



SIGNAL

A club since 1992



Since 1993



Since 1996

de N1NC

December 2021

Volume 30 Number 12

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NVARC Monthly Meetings

NVARC general meetings are scheduled for the third Thursday of the month at 2430 UTC (7:30pm, Eastern Time). Meetings are held at the Pepperell Community center.

This Month's Meeting

The December NVARC meeting will consist of our annual "Homebrew Night": an in-person meetup where in you can show off the fruits of your radio labors over the past year.

Note that the meeting will be filmed, but not live-streamed via Zoom.

Come on down and show the club what you've been up to!

Next Month's Meeting

The January NVARC meeting will consist of Member's Short Subjects. Members are invited to share 10-15 minute presentations of radio-related topics with the club.

The President's Corner

de Bruce, K1BG

December is upon us, and it seems like everybody is getting ready for the holidays.

But before going there, I want to congratulate NVARC on being recognized by the ARRL W1

QSL bureau for 25 years of service to the QSL card sort effort.

Next to Field Day, this is perhaps the longest running activity in which the club participates, and I hope that NVARC continues to support the bureau for many years to come.



The plaque is well deserved. I have no idea how many cards have been sorted over the 25 years, but if we average 25K cards per year, that's half a million cards! Wow...



NVARC's social media presence continues to develop and expand. Both the club's Facebook page created by George, KB1HFT, and myself, K1BG;

and the YouTube page, managed by Jim, N9VIM, show activity and increased levels of interest. Outstanding!

If you are active on either of these platforms, please have a look at the pages and click the “Follow” and “Like” buttons when you see them.



The ARRL Ten Meter Contest is coming up this weekend, and NVARC members who are participating are being asked to designate NVARC as their Affiliated Club when submitting their score.

It's a fun operating activity. With increased solar activity, it's likely that ten meters will be open for some good DX.

If you are new to amateur radio or ten meters, many club members are eager to help get YOU on the air.

If you have any questions regarding operating, logging, rules, software, antennas, equipment, etc., feel free to contact me or ask on the club email reflector. NVARC@n1nc.org.



The topic for the December meeting is traditionally “Home Brew Night”. This is part social gathering and part showing-off. Note that this meeting will NOT be “Zoom-ed”. Ya gotta show up!

A lot of time is available to converse with fellow attendees in the holiday spirit.

Members and guests alike show off their “home brewed” items.

In the past, these have not necessarily all been items related to amateur radio! Feel free to bring anything that is not a stock, off the shelf, item.

Built from scratch, modified, re-worked and repaired all qualify! Software programs (that you wrote) and kits! Share with us what you have been doing in your spare time.



As I mentioned at the beginning of this column, the holidays are now fast upon us. It's a time to relax and spend time with family and friends. It's a time to reflect on the past year and think about the coming one. It's time to make time to get on the air.

This past year has been tremendously challenging for so many of us in so many ways, but I'm always

optimistic for the future, and 2022 is no exception. Enjoy the Holidays! Have a Merry Christmas and a Happy New Year!

-de Bruce, K1BG

Homebrew Night – A Week Early de Skip, K1NKR

I'm not expecting to make HB Night, so I thought I'd share my most recent project.

There's a HamSCI experiment running from 1 to 10 December and the use of receivers supported by GPS disciplined oscillators is strongly desired.

Years ago, I bought a GPSDO kit and it's been languishing on the “to be worried about later” pile in the workshop ever since. What better reason to get my “stuff” in gear?

The kit, from the Mt Airy VHF Radio Club (<https://www.packratvhf.com/index.php/technical-articles/160-gps-receiver-project>), consists of a surplus GPS receiver board which contains a precision 10MHz reference and an Arduino to control it.

It even includes the parts for the internal 15- to 10-volt power conditioner and the switch de-bounce circuit. The only thing not included is an enclosure, a 15VDC supply, and an antenna.

Surprisingly, I found a wall-wart with that output in my junk box!!

