CQ CHATTER

MARCH 2015 VOLUME B15 •ISSUE 1

WOOD COUNTY AMATEUR RADIO CLUB

President	WB8NQW	Bob Willman
Vice President	WD8JWJ	Bill Wilkins
Secretary	N1RB	Bob Boughton
Treasurer	KD8NJW	Jim Barnhouse

http://wcarc.bgsu.edu

Minutes

WCARC Meeting

February 9, 2015

Bob-WB8NQW, presiding

Present: Jim-K8JU, Bob-WB8NQW, Stan-K8LL, Don-K8OVO, Hoot-WB8VUL, Eric-WD8LEI, George-W8GGS, Chuck-WD8ICP, John-N8MSU, Steve-K8BBK, Jim-KD8NJW, Bill-WD8JWJ, Bob-N1RB

Meeting Called to Order with Pledge of Allegiance at 7:35 pm.

Minutes of December meeting approved. (JU/BBK)

Treasurer's Report approved (RB/VUL)

Old Business:

- Bob (NQW) reviewed the Kick-off brunch at Nazareth Hall and sought comments on whether or not to return there next year. There was unanimous consensus for returning to Nazareth.
- Bob reported on the current status of the repeaters as operational, and described the switch-overs made when it was discovered that the original UHF receiver was narrow band FM, thus explaining the distorted audio. Next project will include tuning and installing the duplexers that are already in-hand.
- Eric (LEI) began by describing the programming capabilities of the Motorola receivers that we are using. He also commented on the new plans for the 145.19 MHz repeater that had been part of the I-75 linked network. A friend has taken ownership of the repeater and intends to devote it to area-wide Skywarn operation. He also reported on plans for a digital repeater in Fostoria.
- Bill (JWJ) asked about the extent of the Club's equipment.

continued---on p.6

NET CHECK INS

Feb 3 Traffic: 0

KD8NJW (NCS)
KD8WZK
WB8NQW
W8GGS
WD8JWJ
NM8W
KD8VWU
K8BBK
KG8FH
WD8ICP
K8OVO
KB9JDP (12)

Feb 10 Traffic: 0

KD8VWU (NCS)
WD8JWJ
WB8NQW
KD8NJW
W8GGS
N8VNT
WD8LEI
N1RB
K8BBK
K8OVO
VA3IOI-John
KB8IUO-Neil
KD8WZK (13)

Feb 17 Traffic: 0

N1RB (NCS)
K8BBK
W8GGS
WB8NQW
WD8LEI
KD8VWU
KG8FH
KC8EKT
K8OVO
WD8JWJ/M (10)

BRAIN TEASERS

1. On what frequencies in the 2 meter band may image emissions be transmitted ?

a.) 144.1 to 148.0 only

b.) 146.0 to 148.0 only

c.) 144.0 to 148.0 only

d.) 146.0 to 147.0 only

2. Which of the following modes of communications are not available to a Technician class operator?

a.) CW and SSB on hf bands

b.) amateur television (ATV)

c.) EME (Moon bounce)

d.) VHF packet, CW and SSB

3. If an ammeter marked in amperes is used to measure a 3000-milliampere current, what reading would it show?

a.) 0.003 A

b.) 0.3 A

c.) 3 A

d.) 3,000,000 A

March Contests

The contest lineup for the month of March is given below. Please note that the WARC bands (60, 30, 17 and 12 m) are never open to contesting.

Feb 28/Mar 1	*1300 to 1300 Z*	80 m to 10 m
UBA (Belgium) DX 'test		**CW**
Feb 28/Mar 1	*1800 to 0600 Z*	80 m to 10 m
North American RTTY QSO Party		**RTTY**
Mar 1-2	*1500 to 0059 Z*	80 m to 10 m
North Carolina QSO Party		**all modes**
Mar 7-8	*0000 to 2359 Z*	160 m to 10 m
ARRL Int'l Phone 'test		**SSB**
Mar 14-15	*1400 to 0200 Z*	160 m to 10 m
Louisiana QSO Party		**all modes**
Mar 14-15	*1900 to 1900 Z*	80 m to 10 m
Idaho QSO Party		**all modes**
Mar 15-16	*1800 to 0100 Z*	80 m to 10 m
Wisconsin QSO Party		**all modes**
Mar 21-22	*1200 to 1159 Z*	160 m to 10 m
Russian DX 'test		**SSB-CW**
Mar 21-22	*1300 to 0100 Z; 1300 to 1900 Z*	80 m to 10 m
Oklahoma QSO Party		**all modes**
Mar 21-22	*1400 to 0200 Z; 1200 to 2400 Z*	160 m to 10 m
Virginia QSO Party		**all modes**
Mar 28-29	*0000 to 2359 Z*	160 m to 10 m
CQ WPX SSB 'test		**SSB**

