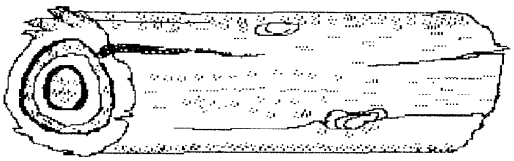
LOG

FOUNDED 1947



Web:
http://www.westparkradiops.org
Email: w8vm-<at>-arrl.net

CLUB'S W8VM SKCC #12111

October-November 2023
VOL. LVIII No. 6

WEST PARK RADIOPS AMATEUR RADIO CLUB

WEST PARK NEWS *

*Subject to change

Monday night nets are on the NODXA's repea
Join the fun. We thank the Northern Ohio DX Association for our use of their repeater, W8DXA, 147.36+ (107.2). Our meeting schedule is somewhat variable. Pay attention to our opportunities to announce meeting changes.

UPCOMING CONTESTS AND ACTIVITIES...

(sourced from WA7BNM and ARRL information)

Oct	6	NCCC FT4 Sprint
Oct	14	Solar Eclipse QSO Party
Oct	21	Stew Perry Topband Challenge
Oct	28	CQ Worldwide DX Contest, SSB
Nov	4	ARRL Sweepstakes Contest, CW
Nov	10	K1USN Slow Speed Test
Nov	18	ARRL Sweepstakes Contest, SSB
Nov	25	CQ Worldwide DX Contest, CW

WEST PARK RADIOPS MEETINGS & PROGRAMS FOR 2023*

Oct	13*	Possible Choices*
Nov	10*	QRP operation*
		Linux Demonstration*
Dec	8*	Annual Christmas Party*

* Subject to Change, Including order of events, locations and times.

HURRICANE NET FOUNDER GERALD MURPHY K8YUW...

Gerry Murphy was a long time MEMBER of West Park Radiops

ARRL President Congratulates Hurricane Watch Net on its 50th Anniversary 10/07/2015

(from the ARRL)

On behalf of the League, ARRL President Kay Craigie, N3KN, has congratulated the Hurricane Watch Net (HWN) on the 50th anniversary of its founding by Jerry Murphy, K8YUW.

"Thanks to the efforts of the Net's dedicated and knowledgeable volunteers across 5 decades, Amateur Radio has played a key role in helping protect the lives of a great many people in harm's way," President Craigie told HWN Manager Bobby Graves, KB5HAV, this week in an e-mail. "The Net demonstrates how significantly Amateur Radio contributes to emergency preparedness and promotes international goodwill. Please relay to the Net's members my appreciation and respect for a half century of outstanding service. Best wishes for many more years of successful operation of the Hurricane Watch Net."

Murphy founded the HWN in 1965 during Hurricane Betsy as "an informal group of radio amateurs who recognized a need to provide communications to and from hurricane affected areas." The net now enjoys a formal relationship with the National Hurricane Center and its WX4NHC amateur station.

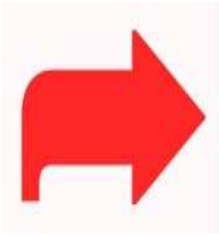
The HWN activates on 14.325 MHz whenever a hurricane is within 300 miles of projected landfall or becomes a serious threat to a populated area.

WSJT-X TIME SYNCHRONIZATION SOFTWARE & HINTS...

https://www.dxzone.com/how-to-sync-your-computer-clock/

The above URL has a comprehensive guide to software for syncing your computer clock to an accurate time source, over the Internet, or elsewhere.

JTSync (listed in that page) is useful in out-in-the-field POTA operation where often there is no available Internet connections. But one can get WSJT-X operating and while running FT8 there are the "DT" (delta time) listings of the fractions of second comparisons with your computer's clock and other operator's sending times. JTSync can use those DT's to adjust the clock times closer.



THEY BUILT IT RAPIDLY...

"Modern" railroad construction started in about 1830. Samuel F.B. Morse founded the propagation of Morse Code over wire in 1844. Two decades later there were 20,000 miles of railroad track in the North and 15000 miles of telegraph line before the American Civil War ended. This counted all the mining, smelting, hauling, etc.

Wilcox's Landing, Va., vicinity of Charles City Court House. Field telegraph station. 1864. Civil War. Prints & Photographs Division

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HOW MANY PHOTONS ARRIVE ON YOUR 160m ANTENNA FOR A BARELY READABLE "DIT" CW SIGNAL?...

