The Printed Circuit

The Monthly Publication of the Tallahassee Amateur Radio Society
January, 2021

TALLAHASSEE AMATEUR RADIO SOCIETY
K4TLH .NET
Facebook.com/K4TLH
P.O. Box 37127
Tallahassee, FL 32315

Minutes of the January 7, 2021 TARS Meeting

Compiled and Submitted by: Todd Clark (KN4FCC) – TARS Secretary
(Note: The business portion of the meeting was conducted via radio net due to the COVID-19 pandemic. The program portion of the meeting was conducted via video teleconference following the business meeting)
Call to Order: Gerry Gross (WA6POZ), as net control, opened the meeting net at 7PM local time on the 147.03 MHz repeater. Check-ins from:

KN4FCC Todd
K4TB Tom
KK4SIH Don
WA6POZ Gerry
K4SBZ Stan
KQ3O Justin
K4GFD, Norm
KN4WOW, Ed
N4KGT Alan
KN4UXJ Larry
K4YFW Val
AC4TO Ken
KN4TDL Jeff
AI4A, Brian
Gordon KY4BA
KF4RWT Tommy
AG4UU Randy
KO4BPD Keith
KN4TRT Paul
KA5USN Phil
KD4MOJ Doug
K4YFW Sal

Gerry then turned the meeting over to the club president, Don Pace, KK4SIH.
Approval of the minutes

Don opened the meeting and thanked Gerry for serving as net control. Thanks for the great turn out. We need to continue to be safe during the pandemic. Any corrections or changes to the meeting minutes from November? K4TB, Tom, noted that in the "new business" section of the November meeting minutes, Paul (KN4TRT) recommended contacting Bob Heil, for future programs. That is the correction. Hearing no other comments, the meeting minutes from November are approved as amended.

Treasurer's report

Treasurer's report from Doug Ferrell, KD4MOJ: We missed December, but we received reports for both months. November $33.80. from Amazon and some members renewing and paid equipment insurance premium. All members may check membership roster on the TARS' webpage and it has been updated to identify who has paid dues for 2021. You can all send checks to Doug's house, address is on QRZ. Are there questions? None heard.

Don: Thanks to Doug for the report and for the work as Treasurer. Is Phil available for an education update? Nothing heard.

Committee Reports

Jan 9 morning testing session is full. 4 techs and 1 general from Norm, K4GFD.

Don: Thanks to Norm and the other Volunteer Examiners (VEs). The testing schedule is discussed in this month's Printed Circuit.

Randy: AG4UU. All repeaters are working. 442.100 has been repaired. We have removed the 6m antenna as requested and repeater equipment is stored. Randy is working on finding a new location for the 6m repeater. Any questions?

Don: Thanks to the repeater committee for their work in keeping the repeaters up and running.

Old Business

Still looking for a Field Day coordinator. Hope that we will be able to meet face to face. Email and call if anyone would like to be captains for CW or voice or digital stations. Still looking for volunteers to help organize and to be the captains for the various teams. Volunteers will be part of a team and it is not 100% certain that we will be able to host the event face to face.

New Business

Tom, K4TB: still working on programs for 2021. We have a good presenter tonight. Also presentation for Earth-Moon-Earth (EME) communications. Some possible presenters. Tom may use the presentation and present himself. Also set up for show on Li batteries on YouTube. Any other ideas are welcome.

Don: any other suggestions? Nothing heard.

Any other new business?
No other new business. This ends the business part of the meeting at 1922 local time. Zoom meeting will start in a few minutes…. Growing youth involvement in Ham Radio. Thanks for attending the January 2021 meeting. Back to Gerry:
Gerry: One announcement, the Thursday evening net will resume on 146.91 at 8pm local time. This net is adjourned at 7:20 local time.
The program portion of the meeting started at 7:30pm on Zoom. Speaker is Anthony Luscre, K8ZT from Ohio. Published articles in QST on involving youth in Ham radio. Gordon is a new youth member and chair of the new youth committee. We will get some ideas tonight from Anthony on this topic.
Third talk this week! Section Youth Coordinator for the Ohio Section. Will provide links to the presentation which has embedded links. Some ideas for youth activities. See tiny.cc/yiar. Typical ham club is aging. Focus on anyone under 26. 3 groups: 1) Grade 4 – 8; 2) HS; and 3) College students. For Grade 4 to 8, work with groups of students and focus on group events. With HS and college students, you will need to recruit individual students. May focus on specific classes and majors. Often useful to do classes to attract students. Programs may include SW listening, scouting, school radio clubs, and related to a ham. SW bands are decreasing; both scout troops and school radio clubs are declining. Local pharmacy would carry club magazines. Some people don't know how to get a license and can't afford to get license / equipment. You don't have to join the club and you don't have to get a license. It's not always love at first sight. HS is not the best age group. Before HS and after HS are better. Kids can learn the material; voice is not necessarily the best mode for demonstrations. Connections via schools, libraries, maker-groups, or through direct contact. Need to work with organizations to get your foot in the door. Find the club members who will best interact with youth. Approach with ways you can help with activities that the school is already involved in. Good to piggyback on the STEM or STEAM movements. There is a link to a brochure that has been developed. Also handouts available from ARRL (order way ahead of time). Have a good idea of what the school is teaching and who the key contact is at the school. It may be the SRO! Be flexible in your planning and your offerings. ARISS group, ham radio and the ISS. Scouts do Jamboree on the Air. Materials to get beforehand and after the radio event is over. Need other activities besides just radio voice. BSA has free course for Youth Protection. Check with school district and other groups regarding their requirements and guidelines. You may also need a background check. Possible demos: Radio Day. Math to calculate wavelength and frequencies. Merit Badge classes. Student radio day with handouts that has links to various resources. Also