Skywarn Training to be Offered

The annual Skywarn training session for Wood County will be held Monday, March 9th, at 6:30 pm, on the BGSU campus. The session is sponsored by the Wood County EMA and the Cleveland office of the National Weather Service, and this year will be held in the form of a webinar. See more details in the flyer on page 11. ■

FCC "Paperless" Amateur Radio License Policy Goes into Effect

from ARRL Letter

Starting February 17, the FCC no longer will routinely issue paper license documents to Amateur Radio applicants and licensees. The Commission has maintained for some time now that the official Amateur Radio license authorization is the electronic record that exists in its Universal Licensing System (ULS), although the FCC has continued to print and mail hard copy licenses. In mid-December, the FCC adopted final procedures to provide access to official electronic authorizations, as it had proposed in WT Docket 14-161 as part of its "process reform" initiatives.

Under the new procedures, licensees will access their current official authorization ("Active" status only) via the ULS License Manager. The FCC will continue to provide paper license documents to all licensees who notify the Commission that they prefer to receive one. Licensees also will be able to print out an official authorization — as well as an unofficial "reference copy" — from the ULS License Manager.

In comments filed November 5, the ARRL had strongly recommended that the FCC "give serious consideration to continuing a default provision for sending an initial paper license document to new licensees in the Amateur Radio Service, along with detailed, simple instructions for how to make the elections set forth in the notice relative to future modified or renewed licenses."

The FCC said that applicants or licensees who include a valid e-mail address under "Applicant Information" in the ULS will receive an official electronic authorization via e-mail. New license applicants who do not provide a FCC Registration Number at the examination point will receive a printed license as well as an FRN and a temporary password to access the Commission Registration System (CORES).

The ARRL and other Amateur Radio commenters also worried that unless a license document is printed on distinctive paper stock, its authenticity could be questioned in such situations as obtaining vanity

continued---on p.6

Brain Teaser answers: (T) 1-a, 2-a, 3-c

WCARC Weekly Net

Tuesdays at

2100 EDST/EST

147.18 MHz 67 Hz PL

Net Control Roster

Mar 3	WB8NQW
Mar 10	KD8NJW
Mar 17	KD8VWU
Mar 24	N1RB
Mar 31	K8OVO
Apr 7	WB8NQW

NEXT MEETING

Breakfast Meeting

Saturday, Mar. 7

TIME: 9:00 am

PLACE: Frisch's Big Boy

E. Poe Rd.

and N. Main St.

Bowling Green, OH

March Hamfests

Mar 15 Toledo Mobile Radio Association. Annual hamfest and computer fair. Owens Community College, Perrysburg, OH.
web: http://www.tmrahamradio.org/hamfest.php

DON'T FORGET!

10 meter informal net meets Sunday @ 2030 EST/EDST on 28.335 MHz

NET CHECK INS

continued

Feb 24 Traffic: 0

K8OVO	(NCS)
K8BBK	
KD8NJW	
WB8NQWQ	
WD8JWJ	
WD8LEI	
W8GGS	
N1RB	
KD8BIN	
KD8VWU	(10)

FCC---from p. 4

call sign license plates. To address this, the FCC said the watermark "Official Copy" will be printed on each page of an official authorization that a licensee prints out from the ULS. The WTB recently stopped using distinctive paper stock to produce hard copy licenses and has been printing these on "standard, white recycled paper." The Bureau noted that the distinctive paper stock it had used was six times more expensive than the plain recycled paper it now uses.