(HAM RADIO 101)

We assume that radio antennas emit photons of electromagnetic energy. Photons are usually discussed as the "particle" of light transmission. There is a famous physics equation that calculates the energy of a photon.

We will use Microsoft Excel "scientific notation" for numbers that need to show an exponent of 10, such as 10E4 = 10,000 , 4E-3 = .004 .

With that, on 160m: 160 m WAVELENGTH = 1.6E2 (Pay attention to the quiz that follows!)

Use this calculator to find the energy of a photon on 160m (famous equation):
https://www.omnicalculator.com/physics/photon-energy

E = 1.24E-27 joules for each 160m photon. A Joule is a unit of energy.
A Watt (power) is one Joule for one second. Assume the photon is 160m "wide".

Joules (Energy) to Watts (power) conversion

https://www.rapidtables.com/convert/electric/Joule_to_Watt.html

for one second (there's a problem with that; the photon takes much less than one second to cross a full-size 160m antenna, but just for now, use one second).

Watts = 1.24E-27 for each 160m photon.

Next:
The time for a photon to pass by the antenna happens at the speed of light for 160m. (Here assume a photon is like a flat disk, like a very small pizza.)

time = distance / velocity

160m / (~300,000,000 m/sec velocity for photons)

160 / 300,000,000 sec-1 = 0.533 microsec = 5.33E-7 sec (533 nanoseconds "ns")

Effective watts of the single photon are used up in only 533 nanoseconds, not in one second. So we need to scale up for that (power = Joules/time)
W = (1.24E-27 Joules) / (5.33E-7 sec) = 2.33E-21 Watts

Next, the photon is basically going through free space until hitting the antenna. The resistance of free space (yes there is one) is 376.73 ohms (R)

https://www.google.com/search?channel=fen&client=firefox-b-1-d&q=resistance+of+free+space

----
Convert Watts to Volts (^2 means square the number, x means multiply)

Volts V, Watts P P = (V^2)/R ----> V = SQRT(PxR) in EXCEL.

V = 2.33E-21 Watts through 376.73 ohms (for 5.33E-7 sec)

V = SQRT (2.33E-21 x 376.73 ohms) = 9.36E-10 Volts

But that's a long way from 0.2 uV (2E-7 Volts) of a receiver's sensitivity. So we need a photon "bundle" size big enough to generate 2E-7 volts.

The number of photons for 0.2 uV should be scaled up:
(2E-7 Volts /9.36E-10 Volts) ~= 214 = required size of 533 ns bundle.

So that's for 533 nanoseconds, which is not for a full DIT of time. On the order of 50 milliseconds is required to receive one dit in CW at 20 WPM.
So the number of bundles must be scaled up again, to 0.05 seconds from 533 ns.
So 214 bundles scaled up --> 50,000,000 nanoseconds / 533 nanoseconds for the total number of photons captured by the antenna in 50 milliseconds is
214 x (50,000,000 ns/ 533 ns) ~= 2E7
That's 20 million photons. !! (Rough Order of Magnitude)

QUIZ: If you the reader are a real physicist, calm down. I just wanted to make a point and not get too fussy about approximations here! Put your pencil down.)

WHILE WE ARE ON RECEIVER TOPICS...

A resistor has "internal" noise caused by electrons moving around inside due to thermal effects. There is a physics equation to calculate this "Johnson Noise".

https://www.omnicalculator.com/physics/resistor-noise

The Johnson Noise of a 50 ohm resistor at 23 C (Celsius temperature) and 500 Hz filter response yields .018 uV (microvolts). That's about one tenth of the sensitivity of a good ham receiver (0.2 uV) But receiver front ends contain transistors (with thermal noise) and likely use resistors of higher values than 50 ohms.

A 4700 ohm resistor cooled to -40 C still yields .17 uV So you can't "fix" the internal noise problem of a 4700 ohm resistor in your radio by sitting it in a very cold freezer. So we need to assume that modern receivers built with front ends having resistors and transistors inside cannot reach too far below 0.2 microvolts of sensitivity.

A NEW RAILROAD TELEGRAPH...

https://en.wikipedia.org/wiki/Granville_Woods

Granville Tailer Woods (1856 – 1910) was a Black American inventor who held more than 50 patents in the United States. He was the first African American mechanical and electrical engineer after the Civil War. Self-taught, he concentrated most of his work on trains and streetcars. One of his inventions was the Synchronous Multiplex Railway Telegraph, a variation of the induction telegraph that relied on ambient static electricity from existing telegraph lines to send messages between train stations and moving trains.

