



# BARS Billerica Amateur Radio Society

NEWS FOR AND BY BARS MEMBERS

IN THIS ISSUE

## BARS Ice Cream Social

by Andy Wallace, KA1GTT



Our Ice Cream Social at Gary's Ice Cream in Chelmsford was a success! Attendees were Andy, KA1GTT; Tom, K1TW; Tom, K1THG and his wife; Henry, WA1VAB and his wife; Jesse, W1DEA, his wife, daughter Kayla W2IRY, and even their two dogs; and Gary, W1GFF, our welcome host.

People partook of Gary's ice cream (I recommend the blueberry) and food, and an afternoon of good weather and operating.

I built a portable ZS6BKW doublet and erected it on a telescoping flagpole and two fishing rods at the back of Gary's property.

The rig was an Elecraft K2 running from Tom's battery power. We attempted QRP but the K index was 5 and very frustrating. We upped the power to 15W, the max the K2 would do, and had good luck after that. We were dwarfed in our class, being low compared to 100W stations, but Tom and I manned the mic and had a blast on 40 and 20m.

We accomplished 26 QSOs at 15W SSB in the afternoon! This added up to TWELVE STATES, and DX including France, the Slovak Republic, and Haiti! Our score was 390. I will be uploading the logs soon. Not bad for an antenna 28' up at low power.

This could be a precursor to future BARS fun events in the field. Stay tuned!

### My Foray into DMR Pt.1

I went to Boxboro 2017 with thoughts of getting a new Dual Band HT and I have to admit, I was intrigued by the new digital mode radios. [\(Read more...\)](#)

### Whispering during the Solar Eclipse

Thanks to the excellent presentation, "HAMSCI and the Solar Eclipse", given at BARS on July 5<sup>th</sup> by Stan KD1LE, I was motivated to get on WSPR for the first time. [\(Read more...\)](#)

### 6000 Cards in 90 Minutes!

We had a great turnout for the BARS QSL Card sort during the September meeting. [\(Read more...\)](#)

### Sept 2017 Treasurers Report

Summer is over and Fall is here. Dues are due. \$10 per year per Family. You can pay at a meeting or online using PayPal. [\(Read more...\)](#)

### Sept 2017 VE Report

The September VE exam session was held at the Chelmsford Bible Church. [\(Read more...\)](#)

# My Foray into DMR (Digital Mode Radio) Pt. 1

by Jesse Creamer, W1DEA



I went to Boxboro 2017 with thoughts of getting a new Dual Band HT and I have to admit, I was intrigued by the new digital mode radios. In case you don't know, the digital mode repeaters are connected to the internet and you can go through a gateway and talk to the world, North America, New England or local hams from your little hand held unit. I attended the Yaesu Fusion talk and came away excited, I have always been a Yaesu fan and the FT-2DR is one sweet radio! Thankfully, I grabbed my phone and looked for Fusion repeaters in the Repeater Directory and very quickly realized there are none in the New England area. Basically my new radio would be an expensive Analog radio with this digital mode that I would never be able to use.

Disappointed but not giving up, I looked more closely and found that DMR (Digital Mode Radio) is very popular in New England... there were even VHF repeaters in Billerica and Acton. While talking to Rich Zach, K1RJZ, who headed up the Digital Radio Repeater Modes Forum he showed me a TYT MD-2017 DMR HT and suggested I take a closer look at it. At a price of

