QSA-5

Marin Amateur Radio Society Monthly Newsletter

Established 1933 September 2021

From Our President:

More episodes of nearly normal life. On 14 August we supported our first public service event since the onset of covid. Which was the MCBC Dirt Fondo. On 28 August we supported our second public service event the Double Dipsea. Both events had their share or excitement and our folks acquitted themselves well. It is very heartening to see our club back doing something we have made a name for ourselves by doing.

Unfortunately, we are not completely back to normal. We had planned to hold our September 3rd meeting as a hybrid. That is to say, in person in the club house and online. With the increasing number of covid cases due to the delta variant we have decided to make the September meeting zoom only. We are still considering holding the October meeting as a hybrid which we will decide at the September board meeting. I read today an article in the New York Times that some statisticians have suggested that at least in the US and much of western Europe covid surges seem to run in two-month cycles. Some of the hardest hit states are seeming to plateau in new cases. We can only hope that this is a real trend and not wishful thinking or a data anomaly. I for one want to get back to meeting in person even if we have to wear masks to do so. If we have to be masked, we won't be serving pizza at the meeting either. I miss that too, but it is probably better for me to forego the pizza.

Last month I ran on and on so this month I will be brief. Be safe, be healthy and I hope to see you all soon.

73 de wa6uds

From the Editor:

The daylight hours are becoming shorter and there's a slight chill to the evening air. September is quickly coming and with it, the Fall! It has been a crazy year, thus far, and as the pandemic rages on, there is an uncertainty regarding the future. However, the shining light at the end of the journey is the simple fact that we have each other. This is my sixth month of being the editor of the QSA-5 newsletter and was reminded of our unity as members of the Marin Amateur Radio Society as I looked through the previous five issues. I quickly realized that the best content the QSA-5 presented was content that our club members provided. In short, you make this publication what it is. I merely do a lot of typing and occasionally make sure the boat is going in the right direction. Please keep those ideas and thoughts coming!

I would like to start doing a monthly feature profiling our club members. The Marin Amateur Radio Society has a multifaceted membership, with members coming from an extremely wide variety of interesting backgrounds. I suspect that every member has an interesting story to tell regarding their lives and how they got involved in Amateur Radio. Therefore, I'd like to put out a call for volunteers to tell me their story so I can share it with the club. It's a good way to get to know one another, especially for our newer members (myself included). What got me interested in this monthly column idea was listening to Jan WB6SPX tell stories about his life. After that great laundromat story at last month's General Meeting, I thought, "here is an interesting gentleman that I could learn a lot from, be it about life or Amateur Radio. Therefore, I would ask that you contact me with any interesting stories you have regarding Amateur Radio (or attracting gals at the local laundromat). You can contact me at:

QSA-5Editor@w6sg.net

General Membership Meeting: August 6th, 2021

Call to Order: 19:30 Hours (7:30 PM) Curtis WA6UDS called to order.

Adopt Agenda: M/S/A

New Members:

Loren "Jim" Atwood KJ6CW – Novato

Ronald Purser WB9EGG – Pacifica

Roberto Alonzo KN6QCH - Novato

Board Actions:

Board spent a lot of time recently developing a facility use policy for COVID: Hybrid meetings, with Zoom and in-person attendance. We will require masks and vaccination, with the latter being on an honor system, not affirmatively verified by MARS. *(This all dovetails well with new county practices adopted since the board meeting. - B.C.)*

Presentation: N/A

Fun with Ham Radio:

Milt KM6ASI: Recently RCV and RACES installed a new UHF repeater on Sonoma 442.175 PL +162.0, primarily for use by RCV and RACES. Known as "San Rafael Hill", on the hill adjacent to a notable AT&T comms tower that is quite visible from 101 NB passing Central San Rafael (former site of the KTIM stick, etc.).

Jan WB6SPX: John Butler thanked the club for the recent Elmer Award he received from the club. Jan regaled us with stories of how he attracted young ladies at the laundromat by knowing what to add to the wash in what order. He also reported that the bands were

busy with international traffic lately. He used his nanoVNA and built a “hula hoop” magnetic antenna and told how he dials it in, sweeping various bands to optimize the antenna. He then made contact with 9A2AJ on 14.02 MHz in Croatia calling CQ.

Doug KF6AKU related a story about an operator with modest power making contact with a station in AU from the McCloud River (but Brian didn’t capture the details as he had to turn and catch a photo of deer discovering his drought watering dish for them for the first time at his new Novato QTH.)

Providing drought watering stations for animals in need. Thanks (says the Deer)!

