

The Framingham Circuit

Newsletter of the Framingham Amateur Radio Association December 2019 Vol. 86, No. 6

President's Message: Greetings to all FARA members for the Holiday Season. We had about 16 people attend the FARA Holiday Party at Carbone's Restaurant in Hopkinton, MA, on Thursday December 5, 2019. We had a surprise appearance of Neal Lipson, K1NDF and his guest, who came straight to the party from a gig. After dinner, Neal entertained us with several songs on his clarinet which attracted an audience from others in the restaurant.

Arnold Barnes, KB1RIA, became a silent key on September 9, 2019. He was a former FARA treasurer, and was a regular participant in the Sunday night FARA net and the monthly meetings. While I should have included something about him in the November Circuit, I have included info from the obituary here in this Circuit. FARA made a \$50 donation and the thank you note is included from his wife Sally.

Sumner, W1VIV, sent in an update on our Field Day battery testing project which you can read below.

Our new dues schedule is \$20 flat rate for an individual or family, and is due by January 2020. Once paid, your name will appear on the FARA web page.

For our January 2, 2020 meeting, we will have several segments: We will have a Show and Tell segment, so bring anything interesting that you have related to Ham Radio, rare QSL card, equipment that you can carry in, a new HT, and old piece of test equipment, etc. We will have a QLF, or left foot CW contest, with a prize for the best left foot! Then we will watch a Dxpedition video from Dave Hoaglin's collection, VP8ORK, South Orkney Island.

For our February meeting, Adrian, AB2IX, will present on 3D printing.

I hope everyone has a great holiday season and that you receive many HRO gift cards! And thanks for your participation in the club. The electronics equation of the month:

$$\text{clubFunctioning} = (\# \text{clubActivities} * (\% \text{memberParticipation}) / 100) * \text{memberInterest}^2).$$

Several members participated in the North American QSO Party, SSB section, back in September at my house. FARA's performance: about 39/82 in the Multi operator 2 division

See results at: <https://ncjweb.com/naqp-scores/preliminary/naqpssb2019augprelim.txt> club

Speaker suggestions and ideas for the Circuit. We are always looking for suggestions for topics and outside speakers and contributions to the newsletter. Especially if you have a connection to the speaker. Also we invite any home grown FARA member volunteers to give a talk at our meetings! Let me know if you would like to give a talk or a demonstration. Similarly, feel free to submit an article, or pictures, or a question to me for the newsletter. The older Circuits used to have a section where people could submit pictures, station news, license upgrades, antenna projects, new gear, rare DX, etc., for the newsletter. Please send them to me! Sumner, W1VIV, contributed a follow-up article on getting ready for the next Field Day.

Silent Key: Dr. Arnold Appleton Barnes, Jr. Age 89, KB1RIA, former treasurer of FARA, of Sudbury, passed away Monday, September 9, 2019, from Pulmonary Fibrosis.



Born on June 10, 1930 in Charleston, West Virginia, he was the son of Arnold and Frances (Arbuckle) Barnes. He was raised in West Virginia and graduated from Lawrenceville School and [Princeton University](#), where he studied math and physics. Arnold served in the United States Air Force based in England during the [Korean War](#), providing meteorological support for the U2 flights over Russia. Upon his honorable discharge, he earned a Master's and Ph.D. from MIT. Dr. Barnes worked as a research meteorologist for the United States Air Force for 42 years, until his retirement in the late 1990s. He was a resident of Weston for over 45 years until moving to Sudbury in 2007.

Arnold was a member of the Retired Men's Association, a ham radio enthusiast, a silversmith and quite the handyman. He, along with his family, built the summer home in Scituate. He enjoyed traveling with Sally during their retirement. He loved being "Papa" to his grandchildren, and always had a smile and coffee ice cream for them.

He is survived by his beloved wife of 59 years, Sally (Spall) Barnes; devoted father of Judith "Dede" Ball and her partner Manuel "Mick" Costa of Sudbury, Arnold "Chip" Barnes III and his wife Catherine of Boulder, CO, Amy Hurley and her husband Mark of Henniker, NH; loving brother of John Barnes of West Virginia; proud grandfather of Travis Ball and his wife Camille of Marlborough, MA, Whitney Ball of Washington, D.C., Elizabeth and Colin Barnes, both of Boulder, CO, Kevin Hurley of Wilmington, MA, Brenna Hurley of Henniker, NH. He is also survived by his adored sister-in-law, Judy Spall of Waltham, and many friends, including his dear friend Sandra Erdle of Sudbury.

