

Northwest Indiana DX CLUB

Volume 7, Issue 7

July 2019

President's Corner

Our next meeting will be in August. Same time and place. Noon central time at the Round the Clock restaurant in Chesterton on Highway 49. We will be in the middle room.

Vice President, Jerry Hess is working on getting a presenter from a larger DX Organization. You won't want to miss this meeting. More details later.

73

John W3ML

Good DXing!

NWI DX Club Website

<http://nwidxclub.weebly.com/>



INSIDE THIS ISSUE

- 1 President Speaks
- 2- Member News/DX News

Reminder, the NWIDX Club has a club call W9NWI.

The call is available to members for use during contests, special events, Field Day, etc. To schedule dates for its use, contact the trustee, Steve Mollman – KD9HL. kd9hl@arrl.net

QSL cards are available.

Notice:

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Indiana QSO Party

NorthWest Indiana DX Club (4 logs)
N9RD W3ML AJ9C W9DZ

95332

We came in 3rd Place for Club Competition. Maybe next year we can get more operators to play and move up the ladder.

NWIDX Club Members DXCC Challenge Award Scorecard (As of June 30, 2019)

1	AG9S	JIM SJOBERG, JR	2974
2	N9FN	DAVE CHASEY	2377
3	K9FN	DAVID BUNTE	2202
4	AJ9C	MIKE KARISH	1837
5	W8FIB	TOM RUGGLES	1703
6	KD9HL	STEVE MOLLMAN	1378
7	W3ML	JOHN POINDEXTER	1374
8	K9SUH	KENNETH REISING	1356
9	W9UM	NICHOLAS COMINOS	1349
11	N9RD	JUERGEN NITTNER	1302
12	ND9A	JOHN SIKORA	1149
13	K9QA (SK)	RICH LOCHNER	1145
14	N9DD	THOMAS FRISZ	1084

The above totals were abstracted from the ARRL DXCC Standings lists:

<http://www.arrl.org/dxcc-standings>

The ARRL DXCC Challenge award is available to applicants who reach 1,000 confirmed and credited band points on the bands of 160 through 6-Meters (except 60 Meters). This includes only current entities. Deleted entities do not count towards this award. All contacts must be made after November 15, 1945. Once you reach the 1,000 point level with the ARRL, you are entered into the Challenge listing automatically. An application to request the DXCC Challenge listing is not required. This award is endorsable in levels of 500. There is no certificate for this award but a special plaque is available from the ARRL for the DXCC Challenge award.

Members with less than 1000 points are NOT listed in the ARRL DXCC Standings.

The maximum possible points as of June 30, 2018 was 3400 points (10 bands X 340 eligible entities). The current World high point holder is EA8AK with **3264 points**. The current USA high point holder is **W4DR with 3183 points**.



By Steve Mollman



DX FOR JULY 2019

2019 Jun07	2019 Jul02	Ghana	9G5GS	2019 Jun29	2019 Jul06	Svalbard	JW7QIA
2019 Jun15	2019 Jul31	Somalia	6O10O	2019 Jun30	2019 Jul07	Crete	SV9
2019 Jun16	2019 Jul03	Azores	CT8	2019 Jul05	2019 Jul12	Malta	9H3IK
2019 Jun19	2019 Jul06	Uganda	5X7W	2019 Jul05	2019 Jul20	Solomon Is	H44MS
2019 Jun22	2019 Jun29	French Polynesia	FO	2019 Jul06	2019 Aug03	Palestine	E44WE
2019 Jun22	2019 Jul06	Honduras	HR9	2019 Jul07	2019 Jul16	East Malaysia	9M6NA
2019 Jun22	2019 Jul15	South Sudan	Z81D	2019 Jul11	2019 Jul16	Aruba	P44W
2019 Jun25	2019 Jul02	Saba & St Eustatius	PJ5	2019 Jul11	2019 Jul17	Isle of Man	MD
2019 Jun25	2019 Jul04	Tuvalu	T2AR	2019 Jul13	2019 Jul21	Georgia	4L
2019 Jun26	2019 Jun28	Jamaica	6Y3Y	2019 Jul20	2019 Aug11	St Kitts & Nevis	V47JA
2019 Jun26	2019 Jul07	Laos	XW4XR	2019 Jul22	2019 Jul29	Lord Howe Is	VK9APX
2019 Jun27	2019 Jul06	Tuvalu	T2R	2019 Jul31	2019 Aug07	Maldives	8Q7SU
2019 Jun28	2019 Jul06	Trinidad & Tobago	9Y4	2019 Jul31	2019 Aug07	St Paul I	CY9C

