North Fulton Amateur Radio League NFARL eNEWS

April 2018

Over 40 Years Promoting
Service | Friendship | Education | Fun

www.nfarl.org

Final Countdown to the Georgia QSO Party

The 2018 Georgia QSO Party will begin on Saturday April 14th, with two operating periods: 1800Z Saturday (2:00 pm EDST Saturday) until 0359Z Sunday (11:59 pm EDST Saturday) and 1400Z Sunday (10:00 am EDST Sunday) to 2359Z Sunday (7:59 pm EDST Sunday).

We expect to have a record number of entries in the NFARL challenge this year, as well as lots of great stories to swap about the experiences after the contest.

Be sure to have your station prepared, software loaded, and energy drinks and snacks at the ready as you plunge into the excitement and activity of this event.

The North Fulton Amateur Radio League is operating 10 special event callsign stations to celebrate 40 plus years of amateur radio service.

N4**N** - N4**F** - N4**A** - N4**R** - N4**L**
K4**N** - K4**F** - K4**A** - K4**R** - K4**L**

Work 5 of these stations with the suffixes to spell **"NFARL"** using any mix of "N" or "K" prefixes and earn a "Worked All NFARL" certificate!

Stations may be worked in any mix of CW and SSB on any band.

Upon completion of the contest, you will need to submit your logs to the GQP by May 15. Please be sure to indicate your club affiliation with the North Fulton Amateur

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Radio League with your GQP submission.

See details and instructions for GQP log submission under the rules tab at georgiaqsoparty.org.

Also, after sending your log to the GQP, please be sure to submit your GQP data to NFARL to qualify for the special NFARL awards/ certificates. Please click on the Georgia QSO Party tab at NFARL.org for details.

Last year, club members were recognized for key accomplishments in select categories and the highly coveted NFARL GQP certificates were awarded to many operators.

Please check your logs to see if you worked all 5 suffixes of the 1x1 NFARL stations to spell "NFARL" for the certificate. Send those details to n4tol@arrl.net. So be sure to submit your scores to be eligible for a NFARL award. Most importantly, Have Fun!!! I hope to work you in the GQP.

John Tramontanis N4TOL

Favorite Urban Legends / John Kludt, K4SQC

Every hobby has its urban legends and I suspect ham radio is no different.

I'd like to start collecting and publishing some of them here in the NFARL eNews. If you have a suspected or known urban legend that accompanies our great hobby send them along to me here and I will collect and publish them. Let me know if you would like to be credited with your urban legend. Some may be off beat enough; you just as soon stay unknown!

Urban Legend: Electrical tape is great for sealing coax connectors against the weather. In pursuit of this well known fact I have used up countless rolls of electrical tape. It is so good to go back into the shack knowing that Mother Nature and specifically rain has been defeated and that expensive coax is safe, totally safe. I changed one of my satellite antennas today. The connection between the antenna and the feedline was a barrel and lots of electrical tape very neatly wrapped over the entire coupling. And of course, out poured the water when I untapped the connection! I was in a hurry when I put it up and, well, you know electrical tape makes great waterproof connections.

Not so much. It makes a great under layer for real waterproof products like coax seal. But beyond that electrical tape is not really so great a weatherproofing material.

What's your Amateur Radio Urban Legend? Drop a line and let's all share in your adventures in Amateur Radio "knowledge."

NFARL Upcoming Events and Dates

- **Every Sunday — NFARES net** - 8:30 PM - 147.06 MHz (+) PL 100
  All licensed Hams are welcome, you do not need to be an ARES member!

- **Every Monday — Tech Talk** - 8:30 PM - 145.47 MHz (-) PL 100
  NFARL's flagship technical based "non check-in" net. The net is always better when using the web based chat room but Internet is not required to join the net. Check NFARL Nets website for more information and "how to".

- **Every Wednesday — Hungry Hams Lunch Bunch** - 11:15 AM
  Meet with your fellow club members every Wednesday!
  Slope's BBQ, 34 East Crossville Road, Roswell.

- **Every Thursday — YL OP Net –** 8:00 PM - 9:30 PM 145.47 MHz (-) PL 100
  Check NFARL Nets website for "how to."
  OM's (guys) are welcome to listen in to this YL net.
  Great opportunity to get your YL's on the radio!

- **Every Saturday — Royal Order of the Olde Geezers (ROOG) Lodge No. 1**
  9:00 AM - Reveille Café, 2960 Shallowford Road, Marietta (at Sandy Plains and Shallowford). Everyone is welcome: You don't have to be "old" or a "geezer" to join this breakfast get-together.

