Dixie Amateur Radio Club

March 2010 Volume 34, Issue 3

March Meeting Preview

MARS and how you can be involved!

How many amateurs know what MARS is? No, we're not talking about the place that the little green man in the Loony Tunes cartoon came from, threatening to blow up the Earth with his *Illudium Q-36 Explosive Space Modulator.*

MARS used to be known as the Military Amateur Radio Service or Military Affiliated Radio Service. Recently, to better fit their mission, they changed the name to the Military Auxiliary Radio Service.

Steve Peterson, KI7L, will present information on the new MARS at the March 17th meeting. Operational changes and membership information will be provided.

Also information on new 12V DC Power Distribution devices will be shown. All in all, a meeting you don't want to miss! Take time to enjoy Amateur Radio.

February Meeting

Stormwatchers!

The February meeting was, in the words of one attendee, "the best and most interesting club meeting I've ever attended!"

Kevin Barjenbruch of the National Weather Service enlightened us with instruction and tips on Stormwatching, and how we as amateur radio operators can help the NWS with observations. Our observations can tip the balance in whether an alert is issued for a particular area for high rainfall, flooding, or even tornadoes.

In other happenings, President Nick Nickle, W7CRN gave a synopsis of the bylaw change which will be voted on at the March meeting, and Vice-President Kory Talbot KE7MMH told us about the use of a storage unit which has been donated to the Club. If you have Club property please contact Kory to see if it should be stored in the unit.

The handouts Kevin provided will be available at the Welcome table at the March club meeting for reading, should you wish to see them. Many thanks to Kevin for the fascinating presentation - and to all the club members and others who attended this meeting.

Who Are We?

The Dixie Amateur Radio Club, Inc. is a non-profit IRS 501(c)(3) association of federally licensed Amateur Radio operators (also known as "ham radio" operators) who primarily reside in southwestern Utah, mostly in the greater St. George City metropolitan area. We also have members who live in rural areas of Washington County and in areas outside of the county. The Dixie Amateur Radio Club, Inc. is a formally "Affiliated Club" with the American Radio Relay League (ARRL) "The National Association for Amateur Radio".

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It's not the class of the license that the Amateur holds, but the Class of the Amateur that holds the License.

Affiliated Club

2010 Board Members

President.....C. R. "Nick" Nickle W7CRN

Vice-President.....Kory Talbot KE7MMH

Secretary..... Kevin Merrill KE7TLW

Treasurer.....Harold Wells KE7OZG

Board Member.....Scott Taylor KE7YIQ

Board Member.....Bruce Bissell KE7LGD

Board Member.....Ken Forshee KE7DZI

Past Presidents of DARC

2009.....Ken Forshee KE7DZI
2008.....Ric Wayman K7DLX
2007.....Hal Whiting KI2U
2006.....Hal Whiting KI2U
2005.....Gary Zabriskie N7ARE
2004.....Dan Farwell W8EQA
2003.....Dan Farwell W8EQA
2002.....Ron Sappington WI7Z
2001.....Travis Lofthouse KD7FRN
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Can anyone help me complete this list?
Please contact Ric Wayman at
k7dlxham@gmail.com

SUBMISSIONS WANTED!

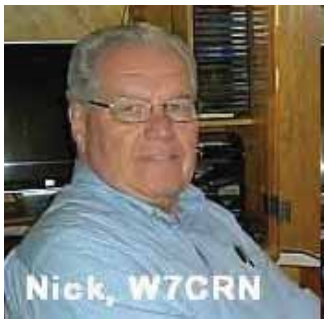
Send your ideas, bios, articles, cartoons, etc.

to Ric Wayman at k7dlxham@gmail.com.

ALL HELP WILL BE APPRECIATED!

Nick Nickle, W7CRN

President's Corner



The March Board of Directors meeting will be held on Thursday, March 4th at 7:00 PM in room E of the Community Arts Building, 86 South Main Street in St George. All members are welcome to attend.

At our March Club meeting on Wednesday March 17th, a vote will be held on the proposed changes to the Bylaws: a) change term of membership from calendar year to 12 consecutive months; b) change to consider honorary members full members for all purposes of the DARC; and c) change to provide designation of a chairperson for committees at the discretion of the Board of Directors. To vote you must be a full member in good standing (2010 dues paid). We will also have a presentation by Steve Peterson KI7L on the MARS program. Formerly known as the Military Amateur Radio Service or Military Affiliated Radio Service it has recently changed its name to Military Auxiliary Radio Service with changes in its mission and membership requirements, Steve will give us an update on these latest changes and some operational information. There will also be a presentation and discussion on 12 volt DC power distribution.

Our February 20th Fox Hunt was a success even with the rain. We had 14 fox hunters participate and all were successful in finding the fox. At the March meeting we will review some direction finding techniques that may be used to help locate the fox's den more rapidly.

The Club's Training Committee has scheduled a Technician License Class to begin on Saturday, April 17th and continue each Saturday through May 8th. Watch our website for more details as they become available.

Thanks & 73, *Nick Nickle* – W7CRN

New Ham Class Announced!

Do you know someone who would like to become an amateur radio operator? Your Club can help!

We have scheduled a Technician License Class to be held starting Saturday, April 17th. Learning about amateur radio couldn't be easier. This class will be held every Saturday for 3 weeks and culminate in an exam session to get the participants licensed as Technician Class Amateurs. All ages are welcome and encouraged.

