



The Unofficial Call Sign of the Sussex County Amateur Radio Club

May 2016 Issue

Lorianne, KD2CVR, and Brian Brunsch, KC2YON

Upcoming Club Events - Please refer to the club website for up to the minute changes and details. www.scarcnj.org

May

20 SCARC May Meeting. Executive Committee at 6:30 VE Session at 7:30 pm, and Club Meeting at 8:00 to 9:00 pm. *****LOCATION CHANGE: FRANKFORT TWP FIRE HOUSE ON RT. 206*****
ADDRESS - 401 US Highway 206, Branchville, NJ 07826

June

11-13 June VHF Contest. All members are **WELCOME and ENCOURAGED** to participate. Sunrise Mountain Area, Sussex County, NJ

17 SCARC June Meetings. Executive Committee at 6:30 VE Session at 7:30 pm, and Club Meeting at 8:00 to 9:00 pm at the Sussex County Public Safety Training Academy, 114 Morris Turnpike, Newton, NJ.

25 - 26 Field Day. All members are **WELCOME and ENCOURAGED** to participate. Family and community groups visiting as well. Site to be finalized.

July

17 2016 SCARC Hamfest. Sussex County Fairgrounds, Augusta, NJ. All members are **WELCOME and ENCOURAGED** to participate.

Additional updates, meetings, contests and nets can be found on the website at: www.scarcnj.org/calendar . If you have a suggestion for a listing in the Upcoming Club Events of this Newsletter, please email brilorphoto@me.com

Follow us on Facebook - <http://facebook.com/scarcnj>

Weekly On-Air Meetings

There is a weekly SCARC VHF rag-chew activity hour, and Dx'ing net on the W2LV repeater frequency 147.300 MHz EVERY Tuesday at 8:00 pm. Thanks goes to Joe, KD2FAQ, for volunteering as net control and keeping topics fresh and current. Newcomers? New to a certain aspect of radio? Experienced operator willing to share in the growth of the hobby? All are welcome and encouraged. Seasoned operators are also encouraged to attend and update us on current trends and projects you are working on!

Please join us in thanking Niel N2IEL for a persistent effort on 80m. There is great interest growing in our 80 meter net on 3.962MHz +/- QRM on Thursday nights. It's fun getting off the repeater for a change and getting on to HF. This net allows us to experiment with different equipment, antennas and modes of operation to determine what works and doesn't work at our home station.

From the "Office" of the President - Brian Brunsch, KC2YON

Dear SCARC,

On Friday, May 20th's meeting, most of the attention will be on Field Day with minor attention to Hamfest. In the past, this club has performed admirably at both events. Last year SCARC placed first in our Field Day category, 5A. 5A means we run on back up power, 5 bands, plus 6 m and VHF for 24 hours. As you can see this takes the effort of MANY individuals.

It does not matter if you are a Charter member of the club, have a background in electronics, a converted civilian with a few years, or the newest member of the club EVERYONE's help is needed for Field Day. Assistance is needed to pick up food and ice, take a turn at the grill when needed, volunteer to assist with a bonus point, operating daytime Saturday, operating overnight Saturday, operating daytime Sunday, set up assistance, helping captain a band, scheduling other operators, and putting down on Sunday afternoon after 2. I look forward to seeing everyone at Friday's meeting. If you are unable to attend but still want to assist with Field Day, Please email me at brilorphoto@mac.com. Together we will place well again.

73.

Brian

April Meeting details - Lorianne Brunsch, KD2CVR Secretary.

The following are the minutes from the April meeting:

- Club looking into getting additional Hamfest signs. Both the road directional signs and 'on site' signs to be attached to 'sandwich sign' boards.
- By-laws - with the busy radio season quickly approaching a final draft will probably not be until September or November.
- Website - the new website to be switched to the new server in a couple of weeks.
- Field Day - more to be discussed at May meeting. Club has 3 radios that we will be using. John - N2HMM - lending his radio for the day. Discussion on as to why additional members will not step up to 'lend' their stations for use on the day.
- NPOTA - group agreed to research options for possible club activation. Andrea - K2EZ is contact.
- Motion made and approved for \$300 for Walt to use at upcoming Hamfests or order of items from KJI for missing items for club radio stations for field day.

Coax Info - John Santillo, N2HMM, Past President

During one of our Tuesday night nets we spoke about coax. I figured this would be a good transition to add some details to the discussion.

