The QUARAE

Volume 21 Issue 4 Editor John Lindvay WB3IFD April 2020

It Seems to Me

I am on my tenth day of "stay at home" or government quarantine. I have cancelled one doctor's appointment and made my first endocrinologist's video "tele-video" appointment. I have made many contacts on my radio both SSB and digital. I have watched countless movies and TV shows. I have read a few books. I have slept a lot. I haves played hundred of computer card games. I miss going to the library, out to lunch with friends, walking at the mall. I even miss grocery shopping. The Corona virus has really changed my way of life and it looks like things are going to stay this way for quite a while.

Law of Probability-The probability of being watched is directly proportional to the stupidity of your act

For Sale: Solar Power System

Outback Power Systems GTFX3048 inverter. 48 VDC in 120 VAC out. Rated at 3 KW. Grid Tie capable.

Outback Power Systems PS2DC-100 DC input service box with appropriate circuit breakers. AC PS2AC output service box with transfer switch and circuit breakers.

Outback Power MX50: Maximum power transfer charge controller/battery charger.

Outback Power Mate: System controller/monitor

Wall mounting plate for integrating all above components.

8 six volt 530 AH Rolls L16 batteries for 48VCD System, never discharged below 20% of full charge. See www.rollsbattery.com

You have to remove.

12 Siemens SM110 solar panels. 12VDC 110W each.

2 Siemens SM110 solar panels. 24VDC 110W each.

Panel rack mounting hardware.

$2500.00 firm.... For more info go to Outback Power Systems web site.

Rick Cutter, 814-440-9189

Supermarket Law- As soon as you get in the smallest line, the cashier will have to call for help.

March General Meeting Minutes

Began At: 7:00 P.M.

Board Members and Officers Present: KC3GBD-Bob, N8wxq-Frank, K3plv-Craig, K1zik- Ed- Not Present-sick, Kb3zvh-Richard

Members Present: Ka3cpv-Joe, Wb3dom-Ron, Wb3ifd-John

Program: Vacuum Tubes

New Hams: Kc3ork-Daryl Diehl

Silent Keys: None

Visitors: None

Treasurer's Report: $1730.45 Checking, Debits Electric Bill $114.91

Membership Report: Kc3pork- Daryl Diehl New Member, Welcome to the club!

Facilities Report: None

Repeater Report: All working fine

Public Service: 7 Events planned this summer

Contesting Report: Wpx world wide Dx contest March 28th and 29th 2020

Old Business: None

New Business: None

Meeting End At: 8:00 P.M.

Attention: The April Meeting at the Red Cross is canceled because of COVID-19 and Red Cross needs the room for emergency Blood Drive. We are all hunkered down at our homes to prevent the spread of COVID-19. Please listen to the Governor for instructions to stay safe and healthy. Good time to get on the air

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Law of Random Numbers - If you dial a wrong number, you never get a busy signal and someone always answers

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How the National Bureau of Standards helped make "radio"

This was originally published as "NIST's Role in the Early Decades of Radio (1911-1933)" on the National Institute of Science and Technology's blog, ----------

Even if you weren't able to watch the recent Super Bowl on TV, you could still listen to the play-by-play commentary on the radio. But radio does more than just broadcasting sporting events or playing music. It plays a major role in emergency response, navigation and science.

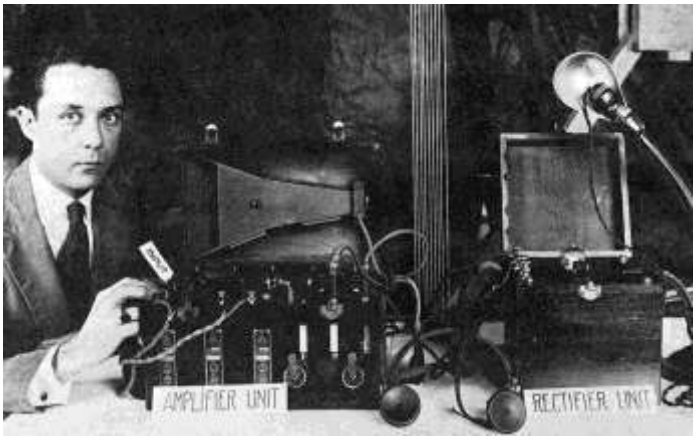
The word "radio," however, didn't become part of our regular vocabulary until 1911, and it happened thanks in part to J. Howard Dellinger, a radio scientist at the National Bureau of Standards (NBS), the agency that became the National Institute of Standards and Technology (NIST). This came about when the second International Radiotelegraph Conference was being planned in London, and a professor sent Dellinger a paper that he was going to present to the conference for review.

At the time, "wireless" was used as the term for radio communication, especially by the British. However, NIST was charged with revising standards in preparation for the conference, and Dellinger suggested that the professor use "radio," which was already becoming a popular word in the U.S., instead of "wireless." The professor agreed, and the word "radio" went on to become the universally accepted term.

Dellinger not only played a role in popularizing the word "radio," but he also played a role in the first radio work done at NIST. A commercial company asked NIST to calibrate a wavemeter, a device developed by one of its engineers that measures electromagnetic waves like those of radio. Dellinger was known as the wireless expert and took on the project of calibrating the first radio instrument at NIST.