NATO phonetic alphabet and Morse Code signals. There is also a handout for teachers to use for prep. Now can use Software Defined Radio and 20 kids can tune separate radios at the same time. Can do this at home if they have internet access – or even on a cell phone or tablet. Can have students build a clothes pin key for CW. Demos using digital modes and CW are more interesting to students. Contests may be interesting on weekends and can view online scoreboards. You may want to consider a "plant" station with someone who is on the air and can discuss things with kids in a way that will be interesting. Have a plan B in case the bands and propagation are not good. Can switch from voice to digital or CW. Can also do foxhunting activities on the school grounds. The middle school kids enjoyed having a chance to do soldering and soldering practice. You may also want to tie into robotics and drones. YouTube videos with kids doing ham radio. Licensing kids is not necessarily the best approach. Focus on general exposure first. Classes online (for everyone) makes it easier for students (not just kids) participate in radio technology courses. Plan to provide elmering and operating experiences for kids. Online classes help address transportation and location issues. ARRL teacher institute in the summer to help teachers who want to sponsor a school radio club. Collection of journal articles tiny.cc/ar-ed-out. Youth handouts with QR codes (see link).
Tom: Thanks for the presentation!

Treasurer's Report

Submitted by Doug Ferrell, KD4MOJ,Treasurer

	for period	year-to-date
Beginning Balances:	27-Jan-21	1-Jan-21
Cash on hand	$ -	$ -
Checking Account:	$ 3,876.41	$ 3,876.41
Savings Account:	$ 3,102.68	$ 3,102.68
Total:	$ 6,979.09	$ 6,979.09
Summary of Month's Activity:		
Total Receipts:	$ -	$ -
Total Expenditures:	$ -	$ -
Recipts Derived From:		
Members Dues:	$ 301.70	$ 301.70
Fifty/Fifty	$ -	$ -
Donation (KI4NBU & N1HJ)	$ 30.00	$ 30.00
Veteran's Radio Fund	$ -	$ -
Field Day Radio Fund	$ -	$ -
Interest (Savings)	$ 0.39	$ 0.39
smile.amazon.com	$ -	$ -
Total	$ 332.09	$ 332.09
Expenditures:		
American Red Cross:	$ -	$ -
Fifty-Fifty	$ -	$ -
ARRL Insurance	$ -	$ -
Spagetti 100 - TARC	$ -	$ -
TARS & Feathers Plaque	$ -	$ -
Storage & Supplies	$ -	$ -
Field Day	$ -	$ -
VE Expenses	$ -	$ -

Tower/Repeater Maintenance	AG4UU	$	-	$	-
Florida Dept of State		$	-	$	-
Post Office Box:		$	168.00	$	168.00
Total:		$	168.00	$	168.00

Transfer Checking -> Savings:

Ending Balances - Jan 27, 2021:

Cash on hand		$	-	$	-
Checking Account		$	4,040.11	$	4,040.11
Savings Account		$	3,103.07	$	3,103.07
Total		$	7,143.18	$	7,143.18
	*Veteran's Radio Fund			$	500.00
	*Field Day Radio Fund			$	697.00

TARS Dues Reminder

Just a reminder that Tallahassee Amateur Radio dues for 2021 are due. There are still bills to pay to keep the repeaters alive and active and other routine expenses that still have to be paid. These are all listed in the Printed Circuit in the Treasurers Report for this that are interested.
Membership dues for the Tallahassee Amateur Radio Society are only $20.00 per individual or family and due February 20. Please make checks payable to the Tallahassee Amateur Radio Society (or TARS) and include your phone number on the check.

The mailing address is:

Tallahassee Amateur Radio Society
C/O Treasurer
P.O. Box 37127
Tallahassee, Fl 32315

FCC requires email addresses

Effective on June 29, 2021, amateur radio licensees and candidates must provide the FCC with an email address on all applications. If no email address is included, the FCC may dismiss the application as "defective." On September 16, the FCC adopted a Report and Order (R&O) in WT Docket 19-212 on "Completing the Transition to Electronic Filing, Licenses and Authorizations, and Correspondence in the Wireless Radio Services," which appeared on December 29 in the Federal Register. The FCC has already begun strongly encouraging applicants to provide an email address and will email a link to an official electronic copy of the license once it's granted.