- **Second Saturday – VE Testing** - 10:00 AM
  NFARL provides Amateur (Ham) Radio test sessions on the second Saturday of each month - Walk-ins are welcome, no appointment is necessary. All exam modules are offered at all sessions.
  Location: Alpharetta Adult Activity Center at North Park
  13450 Cogburn Road, Alpharetta, GA 30004
  Please check our website for more information.

- **Second Tuesday — NFARES Meeting** - 7:00 PM - 9:00 PM
  Fellowship Bible Church, 480 W. Crossville Road, Roswell.
  Check NFARES.org for more information.

- **Third Tuesday — NFARL Club Meeting** - **April 17, 2018**, 7:30 PM.
  Pre-meeting activities begin at 7:00PM.
  Location: Alpharetta Adult Activity Center at North Park
  13450 Cogburn Road, Alpharetta, GA 30004
  Programs: 13 Colonies Contest 2018 - Nathan K4NHW
  Mill Springs ARISS Contact - Jim W4QO, John K4SQC plus others

- **Fourth Tuesday – NFARL Executive Team Meeting**
  April 24, 2018, 7:00 PM
  Location: Arbor Terrace at Crabapple
  12200 Crabapple Road, Alpharetta, GA 30004
  Meetings are open to all NFARL members. Space is available on a first arrival basis. Please contact the President to ensure available space.

Radio Island Activation / Terry, W4YBV

On Thursday March 22nd I activated Radio Island, N.C.

As everyone knows the bands have been terrible so this year I stayed on 40 meters most of the day. My island rig was my FT 450 with a 40 meter dipole.

I made 68 contacts in 18 states and Canada. I would like to thank club members Grant KK4PCR, Jeff N1KDO, Jim N4SEC, Jim W4JDS, Lori K4UPI, Daryl K4RGK and Mike AD4MC for helping make my island event a success.

I tried something new this trip by putting my call sign banner up in my dipole to show off my station.

Radio Island was first qualified by Bill Wetherill Jr., N2WG on October 25, 1997 for the US Islands program. Radio Island first got it's name back in 1947 when the Carteret Broadcasting Co. constructed a 280 ft. AM radio tower and WMBL went on the air on 740 AM. In the mid 1970s the station went off the air and the tower cane down. Today the only acknowledgement of the station is a flag that flies in front of Snug Harbor cottages.

Terry W4YBV

Terry - W4YBV

One Hams' Story / Marvin Moss, W4UXJ

I am one of NFARL's long-time supporters even though I live in West Cobb, almost in Paulding county, and thus do not get to many meetings.

I have been a ham for 67 years and am still somewhat active. Mostly on 2 meters but some on HF. Got my novice license WN4UXJ at the age of 14, one of the first Novice tickets in the country. Code requirement was only 5 Words Per Minute (WPM) at that time. My call is an original call taken in sequence and has never been held by anyone else.

My Dad was a ham licensed in 1926 by the Federal Radio Commission. No FCC until 1934 :-) When I was a little guy, he would put me up on a high chair and dump a whole bunch of resistors on the bench and I would have to sort them (to keep me busy). Even to this day, when I see the colors on a resistor body, I see a number for the resistance not bands or colors. Since my Dad used to work on jukeboxes, I got from him a junked amplifier chassis with an intact power supply. I went ahead and built my first 6L6 xtal oscillator on the novice band and got a surplus BC-454 command set receiver that I had to convert to a real power supply rather than the dynamotor it had originally. They were cheap at a WWII surplus house and I think Dad (and I) paid 2 or 3 dollars for it. Remember 1951 was just a few years after the end of the big war. I was pretty nervous on my first contact but was real excited to make it and wrote everything down. I was a little miffed when the guy told me where he was located; the other side of town! But nevertheless, it was great fun.

My next rig was a lot more power with a 6AG7 and an 807. I wound my final coil on an old capacitor and tuned it up. But I could not figure out why I was not getting out until someone heard me on 40 Meters but outside the band, a nasty 2nd harmonic. Forgot that the capacitor I used changed the inductance calculation because it was not air wound. So my final was acting as a doubler. But I fixed that problem quickly and went on to make many contacts.

A year later, I went for 13WPM and a test (that gave me little trouble) and I was a Class B ham. At this time, 80 meters and 20 meters were only available to Class A hams. The Knights of the Kilocycles (K of the K) in Florida met on 80 meters every Sunday morning and so only Class A hams could become members. When the FCC allowed Class B to operate on 80 and 20, I immediately started calling in to the K of the K. After 10 times, I became the first Class B ham to become a bonafide member of the K of the K. Of course, Class B became the General Class and the A became Advanced class and now they even have an Extra Class.

