

OCEC/RACES SIGNALS

For the support of County Government during emergencies



Oswego County Emergency
Communicators/RACES
200 North 2nd Street
Fulton, NY 13069

Oswego County Repeaters

147.150 mHz PL not req'd
146.850 mHz PL not req'd
442.350 mHz 103.5 PL

Other repeaters of interest

146.670 mHz PL 151.4 Syracuse
147.345 mHz No PL Phoenix

Packet FlexDigi User Ports

EOC Fulton 145.090 mHz K2QQY
Scriba 145.690 mHz KA2AON
Hannibal 145.770 mHz K1YHR

NETS

OCEC/RACES The 1st and 3rd Sunday
of the month at 2000 Hrs. 147.150 mHz

NYS RACES Net Every Sunday Morn-
ing at 0900 local on 3993.50 kHz

WEB SITES

OCEC/RACES
www.oswegoraces.org

Fulton Amateur Radio Club
www.fultonhamradioclub.org

Go to our web page for more links to
interesting places.

*A monthly meeting is held in the
lower level of the County Building
on Route 481 North, Fulton,
across from Mimi's restaurant.
Access is through the west door
until the meeting starts. Door is
secured after that. Use the after
hours button if late. Someone will
come up and let you in. Meeting
sign in is at 1850 hours local.*

Up coming meetings:

February 18th

March 18th

April 15th

OFFICERS

John K2QQY Radio Officer
Keith, WB2NVY ARO Admin
Jim N2MGU ARO Comms
Mark KC2JNI ARO Logistics
Bob WA2AFF ARO Ops & Plan,
Tom W2TQF ARO ARRL EC
John N2MKH Unit Ldr Packet
Steve KC2QXE Unit Ldr IT
Brien KA2AON Unit Ldr Skywarn

The OCEC/RACES Newslet-
ter is now being compiled for
a quarterly posting. The
move is to try and get more
interesting subjects from
more contributors. If you
have a pet subject and would
like to publish it here please
contact me.

The schedule for publishing is
variable.

John K2QQY

January Meeting

The year started off with a bang. The EMO Director declared the message form that we had been using dead. She had gotten many comments from users that it was just too complicated and why couldn't they have something simple. A look at the NIMS form 213 seemed to hit the mark. She marked up for a few changes that does not significantly change the look but is more in keeping with the County's needs. A final design has been made and it will be going to the printers shortly. In the meantime we will be training with the new form which is know for the moment as Form ICS-213-Oswego.

Full user instructions will be added to our SOG after we do a few shake downs. For the moment the word count will be for every word and punctuation mark. Abbreviations and number groups will still be one group signified by spelling them. You can download the form on our web site on the SOG page, Standard Oswego County Message Form.

A copy is included on the next page.

The training portion of the meeting saw us break into small groups and discuss various parts of a packet system.



John, N2MKH, demonstrating how long a packet is to Henry, KC2SUL and Ed, KC2SUJ. K2QQY looks on in disbelief. A stretchy cord will give you longer packets. Oh, that is a computer cable!



Keith, WB2NVY answers questions about using the bulletin board system with Bob, WA2AFF, and Judy, KC2SUM.



John, N2MKH, showing a gosinta to Ed and Henry. You gotta have a fitsa sock for it. High tech digital is interesting.

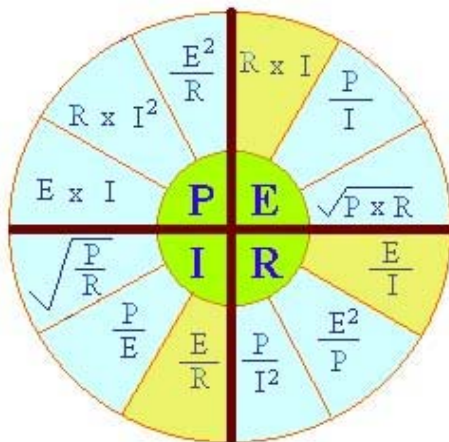
Tech Notes for Ham License

By Dave Anthony WD4EKB

Brushing up on some of the technical aspects of ham radio

Studying "The ARRL Extra Class License Manual for Ham Radio" knocked out some cobwebs that had formed over some basic concepts of electrical and electronic theory. Although there are a lot of places where you can "memorize the test questions", I thought it would be interesting to go over the theory behind these questions. A lot of things looked familiar, but the memory got clouded with the advances in technology like complete radios being crammed onto one chip requiring little knowledge as to how to make it a finished product. The first few topics to be covered will be "Pre" Extra class theory, but will be of help getting up to speed in electrical/electronic theory. ~Dave

We will start with Ohms Law and simple series and parallel resistance in a DC circuit, a couple of the basics that must be understood.



