THE FEEDLINE

Volume 47, Issue 5 The Voice of the Western Illinois Amateur Radio Club May 2023

Shack-blast from WM4D

(He told me to put a title on it…. N9JF)

During and after our April club meeting, a number of issues were brought to light; and I would like to take this opportunity to update everyone on a few things.

***Club Dinner*: We plan on having a club dinner on a Saturday evening sometime in the fall. We have not had a dinner in several years; and in the past this was held at the Patio in January. It was decided to move the dinner to a date later in the year as most of the January dinners were plagued with bad weather. The Patio's prices have reportedly doubled. Alternative locations, i.e. Sprouts are being explored and we hope to make an announcement soon.**

***Membership Cards:* We can make membership cards. Dave Soncek has developed a macro in Excel that can print individual membership cards. It was also suggested we print generic membership cards and "ink in" the member's name and membership dates. Strong opinions exist both ways and I can see both views as viable. Each of these options require that we have an accurate roster. The executive committee has met and is working on an accurate roster. Also being worked on is getting the roster into Google Docs where it can be a "live" document and accessible to club officers for editing and updating. There are some technical issues involving transfer of macros and this is being worked on.**

***Repair of the station Heil Headset.* As of this writing the headset has been repaired and is on its return trip from Heil.**

***Issues with the station K3:* The K3 issues have not been addressed.**

***Club Storage in Garage/Shed:* It has been mentioned several times in past meetings that we need to clean up our storage area in the Red Cross garage and in the transmitter shed. This has been done and discarded equipment sold for scrap. It's done, the garage and shed are neat and clear of all excess junk. Funds received will be announced.**

***Club Outing:* While the Executive Committee did approve $50 to rent the main shelter at Siloam Springs the event is on hold for now. Some key players needed to be available for the date. Travel and job commitments just got in the way. That said, the weekend of June 3rd, there will be POTA activity at Siloam Springs. There is a world wide POTA event that weekend and myself, and possibly others, will be camping at Siloam Springs and have stations on the air. So, take a nice drive in the country and stop by the park on June 3rd and see what POTA is all about. We may be spread out so find one of us and we can direct you to the other stations. Particulars may be posted on our Facebook Group page. If you have not joined the Group. Please do. There is a lot of**

information there about what our members are up to and can be entertaining as well as informative.

POTA: **The POTA [Parks on the Air] event the first weekend in June is the "POTA Plague Event" and they are saying this is NOT a contest. Well, good luck with that. No doubt linears and beams will be transported to parks around the world for this event. Here is everything you need to know copied from the Parks on the Air Website.**

RULES & RESOURCES

OVERVIEW The Parks on the Air Plaque Event encourages individual amateur radio operators and amateur radio clubs to visit eligible parks and make contacts with other amateur radio operators. The event recognizes high-performing activators and hunters in various categories with plaques based on their activity during the event.

(But no, it's not a contest…wink wink N9JF)

OBJECTIVE The objective of The Parks on the Air Plaque Event is to contact as many stations as possible on the amateur radio bands as a Parks on the Air hunter and/or Parks on the Air activator.

ELIGIBILITY The Parks on the Air Plaque Event is open to all licensed amateur radio operators Only POTA.app registered users are eligible to be awarded plaques.

> **An "activator" is a licensed amateur radio operator who operates within a park that is listed on the Parks on the Air designated park list and who contacts other licensed amateur radio operators.**
> **A "hunter" is a licensed radio operator who contacts an activator at a park that is listed on the Parks on the Air designated park list. The term "chaser" is sometimes used synonymously.**
> **A "club" must have its own account at POTA.app. Clubs must have contacts made by at least 3 different club member amateur radio operators during the Parks on the Air Plaque Event to qualify.**

DATE The 48-hour Parks on the Air Plaque Event 2023 begins at 0000 UTC June 3rd and runs through 2359 UTC June 4th 2023.

BANDS AND MODES Any amateur radio band is allowed except for the WARC bands of 60M, 30M, 17M, and 12M. Any mode is allowed. (See Parks on the Air guidelines for additional information.)

SCORING A standard Parks on the Air contact counts as one (1) point towards each applicable award category.

A contact within a multiple reference park ("N-fer" park) will count ONLY as a single contact and single park. There are no multipliers for the Parks on the Air Plaque Event.

