

CQ CHATTER

SEPTEMBER 2021

VOLUME B21 • ISSUE 7

WOOD COUNTY AMATEUR RADIO CLUB

President	KG8FH/W8PSK	Jeff Halsey/Loren Phillips
Vice President	KE8CVA	Terry Halliwill
Secretary	N1RB	Bob Boughton
Treasurer	KD8NJW	Jim Barnhouse
Board Member	WB8NQW	Bob Willman

Minutes WCARC Meeting August 9, 2021

Special thanks to Jeff-KG8FH for recording these minutes—ed.

Phil-W8PSK presiding

Present: W8PSK-Phil, KG8FH-Jeff, WD8LEI-Eric, WB8NQW-Bob, KE8QGV-Roger, KC8PFP-Rex, KC8FCE-Mike, KE8CVA-Terry, WE8TOM-Tom, WB8ZHU-Thom

Meeting called to order: at 7:30 with Pledge of Allegiance

Minutes: of the June business meeting as published in the July edition of CQ Chatter were approved.

Treasurer's Report: Treasurer was not in attendance.

Old Business:

- Phil initiated a brief discussion of Field Day—all participants were enthused by the event.
- Phil brought up plans for the upcoming King Midget Special Event operation on August 13. Plans are to meet on the “grassy knoll” area behind Homeworks at 3 PM to set up the equipment.
- Eric (LEI) presented both an ARES report and AREDN news. He reported that FEMA is concerned about the potential large influx of travelers to the NW and Central Regions of the I-75 corridor as the 2024 solar eclipse best

continued on p. 6

Net Check Ins-I

Aug 3

Traffic: 0

WB8NQW
WD8LEI
KB8QEW
W8PSK
KD8NJW
KA8VNG
KE8PJM
KE8CVA
KG8FH
WE8TOM
WD8ICP
KD8VWU
WD8JWJ

(NCS)

(13)

Aug 10

Traffic: 0

KG8FH
WD8LEI
KE8CVA
KE8PJM
WB8NQW
W8PSK
KD8RNO
KA8VNG
WB8ZHU
KC8NKC

(NCS)

(10)

Aug 17

Traffic: 0

N1RB
KC8EKT
KE8CVA
KE8PJM
KG8FH
WD8LEI
KD8NJW
WB8NQW
W8PSK
KA8VNG
KD8RNO
N8VNT
WE8TOM

(NCS)

Brain Teasers

1. What happens to the current at the junction of two components in series?
 - a.) it divides equally between them
 - b.) it is unchanged
 - c.) it divides based on the value of the components
 - d.) the current in the second component is zero
2. Which of the following might damage a multimeter?
 - a.) measuring a voltage too small for the chosen scale
 - b.) leaving the meter in the milliamps position overnight
 - c.) attempting to measure voltage when using the resistance setting
 - d.) not allowing it to warm up properly
3. What is the ability to store energy in a magnetic field called?
 - a.) admittance
 - b.) capacitance
 - c.) resistance
 - d.) inductance

September Contests

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

Sep 4-5	<i>0000 to 2359 Z</i>	80 m to 10 m
All Asian DX 'test		SSB
Sep 4-5	<i>1300 to 0400 Z</i>	160 m o 10 m
Colorado QSO Party		all modes
Sep 5-6	<i>1800 to 0300 Z</i>	160 m to 10 m
Tennessee QSO Party		all modes
Sep 11	<i>1400 to 2200 Z</i>	80 m on up
Ohio State Parks on the Air		SSB/FM
Sep 11-12	<i>1500 to 0300 Z</i>	160 m to 10 m
Alabama QSO Party		all modes
Sep 18-19	<i>1400 to 0200 Z</i>	160 m to 10 m
Iowa QSO Party		all modes
Sep 18-19	<i>1400 to 2000 Z</i>	160 m to 10 m
Texas QSO Party		all modes
Sep 18-19	<i>1600 to 0359 Z</i>	160 m to 10 m
New Jersey QSO Party		all modes
Sep 18-19	<i>1600 to 2200 Z</i>	160 m to 10 m
New Hampshire QSO Party		all modes
Sep 25-26	<i>1200 to 1200 Z</i>	160 m to 10 m
Maine QSO Party		all modes

