



President's Corner

By Steve Bible, N7HPR



The annual ARRL-TAPR Digital Communications Conference (DCC) will occur on the weekend of September 15-17 at the Holiday Inn Airport West in the St. Louis suburb of Earth City.

The DCC has two days of technical forums on Friday and Saturday and concurrent introductory sessions on Saturday (on page 2 is a list of the papers submitted for this year's DCC along with the tentative DCC schedule). Saturday night, the banquet features Tom McDermott, N5EG, who will present "Ham Radio, the Best 1,000 Hobbies you can Undertake" and on Sunday morning, Gerry Creager, N5JXS will present "The Citizen Weather Observer Program and APRS Weather: History, Futures and Brain-Storming."

On-line, you can register for the DCC and make your hotel reservations at <https://www.tapr.org/dcc.html>

See you in Saint Louie (at the DCC)!

73,

Steve Bible, N7HPR, President TAPR

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DCC Papers

The following papers were submitted for publication and possible presentation at the DCC:

HamSCI and the 2017 Total Solar Eclipse by N.A. Frissell, W2NAF, J.S. Vega, WB2JSV1, J.D. Katz, KD2JAO, S.W. Gunning, K2AEM, A.J. Gerrard, KD2MCQ, M.L. Moses, KM4EGE, G.D. Earle, W4GDE, E.S. Miller, K8GU3, J.D. Huba, M. Hirsch, W2NRL, H.W. Silver, N0AX, S.E. Reyer, WA9VNJ, J.R. Ackermann, N8UR, M.D. Suhar, W8RKO, and D. Bern, W2LNX

Raspberry Pi 9600 Baud TNC (TNC-Pi9k) by Mark Griffith, KDØQYN

The H.A.R.C. Database and Visualization Utilities by Joshua D. Katz, William Engelke, and Dr. Nathaniel Frissell

Development and Design of Firmware Programming Tools for the openHPSDR Hardware by Dave Larsen, KV0S

Ground Based DVB-S2 Repeater for GEO Satellites by Wallace A. Ritchie, WU1Y

Modulation – Demodulation Software Radio by Alex Schwarz, VE7DXW

Developing a Solar Eclipse Simulation for Greater Good by Joshua S. Vega, WB2JSV, Dr. Nathaniel A. Frissell, W2NAF, Joshua D. Katz, KD2JAO, and Dr. Joseph D. Huba

Tracking Wildlife with Software Defined Radio in the VHF Band by Dave Witten, KDØEAG

###

DCC Schedule

Friday, Sept. 16

- 8:00 AM Conference Registration and Demonstration Room Open
- 8:45 AM Welcome
- 9:00 AM Technical Presentations
- Noon Lunch
- 1:00 PM Technical Presentations
- 5:30 PM Friday Night Social
- 10:00 PM Demonstration Room Closed

Saturday, Sept. 17

- 8:00 AM Conference Registration and Demonstration Room Open
- 8:45 AM Welcome
- 9:00 AM Technical Presentations
- Noon Lunch
- 1:00 PM Technical Presentations
- 4:00 PM TAPR Membership Meeting
- 6:00 PM No Host Cash Bar
- 7:00 PM Dinner Banquet
- 10:00 PM Demonstration Room Closed

Sunday, Sept. 18

- 8:00 AM Sunday Seminar
- Noon DCC Closes

###

Directors Election

Three Director positions on the TAPR Board of Directors are now open for nomination and nominations may be submitted now.

TAPR Board members serve three-year terms and their responsibilities include:

- 1) Attendance at both board meetings each year. [One is held at the Dayton Hamvention in May, the other at the Digital Communications Conference (DCC) in September.]
- 2) Regular participation in the continuous board session, which is conducted over the Internet.
- 3) Active engagement in TAPR's management.

To place a person in nomination, please remember that he or she must be a member of TAPR. Also, confirm that the individual is willing to have his or her name placed in nomination. Send that person's name (or your own if you wish to nominate yourself), call sign, mailing address, e-mail address, phone number(s), and a biographical sketch (100 words maximum) via <http://www.tapr.org/inforequest.php> or via snail mail postmarked by September 6, 2017, to P. O. Box 852754, Richardson, TX 75085-2754. If you submit a nomination via e-mail, we strongly encourage you to follow up by regular mail.

Nominations close after the call for nominations from the floor at the TAPR Membership Meeting at the DCC on September 17, 2016, and an online election will be held at http://www.tapr.org/tapr_elections.html from September 24, 2016 to October 7, 2016.