And later in the year, the Club's Training Committee is scheduled to present a General Class Upgrade class. The General Class license opens up many new avenues of enjoyment for any amateur radio operator.

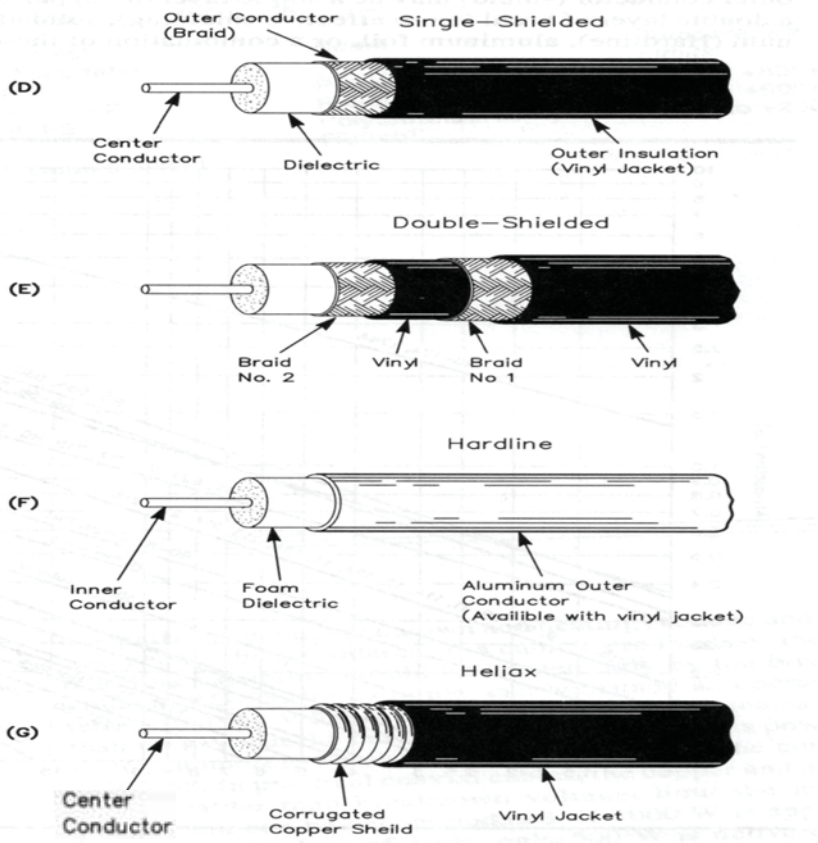
Keep your browser glued to our website for more information about these exciting opportunities.

Coaxial Cable
What's so magic about it?

By Ned Stevens K7ELP

Coaxial cable is known as transmission line,. It couples the output from your transmitter to the antenna in the transmit mode. When receiving the cable feeds the signals that are captured by the antenna a feeds them to the receiver. The simplest coaxial cable has two conductors. The center conductor is one and the braid or shield as it is called the second conductor. If you are using a handheld with the attached antenna there may be a short piece of coax inside the case that connects the electronics to the antenna.

The pictures to the right show several construction types of coax. Looking at the pictures you will notice the construction of the coax has a center conductor, a dielectric and an outer conductor. The center conductor is the lead that connects to the center pin of the coax connectors. This center conductor has a wire size that is generally expressed in AWG (American wire gauge). It is listed as Center Conductor AWG in the table of transmission lines. The outer conductor or the shield is the common lead and usually connects to the ground and the outer shell of the coax connector. The dielectric is an insulator and it is composed of various materials, this affects velocity factor, the maximum voltage of the coax and the capacitance per foot.



Most amateur radio receivers and transmitters use a 50 ohm antenna impedance. The term impedance is a term for AC resistance, that takes into effect a lot of factors that can include capacitance, inductance, and resistance, and can be multiple combination of R, C, L plus other factors. This subject can be covered at another time

The characteristics of coaxial cable are:

1 Impedance….expressed in ohms
2 Maximum voltage…..expressed in RMS
3 Loss per 100ft in different frequencies…..expressed in dB.
4 Velocity factor….expressed in a percentage.
5 Capacitance per foot….expressed in pF

Characteristics 1 through 3 are the only ones important for a typical station installation, whether it is a home station, mobile station, or a temporary station, like for field day. Characteristics 4 and 5 are important if are using the coax for baluns or using the coax for some tuning purposes, such as in a repeater duplexer.

For maximum transfer of power from the transmitter to the antenna the coax impedance should be the same as the antenna and the transmitter. A 2M groundplane antenna if constructed to have a 50 ohm feed impedance will have a maximum transfer of power from the transmitter to the antenna minus the loss due to the length of the coax. If you use 50 ohm coax to feed a 40 meter dipole there will be a mismatch because the antenna is near 75 ohms and the transmission line and the transmitter are 50 ohms. If a SWR meter (standing wave ratio meter) is inserted in the line it would indicate a SWR of 1.5:1.

(Continued on page 7)

Farwell and Good

The Beginning - Part II

By Dan Farwell
W8EQA

I was first licensed in 1961 in suburban Chicago as KN9HNS. My dad had to take the day off from work to take me downtown to the courthouse for my test. The pressure was on but victory was mine!

In 1963 my family moved to rural Eastern Ohio. I guess the FCC must have felt guilty, no fresh untouched WA8 for me. I greeted the mailman with anticipation. I was reissued W8EQA at 16 years old. Life was good!