While many, if not most, amateurs already have provided an email to the FCC, this also will become a requirement. Under Section 97.21 of the new rules, as amended, the holder of a valid amateur radio station license "must apply to the FCC for a modification of the license grant as necessary to show the correct mailing and email address, licensee name, club name, license trustee name, or license custodian name." For a club or military recreation station license, the application must be presented in document form to a club station call sign administrator who must submit the information to the FCC in an electronic batch file.

Under new Section 97.23, as amended, each license must show the grantee's correct name, mailing address, and email address. "The email address must be an address where the grantee can receive electronic correspondence," the revised rule will state. "Revocation of the station license or suspension of the operator license may result when correspondence from the FCC is returned as undeliverable because the grantee failed to provide the correct email address."

Licensees can log into the ULS License Manager System with their FRN and password to update their FCC license record, including adding an email address. For questions or password issues, call the CORES/FRN Help Line, (877) 480-3201 (Monday - Friday, 1300 - 2300 UTC) or reset the password on the FCC website. Read more.

TARS license testing schedule

For 2021 and beyond, please read the following.

TARS will conduct test sessions for all classes of Amateur Radio Licenses on the Saturday following the TARS Club meetings on odd numbered months, at 10 am and 1 pm at the American Red Cross, 1115 Easterwood Dr. near Tom Brown Park. Test sessions are also scheduled for Saturday morning on Field Day weekend. If required, a special session can be scheduled.

Also, ALL test sessions, due to Covid-19, test sessions are limited to 5 participants and pre-registration is mandatory. To register, send an email to Norm, K4GFD at TALLYTARSVE@GMAIL.COM.

Due to Covid-19, face masks covering the nose and mouth are mandatory for all attending these test sessions.

There is no fee for testing. Be sure to bring two pencils and a calculator with a memory that can be cleared (not a smart phone).

Bring a photo ID and your FCC issued Federal Registration Number (FRN). If you do have an FRN, go to the FCC's Registration Page HTTPS://FCC.GOV/CORES/ register and obtain your FRN number. TIN's are no longer used.

Beginning January 1st an email address is mandatory for all participants. This is an FCC requirement.

If you are upgrading to a higher-level license, bring a photocopy of your existing license or a Certificate of Successful Completion of Examination (CSCE), that you may hold from a previous exam sessions, the photocopy(s) will not be returned.

The Thomasville ARC also offers testing sessions on a regular basis. Check their calendar for this schedule at http://thomasvilleamateurradioclub.com/calendar/.

More information about getting licensed is available from the ARRL at http://www.arrl.org/licensing-education-training.

Test session for 2021 are as follows: January 9th; March 6th; May 8th; June 26th; July 10th**; September 4th; and November 6th

** Held the second Saturday because of the July 4th weekend.

Notice for VEs. Test sessions are limited to 3 VEs. Please do not just drop in. Because of testing for General or Extra class license only Extra Class VEs can be used. When necessary Norm, K4GFD or Gerry, WA6POZ will make the necessary call for VEs.

Contesting

Contesting goes full steam in February. We have 14 significant contests this month and six of them are major contests, at least one every weekend. The State QSO Party season kicks off this month with five contests. WA7BNM Contest Calendar lists 125 RadioSport activities for February worldwide, more than enough to keep you busy depending on your interest – phone, CW or digital. You don't have to wait until the weekend to play – there are many small activities scheduled throughout the week in the evenings. The minor events are too numerous, too short, or too focused to warrant attention here. The more significant ones are described below.

Preview of February Weekends

February 6-7

February starts off with the **North American Sprint, CW**. Sprints are unlike most other contests. The most distinguishing feature is that you aren't allowed to sit on a frequency and call CQ. You can call CQ, but when someone responds, you must give up the frequency to them and QSY. Usually, you find someone else calling CQ and when they answer you, you can take over their frequency – for one contact. This makes for an extremely fast-moving contest. For that reason, it only lasts for four hours.

Three **State QSO Parties** kick off the SQP season. They are all part of the State QSO Party Challenge and the new Worked All QSO Parties (WAQP) program. The out-of-state exchange for all three QSO parties is signal report and state/DX.

The **Vermont QSO Party** is first, starting at 0000Z February 6th, which is 7:00 pm EST Friday night. All modes, including FT8/FT4, are included. The 3 highest single operator scorers outside Vermont

but within the U.S. will receive a 3 oz. miniature jug of genuine Vermont Maple Syrup!

A popular event is the **Minnesota QSO Party**. Despite wintery weather, Minnesota mobiles will be out in force, providing contacts in many counties. Watch for W0HJZ; Rich will try to activate 17 counties using both CW and SSB, weather permitting.