Net Check Ins-II

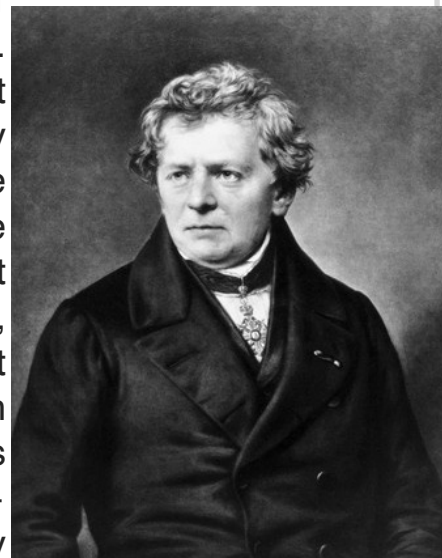
Aug 17	<i>cont.</i>
KE8QWV	
KB8QEW	
W8ALM	(16)
Aug 24	Traffic: 0
KD8NJW	(NCS)
WD8JWJ	
KE8CVA	
W8ALM	
KG8FH	
KE8PJM	
WD8LEI	
KE8NEC	
WB8NQW	
W8PSK	
N8MSU	
WE8TOM	
KD8RNO	
N1RB	
KA8VNG	
WD8ICP	(16)
Aug 31	Traffic: 0
WB8NQW	(NCS)
WD8JWJ	
KE8CVA	
K8DLF	
KG8FH	
KE8PJM	
KC8EKT	
WD8LEI	
KE8NEC	
KE8QGV	
KD8NJW	
WE8TOM	
N1RB	
N8VNT	
KD8RNO	(15)

Brain Teaser answers: (T) 1-b, 2-b, 3-d

The Story Behind Ohm's Law

by [Al Williams](#), Hackaday

Do you ever wonder how much of what we do you could figure out from scratch? Tying your shoe might seem simple now, but kids have trouble mastering the skill, and dreaming it up for the first time is even harder. The same holds true for a lot of technology we use every day. Would you think up the computer mouse or even the computer if they didn't already exist? Surely, though, one of the simplest and most useful math equations that is fundamental to electronics — Ohm's law — would be easy to figure out, right? It is often the first thing you learn about electronics, but figuring it out that first time turned out to be quite difficult.



The fellow who discovered the relationship was Georg Ohm, a high school math and physics teacher from Cologne. What you might not know is that the first time he published it, he got it wrong. But, lucky for us, he figured out his mistake and was able to correct it.

It isn't Just a Good Idea...

Ohm's law is easy. For a linear resistor, the current through the resistor is proportional to the voltage applied across it. The proportionality constant is the reciprocal of the resistance value in — no surprise — ohms. That's just a fancy math way of saying $I=E/R$ where E is voltage, I is current, and R is resistance. Of course, algebra will tell you that $E=IR$ and $R=E/I$.

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WCARC Weekly Net

Tuesdays at 2100 all year

147.18 MHz 67 Hz PL

Net Control Roster

<i>Aug</i>	<i>31</i>	<i>WB8NQW</i>
<i>Sep</i>	<i>7</i>	<i>N1RB</i>
<i>Sep</i>	<i>14</i>	<i>KG8FH</i>
<i>Sep</i>	<i>21</i>	<i>KD8NJW</i>
<i>Sep</i>	<i>28</i>	<i>NM8W</i>
<i>Oct</i>	<i>5</i>	<i>WB8NQW</i>

NEXT MEETING

Breakfast Meeting

Saturday

September 4

TIME: 9:00 AM

PLACE:

Frisch's Big Boy

E. Poe Rd. &

N. Main St.

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 analog

Informal net

minutes—from p. 1

viewing will be centered in this area. There is concern about the potential tourist overload and how it may affect multiple jurisdiction coordination. A potential solution for some of the communication overload needed might be AREDN nodes/operators, etc.

- Bob (NQW) mentioned that he has been in touch with a minister of the LDS church in Waterville, and he is interested in having some hams present information about emergency communications.