I worked and slaved for my Hallicrafters SX-101A and HT-37. It was then that I met my DX Elmer, Lee, W8WFB. I heard him on the air one night. He was so loud he was blocking my receiver with every dot and dash. I looked him up in my call book and it said he lived in the same little burg that I did.

I'll never forget the first time I walked into his shack. The cigar smoke hung heavily on the room. There was a fresh Rolling Rock on the desk. The operating room was much warmer than the rest of the house on that crisp winter's day. Upon reflection I think it had something to do with the 4-1000 homebrew amplifier with a Johnson Ranger driver. His Collins 75A3 sat along side with great authority.

He was in the midst of a pileup about to put some juicy African or Asian station in the log as he explained how to find the last station being worked. Then he zero beat them carefully and slipped his call in there just as the contact ended. He explained all this as he tuned the VFO on the exciter and was silent while he sent his call twice at a brisk 20 words per minute. The DX responded immediately with the familiar "W8WFB ur 599 BK". He dashed off his own "599 OH" and sat back and took a long drink from his frosty beer.

"And that's how you do it. Find the guy he's talking to then put yourself right in his way so he can't help but trip right over you!"

Some lessons I'll never forget. I wish everyone had a great DX Elmer like Lee.

Dan Farwell, W8EQA
age 17

Through the next few years I'd hear him working the exotic stuff. He never had to call them much because he always listened and then put himself right in their way.

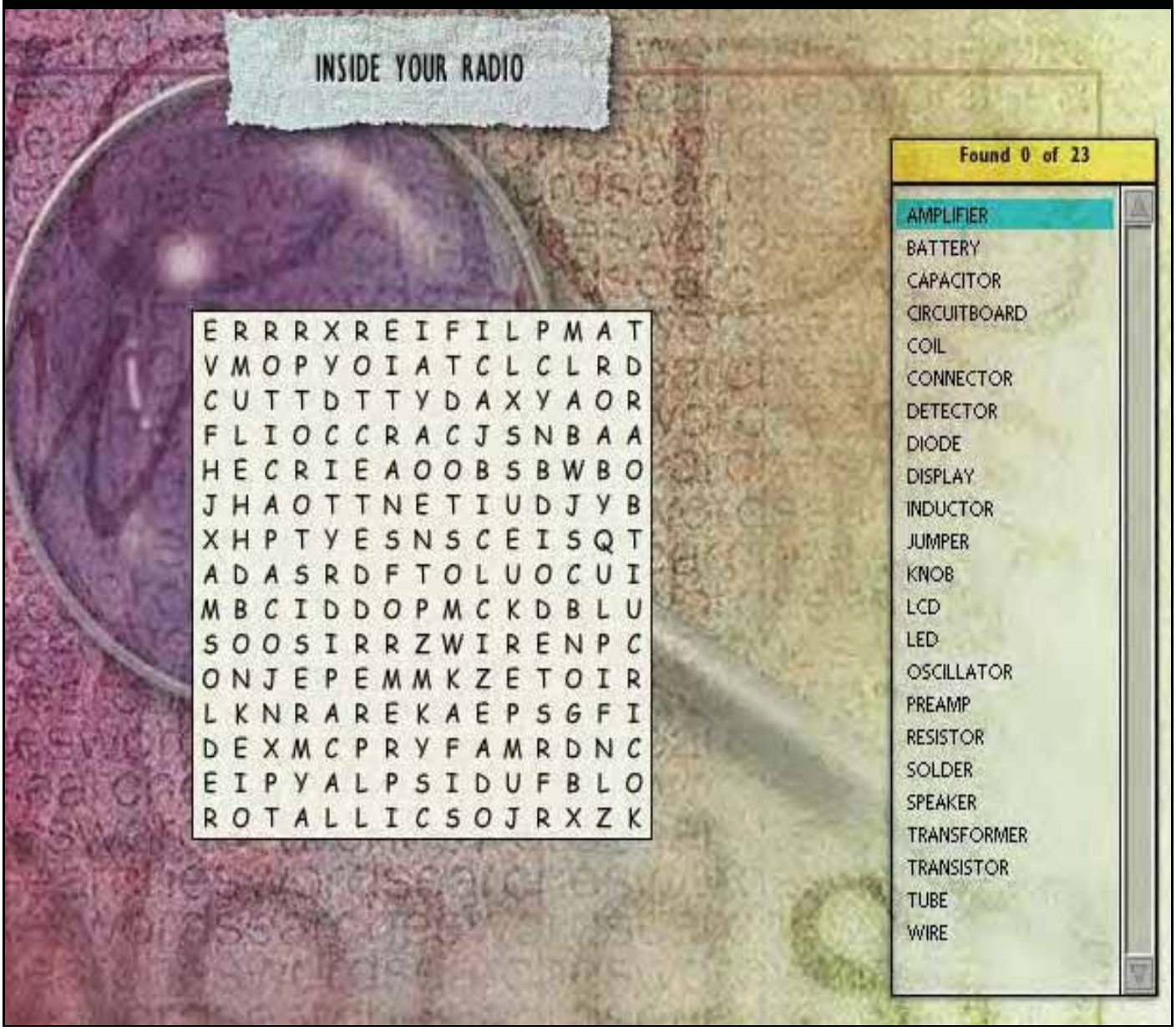
When I graduated from high school I sold my only liquid asset and bought my first car. It was 1966 and there was talk of license upgrades and having to pass more code and theory tests to retain the rights and frequencies I already had as a general. A few years later at college I realized I had let my license expire.