EVENT LOGGING **Activator Logs are due by 2359 UTC on June 18, 2023. Logs must be submitted following the standard Parks on the Air log submission guidelines.**

Hunters do not submit logs to Parks on the Air.

Club logs are due by 2359 UTC on June 18, 2023. Club logs must be submitted under the proper club account and each contact must have both a station (the club) and operator (the individual making the contact) recorded in the log, per standard ADIF convention.

AWARDS **Parks on the Air Plaque Event participants can earn premium award plaques. The plaques are of black piano-finish wood with laser engraved textured black aluminum plates**

DISPUTES **There is a one-week period from when the results are posted on the Parks on the Air website(s) to dispute results. Disputes must follow the standard process for reporting rule violations.**

PARKS ON THE AIR PLAQUE EVENT 2023

AWARD CATEGORIES

Activator Categories

MOST CONTACTS ALL MODES - Issued to the activator making the largest number of contacts across all modes.
MOST VOICE CONTACTS - Issued to the activator making the largest number of voice contacts.
MOST CW CONTACTS – "JOE EVERHART N2CX MEMORIAL AWARD" - Issued to the activator making the largest number of CW contacts.
MOST DIGITAL CONTACTS - Issued to the activator making the largest number of digital contacts.
MOST ROOKIE CONTACTS - Issued to the Rookie activator making the largest of number contacts in any mode. A Rookie is an operator who made their first POTA contact within one year prior to the event.
ROVER - MOST UNIQUE PARKS - Issued to the activator who activates the largest number of unique park references.

DX REGION 1 - Issued to the activator who makes the largest number of contacts, in any mode, from parks located in IARU Region 1.
DX REGION 2 - Issued to the activator who makes the largest number of contacts, in any mode, from parks located in IARU Region 2, but outside of the conterminous 48 United States.
DX REGION 3 - Issued to the activator who makes the largest number of contacts, in any mode, from parks located in IARU Region 3.
CLUB - Issued to the club that makes the most contacts, in any mode, as activators.

Hunter Categories

MOST CONTACTS ALL MODES - Issued to the hunter making the largest number of contacts in any mode.
MOST VOICE CONTACTS - Issued to the hunter making the largest number of voice contacts.
MOST CW CONTACTS - Issued to the hunter making the largest number of CW contacts.
MOST DIGITAL CONTACTS - Issued to the hunter making the largest number of digital contacts.
MOST ROOKIE CONTACTS - Issued to the rookie hunter making the largest number contacts in any mode. A Rookie is an operator who made their first POTA contact within one year prior to the event.
HUNTER - MOST UNIQUE PARKS - Issued to the hunter who contacts the largest number of unique park references.
DX REGION 1 - Issued to the hunter who makes the largest number of contacts, in any mode, with activators within eligible parks located in IARU Region 1.
DX REGION 2 - Issued to the hunter who makes the largest number of contacts, in any mode, with activators within eligible parks located in IARU Region 2, but outside of the conterminous 48 United States.
DX REGION 3 - Issued to the hunter who makes the largest number of contacts, in any mode, with activators within eligible parks located in IARU Region 3."

So, it looks like a contest, smells like a contest, walks like a contest, so is it a contest?

Other POTA activity: This past weekend April 13 -15 I was camping at Siloam Springs and Jim N9JF was out activating some parks toward the East. Conditions were horrible. Jim had difficulty making his unusual number of contacts and I had an S9 noise level from something which could not be determined. I did manage to make the minimum required contacts [10] necessary to claim a park activation for those days. Jim was also successful in activating Fox Ridge State Park and Lincoln Log Cabin State Historic Site. One thing about POTA, it has started to take me to places I would have otherwise never visited. I also finally got up the nerve to do a CW POTA activation calling CQ and making contacts. It was a bit of a struggle but it was "FUN" and that is

what this is about. I started to develop a pattern as you can do this any way you want. I am anxious to get out and operate CW again. This was excellent practice for me to assist with some CW contacts this Field Day June 24-25. Field Day will be held at the Red Cross and everyone is welcome to stop by and operate. It is loads of fun. I will be spending the night this year.

So, I hope that brings everyone up to speed on what's going on. I hope to see you at the next meeting.

73, Good DX, and CW forever.