R = Resistance; I – Current; E = Voltage; and P = Power, which will be discussed at a later time.

The most basic formula that is used in the study of electricity is OHM'S LAW.

1. Total Resistance in a circuit is equal to the Total Voltage applied divided by the Total Current. or, $R = E / I$.
2. Total Current in a circuit is equal to the Total Voltage applied divided by the Total Resistance across the circuit. or $I = E / R$.
3. Total Voltage in a circuit is equal to the Total Current thru the circuit multiplied by the Total Resistance across the circuit. or $E = I \times R$.

In a simple SERIES resistive circuit (with more than one resistor), the current is constant and the voltage divides in proportion to the value of each resistor in the circuit. ($E = I \times R$) See figure 1.

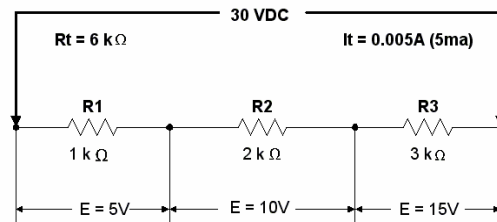


Figure 1

If you have more than one resistor in series, as shown, you find the total resistance simply by adding all of the resistors together. $R1 + R2 + R3$, etc. At this point you can find the total current thru the circuit by dividing the applied voltage by the total resistance. Then you can find the voltage across each resistor using $E = I \times R$.

$$R_{total} = R1 + R2 + R3$$

$$E_{total} = E1 + E2 + E3$$

$$I_{total} = E_{total} / R_{total}$$

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In a simple PARALLEL resistive circuit, more than one resistor as shown in Figure 2, the voltage is the same across each resistor and the current divides in proportion to the value of each resistor leg.

If you have more than one resistor in parallel, as shown in Figure 2, you find the total resistance as follows.

$$\frac{1}{R_{total}} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$$

The reciprocal of the total resistance is equal to the reciprocal of all the resistors in parallel added together.

If you only have two resistors in parallel, you can find the total resistances as follows.

$$R_{total} = \frac{R_1 \times R_2}{R_1 + R_2}$$

If you have more than two resistors in parallel and you are more comfortable using the second method shown above, you can apply it to a multi leg parallel resistance as follows.

$$R_{total} \text{ for } R_1 \text{ and } R_2 - \text{ call it } R_{TA} = \frac{R_1 \times R_2}{R_1 + R_2}$$

$$R_{total} \text{ for } R_1, R_2 \text{ and } R_3 \text{ in parallel} = \frac{R_{TA} \times R_3}{R_{TA} + R_3}$$

As you can see this can get quite cumbersome. With an inexpensive calculator you can easily do reciprocals.

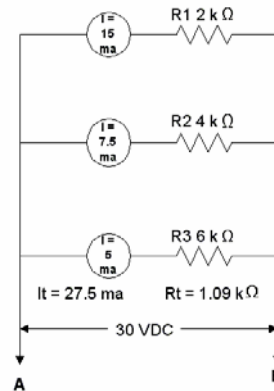


Figure 2

As stated above, the voltage across each resistor in the circuit is equal to the applied voltage 30V.

The total current thru the circuit is equal to the sum of the currents thru each resistor as determined by $I = E/R$. $IR_1 = 0.15A$; $IR_2 = 0.0075A$; and $IR_3 = 0.005A$. Total current thru the circuit is: $0.0275A$ or 27.5 ma .

You can determine the total resistance as shown above or you can divide the applied voltage by the total current. $R = E/I_{total}$. $1.09 \text{ k}\Omega$.

NOTE that the total resistance in a parallel circuit will ALWAYS be lower than the lowest resistor value.

If you have a circuit with both series and parallel resistance, you have to make the circuit a series only circuit by calculating an equivalent single resistance for each parallel leg. After this is done, your calculations are the same as for a simple series resistive circuit. However, keep in mind the rules for current and voltage in series and parallel circuits. The total series current goes into the equivalent parallel section and splits according to the individual resistance within the

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parallel leg, out of the parallel equivalent the current recombines to follow the rule for current flow in a series circuit. Voltage will divide in proportion to the resistive values within the series circuit treating the parallel equivalent as one resistor, however, the voltage across each component within the parallel circuit will be the same. A good internet practice site is: www.wisc-online.com/objects/index-tj.asp?objid=dce3202