Fast forward through a few years. Namely, twenty-eight years later. As I was driving down a freeway in Utah, I caught myself reading a road sign in Morse code. I silently wondered what excuse I still might have that would keep me from getting back to ham radio.

Next month: Ham Radio Reborn!

Dan Farwell, W8EQA, is a past president of the DARC, and an honorary life member. His contributions to the club are numerous. He lives in St. George with his wife Melody, W7RRR (that is NOT the Farwells pictured to the left...). When Dan is not working for the Wal-Mart Distribution Center in Hurricane he can usually be found on the HF bands running the rare DX stations.
This is part of a series Dan has written about his life as a ham operator and knowledge he has gained through the years that he wishes to share with you.

K7DLX's Word Search



Selected Contests

March 2010 Contest Calendar

AGCW YL-CW Party	1900Z-2100Z, Mar 2
ARRL DX Contest, SSB	0000Z, Mar 6 to 2400Z, Mar 7
Wake-Up! QRP Sprint	0600Z-0629Z, Mar 6 and 0630Z-0659Z, Mar 6 and 0700Z-0729Z, Mar 6 and 0730Z-0800Z, Mar 6
DARC 10-Meter Digital	1100Z-1700Z, Mar 7
CWops Mini-CWT Test	1100Z-1200Z, Mar 10 and 1900Z-2000Z, Mar 10 and 0300Z-0400Z, Mar 11
ARCI HF Grid Sq. Sprint	1500Z-1800Z, Mar 13
Feld Hell Sprint	1600Z-1800Z, Mar 13
EA PSK31 Contest	1600Z, Mar 13 to 1600Z, Mar 14
Elecraft QSO Party	1800Z, Mar 13 to 1800Z, Mar 14
Idaho QSO Party	1900Z, Mar 13 to 1900Z, Mar 14
NA Sprint, RTTY	0000Z-0400Z, Mar 14
Wisconsin QSO Party	1800Z, Mar 14 to 0100Z, Mar 15
NAQCC Key/Bug Sprint	0030Z-0230Z, Mar 18
10-10 Int. Mobile Contest	0001Z-2359Z, Mar 20
Oklahoma QSO Party	1300Z, Mar 20 to 0100Z, Mar 21 and 1300Z-1900Z, Mar 21
AGCW VHF/UHF Contest	1400Z-1659Z, Mar 20 (144) and 1700Z-1759Z, Mar 20 (432)
North Dakota QSO Party	1800Z, Mar 20 to 1800Z, Mar 21
Virginia QSO Party	1800Z, Mar 20 to 0100Z, Mar 22
9K 15-Meter Contest	1200Z-1600Z, Mar 21
Run for the Bacon QRP	0100Z-0300Z, Mar 22
CQ WW WPX SSB	0000Z, Mar 27 to 2359Z, Mar 28

The Forshee Household Corner

By Ken Forshee KE7DZI
and Maxine Forshee KE7HNY

- When you buy a container of cake frosting from the store, whip it with your mixer for a few minutes. You can double it in size. You get to frost more cake/cupcakes with the same amount. You also eat less sugar and calories per serving.
- To warm biscuits, pancakes, or muffins that were refrigerated, place them in a microwave with a cup of water. The increased moisture will keep the food moist and help it reheat faster.
- Start putting in your plants, work the nutrients in your soil. Wet newspapers, put layers around the plants overlapping as you go cover with mulch and forget about weeds. Weeds will get through some gardening plastic - they will not get through wet newspapers.
- Use a wet cotton ball or Q-tip to pick up small broken shards of glass you can't see easily.
- Place a dryer sheet in your pocket. It will keep the mosquitoes away.
- To keep squirrels from eating your plants, sprinkle your plants with cayenne pepper. The cayenne pepper doesn't hurt the plant and the squirrels won't come near it.
- To get something out of a heat register or under the fridge add an empty paper towel roll or empty gift wrap roll to your vacuum hose. It can be bent or flattened to get in narrow openings.
- Pin a small safety pin to the seam of your slip and you will not have a clingy skirt or dress. Same thing works with slacks that cling when wearing panty hose. Place pin in seam of slacks and ... ta da! ... static is gone.
- Before you pour sticky substances into a measuring cup, fill with hot water. Dump out the hot water, but don't dry cup. Next, add your ingredient, such as peanut butter, and watch how easily it comes right out.

More next month! Send your household tips to Ken and Maxine at kf24mf@beyondbb.com.

You know you're a Radio Geezer when...

⇒ ...you have more tools than you'll ever need, but can't find them.
⇒ ...you need to keep your radio's user manual on the desk.
⇒ ...your antennas are getting smaller and closer to the ground.
⇒ ...it's been 40 years since you've had the snot shocked out of you.
⇒ ...you forget the band plans.
⇒ ...you check into the weather net, the noontime net, the Bell Telephone net, and some other net just because they are there.
⇒ ...you still have a phone patch and Q multiplier in the cabinet.
⇒ ...your radio warms up faster than you do
⇒ ...RF gets into your hearing aid.
⇒ ...you have to find your teeth to have a QSO.
⇒ ...you can't see the parts used to make radios.

