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SPURIOUS EMISSIONS

APRIL, 2016

INDIAN RIVER ARC

P.O. BOX 237285, COCOA
FLORIDA 32923-7285

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CLUB MINUTES

. President Dave KU0R called the meeting to order at 1930 and followed with the pledge of allegiance.

Next visitors Dana Smith, no call yet, and Robbie Robinson KK4ZBL were recognized.

The minutes for the March meeting were printed in the newsletter; they were approved by acclamation .

Our Treasurer, Larry KK4WDD, reports $3558.96 in checking, $1276.78 in the equipment fund and $14.30 in cash. The Treasurer's report was accepted for audit.

Our Vice- President, Viron N4VEP, is on vacation and will be assigned some action items upon his return.

Dave KU0R reported for the Technical Committee and said that all repeaters are working well but the 37 experiences some interference. The 88 repeater is in dual mode. A tower climb is scheduled on the 16th for TDR measurements; there is a rumor that the repeater is connected to the wrong antenna. The remote link may not be working correctly.

Upcoming events: April 16th,Olsteen Park for the QRP Saturday. The JDRF walk is on April 30 at Lori Wilson Park in Cocoa Beach.

Old Business: Nothing heard.

New Business: Dave needs technical presentations for the meetings. We also need a coordinator for getting presentations for the meetings. Del AK4EY was coordinator but now he has too many other activities to continue doing this. Field Day is coming up and we need a Field Day Chairman as well, to plan the activity. Nominees for the position were proposed but no volunteers stepped forward. The president stressed that he wants someone willing to do the job. Members were recognized for their HF activity and CW and QRP operation.

Next our Emergency Coordinator, Larry WD5CKN, addressed the group and he and Ray N4LEM, our county Emergency Coordinator, are going to West Palm Beach for the Southern Section pow-wow of emergency coordinators. Larry reported that we are in need of volunteers to staff shelters, hospitals, and police and fire departments. Larry would like to have multiple operators per shelter. He is also putting together a telephone tree that will be exercised occasionally. All operators need to have background checks through the county. Level three background checks are required for special needs shelters.

Greg AB4GO reported for the Red Cross that we will have a work party this Saturday to hold a clean up and barbecue and they want to perform some maintenance. Last year some radio and computer equipment showed up at the Red Cross facility and our group will inventory this stuff. We would like at least one other volunteer to help out. There will be food. A few years ago they were considering closing this facility due to concerns over maintenance, but the place has been maintained fairly well. The Saudis have been helping out financially.

Larry KK4WDD determined the winning 50-50 ticket belonged to KG4LHG who won $18.

The night presentation by Steve N4UTQ was about the effect of EMP's on electronic equipment. Following the EMP discussion, Dave described the precautions taken at the Cape to protect the range safety package on space launchers from ground radars.

A move to adjourn occurred at 2033 and was seconded and approved.

Respectfully Submitted

Steve Luchuk, Secretary

HAPPENINGS

From the Ares E-Letter:

Tips: Public Safety Tools -- Excellent Resources for ARES

The US Department of Homeland Security's Office of Emergency Communications' Interoperable Communications Technical Assistance Program publishes a repository of numerous resources for auxiliary emergency communicators. Most are of direct interest to ARES/ RACES and other amateur emergency communication groups, including the new Auxiliary Communications Field Operations Guide (AuxFOG). The pub is a reference for auxiliary communicators who directly support backup emergency communications for State/local public safety entities or for an amateur radio organization supporting public safety. This reference guide contains information about AuxComm best practices, frequently used radio frequencies, Mutual Aid channels as well as tips and suggestions about auxiliary emergency communicators integrating into a NIMS ICS environment to support communications for planned events or incidents. It can serve as a reference both for auxiliary emergency communicators and public safety communications professionals. -- *K1CE*

Field Day is only a couple of months away and we need a Field Day chairman. Any volunteers?

