The Printed Circuit

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

TALLAHASSEE AMATEUR RADIO SOCIETY
K4TLH .NET
Facebook.com/K4TLH
P.O. Box 37127
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Minutes of the February 4, 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:

KA5USN Chief
KN4FCC Todd
K4SQL Hutch
WA6POZ Gerry
K4SBZ Stan
AI4KA Chuck
KK4SIH Don
KN4WOW Ed
KD4MOJ Doug
KO4KSV Robert
K4TB Tom
KB2NUI David

AG4UU Randy KN4SCE Ryan

N4JEL Michael

KO4KSV Bob
Gerry then turned the meeting over to the club president, Don Pace, KK4SIH.

Don thanked everyone for participating in the TARS meeting for this month and for using two different formats (Zoom and on the repeater). Hopefully, we will be back to normal soon.

Approval of the minutes

K4TFT: Still do not have equipment insurance? Is that right?

Doug will review the document. Chief said that it was the general liability insurance that was paid. No other corrections / question.

The meeting minutes from January were approved with the correction that the insurance paid was for general liability insurance only.

Treasurer's report

Doug stated the payment was just for general liability insurance. We have had some new members and some donations to the club. Plus some renewals of membership. Expenses were for the post office box renewal and if you are not getting the newsletter let Doug know. He is working to get the list correctly. Working to get spreadsheet and website up to date. The website should be up to date as of today (see k4TLH.net, and check the membership roster). You can send an email if there are errors. Doug will follow up on the equipment insurance. KD4MOJ

Committee Reports

Education Committee: Written report from Phil Asher: – No classes in near future due to the pandemic. Any questions, you can chat with Phil during the Zoom meeting.

Testing Committee: K4TFD, Norm: next testing on first Saturday in March. We had 4 candidates last test session and all passed. Gerry ran the last test session. Don said thanks to all of the VEs who assist with testing.

Repeater Committee: AG4UU, Randy, see the report in the newsletter. Written report: 53.03 (6 Meter) antenna has been placed on a radio tower located in South East Tallahassee off Tram Road. A final "Scope of Work" is underway to provide shelter and electrical for the 53.03 repeater. The new antenna is a Sirio, Tornado 50-56 MHz antenna and is located at 300 feet on the tower. Preventative Maintenance is schedule for this month for the 146.91 repeater. No reported issues on the K4TLH networks. Any questions? No questions heard. Don also thanked the repeater committee for their work.

Old Business

Club dues are due in February. Talk to Doug if you need to pay your dues, also information on the club website. We appreciate all who have paid their dues so far.

Tom Brooks stated that we have two programs lined up – first with a presentation on 5G for cell phone communications and then in April with a talk on UF professor on radio astronomy (not too technical). Even possible to do on the HF band (15m). In May, Dave Davis will give the hurricane season update and then June will be preps for field day.

Don said to let Tom know if we have any questions for the presenters so that they can be provided to the presenters beforehand. And provide any program ideas to Tom for future programs.

Field Day, we are looking out for volunteers. If you are interested in helping, need station captains and others, just respond to the email to let us know of your interest in supporting field day. Good day for fun and learning. We still may not be able to host face to

face, depending on the pandemic. Any questions? No questions heard.

New Business

We are still looking for club volunteers. Just let us know what you are interested in. Web page articles, newsletter articles. Just let us know if you have an interest in helping out, you may just reply to the meeting invitation emails.

Any other new business?

Nothing heard. Todd shared that the potential site for field day would be Tom Brown Park.

Virtual Hamcation will be held near Valentine's Day. Gerry said next weekend, February 12-13, see hamcation.org to sign up for presentations. There is at least one presentation for all club members. The FL contest group is also sponsoring the Hamcation QSO party. Stations spelling HAMCATION and they are 1x1 stations and can be contact. Minnesota, BC, and one other are having state QSO parties this weekend.