A New Type of Radio Receiver

But for radio to become mainstream, it first had to be commercialized, which began with its introduction into households. However, the challenge was building a radio set that used the electrical current, called alternating current (AC), which powered lights, fans and kitchen appliances when plugged into wall sockets. The predecessor to this technology was developed and patented by two researchers, Percival D. Lowell and Francis W. Dunmore, at NBS in 1922. They called their invention the "mousetrap."



The "mousetrap" was a receiver for a radio amplifier that could run on AC. This was considered a breakthrough because at that time radios were only able to be powered by direct current (DC) provided by batteries. These batteries

were bulky and heavy, had to be charged from time to time and were considered dangerous because of the acid used in them. The researchers' prototype meant the radio could be used in homes without causing damage and with the same performance quality.

Lowell and Dunmore filed two more patents together for other innovations, and for the "mousetrap" they sold the rights to the Dubilier Condenser Corporation. Little did they know that, because there was no uniform policy on patents issued to government employees, their actions would result in more than a decade of litigation over who legally had the rights to the patent.

While they were tied up in court, the Radio Corporation of America (RCA) developed its own model of the AC radio in 1926. Its model later became the first AC-powered radio sold to consumers.

Flying by Radio

During the early years of flight navigation, NIST was doing research to assist pilots while they were flying and landing. Pilots needed three things to get their bearings when flying "blind," meaning it's foggy, too dark or too cloudy to see. They needed to know the longitudinal position, altitude and speed of the aircraft, which were all achieved by various beacons installed in the plane. The remaining issue was that there were two frequencies the pilot constantly had to switch between the frequency that the Department of Commerce used to send weather information to planes and ships, which sometimes caused interference for pilots, and the frequency the radio beacon operated on, which gave altitude and other information.

Dunmore created a prototype, but Harry Diamond, a radio engineer who joined NIST in 1927, completed the device, called the radio guidance system. Diamond solved the problem by developing a separate device that allowed for voice communication to the pilot without receiving any outside interference from ships' radios.

A Curtiss Fledgling, a trainer aircraft developed for the U.S. Navy, was equipped with the device, and flight tests were performed between NIST's experimental air station at College Park, Maryland, and Newark Airport in New Jersey in foggy weather. After a series of successful tests were performed, the device was turned over to be used by the Department of Commerce in 1933.

Praise From a Famous Inventor

While mostly intended for serious users, some of NIST's journals and publications were popular with the public. One such book, titled The Principles Underlying Radio Communication, covered topics such as elementary electricity, radio circuits and electromagnetic waves and was also published as a textbook for soldiers in the U.S. Army. The famous inventor Thomas Edison received a copy from NIST and wrote a letter thanking the first director, Samuel W. Stratton, for publishing it, saying it was "the greatest book on this subject that I have ever read."

As these and other examples show, NIST had a significant influence on radio research between 1911 and 1933. However, NIST's radio work didn't end with the first blind landing. NIST would continue to contribute to the field leading up to and during World War II, and research continues to this day in areas such as 5G, public safety communications and spectrum sharing.

ABOUT THE AUTHOR

Alex Boss is a general assignment writer in the NIST Public Affairs Office and covers standard reference materials (SRM). She has a B.S. in biology from Rhodes College and an M.A. in health.

No matter how much you push the envelope it'll still be stationery.

Ham Radio Calendar

April 2 – RAE Club Meeting (Canceled)

April 4 Nebraska QSO Party. See www.arrl.org/sections/view/nebraska

April 4 - Louisiana QSO Party See laqp.louisianacontestclub.org

April 4 - Mississippi QSO Party See www.arrlmiss.org

April 4 - Missouri QSO Party See w0ma.org/index.php/ missouri-qso-party

April 5 - North American SSB Sprint Contest See ssbsprint.com/rules

April 7 – Corry Wireless Meeting (Canceled)

April 9 – Union City Wireless Club Meeting (Canceled)

April 11 - New Mexico QSO Party See www.newmexicoqsoparty.org

April 11 - North Dakota QSO Party See ndarrlsec.com

April 11 - Georgia QSO Party See www.georgiaqsoparty.org

April 11 - **04/11/2020 -** Cuyahoga Falls, OH ARRL Hamfest (Canceled) See http://www.cfarc.org/hamfest.php

April 12 – Easter

April 14 – Wattsburg Wireless Club Meeting (Canceled)

April 18 - All Texas State Parks on the Air See www.tspota.org/rules

April 18 - Michigan QSO Party See www.miqp.org/Rules.htm

April 18 - Worked All Provinces of China DX Contest See www.mulandxc.org

April 18 - World Amateur Radio Day

April 18 – VE Session (Canceled)

April 18 - Ontario QSO Party See va3cco.com/oqp/rules.htm

April 19 ARRL Rookie Roundup See www.arrl.org/rookie-roundup

April 25 - Florida QSO Party See floridaqsoparty.org/rules

April 25 - Birthday of Guglielmo Marconi. Italian electrician who perfected wireless telegraphy and experiments with short waves.

April 27 - Birthday of Samuel Finley Breece Morse. American artist and inventor of the electric telegraph and the Morse Code.

April 29 - Birthday of Frank Dawson Bliley