Ken, WM4D

Moved and Seconded: Minutes of the April 2023 WIARC meeting:

The April 2023 meeting of the Western Illinois Amateur Radio Club was held on Wednesday, April 5, 2023 at the American Red Cross building. The meeting was called to order by President WM4D at 7 pm with the following members and guests present:

WM4D, N9JF, KB9FIN, WB9EWM, NR9Q, W9US WD9VUW, K9AJC, WB2UFO, WA9GBC, KD9VWR, KB9GIY, W9WE, W9GQK, W9DP, AB9DU, KB9ZEJ, KD9TVM, N0EMR, KD9PPJ

Minutes of the March meeting were approved as printed in *The Feedline.* Motion by KB9FIN to approve, WB9EWM second, carried.

No treasurer's report due to absence of the treasurer.

Repeater board (WB9EWM). 440 machine has a random noise. Chris is going to try connecting via gateway and may decide to put it in analog mode only temporarily. May have to go back for service.

Station committee (WA9GBC): Dave has been operating FT8; worked NA9Q who has been dealing with a broken leg. Dave had a problem with the K3, upgraded firmware, works at low power; various issues eventually fixed by working on the calibration. Power meter has issues. Heil headset is damaged. Rotor control has some dead spots.

WB9EWM moved, WB9UFO seconded to send Heil headset off for repair. Carried.

VE report: (W9WE) Next session is a the HARC meeting next week. Following is May 6 in Quincy.

Old Business:

Thanks to NR9Q and W9US for getting KM9DX his "Kilo" T-shirt!

New Business:

Two recent callouts for storm spotting. Soliciting for new volunteers. Meeting Apr 6 at 6 pm at the EOC warehouse.

Red Cross is concerned about us cleaning up some of "our stuff" in the garage.

Exec Comm: approved $50 to pay for a club activity at Siloam Springs on a Saturday to be determined (main shelter house)

W9DP has created a group on line for the club that appears to be working. Anyone interested should contact him at w9dp@w9dp.us

NR9Q commented on the Facebook page for the club.

AB9DU: inquiring about club dinner (offering a program on Israel and Egypt); probably won't be until fall or winter.

Field Day: building is reserved for the date; Hannibal will probably be having their own operation;

NCS stations:

Apr 12 KD9PPJ, Apr 19 NR9Q, Apr 26 W9WE, May 03 W9DP, May 10 W9WE, May 17 W9DP, May 24 WB9EWM, May 31 KD9PPJ, June 7 W9DP

Adjourn 7:33 pm on motion by KB9FIN, second by WB9EWM and carried.

Respectfully submitted, N9JF Secretary

Net Report and other stuff from W9WE

April 19. NR9Q 147.195
April 26. W9WE 146.94
May 03. W9DP 147.195
May 10 W9WE 146.94
May 17 W9DP. 443.90
May 24 WB9EWM. 147.195
May 31. KD9PPJ 146.94
June. 07. W9DP 443.90

I'm working with Adams County EMA as storm spotter. We have several new people adding capabilities to our deployment roster.

I'm going to put a few links where you can Study for free. These weather conditions can change rapidly and we are all in need of refresher courses.
https://www.weather.gov/education/

https://www.meted.ucar.edu/education_training/course/23

Scroll to bottom of especially this last link to see course information.

I've been working in yard maintenance or feeling like a full-time job. I have long wire antenna back in service after squirrels chewed through the support lines.
Congratulations again to K9AJC Extra Class now.
W9WE 73 Dave

PS Testing for FCC license will be on the 6 May at 1:00 pm, Bethel Church. 12 & Jefferson, Quincy, IL

Be there or be square is the old saying. It's time to upgrade that old rusty license. Don't forget it's not a bad idea for all of us to review periodically too.

WB9WAJ equipment

(All items are "as is"; we did not test any of them. Those interested should contact Bruce at the e-mail at the end of this article.)

Icom IC2300H $75

Astron SS25 power supply $50

MFJ 945E mobile tuner $50

MFJ Plug and Play Intellituner $125

MFJ 1701 Antenna Selector $80

MFJ 945C Versa Tuner II $50

Radio Shack 25a switching power supply $40

MFJ 300W dummy load $50

Kenwood dynamic mic $50

Calrad field detector $10

Various cable and PL259 connectors.