Construction of the GPSDO consisted mainly of mounting the receiver and Arduino, and point-to-point wiring their connections.

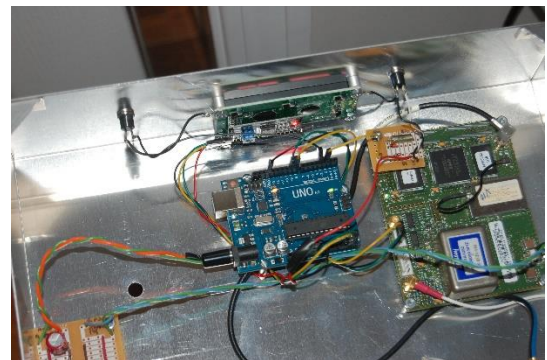


Figure 1

Building the power conditioner (the receiver wants a supply over 13V and the Arduino prefers 10V or less) was just a matter of soldering a mix of leaded and SMD parts onto a small piece of PC board.

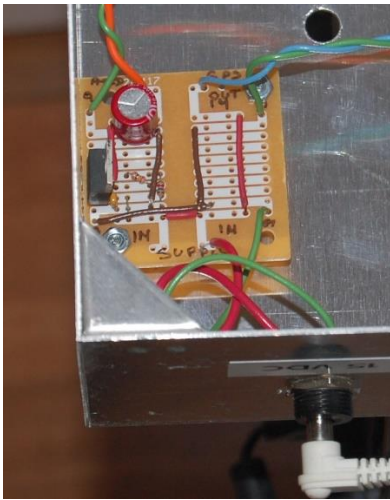


Figure 2

At first the power conditioner didn't work.

I quickly discovered a shorted SMD capacitor at the output side of the LM317 regulator. Junk box time! All fixed with a leaded electrolytic.

I got an amplified GPS antenna from Greg, WY1X.

Lots of GPS receivers detect the presence of an antenna by sensing the current drawn by the pre-amplifier. Older ones expect upwards of 60mA but newer antennas only draw about 10mA, so I put a 3dB attenuator on the antenna input port and the receiver was happy with the increased load.

The big challenge was in loading the hex file software. Having read the instructions repeatedly at the start of the project, I proceeded to ignore them.

Remembering what little I learned during the first few meetings of the club's Arduino Group, I tried repeatedly to load using the Arduino environment on my laptop.

A quick query to the group resulted in George, KB1HFT's, advice to re-RTFM.

Voila, using a program called XLoad (like the instructions said) made everything work!

I had no specifications regarding the receiver's 10MHz signal output level—and I wanted to see the pretty picture—so out came the trusty oscilloscope.

It looked good but I wasn't comfortable with the level. I didn't want to start out by naively frying the station receiver I was going to use, so I grabbed a 3dB attenuator from the junk box, put it in line with the output, and hooked it up to the reference input of my old Flex-5000.

I (or it) became a HamSCI data-taker!



Figure 3

So, it all works FB!

As of this writing, I've monitored the signal from CHU, the Canadian time and frequency station, and collected five continuous days of every-second data.

-de Skip, K1NKR

NVARC YouTube Channel Content Needed!

If anyone has old (or new) Ham Radio related videos or electronic projects, and would like to have them edited and put on our YouTube channel, please contact Jim, N8VIM.

The History of Entry-Level Licensing Part 3 de Bruce, K1BG

Last month I talked about the history of entry level licensing from the 1930's and into the late 1940's. This month I'll cover what I consider to be the most momentous event in the history of entry level licensing – the creation of the Novice class license.

At the end of the Second World War, the country was changing. Besides the need for skilled radio engineers and technicians, the new field of television was rapidly developing. Meanwhile, the average age of an amateur operator was on the increase, now being almost 34 years old¹.