In 1887, he patented the Synchronous Multiplex Railway Telegraph which allowed communications between train stations from moving trains by creating a magnetic field around a coiled wire under the train.

Thomas Edison later tried to file a patent claim that he invented Woods' technology. After two court battles Edison lost. Over the course of his lifetime Granville Woods obtained more than 50 patents for inventions including an automatic brake, an egg incubator, and for improvements to other technologies such as the safety circuit, telegraph, telephone, and phonograph.

EMERGENCY TELEGRAPHIC WARNING OF EXPLOSION...

https://en.wikipedia.org/wiki/Vince_Coleman_(train_dispatcher)

Patrick Vincent Coleman (1872 – 6 December 1917) was a train dispatcher for the Canadian Government Railways (formerly the ICR, Intercolonial Railway of Canada) who was killed in the Halifax Explosion, but not before he sent a message to an incoming passenger train to stop outside the range of the explosion. Today he is remembered as one of the heroic figures from the disaster.

On the morning of 6 December 1917, the 45-year-old Coleman and Chief Clerk William Lovett were working in the Richmond station, surrounded by the railway yards near the foot of Richmond Street, only a few hundred feet from Pier 6. From there, trains were controlled on the mainline into Halifax. The line ran along the western shore of Bedford Basin from Rockingham Station to the city's passenger terminal at the North Street Station, located a mile to the south of Richmond Station. Coleman was an experienced dispatcher who had been commended a few years earlier for helping to safely stop a runaway train.

At approximately 8:45 a.m., there was a collision between SS Mont-Blanc, a French munitions ship carrying a cargo of high explosives, and a Norwegian vessel, SS Imo. Immediately thereafter Mont-Blanc caught fire, and the crew abandoned the ship. The vessel drifted from near the mid-channel over to Pier 6 on the slack tide in a matter of minutes and beached herself. A sailor, believed to have been sent ashore by a naval officer, warned Coleman and Lovett of her cargo of high explosives. The overnight express train No. 10 from Saint John, New Brunswick, carrying nearly 300 passengers, was due to arrive at 8:55 a.m. Before leaving the office, Lovett called CGR terminal agent Henry Dustan to warn him of a burning ship laden with explosives that was heading for the pier. After sending Lovett's message, Coleman and Lovett were said to have left the CGR depot. However, Coleman returned to the telegraph office and continued sending warning messages along the rail line as far as Truro to stop trains inbound for Halifax. An accepted version of Coleman's Morse code message reads as follows:

`Hold up the train. Ammunition ship afire in harbour making for Pier 6 and will explode. Guess this will be my last message. Good-bye, boys.`

The telegraphed warnings were apparently heeded, as the No. 10 passenger train was stopped just before the explosion occurred. The train was halted at Rockingham Station, on the western shore of Bedford Basin, approximately 6.4 kilometres (4.0 mi) from the downtown terminal. After the explosion, Coleman's message, followed by other messages later sent by railway officials who made their way to Rockingham, passed word of the disaster to the rest of Canada. The railway quickly mobilized aid, sending a dozen relief trains with fire and medical help from towns in Nova Scotia and New Brunswick on the day of the disaster, followed two days later by help from other parts of Canada and from the United States, most notably Boston. Even though Lovett had left the station, both he and Coleman were killed in the explosion.

Although historians debate whether Coleman's initial message actually contributed to stopping the No. 10 train, there is some documented evidence to indicate it did. No. 10's Conductor Gillespie reported to the Moncton Transcript that although running on time, "his train was held for fifteen minutes by the dispatcher at Rockingham."

SOLAR NUMBERS FROM WWV DIRECT...

https://www.swpc.noaa.gov/products/geophysical-alert-wwv-text

The above should be data that is really up to date instead of via a third party.

LIFI not WIFI...

(from https://en.wikipedia.org/wiki/Li-Fi)

Li-Fi (also written as LiFi) is a wireless communication technology which utilizes light to transmit data and position between devices. The term was first introduced by Harald Haas during a 2011 TEDGlobal talk in Edinburgh.

