

The Printed Circuit

The Monthly Publication of the
Tallahassee Amateur Radio Society

April 2022



TALLAHASSEE
AMATEUR
RADIO
SOCIETY



K4TLH
.NET

Facebook.com/
K4TLH

P.O. Box 37127
Tallahassee, FL 32315



TARS Officers

- President Alan Terrell N4KGT
- Vice President Phil Ashler N4IPH
- Secretary Todd Clark KN4FCC
- Treasurer Doug Ferrell KD4MOJ
- Member at Large Don Pace KK4SIH

Committees

Repeater Trustee #1	Randy Pierce	AG4UU
Repeter Trustee #2	Doug Ferrell	KD4MOJ
Education & Training	Phil Ashler	N4IPH
Equipment Manager	Vacant	
Newsletter Editor	Paul Eugenio	K00KE
Testing	Norm Scholer	K4GFD
Public Information Officer	Jason Ford	W4JMF
Webmaster, Web Content, and Social Media	Your Name	GR80PS
Server Administrator	Don Pace	KK4SIH

MINUTES of the April 2022 TARS Meeting

7pm on April 7, 2022

American Red Cross Building, Tallahassee, FL

Attending the Meeting:

Doug, KD4MOJ

Norm, K4GFD

Phil, KA5USN

Bill, AE4S

William, KF4KHJ

Jerry, N4JL

Bob, NT4B

Richard, WA4TED

Gerald, KG4BLL

Alan, N4KGT

Phil, N4IPH

Dave, KB4JB

Stan, K4SBZ

Steve, AD4E

Adrienne, KO4UMY

Justin, KQ3O

Austin, KO4YGV

Ed, KE4TZI

Tony, KO4TDF

Don WB4FSU

Ryan, KN4SCE

Chris, KO4DN

Daniel, KO4VXS

Theo, K4MVL

Ken, AC4TO

Garrett, KO4KKX

Todd, KN4FCC

Alan, N4KGT called the meeting to order at 7pm and let the club in the Pledge of Allegiance.

Approval of the Minutes -- no objections to the meeting minutes.

New visitors: none noted.

Alan stated that the board recommended replacing David Minor, W4SKG, as the trustee for the TARS club repeaters and the club call sign, K4TLH. Randy Pierce, AG4UU was recommended by the board to become the new trustee. Alan recommended changing the trustee from David Minor, W4SKG, to Randy Pierce, AG4UU. There were no objections from any club member present. The new FCC fees only apply to new licenses and renewals.

Program

Theo, K4MVL, and Jerry, N4JL, made a presentation on emergency power for amateur radio. This is also portable power. This was a presentation originally made to an ARES forum in January 2008.

Steps: 1) Needs assessment; 2) batteries; 3) safety; 4) battery testing, 5) battery charging, 6) portable power

Needs assessment includes where you are going to be, what you need to provide power to, what will it take to support your communications requirements. Examples include: batteries, auto electrical systems, portable generators, solar power. How long are you supporting power? Hours? Days? Weeks?

Types of power for short term: batteries, portable power source, UPS (commercially purchased), solar power. For long term power: generators, fuel cells, and solar panels.

Start with determining equipment needs and the power required to sustain the equipment. Size the power source to fit the need. Also determine the mode and configuration of communications (HF, repeaters, fixed station vs mobile, point to point simplex, portable radio vs. handheld).

Keeping power levels low, by still being able to conduct communications, will conserve power resources and allow you to operate for a longer period of time. Use your equipment manual to determine how to set the power and use power-saving modes (such as standby and receive-only).

Also, consider duty cycle. Some digital is 100% duty cycle during transmit. Voice uses very little power when you are not transmitting. With heat losses, most transmitters are only about 50% efficient.

A 50W transmitter with 100W power and 12V input draws 8.125 Amps.

Use good operating practices: only transmit when necessary, use minimum power, keep the volume down, use the minimum brightness for the display.

Two factors determine battery life – 1. The battery discharge point (including the minimum discharge voltage) and 2. Radio malfunction point (what is the minimum voltage that the radio requires to operate).

West Mountain Radio sells auxiliaries such as automatic disconnects for when a battery reaches low voltage and power nodes that allow you to share power between a power supply, battery, and solar panel input to your radio.

