on 10 meters until he can attend to his antenna issues. Howie KD2MSU is Net Control Operator on the third Sunday of each month, and Roy AC2GS covers the remaining Sundays, until more Net Control Operators can be found for the rotation schedule. Anyone with a decent 10 Meter setup with a free hour or two on Sunday morning should consider volunteering. Perfect reception or a very strong signal is not necessarily needed. The participants of the Net are available to relay messages back and forth, as needed. Please consider volunteering for this position. The Club executive committee will try to cover the Net Control Operator post until a more permanent replacement is found.

KCRC TechNet —Our Net Control Operator and Host, Roy AC2GS, reported that the TechNet is alive and well, but can always use more participants—either to ask questions, or offer advice. Please consider listening and participating—either with questions or answers, or opinions. Participation makes or breaks a TechNet.

KC2RC FusionNet—The FusionNet continues to go strong, both locally and through its Wires-X room, and its Brandmeister access, but we are looking into offering more linking options in the near future. There are 16+ check-ins weekly and Wires-X check-ins from around the world! Jason has instituted a weekly question for all participants to answer. Anyone wishing to suggest a topic or question for the Fusion Net can email it to: TheFusionExperience@KingsCountyRadioClub.com . The email address is also planned to be changed in the

near future—if you have any great ideas for a new email name (the part BEFORE the '@', not after it), contact Joseph AC2AE or Jason KD2LRX—the winner will get a free KCRC patch!

Old Business: Our next VE Exam is scheduled for March 10, 2019. For ANY individuals interested in joining our VE Team, please contact any Executive Member of the Club or the return email address for these emails of our Club Meeting's minutes. People took time out of their busy lives to help get you licensed - pass on the favor!

Our Club presently has 75 members, 60 of whom have paid their 2019 dues (80% paid up for 2019). We had three new members, David KD2BNT, Mark WA2CIR, and George WB2GTC join our Club this past month.

A graphic representation of our proposed KCRC patch was shown and a vote was passed to approve the purchase of 100 patches for a total of \$227. It was decided to offer these patches at \$5 a piece, plus any applicable shipping fees. (The order for the patch was placed the next day.)

Lloyd K2JVX was formally appointed as Chairman of the U.S.S. Missouri Special Event Station on June 8-9, 2019 commemorating the commissioning of the U.S.S. Missouri. If you are interested in being part of the “build-up” and/or “break-down” crew that will be needed to transfer the equipment back to Mitch N2RGA, who stores the clubs equipment, or is interested in participating in some other way for the special event, please contact Lloyd K2JVX.

There were no new developments regarding Field Day 2019, except to formally appoint Mitch N2RGA as Field Day Chairman.

New Business:

It was suggested that we initiate the tradition of participating in Winter Field Day, beginning in 2020. Joseph AC2AE was appointed Chairman of that event.

We discussed the possibility of purchasing a table at the LIMARC Hamfest for this February 24th, to promote our club. We chose, rather, to consider promoting our club with a table at the next Ham Radio University next January, and to consider other venues, such as the annual ‘Maker’s Faire’. Roy AC2GS will ‘freshen up’ our club pamphlet for 2019.

We discussed other club events that might be instituted. Joseph AC2AE suggested a ‘night out’ get together with club members at some public venue, on a Sunday afternoon, when the weather gets a little bit warmer. Our recent email questionnaire elicited requests for arranging a trip to ARRL Headquarters (weekdays only), a Skywarn lesson, a crystal radio building event, a solder class, a crimping class, antenna building and testing, FT8, DMR, and Fusion technology classes. We will ask the General Membership what particular events they might be interested in participating in, and if we can wrangle enough participation we will go ahead and try to arrange one or more—it’s your move, next!

At 9:05 PM the meeting was concluded.

[See you March 6th for our next meeting!](#)

Disclaimer: The views and opinions expressed in this publication are those of the author and do not necessarily reflect the official policies or positions of the Kings County Radio Club, its Executive Board, nor its General Membership.

These minutes were respectfully recorded and submitted by Roy AC2GS on this day, February 6th, in the two thousandth and nineteenth year of our Lord of Propagation...

The Kings County Radio Club is at www.KC2RC.com or
www.KingsCountyRadioClub.com
KCRC is an ARRL affiliated club (see: www.ARRL.org)

The Usual Suspects

Can You Recognize the Waveforms That You Transmit?

