



# Tallahassee Amateur Radio Society

## August 2007



The Tallahassee Amateur Radio Society meets at 7:00 p. m. on the first Thursday of every month. Our primary meeting location is the conference room on the upper floor of the Publix on Ocala Road in Tallahassee. Talk-in on the AE4S repeater 146.655 (down .600, tone 94.8), or 146.520 simplex if you require entry into the building

Mike KE4FGF, Mark KD4EYE & John KE4FGF will be demonstrating Emergency Ham Radio equipment for Archbald Hospital. In addition, Randy AG4uU will give a presentation regarding the status of the Club's repeaters. Don't miss these informative presentations.

Once again you guys amaze me. I can't believe the turnout at the last meeting. Here it was the day after the fourth of July and people thought I was crazy for not canceling the meeting. I was expecting maybe 5 hams show up, low and behold we came close to having 30. WOW and we had a pretty good time, thanks for supporting Ham Radio. I believe we have a very good program (see page 7) and I really appreciate Randy coming to the meeting to give us a status report on the clubs repeaters.

Please take note of page 6, this is the first time the yearly financial report has been completed and published for all the members to see as required by the Bylaws, we will have a budget document soon. There are lots of irons in the fire, W1ABT will bring us up to speed on some of the Leon County ARES projects.

Looking forward to seeing you at the meeting.

73

Dan KI4HGO

# Minutes of the July TARS Membership Meeting

## TARS - Tallahassee Amateur Radio Society

### Thursday, July 5, 2007

The TARS July Meeting was held at Publix on Ocala Rd. on Thursday, July 5, 2007.

CALL to ORDER at 7:00 p.m.

President Dan Moniz KI4HGO welcomed the 25 members and guests who signed in. Dan said he was very pleased with the large turnout, considering the yesterday's holiday.

\* *The sheet listing those in attendance is made a part of these minutes.*

#### INTRODUCTION of GUESTS

Kerry AI4CW introduced her guests, Boyd and Sandra Owens and niece Katrina Watson. New ham Natalie Binder was recognized; she passed her Technician and General exams at Field Day and operated long hours, making many contacts.

#### RECOGNITION

Dan presented a Certificate of Appreciation to Carlton Wells AG4UT for his many years of service as TARS Treasurer. Carlton says he has enjoyed his service, and looks forward to having a chance to put up his 160m longwire.

#### ANNOUNCEMENTS

##### 1. ARES

Dave Davis WA4WES said that during July through mid-August while hurricane activity usually is low, hams should prepare for the busy storm season predicted by the Weather Service.

- § He highlighted jump kits, emergency power, generators, food/water/medicines for 3 days, and assuring preparations for home and family. If our area is hit, the first responsibility is safety for self, home, and family. Hams may be needed at Red Cross shelters or the EOC.
- § The Emergency Coordinators (ECs) will do simplex tests on various bands and also will try alternate repeaters. Dave is coordinating efforts with Mike Brown KE4FGF of the Thomasville club, TARC, in Georgia.
- § Dave invited interested hams to participate in the Digital Net at 7 p.m. on the 146.655 repeater on the 3<sup>rd</sup> Sunday each month, testing PSK31, slow-scan (SSTV), and other modes.
- § More simplex tests will be conducted to give people experience in programming the various frequencies and seeing which areas lack coverage. ECs may work on this within counties.
- § A test will be conducted on the 3<sup>rd</sup> Sunday in July using the simplex network set up by Paul KJ4G. Paul said the system has coverage from Perry to Carrabelle; it's designed to

let 1-2 hams in an area talk locally on simplex and contact Tallahassee on the net.  
2. Paul reported that Greg W4GJM (Assistant EC for Wakulla County) is recovering, says he feels great, and thanks everyone for their support and concern.

## PROGRAM

Dan led a discussion of Field Day.

TARS Field Day: Dan reported over 70 hams and guests participated. He credited everyone's enthusiasm, spirited leadership of Ken AC4TO, Steve AD4E, and Dave WE4RA, and great food. Comments by members included: great location, good layout, let's go there again; antenna-making was fun and great, especially because antennas built during training were used and then passed to members (and thanks to instructors Kimo K4IMO and Dave WE4RA); the food and munchies were a hit - - sorry the chicken ran out, but more people attended than expected; over 820 CW and 550 phone and GOTA contacts were made, and there were contacts on PSK31 and ATV, while 6m was a challenge; the wireless networking helped follow rules and gave a little competitive edge. Alan W1ABT proposed that letters be sent to formally thank the benefactors: Williams Communications (CW trailer), Capital Chapter of the American Red Cross (phone and digital trailer), and Leon County Parks and Recreation (use of J. Lee Vause Park and shelter fee-free). An unusually large group stayed overnight - - perhaps it was the lure of KD4QKI's promise of breakfast. PR was great, with visits by WFSU and the TV stations, with an extensive piece on Channel 6 featuring TARC and TARS.