Don: Thanks to Gerry for the update. Encourage everyone to check out what is available on the Hamcation site. Worth your time to listen in during the event.

Business meeting closed at 7:28pm. We will start the presentation in 3 or 4 minutes on Zoom.

K5USN: If we do use Tom Brown Park for Field Day in 2021, we will still have to follow COVID 19 protocols.

Program: This will be a presentation of a recorded lesson.

Tom, K4TB, gave some background. Last year the virtual Ham Exposition and they had a lot of good presentations. They are recorded and you can go back and review them. Tom saw several of them, the new presentations will be in March 2021. They also have vendor booths and vendor demonstrations. Last year, good talk on batteries and it will be of general interest. LiFePo4 is one example.

The presenter was a HAM operator and an engineer who builds battery back ups for companies. Presentation is 31 minutes long; we will save questions to the end. Tom showed the presentation from his screen. Presenter is Marcel Stieber, AI6MS. Slides from the presentation are at www.qrz.com/db/ai6ms. Batteries are electrochemical energy storage devices. Original battery used zinc, copper, and brine-soaked paper. Battery cells have different nominal cell voltages. You can stack the battery cells to get to higher voltages, such as 13.8V for most amateur radios.

Lead acid batteries have lead and sulfuric acid. 2.1V per nominal cell and with 6 chambers (cells) you get up to 12.6V (nominal). Very sensitive to deep discharge. You can only use about 50% of discharge before you start to get problems. They are heavy and have a typical shelf life of 5 years. They are cheap and readily available. Very commonly used for emergency power. Important to have an under-voltage lock out to protect the battery.

Lithium Ion batteries developed in the 1970s. Uses a jelly-roll construction wrapped in a cylindrical cell. You can get a much higher specific energy, so these are used a lot today. Nominal cell voltage is 3.6V. Forms include pouch cells and cylindrical cells. The Li-ion batteries are sensitive to over-voltage and over current events that may cause thermal runaway. You need OVP (over voltage protection), OCP, and OTP with cell balancing and fuel gauging. Typically 300 to 500 cycles, cost has come down over time. 4S (4 cells in series) can offer 14.4V nominally and works well for most amateur radios. DIY battery packs come in at around $636 for parts. Weight is about 16 lbs.

LiFePO4 – different type of Lithium battery, nominal voltage of 3.2V. 4S (4 cells in series) pack gives voltage range between 10.0 and 14.6V. Voltage range is very good for most amateur radios. Good as replacements for 12V batteries and you can buy them to directly connect to your mobile radio. Intrinsically safer chemistry than Li-ion. Higher cycle life. More expensive per amp-hour. You can get thousands of cycles (vs hundreds for Li-ion). Lower self-discharge

(longer shelf life). Sold by Bioenno for 220 Watt-hours (see their website at www.bioennopower.com). Build your own for about $506 for 50A-hours. Weight is about 15 lbs.

TARS Treasurer's Report

Submitted by Doug Ferrell, KD4MOJ,Treasurer

	for period	year-to-date
Beginning Balances:	20-Feb-21	1-Jan-21
Cash on hand	$ -	$ -
Checking Account:	$ 4,040.11	$ 3,876.41
Savings Account:	$ 3,103.07	$ 3,102.68
Total:	$ 7,143.18	$ 6,979.09
Summary of Month's Activity:		
Total Receipts:	$ -	$ -
Total Expenditures:	$ -	$ -
Recipts Derived From:		
Members Dues:	$ 380.00	$ 681.70
Fifty/Fifty	$ -	$ -
Donation (KM4LBR)	$ 30.00	$ 60.00
Veteran's Radio Fund	$ -	$ -
Field Day Radio Fund	$ -	$ -
Interest (Savings)	$ -	$ 0.39
smile.amazon.com	$ -	$ -

Total	$	410.00	$	742.09
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
Total:	$	-	$	168.00

Transfer Checking -> Savings:

Ending Balances - Feb 20, 2021:

Cash on hand	$	-	$	-
Checking Account	$	4,450.11	$	4,450.11
Savings Account	$	3,103.07	$	3,103.07
Total	$	7,553.18	$	7,553.18
*Veteran's Radio Fund			$	500.00
*Field Day Radio Fund			$	697.00

Contesting

March RadioSport Highlights

March is a busy month for contesting with big activity every weekend. Both the ARRL and CQ Magazine have major DX Contests

and there are a couple of smaller DX contests scheduled. The State QSO Party season continues with four SQPs. WA7BNM Contest Calendar lists 124 sponsored activities for March worldwide, so there are more than enough contests scheduled 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 March Weekends

March 6-7

The only significant activity this weekend is the ARRL International DX Contest, SSB. It is so popular that no other contests try to compete with it this weekend. It is likely the oldest of all radio competitions, dating back to 1928. This is a "world works W/VE" event, so it is a good strategy to "run" (call CQ) and let the DX find you. The exchange is the usual 59 and state/province. DX stations will give you 59 and their power. Expect to hear a lot of "Ks" (for kilowatt).

March 13-14

There are two Major contests this weekend. The Stew Perry Topband Distance Challenge (TBDC) is Saturday. Although 160 Meters is considered challenging antenna-wise, there are many simple wire antennas for 160 on the internet, some will even fit on a small lot. The top bands are becoming much more popular with the current sunspot cycle. Your score is calculated based on 1 point per QSO plus 1 point per 500 km determined by each station's 4-Character Maidenhead grid square. To keep it simple, your exchange is just your grid-square

On Saturday evening is the North American Sprint, RTTY. Someone once claimed that a sprint is “the most fun anyone can have with their clothes on.” The sprint format is very different from a standard contest. You aren’t allowed to “run.” You must give up your frequency to whoever answers you and QSY elsewhere to either CQ or call someone else who is calling CQ. If you work him/her, you will inherit their frequency – for one call. The contest is only four hours long, but, believe me, you will be exhausted at the end. Be sure to read up on sprint protocols before trying one.

There are three minor DX contests this weekend. Although the YB DX RTTY Contest is an anyone-works-anyone contest, you get (many) more points for a QSO with an Indonesian (YB-Land) contester. YB prefixes (YB0-YB9 / YE0-YE9, YC0-YC9 / YF0-YF9, YD0-YD9 / YG0-YG9, 7A – 7I, 8A – 8I) and countries all serve as multipliers. This is a good opportunity to get some of those hard-to-get Indonesian prefixes in your log.

Spain has the EA PSK63 Contest this weekend. This is an anyone-works-anyone contest for PSK63 only. Multipliers include the Spanish provinces, the EADX-100 entities, EA4URE, and the call areas of the US, Canada, Japan and Australia. The exchange for DX stations is RSQ and serial number. Spanish stations will give their provinces. Power is limited to 50 watts. Expect a lot of European stations, but PSK63 isn’t as popular in the US.

Serbia is hosting the Tesla Memorial HF CW Contest this weekend. This is a world-works-world contest for 40 and 80 meters only. The exchange is RST, serial number and Maidenhead grid. There are no multipliers. Points are calculated based on distance between grids.

This is a good weekend for State QSO Parties. The Oklahoma QSO Party and the Idaho QSO Party are both on Saturday, while the Wisconsin QSO Party is on Sunday. All three allow all modes (CW, SSB, RTTY and other Digital). The distance from

Florida to these three states is such that you will be able to make contacts in all of them on 20, 40 and even 80 meters. All three are recognized for the State QSO Party Challenge and are needed for the Worked All QSO Parties (WAQP) award.