The Technical Committee wants to remind users of the 145.37 MHz repeater that the new machine has a slight transmit delay. Think "1001" after pushing the transmit button before transmitting.

HAPPENINGS

This year's Armed Forces Day Crossband Communication Test on Saturday, May 14, will include a significant new wrinkle: Select military stations will be using 60 meter interoperability channels to communicate *directly* with Amateur Radio stations on the band. Back this year, select military stations will use crossband Automatic Link Establishment (2G ALE) communication as well as MIL-STD Serial PSK to send the Secretary of Defense Armed Forces Day message. Armed Forces Day 2016 is Saturday, May 21, but the radio event is held earlier to avoid conflicting with Dayton Hamvention, May 20-22.

The annual Armed Forces Day Communication Test is an opportunity to exercise two-way communication capability between Amateur Radio and military stations using a variety of modes, including SSB and CW as well as digital modes. The annual event gives participants -- including shortwave listeners (SWLs) -- an opportunity to demonstrate their technical skills, and to receive recognition from the appropriate military radio station.
The Army, Air Force, Navy, Marine Corps, and Coast Guard cosponsor the joint military/ Amateur Radio, with military frequencies and listening on Amateur Radio bands. Amateur Radio stations and shortwave listeners interested in trying the MIL-STD Serial PSK mode can download the software program, *MS- DMT*.

Full details about this year's Armed Forces Day radio will be posted by April 12 and will also appear on the US Army MARS Facebook page.

The Central Brevard Traffic Net currently takes place every Thursday at 7:45 PM on the 147.36 MHz repeater. Over the past few weeks participation in this net has been dismal. This net is a great opportunity to gain experience in traffic handling and it would be a shame if it were to fail. As net manager, I would like to ask for input from the club membership as to which day, time or repeater would be more convenient for this net. Perhaps a change of day, time, or repeater would help stimulate participation. Poor traffic volume may be part of the problem, but we can fix this with test messages passed on low volume days.

Send comments to my email address: olardelga@aol.com

73 de KN4JN.

ON THE AIR

The Heard Island dxpedition will be on the air until April 10 as VK0EK.

Web sites: www.vk0ek.org and www.heardisland.org.

Juan de Nova dxpedition until April 11 as FT4JA.

Web site: www.juandenovadx.com/en

BULGARIA, LZ. Members of Bulgarian Radio Club Blagovestnik are QRV as LZ1012SGM during 2016 to honor the memory of Bulgarian Saints. QSL via bureau.

CROATIA, 9A. Members of the Radio Club 9A4J are QRV using special event call 9A1700SBD until the end of 2016 to commemorate the 1700th anniversary of the birthday of St. Blaise, the patron saint of Dubrovnik. QSL via 9A4J.

MAURITANIA, 5T. Ahmad, 9K2AI is QRV as 5T2AI for the next two to three years. Activity is on the HF bands. QSL via NI5DX.

IRELAND, EI. Special event call EI1916E is QRV during all of 2016 to commemorate the hundred years since the Easter Rising which was part of Ireland's fight for independence. Activity is on the HF bands using SSB, RTTY and PSK. QSL direct to EI3GC.

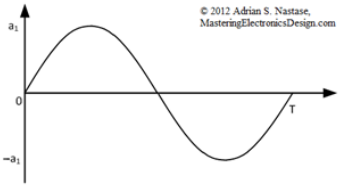
THE DIPOLE ANTENNA by Armando Delgado, KN4JN

It is fair to say that most hams know what a dipole antenna is, but what many hams do not know is the origin of the dipole and why it works.

In a way, there is a parallel between the origin of the dipole and Einstein's famous formula, $E=mc^2$. The average person, if asked what the formula means, will most likely say that it is atomic energy. Yet, it is doubtful that many people could explain what the individual terms mean and even less people could resolve the formula into a practical physical expression. In the metric system the value of E would be in joules, not the kind you give the wife on her anniversary, but a term that is meaningless to most people..