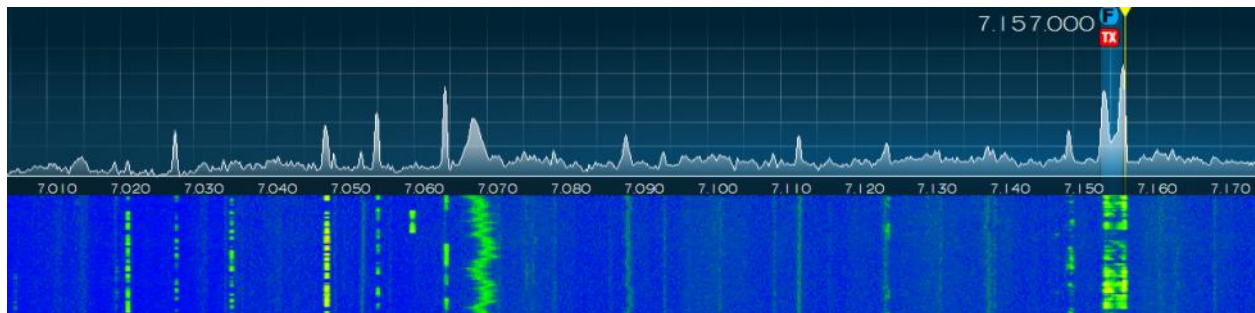
Most people have seen the Bryan Singer Film, The Usual Suspects. Near the beginning of the film the local police hold a *police line-up*, for a number of common criminals, to see if any victim can recognize anyone for the crime, they are investigating...

It made me wonder, how many of us could recognize the kinds of waveforms we transmit regularly out of another kind of *line up*?

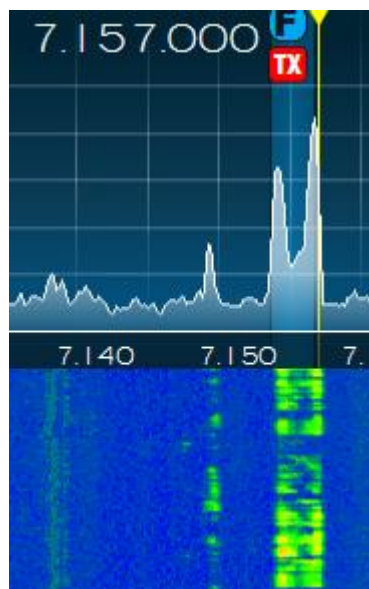
This will probably grow easier as Software Defined Radio features like a panadapter with a *waterfall* display permeate the Amateur Radio community - after a while you'll see the difference between Amplitude Modulation, Upper and Lower Sideband, and even Morse Code on a good day.

There are still a lot of Hams relying on older legacy radios, where they offer little, in the way of visual cues, but I thought that a little demonstration of the different patterns these modes leave on a panadapter might be informative.

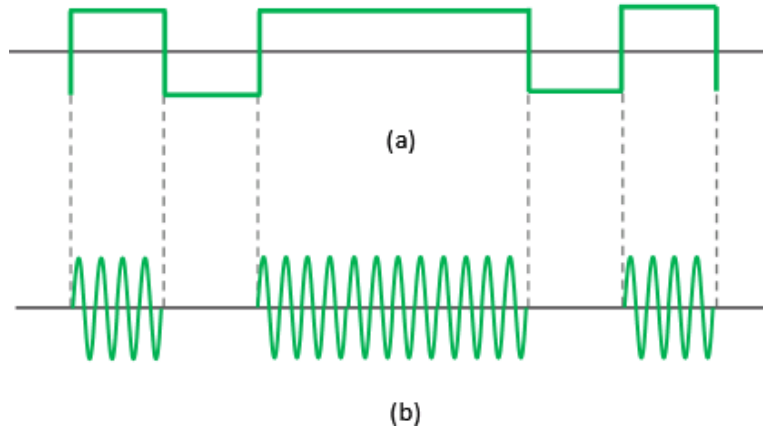
What does a typical panadapter look like? Well here's a snapshot of one from my radio:



(let's ZOOM in, for some detail...)