The three Director positions that are up for election are currently held by Steve Bible, N7HPR, Stana Horzepa, WA1LOU, and Darryl Smith, VK2TDS.

###

The Latest from TAPR...

TICC Timestamping/Time Interval Counter

The TAPR TICC is a two-channel time-stamping counter with better than 60 picosecond resolution and less than 100 picosecond typical jitter. It has an Allan Deviation noise floor below 1×10^{-10} for a one second measurement. For full technical details, visit

http://tapr.org/kits_ticc.html

The price for the TICC with Arduino is \$190 US plus shipping/handling if applicable.

###



TAPR Board Meeting Minutes

Dayton Hamvention, 18 May 2017

Present: Steven Bible, Mark Thompson, Bruce Raymond, George Byrkit, John Koster, John Ackermann, Scotty Cowling

Guests: Joe Muchnij, Ray Sturch

Called to order at 7:16 PM by President Steven Bible.

George Byrkit nominated Scotty Cowling to be TAPR Vice President. Seconded by John Koster. The vote was unanimous. (*Jeremy McDermond, NH6Z, had previously resigned as Vice President. – Ed.*)

Bruce Raymond is welcomed to his first meeting as a new TAPR board member.

Steven brought up the motion by George Byrkit to end the stipends/support of board members and officers to attend the DCC and Hamvention. This is related to the shortfall in the cash flow of TAPR of approximately \$20,000 per year. This motion was tabled, on a motion to table by John Ackermann, second by Scotty Cowling. Unanimously approved.

John Ackermann moved to appoint the following committees to report back at or before DCC

- 1) Membership
- 2) Office operations
- 3) Long-range planning

Each shall have 3+ members. Seconded by Scotty Cowling.

John Ackermann will chair office operations, consisting of John A, John Koster, and George Byrkit.

Scotty Cowling is chair of long-range planning with Steven Bible and one other board member.

Bruce will chair Membership with Mark Thompson and Stana.

Motion passed unanimously.

DCC will be in St Louis. Steven worked to keep the expenses down. We have a good contract. George will provide AV equipment. Tom Holmes will give us a break-out of the past several DCC events, so that we can see if DCC is making or losing money.

John Ackermann with proposals for projects:

- 1) TNDS-BUFs sold well made 100, sold for \$119.00 and 60 ordered and sold. Should we do another order? Consensus: wait to we sell them all, see if orders are still coming in, then order another batch (about 6 week lead time.)
- 2) Pulse Puppy with PPS output, takes one of several XCO or TXCO or whatever on it. John will send a more detailed proposal around. Could sell for \$79 w/o oscillator or \$99 with the Excalibur oscillator
- 3) TADD-13 (half a TADD1 and half a TADD3). Thru-hole kit with bag of parts. Likely a first run of 100 or so. John A moved to authorize development of TADD13 with 2 sets of beta boards, not to exceed \$500. Scotty seconded. Approved unanimously.

Bruce had an idea for a project. A Mylar balloon package with WSPR transmitter and GPS. Looks like \$25 in parts approximately.

Meeting ended at 9:25 PM.

Respectfully recorded,

George Byrkit

###

Hamvention TAPR Forum Video Online

Gary Pearce, KN4AQ, HamRadioNow's main man has posted a video of the TAPR Forum at this year's Hamvention held this past May in Xenia, Ohio. Here is the link to the video: <http://tinyurl.com/yd29v5vk>

###



Scotty Cowling, WA2DFI, moderates our forum.

Hamvention photos courtesy of George Byrkit, K9TRV, and Thomas Witherspoon, K4SWL.



Full house at the TAPR Forum



"Welcome!" says Steve Bible, N7HPR



Dominic Spill and Michael Ossman, AD0NR

TAPR is a community that provides leadership and resources to radio amateurs for the purpose of advancing the radio art.



Warren Pratt, NROV, presents at our forum.



Sated appetites at the TAPR-AMSAT Dinner.



Carl Laufer on the RTL-SDR



Our suite of booths at Hamvention before the throngs arrive.

TAPR is a community that provides leadership and resources to radio amateurs for the purpose of advancing the radio art.