The third "state" QSO party is the ***British Columbia QSO Party***. Instead of counties, the multipliers will be the 42 Federal Electoral Districts of BC. Only CW and SSB are allowed this year. Digital has been dropped due to lack of activity. This Canadian province QSO party, along with the Ontario QSO Party later in the year, counts for the scoring in the State QSO Party Challenge. Note that it is one of the 45 QSO parties included in the new Worked ALL QSO Parties (WAQP) program.

The **Mexico RTTY International Contest** has expanded its time frame to 36 hours. The 32 Mexican states/districts count as multipliers, along with each DXCC entity. The exchange for non-Mexican stations is signal report and a serial number.

February 13-14

The ***CQ Worldwide RTTY WPX Contest*** is the second major contest of the month. Multipliers are the prefixes of the station worked, so there is an opportunity to collect a large number of multipliers, even if band conditions are not great. The exchange is RST plus a serial number.

The **Dutch PACC Contest** is a 24-hour CW/SSB contest. The objective is to work as many Dutch provinces as you can. The exchange for non-Dutch stations is RS(T) and serial number.

Special Note: This is the weekend when HamCation is usually held in Orlando. Because HamCation has been cancelled this year due to COVID-19, a virtual HamCation will be held with seminars, vendors, and even door prizes. As part of this virtual weekend, there will be a **HamCation QSO Party**. To highlight the desirability of being in Florida in February, the

exchange will be your name, state, and outside temperature. Also, everyone can work everyone, regardless of location. Details are at https://www.hamcation.com/. This is just a fun event and does not count toward any awards, except those given by the event.

February 20-21

The only significant contest this weekend is the **ARRL International DX Contest, CW**. W/VE stations may only work DX and DX stations may only work W/VE, so it's a good opportunity to add some DX to your log. W/VE stations will use signal report and state/province for their exchange, while DX stations must use signal report and power. Expect to hear a lot of "K's" from the kilowatt stations.

February 27-28

The last weekend of the month is busy with five contests. The major contest is the **North American QSO Party (NAQP), RTTY**. As the name suggests, the object is to work as many North American stations as possible. The exchange is operator's name and state/province. Because power is limited to 100 watts, this contest enables the little pistol to compete with the big ops on an even playing field. (This is NOT a state QSO party.)

This is the "Carolina Weekend" with the **South Carolina QSO Party** on Saturday and the **North Carolina QSO Party** on Sunday. Both contests are CW/SSB/Digital; however, the NCQP does not allow FT8/FT4. The exchange for both is a signal report and state.

About Participating

Before participating in any of these contests or events, please familiarize yourself with the times, bands, exchanges, rules, etc. associated with the event. The WA7BNM Contest Calendar (http://www.contestcalendar.com//index.html) can provide most of the information, as well as a link to the contest's home page, which will give you a "flavor" for the contest and let you know about any plaques or other special prizes like a bottle of wine or a frozen salmon. Alternatively, you can Google the name of the contest or event and go directly to their home page.

If you are a new or casual contester, there is never a better time to start or return to contesting than now. Pick one of the easier contests, such as a State QSO Party or one of the minor DX contests, and jump in. (No, first read the rules as suggested above.) You do not have to score a lot of points but do spend some time in the chair having fun. As you are enjoying the leisurely pace of one of these slower contests, picture it on steroids as a major contest with wall-to-wall stations, all calling CQ. After it is completed, submit your log to the contest sponsor and report your activity on 3830Scores. Then look at the contest results on 3830 to see how you compared with all others. With this contest completely under your belt, check the Schedule of Contests to see what next weekend has in store for you.

Summary

Contest	Type	Date	Time	CW	SSB	RTTY	Other Digital
North American Sprint, CW	Major	6-Feb	0000Z	C			
Vermont QSO Party	QSO	6-Feb	0000Z	C	S	R	D
Mexico RTTY International Contest	DX	6-Feb	1200Z			R	
Minnesota QSO Party	QSO	6-Feb	1400Z	C	S	R	
British Columbia QSO Party	QSO	6-Feb	1600Z	C	S	R	D
CQ WW RTTY WPX Contest	Major	13-Feb	0000Z			R	
Dutch PACC Contest	DX	13-Feb	1200Z	C	S		
ARRL Inter. DX Contest, CW	Major	20-Feb	0000Z	C			
CQ 160-Meter Contest, SSB	Major	26-Feb	2200Z		S		
REF Contest, SSB	DX	27-Feb	0600Z		S		
UBA DX Contest, CW	DX	27-Feb	1300Z	C			
South Carolina QSO Party	QSO	27-Feb	1500Z	C	S	R	D
North American QSO Party, RTTY	Major	27-Feb	1800Z			R	
North Carolina QSO Party	QSO	28-Feb	1500Z	C	S	R	D

Ham Happenings

February 2021 DX

It is possible that some of the listing stations canceled their plans due to the Corvis-19