Bo N6DBN: At Lake Kent cabin north of Redding he set up an 80M vertical that operates with an end fed halfwave with 12V DC injection. This allows changing the nature of the antenna by operating relays on the far end with the applied voltage.

Steve KB6HOH with Ken AB6JR were working the bands and Steve made a contact with YL2SM in Latvia, his most distant contact ever.

Secretary – Communications:

Communications N/A

Treasurer's Report:

Bruce Bartel shared the following documents regarding the Treasurer's Report:

http://w6sg.net/QSA1/2021/BalanceSheet.pdf

http://w6sg.net/QSA1/2021/ProfitandLoss.pdf

Committee and other Reports:

1. Membership: 139 | 100% as of the end of FY 2020, though that doesn't mean we have the exact same roster of members, just the same quantity. We can expect to get more members for the remainder of the FY and that suggests we are growing as a club, as we have over the last 2 years.

2. Facilities: N/A

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3. Education: N/A

4. Repeaters: No progress on previously discussed projects since last meeting. Urgency of those projects is focused on clearing up long standing southern Marin coverage noise.

5. VE: Ken AB6JR: Next session will be 10/9/21. A modest 4 sign ups so far but it's early**.**

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Old Business: N/A

New Business: N/A

Good of the Order:

Bo Lamb N6DBN: Status report on the Weds night Tech Net. This net has been a bit weak in terms of participation, average 4-5 check ins, but as few as 1 in the most recent week. Bo would like the tech net taken over if someone is interested since he is about to head off to school. KB6HOH pointed out that summer is a tough time for all net participation as people are away on trips/vacations. And the night before the weekly tech net is the RACES net which may lead to some sequential evening burnout, not to mention possible the competition the tech net may face from other clubs' nets on the same evening. Curtis WA6UDS says we will add the tech net issue to the agenda for the next MARS board meeting.

Steve KB6HOH: Mentioned that in the past he brought up putting the ARRL weekly broadcast out on our simulcast system but doing so would need a timeout setting exception to do so as the ARRL broadcast runs much longer than our current system timeout. No division about this was made at this meeting.

Adjourn: 20:28

Post-agenda Presentation: N/A

Next General Meeting: September 3, 2021

Marin Amateur Radio Society Board of Directors Meeting August 12th, 2021

Call to Order 19:30 Hours (7:30 PM)

President: Curtis Ardourel WA6UDS
Secretary: Brian Cooley K6EZX
Vice President: Milt Hyams KM6ASI
Trustee W6SG: Mitch Martin WU1Q
Director/Trustee K6GWE: Doug Slusher KF6AKU
Director: Skip Fedanzo KJ6ARL
Treasurer: Bruce Bartel N6VLB
Director: Mark Klein KM6AOW

Adopt agenda: M/S/A

Approve minutes of:

8th of July meeting. Brian needs to update with some corrections from Milt KM6ASI, will submit for approval with this meeting's minutes, for combined approval at next board meeting.

Secretary's Report/Communications:

Brian K6EZX asked about our plans to move the club PO box moving to Shell Rd. with a 27A/27B address division. The board decided not to pursue this due to the difficulty that would be involved with an overlay of authorities that would have to be consulted.

Milt KM6ASI: Suggested the Secty adopt a fixed comment window for any changes to draft minutes before they are sent along the Curtis WA6UDS as final. Brian suggested a 7-day comment period, with the minutes considered final if no feedback is received by end of 7 days after each board meeting. Adopted.

Treasurer's Report:

N/A, see minutes from recent 8/6 general meeting for two financial reports that were submitted as part of that agenda.

Committee and other Reports:

Membership: 140 100%+

Education N/A

Facilities:

Skip: 443.250 repeater is now listed as Pending at NARCC for registration. Good progress.

Rob NZ67J: How do we dispose of decent gear that does not sell but has some value? Total value could be around $15,000. After discussion it was decided to guide the final silent auction and fate of all remaining surplus gear:

- Full board is asked to review the current gear list before next meeting.
- We will want to assign a reserve price to items that deserve it.
- A key selection of radios can be held back and used for a permanent display in the clubhouse per board review.
- We will try to accommodate requests by bidders to see and try the gear in person at the clubhouse.
- Sales will be via list distribution, not eBay or any other platform. Bids will not be accepted via email or other "side doors" either.
- We can take our time and may let this silent auction run as late as through PacificCon, Oct 15-17, 2021.
- All sales of any gear will be as-is and final.
- We will bake in a copy of these terms on any inventory sheets that we distribute to facilitate the silent auction bids. That way any form of the sheet that is shared carries the above terms within it to avoid confusion.