March 20-21

Again, there is something for everyone this weekend – CW, SSB, RTTY or other digital. The BARTG HF RTTY Contest is a 48-hour worldwide event. It has a slightly different exchange: RST, Serial, and UTC-Time; e.g., 599 123 1645. All data modes are encouraged. Multipliers are the DXCC entities, plus the call areas of the US, Canada, Japan and Australia. Scoring is QSOs x multipliers x continents.

The Russian DX Contest is also a worldwide event. Only CW and SSB are used. Multipliers are Russian oblasts and DXCC countries. The exchange is RS(T) and serial number for non-Russian stations. A new feature is that you are allowed operate Single Operator Single Band (SOAB) on two different bands.

This weekend has another state QSO Party. The Virginia QSO Party permits all modes and is both days. There are 95 counties and 38 independent cities for you to collect as multipliers.

March 27-28

The last weekend of March brings another big one – the CQ Worldwide WPX Contest, SSB. The bands will be jammed for this one. Everyone can work everyone, even in the same country. However, there are more points for working other countries and continents. Contacts on 160, 80 and 40 meters are worth more than the other bands. So, the strategy is to operate on bands where there is propagation to high-point-value and prefix-rich areas. The exchange is “59” and a serial number.

State QSO Party Challenge

Just a reminder about the State QSO Party Challenge. The annual Challenge will recognize all radio amateurs' participation in U.S. State and Canadian Province QSO parties. It is open to anyone who operates in two or more approved State QSO Parties and who makes at least two contacts in those contests. There is no need to register. Participants must simply submit their reports to 3830Scores.com to be included in the Challenge. 3830Scores has an up-to-date score tracking menu choice for the State QSO Party Challenge. For more details see http://StateQSOParty.com/.

About Participating

Before participating in any of these contests or events, please familiarize yourself with the frequencies, 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.

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 an NAQP, a State QSO Party or many of the minor DX contests, and jump in. (No, first read the rules as suggested above.) You don't 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 and report your activity on 3830Scores. Then check the schedule of contests to see what next weekend has in store for you.

Radio Receiving

Todd Clark, KN4FCC (KN4FCC@arrl.net)

Although the most engaging parts of the amateur radio hobby are two-way communications, you can also use your radio skills and your equipment to practice receiving bulletins. This activity is one that can be done by any amateur radio operator; actually by anyone with the appropriate equipment, because you don't need an FCC license if you are only receiving signals!

Background

The ARRL has a nice radio station at their headquarters in Newington, Connecticut (about 1,000 miles from Tallahassee). You do not have to be a member of ARRL to listen to the bulletins and transmissions from their station, call sign W1AW. You may read the station's operating schedule online here: http://www.arrl.org/w1aw-operating-schedule.

From the schedule, you can see that W1AW sends out bulletins in CW (Morse Code), voice, and digital modes. This article will discuss how to receive the digital bulletins which are sent out at 6pm (2300Z) and 9pm (0200Z) Eastern Time. I have had the most success in retrieving the digital bulletins at 9pm on the 40-meter band.

Equipment Required

Anyone who has worked digital modes for amateur radio already has all the equipment you will need to pick up the digital bulletin from W1AW. You will need a radio and antenna system capable of receiving signals in the high frequency (HF) range, a way to get the radio output to a laptop computer (using your computer soundcard or a device such as SignLink™). And you will need a software application, such as FLDigi, to translate the radio signal into text.

Procedure

I like to get to my station about 10 minutes before the bulletin starts to get set up to receive the bulletin. I power up my radio and tune to the appropriate frequency for receiving the bulletin. ARRL posts the frequencies for the digital bulletin online at the same website given above for the operating schedule. Here are the frequencies they list for the digital bulletins:

-

- 80-meter band: 3.5975 MHz
- 40-meter band: 7.095 MHz
- 20-meter band: 14.095 MHz
- 17-meter band: 18.1025 MHz
- 15-meter band: 21.095 MHz
- 10-meter band: 28.095 MHz
- 6-meter band: 50.350 MHz
- 2-meter band: 147.555 MHz