Choosing a coax cable is a matter of installation criteria (i.e. coax length, flexibility, diameter, frequency, power handling, adjacent coax cables and insertion loss). So to keep it simple, the table below will detail some of these parameters such as mechanical and electrical properties. Most of this data was obtained by the Time Microwave Calculator. Vendors use a variety of different Dielectric Materials etc. which will change the insertion loss and characteristics of coax. I suggest you check individual cable manufactures for specific details.

Some guidelines: Try to stick with Black coax as it will be Ultra-Violet light resistant and hold up for a long time. Direct bury is better for underground use but almost all coax cable will last on top or underground for a very long time. Non-Contaminating coax means the outer jacket plastic polymers won't leach into the dielectric insulation which could change the impedance of the coax. Generally solid center conductor coax makes the coax rigid compared stranded center conductor coax. For reference 3dB of coax loss will cut your output power in half but for general terrestrial operating, this is not significant. 6dB of coax loss is much more significant and for VHF on up, it will cut your range in half. Keep in mind that these losses are bi-directional. Output power and the receive signal are both impacted. . .

The variety of coax cables is extensive. I suggest you click on the links below for more details.

Some definitions:

DB – Direct Bury – Non-Contaminating outer jacket.

UF - Ultra Flex – Very Flexible Coax

Braid – Copper or Tin plated shield – Usually provides about 97% Shielding

Foil – Aluminum Foil Shield – Usually provides 100% Shielding

VF – Velocity Factor – The ratio of the flow of the RF thru the coax to the speed of light (i.e. A VF of 66% would mean the RF is flowing at 66% of the speed of light)

GP – General Purpose

HP – High Power

Coax Vendors (to name a few):

Davis RF – www.davisrf.com

The Wireman – www.thewireman.com

RF Parts Company – www.rfparts.com

Times Microwave – www.timesmicrowave.com/calculator (this site has an excellent insertion loss/power calculator)

DX Engineering – www.dxengineering.com

Amateur Radio Supplies www.amateurradiosupplies.com

KJI – www.kjielectronis.com

AES – www.aesham.com

HEO – www.hamradio.com

Note that the wider the coax diameter is, the lower operating frequency (Cut-Off) it can support. For most Amateur applications this is not a concern. But just as an FYI, for RG-8/U the cut-off is 11GHz

Coax Name	Description	Loss per 100 (dB)/feet in MHz						Power Handling (Watt/C) in MHz (average power)						Shielding Percentage	Flexibility	Notes
		1	10	50	100	146	440	1	10	50	100	146	440			
RG-58/U	210' GP Coax	0.4	1.6	2.5	3.2	5.5	8.9	3000	960	550	420	240	140	95% to 100%	Very Good	For short **20' low-power HF runs or patch cables.
RG-59 or RG-6	240' GP Coax	0.3	1.1	1.5	1.6	4.5	6.1	2000	620	350	270	150	90	95%	Very Good	For short **20' low-power VHF runs or patch cables.
RG-59 / RG-213	400' HP Coax	0.2	0.6	1.0	1.4	2.4	4.4	5000	1600	900	680	400	200	95%	Good	Good HP/VHF Coax out to 100 feet in many settings.
RG-214	400' HP Coax	0.2	0.7	1.2	1.5	2.7	5.0	4000	1200	600	470	250	400	100%	Good	Good for multiple HF coax runs side by side.
Radco RG-8	400' HP Coax	0.2	0.7	0.9	1.0	1.8	3.0	~5000	1700	1000	750	500	300	100%	Fair	Susceptible to water ingress, must be sealed tight.
RG-8/U	400' HP Coax	0.2	0.6	0.9	1.1	1.8	3.1	~4000	1600	1000	750	500	300	100%	Good	Soft foam core, less chance of water ingress.
140-400	400' HP Coax	0.2	0.6	0.7	0.9	1.5	3.7	3000	900	500	370	200	100	100%	Fair	Needs special tool for connectors. Solid center.
140-400-P	400' HP Coax	0.2	0.7	0.9	1.1	1.8	3.2	2500	800	470	350	200	100	100%	Good	Needs special tool for connectors. Braided center.
1/2" flexible weatherline	400' HP Coax	0.6	0.7	0.90	0.8	0.9	1.8	12000	11,000	6700	4800	3000	1600	100%	Very Poor	For long straight runs up a tower or on the ground.