The ULS License Manager now includes settings that allow licensees to notify the WTB that they prefer to receive official authorizations on paper. Once the final procedures go into effect designating electronic access as the default, licensees can change the ULS License Manager setting so that the Bureau will print and mail a license document. Licensees also may contact FCC Support via the web, telephone or mail to request paper licenses. ■

minutes---from p. 1

- Bob (RB) moved that an inventory of the Club's equipment be made and submitted to the President (seconded by JWJ)-motion passed unanimously.
- Bill asked if the check for the proceeds share of the equipment sales had been sent to the WA8SCT Trust and the answer was affirmative.
- Bob reminded all of the Skywarn training on Monday, March 9 at BGSU-Olscamp Hall (see flyer).
- Bob asked if there was any interest in a Foxhunt. Bill (JWJ) suggested having an unattended xmtr for the hunt and will try to look into it.
- The next meetings are breakfast on Saturday, March 7th, and business on Monday, April 13th.
- Bob requested any new suggestions for meeting programs.

New Business:

- Don (OVO) mentioned that Ross, NS8C, who had been a long-time active member of WCARC, was now a silent key.
- Jim (JU) moved that the following members be granted life membership for extensive service to the Club : WB8NQW, W8PSK and N1RB (seconded by VUL). Motion was passed.

Meeting Adjourned at 8:40

WB8NQW sought comments on a schematic chart of the repeater that he is developing. ■