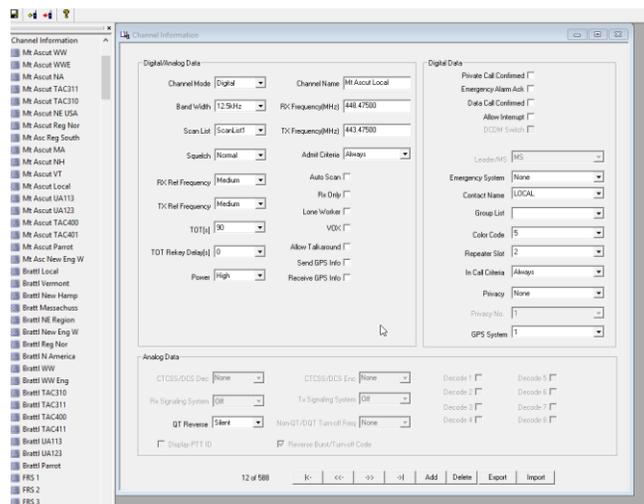
\$219 and it also works analog I figured how could I go wrong? So, sometime around lunch I ran down to the Ham Radio Outlet booth and asked to see one of these new TYT radios and much to my disappointment they were already sold out! There were stacks of Yaesu boxes but these new TYT radios were so popular they had already sold out by Saturday morning! It appeared I was on the right track.

So, Monday I took the plunge and ordered a MD-2017 from Ham Radio Outlet and on Tuesday it arrived in my hot little hands. Little did I know this was just the beginning of my frustration! Three days later I still couldn't figure out how to program a DMR Radio let alone get it set up to operate Analog Modes. Thanks to a Facebook Group I met two local hams, David Webb KB1PVH and Pete Stagman W1PGS, I had help! First I had to find a copy of the software used for programming the radio, good luck finding this on the TYT site. Thankfully, someone on the Facebook Group pointed me to the link:

<http://www.grapevineamateurradio.com/software-downloads/>

I was able to find the software and had a start... all I needed was one of these code plugs, I mean how hard could it be to find one of these? Yeah, they don't exist! A code plug is basically the configuration file for your new HT, it contains the repeater definitions for each of the repeaters you want to access.

OK, great... I have programmed many a radio using RT Systems, Chirp, G4HFG so how hard can this be? I was pretty quick to get an analog repeater set up, it was a concept I understood. Re-charged I jumped right into setting up the Acton DMR Repeater... Wait, what... zones; channels; talk groups; color codes; contact names... my head was spinning... This was when Pete, W1PGS, told me about the NEDECN (New England Digital Emergency Communications Network) [www.nedecn.org](http://www.nedecn.org) and how they were having an annual picnic and radio programming event at the Hopkinton State Park. So, I packed up my brick... I mean radio and drove to Hopkinton and met a wonderful bunch of folks. Pete was kind enough to program my radio for me and I was able to kerchunk the Southboro repeater, success!!! I was on my way with this new digital mode and I was even starting to understand how to set up a repeater in CPS but this was just the beginning and I was going to find out how much I really didn't know....



This has not been a totally negative experience, I met some great new hams who were more than happy to step up and help me with this new confusing mode. In the next newsletter I will provide a tutorial of everything I learned about setting up my new HT in hopes of helping others avoid the struggles I have been going through. Meanwhile, if you get a DMR radio and need help setting it up don't hesitate to ask me.

# Whispering during the Solar Eclipse

by Tom Walsh, K1TW

Thanks to the excellent presentation, "HAMSCI and the Solar Eclipse", given at BARS on July 5<sup>th</sup> by Stan KD1LE, I was motivated to get on WSPR for the first time. As Stan explained, there was a nationwide effort to get as many signals on the air Monday, August 21<sup>st</sup>, during the eclipse. HAMSCI was promoting two primary on-air activities: (1) participation in the Solar Eclipse QSO party (SEQP) and (2) getting active on WSPR.

I chose to set up WSPR. To do that I needed a digital interface between my radio and computer along with the WSPR software. I already had the radios and antennas. For the interface, I chose the Tigertronics Signalink USB available from ham radio dealers nationwide. This device is simplicity itself. All it required was one cable from the Icom socket on the back of the radio to the Signalink and a USB cable from the Signalink to the computer.

Signalink provides very convenient adapter sockets installed inside the case to adapt the cable to the radio you are using. Install the adapter socket, and connect the cables and you are ready. You can purchase adapters for other radios and quickly change from one to another. I decide to get a second adapter for my FT-817.