Packet Travel in Poland and Slovakia

By Miroslav “Misko” Skoric, YT7MPB

This past June I spent in Poland and in Slovakia (both in central Europe). The main reason for a 2-week travel was CN2017, a respected computer network -related conference in Ladek Zdroj, Poland, where I had my packet radio tutorial. This time I had a chance not only to talk about my favorite data mode, but also to bring, display, & test some portable packet radio and APRS gear. For traveling to the event, I used a train from Krakow to Wroclaw. The ride took around 3.5 hrs, so I spent my time by experimenting with local APRS infrastructure. My equipment included ADI AF-16 VHF radio, RIGblaster Plug & Play sound card interface, and YIC GU93030SM-USB GPS-mouse, so the passengers in the train had an opportunity to see APRS in action. Having in mind travel conditions such as the 'Faraday cage' of the train construction, high voltage power lines over the railway composition, a relatively high speed of the train – circa 120 km/h, and geographical configuration of surrounding terrain and so on, it was not expected that my signals will reach many recipients, if any (Fig. 1).

The conference started on June 20 and my tutorial was chosen to be the first presentation. Some attendees wanted to compare AF-16 with some older & outdated technologies used 25-30 years ago that made hand-held radios bulky and heavy.

After finishing my activities in CN2017, I had to take more train ride, at first back to Wroclaw, following by another train to Rzeszow. Both rides took roughly 8 hours, so once again I used my gear for examining amateur radio frequencies – this time in the opposite direction. During that long and tiring travel of some 450 km I passed through the railway stations of Lublinec, Krakow Glowny, etc. All the time, the equipment was collecting signals from nearby APRS stations.



Fig. 1

Finally I arrived to Rzeszow city where I was the special guest lecturer with Politechnika Rzeszowska (means “University of Technology in Rzeszow”). My hosts and assistants were Mateusz SP8EBC (Fig. 2, left) and Prof. Dominik Strzalka, Vice-Dean for Development and Cooperation with the Economy (Fig. 2, right).

Prof. Strzalka officially opened the session, followed by an introductory speech of Adam, SP8N, the chair of the local chapter of Polish amateur

radio union PZK.

The second part of my travel was occurred in Bratislava, the capital of Slovakia. I made some practical experiments with APRS while visiting the “UFO”, an 100+ meter high observatory on Danube river bank in Bratislava. Of course, the radio and GPS were placed on a position from where they were about to pick up local amateur radio signals (Fig 3).

The technical experience was nice, as well as the meetings with local educators and hams. Should you want to collaborate in similar events next time, do not hesitate to contact me by email or packet mail.



Fig. 2



Fig. 3

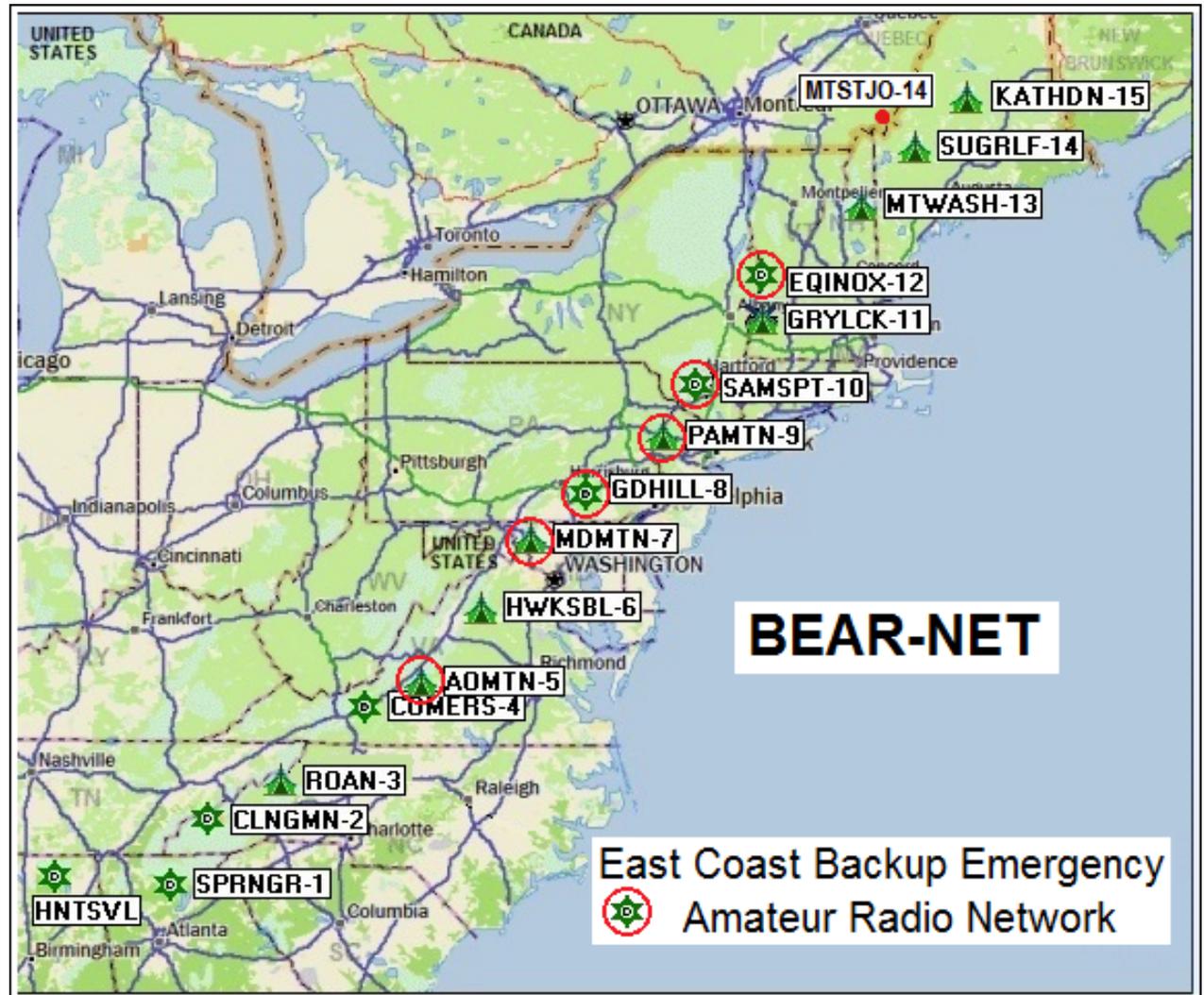
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East Coast BearNet 9600 Baud Packet Backbone