Bruce N6VLB reports that we are $400 shy on total Paypal receipts from the first phase of the silent auction compared to a total of $940 in successful bids. Rob NZ6J will contact Bo W6DBN to see about closing his final winning bid payments.

Curtis WA6UDS: New County policy states that property owners are responsible for drainage maintenance on their lot. The letter stating this is generic and does not insinuate that we have a problem that needs to be addressed. *(See letter in addenda at bottom and informational flyer here.).* Skip KJ6ARL says our back fence may erode into a drainage culvert behind the property. Milt KM6ASI was told that the back area has drainage that runs across Shell Rd., in an underground culvert that opens up just before the van tent area on the W. side. A cement lined ditch in that area along the W. property line, approx. 75-80 linear feet. Milt quoted county code that states it is our responsibility to keep clear any creek that passes through the property, if any "unnatural" material should impede its flow. Skip KJ6ARL: He and Rob NZ6J will inspect this part of our property again and report back as to its condition with this new policy in mind.

Public Service:

MCBC Dirt Fondo is coming up, prep net was held just prior to this board meeting.

Technical:

Doug KF6AKU reported that the Tam West repeater has been fixed and Milt KM6ASI reminded us that the new 442.275 repeater on San Rafael Hill is on the air. In general, Dan Dufficy-inherited gear is being deployed with shared responsibility for installation and operation, not strictly as MARS' responsibility. Aligned groups like the Marin Emergency Communications Unit (Dan Healy, trustee) which has a strong overlay of MARS members is one example of such overlaid operational duty. This policy has been adopted to spread around the overhead involved so as not to overextend MARS manpower available.

Old Business:

- **Tower**: Milt KM6ASI recapped a previous email thread about major snags encountered with the permit for the new tower (fee cost and permit denial - see county correspondence pasted at end of these minutes for recap.) Andrew LeBlanc will try to intercede at the county level to see if he can move this application out of Development & Planning, where we believe it is receiving unwarranted and excessive

scrutiny. Milt says the county needs to understand that our tower project is basically a clean-up effort of an existing antenna, not construction of a new "radio station" as county admins have come to see it. *(Note: The MARS clubhouse on 27 Shell is in a pocket of county jurisdiction, not within the City of Mill Valley).*

- **Ward Peak** N/A

- **MARS and VOAD**: Skip KJ6ARL summarized recent RCV comms tests and meetings, including a confab between RCV ops and reps from the CBOs they will serve held recently at 1600 Los Gamos. Skip is still looking for a lot more volunteers beyond the 15-16 that we have signed up for RCV so far. Curtis suggests we promote RCV membership during the next MARS general meeting to help build its ranks. Curtis and Skip will discuss how to do that before next meeting.

- **Life membership** N/A

- **Frequency coordination**: We are now pending formal coordination registration of our 146.700 simulcast system with NARCC unless something unusual crops up in the form of an objection. 443.250 machine NARCC registration is pending as well (as mentioned above.)

- **Sale of catalogued equipment**. (Covered above in **Facilities**.)

- **Public Service Luncheon** came to a total of $1,280 for food, which is already paid. The question now is that of a tip for the caterer. Curtis noted that the food was dropped off and the caterer left, but that we should still tip for as a show of appreciation for the long-term relationship and to offer support for the business during COVID. It was M/S/A unanimously that we send a tip of 20% *(approx. $256?*) to the catering company.

- **In person meetings**: Last meeting we adopted a hybrid meeting plan, but since then Delta COVID variant has escalated. As of this date, board members agree that we should retreat to a Zoom-only format for meetings for at least one more General meeting (September meeting) before we consider once again moving to a hybrid meeting plan. Will reevaluate prospects for that during the September board meeting.

New Business:

- **Hybrid meetings technical plan** was offered previously by Brian K6EZX:
- Camera/Phone
- Tripod and phone clip
- Laptop
- Projector
- Mics

Brian will submit a formal list of the above gear for formal consideration at next board meeting.

- **Drainage**. Covered above in **Facilities**.