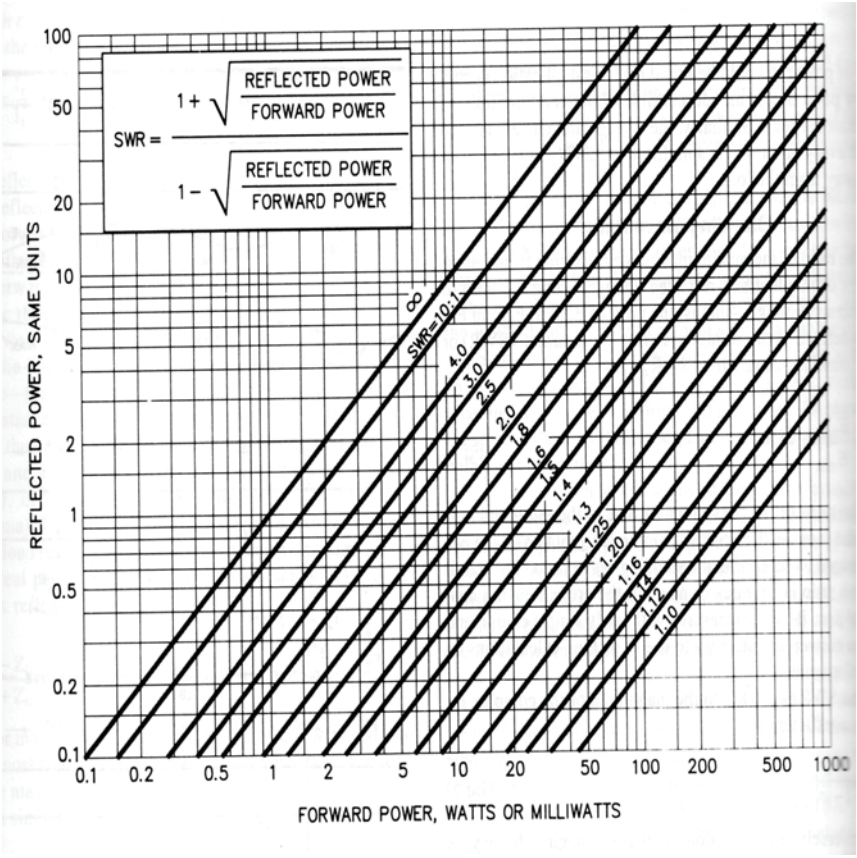
⇒ ...you used to have a real ham shack
⇒ ...you know how to properly tie a wire bundle using waxed string.
⇒ ...some of your test gear you built is older than your adult children.
⇒ ...you add light in front of your radio so you can read the dials.
⇒ ...the neighbor kid annoys you with his rap music so you get on six meters and call CQ when the is no chance of a band opening.
⇒ ...you buy a piece of gear only to find out you already had one in the garage you forgot about.
⇒ ...you can no longer log, make QSO's and drive at the same time.
...you realize a Life Membership in the ARRL is no longer a good value.

Many thanks to Bill Smith N6MQS of www,artsci.com, Jon Duckworth KB6TLJ, and the Newsletter of the San Bernardino, California Microwave Society.

Coaxial Cable - cont.

(Continued from page 3)

If your low band transmitter is putting out 100 watts of SSB power, then looking at the chart to the right the reflected power would be 3 watts. This is the loss of power due to just the mismatch of the antenna to the transmission line. There will also be power loss due to the transmission line. Earlier I mentioned loss in dB/100ft of cable. For example you are using 100 feet of Belden 9258, RG-8X cable, the attached table 21.1 shows a 0.9dB loss per 100 ft @ 10Mhz. So the loss because of the cable would be about 1.2% of the 100 watts or a total of 3+1.2 or about 4.2 watts. This small amount is not worrying about. But reviewing the SWR chart one can see that as the SWR increases the power loss also increases.



Another characteristic of the transmission that I mentioned is the maximum voltage in RMS that the cable can handle. If this voltage is exceeded the dielectric will break down and there can be arcing between the center conductor and the shield. How does this relate to watts, since the transmitter is specified in watts. A simple calculation will give us the answer.

Using the formula Power= E squared, divided by Z(impedance), and using the spec of 600Vrms for the 9258 cable, Watts=(600 X 600)/50. Watts= 7200, or 7.2KW. From this we can see that RG-8X will easily handle the maximum power for the amateur service.

For more information about this subject please consult many of the ARRL publications and/or the internet.

SWR CHART *(see page 8 for a chart comparing loss rates of popular coaxial cables)*

When there is a SWR with the coax used standing waves are produced and this could affect the maximum RMS voltage of the coax. It is possible that the reflected power may be in phase with the forward power and the two waves would add together.

Most modern solid state transceivers have in built in SWR detection circuits to reduce the output power or prevent the transmitter from putting out RF. It is always best to use an antenna tuner if there is a SWR or mismatch.

Another characteristic of coax is the velocity factor. This affects the speed at which the electrons move from on end of the coax to the other. It is a known fact that current flow in free space is 186,000 miles per second. In a conductor, especially coax, the speed is slower because it takes time to charge the capacitors in the coax. This is another characteristic of coax: capacitance per foot. The capacitance per foot is expressed in pF or picofarads per foot.

So when using coax for matching sections that require a portion of a wavelength, it is necessary to calculate the length of cable needed, then multiply that length by the velocity factor. For example using the formula L=492/f(MHz) for the length of a ½ wavelength of wire in free space for 7.2MHz would be 492/7.2 = 68.3 ft. For a ½ wave length of the Belden 9258 coax we multiply the 68.3 by 0.66 for a ½ wave length of 45.1 feet.