New Business:

- Phil introduced the need to accomplish a relocation of all the Club gear that is located in the Phillips building on N. Main St. Eric (LEI) offered some space to the Club for the storage of antenna-related gear in a building near the Sheriff's tower, provided members help him install a new floor at that location. He commented that it is a small job, and should not take too long. Tom (TOM) and Roger (QGV) also volunteered to help. Phil mentioned that he would store the gear in his garage until the end of September, which would allow Eric to schedule the floor replacement and enable the gear to be stored there.
- Phil brought up the earlier consensus to hold a Fox Hunt immediately after

the September Breakfast Meeting on the 4th (Labor Day weekend). It was suggested that a better time for the breakfast and foxhunt would be the next weekend, on Saturday, September 11th. Motion was made and seconded (LEI/CVA) and approved.

- Phil mentioned that it was time to begin thinking about the Officer Slate for 2022. Also discussed was the potential for an in-person kick-off banquet in January.
- Tom (TOM) announced that there will be an Ohio State Parks on the Air event slated for Saturday, September 11.

King Midgets Visit BG

The 30th Annual King Midget Car Club Jamboree paid a visit to Bowling Green on August 12 through 14. As a part of the festivities WCARC set up a special event station with the call K8M, with operation on Friday, August 13th.

The Club's portable NVIS antenna was erected near the City parking lot at Clough and S. Main St. Unfortunately, band conditions on 40 m and 80 m were not favorable, and no QSOs were made. Nevertheless, a good time was had by all and there was a chance for some conversation with a few of the Midget owners under the canopy after the rains came. ■

Ohm—from p. 4

battery and a galvanoscope. His experiments aimed to describe the amount of current that would flow through a given length of wire. He would measure the current flowing from the battery using only his galvanoscope and then insert a length of wire and note the difference in the reading.

Oops...

In 1825, Ohm announced his formula to the world in a paper entitled, “Preliminary Notice of the Law According to which Metals Conduct Contact Electricity.” Not exactly a click-bait title. However, there was a problem: the formula he had was incorrect.

Keep in mind that there were not all the units we are used to today, so Ohm’s formula was measuring V , the reduction in needle deflection caused by the test wire. The length of the wire X and the applied voltage M were key factors as well as the resistivity of the wire, R . The incorrect formula was: $V=M \log(1+X/R)$

With what we know today, you can look at this and immediately know it is incorrect. However, in 1825, that wasn’t so obvious. The paper was accepted for publication but before it went to print, Ohm ran new experiments with a different power source. He realized his formula was wrong, but it was too late.

Correction

The problem was the battery. While it might seem obvious today, in 1825 there wasn’t a general realization that a wet

Measure Twice

While that seems obvious today, in the 1800s, not so much. There had been some awareness of electricity dating back to ancient Greece. However, until 1800, when Volta created the “hydro-electric” battery — meaning it was a wet cell — there was no easy way to create a steady current for scientific investigation.

From 1800 to 1820, then, science was able to use a voltaic pile to generate electricity. But there was a big limitation. There was no way to measure the current flow in the circuit. In 1781 Henry Cavendish experimented with Leyden jars (basically a high-voltage capacitor) and glass tubes of varying diameter and length filled with saline. Having no way to measure current, he would use his body and note how strong a shock he felt. He noted that current was related to voltage but did not mention it to other scientists and it remained largely unknown until Maxwell published the result in 1879.

The current measurement problem resolved in 1820 when Oersted showed that a current would produce a magnetic field. That led Schweigger and Poggendorff to invent the galvanoscope in 1821. This is essentially a coil with a compass inside of it. Current in the wire would deflect the compass needle and the amount of deflection told you how much current was in the wire.

Ohm wanted to study the nature of electric current flow and built both a

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Ohm—from p. 7

cell's voltage will vary under load. Ohm's friend Poggendorff suggested he use a thermoelectric battery — what we would call a thermocouple. In *“Determination of the Law According to which Metals Conduct Contact Electricity, together with the Outlines of a Theory of Volta's Apparatus and the Schweigger Galvanoscope”* Ohm got it right. (He liked the long titles.) The formula there didn't exactly look like what we think of as Ohm's law, but it actually is, if you account for the resistance of the power source. In modern notation, we would write: $E=I*(R_b+R)$.