- **Tech Net**: Bo Lamb W6DBN is off to college so the Weds evening tech net he started and hosted is in limbo. Its attendance has been variable and sometimes very low. Steve KB6HOH agreed with a suggestion that we could roll tech net into the weekly Sunday net, a time when we already have a lot of hams gathered in one place without putting another net on their calendar. Board agreed that this should be pursued and Steve will pilot doing so either during or right after the weekly Sunday VHF net. Will start by announcing during this weekend's (8/15) VHF net that this plan is underway and develop a format for it. The first tech net integrated into Sunday's net could take place as soon as the following Sunday morning (8/22). As part of this change it was agreed that we will move the time of the Sunday VHF net up to 10am from its current 10:15 after giving operators a couple of weeks of on-air notice, meaning this new start time would be adopted as off you have any questions, comments, or requests please do not hesitate to contact James or myself by email or on slack channel #sfmarathon.
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- Kind Regards
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- Antonis, AA6PP (antonis@aa6pp.org)
- James KM6ASJ (egon@egon.cc)
- Event Organizers
- he first Sunday in September (9/5/21).

Good of the Order N/A

Executive Session N/A

Adjourn M/S/A

Next Regular Meeting 3 September 2021

Next Board Meeting 9 September 2021

Questions and Answers

This section of our publication is dedicated to any questions you have. If there is something you need or a problem you cannot solve, this is the place to seek assistance. Who provides the answers? Readers of the QSA-5 publication do! This month's question comes from me, the editor of the QSA-5, I am sure some of our newer members could use help in this department as well:

Greetings and salutations! I am trying to find a used HF Transceiver. The Covid-19 Pandemic financially crushed my quest to purchase a new rig. Of course, I'm trying to find an inexpensive HF receiver, which seems to be a pipe dream at best. However, I have seen rigs being sold on E-Bay that seem to be too good to be true, pricewise. My question is this: Where is the best place to look for a used HF rig. My concern with E-Bay is that you are essentially sending money to someone you don't know, based on a photograph of a radio that may or may not be what actually arrives on your doorstep when all is said and done. Any suggestions for a super-broke radio guy?

Marin Amateur Radio Society News

Winlink & Amateur Radio During Race Events

This is an interesting piece about the use of WinLink during race events, brought to us by Bruce N6VLB. Bruce added that he would like to see more of this in the QSA-5 newsletter so, with that said, we will be happy to add Winlink related articles in this

publication's pages. Here is a quote Bruce sent us regarding the practical use of WinLink. The quote comes from Ken Grous NB6S:

"I volunteer at a good deal of endurance runs and riding events each year in some pretty remote locations (just back from Big Bear, heading to Ashland in a couple of weeks) - most of which have no cell service."

The following is an example of Winlink's value in emergency communications: *"I set up a radio station out at Last Chance during The Tevis Cup last month (not even a glimmer of cell service there). I heard over the radio from another station about an injured horse still 20 miles back up the course (torn ligaments requiring transportation to a large animal hospital). The head veterinarian for the event was in our station, so I brought him over to our radio to listen in / provide support. He and the on-scene vet could consult about the injury via radio."*

"After their conversation on the radio, our vet was mentioning he sure wished he could give the hospital a heads-up on the injury. We then used a piece of software called Winlink to send a detailed email to the hospital - the physician could write it up using medical terms to describe the injury, recommended protocol, we re-read it to him a couple of times to make sure everything was accurate then used our radio to send the message as email to the hospital. This allowed them to know about the case before the trailer arrived."

"A few hours later we needed an additional trailer to transport a horse not able to continue so used voice radio for that… then finally, on the drive out my partner was behind a large pickup towing a trailer with three horses and the pickup lost his brakes out on Mosquito Ridge Rd - another zero-cell service area."

"My partner pulled over, set up his radio and was able to arrange for a replacement vehicle plus a tow for the pickup… and those actions weren't even why we were out there! … fun stuff to be able to help in meaningful ways…"

NB6S, Ken Grouse (contact Ken if further info desired).

Upcoming Licensing Test Session

Our Volunteer Examiner Team, led by Ken AB6JR will be holding another testing session for individuals wishing to get their first amateur radio license or upgrade their current license. The testing session will be held on October 9th, 2021, at 1:00 pm. The event will take place at our clubhouse, 27 Shell Rd, Mill Valley, CA 94941. As of the August General Membership Meeting, there we four people who had signed up. However, that number is expected to grow as the examination date nears. Ken hopes to be able to do the session indoors. If you know anyone interested in getting their amateur radio license or upgrading their existing license, let them know about our VE session. Make sure to tell anyone considering taking their Technician's test for the first time that they need to acquire an FCC FRN from the FCC site. Here's a link to the FCC website page for doing that:

https://apps.fcc.gov/coresWeb/publicHome.do

SFRC needs our help with the San Francisco Marathon

This comes to us from our club President, Curtis Ardourel WA6UDS, regarding the San Francisco Marathon The Marathon, a popular and nationally known race, takes place on Sunday, September 19th, 2021:

The San Francisco Radio Club has been invited back to manage the Communications Team for the San Francisco Marathon. This is the biggest event for the club this year and we need your participation!