I set up WSPR over the weekend before the eclipse so this was my first time using it. I operated on 20 meters at 5-watts. The results were astonishing: Europe, Africa, Northern Canada, Central America and a huge number across the USA all reporting my 5-watt transmissions. Attached are two screen shots of the K1TW WSPR map: (1) Europe/Africa/North America and (2) just North America.

Figure 1: K1TW AUGUST 21<sup>st</sup> (about 5 Watts on 20 meters)  
Between about 1 PM and 6 PM (Boston area eclipse totality at 2:46 PM)

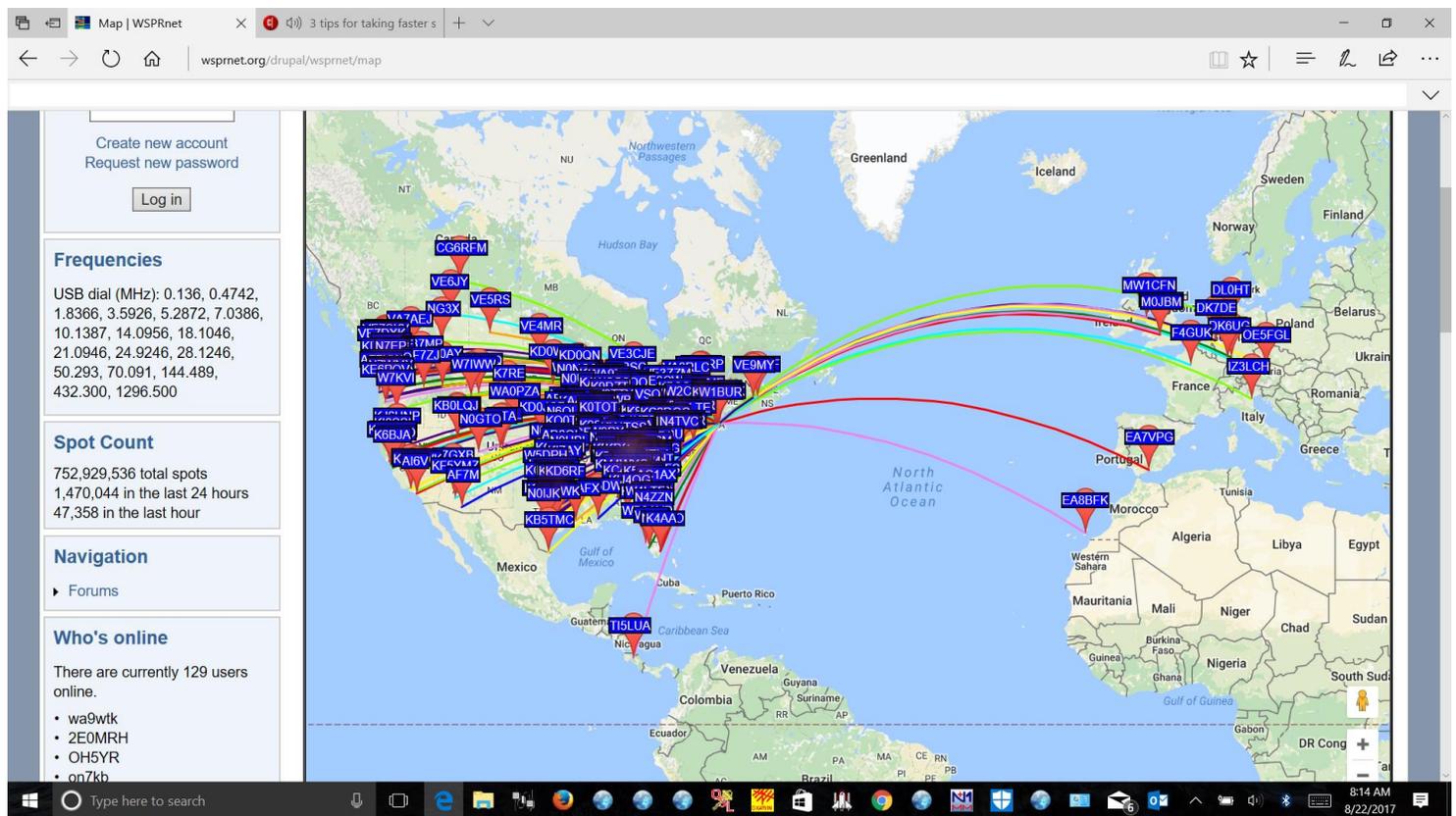
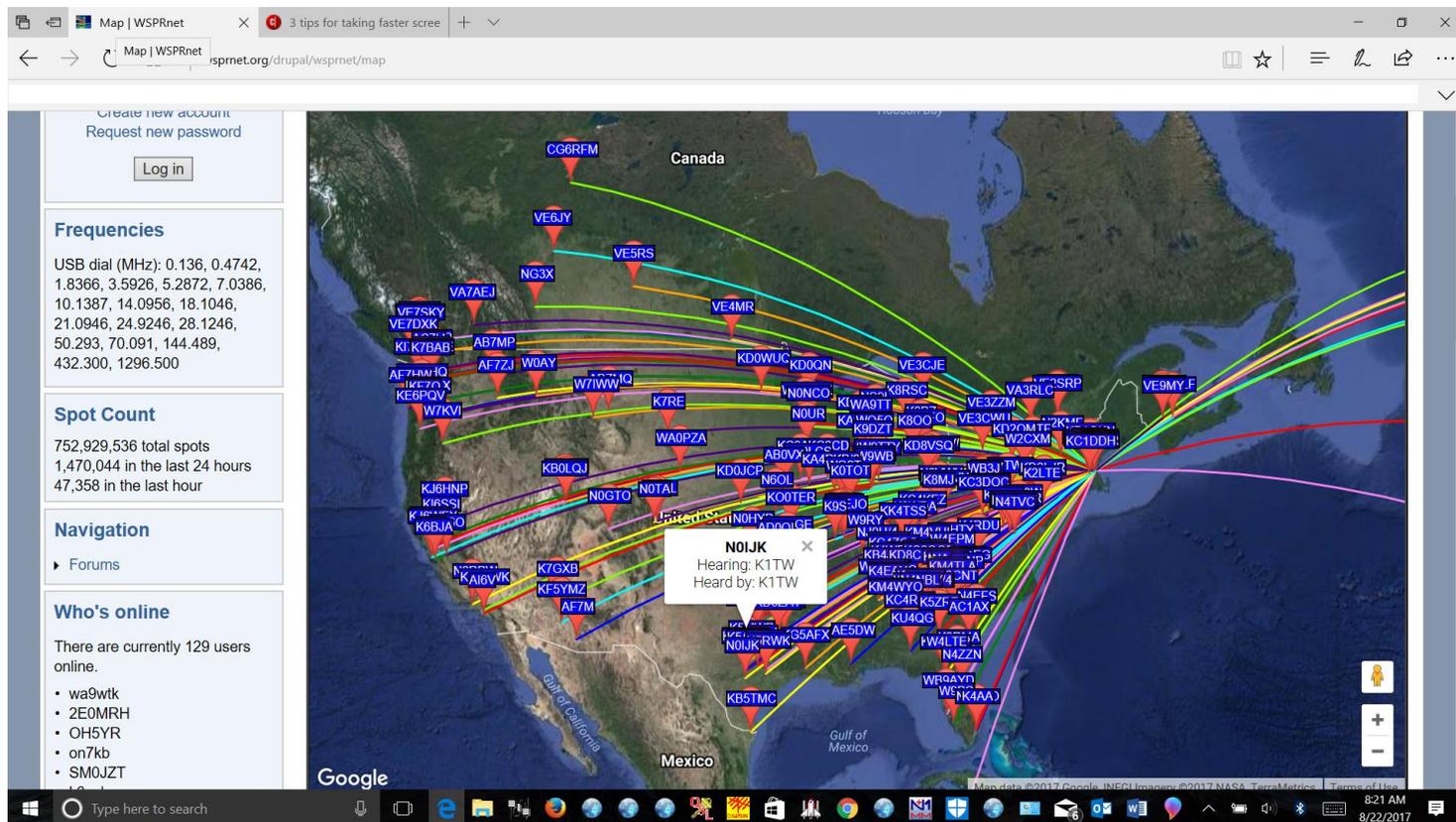


Figure 2: K1TW Map focused on North America during eclipse.  
Note highlighted example of N01JK both hearing K1TW and heard by K1TW



It was simple to set up WSPR especially since Stan had provided the information during his talk. It took me about 30 minutes to set up the Signalink and another 30 minutes or so to configure the software and that was it!