Unfortunately, the resolution of the dipole formula is not as simple as Einstein's famous formula.

Towards the end of the 1800's Maxwell derived a series of formulas using experiments and concepts of previous researchers, such as Faraday, to describe



A sine wave

The Dipole Antenna

electromagnetism. Mathematically, he defined an electric charge as being composed of electric and magnetic components operating simultaneously. These formulas are extremely complex, since both electric and magnetic fields in a moving electron are constantly changing and encompass vector and polar coordinates in order to be described mathematically. But that he did, and the formulas worked and were able to explain many electromagnetic phenomena known from observation but not understood.

The dipole antenna originated as a theoretical Hertzian dipole, and came about from the famous Maxwell equations.

Since antennas are electrical conductors, Maxwell's equations were used to explain how they worked. One early understanding of this research was that the maximum radiation of an antenna occurred at the peak current. The next question then became, at what antenna size does the peak current occur. At the beginning of radio, long wire antennas were the norm, principally because they worked, but why they worked was not understood. Today we know they worked well because the early radios transmitted in very long wave lengths and antennas had to be long in order to be efficient.

As Maxwell's equations were applied to wire antennas, the fundamental discovery was that the peak current should occur at one half of the wave length of the signal applied to the antenna. Now that we understand the sinusoidal pattern of RF signals this concept seems obvious. In an RF signal the current peaks during both positive and negative halves of each cycle, a cycle being a full wave length. Thus there will be a current peak at each half wave length.

Of course, these are imaginary antennas operating in free space. Real physical antennas differ from the theoretical, due to the characteristics of the wire and its surroundings. These factors change, for example, the physical length of an antenna from the calculated electrical length. However, for wire antennas the differences are minimal, since the conductor diameter is small for the given HF wave length. And the good news is that there are formulas that allow us to resolve these differences.

HOME BREW VERTICALS ON A BUDGET

by J. D. Collner W4GNC

Some time ago I decided to try my hand at building a vertical antenna for 15 meters that didn't require radials. Radials are unpopular with me for a number of reasons. First off, they can require a rather large area and need to be buried under the ground to keep them from being sucked up by the lawn mower. Secondly, if you want the antenna elevated you now have a real problem of elevating the radials as well. Fortunately, I had a built in ground plane consisting of my aluminum screen enclosure and a patio roof made of aluminum 8 feet above the ground. While there is an open quadrant and the aluminum pieces are not cut to radial lengths, it doesn't seem to be a problem for my antenna performance. The VSWR is good and my 5 watt QRP station is able to work a lot of DX as well as stateside stations, particularly on JT65 and PSK31.

The antenna is constructed from steel fence rail sections, an electrical junction box housing, 100 plus pf worth of capacitance, scrap aluminum tubing, some PVC, some wire and a few bolts and clamps that were lying around the house. The feed is a Gamma Match coax feed. I used an MFJ 266 Antenna Analyzer to adjust the capacitance and fence rail lengthto get a good VSWR. Because the fence rail has a large 1 ¼ diameter and I had tuned it low, I found the antenna had good performance on both 15 and 17 meters. I also added a 20 meter vertical on the other side of the patio and am using one coax feed thru an MFJ 4712RC to switch between the 2 verticals. The information on approximate design parameters was taken from Chapter 21.24 of the 2014 ARRL Handbook.

W1AW CW PRACTICE TRANSMISSIONS

7 PM EST) Slow CW :
Mon, Wed, Fri

7 PM EST Fast CW:
Tue, Thu

FREQUENCIES:

1.8025, 3.5815, 7.0475, 14.0475, 18.0975, 21.0675, 28.0675, 147.555

Editor's Note:

Send comments about the Newsletter or to contribute information or articles to the Editor's email address:

olardelga@aol.com.

437 S. BABCOCK ST.
MELBOURNE, FL 32901
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