Dongle Bits - VI

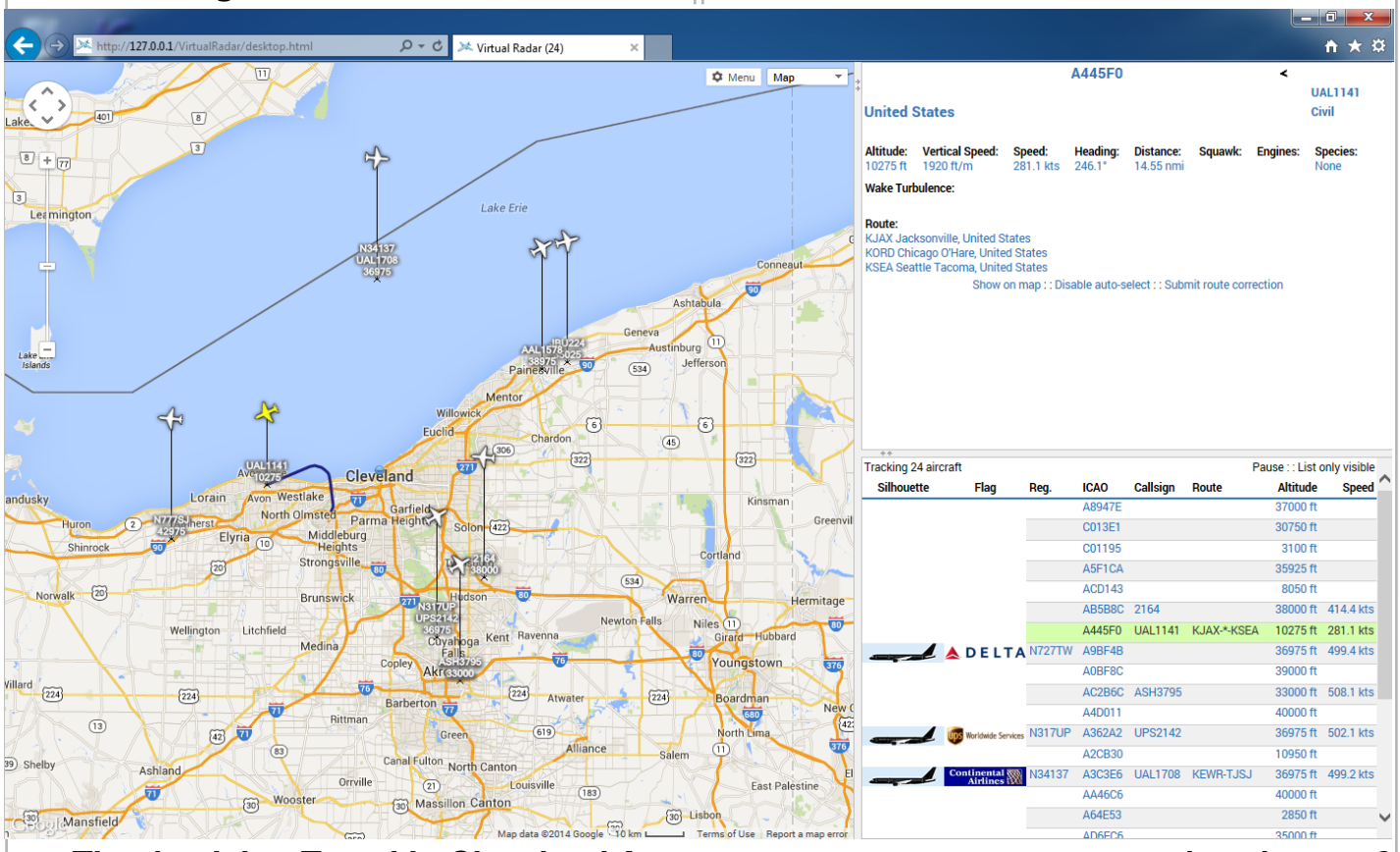
contributed by Jeff Kopcak, K8JTK

The holidays were a busy time at the K8JTK laboratories with a couple of RTL-SDR projects. The RTL-SDR is the European TV tuner dongle that was turned into a software defined radio receiver.

Thanksgiving is one of the busiest travel seasons, and I wanted to decode ADS-B data to see how many aircraft were flying around. ADS-B stands for Automatic Dependent Surveillance - Broadcast allowing aircraft to be tracked by ground stations and provide situational awareness to nearby aircraft. This is part of the FAA's NextGen project and mandated by agencies across the globe.

I saw this project in the January 2014 edition of QST, written by Robert - W9RAN. He covered building a Collinear Array for the ADS-B frequency of 1090 MHz. I used one of my ham antennas. The RF signal received by the dongle is turned into data packets by a program called ADSB# (included in the SDR# download). VirtualRadar receives those packets, decodes the data, and plots aircraft on Google Maps. This setup can work with a Raspberry Pi, and I hope to try this in the future.

Over the Thanksgiving holiday, I saw 25 aircraft flying around Cleveland, on average. I think the most I saw was 48 at once. Not all aircraft have full ADS-B implementations.



