

# Spurious Emissions

Orleans County Amateur Radio Club

October 2009

## OCARC Meetings

The OCARC meets at **7:30 PM** on the **2nd Monday** of each month at the Orleans County Emergency Management Office (14064 W. County House Rd. Albion, NY)

The exceptions are the August (picnic) and September (dinner) meetings

## **Club Officers**

### **President**

Stephen W Maier KZ2R

### **Vice President**

Howard Flint KC2EZJ

### **Secy**

Charles Lind N8CL

### **Treas**

Richard Toussaint

KA2BCF

### **Dir**

Bruce Sidari WA2TMC

### **Net Mgr**

Marion Toussaint

KA2BCE

## OCARC Meeting October 12, 2009

### **WHERE:**

EMO

necessary, just not as much.

### **When:**

October 12, 2009

Yes, SDR has been here for a while and is the future of wireless communications.

### **Time:**

7:30 PM

You have to look no further than the very popular FLEX 3000 and FLEX 5000 ham transceiver.

### **PROGRAM**

This month I hope to present a program on Software Defined Radios.

Look in QST and read what they can do.

Huh? What's that you say! You HATE software and can't let go of your hardware.

It is more than just a computer imitating the knobs and meters on the front panel of a radio.

Don't worry hardware is, and will, always be

It is the computer actually processing signals received AND transmitted.

As in all the programs we present this will be an introduction to SDR. It will NOT be an engineering lesson.

If all goes as planned I hope you will be suitably impressed with the cost vs. performance of an SDR radio and it's associated software.

See **YOU** at the meeting. I'm bringing the cider.

**de WA2TMC**

## Update : OCARC Remodeling Club Station **WA2DQL** Bruce WA2TMC

Wayne N2WK and Bruce WA2TMC met at the EOC to discuss antenna placement and the shack reorganization. We have selected a spot for the vertical just South of the EOC approximately where we had it for FD this year. We will also be erecting a G5RV North of the EOC in about the same position as FD but trying to get it up at 80 ft or

higher.

It would be ideal if we could get the folded dipole mounted between the two towers. This would give us a selection of three different antennas. All this will be based on approval of Paul Wagner EMO.

The shack is well .....**a shack!**

It needs a good house cleaning. Anything that does not lend itself to

the efficiency, enjoyment or pleasurable radio atmosphere should be eliminated.

The station should be easily understood by anyone who stops in and wants or HAS to operate. Not only the FM radios but the HF radios too.

Let's be honest if there was a real emergency how long would it take a club member not familiar with the shack to be operational? My guess ..... longer than it should!  
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A posted easily followed procedure will be in place. Antenna switching, power supplies, computers etc will be clearly marked and included in the posted procedure.

Our club station is a real asset that other clubs would love to have.

It has been in that same room since 1962. For 47 years the Orleans County EMO has been very gracious to the club. Let's get better prepared to answer the call.

With the removal of equipment from the back room the shack has taken on additional duties as a storage area. It couldn't be helped - space is limited.

We need to put a serious plan together to get rid of the outdated and unused equipment that has accumulated. It has less value everyday.

Will **YOU** be the one to take on this liquidation project. HELP!!!!

Wayne and I will continue with our efforts but **PLEASE** give us your input **PLEASE** don't be afraid to ask us what's going on.

de WA2TMC

### **What Is a Software Radio (SW)?**

*The ultimate device, where the antenna is connected directly to an A-D/D-A converter and all signal processing is done digitally using fully programmable high speed DSPs.*

*All functions, modes, applications, etc. can be reconfigured by software.*

### **What Is a Software Defined Radio (SDR)?**

*Performs the majority of signal processing in the digital domain using programmable DSPs and hardware support, but some signal processing is still done in the analog domain, such as in the RF and IF circuits.*

### **HAM Radio SDR**

*A typical amateur software radio such as the FlexRadio systems or the design described in the ARRL Handbook (1999), uses a direct conversion receiver.*

*Unlike direct conversion receivers of the more distant amateur radio past, the mixer technologies used in Software Defined Radios are based on DSP (Digital Signal*

## **OCARC Weekly 2 Meter Net**

The OCARC 2 Meter Net meets every Tuesday evening at 9:00 PM on the WA2DQL repeater.

**Freq** = 145.27 KHz -600  
**PL** = 141.3 Hz

This is a very informal net and ALL stations are welcome.

Our monthly Simplex night is the Monday FOLLOWING our normal club meeting.

It is also at 9:00 PM and is conducted on 145.27 Simplex.