-

As I mentioned earlier, for me, I have had the most success receiving the 9pm digital bulletin on the 40-meter band (so I tune my radio to 7.095 MHz). The bulletins are sent out Monday through Friday and use different modes for each evening. When I was first starting with this, I was most familiar with PSK31, which is sent out (first) on Tuesdays and Fridays. The weekly schedule of which digital mode is used on which evening is published here:

http://www.arrl.org/files/file/W1AW/W1AW%20Daily%20Digital%20Bulletin%20Schedule.pdf

Once you have your radio tuned to the correct frequency and your computer software set up to receive the correct digital mode (either PSK31, RTTY (also known as Baudot, using 45.45-baud rate), or

MFSK16), you should be ready to go. At 9pm, when the signal starts, you may have to tune your radio slightly to ensure that the signal shows up on your waterfall.

Additional Practice

Once you get the hang of receiving these bulletins, it is not that hard to do. You can try receiving them using different digital modes (the FLDigi software will translate all three digital modes used by ARRL for their digital bulletins) and you can try receiving on different frequency bands (40 meters and 80 meters work well after sunset; you may want to try 20 meters before sunset). The key is to have fun and know that you are picking up and translating radio signals from more than 1,000 miles away!

Output

It may take you a couple of evening of trying before everything works, so be patient and be persistent. Again, the signal is coming from 1,000 miles away, so there are some evenings when I cannot receive the bulletin at all, depending on propagation conditions. But if everything works as it should, you will get a bulletin like this one that I received on the evening of Tuesday, February 9, 2021 on 40-meters using PSK31. I'm leaving the typos / errors in the bulletin so that you can see that it is still readable even with minor interference.

Calling all Radio Amateurs. Calling all Radio Amateurs.
This is W1AW in Newington, CT.
An officiaNbulletin transmission follows using PSK31 in BPSK mode, followed imm diately by MFSK16.
This is W1AW
ARLP006 follows
ARLP006 follows
ZCZC AP06
QST de W1AW
Propagation Forecast Bulletin 6 ARLP006
From Tad Cook, K7RA
Seattle, WA February 5, 2021

To all radio amateurs
SB PROP ARL ARLP006
ARLP006 Propagation de K7RA
We just witnessed five days in a row with zero sunspots, but on February 2 a small sunspot group (2801) appeared on our Sun's northwest limb. It soon rotated off the Sun's visible area, and on Thursday the sunspot number was back to 0.
We will probably see a few more days with no Xenspots, but a return after February 11 is possible when increased solar flux is forecast.
Average daily sunspot numbers declined from 28.1 reportet in last week's Propagation Forecast Bulletin LP005 to 3.3 this week.
Average daily solar flux dropped three points from 77=T to 74.2.
Average daily planetary A index went from 9.4 to 6.7.
Solar flux over the next 30 days is predicted at 74 on February 5-11, 76 on February 12-16, 78 on February 17-22, 76 on February 23-25, 74 on February 26, 73 on February 27 through March 1, and 72 on March 2-7.
Predicted planetary A index is 5, 8, 16 and 10 on February 5-8, then 8 on February 9-10, 5 on February 11-20, then 20, 16 and 12 on February 21-23, 5 on February 24-27, then 18, 12 and 8 on February 28 through March 2, 5 on March 3-5, and 10 on March 6-7. A coronal hole may return on March 20-21 causing a rising A index.
Geomagnetic activity forecast for the period February 5 to March 2, 2021 from F.K. Janda, OK1HH. "Geomagnetic field will be, quiet on: February 18-19, 26-27 quiet to unsettled on: February 5-6, 9-13, 17, 24-25 quiet to active on: February 7-8, 14-16, 20, 23, 28 unsettled to active: February 21-22, March 1-2 active to disturbed: nothing predicted
"Solar wind will intensify on: February (8-10, 15-17, 20-22,) 23-24, (25-28).
"Remarks:
- Parenthesis means lower probability of activity enhancement.
- Predictability of changes remains low, as indications remain ambiguous."