Thanksgiving Travel in Cleveland Area

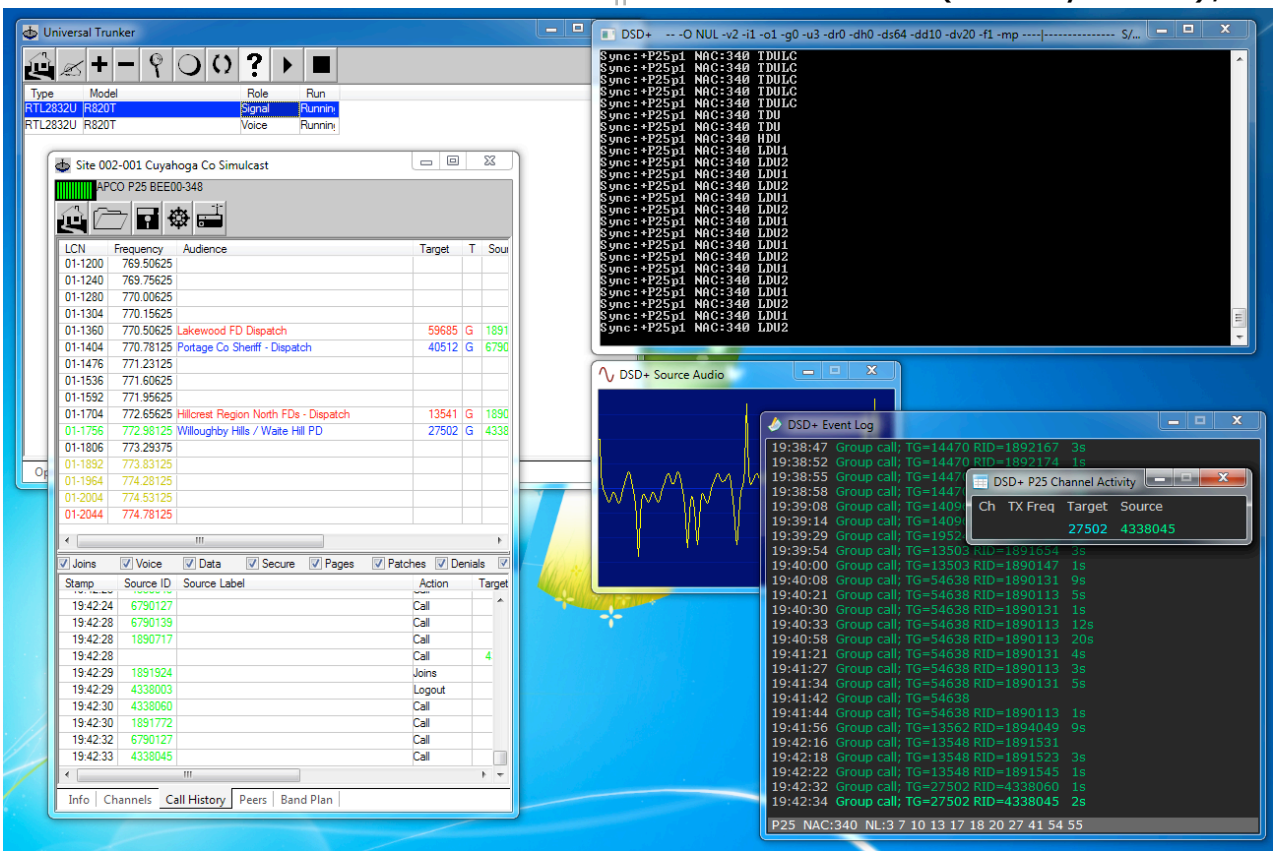
continued---on p.8

Dongle---from p. 7

For example: I would see a call sign but no position data. My receive range (depending on aircraft altitude) was east of Toledo to the PA border and south to Canton. Visit my write-up on this project: ADS-B Decoding with ADSBSharp and VirtualRadar Server.

The second project is a little more complicated but it helped me understand how trunked radio systems work. With the FCC narrow banding mandate in certain parts of the RF spectrum, many public service agencies have decided to "go digital." In my area, the MARCS-IP system and the Greater Cleveland Radio Communications Network are the most popular. Both are P25 trunked digital systems. P25 is a specification for voice and data transmission. Trunked radio systems operate by having a radio send data to the control channel requesting communication on a talk group. The control channel directs all users of that talk group to a specified channel. When the user is done transmitting, all radios switch back to monitoring the control channel for further instructions. This is done seamlessly and allows many users (agencies) to use a small set of radio frequencies. Users only hear the conversations on their assigned talk group, but not other users on the same system.

Scanners that receive these systems run $500 and go up from there. Using two RTL-SDR dongles and software (mostly free), I've



Trunk Tracking---Single Voice Decoder

continued---on p.9

Dongle---from p. 8

been able to receive P25 trunked systems for about $65. One dongle monitors only the control channel and other dongle(s) jump frequencies to receive the digital voice modulation with a program decoding the audio. I can have as many voice receivers as I want, whereas a scanner cannot be expanded. The most I've heard of is eight. There are some drawbacks, like portability. Find out my experiences in my P25 Trunked Tracking post.