From To Prefix Call, () is the IOTA designation

01-Feb ??? T6 T6AA

01-Feb	???	Z8	Z81D
01-Feb	01-Apr	HK	HK3JCL
01-Feb	01-Jun	JW	JW/LB2PG (EU-027)
01-Feb	01-Mar	VU	AT2YAR
01-Feb	03-Feb	P4	P4/DL4MM
01-Feb	01-Apr	HK	HK3JCL
01-Feb	10-Mar	PA	PC19HOPE
01-Feb	11-Feb	5U	5UAIHM
01-Feb	11-Feb	CE9	VP8/SQ1SGB, VP8DOI
01-Feb	14-Feb	PA	PD112MKNN
01-Feb	15-Mar	CE9	DP0GVN, DP1POL
01-Feb	21-Feb	YI	YI9WS
01-Feb	28-Feb	SP	SN65KDU
01-Feb	30-Apr	SP	SQ0MORSE
01-Feb	30-Jun	F	TM8AA
01-Feb	30-May	CE9	RI01ANT
01-Feb	31-Dec	CE9	8J1RL
01-Feb	31-Dec	ZC4	ZC4GR
01-Feb	31-Dec	ZD8	ZD8HZ
01-Feb	31-Mar	JA	8N1IZA
01-Feb	31-Mar	JX	JX2US
01-Feb	31-May	HI	HI9/F5PLR
01-Feb	03-Mar	SV	SX5A/59-SX5A/50
01-Feb	04-Apr	PA	PE75BORNE
01-Feb	22-Apr	JA	8J17CALL
01-Feb	30-Jun	DL	DL73TXL

01-Feb	31-Dec	CT	CQ750RSI
01-Feb	31-May	VR	VR2HK9O

DX sources - The Daily DX, 425 DX News, or DX Zone

FCC sends warning to hams

In light of the events at the Capital in Washington DC on January 6, the FCC sent a warning to all Amateur Radio operators on January 17. It read:

> WARNING: AMATEUR AND PERSONAL RADIO SERVICES LICENSEES AND OPERATORS MAY NOT USE RADIO EQUIPMENT TO COMMIT OR FACILITATE CRIMINAL ACTS
>
> The Enforcement Bureau (Bureau) of the Federal Communications Commission issues this Enforcement Advisory to remind licensees in the Amateur Radio Service, as well as licensees and operators in the Personal Radio Services, that the Commission prohibits the use of radios in those services to commit or facilitate criminal acts.
>
> The Bureau has become aware of discussions on social media platforms suggesting that certain radio services regulated by the Commission may
>
> be an alternative to social media platforms for groups to communicate and coordinate future activities. The Bureau recognizes that these services can be used for a wide range of permitted purposes, including speech that is protected under the First Amendment of the U.S. Constitution. Amateur and Personal Radio Services, however, may not be used to commit or facilitate crimes. Specifically, the Bureau reminds amateur licensees that they are prohibited from transmitting"communications intended to facilitate a criminal act" or "messages encoded for the purpose of obscuring their meaning." Likewise, individuals operating radios in the Personal Radio Services, a category that includes Citizens Band radios, Family Radio Service walkie-talkies, and General Mobile Radio Service, are prohibited from using those radios "in connection with any activity which is against Federal, State or local law." Individuals using radios in the Amateur or Personal Radio Services in this manner may be subject to severe penalties, including significant fines, seizure of the offending equipment, and, in some cases, criminal prosecution.

Emergency net called

A small tornado touched down at the Tallahassee Airport on Wednesday, January 27. It flipped over a plane and damaged the dome on the NWS tower. It then moved east at about 55 miles per hours.

Erik Brooks, KC4NVU, the Leon County Emergency Coordinator called an emergency net to take weather related messages and send them to the National Weather Service Office in Tallahassee. We have access to their chatroom, and during the course of the hour long net, we passed two message to it.

Thanks to all who participated.

Propagation Charts

In the last two issues of the Printed Circuit, I explored the way amateur radio operators used the atmosphere to send and receive signals. In particular we saw that the D layer absorbed radio signals whereas the much higher F layer tended to reflect them and hence stations hundreds and thousands of miles apart could talk with one another.

These layers, or rather the ability of layers to absorb or reflect signals, depend on several variables, such as their height, the time of day, season, sunspot number, frequency, power, and type of antenna being used to transmit and receive the signal. Hams who use HF extensively, will, over the course of months and years, develop a sense of when a band is open to long distance communication.

There is, however, an easier way to do this. That is the propagation chart. These charts will take all the variables mentioned, add a few more, and then using the magic of computers and sophisticated equations be able to predict the Maximum Usable Frequency (MUF), the Lowest Usable Frequency(LUF), and other valuable results.

Fifty years ago, when these charts were first being developed and computers were much more primitive, only a few people, and then they were not hams, had access to this marvelous product. When I was in the Army in the early 70s, I would send the relevant information to an agency or office at Ft. Huachuca, Arizona, and then two weeks later or so I would get a computer printout (in dot matrix form) of the crucial frequencies I had to use to have reliable communications. It was marvelous.