Here, R_b is the battery resistance. In 1827, Ohm also published “The Galvanic Battery Treated Mathematically” showing that, at least, his ability to write good titles had improved. That's all, right?

Not So Fast

You would think that everyone would be happy to see Ohm's law and would start to apply it immediately. That didn't happen. Science was skeptical then — as you might argue it still is — and the establishment of the day thought Ohm's law was too simple to have eluded the community for thirty-some-odd years.

There was also strong sentiment that Ohm had rushed to formulation, and a distaste for his practical experimental methods. The establishment saw Ohm as — more or less — a poser.

The German Minister of Education proclaimed that “a professor who

preached such heresies was unworthy to teach science.” Others said that the work was a “web of naked fancies.”

For six years, the world continued to ignore Ohm's law, for the most part. However, Pouillet published a paper in 1831 where he — without being aware of it — rediscovered Ohm's formula. He was probably disappointed when, upon publication of Pouillet's law, others pointed out that Ohm had done the same work years earlier.

Errata

You might think it is odd that Ohm published a wrong formula or Pouillet repeated an experiment, but things were a lot different then. Barlow, in fact, tried to solve the same problem in 1825 and had published a finding that current through a wire was inversely proportional to the square root of the wire's length.

This result was incorrect but fit the data because Barlow failed to account for the internal resistance of the battery, as Ohm did. Even Barlow accepted that he was uncertain his law was correct. On the plus side, Barlow did invent Barlow's Wheel which was a clever form of motor using a metal wheel, a magnet, and mercury.

Acknowledged

In the end, Ohm's work was acknowledged and he not only received the credit he was due, but his name is still on our lips every day. ■

King Midgets Visit Snooks

Thanks to Bob, WB8NQW, for making arrangements to obtain photos—photos courtesy of Wood County Sheriff's Dept.





2021 FINDLAY HAMFEST

Vendor set-up 6AM.
Doors open at 8AM.

SUNDAY, SEPTEMBER 12

Hancock County Fairgrounds
1017 E. Sandusky St., Findlay, OH 45840

41.036717
-83.631166

- \$10 Admission
- \$20 Vendor Table (\$15 additional tables)
- \$ 5 Flea Market Space
- \$15 Overnight fee

CONTACT US:

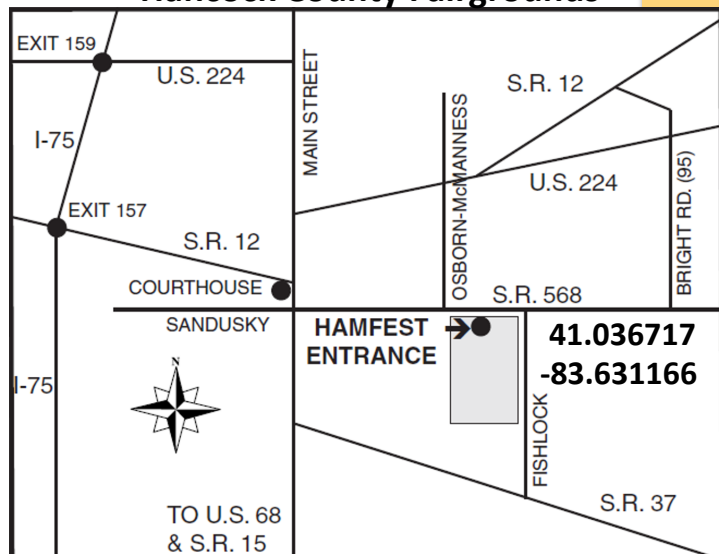
Talk In: 147.15+ (PL 88.5)
444.15+ (PL 88.5)
Phone: 419-423-3402
www.findlayradioclub.org/hamfest
hamfest@findlayradioclub.org



Box 587 Findlay, OH 45839
Organized in 1925

**RAIN OR SHINE
FREE PARKING**

Hancock County Fairgrounds



For more information and online ticket sales, just point your cell phone's camera on this QR code.



September Hamfests

Sep 12 - Findlay RC Hamfest. Hancock County Fairgrounds, Findlay, OH.
web: <http://www.findlayradioclub.org/hamfest>

Sep 19 - Adrian ARC Hamfest. Lenawee County Airport, Adrian, MI.
web: <http://www.w8tqe.com>

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