Thank you. Email at fourshipp86@gmail.com

DX info cheerfully and shamelessly purloined from *ARRL DX News*

(There's plenty of DX to be worked. You just have to hunt for it. Not a lot of current info here….. N9JF)

QST de W1AW DX Bulletin 15 ARLD015 From ARRL Headquarters Newington CT April 13, 2023
To all radio amateurs SB DX ARL ARLD015

This week's bulletin was made possible with information provided by The Daily DX, 425 DX News, DXNL, Contest Corral from QST and the ARRL Contest Calendar and WA7BNM web sites. Thanks to all.

UGANDA, 5X. Eddy, OE3SEU is QRV as 5XA1J. Activity is on the HF bands and on Satellite QO-100. QSL via LoTW.

Please see April QST, page 69, and the ARRL and WA7BNM Contest web sites for details.

Technicians. you really ought to look at ALL of your privileges

Most new Technicians buy a VHF/UHF radio to get on the local repeaters. Unfortunately, many only go that far and either stay there, or lose interest in Ham Radio altogether. Most Techs are aware that they have all ham privileges about 50 MHz, but seldom take a look at what else they can do besides repeaters. Six meters offers a gold mine of activity on SSB, digital and even CW. There are several months a year where 6 meters offers propagation via Sporadic E; and with the upswing in solar activity, the possibility of some F2 propagation that may give world wide coverage. Six meters allows very easy meteor scatter contacts using simple radios and antennas. There is even a diehard group of hams using 6 meters for making contacts by bouncing signals off of the moon.

Many HF radios include 6 meters and a few even have 2 meters and 70 cm. Two meters is probably the most common band for Technicians as there are several very inexpensive radios available for 2 meter FM and repeaters. Many of those same radios are capable of communications through Amateur Radio satellites. There are many FM low earth orbit satellites that can be accessed with an HT and a small yagi antenna. But there is much more to 2 meters. APRS, packet radio, VARA FM, weak signal SSB, CW and digital modes are very common on 2 meters. The amazing thing about using the weak signal modes is you soon learn VHF in not limited to line of sight. Using SSB, CW or WSJT, it is possible to make daily contacts 200 , 300 or even 500 miles away. For long distance work, you will need a decent antenna high enough to clear the nearby buildings. Meteor scatter is possible on 2 meters. It does take a better station than it does on 6 meters, but any 2 meter station equipped for weak signal work can do meteor scatter as well. Meteor scatter will allow contacts at distances up to 1000 miles or even more. By far, the bulk of spectrum allowed to Amateur Radio is above 50 MHz: 222, 432 902, 1296 are all active locally, although finding stations on the air does take a little work.

Going even higher you will find many hams on the microwave frequencies within operating range. Microwave frequencies are a bit daunting, but recent designs shared by the designers have made it pretty easy and fairly inexpensive for the weak signal VHF operator to make the move to microwave frequencies. I have purchased PC board and parts for several microwave transverters for less than $100. They are very low power and require a functional all mode radio to make them a complete transceiver; but compared to years past, you had to make everything yourself and circuits were fairly complex. One of the great things about microwave is high power is not needed; antenna gain is the name of the game. A few milliwatts into a 20 inch dish can give you QSO's over many, many miles on bands above a couple of GHz.

Besides the VHF and above, most new Technicians are at least aware that they have voice, CW and digital privileges on parts of 10 meters; and 10 meters should be a hot band over the next several years. Besides 10 meters, much of the CW sub-bands on other HF bands is available to Technicians as well. Yes, you will need to be able to send

and receive CW, but many new hams have risen to the challenge with a lot of slow speed CW activity taking place on great HF bands besides 10 meters, including 80, 40 and 15 meter CW. Any CW segment of each of those bands available to General class are available to Technicians. CW radios can be very simple and several great kits are available if you feel like building your own transceiver.

When you are ready to branch out from just working FM and repeaters, remember you have access to all Amateur Radio frequencies above 50 MHz.

I noticed recently that a log I'd uploaded to Logbook of the World hadn't shown up in my "Recent QSOs". Appears this is a common issue, and here is some explanation for the problem. I don't understand the technical aspects, but it's obvious that ARRL is working on it! N9JF

Subject: [Special] [ARRL-LoTW] Facts and Fiction: LoTW in 2023 (Warning - this post is long).