By Bob Bruninga, WB4APR

The Appalachian Golden Packets were successful again this year exchanging APRS messages from a handheld on top of Mt Katahdyn in Maine after a 5000' climb, along the 2000 miles to Springer Mountain in Georgia. Fifteen teams scaled mountain tops through 12 states for the 3 hour annual event the third saturday in July. For the second year, we did it at 9600 baud in preparation for a possible permanent Appalachian backbone. The idea for an East Coast Backup Emergency Amateur Radio Network (BearNet) is growing as we now have at least 5 of the sites at places with permanent ham radio access (circled in Red).

We had planned on looking into the 219 MHz shared Amateur Radio backbone frequencies shared with the Marine AMTS system. But apparently the commercial users never materialized and although the frequencies are relatively clear, it makes no sense to risk such a major effort for frequencies that might be taken away at any time. SO now we are looking at a simplex 223 MHz data channel that we can find clear from Georgia to Maine. The backbone will operate at 9600 baud with VHF ports for local user access.



TAPR Wear Available

As seen on the cover of Lands' End Business catalog

The VHF ports will also support APRS operators hiking the Appalachian trail and nearby mountains. The backbone will be a level 4 NetRom (TheNET) type network for occasional use during emergency communications exercises. We will use Kantronics KPC9612 nodes using their simplified KA node mode.

This initial phase 1 using KA nodes is just to get something on the air that just works. I know this is 30 year old technology, but it also works with no software, no firmware, no drivers, no upgrades, no internet, no downloads, etc. Just plug them in, adjust levels and the node is on the air.

See <http://aprs.org/ec9600net.html>, "AT Golden Packet Report" in PSR #112 and "Golden Packet Claimed!" in PSR #126.

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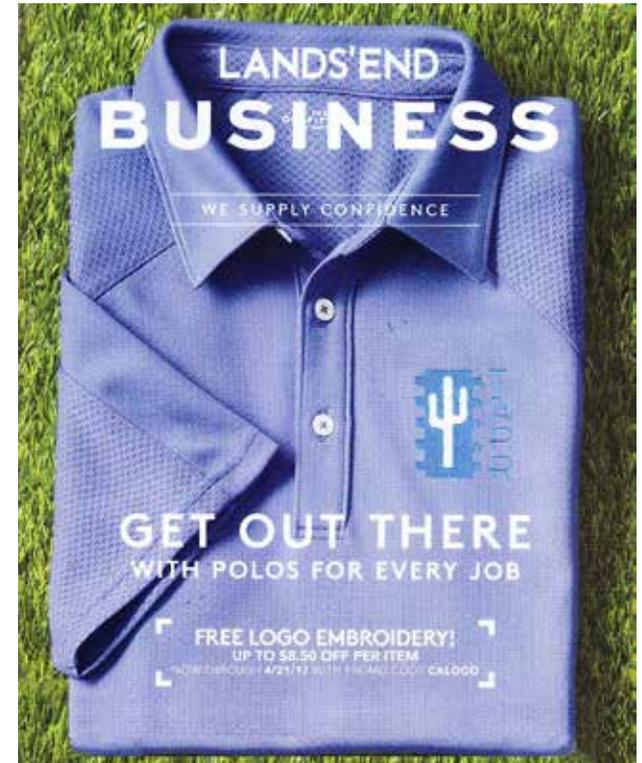
Personalized Land's End clothing with the TAPR logo and your name and call sign are now available from the TAPR Store at <http://business.landsend.com/store/tapr/>