- Interface: Tigertronics Signalink USB
- Radio: Icom 7600 at 5-watts
- WSPR Software downloaded from wsprnet.org

I now am excited to try out the Signalink with other modes including RTTY, PSK and JT-65.

# Miscellanea

## September 2017 Treasurers Report

from the BARS Treasurer, Bruce Anderson W1LUS

Income for September was \$90.00 from membership fees, \$13 from refreshments and \$.01 interest for a total of \$103.01. Expenses were \$108.05 for refreshments leaving a net income of -\$5.04 for the month. The General fund current balance is \$696.86.

Summer is over and Fall is here. Dues are due. \$10 per year per Family. You can pay at a meeting or online using PayPal. To pay using PayPal log on to your PayPal account and Send \$10 to [BARS.dues@outlook.com](mailto:BARS.dues@outlook.com)

## September 2017 VE Report

from the BARS VE Coordinator, Bruce Anderson W1LUS

The September VE exam session was held at the Chelmsford Bible Church. No one showed up this month. The next BARS VE exam will start at 7:00 PM on October 12 at the Chelmsford Bible Church

Thanks to the following VEs that participated in conducting the exam session Bruce W1LUS, Peter N1ALO, Gary W1GFF, Scott K1OA and Antonio KB1KDS

## BARS Needs You!!!

We are looking for a few good hams to act as net control on the regularly scheduled Wednesday night nets! All it takes is one night a month; if you are interested then contact Niece Haynes at [ka1uln@mail.com](mailto:ka1uln@mail.com).

## BARS Election in November

We are holding elections at the November meeting for the coming year. . At the November meeting we will be electing the following positions:

- President
- Vice President
- Secretary
- Treasurer
- And 2 Board members.

We always need new folks to join the leadership team to keep things running smoothly. If you enjoy BARS, please lend a hand. If many people contribute a little time, everyone benefits. If you are interested in an elected position, or just to be a volunteer for the club's benefit, please email our secretary, Andy Wallace (ka1gtt at arrl.net), and he'll help you get involved.

# 6000 Cards in 90 Minutes!

by Kayla Creamer, W2IRY



We had a great turnout for the BARS QSL Card sort during the September meeting. Thanks to everyone who was able to come join us for some pizza and sorting. Eric Williams, KV1J, with the W1 QSL Bureau gave a brief introduction to how the QSL Bureau operates and then everyone branched off to sort some cards. According to Eric, we sorted 6,600 cards in about 90 minutes. Ken Caruso, WO1N, took the prize for most QSL cards found during the sort with a total of six cards.

We hope you'll join us for the October meeting where our guest speaker will be Bruce Blain, K1BG. Bruce will be joining us from the Nashoba Valley Amateur Radio Club (NVARC) to give a talk on the history of ham radio licensing exams. I was able to attend Bruce's talk during Boxboro and found the topic to be very intriguing. I think others will too, so be sure to come to the October meeting and feel free to bring any aspiring hams you may know.



# From the President's Shack

from the President of BARS, Tom Walsh K1TW

The Autumn Equinox passed quietly yesterday (September 22, 2017) at 4:02 PM EDT. I look forward to this moment every year because it portends significant changes for Amateur Radio in the coming months and because Fall is my favorite season of the year. This may be the best time of the year to take to field with a small radio as the days become cooler, less humid, and the bugs start to lose their summer domination over us.

I usually tell my ham radio friends to get on the air starting now and continue well in October and November because if you don't you will miss the very best propagation conditions of the year. Wherever we are in the solar cycle (e.g., high, medium or low—as we are now) this is the "sweet spot" so don't miss it! That's what I usually tell my friends!