First the Fiction:
"Meanwhile, a report on page 61 of the same QST issue announces that the CEO has been authorized by the ARRL Board to hire an IT Project Manager to oversee a project to replace LoTW from scratch."

"The ARRL's Director of Operations continues to claim that LoTW is working fine."

"However, there is no evidence that a sudden increase in single-QSO uploads between December 2022 and January 2023 is responsible for the 4X decline in the measured aggregate rate of QSO processing, or for the more than 7X amount of time being required to clear the Queue after a popular contest weekend (there are still 1.7 million unprocessed QSOs in the Queue).".

"The ARRL staff members who understood the current implementation's internals have all left the ARRL ? and without being asked to document their knowledge".

Now the facts:

1) "Performance analysis was one of the many casualties of the LoTW project's horrendous under-scoping when it was launched in 2000."

2) "The ARRL staff members who understood the current implementation's internals have all left the ARRL and without being asked to document their knowledge".

Note that I have listed the last one under both Fiction and Fact because, like many other opinions that are incorrect, they mix enough fact in along with the fiction to appear to be 100% believable to the casual reader. The "and without being asked to document their knowledge" surreptitiously assigns blame to ARRL Leadership for being remiss about asking them to do so on their way out the door. That is the fiction. This sort of comment is what's known as a "red herring". The fact is that the entire LoTW system is not documented as it is, and it should have been all along. There may be a pile of old documents that may have been partially accurate at one time, but all sorts of changes (admittedly some that yielded positive results) were not documented at all.

This lack of documentation is but one of the many reasons why those who are no longer at ARRL were asked to leave or chose to retire or just leave on their own, or whatever. We will not discuss any individual's situation as doing so would be wildly inappropriate.

This notion of being "from scratch" is also a red herring. Take the #1 fact above about "the LoTW project's horrendous under-scoping". The fact is that this "under-scoping" went far beyond just performance analysis in LoTW. The systems it was deployed on were inadequate at the time they were first powered up. That is true to this moment as I write this. Many of the operating systems and the various software components are all generations behind today's releases and in many cases are completely at-risk, and not supported by the vendors any longer.

This is true all across the ARRL's IT landscape. It wasn't just LoTW that got short-changed over the last few decades. The recent Personify situation was hampered by this short-sighted and common "horrendous under-scoping" approach to everything. Minimal budgets, no experienced IT staff, and a whole lot of deferring until sometime in the future. Well, the future is here now.

The new LoTW, when it emerges will be "from scratch" in a sense, but we are not just throwing out what's been done, and starting over as "starting from scratch" conveys. The upgrade path spanning 20+ years of technology changes will not happen - there will be no intermediate stages where we deploy something that might have worked 10 years ago for a while. No, instead, we are going to "jump to hyperspace" and upgrade to a current technology platform that is extensible and capable of doing all the things that we all know need to be done. Yes, that includes comprehensive performance monitoring of all activities. Realtime capabilities, parallel processing for all users etc.

Another Fiction above is this: "The ARRL's Director of Operations continues to claim that LoTW is working fine."

No, LoTW is not fine. I never made such a statement. It's old, and barely capable of keeping up with the workload it's given. It is remarkable, however that it continues to plod along and do its job well enough to service the users and provide the platform for DXCC and other coveted awards.

So what's all this about single QSO uploads? More fiction. I never said that single QSO uploads were the sole cause of any degradation. They are but one of the many contributing factors in the increase in workload on the LoTW system. More users making more demands for certificates. DXCC Record updates. Download of data requests with date ranges beginning before there was radio (i.e. 1900) or before there was DXCC (i.e. 1945) et al. Also, when we work on LoTW here at ARRL HQ - it's on the same system! When your DXCC award is processed, it's on the singular LoTW platform that is also taking in upload files. When your certificate is renewed and approved by a staff member, it's on that same system. When you connect via the lotw.arrl.org web page and look at your recent QSOs or QSLs or your DXCC totals, you're accessing that same system. All of it adds up, and there's more! I'm not listing it all.