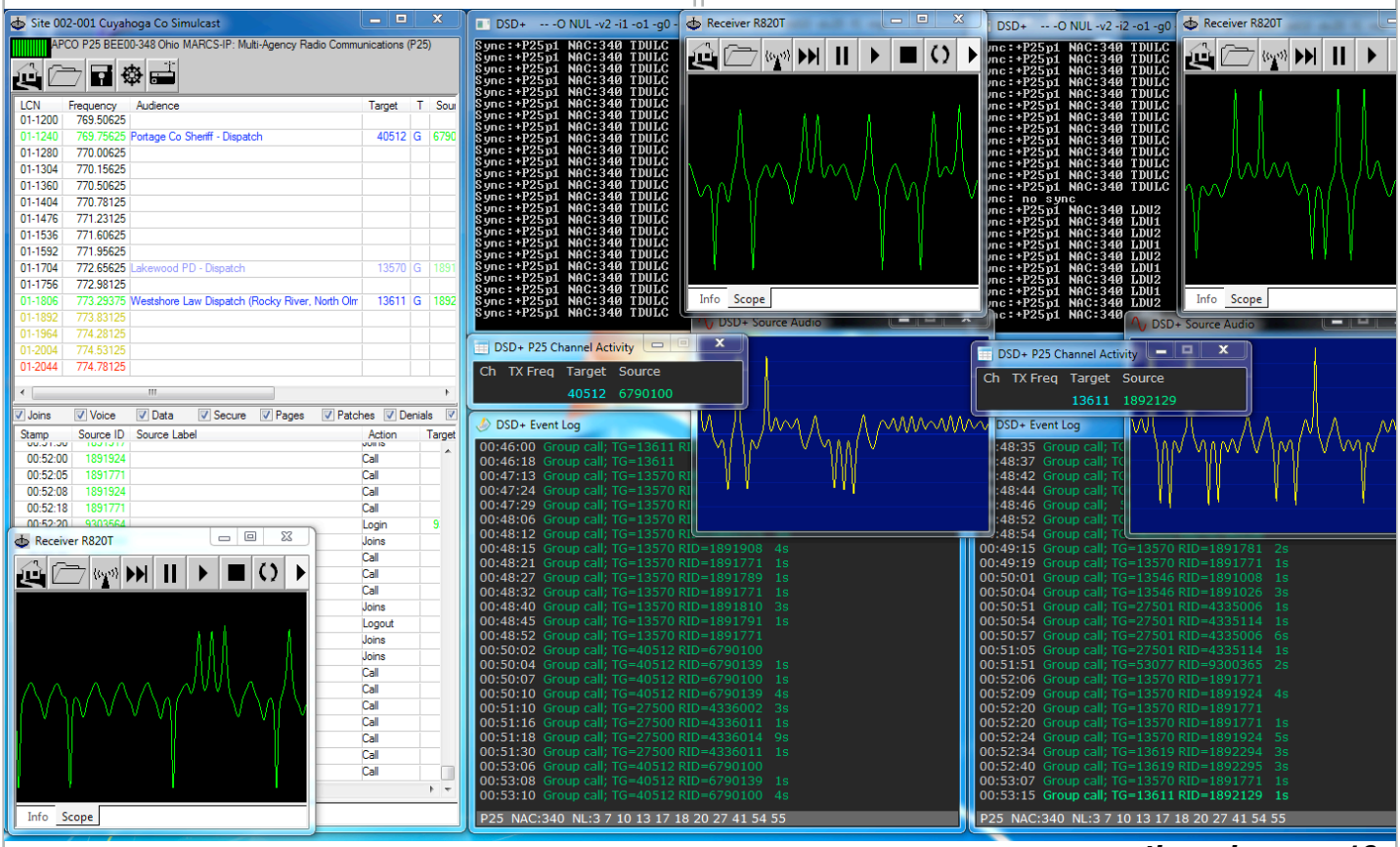
Fresh Baked Pi

The Raspberry Pi foundation released new models over the last couple of months. The biggest news coming at the beginning of February: the Raspberry Pi 2. This model comes with a quad-core CPU and 1GB RAM offering a six times speed improvement, still at $35. Initial reports are that it is a lot faster!

Along with the new Pi2 came a new version of the Raspbian operating system with optimizations and a new look. In the near future, Microsoft will be releasing a version of Windows 10 Embedded for the Raspberry Pi 2 FREE OF CHARGE! (see the Raspberry Pi 2 link above.)