Li-Fi is a light communication system that is capable of transmitting data at high speeds over the visible light, ultraviolet, and infrared spectrums. In its present state, only LED lamps can be used for the transmission of data in visible light.

In terms of its end user, the technology is similar to Wi-Fi — the key technical difference being that Wi-Fi uses radio frequency to induce an electric tension in an antenna to transmit data, whereas Li-Fi uses the modulation of light intensity to transmit data. Li-Fi is able to function in areas otherwise susceptible to electromagnetic interference (e.g. aircraft cabins, hospitals, or the military).

Visible light communications (VLC) works by switching the current to the LEDs off and on at a very high speed, beyond the human eye's ability to notice. Technologies that allow roaming between various Li-Fi cells, also known as handover, may allow to seamlessly transition between Li-Fi. The light waves cannot penetrate walls which translates to a much shorter range, and a lower hacking potential, relative to Wi-Fi. Direct line of sight is not always necessary for Li-Fi to transmit a signal and light reflected off walls can achieve 70 Mbit/s.

Vehicles

Vehicles could communicate with one another via front and back lights to increase road safety. Street lights and traffic signals could also provide information about current road ituations.

Home and building automation

Many experts foresee a movement towards Li-Fi in homes because it has the potential for faster speeds and its security benefits with how the technology works. Because the light sends the data, the network can be contained in a single physical room or building reducing the possibility of a remote network attack.

OLD TIMERS IN WEST PARK RADIOPS

View the AWARDS page at https://www.westparkradiops.org

The AWARDS page data table was created by Don Pearson, W8IDM.

THE DX SCENE…

(Courtesy of the NG3K website)

Call, Start Date,, End Date, DXCC Entity

T32AZ,2023 Sep01,2023 Oct17,East Kiribati
4W,2023 Sep09,2023 Oct13,Timor Leste
A22EW,2023 Sep16,2023 Oct08,Botswana
T22T,2023 Sep21,2023 Oct09,Tuvalu
6W,2023 Sep26,2023 Oct16,Senegal
TF,2023 Sep28,2023 Oct08,Iceland
5X3K,2023 Sep28,2023 Oct08,Uganda
ZD9W,2023 Sep28,2023 Oct22,Tristan da Cunha
4O1OK,2023 Sep29,2023 Oct08,Montenegro
V31DN,2023 Oct01,2023 Oct09,Belize
5W0LM,2023 Oct01,2023 Oct14,Samoa
YJ0TT,2023 Oct01,2023 Oct31,Vanuatu
J88PI,2023 Oct02,2023 Oct10,St Vincent
FO,2023 Oct02,2023 Oct06,French Polynesia
TX6D,2023 Oct02,2023 Oct15,French Polynesia
T32AN,2023 Oct04,2023 Oct11,East Kiribati
V73AH,2023 Oct04,2023 Oct15,Marshall Is
W8S,2023 Oct04,2023 Oct17,Swains Is
TO8FH,2023 Oct10,2023 Oct22,Mayotte
E6AM,2023 Oct10,2023 Oct23,Niue
T2C,2023 Oct10,2023 Oct30,Tuvalu
E51JAN,2023 Oct12,2023 Nov06,North Cook Is
V63AH,2023 Oct18,2023 Oct30,Micronesia
ZL7,2023 Oct20,2023 Nov04,Chatham Is
YJ0CA,2023 Oct22,2023 Dec05,Vanuatu
V6SZ,2023 Oct25,2023 Oct31,Micronesia
PJ5,2023 Oct25,2023 Oct31,Saba & St Eustatius
H40WA,2023 Oct26,2023 Nov09,Temotu
V63CB,2023 Oct27,2023 Oct31,Micronesia
TJ9MD,2023 Nov02,2023 Nov15,Cameroon
VK9QO,2023 Nov03,2023 Nov07,Cocos (Keeling)
E6AJ,2023 Nov03,2023 Nov10,Niue
TX7L,2023 Nov04,2023 Nov19,Marquesas
C6A,2023 Nov05,2023 Nov10,Bahamas
4W8X,2023 Nov06,2023 Dec05,Timor Leste
5H3MB,2023 Nov08,2023 Dec08,Tanzania
ZL7A,2023 Nov09,2023 Nov22,Chatham Is
TO8FH,2023 Oct10,2023 Oct22,Mayotte
H44WA,2023 Nov15,2023 Nov29,Solomon Is
XW4DX,2023 Nov16,2023 Nov27,Laos
V51WH,2023 Nov16,2023 Nov30,Namibia
VK9XGM,2023 Nov21,2023 Dec05,Christmas Is
HR9,2023 Nov21,2023 Nov28,Honduras
9L5M,2023 Nov23,2023 Dec06,Sierre Leone
TO9W,2023 Nov26,2023 Dec08,St Martin
V6EU,2023 Dec04,2023 Dec16,Micronesia
J87TT,2023 Dec26,2024 Jan05,St Vincent & Grenadines
3B9AT,2023 Dec27,2024 Jan06,Rodrigues Is
VP2MDX,2024 Jan11,2024 Jan30,Montserrat
T8,2024 Jan12,2024 Jan18,Palau
J79,2024 Jan17,2024 Jan24,Dominica