By permission of NG3K, <https://www.ng3k.com/Misc/adxo.html>

Also from the ARRL Weekly DX Listing (<http://www.arrl.org/wlaw-bulletins-archive/ARLD026/2019>)

4U?ITU – ITU HDQTRS, BV – Taiwan, CE – Chile, HL – Korea, OE – Austria, UR – Ukraine, ZB – Gibraltar

73's and good DXing,
Jerry, W9KTP

NEWSLETTER INDEX **IS** **AVAILABLE**

We now can search all of the past issues of the NWIDXC newsletters. You can call up the Index from the Newsletter Website tab. It is a two-column table in a M/S WORD document consisting of a Subject/Title column and a URL column associated with a monthly newsletter. To begin, click on the rectangle just above the Archive listing. After you click on the rectangle, you may be asked by your browser to SAVE the Index Document. Accept the SAVE and while it is saving, promptly select (you don't want it to disappear) a pop-up box on the lower left task bar and either chose ALWAYS OPEN or just OPEN.

When the Index appears on your screen, click the HOME tab in the upper left and select FIND in the upper right to do a search for a specific subject. A ("NAVIGATION") column will appear to the left of the Index for performing a search. Enter a keyword or two. You may get more than

one hit. Scroll down the Index to choose one of the highlighted hits. Highlight the associated URL with your mouse and then hover over it and do a CTRL/LEFT CLICK.

The NWIDXC Website will display the required month. Click DOWNLOAD and the issue will appear. To find the specific item you want, you can either simply scroll down or click on the circle with three vertical dots to do a search. Some browsers have just the three vertical dots in the upper right.

Five issues do not appear in the ARCHIVED list. They were archived with one of the adjoining months and you will get two months to choose from. Where that occurred, I put a date just after the subject in the Index so you know which issue to search. The following is a list of these issues. I have set the URL's to bring up the saved month.

June 2017 – Saved under May 2017 includes May & June 2017

August 2016 - Saved under July 2016 includes July & August 2016

February 2015 – Saved under January 2015 includes January & February 2015

June 2015 – Saved under May 2015 includes May & June 2015

August 2014 – Saved under July 2014 includes July & August 2014

I have tested all the URL links and most of the subjects as I built the index. There is still the possibility that I missed something. As much as possible I used the article titles but in some cases the title gave no hint of the subject matter and I added some keywords to the title. I have been able to call up and search newsletters from Google, Internet Explorer and my wife's MacBook. If you encounter a problem, let me know.

73's, Jerry W9KTP

NEWSLETTER INDEX QUIZ

1. Where can you buy cheap plastic locally?
 2. How did N9RD power the TS-430 on St Lucia (no period after the "t")?
 3. How did K9CIV get his Stepper Antenna in the air in 2014?
 4. Who wrote "The New DXer's Handbook"?
 5. What is the latitude of South Sandwich Thule Island?
-

Handy Hint

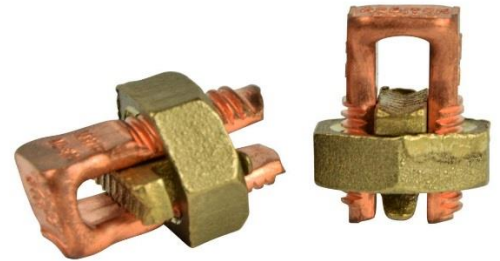
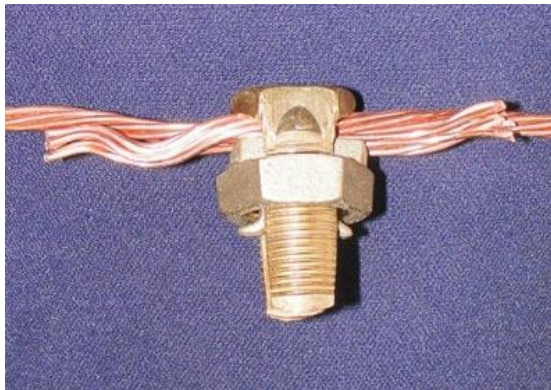
Split-Bolts to Adjust Wire Antenna Length

By Steve Mollman-KD9HL

Building and experimenting with simple (or complex) wire antennas is a practice that most hams indulge in. To adjust the wire length, use split-bolts. Pass the end of the wire through the insulator and double it back securing the end to the element with the split-bolt.