Again, there's a lot of stuff going on in LoTW and a whole lot of single QSO files coming in, thousands per hour, every day, non-stop. As I described in very simple terms, there is time consumed that could be used for uploading QSO data that is instead going to file

I/O overhead. All of these additional functions add up, and due to the limitation of LoTW, they take time away from uploading. Not being able to document exactly how much that impact is does not make it irrelevant and you cannot discount it from the impact it has on upload speeds. 4 years ago, (heck, 4 months ago) there was far less being uploaded to LoTW on a daily basis.

Another fact: No one who does not work at 225 Main St. knows what is going on with LoTW monitoring or development in any amount of detail. So, all of the speculations are just that. Speculations without any basis in fact: which is Fiction!

Fact in the form of a long story:
On December 26th, the nice fellows over at Gridtracker released a new version of their software that had a defect, and it was caused by someone being careless. They're nice and very smart people, and are working with us to help make LoTW work better. However, as their many thousands of users around the globe began to install this new upgrade, every one of them began requesting their entire LoTW QSO records. The first few were responded to, and as more and more users were requesting them, the download queue in LoTW was being stressed with thousands of requests. Then, when an initial interval had passed, the Gridtracker users systems would re-request the same query from LoTW. The download abuse detector did it's job, and rejected these subsequent repeat requests. But now, the Gridtracker system didn't wait a reasonable interval, it waited one half second and issued the request again. Every one of the thousands of the Gridtracker users was doing this, every half second. LoTW's download queue was overwhelmed.

As has been discussed before, downloads impact uploads, and the more downloads are being serviced, the more degradation to uploads. As you may recall, we had periods of time when one QSO per every 5 minutes was all that was managing to slip through. I was on vacation during the holidays, and monitoring the situation from my cell phone. The balance of the IT Team was also not in the office at the time. Even so, we have remote developers that we are currently working with who were pressed into service to assess the situation, and ultimately provided a way for us to modify the incoming traffic to LoTW that identified the traffic causing this overload. This was done by identifying consistent content contained in those requests and we were able to block them all, so the impact to LoTW was completely mitigated.

The fiction reported here and elsewhere was that there could still be some of the users still doing this, and while there may be some of the Gridtracker users running that faulty December 26 version, their traffic is not reaching LoTW. The source of this was found by reviewing the incoming data packets and their contents. Part of the requested format for download requests is to include an identifying string of characters so we could tell just by looking at the contents what application was the source. Gridtracker didn't do this. There was no identifier. The packets were coming from literally all over the globe - hundreds from China, Indonesia, and elsewhere.

They all had one thing in common, and that was the unique and absurd date range they were requesting. We set up a pre-LoTW filter application that evaluated every incoming request and began discarding all the rogue Gridtracker requests.

After a few days of very slow processing, this worked and LoTW recovered.

We then reached out to Gridtracker, and they subsequently began to fix their software, which they did in a couple of days.

I apologize for that long story, but I think it's important to know the facts, and I also think that this shows that we are working on LoTW actively and our new IT Director and I are on top of this thing around the clock, even on vacation.

I thank those of you who recognize the struggle this is to keep LoTW operational and to guard it from attack.

73, Bob W5OV ARRL

(As of 2 pm on April 19, I just checked, and it appears that the queue has been cleared?

Weekend in the park de K9AJC

(This was at Wakonda SP, K-1792…and congratulations, Allan on the Extra Class! N9JF)

Park activation was great Friday night after setting up camp, around 60 late night contacts after 12am Zulu. Set up the multi band end fed antenna and made 20 and 40 meter contacts.
But waking up and getting things going for Saturday was in the ducks' favor, rain and lightning came in heavy so I made the decision to break camp early before it all came down on me.
As soon as I broke camp and sat down to call some quick CQ, the rain came in, so all radio equipment was packed up and away I went. Reviewed the weather radar it was probably a good decision.

POTA Report from W9US

I activated K-1023 8 times for 1016 contacts and on 3-25-23 is when I got my kilo award for Siloam. the most contacts I did at that park was 204 in 1 day and the most contacts I've done in a day was k-6512 Locust creek state conservation area and that was 313 in 4 hrs. and I'm probably going to work on Frost Island K-7497 next for the kilo but I have 800 to go there 🤣🤣🤣 Hoping this helps ya out with the newsletter de W9US

A quote from one of the POTA group on Facebook:

"I think Pota is the best thing that ever happened to ham radio! I'm addicted! I have been a general class ham for several years and I've never seen anything like this. You might not realize it but Pota is training us to mobilize on a minute's notice anywhere anytime we're needed if we had a national emergency."