Ned Stevens, K7ELP, is a native of Salt Lake City.
A former Coast Guard electronics engineer, Ned retired to Kayenta and enjoys building projects, helping new hams and talking with friends on the air and in person.
You can reach Ned at (435) 634-0510.

Table 21.1

Nominal Characteristics of Commonly Used Transmission Lines

RG or Type	Part Number	Nom. Z_0 Ω	VF %	Cap. pF/ft	Cent. Cond. AWG	Diel. Type	Shield Type	Jacket Matl	OD inches	Max V (RMS)	Matched Loss (dB/100') 1 MHz	10	100	1000
RG-6	Belden 1694A	75	82	16.2	#18 Solid BC	FPE	FC	P1	0.275	600	0.2	.7	1.8	5.9
RG-6	Belden 8215	75	66	20.5	#21 Solid CCS	PE	D	PE	0.332	2700	0.4	0.8	2.7	9.8
RG-8	Belden 7810A	50	86	23.0	#10 Solid BC	FPE	FC	PE	0.405	600	0.1	0.4	1.2	4.0
RG-8	TMS LMR400	50	85	23.9	#10 Solid CCA	FPE	FC	PE	0.405	600	0.1	0.4	1.3	4.1
RG-8	Belden 9913	50	84	24.6	#10 Solid BC	ASPE	FC	P1	0.405	600	0.1	0.4	1.3	4.5
RG-8	CXP1318FX	50	84	24.0	#10 Flex BC	FPE	FC	P2N	0.405	600	0.1	0.4	1.3	4.5
RG-8	Belden 9913F7	50	83	24.6	#11 Flex BC	FPE	FC	P1	0.405	600	0.2	0.6	1.5	4.8
RG-8	Belden 9914	50	82	24.8	#10 Solid BC	FPE	FC	P1	0.405	600	0.2	0.5	1.5	4.8
RG-8	TMS LMR400UF	50	85	23.9	#10 Flex BC	FPE	FC	PE	0.405	600	0.1	0.4	1.4	4.9
RG-8	DRF-BF	50	84	24.5	#9.5 Flex BC	FPE	FC	PE	0.405	600	0.1	0.5	1.6	5.2
RG-8	WM CQ106	50	84	24.5	#9.5 Flex BC	FPE	FC	P2N	0.405	600	0.2	0.6	1.8	5.3
RG-8	CXP008	50	78	26.0	#13 Flex BC	FPE	S	P1	0.405	600	0.1	0.5	1.8	7.1
RG-8	Belden 8237	52	66	29.5	#13 Flex BC	PE	S	P1	0.405	3700	0.2	0.6	1.9	7.4
RG-8X	Belden 7808A	50	86	23.5	#15 Solid BC	FPE	FC	PE	0.240	600	0.2	0.7	2.3	7.4
RG-8X	TMS LMR240	50	84	24.2	#15 Solid BC	FPE	FC	PE	0.242	300	0.2	0.8	2.5	8.0
RG-8X	WM CQ118	50	82	25.0	#16 Flex BC	FPE	FC	P2N	0.242	300	0.3	0.9	2.8	8.4
RG-8X	TMS LMR240UF	50	84	24.2	#15 Flex BC	FPE	FC	PE	0.242	300	0.2	0.8	2.8	9.6
RG-8X	Belden 9258	50	82	24.8	#16 Flex BC	FPE	S	P1	0.242	600	0.3	0.9	3.1	11.2
RG-8X	CXP08XB	50	80	25.3	#16 Flex BC	FPE	S	P1	0.242	300	0.3	0.9	3.1	14.0
RG-9	Belden 8242	51	66	30.0	#13 Flex SPC	PE	SCBC	P2N	0.420	5000	0.2	0.6	2.1	8.2
RG-11	Belden 8213	75	84	16.1	#14 Solid BC	FPE	S	PE	0.405	600	0.2	0.4	1.3	5.2
RG-11	Belden 8238	75	66	20.5	#18 Flex TC	PE	S	P1	0.405	600	0.2	0.7	2.0	7.1
RG-58	Belden 7807A	50	85	23.7	#18 Solid BC	FPE	FC	PE	0.195	300	0.3	1.0	3.0	9.7
RG-58	TMS LMR200	50	83	24.5	#17 Solid BC	FPE	FC	PE	0.195	300	0.3	1.0	3.2	10.5
RG-58	WM CQ124	52	66	28.5	#20 Solid BC	PE	S	PE	0.195	1400	0.4	1.3	4.3	14.3
RG-58	Belden 8240	52	66	28.5	#20 Solid BC	PE	S	P1	0.193	1900	0.3	1.1	3.8	14.5
RG-58A	Belden 8219	53	73	26.5	#20 Flex TC	FPE	S	P1	0.195	300	0.4	1.3	4.5	18.1
RG-58C	Belden 8262	50	66	30.8	#20 Flex TC	PE	S	P2N	0.195	1400	0.4	1.4	4.9	21.5
RG-58A	Belden 8259	50	66	30.8	#20 Flex TC	PE	S	P1	0.192	1900	0.4	1.5	5.4	22.8
RG-59	Belden 1426A	75	83	16.3	#20 Solid BC	FPE	S	P1	0.242	300	0.3	0.9	2.6	8.5
RG-59	CXP 0815	75	82	16.2	#20 Solid BC	FPE	S	P1	0.232	300	0.5	0.9	2.2	9.1
RG-59	Belden 8212	75	78	17.3	#20 Solid CCS	FPE	S	P1	0.242	300	0.6	1.0	3.0	10.9
RG-59	Belden 8241	75	66	20.4	#23 Solid CCS	PE	S	P1	0.242	1700	0.6	1.1	3.4	12.0
RG-62A	Belden 9269	93	84	13.5	#22 Solid CCS	ASPE	S	P1	0.240	750	0.3	0.9	2.7	8.7
RG-62B	Belden 8255	93	84	13.5	#24 Flex CCS	ASPE	S	P2N	0.242	750	0.3	0.9	2.9	11.0