Using this method allows you to adjust the length without cutting or trimming the wire.

After determining the correct length (preferably with an Antenna Analyzer, but a SWR bridge can be used) the excess wire can be trimmed off or the excess be kept in place for future tuning to a lower frequency.



Split-Bolts (also known as Burndy Connectors) are available in various sizes at most places where electrical supplies are sold including Menards, Home Depot and Lowes.

◀73's and good DX ▶

Do you have a Handy Hint that you would like to share? Contact Steve Mollman at KD9HL@ARRL.net

Article Follow-Ups, Comments and Feedback

-The Ultimate Receive Antenna? The Elephant Cage-April 2019 Issue

Jon –EA2SN, Vitoria-Gasteiz Spain wrote:

“Until 2003 there was one antenna at the Rota Naval Station in Southern Spain. If you use Google Maps, on the NW corner of the base you may still see the remains of the circle. 36.656308 N 6.365045 W.

See also: <https://www.stripes.com/news/cold-war-relic-bull-ring-is-being-dismantled-at-rota-1.1674>

In the 70's there was also a secret receiving station south of Madrid. It was from the Germans, who tried to receive all kinds of communications from the Eastern Block on frequencies which were in skip with Germany. No antennas were on site, and the whole station was underground. I don't think there is anything left now, though.

BTW, very interesting reading.”

Jon-EA3SN

KD9HL's reply: *Thank you for the feedback and information on the Madrid facility and the German listening post. The Rota antenna was a US Navy AN/FRD-10 of which there were 16 military and 1 civilian sites around the world, including the one at Rota, Spain. It is reported that only the two Canadian and possibly the civilian one near Green Bank, West Virginia are still operational. Time and technology marches on! I understand the local nickname for the Rota installation was “La Plaza de Toros” (The Bull Ring). The US Navy AN/FRD-10 antenna while an imposing and very large structure, was physically smaller than the Air Force model.*

-SWR and Watt Meters-How Accurate are Yours? -June 2019 Issue

Last month's article on the accuracy of SWR Meters and Watt Meters unearthed some comments.

Bob-K4TAX, Sparta, TN wrote:

“Yes, the SWR display can show a 1.0:1 value. But in my case, it does not, you are showing two different values, as minute as they are I might add, you are measuring two different places in the feed line. In my thinking, it is physically impossible to put two SWR bridges in the same place electrically.

In theory the SWR on a given line should be the same at all places, but maybe not since there is loss of some minute value in the line. Since you are measuring on antennas, common mode current, may be the contributing cause. Difference in measurement calibration, may be a factor as well.

VSWR bridges are calibrated with some specific value of load. Ideally, it is 50 ohm non-reactive, but it could be 49 ohms or 51 ohms or some other value. Just because a load says "50 ohms" on the label is no real indication that is actually fact. To that end, I have 3 dummy loads which are "50 ohm" loads according to the labels but none are not true 50 ohm loads. I do have a Celwave load that says 50.5 ohms on the label and measures 50.5 ohms per my General Radio bridge. The others are +/- something, but good enough to evaluate a ham transmitter or amplifier.

Frankly, a difference between 1.1:1 and 1.0:1 won't make any realistic difference in any form or fashion other than to appease the operator. *Emphasis added*

73

Bob, K4TAX

Wes-N7WS, Tucson, AZ wrote:

“I would be surprised if two garden variety instruments, even placed at the same point, would agree. The directional bridges/couplers in most "(V) SWR" meters that hams routinely use externally or which are built into our radios are not precision instruments. There are a number of error sources in reflection measurements; source match, diode non-linearity, coupler tracking errors and often the most significant, directivity error.

In an ideal coupler, (i.e. signal separation device) one port measures the forward (incident signal) and another measures the reverse (reflected) signal and there is no coupling between ports in the unwanted direction(s). In other words there is no signal at the reverse port due to the forward signal. In a real world coupler there is some leakage signal appearing at the reverse port due to the forward signal, absent any reflected signal. The "goodness" of a directional coupler in this instance is called "directivity" and the error signal is directivity error. Directivity is usually specified in db. Really good couplers might have directivities in the 40 dB neighborhood. Really-really good directional bridges can be 50 dB, but so-so units might be 25-30 db. Not ready for prime time units are lower than this.