Much later I did have the fortune to talk to some hams that I did not know exactly who they were. Barry in Arizona and Art in Virginia. You would recognize them as Goldwater and Godfrey. This passion for ham radio led me into college to get an Engineering degree and one thing led to another and I stayed long enough to get a PhD in Electrical Engineering as a result of my great interest in ham radio. In 1957, on the day after Sputnik was launched, I went up to the top floor of the University of Florida ham radio station, W4DFU, and heard Sputnik live at 20.005 MHz (Megacycles back then). No computers back then with orbital info, just lucky, I guess, to hear it at the time I did. When I got married in 1976, my wife had never heard of ham radio but she loved me enough to learn the code and studied enough to get her Novice ticket that she has to this day (but totally inactive).

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I have been attending HamFests for 50+ years now and never fail to hear a little voice once in a while saying "Buy me, Buy me" at HamFest tables. I guess I am weak….. But now being in a retirement village and rather restricted to a single second bedroom, my stash of stuff is much less than it used to be.

I might let you know that I have been donating a lot of stuff to the Alabama Historical Radio Society (AHRS) in Birmingham since most of my stuff is getting up in years now (like me). They are a great bunch of guys and gals who teach radio repair and hold all kinds of seminars. They also have the Don Kresge Museum and have the most fantastic array of antique radios and other stuff that makes your eyes water. They are a wonderful group of guys and gals.

This was just a short story from way back that I thought you might like to hear.

73, ***Marvin*** W4UXJ
Extra Class now and member of ARRL for over 60 years.

Editor Note:

Did you enjoy reading the above story? We did and we would like to see more stories like this in eNews. Drop us a note and let us know what you think...or send us your story!

enews@nfarl.org

Build Your Own DIY Solder Reflow Controller Using "picoreflow" on Raspberry Pi / Bob Freeman, KI4SBL

Have you noticed that as our technology moves forward that the electronic parts are getting smaller and smaller? Well, if you have assembled any circuit boards lately, then you have likely run into some surface mount device (SMD) components. Soldering these can be a challenge because of their small size – the least little bump with a soldering iron and the components become part of the laboratory floor!

This is where the solder reflow process comes in, a process that enables solder of multiple SMD components at the same time without using a soldering iron. In searching the internet for a computer-controlled solution for the reflow process, I came across the open source program picoReflow at this home page: https://apollo.open-resource.org/mission:resources:picoreflow . The latest version of the software can be downloaded here: https://github.com/apollo-ng/picoReflow .

The picoReflow program runs on a Raspberry Pi and controls oven temperature versus time (i.e. a temperature profile). Control is done using a proportional, integral, differential (PID) loop. The PID loop is achieved using a solid-state relay (SSR) to control the oven and a Type K thermocouple for feedback. With the program running on the Raspberry Pi, the program can be controlled and monitored from a web browser.

Here is a screen shot of the user interface captured from the system I just completed building:

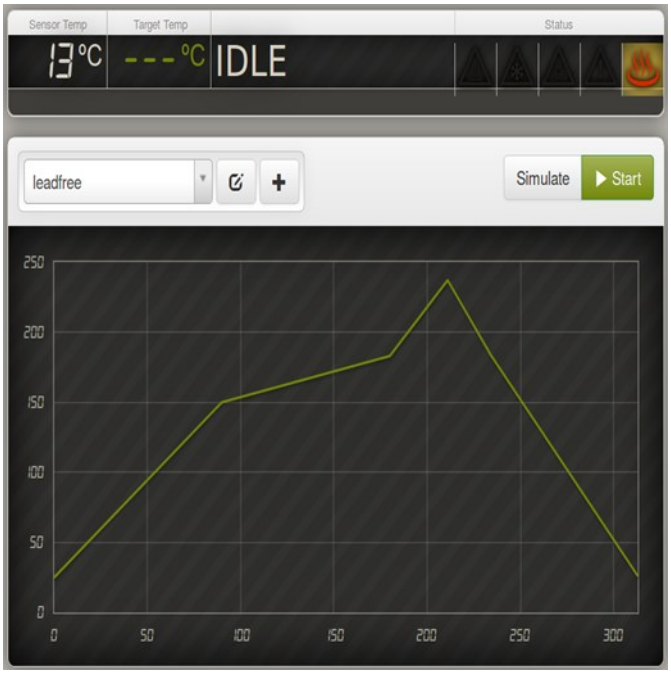

Illustration 1: picoReflow Temperature Profile for Lead-Free Solder (sample)