2023 ELECTED CLUB OFFICERS

President
Glenn Williams **AF8C**
(440) 934-5566

Vice President
Karl Beckman **WA8NVW**
(440) 234-4839

Secretary
Open

Treasurer
Ann Wadsworth **KA8ZEP**

Fifth Board Member
Stephen Kinford **N8WB**
(216) 702-8384

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FIELD EVENTS COMMITTEE - OPEN

Safety Officer
OPEN

License Trustee
N8WB

ARRL VE'S
AF8C, N8WB, W8MET, KC8FOS

ARTICLES SUBMITTED
--

NET MANAGER
W8WLI

CONTESTS, SATELLITES
N8WS and N8WB

PROPERTY CUSTODIAN
N8WS

8TH AREA BUREAU LETTER MGR.
AF8C (8V)

PROGRAMS
AF8C and VOLUNTEERS

EDITOR, WEBMASTER
AF8C

TX5S,2024 Jan18,2024 Feb01,Clipperton Is
CB0ZA,2024 Feb13,2024 Feb20,Juan Fernandez
8R,2024 Feb14,2024 Feb24,Guyana
3B8,2024 Feb20,2024 Feb27,Mauritius
V4,2024 Feb25,2024 Mar04,St Kitts & Nevis
TY5C,2024 Mar01,2024 Mar31,Benin
PJ7AA,2024 Mar02,2024 Mar30,Sint Maarten
J3,2024 Mar04,2024 Mar16,Grenada
TX5G,2024 Mar25,2024 Apr03,Austral Is
TO4VV,2024 Mar29,2024 Mar31,Mayotte
TO4VV,2024 Apr05,2024 Apr07,Mayotte
TO4VV,2024 Apr12,2024 Apr14,Mayotte

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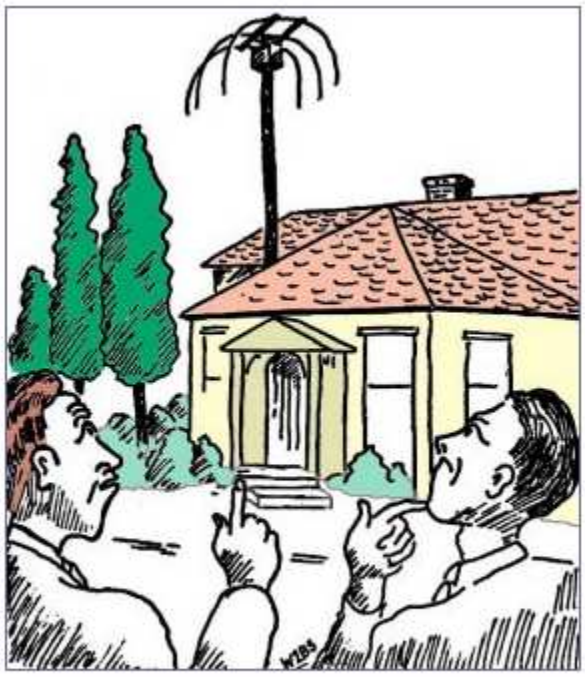
From 1940 *RADIO NEWS* in RFCAFE.COM



"Funny thing, it did that with 1 kW!"
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A NON-PROFIT SCIENTIFIC AND EDUCATIONAL CORPORATION

WEST PARK RADIOPS ARC meets
Once a month
Time and Location To Be Announced

Dues are $15/yr. We welcome anyone interested in amateur radio to our activities. We operate Monday night nets on 147.36+ MHz (PL 107.2 Hz) at 8:00 p.m. Eastern.

http://www.westparkradiops.org
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