All operators, experienced or not, can participate. This is a great opportunity to put your skills to work, learn by shadowing an experienced operator and have fun! This is all about helping the community for a few hours, preparing for the unexpected and building on the reputation of our club.

The event takes place mainly in the city and spans over the Golden Gate Bridge for a few miles this year. Parking and access should not be a problem for the most part. We are looking for operators to man the 18 water stations, 6 SAG vehicles, our NET operation station as well as a sweep (ideally on a bike).

We will be using our main VHF W6PW Sutro repeater for this event. Frequencies and backup repeaters are listed in the registration page.

We appreciate and thank you for your participation as a member of the San Francisco Radio Club Communications Team. Your generosity and skills are valued contributions towards the success of these events and are noted and appreciated by the event organizers and medical personnel, whom we partner with each year.

For more information and to register to operate in this event, see the following page

https://w6sg.us20.list-manage.com/track/click?u=99a8a0b4b26b27597c9897c9f&id=9cac7acc5e&e=b1be920436

If you have any questions, comments, or requests please do not hesitate to contact James or myself (The Event Organizers) by email or on slack channel #sfmarathon.

Kind Regards

Antonis, AA6PP (antonis@aa6pp.org)
James KM6ASJ (egon@egon.cc)
Event Organizers

Help Extend the SF Emergency Wireless Emergency MESH

Because the San Francisco Emergency Wireless Emergency MESH is such an important project, we are reposting last month's piece on it.

From Rob Rowlands: We have about 6 nodes working in Marin so far and need people with property in high places to host more nodes. The mesh depends on line of site (LOS) paths between nodes interworking and while we have a great site on Wolfback ridge above Sausalito, there are multiple places we can't reach, for example the Club house! If you have access to homes or buildings with great views, we may be able to mount a node, regardless of whether you want to connect (see the following page for a picture of the node).

http://meshmap.sfwem.net/map_display.php#11/37.8586/-122.3836

This is an example of a MESH Node

All it takes is space to mount a $50 radio on a wall and connect it via ethernet cable to a power feed adapter. The radio node is about the size of a small loaf of bread and can be painted to appease your family! Call Michael Fisher (415) 519-2201 or Rob Rowlands (415) 849 5667 if you can help.

New Slack Chat Channel for MARS Members

Join our new Slack channel to chat about ham radio!

From Rob Rowlands: "Slack" is used extensively in industry and academia to network people, especially since Covid-19. MARS now has a Slack channel, "Marin Amateur Radio Society". Go to https://join.slack.com/t/marinamateurr-sq15924/shared_invite/zt-r9ocah4l-4G7Pl8LAOssMMsnfIQ8QcQ. There is also a slack channel for the San Francisco Amateur Radio club that is highly active.

Ham Radio News

Each month, QSA-5 searches the internet for stories about amateur radio in the news. As editor of our publication, I merely present these articles and do not take a position regarding their message or content. Our first story comes from the Indiana Gazette regarding a Ham Radio club's celebration of 80 years of emergency communications service:

Pittsburgh amateur radio group celebrates 80 years of providing emergency communications during disasters:

https://www.indianagazette.com/leisure/pittsburgh-amateur-radio-group-celebrates-80-years-of-providing-emergency-communications-during-disasters/article_0ae75d7c-f796-5721-92e4-9150f108a1b2.html

This next piece is both bizarre and interesting. Apparently, a woman s trying to have "ham radio" banned because she claims that it interferes with her insulin pump. I know this might appear to be something more suited to a tabloid publication, but it made the local nightly news. This comes from WFTA Action News in Florida:

Woman fights to have ham radio operations banned after potential interference with insulin pump

https://www.wftv.com/news/9investigates/woman-fights-have-ham-operations-banned-after-potential-interference-with-insulin-pump/GA5IHWEQGFA7XHLOLPQDVEZGCQ/

Our final story comes from our neck of the woods, Northern California, regarding Amateur Radio operators helping family members find one another in wildfire stricken areas:

Ham Radio Operators Helping Family Members Locate Caldor Fire Evacuees

https://sacramento.cbslocal.com/video/5908770-ham-radio-operators-helping-family-members-locate-caldor-fire-evacuees/