Now I have no way of knowing what the directivities are of the couplers built into my K3s, KPA500, KAT500, but considering that they have to work over about 5 octaves, I'm going out on a limb and saying that 25 to 30 dB is a fair estimate. If I'm wrong, I'm sure I'll hear about it.

For sake of discussion I'm going to use 26.5 db. What this means is that if I terminate the output spigot of one of these radios with a perfect 50+j0 load, I'm going to measure a leakage signal (directivity error) that is 26.5 dB below the incident value. I'll introduce the concept of return loss here.

We hams usually speak in terms of SWR. $SWR = (1 + p) / (1 - p)$ where p is the reflection coefficient. Here the p = the voltage measured at the reflected port and the constant 1 represents the incident signal. In reality both of these quantities are complex numbers, they have both magnitude and phase but SWR measurements are scalar, we throw away the phase (since it's difficult to measure) and just use the magnitude. (In fact the symbol "p", which is really the Greek letter rho, indicates the magnitude of the reflection coefficient in normal usage). We can also express this ratio as return loss, which is $-20 * \log_{10}(p)$. So return loss, SWR and reflection coefficient are just different ways to express the same thing; the ratio of incident to reflected signal.

Let's return to our example; the coupler with 26.5 dB directivity, which indicates a return loss (RL) of 26.5 dB even with a perfect termination. Doing the math and converting $RL = 26.5$ dB to SWR we get 1.1:1. Our perfect load measures 1.1:1 with our imperfect instrument. This assumes that there are no other errors, which there always are. But it gets worse.

Let's say that the load we want to measure really is 1.1:1. We now have two (apparent) reflections, 1) the real one and 2) the directivity error and they both have the same magnitude. In our simple detector, they sum together. Now I said earlier that we don't measure phase, only magnitude, but just because we don't, or can't measure the relative phases doesn't mean they aren't there. We will examine two cases to determine the limits of error.

Case 1: Both reflections are in phase, they add up to $p + p$ or $2p$, $RL = 20.5$ and $SWR \sim 1.21:1$.

Case 2: They are exactly out of phase, they sum to zero. $p = 0$, RL is infinite and $SWR = 1:1$. The possible RL error is then -6 to $+\infty$ dB!

In other words, an actual SWR of 1.1:1 can be measured anywhere between 1.0:1 and 1.2:1. Is it any wonder that we often read about concerns that one device measures one thing, while another located at the same, or close location measures something different. Of course all of this is predicated on a directional coupler with 26.5 dB directivity and no other error sources. It's entirely possible that the Elecraft K3 couplers are better than this. They are certainly no better than 40 dB since the internal reference resistors are 51 instead of 50 ohm. Plus the "Tandem Match" configuration is in itself not a great match to the transmitter output (Note 1). Furthermore, the coupler, at least in a K3 is driven by a LPF, which isn't a great 50 ohm source. Plus the coupler output port isn't connected directly to the coax connector..... And so on and so forth (Note 2). All of this creates "uncertainty."

In a lab heroic efforts are made to reduce uncertainty but do we, or should we, really care in this situation? In my opinion, no, but everyone is free to differ.) : *Emphasis added*

(Note 1): See "An HF In-Line Return Loss And Power Meter" by Paul Kiciak, N2PK.

<http://n2pk.com/#TP3>

(Note 2): See "Gauge the Accuracy of SNA Measurements" <http://www.testmart.com/webdata/appnote/763.PDF>

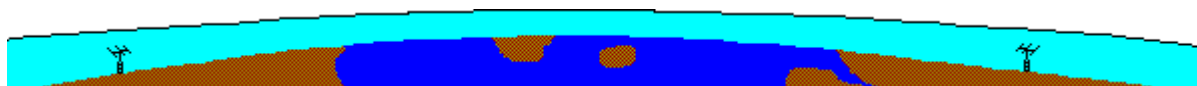


They took Doc's Big SteppIR down with a Gin pole.

We still have some items for sale of Rich's K9QA and others on the Starke County Club For Sale page at <http://www.w9joz.org/forsale.htm>

His tower, for those that don't know, is a solid steel leg PiRod tower that sold for over \$15,000.00. We are asking \$3000.00, but you must take it down. It is 4 sections of 20 feet in length for a total of 80 feet.

I want to thank those that have been sending in articles for the newsletter. All items are appreciated.



Until Next Time,

73

John

W3ML

<http://nwidxclub.weebly.com/>



DX

THANKS
Thanks for visiting!