RG-63B	Belden 9857	125	84	9.7	#22 Solid CCS	ASPE	S	P2N	0.405	750	0.2	0.5	1.5	5.8
RG-142	CXP 183242	50	69.5	29.4	#19 Solid SCCS	TFE	D	FEP	0.195	1900	0.3	1.1	3.8	12.8
RG-142B	Belden 83242	50	69.5	29.0	#19 Solid SCCS	TFE	D	TFE	0.195	1400	0.3	1.1	3.9	13.5
RG-174	Belden 7805R	50	73.5	26.2	#25 Solid BC	FPE	FC	P1	0.110	300	0.6	2.0	6.5	21.3
RG-174	Belden 8216	50	66	30.8	#26 Flex CCS	PE	S	P1	0.110	1100	1.9	3.3	8.4	34.0
RG-213	Belden 8267	50	66	30.8	#13 Flex BC	PE	S	P2N	0.405	3700	0.2	0.6	1.9	8.0
RG-213	CXP213	50	66	30.8	#13 Flex BC	PE	S	P2N	0.405	600	0.2	0.6	2.0	8.2
RG-214	Belden 8268	50	66	30.8	#13 Flex SPC	PE	D	P2N	0.425	3700	0.2	0.6	1.9	8.0
RG-216	Belden 9850	75	66	20.5	#18 Flex TC	PE	D	P2N	0.425	3700	0.2	0.7	2.0	7.1
RG-217	WM CQ217F	50	66	30.8	#10 Flex BC	PE	D	PE	0.545	7000	0.1	0.4	1.4	5.2
RG-217	M17/78-RG217	50	66	30.8	#10 Solid BC	PE	D	P2N	0.545	7000	0.1	0.4	1.4	5.2
RG-218	M17/79-RG218	50	66	29.5	#4.5 Solid BC	PE	S	P2N	0.870	11000	0.1	0.2	0.8	3.4
RG-223	Belden 9273	50	66	30.8	#19 Solid SPC	PE	D	P2N	0.212	1400	0.4	1.2	4.1	14.5
RG-303	Belden 84303	50	69.5	29.0	#18 Solid SCCS	TFE	S	TFE	0.170	1400	0.3	1.1	3.9	13.5
RG-316	CXP TJ1316	50	69.5	29.4	#26 Flex BC	TFE	S	FEP	0.098	1200	1.2	2.7	8.0	26.1
RG-316	Belden 84316	50	69.5	29.0	#26 Flex SCCS	TFE	S	FEP	0.096	900	1.2	2.7	8.3	29.0
RG-393	M17/127-RG393	50	69.5	29.4	#12 Flex SPC	TFE	D	FEP	0.390	5000	0.2	0.5	1.7	6.1
RG-400	M17/128-RG400	50	69.5	29.4	#20 Flex SPC	TFE	D	FEP	0.195	1400	0.4	1.1	3.9	13.2
LMR500	TMS LMR500UF	50	85	23.9	#7 Flex BC	FPE	FC	PE	0.500	2500	0.1	0.4	1.2	4.0
LMR500	TMS LMR500	50	85	23.9	#7 Solid CCA	FPE	FC	PE	0.500	2500	0.1	0.3	0.9	3.3
LMR600	TMS LMR600	50	86	23.4	#5.5 Solid CCA	FPE	FC	PE	0.590	4000	0.1	0.2	0.8	2.7
LMR600	TMS LMR600UF	50	86	23.4	#5.5 Flex BC	FPE	FC	PE	0.590	4000	0.1	0.2	0.8	2.7
LMR1200	TMS LMR1200	50	88	23.1	#0 Copper Tube	FPE	FC	PE	1.200	4500	0.04	0.1	0.4	1.3
Hardline														
1/2"	CATV Hardline	50	81	25.0	#5.5 BC	FPE	SM	none	0.500	2500	0.05	0.2	0.8	3.2
1/2"	CATV Hardline	75	81	16.7	#11.5 BC	FPE	SM	none	0.500	2500	0.1	0.2	0.8	3.2
7/8"	CATV Hardline	50	81	25.0	#1 BC	FPE	SM	none	0.875	4000	0.03	0.1	0.6	2.9
7/8"	CATV Hardline	75	81	16.7	#5.5 BC	FPE	SM	none	0.875	4000	0.03	0.1	0.6	2.9
LDF4-50A	Heliax –1/2"	50	88	25.9	#5 Solid BC	FPE	CC	PE	0.630	1400	0.05	0.2	0.6	2.4
LDF5-50A	Heliax –7/8"	50	88	25.9	0.355" BC	FPE	CC	PE	1.090	2100	0.03	0.10	0.4	1.3
LDF6-50A	Heliax – 1¼"	50	88	25.9	0.516" BC	FPE	CC	PE	1.550	3200	0.02	0.08	0.3	1.1
Parallel Lines														
TV Twinlead (Belden 9085)		300	80	4.5	#22 Flex CCS	PE	none	P1	0.400	**	0.1	0.3	1.4	5.9
Twinlead (Belden 8225)		300	80	4.4	#20 Flex BC	PE	none	P1	0.400	8000	0.1	0.2	1.1	4.8
Generic Window Line		405	91	2.5	#18 Solid CCS	PE	none	P1	1.000	10000	0.02	0.08	0.3	1.1
WM CQ 554		420	91	2.7	#14 Flex CCS	PE	none	P1	1.000	10000	0.02	0.08	0.3	1.1
WM CQ 552		440	91	2.5	#16 Flex CCS	PE	none	P1	1.000	10000	0.02	0.08	0.3	1.1
WM CQ 553		450	91	2.5	#18 Flex CCS	PE	none	P1	1.000	10000	0.02	0.08	0.3	1.1
WM CQ 551		450	91	2.5	#18 Solid CCS	PE	none	P1	1.000	10000	0.02	0.08	0.3	1.1
Open-Wire Line		600	92	1.1	#12 BC	none	none	none	**	12000	0.02	0.06	0.2	0.7