Today, with the advent of much more powerful and sophisticated computers and prediction programs, you can do at home and in minutes, what I did years ago. And the program to do that is free, which is always nice.

Specifically, the Voice of America has developed a program for amateur radio operators to use to create their own propagation charts. It can be found at VOACAP.com/hf.

The program is very easy to use, intuitive really, and has a great graphics presentation. To start you need, of course, to enter some relevant information such as your location, the mode of communication, the location of the ham you want to talk to, the power you will use, and the antennas at both ends of the path.

So, let's say you want to talk with KX4Z in Gainesville. You would enter your home QTH(somewhere in Leon County, for example), KX4Z's locations(Alachua County), the power you will use, say 100 watts, SSB as the mode of communication, and your antenna, a dipole up about 30 feet. You may not know what type antenna KX4Z uses, so just take a guess of a dipole up 30 feet. If you want you can easily change these variables, and the program will make the adjustments.

Now, I mentioned that you will need to enter the locations of the transmitting and receiving stations. Actually, you do not need to do so. The program has a color map of the world, and on the map are two pins, one blue and one red. Using your mouse you can click one of the pins, say the blue one, and move it to either your location or that of the distant

station. Then you can do the same thing with the red pin, only this time you will move it, for example, to the distant station.

The program will then calculate the MUF and LUF, and it will do so for all the amateur bands from 80 meters to 10 meters. But the programs does much more than that. It not only makes those predictions it will do so over a 24 hour period, and then it will produce graphs to visually show you how all the bands look over a single day. Not only will it produce a graph in the usual Cartesian format (time on the X axis, frequency on the y axis), it will produce a fan chart to give you an alternate way of presenting what it has calculated.This latter product is very impressive because each band has its own color, so you can see at a glance how 80 meters and 40 meters compare.

For example, if you wanted to see if you could have communications with KX4Z continuously over a 24 hour period, using the VOA program you would discover that no you could not if you relied solely on 80 meters. Between 1000 and 1600 hours, that band is dead. There is no MUF. On the other hand the graph will also show you that during this same time 40 meters has very good propagation between those two points. Hence the solution to the problem of constant or continuous communications between the two locations becomes obvious. Start with 80 meters early in the morning, and switch to 40 meters somewhere about1000 hours.

But, as mentioned, the program offers much more. At the bottom of the page that has the map of the world are several tabs that offer other products. For example, let us say you are in the middle of an emergency, and you want to know if you can pass traffic between Tallahassee and Gainesville. Let us also say the signal quality needs to be at least an S 7 on your radio's S meter in order to reliably pass traffic on voice. The program will give you a graph showing you what frequencies and bands satisfy those demands.

To give you real example, last weekend, we ran a simple test on 80 and 40 meters. The North Florida ARES net was opened at 0900 on

3.950 MHz. As Leo, N4MRJ, the Net Control Station for the net, went through to roll, I sat on 7.233 MHz waiting for them to call me once they had checked in on 80 meters. I heard no North Florida station, but I did hear W4DOM, who was in South Carolina. As the 80 meter net progressed, W4DOM could hear many north Florida stations trying to call me. I heard none of them. The South Carolina station eventually relayed the calls of those stations. I was stunned that I had heard none of them on 40 meters, but I should not have been. Had I taken 5 minutes and run the VOA propagation program, I would have visually discovered that 40 meters was dead for stations in north Florida at 0900 hours, but wide open for stations just a hundred or so miles north of me. Had I known that we could have done something different.

The VOA program, which was specifically developed for amateur radio operators, is not only very powerful, it is free. Check it out and play with it. It will make your time on the radio much more enjoyable and less frustrating as you find the frequencies that will provide reliable paths and those that are simply dead.

TARS Officers

Don Pace	**Todd Clark**	**Tom Brooks**	**Doug Ferrell**	**Bob Clark**
KK4SIH	**KN4FCC**	**K4TB**	**KD4MOJ**	**K9HVW**
President	**Vice President**	**Secretary**	**Treasurer**	**Board Member at large**
dgpace			**KD4MOJ@**	
@yahoo.com	**KN4FDCC**	**K4TB**	**KD4MOJ.org**	**K9HVW@ARRL.net**
@hotmail.com	**@ARRL.net**	**@earthlink.net**		