Melba (KB9CES) adds this thought: "It's much more relevant than Field Day, where you can plan for months and have to haul everything out of your home shack (and then put it back when you're done)! Most POTA operators already have a portable station ready to go or know how to assemble it quickly."

I would add, "And many of them have spouses who tolerate it!!" (Thanks, Sweetie!)

N7DDC designed ATU-100 review

I purchased an assembled ATU-100 PC board from Amazon, at that time the price was under $40.00, shipped. This did not include cabling but it did come with right angle SMA connectors on the input and output. It did come with the tiny OLED display. The unit is rated at 100 watts PEP, advertised for use from 160 – 6 meters, runs on 12 VDC at 400 milliamps and has a decent quality PC board. I did some bench testing and it did work, after a fashion. Since I had not wired any buttons, it was always in fully automatic mode, that is, whenever it saw a few watts of power and the antenna SWR was higher than 1.7:1, it automatically tried to find a better match. I soon discovered the matching range was pretty limited; anything over 3:1, and it may not find a match. It has about the same range as many of the built-in antenna tuners in modern HF radios.

There are other PCB kits available with the surface mount parts installed and the PIC installed and programmed for under $30.00 (shipping extra), you wind the coils and install several through hole parts, so you could build yourself a really cheap automatic tuner if feel the need.

These tuners were originally designed by N7DDC, and he has made then open source, so many sources have made them available in varying levels of configuration. I have seen 500 watt and 1000 watt versions available, but there is very little data available on the web about the higher power versions.

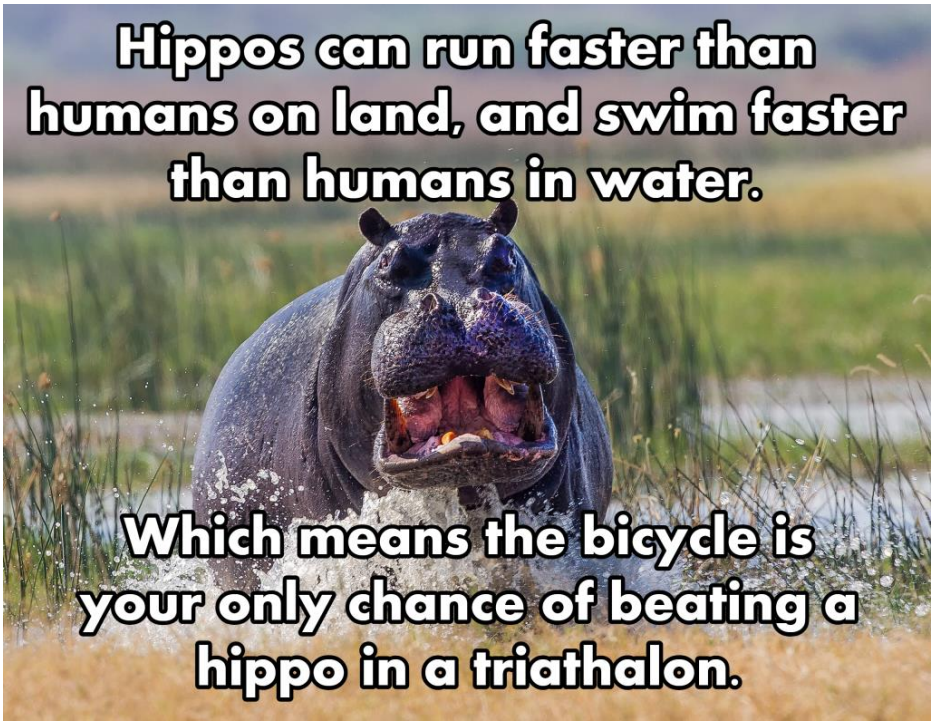
I was able to use my tuner effectively on my 41 foot wire vertical antenna on 40 – 17 meters, but it did not find an acceptable match on the same antenna on the higher bands. I had read about some of the Chinese units used incorrect diodes in the directional coupler circuit, so I purchased some known good detector diodes; but it did not help with the higher frequency tuning. If you opt to use all the functions, it can do fully automatic tuning, semi-automatic tuning, manual tuning or it can be bypassed when not needed. The display shows power, SWR, capacitance and inductance values used and efficiency (in other words, it tells you how much power is coming out of the tuner versus how much you are putting into it). Tuners can consume a fair amount of your transmit power at certain settings.