Example temperature profiles are supplied with the program for use with both leaded and lead-free solders. These will provide a good starting point but will likely need to be revised for your specific oven. The temperature profiles are stored in a plain text file and can be edited with a text editor, or using the program's GUI interface. Here are the file contents for the above temperature profile:

{"type": "profile", "data": [[0, 25], [90, 150], [180, 183], [211, 237], [234, 184], [313, 26]], "name": "leadfree"}

The circuits and components needed to automate the oven/reflow process are reasonably simple and inexpensive. My recent implementation of this controller was implemented as a kiln control; the connection diagram and a photograph of the controller are shown on the next page.

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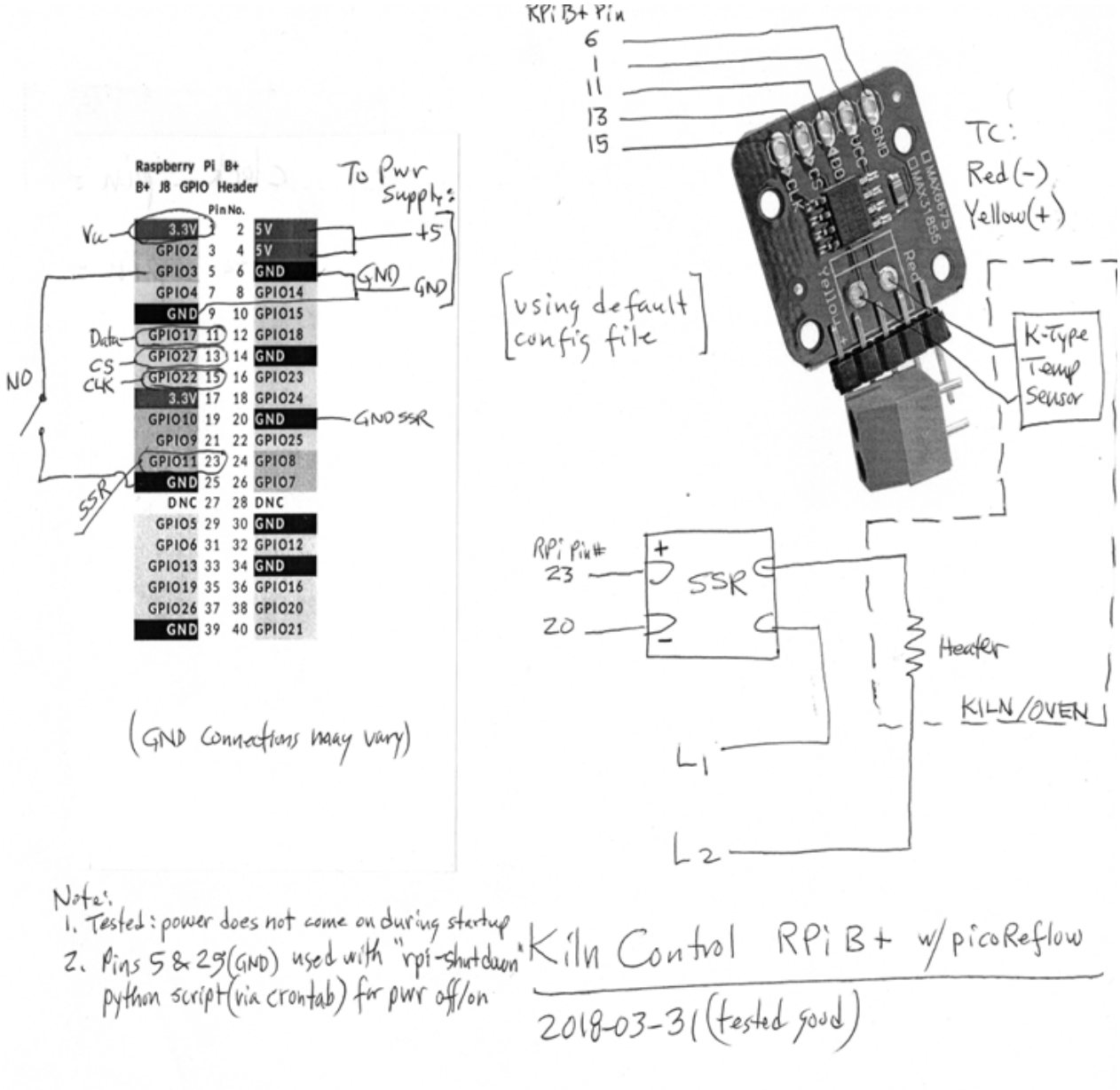

Illustration 2: Circuit Connections for 240 VAC Temperature Controller

The above controller can be used for a 120 VAC oven control application without modification – just wire the "hot" 120 VAC power input to the SSR. Other components in the system remain unchanged.