First, let's start with the first mode of transmission that Hams used - Continuous Wave, CW, using Morse Code. It sounds rather simple, at first - its either all-on or all-off, nothing in between:

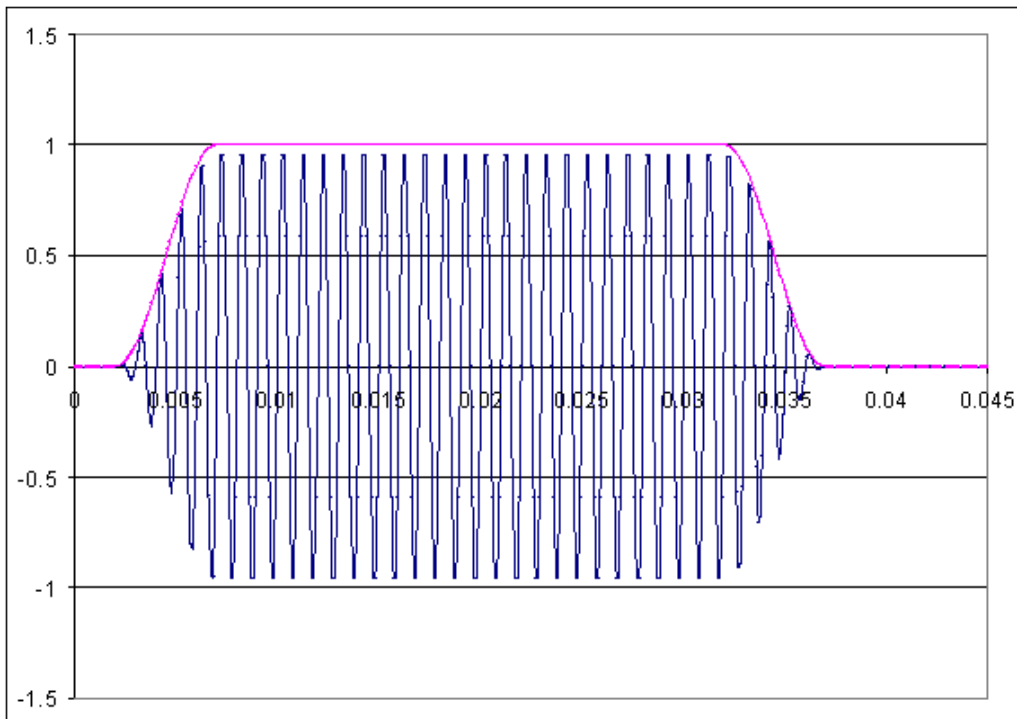


Where “a” is the modulating signal, with all the information, and “b” is the carrier wave.

Ah, if life were that simple.

In real life “square waves”, “a” in the illustration above, are the equivalent of a sine wave signal that is the sum of the *fundament* frequency and to a diminishing extent, **EVERY SINGLE** odd multiple of that fundamental frequency, up the frequency spectrum! This is what produces *clicks* and *chirps* that are the reason for the last bit in some “RST” transmission reports - 599K, for instance, means the transmission was perfectly readable, very strong, and a pure *D.C.* tone, **BUT** you had an annoying *click* in your *dits*, and *dahs*!

What's a Ham gonna do about this? Well, all that is required is a smoother transition from full power and no power, and those chirp causing harmonics will fade into the noise, where they belong:



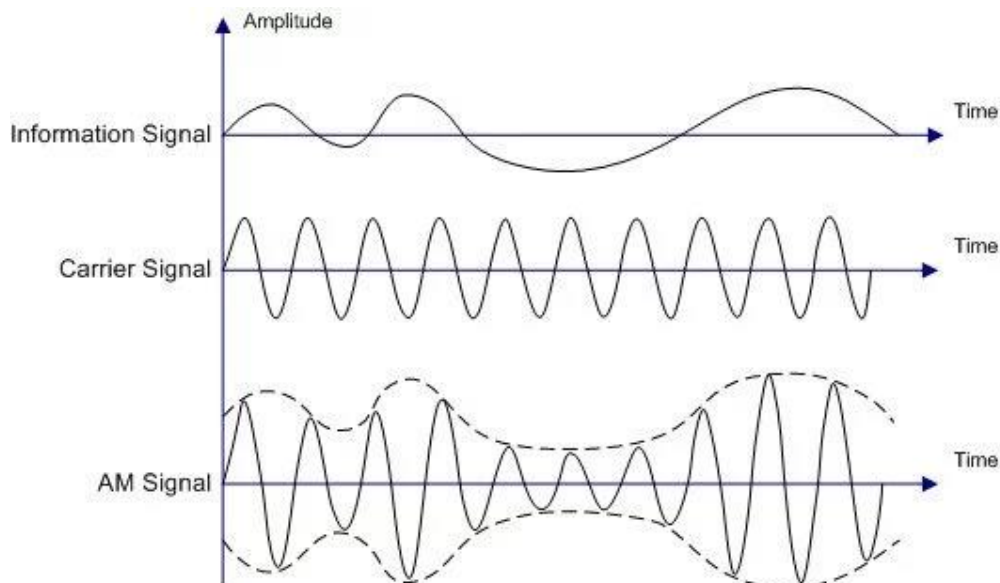
So, how does this look in my panadapter?



For Morse Code, unless you have an amazing “eye” you’re going to need to look for the frequency amplitude *history* at the bottom, in the *waterfall*, where you might recognize the *dits* and *dahs* streaming down the page!

Okay! What came next to our *Hamcestors* (get it - it’s a mix of Ham and ancestors???)?

Why, Amplitude Modulation, AM!



That’s not too difficult - just modulate your carrier with an audio frequency signal coming from your microphone and you’re there!

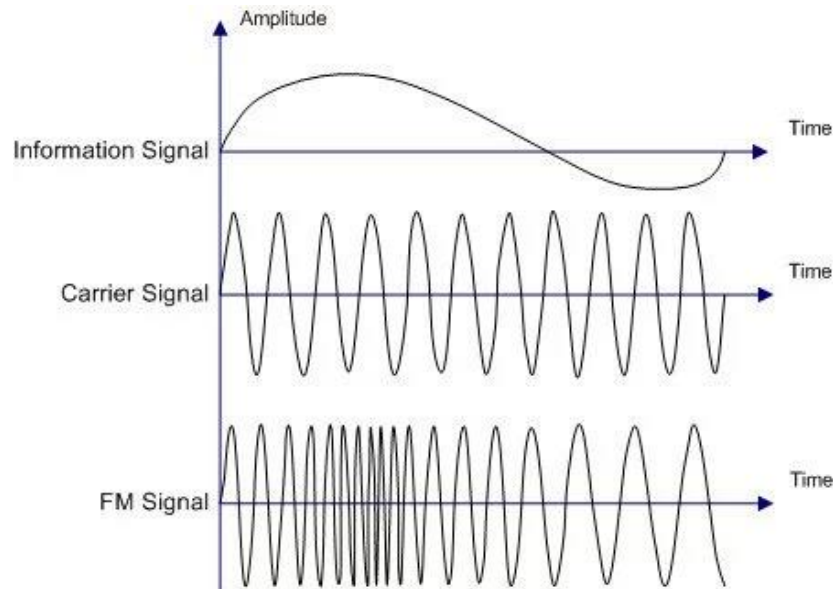
This produces a symmetrical waveform on a panadapter, similar to CW, although it will cause a wider band of frequencies than CW, to handle the increased *data* or *symbol rate* - phone just has a lot more information than a simple CW transmissions, at a higher rate. Some AM transmissions are 6 kHz wide, but some AM guys have been known to expand that a bit more to get those nice sibilants, of theirs, a chance to be appreciated. How does an

AM transmission look on a panadapter?

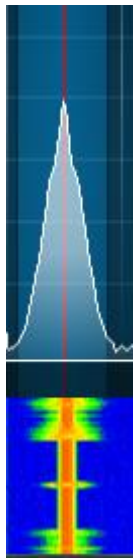


It's a bit *symmetrical* and the *waterfall* shows *softer* passages along with *louder* ones, not the abrupt cut-off seen in CW transmissions.