N0JK reported, "Had some sporadic-E on 50 MHz the evening of February 1 (February 2 UTC). XE2TT (DL44) on 50.313 MHz, 0205 UTC. I was on Saturday night for a couple of hours January 31 UTC for the CQ 160 M CW contest. Band noioy due to snow and high winds in eastern Kansas. Made over 50 contacts with 5 watts and a rain gutter antenna."

More from Jon the next day:

"Some sporadicwu on 6 Meters February 2, 3 and 4. Es is rare in February. I worked WA2VJL (EL16) on 50.313 MHz FT8 from my mobile set up on the 2nd. See below.

"N0LL (EM09) is back on 6 Meters after repairing storm damage to his antenna. On February 3 Larry worked XE2ML on 6 Meters. VK3OER in Australia spotted K0TPP in Missouri! Possible sporadic-E-TEP across the Pacific Ocean.

"XE2ML 21/02/04 0010Z 0313.0 EM09<ES>DL74 N0LL
N0LL 21/02/04 0009Z 50313.0 DL74QB EM09 TNX qso 7 XE2ML

"Had some Es when I checked from my car at work. Decoded XE2OR, N7WB/p, K0JY, and XE2ML.

"N7WB/P 21/02/03 2354Z 50313.0 EM28IX ES DM51BI N0JK

"VK3OER spotted K0TPP!

"K0TPP 21/02/04 0036Z 50313.0 -16 CQ K0TPP correct! VK3OER"

In response to last week's bulletin and the subject of super-huge solar flares, Jon commented: "The VHF community is ready. Bring it on!"

Article about solar magnetic waves and corona composition:

https://bit.ly/3pRz5Hv

The latest report from Dr. Tamitha Skov, WX6SWW:

https://bit.ly/39P9r0o

An audio tour of the Sunspot, New Mexico solar observatory:

https://bit.ly/39QVAGS

If you would like to make a comment or have a tip for our readers,please email the author at, k7ra@arrl.net .

For more information concerning radio propagation, see

http://www.arrl.org/propagation and the ARRL Technical Information

Service web page at, http://arrl.org/propagation-of-rf-signals. For an explanation of numbers used in this bulletin, see http://arrl.org/the-sun-the-earth-the-ionosphere.

An archive of past propagation bulletins is at

http://arrl.org/w1aw-bulletins-archive-propagation. More good information and tutorials on propagation are at http://k9la.us/.

Instructions for starting or ending email distribution of ARRL

bulletins are at http://arrl.org/bulletins .

Sunspot numbers for January 28 through February 3, 2021 were 0, 0, 0, 0, 0, 12, and 11, with a mean of 3.3. 10.7 cm flux was 75.6, 75.5, 73.7, 73.4, 73.7, 72.9, and 74.3, with a mean of 74.2.

Estimated planetary A indices were 5, 3, 2, 1, 5, 17, and 14, with a mean of 6.7.

Middle latitude A index was 3, 2, 2, 0, 4, 11, and 10, a with a mean of 4.6

Ham Happenings

March 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-Mar	???	9J	9J2RS
01-Mar	???	C9	C91BVA
01-Mar	???	HH	HH2AA
01-Mar	???	YB	YD6HNL (OC-161)
01-Mar	01-Apr	HK	HK3JCL
01-Mar	01-Jun	J2	J28PJ
01-Mar	01-Jun	JW	JW/LB2PG (EU-027)
01-Mar	01-Mar	4X	4X0RMN
01-Mar	01-Mar	VU	AT2YAR
01-Mar	01-Mar	YI	YI9WS
01-Mar	02-Mar	3A	3A/F4FRL, 3A/F5RBB
01-Mar	03-Mar	YO	YP145B
01-Mar	05-Mar	SV	SX2A/2#
01-Mar	10-Mar	PA	PC19HOPE
01-Mar	15-Jun	YU	YU51ANO
01-Mar	15-Mar	CE9	DP0GVN, DP1POL
01-Mar	20-Apr	JA	8N0J
01-Mar	21-Mar	3W	3W9FAR
01-Mar	30-Apr	DL	DC220GERKE