FCC Regulatory News

Here are the current regulatory changes and FCC news as it applies to Amateur Radio. This section of the QSA-5 newsletter was introduced earlier this year. We will add new regulations and rules monthly, removing the older regulations and rules as new regulations/rules are introduced. As of the August issue of the QSA-5 newsletter, this list of FCC regulations and changes will be reduced, only covering this year's new regulations and rules. The newest regulations and changes will appear at the top of the list. Note that we are not able to cover every change the FCC has made this year within our publication:

FCC Application Fees Unlikely to Go into Effect Until 2022:
Last year, the FCC announced that they would be increasing the cost of Amateur Radio licenses. It as drawn both criticism and support from radio operators across the United States. Here's a link to the ARRL reporting on the increase.

http://www.arrl.org/news/fcc-application-fees-unlikely-to-go-into-effect-until-2022

FCC to Re-Establish Technological Advisory Council, Solicits Membership Nominations:
The FCC is seeking nominations for a chairperson and members of the Technological Advisory Council (TAC). Here is a link to the ARRL article.

http://www.arrl.org/news/fcc-to-re-establish-technological-advisory-council-solicits-membership-nominations

FCC Investigating Alleged "Jamming" on 40 Meters:
Amateur radio operators have reported that there is some sort of signal jamming on the 40-meter band. Here is an article from the ARRL that covers the story in greater detail.

https://www.arrl.org/news/fcc-investigating-alleged-jamming-on-40-meters

FCC Reaffirms Nearly $3 Million Fine for Marketing Unauthorized Drone Transmitters: While not directly related to amateur radio, this article from the ARRL reminds us that manufacturers of any device that uses a radio frequency based control or communication system is regulated.

https://www.arrl.org/news/fcc-reaffirms-nearly-3-million-fine-for-marketing-unauthorized-drone-transmitters

FCC Seeks Comment on Potential Impact of Global Semiconductor Shortage:
This is an important read for anyone that is involved in electronics, or anyone who owns or is considering the purchase of "smart" electronic devices. There is a global semiconductor shortage, and the FCC is asking for commentary regarding this potentially serious problem:

http://www.arrl.org/news/fcc-seeks-comment-on-potential-impact-of-global-semiconductor-shortage

FCC Seeks Comments in Proceeding Involving 70 and 5 Centimeters:
This article from the ARRL was published on June 24th, 2021. The gist of the article is this: The FCC is soliciting a second round of comments regarding the use of portions of the 70cm and 5cm bands for commercial space entities. Here's a link to the full article:'

http://www.arrl.org/news/fcc-seeks-comments-in-proceeding-involving-70-and-5-centimeters

First-Time Exam Applicants Must Obtain FCC Registration Number before Taking Examination:
As of May 20th, 2021, the FCC now requires that all examination applicants must provide an FCC Registration Number or FRN to the Volunteer Examiners at the testing site before taking the actual examination. Here's link to an ARRL article regarding this rule change:

http://www.arrl.org/news/first-time-exam-applicants-must-obtain-fcc-registration-number-before-taking-exam

FCC Issues Enforcement Advisory: Radio Users Reminded Not to Use Radios in Crimes:
If you have an amateur radio license, then you most likely received an email from the FCC regarding this issue. As the editor of QSA-5, I am bound to present information to you in an unbiased manner and offer no opinion on the subject matter, leaving that to you, the reader. However, you can find some interesting video responses from Amateur radio operators on YouTube by searching under the heading "FCC Enforcement Advisory". Here is a link to the ARRL article regarding the advisory notice, which was sent to licensed radio operators twice this year:

http://www.arrl.org/news/fcc-issues-enforcement-advisory-radio-users-reminded-not-to-use-radios-in-crimes

Updated Radio Frequency Exposure Rules Become Effective on May 3, 2021:
Rule changes have been put into effect (based on a 2019 report) on May 3rd, 2021, regarding RF Standards. The new rules do not change the existing RF exposure (RFE) limits. However, the changes do require that stations in all services, including amateur radio, be evaluated against existing limits, unless they are exempt. Here is a link to the ARRL article:

http://www.arrl.org/news/updated-radio-frequency-exposure-rules-become-effective-on-may-3

FCC Not Yet Collecting $35 Application Fee:
In 2020, the FCC stated that it would be increasing licensing fees. Initially, a fee of $50.00 was set for each license and any license renewals. However, that number was brought down to $35.00. Here is the latest news regarding the implementation of this new fee from the ARRL:

http://www.arrl.org/news/fcc-not-yet-collecting-35-application-fee

Propagation News

Here are some links dedicated to propagation conditions, space weather, sunspot cycle information and all things related to solar conditions:

DX.QSI Propagation:

A simple, straightforward website for propagation conditions that is regularly updated:

https://dx.qsl.net/propagation/

Radio Society of Great Britain: What's New and Propagation Now:

A great resource from the UK version of the ARRL regarding solar activity and propagation:

https://rsgb.org/main/technical/propagation/whats-new-propagation-now/

SunSpotWatch.com:

A good general interest site for amateur radio operators who follow solar activity:

http://sunspotwatch.com/

ARRL:

Here is an update from the ARRL regarding solar flare activity. The article appeared on May 25th, 2021: Weekend Solar Flare Frenzy Could Spark Geomagnetic Storms:

http://www.arrl.org/news/weekend-solar-flare-frenzy-could-spark-geomagnetic-storms

DIY Radio References

We have added a few additional links to our list and will continue to do so as we discover more websites related to the Do-It-Yourself movement! QSA-5 is going to keep adding to the original list of online resources, bringing you more resources as we find them. If there is anything you think would be useful to other club members, contact me and I will be happy to include it in this reference section.

Microcontrollers and Single Board Computers: With the advent of the Arduino micro-controller board, the Raspberry Pi (a single board minicomputer) and Texas Instrument's Launchpad (also a single board microcontroller), Amateur Radio

enthusiasts can build both accessories, such as antenna tuners, and fully functioning transceivers. I have spent the last year at the University of California studying these devices, learning how to use them and incorporate them into electronic projects. I was able to build two HF receivers based on the Arduino and Raspberry Pi devices. The best news of all is that these devices are inexpemsive! I encourage you to check these websites out!

Arduino: The Arduino microcontroller board was the first to popularize these devices. They are inexpensive and can be used for a variety of radio related projects. I will include some links to radio related Arduino projects in the next issue of the QSA-5. Here's a link to the Arduino homepage:

https://www.arduino.cc/

Raspberry Pi: Did you every wish you could have a PC small enough to fit into your shirt pocket? Your dream has come true. The Raspberry Pi 4 is a fully functional Quadcore 1.6 GHz computer, about the size of a package of playing cards. It has an Ethernet jack, two USB 2 ports, two USB 3 ports and two HDMI ports. Next month, I'll post some links to radio related Raspberry Pi projects. Here's a link to their homepage.

https://www.raspberrypi.org/

Texas Instruments TI Launchpad: The Launchpad is Texas Instruments answer to the Arduino. The Launchpad is geared more towards advanced projects and is slightly more expensive. However, the Arduino still holds it own against this device. The Arduino also has more in the way of opensource software. Here is a link to the TI Launchpad homepage.

https://www.ti.com/design-resources/embedded-development/hardware-kits-boards.html

Tools for electronics: It is a lot easier to build or repair your electronics if you have the right tool. Paperclips and duct tape are not the solution to everything (unless you are McGyver – hopefully, you got the reference). Therefore, we added some links to suppliers of electronics tools.

All Electronics: A one stop electronics shop that has a variety of tools for your repair and building needs:

https://www.allelectronics.com/category/780/tools-and-supplies/1.html

Jameco Electronics: A supplier of decent tools at a reasonable price:

https://www.jameco.com/Jameco/content/tools.html

Electronic Printed Circuit Boards (PCB): If you design and build projects that require specific circuit boards, you know how difficult it is to find a board that will work for your purposes. Designing a board and then having it made can be expensive. Here is a company that has a large number of radio PCBs you can purchase and then add components to. They also can take your design and fabricate a PCB at a very reasonable cost. The company's name is **PCBway**:

https://www.pcbway.com/project/

Electronic Components and Parts: Many of us involved in amateur radio are constantly tinkering with electronics. It seems to be part of our genetic makeup! Here are some links to companies that sell electronic components and parts, starting with San Rafael's own Electronics Plus (Support local business).