The Rettysnitch

By L. B. Cebik, W4RNL

Ed. note: Last month, we looked at the legend of the Wouff-Hong. This month, we continue with as much information we could find on the terrible Rettysnitch. Read and tremble.

The Wouff-Hong

In 1919, after World War I (then called simply the Great War since no one could imagine doing all that destruction and killing all over again), the League once more took up its work in earnest. At just this critical time, the Directors received from The Old Man a package containing an authoritative and well-preserved specimen of Wouff-Hong. Turner described the contents of the package as "the gruesome instrument of torture." By order of the Directors, it was hung in the office of the Secretary-Editor, within easy reach. Its first portrait appeared in QST for July that year. At each Board meeting, the Wouff-Hong stood on display, to the blanched looks of the humbled Directors.

The Rettysnitch

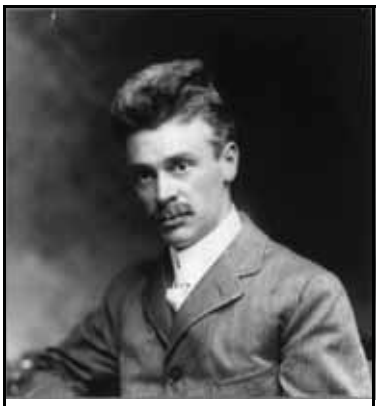
The Old Man also presented the world with its first glimpse of the Rettysnitch. In 1921, the monstrous machine was presented to the League traffic manager by the Washington, D.C., Radio Club, ostensibly after receiving it from T.O.M. Even at its first public appearance, two of its teeth were missing, suggesting a long history of necessary and effective use. However, to this day, the Rettysnitch has lost no other teeth. It was ordered to hang by its mate.

In the 20s and 30s, many a reproduction of both instruments, but especially the Wouff-Hong, materialized across the country. A group of hams in Flint, Michigan, created the mystic society called the Royal Order of the Wouff-Hong. The society endures to this day, according to legends to which I have so far not been privy. And The Old Man has been given a name: Hiram Percy Maxim, W1AW. At least, legend tells the story that way, perhaps based on the fact that T.O.M. glared at "Kitty" while reflecting on the "rottenness" of everything. Maxim did have a cat. However, true to feline nature, Maxim's cat never spilled the beans.

But what has become of the Wouff-Hong and the Rettysnitch? More important, what has become of their power to enforce both decency and law and order on the ham bands? Hams used to cringe at the thought, let alone the sight, of these dreadful tools of enforcement. But, we do not hear of them much anymore. Oh, a tremor of curiosity every now and again brings out a ripple of questions and speculation. But not much more more than a ripple.

You see, today, we have much more terrifying weapons, things like Oozies and H-booms and the like. They scare us in ways that seem to make the Wouff-Hong and the Rettysnitch tame and toothless. However, even in Maxim's day, objectively more powerful weapons were used in France, like tanks and gas more poisonous than that made by Texas chili. Why were the Wouff-Hong and the Rettysnitch so powerful to those early hams?

Because those hams cared about amateur radio in their hearts. They wanted what they knew they could never have: a perfectly law-abiding and decent radio service that would inspire young and old alike to become hams or, lacking the inclination to electronics, to become admirers of hams. Every minute of on-the-air time was a chance to show how noble a pursuit amateur radio was and should always be. They feared the Wouff-Hong and the Rettysnitch as instruments of their own consciences, as they strove to meet the standards they set for themselves.



"The Old Man"
Hiram Percy Maxim

And that is where today you will find both the Wouff-Hong and the Rettysnitch -- ***deep in your own conscience***. If they seem to hold no power, then you know it is time once more to elevate your standards a notch higher, and then to strive to achieve them perfectly. Each of us has a secret and private office where no one else may go. Above the door, facing our individual operating tables, hang two instruments, one of law and order, the other of decency. However much the outside world may neglect the tradition of these terrible reminders of responsibility, each of us possess our own Wouff-Hong and Rettysnitch. May you never deserve their sting.

Like all legends, this one, too, must end with special words: ***pass it on***.