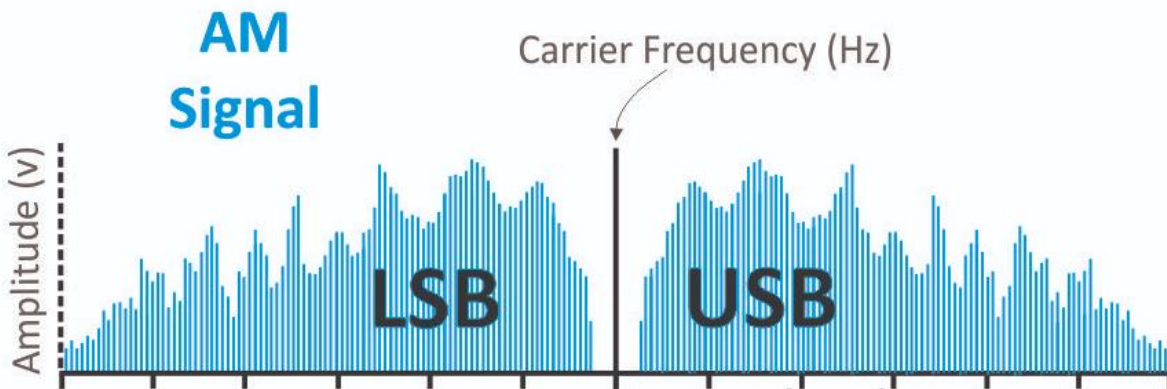
What about Frequency Modulation? This is where, rather than modulate the carrier's amplitude by the amplitude of the audio wave from your microphone, the audio's amplitude is used to *deviate* from the exact frequency of the FM transmission's carrier wave (that is why, when you over-drive your audio on an FM Repeater, people will tell you that you are *over-deviating!*):



How can you tell the difference between an AM transmission and an FM transmission on a panadapter? Well, unfortunately it isn't easy - they pretty much look just like a symmetrical AM signal **BUT** there are little difference - during the silent pauses during an AM transmission the transmission bandwidth shrinks to a fine line. FM transmissions seem to have a thicker bolder bandwidth, especially when they are also transmitting an inaudible PL tone for Repeaters. It ain't a perfect system, but it's better than nothing!



Now, what about Sideband? Upper or lower sideband is not that different, since they are mirror images of each other. Let's look at an amplitude modulated signal from a different point of view...



Now, using 40 meters as an example, if you strip this signal of its center carrier wave transmission, and you are left with a *double sideband* signal that supplies all of your voice information!

But we are greedy for the *best bang for the buck*, so we also strip out one of the two mirror sidebands. Since we are using 40 meters as an example, we strip away the upper sideband and amplify and transmit the lower sideband as our final signal.

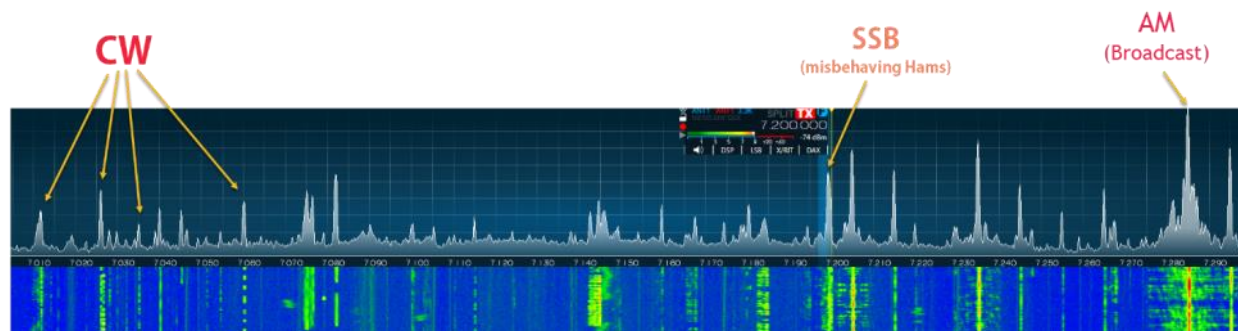


Unlike AM and FM, it is quite easy to see an SSB signal and you can even tell if it is Upper Sideband or Lower Sideband:



Notice the *lopsidedness* of the wave form, like someone cut off the righthand half of it? Because that's exactly what they did!

Put it ALL together, and what do ya get?



Well, now YOU can recognize *The Usual Suspects* on the Ham Bands.

Grab a panadapter and take look around for yourself!

Vy 73,

Roy AC2GS