Ken, AC4TO, provided information on portable radio activity, including places with no cell phone coverage. Needed to support voice communications for radio activity. Lithium – Iron – Phosphate batteries able to fit into a rucksack at 50W or 100W. 40 A-hr battery will operate 100W transceiver for about 18 hours with an 80/20 (receive / transmit) cycle. You may also use a 100W solar panel to charge a spare battery while you operate with the other battery so that you can operate full time.

Business Meeting:

Treasurer's Report: Doug, KD4MOJ, stated that report was published in newsletter, 9 renewals, 1 new member, \$37 from Amazon Smile, \$20 from sale of 2 club laptops. Doug also explained what Smile Amazon does, allowing users to donate to the club through Amazon purchases.

Education: Phil, N4IPH – will try to get a class set up this spring. Will use new question pool coming up in July 2022. Looking at early June for a tech training class. A teacher at McClay may also have some students interested in taking the course. Gmail account available for folks to use to ask questions regarding the course.

Testing: Norm, K4GFD stated that there will be testing on May 7 at 10AM at American Red Cross Building, Tallahassee. This is open, no cap for number of test takers. Alan stated that April 19 is the date when the FCC will start charging its \$35 fee. We will send test information to

Laural, and the FCC will send the candidate a website where they can pay the \$35 within 10 days.

Repeaters: Norm: 6m is still working. Blairstone will need new batteries. Site went down about 3 weeks ago.

Old Business:

Thanks to Chief, KA5USN, for getting permission from Tom Brown Park to use the park for field day in June 2022.

Jerry, N4JL, reported that we have station captains for CW and Voice. We will run 2 separate stations, one phone and one CW. Phone captain is Bill, CW captain is Ted. Ted will also provide a pop-up camper. Randy's RV will be used for the phone station. We will do the testing at the ARC building. Digital station is optional, if they are willing to set up, they will need to be self-sufficient. Don will bring out digital station if we can have 4 to 5 people to run the station. We can run any digital mode, usually PSK 31. Don, KK4SIH, wants to have an upswelling of people to operate the digital station. We still need to get a generator. We may also be able to set up drinks and potential for a BBQ. We may also be able to get a trailer of soda from a local soda vendor.

There will be an inventory of amateur radio equipment posted on the TARS website with equipment that will be auctioned off at the next club meeting. Materials will be sold for cash at the meeting.

New business:

None.

AND God said

$$\begin{aligned}\nabla \cdot \vec{E} &= \frac{\rho}{\epsilon_0} \\ \nabla \cdot \vec{B} &= 0 \\ \nabla \times \vec{E} &= -\frac{\partial \vec{B}}{\partial t} \\ \nabla \times \vec{B} &= \mu_0 \vec{J} + \frac{1}{\mu_0 \epsilon_0} \frac{\partial \vec{E}}{\partial t}\end{aligned}$$

AND there was RADIO!

$$c = \frac{1}{\sqrt{\mu_0 \epsilon_0}}$$



SWAR-GREES® Standing Wave Improver

Have you got one of those aerials that's hard to tune? SWAR-GREES® is the answer. This patented RF lubrication launched at the start of this month dramatically improves your aerial match by making signals slide along the cable with less RF friction (hysteresis), thus improving the SWR, VSWR and Return Loss. You also get increased power handling and better 'talk power' because the faster-moving signal can build up greater RF inertia. It can give a 9dB per kHz per metre improvement on SSB and up to 12dB/kHz/m or more on weak-signal modes. On VHF and UHF systems it also reduces the noise figure. SWAR-GREES® is compatible with SSB, AM and FM, all the latest digimodes and even most legacy modes. Put SWAR-GREES® on your coax for instant better matching! Each application lasts about six months. How much will your system improve? Available from the RSGB Shop, with special pricing for RSGB Members. See www.rsgb.org/swar-grees