In April 1949, the FCC released a Notice of Proposed Rule Making, NPRM-9295. The notice pro-

¹ <https://worldradiohistory.com/Archive-Radio-News/40s/Radio-News-1948-09-R.pdf>, page 8

posed a number of sweeping changes to amateur radio, including:

- A statement on the “Basis and Purpose” for Amateur Radio
- The Amateur Extra License
- The Advanced Class License (replacing the old class A)
- Changing the names of the Class B (to General Class) and Class C (to Conditional Class)
- Creation of both the Novice and Technician Class licenses

For details, please refer to the June 1949 issue of QST².

Amongst these proposals was a new class of license: The Novice Class. The NPRM specifically said the following: “Paragraph 7(c): Creation of initial interest on the part of the novice, particularly youth, through the establishment of a short term, non-renewable beginner’s license of comparatively easy attainment.”

Apparently, the ARRL Board of Directors was completely against all of the proposals³. “Thus, the positions of the League, representing amateur radio operators, is established as opposing the ‘overall plan or blueprint for the immediate and long-range development of the amateur radio service.’ The Board noted that it was in agreement with the Commission’s desire that amateur radio continue its growth and development, but felt strongly this would not be achieved satisfactorily by enactment of regulations that are so obviously unpopular.”

The proposals were quite controversial. Besides the ARRL, other amateur groups were organizing to challenge the ARRL’s position before the FCC. The FCC organized an “informal conference” that was held on October 10th and 11th 1949 to discuss these proposals with these amateur groups.

The ARRL board of directors held their own strategy meeting on October 8th. The league’s first position paper opposed the creation of the Novice License due to a “lower quality of amateurs as a result of lowered requirements”. Apparently,

² <https://worldradiohistory.com/Archive-DX/QST/40s/QST-1949-06.pdf>, page 20

³ <https://worldradiohistory.com/Archive-DX/QST/40s/QST-1949-07.pdf>, page 26

ARRL President George Bailey, W2KH, changed the boards mind during the strategy meeting.

The revised position paper stated “...while not in favor of lowering the standards for amateurs, (the league) believes that the encouragement offered by the terms of the suggested Novice Class license will afford an opportunity for greater numbers of young people to enter amateur radio...”

In 2021 vernacular, the league opposed “dumbing down” the hobby!

While the vernacular may have changed, attitudes have not changed much in the last 70 years!

Thankfully, forward thinking people like W2KH prevailed. Much was written at the time about this, and it would be worthy of a movie script if more people had an interest. The most complete write-up was in the December 1949 issue of Radio News Magazine, both on their editorial page and a large article regarding the activities⁴.

In my opinion, everything happens for a reason. I believe that the “old guys” at the FCC office in 1949 remembered amateur radio being largely a “youth hobby” before World War I (a mere 30 years earlier).

Remember, to get a license at that time, you needed to know Morse code to 5 words per minute, know basic rules and regulations, and you needed to be able to describe the equipment that you intended to put on the air.

The proposed Novice license looked quite similar:

- 5 Word Per Minute Code Requirement
- Simple test – basic rules and regulations, 20 question multiple choice
- Limited Privileges
- Limited Duration (one year), non-renewable

The ARRL asked for Novices to have a distinctive callsign, to the FCC agreed.

NPRM 9295 went into effect on July 1, 1951. It led to an explosion in youth participation in Amateur Radio.

More on that, and what happened in the 1950s and 1960s in the next installment.

de Bruce, K1BG

⁴ <https://worldradiohistory.com/Archive-Radio-News/40s/Radio-News-1949-12-R.pdf>, page 8, pages 54, 55, 107.

Strays



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-tnx to Bill, K1NS



O Roar a Roar for Nora,
 Nora Alice in the Night.
 For She has seen Aurora
 Borealis burning bright.

From Songs of the Pogo © by Walt Kelly



Have **YOU** paid your NVARC Dues? See:
<http://n1nc.org/Members/Roster>
 for your renewal month.

Treasurer's Report

Income for November was \$50 in membership renewals. No expenses were paid, leaving a net income of \$50 for the month.

Current balances:

General fund	2,567.89
Community fund	\$6,628.25

As of 2 December we have 36 members who are current with their dues and 38 renewals outstanding. Renewal months are in the member list on www.n1nc.org in the Member's area; check yours on <https://www.n1nc.org/Members/Roster>.