TARS COMMITTEES/COORDINATORS

Repeater Trustee: Randy Pierce AG4UU

Assistant: Doug Ferrell KD4MOJ

K4TLH Callsign Trustee: Dave Miner W4SKG

Equipment Manager: Vacant

Education: Phil Ashler N4IPH

Testing Coordinator: Norm Scholer K4GFD

TARS Officers

Repeaters Capital Area Region

Location	County	Call Sign	Backup Power	Digital Mode	Output Freq	PL	Special Configuration	Height ft.
Crawfordville	Wakulla	K4WAK	No		145.450 -	94.8		300
Crawfordville	Wakulla	KB5IKR	Yes	Fusion	444.450 +	94.8	Yaesu System Fusion C4FM WIREX Connected (Auto)	400
Crawfordville	Wakulla			Fusion	442.850 +	94.8	Yaesu System Fusion (Auto)	
Greensboro	Gadsden	NX4DN		Fusion	147.390 +	94.8	Yaesu System Fusion DCS 023 WIREX Connected (Auto)	300
Greensboro	Gadsden	NX4DN		NXDN	444.125 +	94.8	NXDN World Wide Network	300
Monticello	Jefferson	WX4JEF	No		145.430 -	94.8		270
Quincy	Gadsden	W4EAF	Yes		147.165+	94.8		250
Tallahassee	Leon	AE4S	Yes	P-25	146.655 -	94.8		550
Tallahassee	Leon	N4PG	Yes		146.610 -	203.5		200
Tallahassee	Leon	K4TLH	Yes	P-25	146.910 -	94.8	Temp TARS Talk-In	375
Tallahassee	Leon	K4TLH	Yes		147.030 +	94.8		750
Tallahassee	Leon	KA4EOC	Yes		147.285 +	94.8		350
Tallahassee	Leon	K4TLH	Yes		442.100 +	94.8	Statewide Amateur Radio Net (SARnet) See Next Page	600
Tallahassee	Leon	K4TLH	No		442.850 +	94.8		275
Tallahassee	Leon	KJ4G	Yes		443.400 +	131.8	Host of Echolink Node #3950	575
Tallahassee	Leon			Fusion	444.800 +	94.8	Yaesu System Fusion (Auto)	
Tallahassee	Leon	AE4S	Yes	P-25	443.950 +	94.8		550
Tallahassee	Leon	N4NKV	Yes		444.600 +	131.8	NXDN World Wide Network	CRMC (200)
Tallahassee	Leon	KD4MOJ	Yes		444.000 +	94.8		TMH (200)
Tallahassee	Leon	NX4DN		NXDN	444.175 +	94.8	NXDN World Wide Network	175
Tallahassee	Leon	NF4DG	Yes	D-Star	146.835 -	DV		180
Tallahassee	Leon	NF4DG	Yes	D-Star	443.450 +	DV		180
Tallahassee	Leon	NF4DG	Yes	D-Star	1293 -	DV		180
Tallahassee	Leon	NF4DG	Yes	D-Star	1253	DD		180
Wacissa	Jefferson	K4TLH	No		147.000	94.8		300
Wacissa	Jefferson			Fusion	444.050 +	94.8	Yaesu System Fusion (Auto)	
Thomasville	Thomas				145.370 -	141.3		
Thomasville	Thomas				442.600 +	141.3		
Reno	Grady	KE4URL	Yes		145.170 -	141.3		600

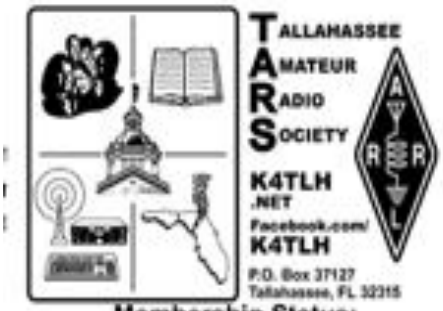
The most current repeater list is available on the TARS website:
www.k4tlh.net/repeaters
For ***SARnet*** information (Locations, Repeaters and operational status) visit:
http://www.sarnetfl.com/

Regional Nets

TARS News & Information Net	Thursday • 8 PM EST (not 1st Thrs.)	**147.030** MHz, K4TLH + *600, 94.8*
North Florida Amateur Radio EmComm Net	Daily • 9:00 AM ET *except Sunday*	**3950** kHz
Capital District EmComm Training Net	Sunday • 7:30 PM ET	**147.030** MHz, K4TLH + *600, 94.8*
Capital District ARES Net	Sunday • 8 PM ET	**147.030** MHz, K4TLH + *600, 94.8*
Leon County ARES Net	Tuesday • 8:15 PM ET	**147.030** MHz, K4TLH + *600, 94.8*
Florida Phone Traffic Net	Daily • 6:55 AM ET	**3940** kHz
Florida Midday Traffic Net	Daily • Noon ET	**7242** kHz
North Florida Phone Net	Daily • 7:30 PM ET	**3950** kHz
North Florida Digital Net	Sunday • 7 PM ET	**3590** kHz **PSK-31 Mode**
TARC Thursday Night Net	Thursday • 8 PM ET	**147.060** MHz, + *600, 141.3*
Thomas County ARES Net	Thursday • 7:30 PM ET	**147.060** MHz, + *600, 141.3*
Grady County ARES Net	Tuesday • 7:30 PM ET	**145.170** MHz, - *600, 141.3*
North Florida 6M SSB Net	Sunday • 8:30 PM ET	**50.150** MHz
Morse Code Practice Net (Informal / Open) 5-15 WPM	Wednesday (or any day) 8:30 – 9:30 PM ET	**28.114** MHz CW Mode
Morning Drive-Time Net (Informal)	Mon-Fri • 7:30 – 9:00 AM ET	**147.030** MHz, K4TLH
Southwest Georgia HF Weather Net	Third Thursday 7:30 PM ET (or after GA SSB Net)	WX4TAE, **3975** kHz (+/-)
Southwest Georgia ARES Net	Thursday • 9 PM ET	**145.170** MHz, + *600, 141.3*
SKYWARN Net	First Sunday • 7:30 PM ET	WX4TAE, **3810** kHz (+/-)

Some nets have been inactive for some time, however, individuals are encouraged to re-activate these nets as guest net controls.