TARS Treasurer's Report		
Submitted by Doug Farnell, KD4MOJ, Treasurer		
	for period	year-to-date
Beginning Balances:	25-Apr-22	1-Jan-22
Cash on hand	\$ 104.00	\$ 33.00
Checking Account	\$ 5,989.98	\$ 5,224.09
Savings Account	\$ 3,104.62	\$ 3,104.62
Total:	\$ 9,198.60	\$ 8,361.71
Summary of Month's Activity:		
Total Receipts:	\$ 58.39	\$ 1,122.42
Total Expenditures:	\$ -	\$ 298.14
Receipts Derived From:		
Members Dues:	\$ 40.00	\$ 645.00
Fifty/Fifty*	\$ 18.00	\$ 100.00
Donation	\$ -	\$ 320.00
Red Cross Donation	\$ -	\$ -
2022 Holiday Picnic	\$ -	\$ -
Veteran's Radio Fund	\$ -	\$ -
Field Day Radio Fund	\$ -	\$ -
Interest (Savings)	\$ 0.39	\$ 0.39
smile.amazon.com	\$ -	\$ 37.03
Equipment sales	\$ -	\$ 20.00
Total	\$ 58.39	\$ 1,122.42
Expenditures:		
American Red Cross:	\$ -	\$ -
Fifty-Fifty	\$ -	\$ -
ARRL Insurance	\$ -	\$ -
Spagetti 100 - TARC	\$ -	\$ -
TARS & Feathers Plaque	\$ -	\$ -
Storage & Supplies	\$ -	\$ -
Field Day	\$ -	\$ -
VE Expenses *	\$ -	\$ 32.89
Tower/Repeater Maintenance AG4RUJ	\$ -	\$ -
Florida Dept of State	\$ -	\$ 61.25
Post Office Box	\$ -	\$ 204.00
Misc. 2022 Holiday Lunch	\$ -	\$ -
Total:	\$ -	\$ 298.14
Transfer Checking -> Savings:		
Ending Balances - April 25, 2022:		
Cash on hand	\$ 104.00	\$ 104.00
Checking Account	\$ 6,047.98	\$ 6,047.98
Savings Account	\$ 3,105.01	\$ 3,105.01
Total	\$ 9,256.99	\$ 9,256.99
*Veteran's Radio Fund		\$ 500.00
*Field Day Radio Fund		\$ 697.00
* KF4KHJ 50/50 Donation		



LOCAL AMATEUR RADIO NET

NET	TIME	QSY
North Florida Amateur Radio Emergency Communications Net	Daily @ 9:00 AM EST except Sunday's	3950 kHz
Capital District EmComm Training Net	Sunday @ 7:30 PM EST	147.030 MHz, K4TLH
Capital District ARES Net	Sunday @ 8:00 PM EST	147.030 MHz, K4TLH
Leon County ARES net	Tuesday @ 8:15 ET	147.030 MHz, K4TLH
Florida Phone Traffic Net	Daily @ 6:55 AM EST	3940 kHz
Florida Midday Traffic Net	Daily @ Noon EST	7242 kHz
North Florida Phone Net	Daily @ 7:30 PM EST	3950 kHz
TARS News and Info Net	Thursday @ 8:00 PM EST	146.910 MHz, K4TLH
Kid's Net	Tuesday @ 8:00 PM EST	145.170 MHz, KE4URL - 600, 141.3
Jefferson County Net	Monday @ 8:00 PM EST	145.430 MHz, WX4JEF, 94.8
The Morning Drive-Time and Welfare Net (Informal Check-In / Rag Chew)	Mon-Fri @ 7:30 - 9:00 AM EST	147.030 MHz, K4TLH + 600, 94.8
Southwest Georgia HF Weather Net	Third Thursday @ 7:30 PM EST (or following GA SSB Net)	WX4TAE, 3975 kHz (+/-)
SKYWARN Net	First Sunday @ 7:30 PM EST	WX4TAE, 3810 kHz (+/-)
Navy Amateur Radio Net	Daily, 0700-0900 Eastern	7245 kHz
Worldwide DMR-MARC Net	Saturdays @ 1600 UTC in Summer, 1700 UTC in Winter months	Worldwide Talkgroup (1)
Florida D-STAR Net	Thursday @ 9:00PM Eastern	D-Star REF046C
North Florida Digital Net	Sunday @ 7:00 PM ET	3590 KHz PSK-31
Madison ARES Net	Sunday @ 2100 Eastern	145.190 PL 123
Taylor County Amateur Radio Club Net	Sunday @ 1900 Eastern	145.350 PL 123.0
Wakulla County Weekly Monday night net.	Monday @ 1930 Eastern	145.450 MHz K4WAK