A Memorial Service was held Saturday, September 28, 2019 at 11AM at the Memorial Congregational Church, 26 Concord Road, Sudbury. FARA made a \$50 contribution to:

Research Discretionary Fund of Beth Israel, Interstitial Lung Disease Center, Pulmonary Sleep Critical Care Division, Beth Israel Deaconess Medical Center, 330 Brookline Ave., Boston, MA 02215 (ILD Research Fund, c/o Dr. Joseph Zibrak).

<https://www.legacy.com/obituaries/bostonglobe/obituary.aspx?n=arnold-appleton-barnes&pid=193886175&fhid=10882>

this does so much to further
the advancement of science.

Arnold enjoyed the FARA group
so much and loved getting on the
NET Sunday evenings.

Thank you all again for your
kindness and generosity.

Fondly,

Sally

November 9, 2019

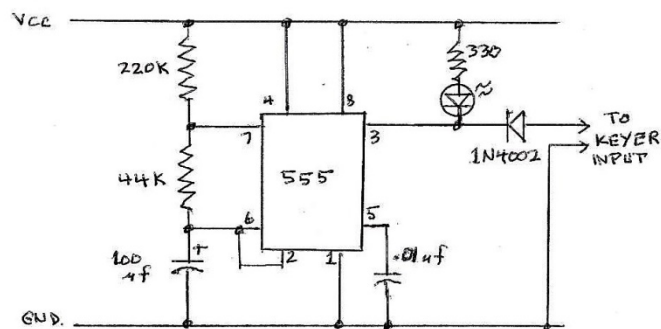
Dear Friends,

My family and I thank you for
the donation to Dr. Zubrak's Research
Fund at Beth Israel Deaconess Medical
Center. Dr. Zubrak is a pulmonologist
who has been taking care of Arnold since
2011. While under his care, Arnold
became part of a research study for
Esbriet in 2014. During the study, Esbriet
was approved by the FDA to treat
Pulmonary Fibrosis. Research like

Getting Ready for Next Field Day
Part 2
Sumner Weisman, W1VIV

As I wrote last time, although Field Day 2020 is not until next June, FARA is already making preparations. This latest test answers the question, “How long will our batteries last in typical Field Day operation?” Our batteries are rated at 35 Ampere Hours. We can lengthen the operating time by using an MFJ battery booster in series with each battery. According to the manual, “With its high efficiency boost regulator circuitry, it will maintain the desired 13.8 volts at up to 25 amps ICAS from voltages as low as 9 volts.” A test was designed to determine if this was a true statement, and also to simulate typical Field Day conditions in order to measure maximum operating time before the battery runs down.

One key question that had to be answered is: using only Search & Pounce, what is a typical duty cycle to use when running our battery tests, using either SSB or CW, to best simulate actual operation? To help answer this key question, I consulted with Joel Hallas, W1ZR, “The Doctor Is In,” from QST Magazine. There are many variables to consider, such as receiver current drain while searching, the fact that after operating a while, there are more “dupes” and less stations available for calling, causing more standby time and less operating time, etc. After much thought and discussion, I determined that a typical duty cycle averaged over four or five hours of actual operating time would be around 15%. That is, listening for 85% of the time and transmitting for 15% of the time. Using a 555 chip, I built an astable multivibrator to provide the 15% duty cycle required. It provides a 25 second cycle, with 4 seconds ON and 21 seconds OFF, with an LED indicating the ON time.