01-Mar	30-Apr	SP	SQ0MORSE
01-Mar	30-Jun	F	TM8AA
01-Mar	30-Jun	TY	ZS6JSI/TY
01-Mar	30-May	CE9	RI01ANT
01-Mar	31-Dec	CE9	8J1RL
01-Mar	31-Dec	CE9	LU1ZG
01-Mar	31-Dec	VP8/SH	DT8A
01-Mar	31-Dec	ZC4	ZC4GR
01-Mar	31-Dec	ZD8	ZD8HZ
01-Mar	31-Jan	HL	DS4DRE/4 (AS-060)
01-Mar	31-Mar	GM	MM0MOL/P (EU-012)
01-Mar	31-Mar	JA	8N1IZA
01-Mar	31-Mar	JX	JX2US
01-Mar	31-Mar	LX	LX40DA
01-Mar	31-Mar	OZ	OV0JUTLANDIA
01-Mar	31-Mar	CP1	CP1XRM
01-Mar	31-Mar	KH9	KH9/NL7RR (oc-53)
01-Mar	31-Mar	MM0	MM0MOL/p
01-Mar	31-Mar	RI0	RI0Q (AS-152)
01-Mar	31-May	HI	HI9/F5PLR
16-Mar	23-Mar	VK9	VK6CE

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

Estate Sale

Wayne Hawthone, KM4CAL, died in December. His wife wants to sell his radios and other ham related items. Below is a list of what he had. If interested please let me know, and I will give you her telephone number. All of the equipment is in good working order. I have pictures I can send to you. Dave WA4WES 562 3660

HF radios

Icom 736-$600

Icom 751A- $500

VHF radios

Kenwood TM 281-$150

Icom IC 2AT(2)-$50 each

Other equipment

MFJ 4225 MV Power Supply-$100

MFJ 962(C) Versa Tuner III-$200

MFJ 949 E Deluxe Versa Tuner II--$150

MFJ 945E Mobile Automatic Tuner-$175

MFJ 925 Automatic Antenna Tuner

Nissei RX—203 SWR/Power meter–$100

Antennas

What looks like a Buxcomm 1062-80-6 meter folded dipole-$100

2 meter /440 cm J Pole-$15

2 position antenna switches (2)-$10 each

Change of Fonts

In a previous life, I practiced law for 38 years. During that time I wrote hundreds of briefs, motions, and other stuff. The rules of court required I use Times New Roman font. I did and liked it. It looked professional and was easy to read.

Recently the Florida Supreme Court changed the font requirements to something called "Bookman Old Style." They did this apparently after looking at several fonts and determining it was easier on the eyes, particularly for documents that were read on a computer. I agree with the court, and so am saying a sad farewell to Times New Roman and a happy hello to Bookman Old Style. This month's "Printed Circuit" is in this new font. Let me know what you think. Is it easier on your eyes?

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

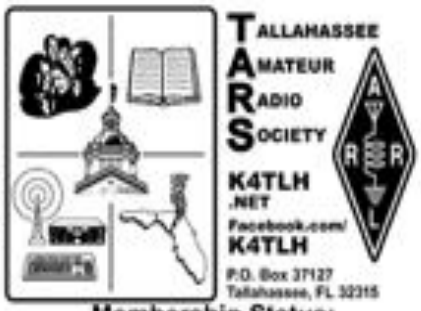
The most current repeater list is available on the TARS website:
www.k4tlh.net/repeaters
For ***SARnet*** information (Locations, Repeaters and operational status) visit:
http://www.sarnetfl.com/

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