SKYWARN

The first Sunday of every month, we have a special ARES/SKYWARN net. At 1930 hours EST, the net starts on 75 meters, on or near 3810 KHz (+/- for QRM). After check-in on this initial frequency, operators attempt to trade RST reports with WX4TAE. After check-ins on 75 m the net moves to 40 m around 7245 KHz (+/- for QRM), and picks up the roundtable there. At 2000 hours EST, the regular weekly Capital District ARES net meets on 147.030 MHz, and we are joined by station WX4TAE, at the

National Weather Service Office in Tallahassee. During the first portion of this net, one of the staff meteorologists joins us on the air and provides a retrospective of the previous month's weather patterns, a brief forecast of what we might expect for the coming month and season, and also takes specific questions from stations whom have checked in to the net. Please join us for these very informative ARES/SKYWARN nets – the first Sunday of every month.

The most current repeater list is available on the TARS website: www.k4tlh.net/repeaters
 For SARnet information see: www.sarnetfl.com

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		444.400 +	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

AUCTION FOR THE BENEFIT OF A TARS MEMBER

Auction to be Saturday, May 7, 2022

American Red Cross

1115 Easterwood Dr

Tallahassee Florida

Viewing of items – starting at 1PM - Auction to begin at 2PM

Special viewing of items - April 30 from 10AM – 2PM,
At Gerry's, WA6POZ – 1612 Shakespeare Dr

THIS IS A **CASH AUCTION**, NO CHECKS, CHARGES OR MONEY ORDERS

ALL items must be paid for before leaving the auction site.

For Information contact Gerry WA6POZ – 402-214-7747 – if no answer leave message or text.

Lot #	Description	unit price	Min Bid
*1	FTdx1200/FP1030A/AL80A/MF998	2995	1000
1A	Yaesu FTdx1200 HF+6 Transceiver	1380	600
1B	FP1030A 35 Watt Power Supply	230	150
1C	Ameritron AL80A w ARB704 & Cables	676	300
1D	MFJ-998 1500 1-30 MHz tuner w cables	610	250
1E	Tigertronics Signalink USB Interface	99	50
2	FT1DR 2/70 portable & Assoc	452	175
3	FTM-400 2/70 Base/Mobile	510	200
4	MFJ - 250 Cantenna	70	35
5	Heil Pro-Set + foot Switch	192	75
6	MFJ-226 Graphic Analyzer	324	150
7	Diamond X-200A 2/70 Vertical	100	30
8	Antenna Tensionner (set of 2)	152	50
9	Ladder Lock - center for dipole	10	1
10	MFJ-4602 Window freedthru	90	25
11	Diamond SX-400 140-525 MHz SWR meter	110	40
12	30 ft push up mast	130	25
14	Crimp Kit - LR400/213/rg8	60	35
15	PL259 - connectors - various kinds	60	35
16	MFJ-261 - dry dummy load 15 watts	50	25
17	Palomar MB-9 9-1 balun 25 watts		
	Sanyo Nicad charger and batteries		
	4 lighting arrestors	50	25
18	RJ type tools and connectors	50	25

19	Power Poles tool, wire, connectors	60	35
20	Handkey and bug		1
21	Misc LiDO AD1 SLM-50H		1
22	Hammerlund HQ-170A		20
23	Miscellaneous		1

*1 Will be offered if there are NO Offers on items 1A thru 1E



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Tallahassee Amateur Radio Society

New Membership / Renewal Form

Updated 09/16/20/21

This form can be used for new members or for renewals.

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 November) for anyone who passed Amateur Licensing Exam facilitated by TARS; all rights and privileges except voting.

For renewals, if **no** personal information has changed, merely complete the form with your name, call, indicate your member type and ARRL membership status and make 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!**

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**). 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: <input type="checkbox"/> Individual <input type="checkbox"/> Family <input type="checkbox"/> Student <input type="checkbox"/> Introductory (Check One)			
Home Phone: () -		Work Phone: () -	
Cell Phone: () -			
E-Mail Address:			
ARRL Member: <input type="checkbox"/> Yes <input type="checkbox"/> No		“Elmer”: <input type="checkbox"/> I would like a ham mentor <input type="checkbox"/> I can be a ham mentor	
Interests: <input type="checkbox"/> EmComm <input type="checkbox"/> Contest <input type="checkbox"/> Phone <input type="checkbox"/> Digital <input type="checkbox"/> CW Other: _____			