As it stood, it was functional and probably could be used for an antenna "stretcher", that is, it would help make a narrow banded antenna more SWR friendly at the band edges. If you have used a Hamstick or Hustler mobile antenna, you know you do not get a perfectly flat SWR even on 20 meters, never mind the lower bands. Even many commercial tribanders will exceed 2:1 at one end of the band or the other.
After my initial testing, I set it aside until the bug bit me to put it to use. Well, I still have not put it to its intended purpose, but I did want to put it is some type of case to protect it if I took it on a portable operations and to help shield it from stray RF. I had several paths for a case I could have taken, but after thinking about the amount of work to build one from scratch, I started looking at what was available online. A nice bare, black aluminum, clamshell case was available for about $14.00, but it would still take a good bit of measuring, cutting and drilling to make the unit functional and my metal work never ends up looking very nice. It would still need connectors, wiring and hardware to install the PCB. I did notice a case kit was available on both Amazon and EBay, a kit that came with the front and rear panels already drilled and silk screened for the ATU-100, RF

connectors and assembly hardware, but it was almost as much as the original purchase of the tuner in PCB form. Now, the completed unit was then available for just a bit more than I was going to have in mine by the time I put it in a case. There are even completed units that include an internal battery for portable operation for a few dollars more. Well, long story short, I bought the case kit and it had everything I needed to finish my project except a few wires between the PC board and the display, power switch and buttons. Below are a couple of recent links to what I purchased.
https://www.amazon.com/ATU%E2%80%91100-Antenna-Automatic-Screen-Components/dp/B099ZX8DF9/ref=sr_1_8?crid=1S4LSMG1OTBGO&keywords=atu-100&qid=1679531022&sprefix=atu-100%2Caps%2C105&sr=8-8
https://www.ebay.com/itm/134061773645?hash=item1f36b4534d:g:8W8AAOSwW0lh49KF&amdata=enc%3AAAQAHAAAA4HyiWDSk%2BLjuB7vmSu0BIx40fp02mjhayC%2Bf8FJnGl97so%2FsUJDgDj3hKX21tSYBuj3IEBW%2FdS4ta%2FwOAKSDb0KnAwKXHzaLmLDfgcx4agCNG1WUxvsfRtE3Yg0YZlHH%2F%2BPMOj1YWHpj1DMMrWcIBsWhd4vF6Mohm3er7WkMnHcYxYmni7gL76HDPX9g1KgrAD4vB0fyGD0twHLXNJueDv1aRjd4NGFqL%2B35mTb189SSpJ%2Fk14sxKDDwz%2Fl2qVndNTkY85pom4bTTMfwCyauj64DLMB1ipN05QgeTsvVYcER%7Ctkp%3ABFBMklOrv-Fh

If I were to do it all over again, I would probably buy the fully assembled unit and be mostly happy. I was disappointed that the tuning range was not better, but compared to the price of the new MFJ or LDG automatic tuners, it was well worth the cost to me. Footnote: I did recently purchase a 1000 watt rated PCB partial kit, so I will be going through it all again.

Danny W9DP



Western Il. Amateur Radio Club
PO Box 3132
Quincy, IL 62305-3132

May meeting: Wednesday, May 3, 2023
7 pm
Adams County American Red Cross Building, 24th and Koch's Lane, Quincy (west ½ block from intersection then north on driveway)

W9AWE – W90AB
The Western Illinois Amateur Radio Club, Inc.
WIARC homepage: http://www.w9awe.org e-mail to w9awe@qsl.net
WIARC email reflector: wiarc@mailman.qth.net

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Analog repeater W9AWE/R on 146.340/.940 Tone Rx and Tx 123.0
Analog and Fusion repeater W9AWE/R on 448.900/443.900 Tone Rx and Tx 103.5
Analog and Fusion repeater W9AWE on 147.795/147.195 Tone Rx and Tx 103.5

All repeaters are located on the north side of Quincy IL

ILLINOIS QSO PARTY

Newsletter input due by the 20th of the preceding month
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