CQ CHATTER

WOOD COUNTY AMATEUR RADIO CLUB

President	WB8NQW	Bob Willman
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Secretary	N7RB	Bob Boughton
Treasurer	KD8NJW	Jim Barnhouse
Board Member	KE8CVA	Terry Halliwill

http://wcarc.bgsu.edu

Time Travel with Software Defined Radio

by Tom Nardi, Hackaday

It's easy to dismiss radio as little more than background noise while we drive. At worst you might even think it's just another method for advertisers to peddle their wares. But in reality it's a snapshot of the culture of a particular time and place; a record of what was in the news, what music was popular, what the weather was like, basically what *life* was like. If it was important enough to be worth the expense and complexity of broadcasting it on the radio, it's probably worth keeping for future reference.

But radio is fleeting, a 24/7 stream of content that's never exactly the same twice. Yet while we obsessively document music and video, nobody's

Morse code on Gboard

from Geek Links
Morse for Gboard is a Method for Using Morse Code on an Android device-

Developer **Tania Finlayson** found her voice through Morse code. Now she's partnering with Google to bring Morse code to Gboard, so others can try it for accessible communication.

Morse code for Gboard includes settings that allow users to customize the keyboard to their unique usage needs. It works in tandem with Android Accessibility features like **Switch Access and Point Scan**.

This provides access to Gboard's AI driven predictions and suggestions, as well as an entry point to AI-powered products, like the Google Assistant.   You can enter text with Morse code on your Android device using Gboard, the Google Key-

Net Check Ins

July 3 **Traffic: 0**
- *KD8NJW* *(NCS)*
- *KD8RNO*
- *KE8CVA*
- *WB8NQW*
- *N1RB*
- *KE8CUZ*
- *WD8LEI /M* *(7)*

July 10 **Traffic: 0**
- *WB8NQW* *(NCS)*
- *KE8CVA*
- *KG8FH*
- *WD8JWJ*
- *K8JU*
- *KD8NJW*
- *N1RB*
- *WD8ICP*
- *WD8LEI*
- *KD8VWU*
- *K8OVO*
- *KE8GJY*
- *KD8RNO* *(13)*

July 17 **Traffic: 0**
- *WB8NQW* *(NCS)*
- *KE8CUZ*
- *KE8CVA*
- *KG8FH*
- *KD8NJW*
- *N1RB*
- *WD8JWJ*
- *KB8QEW*
- *KD8RNO*
- *W8MAL-Mike*
- *WB8RG-Brad*
- *KE8IJV-Rich* *(12)*

Brain Teasers

1. How are VHF signals propagated within the range of the visible horizon?

- **a.)** by sky wave
- **b.)** by line of sight
- **c.)** by plane wave
- **d.)** by geometric refraction

2. When may you operate your amateur station somewhere in the US besides the address listed on your license?

- **a.)** only during times of emergency
- **b.)** only after giving proper notice to the FCC
- **c.)** during FCC approved emergency practice
- **d.)** whenever you want to

3. Which electric circuit draws too much current?

- **a.)** open circuit
- **b.)** dead circuit
- **c.)** closed circuit
- **d.)** short circuit

August Contests

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

Aug 4-5 **10-10 Summer 'test**	*0001 to 2359 Z*	10 m **SSB FM**
Aug 4-5 **North American QSO Party**	*1800 to 0559 Z*	160 m to 10 m **CW**
Aug 11-12 **WAE DX 'test**	*0000 to 2359 Z*	80 m to 10 m **CW**
Aug 11-12 **Maryland-DC QSO Party**	*1600 to 0400 Z*	160 m to 10 m **all modes**
Aug 19 **ARRL Rookie Roundup RTTY**	*1800 to 2359 Z*	80 m to 10 m **RTTY**
Aug 18-19 **Russian District Award 'test**	*0800 to 0800 Z*	160 m to 10 m **CW SSB**
Aug 18-19 **North American QSO Party**	*1800 to 0559 Z*	160 m to 10 m **SSB**
Aug 25-26 **Hawaii QSO Party**	*0400 to 0400 Z*	160 m to 10 m **all modes**
Aug 25-26 **W/VE Islands QSO Party**	*1200 to 0300 Z*	160 m to 10 m **all modes**
Aug 25-26 **YO (Romania) DX HF 'test**	*1200 to 1200 Z*	80 m to 10 m **CW SSB**
Aug 25-26 **Kansas QSO Party**	*1400 to 2000 Z*	80 m to 10 m **all modes**
Aug 25-26 **Ohio QSO Party**	*1600 to 0400 Z*	80 m to 10 m **all modes**