Select from the Men's or Women's catalog. (To make shopping easier, there are "TAPR Recommended Shirts" in the Men's catalog including two styles of polo shirts, each available with or without pockets.)

The logo is available in three colors -- red, blue, and white. The name/call sign monogram thread will match the logo color. (We recommend that you use the white logo with dark colored shirts.)

Prices are very reasonable, for example, after adding the logo and monogram, a mesh pocket shirt is \$36.95. Processing time is 5-7 days, plus shipping.

###





Write Here!

Your *PSR* editor is patiently waiting for a few good writers, particularly ham radio operators working on the digital side of our hobby, who would like to write about their activities and have them published here in *PSR*.

You don't have to be Hiram Percy Maxim to contribute to *PSR* and you don't have to use *Microsoft Word* to compose your thoughts.

Your *PSR* editor can handle just about any text and graphic format, so don't be afraid to submit whatever you have to wallou@tapr.org, she can handle it!

The deadline for the next issue of *PSR* is November 1, so write early and write often.

If *PSR* publishes your contribution, you will receive an extension to your TAPR membership or if you are not a member, you will receive a TAPR membership.

###

On the Net

By Mark Thompson, WB9QZB

Facebook

As you may know, TAPR has a Facebook page, www.facebook.com/TAPRDigitalHam.

However, I also created a TAPR Facebook Group, www.facebook.com/groups/TAPRDigital/.

If you have a Facebook account, "Like" the TAPR Facebook page and join the TAPR Facebook Group.

If you join the group click on the Events link and indicate you're Going to the events.



On Twitter, Too

Access the TAPR Twitter account at www.twitter.com/taprdigital.



Also on YouTube

TAPR now has its own channel on YouTube: the TAPR Digital Videos Channel: www.youtube.com/user/TAPRDigitalVideo.

At this time, there are a slew of videos on our channel including many from the TAPR-ARRL Digital Communications Conference (DCC) that you may view at no cost, so have at it!



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TAPR Office Hours: Monday to Friday, 9 AM to 5 PM Central Time

Submission Guidelines

TAPR is always interested in receiving information and articles for publication. If you have an idea for an article you would like to see, or you or someone you know is doing something that would interest TAPR, please contact the editor (w11lou@tapr.org) so that your work can be shared with the Amateur Radio community. If you feel uncomfortable or otherwise unable to write an article yourself, please contact the editor for assistance. Preferred format for articles is plain ASCII text (OpenOffice or *Microsoft Word* is acceptable). Preferred graphic formats are PS/EPS/TIFF (diagrams, black and white photographs), or TIFF/JPEG/GIF (color photographs). Please submit graphics at a minimum of 300 DPI.

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TAPR is a not-for-profit scientific research and development corporation [Section 501(c)(3) of the US tax code]. Contributions are deductible to the extent allowed by US tax laws. TAPR is chartered in the State of Arizona for the purpose of designing and developing new systems for digital radio communication in the Amateur Radio Service, and for disseminating information required, during, and obtained from such research.

PSR Advertising Rates

Full Page Ad for 1 issue: \$100, 4 issues: \$350

Half Page Ad for 1 issue: \$75, 4 issues: \$250

Quarter Page Ad for 1 issue: \$50, 4 issues: \$175



Membership Application

TAPR

P. O. Box 852754, Richardson, TX 75085-2754

Phone 972-671-TAPR (8277), Monday-Friday, 9AM-5PM Central Time

E-mail taproffice@tapr.org URL <http://www.tapr.org>

Join or renew online at <https://secure.tapr.org/np/clients/tapr/login.jsp>

Benefits of a TAPR Membership:

- Subscription to the quarterly PSR
- 10% off most TAPR kits and publications
- Access to the TAPR digital library
- Latest information on TAPR R&D projects
- Co-sponsor of the annual TAPR-ARRL Digital Communications Conference (DCC)

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