The schedule of net Control stations for the next month is:

Oct 13 - KC2JKU  
Oct 20 - KA2BCE  
Oct 27 - WA2TMC  
Nov 3 - KA2BCF  
Nov 10 - KC2JKU  
Nov 17 - KA2BCE

## **HELP!!**

I wasn't kidding. We really need someone to take charge of liquidating the outdated unused equipment.

It really does need to be **YOU!!!**

***So when someone asks you, "What is ham radio, what exactly do you do??"***

***Well ask them if they have an hour or so and you might describe just a few ham activities but certainly not all.***

***Below is a good start: Amateur Radio Activities and Practices***

Amateur Radio operators use various modes of transmission to communicate. Voice transmissions are most common, with some, such as frequency modulation (FM) offering high quality audio, and others, such as single sideband (SSB) offering more reliable communications, often over long distance, when signals are marginal and bandwidth is restricted, at the sacrifice of audio quality.

Radiotelegraphy using Morse code (also known as "CW" from "continuous wave") is an activity dating to the earliest days of radio. It is the wireless extension of land line (wire based) telegraphy developed by Samuel Morse and the predominant real time long-distance communication method of the 19th century.

Though computer-based (digital) modes and methods have largely replaced CW for commercial and military applications, many amateur radio operators still enjoy using the CW mode, particularly on the shortwave bands and for experimental work such as earth-moon-earth communication, with its inherent signal-to-noise ratio advantages. Morse, using internationally agreed code groups, allows communications between amateurs who speak different languages.

It is also popular with homebrewers as CW-only transmitters are simpler to construct. A similar "legacy" mode popular with home constructors is amplitude modulation (AM), pursued by many vintage amateur radio enthusiasts and aficionados of vacuum tube technology.

For many years, demonstrating a proficiency in Morse code was a requirement to obtain amateur licenses for the high frequency bands (frequencies below 30 MHz), but following changes in international regulations in 2003, countries are no longer required to demand proficiency.[8] As an example, the United States Federal Communications Commission phased out this requirement for all license classes on February 23, 2007.

Modern personal computers have encouraged the use of digital modes such as radioteletype (RTTY), which previously required cumbersome mechanical equipment.

Hams led the development of packet radio, which has employed protocols such as TCP/IP since the 1970s.

Specialized digital modes such as PSK31 allow real-time, low-power communications on the shortwave bands.

Echolink using Voice over IP technology has enabled amateurs to communicate through local Internet-connected repeaters and radio nodes, while IRLP has allowed the linking of re-

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peaters to provide greater coverage area. Automatic link establishment (ALE) has enabled continuous amateur radio networks to operate on the high frequency bands with global coverage.

Other digital modes, such as FSK441 using software such as WSJT, are used for weak signal modes including meteor scatter and moonbounce communications.

Fast scan amateur television has gained popularity as hobbyists adapt inexpensive consumer video electronics like camcorders and video cards in home computers.

Because of the wide bandwidth and stable signals required, amateur television is typically found in the 70 cm (420 MHz–450 MHz) frequency range, though there is also limited use on 33 cm (902 MHz–928 MHz), 23 cm (1240 MHz–1300 MHz) and higher.

These requirements also effectively limit the signal range to between 20 and 60 miles (30 km–100 km), however, the use of linked repeater systems can allow transmissions across hundreds of miles.

These repeaters, or automated relay stations, are used on VHF and higher frequencies to increase signal range. Repeaters are usually located on top of a mountain, hill or tall building, and allow operators to communicate over hundreds of square miles using a low power hand-held transceiver. Repeaters can also be linked together by use of other amateur radio bands, landline or the Internet.

Communication satellites called OSCARs (Orbiting Satellite Carrying Amateur Radio) can be accessed, some using a hand-held transceiver (HT) with a factory "rubber duck" antenna.

Hams also use the moon, the aurora borealis, and the ionized trails of meteors as reflectors of radio waves.

Hams are also often able to make contact with the International Space Station (ISS), as many astronauts and cosmonauts are licensed as Amateur Radio Operators. Amateur radio operators use their amateur radio station to make contacts with individual hams as well as participating in round table discussion groups or "rag chew sessions" on the air.

Some join in regularly scheduled on-air meetings with other amateur radio operators, called "Nets" (as in "networks") which are moderated by a station referred to as "Net Control". Nets can allow operators to learn procedures for emergencies, be an informal round table or be topical, covering specific interests shared by a group.

***What? No mention of Dxing, RDFing, Radio Sport (contesting) etc.***

***Goes to show you how NOT boring our great hobby is! de WA2TMC***