International Lighthouse/Lightship Weekend

3rd Full Weekend in August since 1998

Malarrif Lighthouse, Iceland. New to the ILLW this year. Erected in 1946 (station established 1917). Active; focal plane 30 m (98 ft); four flashes every 30 s, white, red or green depending on direction. 24 m (79 ft) round cylindrical concrete tower with four buttresses, lantern and gallery. Lighthouse painted white, lantern red. Located on the south coast of the Snæfells peninsula about 15 km (9 mi) southwest of Gröf.

00:01 *UTC*, 18 August, to 24:00 *UTC*, 19 August 2018 (48 hours)
Next year: 00:01 *UTC*, 17th August, to 24:00, 18th August 2019

For some reason or other August seems to have become the international weekend for lighthouses. Countries all over the world have become involved in one or another lighthouse activity. Some years ago the United States Congress declared August 7th as their National Lighthouse Day and during the first week in August amateur radio operators in U.S. set up portable stations at lighthouses and endeavor to make contact with each other. This event is known as the US National Lighthouse Week.

In Britain the Association of Lighthouse Keepers, **ALK**, conducts International Lighthouse Heritage Weekend on the 3rd full weekend in August. Their objective is to encourage Lighthouse managers, keepers and owners to open their lighthouse or light station and related visitor centers to the public with a view to raising the profile of lighthouses, light vessels and other navigational aids, and to preserving our maritime heritage.

However, the major event which takes place in August is the International Lighthouse/Lightship Weekend **ILLW**, which came into being in 1998 as the Scottish Northern Lights Award run by the Ayr Amateur Radio Group. The history of this event can be found elsewhere on this site. The ILLW takes place on the 3rd full weekend in August each year and attracts over 500 lighthouse entries located in over 40 countries. It is one of the most popular international amateur radio events in existence probably because there are very few rules and it is not the usual contest type event. It is also free and there are no prizes for contacting large numbers of other stations. There is little doubt that the month of August has become "Lighthouse Month" due largely to the popularity and growth of the ILLW. ∎

WCARC Weekly Net

Tuesdays at 2100 all year

147.18 MHz 67 Hz PL

Net Control Roster

Aug 7	*KD8NJW*
Aug 13	*K8OVO*
Aug 20	*WB8NQW*
Aug 27	*N1RB*
Sep 3	*KD8VWU*
Sep 10	*KD8NJW*

NEXT MEETING

Business Meeting

Monday, August 13

TIME: 7:30pm/7:00
PLACE:
   Sheriff's Training Rm
   S. Dunbridge Rd. and
   E. Gypsy Lane Rd.
   Bowling Green, OH

10 meter Net

informal group

meets

Sunday

@ 20:30

on 28.335 MHz

Fusion Net

Thursday

@ 19:30

on 442.125 MHz

67 Hz PL on FM

discussion of all

things digital

Net Check Ins

July 24   Traffic: 0
N1RB   (NCS)
KC8EKT
KE8CVA
KG8FH
KE8CUZ
WD8JWJ
KD8NJW
WB8NQW
WD8LEI
KD8RNO
N8VNT
NA1RB-Brian
K8JU
K8LL   (14)

July 31   Traffic: 0
N1RB   (NCS)
KE8CUZ/P
KC8IFW
KG8FH
KE8CVA
WD8JWJ
KD8NJW
WB8NQW   (8)

board.   Watch the YouTube video below for an explanation:

Tania's Story: Morse code meets machine learning

How to Do It—

Step 1: Download Gboard
Note: Morse code is available for US English on devices running Android 5.0 and later. To find your Android version, go to Settings: About phone or About tablet.

To download Gboard on your Android device, go to **Gboard on Google Play**.

Step 2: Set up the Morse keyboard

To add the Morse code layout to Gboard:
1. Open your device's Settings app .
2. Tap **System**, then **Languages & input**.
3. Tap **Virtual keyboard**, then **Gboard**.
4. Tap **Languages**, then **English (US)**.
5. Swipe left through the options, then tap **Morse code**.
6. To hear sound feedback as you enter Morse code, turn on **Sound on keypress**.
7. Optional: Change other Morse code settings on this screen. Tap **Done**.