That's A Wrap

A goal behind this series has been to expose many hams to newer technologies, and younger people to ham radio. These technologies are getting young people



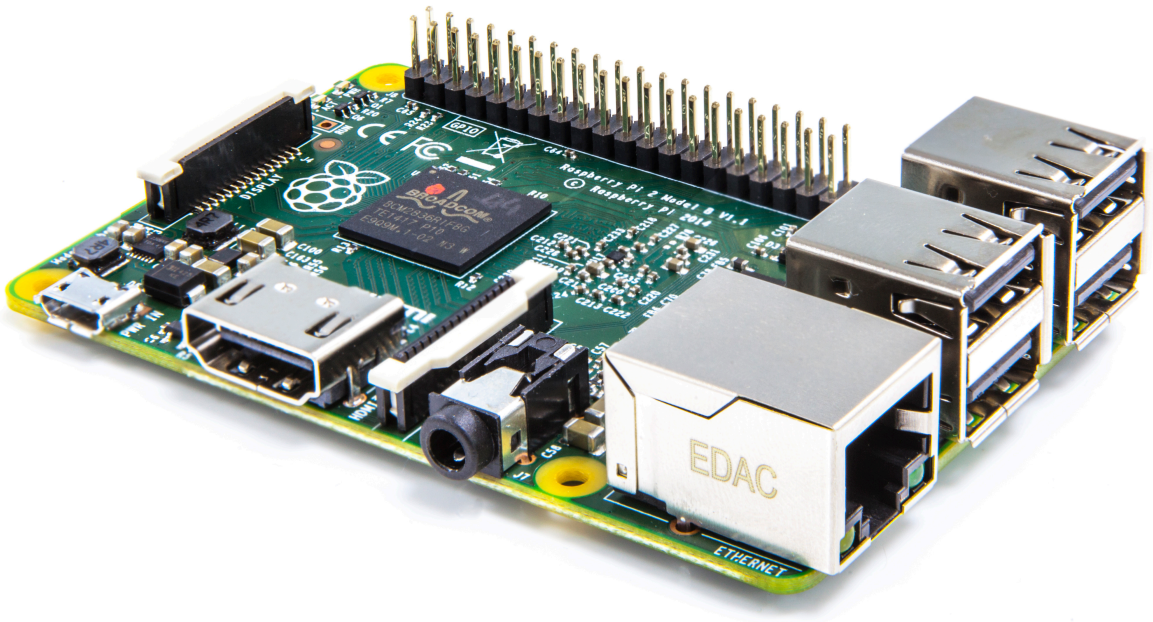
Trunk Tracking---Two Voice Decoders ***continued---on p.10***

Dongle---from p. 9

interested in experimenting, programming, and even Ham Radio. On podcasts that I watch, I've heard "I want to get my Ham Radio license" by 20 and 30 year olds like I've never heard before. These are young people interested in experimenting, making things, building things, and hacking things -- all of which are the foundation of Amateur Radio. Making has evolved into writing software, sending a chip a set of commands and analyzing what is returned, or analyzing packets. Then figuring out "what can I do with this?"

I saw a great technology roundtable over the holidays and they talked about getting kids into technology. Many of the methods apply to Ham Radio. As a builder, you build something and presume what will happen. Then something different happens and now you have a mystery to solve. "Why did X happen and not Y?" A new theory develops and sucks you in. This is exactly how the Raspberry Pi, RTL-SDR, and every project surrounding them came to be. It is my opinion that we, as the Amateur Radio community, need to encourage, capitalize, and focus efforts on younger makers and hackers to get them licensed.

As this is my last planned article, I would like to take time and thank the newsletter editors for thinking this series was worth publishing and recreating all the links I included. Thank you to those who told others about this series. I got a ton of feedback and couldn't be happier that others have found this interesting and sparked them to start experimenting. Most of all, thank you for reading. ■



Raspberry Pi 2

2015

SKYWARN SEVERE WEATHER SPOTTER'S TRAINING

for

WOOD COUNTY

MONDAY, MARCH 9, 2015

6:30 p.m.

OLSCAMP HALL Room #115

On the campus of BOWLING GREEN STATE UNIVERSITY

(Use Parking Lot N on Ridge Street off of Mercer Rd.)

Presented via <u>WEBINAR</u> by: National Weather Service, Cleveland, OH Office

No pre-registration required. You will register the night of the class starting at 6:00 p.m.
This training is open to first responders and the general public (any age).
Attendees will receive (either that night or via mail) their SKYWARN card from the NWS.
EMA will provide class attendance certificates to first responders.

WOOD COUNTY ARC
P.O.BOX 534
BOWLING GREEN, OH
43402