Thank you to those of you who mail your renewals or use PayPal without a reminder.

To pay membership dues via PayPal see the instructions at <http://n1nc.org/Members/dues>.

If you are joining ARRL or renewing your membership please consider letting Ralph send in the paperwork for you. The Club will buy the stamp and will get a commission from ARRL. As a Special Service Club, the ARRL expects a majority of Club members to also be ARRL members. Contact Ralph for further information if you need it.

de Ralph, KD1SM

Board Meeting 2 November 2021

Meeting was called to order at 7:30pm

Attendees were:

Bruce, K1BG	John, K1JEB
Ralph, KD1SM	Skip, K1NKR
Jim, N8VIM	Jim, AB1WQ
George, KB1HFT	

- Treasurer's Report – One new member.
- Jim's reimbursement is on the way.
- Bruce K1BG will add new items to the Facebook page.
- Jim is adding new content to the YouTube page.
- Bruce is working on the New Ham QSL Program.
- December club meeting is Home Brew Night.
- Any project that is not a working store bought product. Can be a restoration, a kit project, software project, etc.
- Phil has some speakers lined for future meetings.
- QSL Sort was a success. Suggestion to have the smaller card sort be one sided. This prevents competing sides pushing each other's cards out.
- The card sorting boxes are now being stored at Jessica's attic.
- As for AA1VX, Bruce had nothing to report.
- The weekly 2M Net is bumping along. Harry WA1VBH volunteered last week.
- Jim N8VIM asked if the next meeting is either going to be Zoomed or in Archived video. It was decided to make a Archived Video in 4K on YouTube and not do Zoom.
- The repeater is in need of repair so the club is looking for volunteers for doing the repairs.
- Jim N8VIM is placing a notice in the Signal that he is willing to upload Member videos on YouTube.
- Saturday Breakfast at Tiny's is well attended.

- The CW Help meetings have been held on Tuesday nights.
- No New Business.
- The Transatlantic Test Week is a Week from Saturday. (Secretary's Note: The ARRL email Bulletin, "The ARRL Letter for December 2. 2021", has an article on this subject called "Two 160-Meter Events in December Give Nod to 1921 Transatlantic Tests") On the same Saturday and Sunday is the ARRL 10 Meter Contest.
- Ralph gave a heads up that the Groton Road Race has requested NVARC to help with the race.

Meeting was adjourned at 8:45pm

de John, K1JEB



**Nashoba Valley
Amateur Radio Club**
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President: Bruce Blain, K1BG
Vice President: Phil Erickson, W1PJE
Secretary: John Bielefeld, K1JEB
Treasurer: Ralph Swick, KD1SM

Board Members:

Jim Wilber, AB1WQ, 2019-2022
Skip Youngberg, K1NKR, 2020-2023
Jim Hein, N8VIM 2021-2024

Property Master: John Griswold, KK1X
Librarian: Peter Nordberg, N1ZRG
N1NC Trustee: Bruce Blain, K1BG

Join NVARC! Annual membership dues are
\$15; \$20 for a family.

NVARC general meetings are scheduled for the third Thursday of the month at 2330 UTC (7:30pm, Eastern Time). Non-members interested in attending may send an email to meetings@n1nc.org requesting the teleconference details. NVARC thanks Medtronic, Inc for providing the teleconferencing services under their employee volunteer support program for non-profit organizations.

Contact us on the N1MNX repeater.
442.900 (+), 100Hz
147.345 (+), 100 Hz
53.890 (-), 100Hz

This newsletter is published monthly. Submissions, corrections and inquiries should be directed to the newsletter editor: editor@n1nc.org.

Articles and graphics in most PC-compatible formats are OK.

Editor: George Kavanagh, KB1HFT

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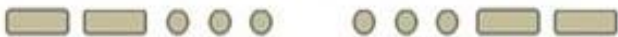
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