Schematic, Duty Cycle Pulser

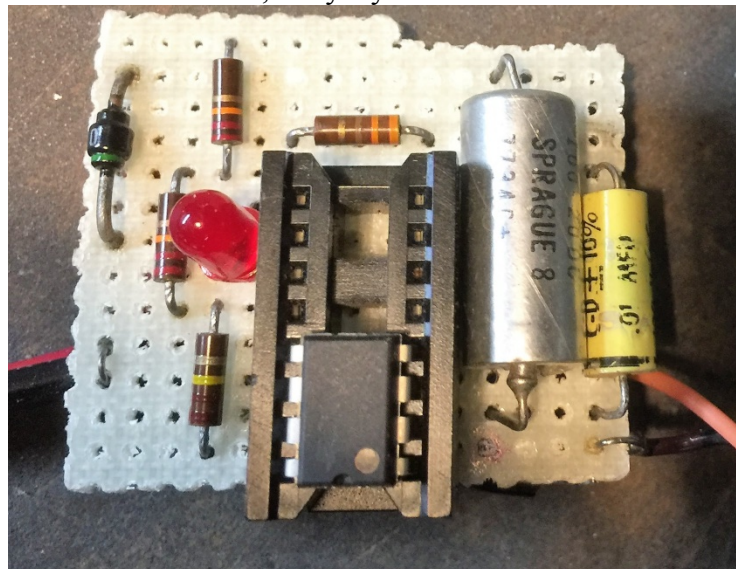
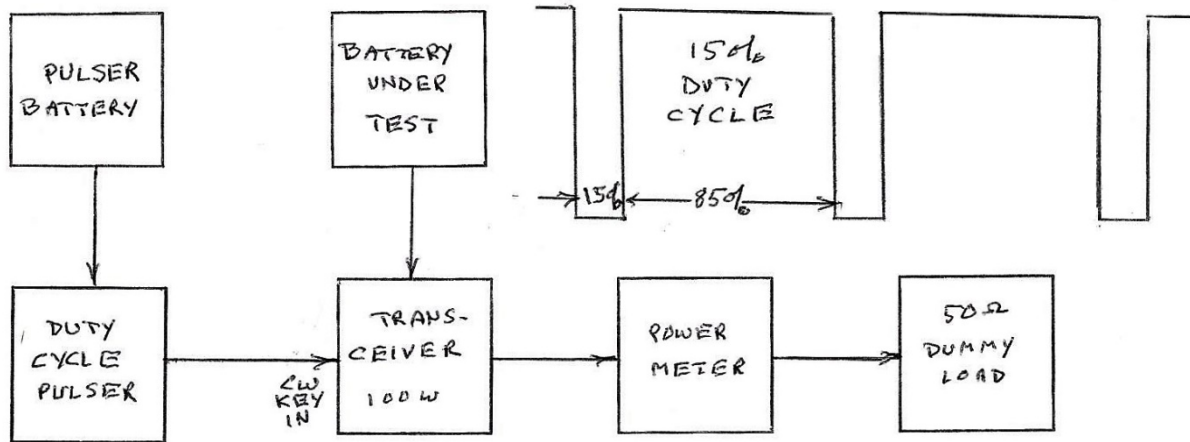


Photo 1, Duty Cycle Pulser

The complete test setup is shown in the block diagram and in Photo 2. For better test accuracy, I powered the pulser from a separate battery to keep from adding to the drain of the battery under test.



Block Diagram, Battery Life Test System



Photo 2, Battery Life Test System

The test ran pretty much as expected, showing that our battery lasted for 5-3/4 hours before the system failed. The battery booster puts out a loud “Low Battery” beep, so there was no doubt about when it occurred. These are acceptable results, since in the past we only ran for four hours at the McAuliffe Library, from 2pm to 6pm on Saturday. I would like to ask them for permission to operate a little longer next June, but I’m not sure if they will approve. If we get permission, this test shows that we may be able to operate until 7:45 if my simulation was accurate.

Shown below is a table of actual measurements taken during this test.

Time	Battery	Output (V)	Booster	Output (V)	Power
(Hrs)	Unkeyed	Keyed	Unkeyed	Keyed	Output
0	12.65	12.05	14.05	13.95	100W
1	12.58	11.80	14.03	13.93	100W
2	12.42	11.64	14.01	13.91	100W
3	12.24	11.44	14.01	13.90	100W
4	11.98	11.08	14.00	13.85	100W
5	11.70	10.60	14.00	13.85	100W
5.75	9.7	-	-	-	-

2019 FARA Holiday Party at Carbone's Restaurant in Hopkinton, MA, Thursday December 5, 2019.



Open Positions: We have open positions for Director of Training, Activities Coordinator, Publicity Officer and Emergency Coordinator. One member, Dave Miscia, KB1YXL, has expressed interest in the Emergency Communication position, and is looking over the repeater material. If you are interested in any of these, have experience in any of these, or have a suggestion for a nomination, please inform one of the officers or Sumner Weisman, W1VIV, the Director.