Electronics Plus: It's great to have an electronics store close by for those times when you need a part immediately:

https://www.electronicplus.com/

Digikey: A good source for DIY and Maker projects as well as parts. They claim to have the world's largest selection of electronic components.

https://www.digikey.com/

Jameco: This company is a good source for almost everything, especially mainstay items such as resistors, capacitors, etc.

https://www.jameco.com/

Homemade Antennas: Many new ham radio enthusiasts put a great deal of time and effort into researching their first radio. However, they often neglect the most important component to a successful radio experience, the antenna. Even if you have some ham radio experience, antennas can be a daunting subject. Commercially manufactured antennas can be expensive and beyond your budget during these hard financial times. Even if you have the funds available to purchase an antenna, reading through the antenna's specs can be akin to reading some long lost ancient language. A good solution for increasing your knowledge of antennas and radio wave propagation, not to mention cutting the costs down, is to build them yourself. Here are some links to DIY (do it yourself) sites to give you a start:

Antenna building basics:

https://www.wikihow.com/Build-Several-Easy-Antennas-for-Amateur-Radio

Good Reference for several antenna types:

https://www.hamradiosecrets.com/homemade-ham-radio-antennas.html
A step-by-step guide for building a simple antenna:

https://geardiary.com/2012/07/21/building-a-simple-ham-radio-antenna-without-soldering/

Instructions for a VHF/UHF dual band antenna:

https://www.instructables.com/Quarter-Wave-Dual-Band-VHFUHF-Ham-Radio-Antenna/

Build an HF dipole antenna:

https://www.electronics-notes.com/articles/antennas-propagation/dipole-antenna/hf-ham-band-dipole-construction-80-40-20-15-10-meters.php

Introduction to antennas:

https://www.onallbands.com/ham-radio-antenna-options-for-home-and-portable-operations/

Ham Radio QRP Transceiver Kits: With the advent of SDR (Software Defined Radio), building fully functioning ham radios has become a lot easier and extremely inexpensive. While, having fewer bells and whistles, as well as being low power units, many have fully functional touchscreens and cover many of the HF bands:

An easy to build QRP transceiver. No soldering needed to build:

https://www.hfsignals.com/

An easy to build, single band CW kit:

https://qrp-labs.com/

Offering several kits and finished transceivers:

https://youkits.com/

Propagation Websites: Propagation is a key factor in successful radio communications. Here are some links to websites that will help you with all your basic propagation needs:

Real time band conditions:

https://qrznow.com/real-time-band-conditions/

VOACAP band conditions:

https://www.voacap.com/hf/
ARRL Propagation Page:

http://www.arrl.org/propagation

Real Time HF Propagation Prediction:

https://hamwaves.com/propagation/en/index.html

Ham Radio Websites of general interest:

Ham Radio News: Here are some sites and articles you may find of interest regarding ham radio.

ARRL News Page, which is a good place to find national news regarding ham radio:

http://www.arrl.org/news

QRZ Now. Another good site for ham radio news from around the globe:

https://qrznow.com/

The Amateur Radio Newsline. An AP styled news feel page for amateur radio:

https://www.arnewsline.org/

Fun With Radio

Evey use a magnetic loop antenna? A magnetic loop antenna is a loop of copper or other radio friendly metal wire mounted on a frame (for air-core loops) or around ferromagnetic material (for ferrite loops). The magnetic loop antenna is sensitive to the magnetic field and not the electric field. It outputs a voltage proportional to that field. This type of antenna is referred to as ‘Magnetic' because it picks up the magnetic end of an electromagnetic field, unlike the usual antennas used for Amateur Radio, such as dipoles, yagi, and vertical antennas. Antennas such as dipoles, yagi and vertical antennas only respond to the electrical end of the electromagnetic field.

One of the great advantages of magnetic antennas is that they can be small or large. This is extremely useful for radio operators who have a small space in which to work. You don’t have to worry about radials or other counterweights because the radiation is largely independent of the distance of the antenna to the ground. However, you do want to keep your magnetic loop antenna somewhat above the surface of the ground. They range in price from inexpensive to expensive. I purchased a small magnetic loop antenna for about $50.00 and have seen large models priced just below $1,000.00 (and all points in between). Pricewise, there’s a loop antenna to fit anyone’s budget.

Regarding resonance frequency, magnetic antennas are somewhat narrow-banded. As with any antenna, there are pros and cons to consider. One advantage is that few harmonics are radiated. However, smaller loop antennas have poor efficiency and hence are mainly used as receiving antennas at lower frequencies. There is also some power loss as heat due to flow of current with high levels.

Again, with all antennas, there are pros and cons, which may explain why many of us have multiple antennas protruding from our rooftops. I use a magnetic loop antenna for my homebrew, DIY Arduino HF receiver and it works wonderfully. Here are some links for further information:

The Wiki Page About Loop Antennas:

https://en.wikipedia.org/wiki/Loop_antenna

Homebrew Magnetic Loop Antennas:

https://m0ukd.com/homebrew/antennas/magnetic-loop-antennas/