But sometimes our most important star has other things in mind as it did last September 8! And when it does, don't turn off your radio but become an explorer. We have amazing tools at our disposal today that just were not there or were just becoming available during past solar minimums (e.g., WSPR, Reverse-Beacon Network, JT-65, FT-8, etc.).

What do I mean when I say the Autumn Equinox passed quietly by yesterday? Folks on Nantucket and Cape Cod or in the Caribbean have experienced anything but a quiet Equinox due to extreme weather events. But higher up in the atmosphere, the space weather finally calmed down after several extended periods of turmoil.

One of my favorite web sites that I check almost every day before operating on the bands is the NOAA Space Weather Prediction Center at <http://www.swpc.noaa.gov/products/planetary-k-index>. This web-site shows in a glance just what is going on with our ionosphere and what I might encounter for propagation conditions.

Comparing two days this month, the difference is spectacular:

- September 8: K-index= 8 5 4 5 8 7 6 5; A=94;
- September 22: K-index= 1 1 1 1 1 1 2 2; A=5.



On September 8<sup>th</sup>, no doubt the Northern Lights and the Aurora were visible very far south and HF radio had some challenges. Did anyone try operating W1A at Boxboro on September 8? But on September 22, things were very quiet.

In simple terms, quiet but generally good conditions occur with low K-indices (0-2) and low A-indices. The K-index updates every 3-hours and the A-index updates once per day. In the above example, both the K and A numbers for September 8 are almost off the charts. Even when that happens, as I said above, don't immediately turn off your radio. Become an explorer. Find out more about what can be worked even when things look challenging. For instance, often North-South paths open during disturbed conditions at higher latitudes. Check 10 meters and even the low bands for signals from South America. They are often there. You may be surprised to find so called disturbed conditions presenting unusual paths and opportunities to work rare DX. Above all, enjoy the variations that propagation affords every day. It certainly is not boring!

Happy Autumnal Equinox to all BARS members and remember to get-on-the-air in all kinds of Space Weather!

73,

Tom K1TW

## Your Article Here!

by You

Did you have something you wanted to share with members of the club? If you have an article, send it to [w1dea@arrl.net](mailto:w1dea@arrl.net).

## Upcoming Events

Event	Date
October BARS Meeting – Entry Level License - What's Worked and What Hasn't with Bruce Blain, K1BG	October 4, 2017 7:00 – 9:30 PM
NEAR-fest New England Amateur Radio Festival	October 13-14
CQ World Wide SSB	October 28-29
November BARS Meeting – Kelly Beatty, editor of Sky & Telescope Magazine	November 1, 2017 7:00 – 9:30 PM
November sweepstakes - CW	November 4-6
November Sweepstakes – Phone	November 18-20
CQ World Wide CW	November 25-26

**BARS**  
Billerica  
Amateur  
Radio  
Society

Billerica ARS  
PO Box 832  
Nutting Lake, MA 01865

[www.w1hh.org](http://www.w1hh.org)  
[fb.com/barsw1hh](https://www.facebook.com/barsw1hh)

EMA Section Website  
[ema.arrl.org](http://ema.arrl.org)

**Next Meeting: October 4<sup>th</sup> - 7:00 – 9:30 PM!**

**Topic: Entry Level License – What’s Worked and What Hasn’t**  
**Chelmsford Bible Church**  
**128 Gorham St., Chelmsford MA**

**Club Net: Wednesday Nights – 8PM Start**

**Join us on the Billerica Repeater, 147.12, for the**  
**Weekly BARS net (except on the 1<sup>st</sup> Wednesday**  
**of the month which is club meeting night)**

**Weekly Club Breakfast: Saturday at 8:15 AM**

**Stelio’s Family Restaurant**  
**293 Boston Rd.**  
**North Billerica MA**

**VE Session: October 12<sup>th</sup> - 7:00 PM Start!**

**Chelmsford Bible Church**  
**128 Gorham St., Chelmsford MA**