FARA Members Email: Paid members and lifetime members should be receiving emails from members@w1fy.org. Let Steve or I know if you or anyone else is not getting the club emails. Non-members interested in receiving news about FARA can view the website or get on the separate news@W1fy.org by going to http://w1fy.org/subscribe-to-fara_news

Echolink: The Echolink connection seems to be working very well, I use it almost every week for the Sunday net. We get 1-3 check-ins each week on Echolink for the Sunday night net. I have heard folks from out of area check in on Echolink too at other times of the day.

Websites to check out:

Upcoming Radio Events: From WA7BNM website. <https://www.contestcalendar.com/contestcal.html>

- ARRL Rookie Roundup, CW 1800Z-2359Z, Dec 22
- RAC Winter Contest 0000Z-2359Z, Dec 28
- Stew Perry Topband Challenge 1500Z, Dec 28 to 1500Z, Dec 29
- Straight key night January 1 from 0000 UTC through 2359 UTC <http://www.arrl.org/straight-key-night>
- ARRL RTTY Roundup 1800Z, Jan 4 to 2400Z, Jan 5
- ARRL Kids Day 1800Z-2359Z, Jan 4
- North American QSO Party, CW 1800Z, Jan 11 to 0559Z, Jan 12
- North American QSO Party, SSB 1800Z, Jan 18 to 0559Z, Jan 19
- ARRL January VHF Contest 1900Z, Jan 18 to 0359Z, Jan 20
- **Winter Field Day 1900Z, Jan 25 to 1900Z, Jan 26 !!!!!** <https://www.winterfieldday.com>

**** We plan to test out our new battery, connections, booster, and a field day radio on one of these contests.**

FARA HORIZONS -- UPCOMING EVENTS

January 2, 2020: Show and tell, bring something interesting to show the club. QLF contest: Try to send CW with your left foot. We will watch video on the VP8ORK Dxpedition.

Winter Field Day 1900Z, Jan 25 to 1900Z, Jan 26 !!!!! We may test our equipment then.

February 6, 2020: Adrian AB2IX on 3d printing.

March 5, 2020: Brian WO1VES on internet "boxes", the Yaesu HRI box, the Shark RF, the ones that tap into the DMR network.

April 2, 2020: Sumner W1VIV on Navy Ham Radio During the Korean War.

May 7, 2020: Pizza Party??

June 4, 2020: Field day prep, officer elections.

Club Information:

Officers: see <http://w1fy.org/fara-officers> (No change to officers this year)

- President: John Iwuc KB1VXY president@W1FY.org
- Vice president: Paul King N1VAM vp@W1FY.org
- Clerk/Secretary: Victor Anderson K1VEA secretary@W1FY.org
- Treasurer/Webmaster: Steve Moro N1MH treasurer@W1FY.org webmaster@W1FY.org
- Director Sumner Weisman W1VIV director@W1FY.org
- Director of Testing Jim Weckback W1EQW testing@fara.org

Meeting: Club meetings are normally held on the 1st Thursday of each month at 7:30PM in the Framingham Police Station. Sept., Oct., Nov., Jan., Feb., Mar., April., June.

Club Nets:

- FARA Net: Sunday, 7:30PM, 147.75/147.15 - social/chat, emergency preparedness
- Wednesday Roundtable Ragchew: 7:30 pm.

Traffic passing: Fred Beihold, NV1N, is very active. Traffic@w1fy.org

Club Web Site: W1FY.org

Social Media:

- facebook.com/faraw1fy
- twitter.com/fara_w1fy

Dues: Going forward, the Board agreed that there will be one flat rate of \$20 per year per person or family, and no separate repeater fee. Paid members will be posted on the web page.

You can join/renew/pay online at <http://w1fy.org/membership-form>

Testing: Odd numbered months on the second Wednesday at 7:30PM by appointment only.
<http://w1fy.org/license-exams>

Mail Address: Framingham Amateur Radio Association, PO Box 3005, Framingham, MA 01705