Have any corrections or additions? *Contact Dave at davedavis1@embarqmail.com* prior to the 20th of the month to make changes.



Tallahassee Amateur Radio Society

New Membership / Renewal Form

Updated 11/3/16

This form can be used for new members or for renewals. If you have no changed any information from last year, merely complete the form with you name, indicate your member type and ARRL membership status and mak payment to TARS.

Membership Status:

- Individual; Single member; full voting privileges.
- **Family**; Single member, plus participating family members residing at the same address; all members have full voting privileges. Complete a form for each member.
- **Student**; Free for students (elementary school through college) with ID; all rights and privileges except voting.
- **Introductory**; Free until the end of year (next year for December) for anyone who passed Amateur Licensing Exam facilitated by TARS; all rights and privileges except voting.

If no personal information has changed, current memberships can be renewed simply by making payment to TARS.

You must be a licensed Amateur Radio operator to *join the Society*; however, any non-licensed radio enthusiast may attend the TARS business meetings and functions. Membership dues for the Tallahassee Amateur Radio Society are only ***$20* per individual** *or family* (complete a form for each family member.) **Students** (with valid ID) **can join for free!**

Membership is per calendar year and the deadline for paying dues for renewing membership is February 20th. Individuals wishing to reinstate their expired membership status must reapply and pay full dues ($20) for the current year. TARS is a "not-for-profit" organization and dues are used to help defray the cost of repeater maintenance and TARS events. Most of TARS's revenue is derived from donations, which are gladly accepted.

Please make your dues check payable to the **Tallahassee Amateur Radio Society** (or **TARS**) and include your telephone number on the check. Bring your check (or cash) along with the completed form provided below (including e-mail address please) to the next monthly TARS business meeting and give it to the Treasurer - or mail your check and completed form to:

Tallahassee Amateur Radio Society, C/O Treasurer, P. O. Box 37127, Tallahassee, FL, 32315

Name:		**Call Sign:**
Address:		
		Date: / /20___
City:	**State:**	**Zip:** -
Member Type: ☐ Individual ☐ Family ☐ Student ☐ Introductory (Check One)		
Home Phone: ( ) –	**Work Phone:** ( ) –	**Cell Phone:** ( ) –
E-Mail Address:		
ARRL Member: ☐ Yes ☐ No	**"Elmer":** ☐ I would like a ham mentor ☐ I can be a ham mentor	
Interests: ☐ EmComm ☐ Contest ☐ Phone ☐ Digital ☐ CW Other:_____		

Updates of Information If you are aware of any updates, changes or corrections to any of the information in this newsletter such as news write-ups, information about our neighboring clubs, local nets, repeaters, frequencies or etc., please forward that information to us at TallyAmateurRadio@Gmail.com or *Dave Davis, WA4WES*, (Editor in Chief) at davedavus1@embarqmaill.com for inclusion, retraction or correction in future newsletters publications. Corrections and additions cannot be reflected until the following month's edition.

At NO Cost The Printed Circuit is provided as a service **FOR FREE!** Articles and content are written and edited on a volunteer basis. Please consider the large amounts of time each month put into making these newsletters a "great read." Monetary contributions are encouraged to be made to the Tallahassee Amateur Radio Society, Inc., which depends on your support. You may also consider donating your time and talents by writing for The Printed Circuit or submitting material or information to be considered for publication. The Printed Circuit is MORE than just a club newsletter!

Distribution The Printed Circuit is distributed via ***gmail*** account via a PRIVATE BCC recipient list, generally one week prior to the following TARS business meeting. **Re-Distribution IS ENCOURAGED**, however you may consider sending us any new addresses for interested recipients (with their authorization.) Back issues and past articles organized by topic can be readily found at http://k4tlh.net/tars-newsletter/ and http://k4tlh.net/index-of-newsletter-articles/

E-mail Addresses Please forward any additions or changes of e-mail addresses for delivery of the Newsletter to the TARS email address: TallyAmateurRadio@Gmail.com , or *Dave Davis, WA4WES*, (Editor in Chief) at davedavus1@embarqmaill.com. Also, notify us if you wish to no longer receive the newsletter and would like to have your address removed.

73,

Dave

WA4WES

Printed Circuit Editor