Tip: You can always go back to Gboard language settings from the Gboard. Touch and hold the comma (,), then tap Settings.

Step 3: Use Morse code on Gboard

When the keyboard is on your screen, switch to Morse code layout by pressing the Globe.

August Hamfests

Aug 11 Land of Lakes ARC. **Hamfest.** Gateway Community Church, Angola, IN.

web: http://llarc.org

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morse—from p. 6

Now you can enter text using the dot (.) and dash (-) from Morse code.

For a tutorial that will teach you to type in Morse code with Gboard, visit **morse.withgoogle.com/learn**. To play a game and find other learning tools, visit **g.co/morse**.

Note: If you're using an accessibility service on your Android device (such as TalkBack, Switch Access, or Select to Speak), the Morse layout works with these services.

Connect an external switch

You can enter Morse code with an external switch device using **Android Switch Access**.

To ensure that the Morse keyboard shows on the screen when your switch device is connected:

1. Open your device's Settings app
2. Tap System, then Languages & input.
3. Tap Physical keyboard, then turn on Show virtual keyboard.

If your switch device already has keys assigned to the dot (.) and dash (-) characters, Gboard automatically registers these characters when you press those keys. ∎

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time—from p. 1

bothering to record radio. You can easily hop online and watch a TV show that originally aired 50 years ago, but good luck finding a recording of what your local radio station was broadcasting last week. All that information, that rich tapestry of life, is gone and there's nothing we can do about it.

Or can we? At HOPE XII (Hackers On Planet Earth-12th conf.), Thomas Witherspoon gave a talk called *"Creating a Radio Time Machine: Software-Defined Radios (SDR) and Time-Shifted Recordings"*, an overview of the work he's been doing **recording and cataloging the broadcast radio spectrum**. He demonstrated how anyone can use low cost SDR hardware to record, and later play back, whole chunks of the AM and shortwave bands. Rather than an audio file containing a single radio station, the method he describes allows you to interactively tune in to different stations and explore the airwaves as if it were live.

Modern Take on a Classic Technique

You might think that such radio trickery is a product of modern hard-

ware and software, but in fact the methods Thomas and his group of radio archivists use have considerably more retro beginnings. As far back as the 1980's DXers, radio hobbyists that look specifically for distant signals, found that if they connected the intermediate frequency (IF) output of their radio to a VCR they could capture whatever their antenna was picking up for later analysis. When the tape was played back through the antenna port of the radio, they could tune to individual frequencies and search for hard to hear signals.

Of course the utility of this method wasn't limited to just weak signals. It allowed radio operators to do things that would otherwise be impossible, like going back and listening to different news broadcasts that were aired at the same time. A few DXers realized there was a potential historical value to such recordings, and some of these early tapes were saved and wound up becoming part of the collection **Thomas has been building and offering up as a podcast**.

The modern version of this technique replaces the AM or shortwave receiver with any one of a number of affordable SDR devices, and the VCR has become a piece of software that can dump the SDR's output to a file. This file can then be loaded up in a compatible SDR interface program, such as HDSDR, in place of an actual radio.

Storing History

Thomas envisions a future where researchers will be able to sit down at a kiosk and browse through the radio broadcasts from a given time and place, the same way a microfilm machine is used to look at a newspaper from decades past. But while making these recordings is now cheaper and easier than ever before, there are still logistical issues that need to be solved before that can happen. Chief among them: how do you store it all?

Thomas mentions that a single day's recording of the AM broadcast band will result in roughly 1 TB of data. Potentially some compression scheme could be developed which would scan the recordings to isolate the viable signals and delete the rest. Another approach would be a sort of ring buffer arrangement, where the system only retains the last few days of recordings unless the user commits them to long-term storage. If something deemed worthy of future study occurs, the ring buffer could be moved to permanent storage so the event as well as the preceding time could be preserved for historical purposes.

Until then, Thomas and his team will keep on recording during noteworthy events. As an example, they made extensive spectrum recordings during the 2016 US Presidential elections, believing it will be a moment future generations will likely want to have as much information on as possible. ∎

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