The cost of the temperature controller project is estimated at $33, as follows:

Raspberry Pi Model B+ (microcenter)	$20
SSR with Heatshink (eBay)	$6
MAX 31855 Thermocouple Interface (eBay)	$3
Thermocouple Type-K (eBay)	$2
Wireless Adapter with Antenna (eBay)	$2

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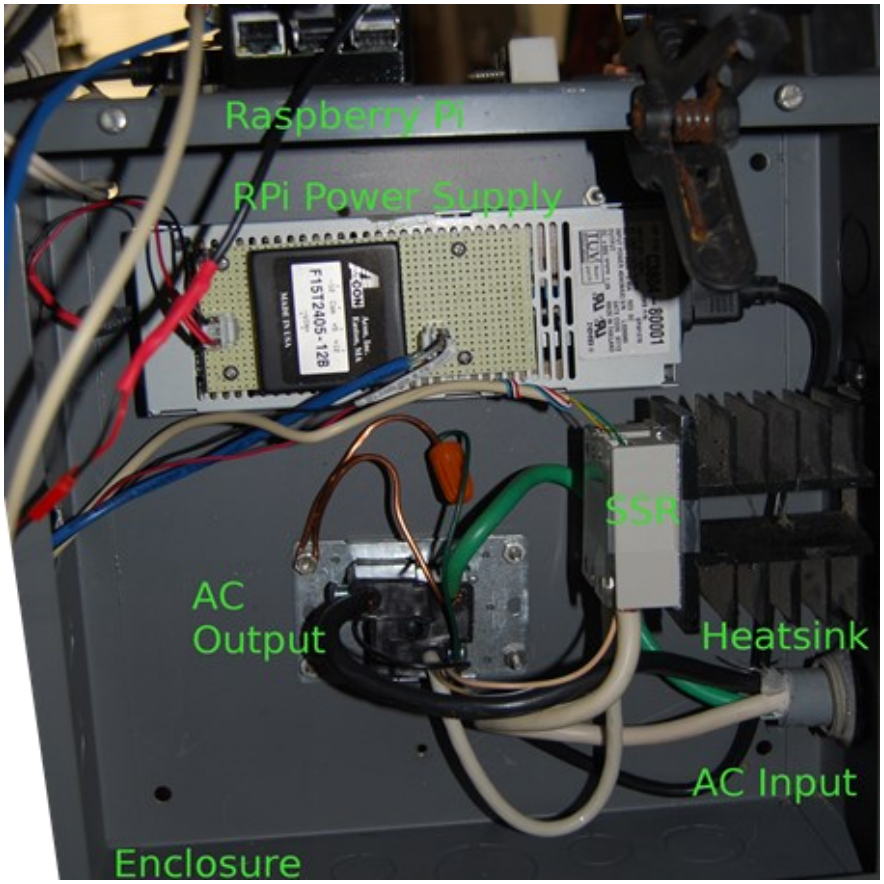

Illustration 3: Wiring Enclosure for 240 VAC Temperature Controller Using picoReflow

The electrical box, RPi 5 VDC power supply, wiring and connectors were "found in the lab." Of course, you will have to bring your own oven to the project!

This DIY project will add great process control features to your thrift store toaster oven for solder reflow. The relative few components are easy to assemble and make for a fun project with the Raspberry Pi. Finally, this system should enable the solder reflow process to be made with good repeatability, time after time.

This is a newly built project for me and I look forward to trying the controller out, soon.

If there are questions, feel free to contact the author. Until then, have fun!

73,

Bob
KI4SBL

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eNews can be located online at:
https://www.nfarl.org/enews/eNewsIndex.html

Club Repeaters

Frequency—Description	P.L. Tone	Location
145.470 (-) EchoLink Node 56086 NF4GA-R	100 Hz	Sweat Mountain
147.060 (+) Primary ARES Repeater	100 Hz	Roswell Water Tower
224.620 (-) Joint Venture with MATPARC	100 Hz	Sweat Mountain
443.150 (+)	No Tone	Roswell Water Tower
444.475 (+)	100 Hz	Sweat Mountain
927.0125 (-)	146.2 Hz	Sweat Mountain

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