SPARC Field Day: Paul KJ4G said they had "good groceries, as usual" and enjoyed the day. The CW team worked in the trailer, and the tower shack doubled as a ham shack. They sent Rudy Hubbard an ARRL message via Winlink 2K, but couldn't connect with Sedan. Bill KG4LFT stayed busy throughout the night exercising his brand new General privileges after passing his test at TARS Field Day. Paul also mentioned the weather balloon that Dan KJ4ZI of Perry sent up with a tiny tracker 3, and asked hams to look in the Cody area for the data pack that came down. See pictures in the July TARS Newsletter.

## OFFICERS' REPORTS

### TREASURER'S REPORT

Carlton AG4UT prefaced his last report by saying he enjoyed working with the Boards led by 3 Presidents over the years. He stepped down due to work responsibilities after a promotion to major responsibility in State of Florida interoperable communications systems. He looks forward to having more time to enjoy the ham hobby: voice, digital, public service, nets, disasters, training new hams, and to getting his antenna system completed.

Carlton read his final report and said he will do all possible to assist Larry KI4MAJ during the transition. The Treasurer's Report was approved and Carlton received hearty applause.

\* A copy of the Treasurer's Report is made a part of these Minutes.

## MINUTES

The Minutes of the Annual Meeting in June were printed in the July Newsletter, and approved.

## COMMITTEE REPORTS

Testing, Education, Repeaters - No reports

Website -

Webmaster David Heupel WE4RA said he has had problems with the website, maybe due to bots, and invited members to call him any time if the server is down so he can restart it.

Newsletter -

Dan said the July "Field Day" Newsletter was sent out to all members. If anyone did not receive an electronic copy, please email Dan at [ki4hgo@arrl.net](mailto:ki4hgo@arrl.net)

## UNFINISHED BUSINESS

Trailer: State funds for projects such as the Communications Trailer grant were eliminated, so TARS and the Red Cross will have to rewrite and resubmit for the next cycle. The current van can be deployed within 15 to 45 miles or so of town, but not for long distances.

## NEW BUSINESS

Dave KG4YZI gave Red Cross news:

1. Satellite communications: Dave AI 4GF, Farley KI 4LUN, and Alan W1ABT have trained on this equipment at the Red Cross. A 1-hour session is held each Wednesday at 5 p.m. It is a VOIP phone. The Red Cross looks to amateurs to be communicators and also to maintain communications equipment that ARC staff will use. When needed, a ham would go to a shelter, set up the equipment, show the ARC worker how to use it, and the ham would then leave.
2. ARC exercises on the scale of Hurricane Zeus will not be repeated. Exercises will be smaller in the future.
3. The new Chapter House will be on Weems Rd. near where the joint communications center is planned. Hams are invited to brainstorm about a floor layout in the radio room, which is not an outside room.

## ADJOURNMENT

Following a brief discussion, the meeting closed at 8:30 p.m.

Respectfully submitted,  
Chantal Blanton, KI 4NBU

## TARS Treasurer's Report August 2007

As of 7/30/07:

Checking Account Balance: \$750.76

Savings Account Balance: \$2875.75

Receipts deposited in checking account: \$600.00

Receipts deposited in savings account: \$0.69

Receipts derived from the following:

0.00	Dues
0.00	TARS Auction
\$600.00	Donations
0.00	50/50
<u>0.69</u>	Savings Interest
\$600.69	Total

8 members renewed or joined since last report.

4 individual(s)

4 family member(s)

0 student(s)

Expenses:

- \$92.00 Post Office Box annual fee.

Outstanding expenses:

- Less than \$300.00 to Bobby Guris for Field Day food.

Donations:

- \$600.00 from Capital City Cyclists

# Tallahassee Amateur Radio Society

## Twelve Month Financial Report

### 2006

Income:

Member Dues	\$1285.00
Donations	\$1100.00
\$150 Capital City Cyclists (CCC), TOSRV	
\$300 Experimental Aircraft Association, Airfest	
\$500 CCC, TOSRV	
\$150 CCC, Spaghetti 100	
50/50 Raffle	\$ 21.00
Auction	\$ 223.00
Interest on Savings Account	\$ 3.00
Sale of Extra Field Day Food Supplies	\$ 50.00
Payment for Replacement of Van Windshield	\$ 221.00
Total	\$2903.00

Expenditures:

Picnic	\$ 127.00
Field Day	\$ 284.00
Communications	\$3275.00
\$3000 Baker's Communications	
\$ 199 Cables for Duplexers	
\$ 11 TCH Lights and Antenna Maintenance	
\$ 25 '03 Repeater Expense	
\$ 40 Repeater Expense	
Van, Gas	\$ 121.00
Insurance	\$ 334.00
Awards	\$ 113.00
\$ 49 TARS and Fathers Award	
\$ 64 Past President Award	
Post Office Box Rental	\$ 80.00
URL Fee	\$ 9.00
Total	\$4343.00

Savings Account Balance on Jan 1, 2006	\$4000.28
Savings Account Balance on December 31, 2006	\$2053.53
Checking Account Balance on December 31, 2006	\$ 378.89

## Thomasville Amateur Radio Club to Demonstrate Archbold Hospital's Emergency Ham Radio Equipment

August 23<sup>rd</sup>, 2005...a small storm formed over the Bahamas and quickly intensified to the point that it required a name. As it was the eleventh storm of the season, the assigned name for that year was *Katrina*. After a brief encounter with south Florida, it moved into the Gulf and became one of the strongest storms ever recorded while at sea. It made landfall on August 29<sup>th</sup> as a Category 3 storm and laid waste to large sections of Mississippi, Louisiana and Alabama. After the storm abated, large numbers of volunteers made their way to the area to help pick up the pieces. We've all seen countless articles and reports from our fellow amateurs about what they faced; what worked and what didn't, and what could be done better "next time." Another group also faced similar problems and was left with impressions and worries over what would take place if "next time" happened to be on their own home turf. Georgia had a large contingent of medical personnel that responded to the need for help, and the hardest lesson they learned was that if more supplies were needed, they weren't "just a phone call away." Countless times, the requests for additional supplies were handled by various Amateur Radio groups and the lesson was not lost on the Georgia medical community. The Atlanta branch of the Metropolitan Medical Response System (MMRS), approached the Georgia ARES group, and together, a plan began to take shape to insure that if our state was in fact "next," they'd be better prepared to respond. That plan involved getting a grant for a permanent Amateur station at each of the 15 Regional Coordinating Hospitals around the state. High on the priority list were Savannah, due to it being close to the Atlantic coast, and Archbold Memorial in Thomasville, due to it's proximity to the Gulf. The idea was simply to insure that these hospitals could continue to be in communication with each other and with outside sources, despite the condition of the local telephone systems. While described as "permanent", the entire system is configured so that if the actual hospital building were destroyed, the radio system, safe in its waterproof case, can be quickly moved and redeployed wherever it's needed. It centers around two Kenwood radios, a TS-480SAT for HF purposes and a TM-D700A for VHF/UHF. The waterproof case holds the actual radio RF decks, and the control panels are on extensions so they can be set up on a table. The case also holds an Astron 35 amp power supply, which float charges a 75 Amp-Hour 12 volt gel cell battery in the bottom of the case that provides the actual power to the radios, and also protects them from line transients. The local ARES groups in the various hospital locations are tasked to provide manpower to operate the stations. The Thomasville group received their radio system in time for Field Day 2007 and group members were able to get used to the radio's operating features before having to pass traffic "for real." While it's unfortunate that it takes a catastrophe of *Katrina* proportions to draw attention to potential problems, the positive thing is that the state of Georgia is trying to be ready before the worst actually happens here...

de KE4FGF

The lunch bunch:



American Red Cross Appreciation Dinner:



Vets lunch:



## **FCC Releases Post-Katrina Order, "Final Rule" From the ARRL:**

On July 11, the FCC released their Order regarding the recommendations of the independent panel reviewing the impact of Hurricane Katrina on communications networks (the Katrina Panel). It contained their conclusions following a review of the comments filed in response to the FCC's Notice of Proposed Rulemaking (NPRM). The Commission asked for comments a week after the release of the report and recommendations of the Katrina Panel and directed the Public Safety & Homeland Security Bureau (PSHSB) to implement several of the recommendations. The FCC also adopted rules requiring some communications providers to have emergency/back-up power and to conduct analyses and submit reports on the redundancy and resiliency of their 911 and E911 networks. The FCC's actions are to go into effect August 10.

The Commission noted that "the amateur radio community played an important role in the aftermath of Hurricane Katrina and other disasters," and instructed the PSHSB to "include the amateur radio community in its outreach efforts."

The FCC invited comments on the Katrina Panel's recommendation that the FCC "act to enhance the public safety community's awareness of non-traditional emergency alternative technologies that might be of value as back-up communications systems in a crisis." Several commenters suggested that the public safety community be educated about the applicability of Amateur Radio in a crisis. The FCC agreed with these comments, saying that improving the public safety community's knowledge of, and training in, alternative technologies would improve preparedness for future crises. They directed the PSHSB to "develop and implement an awareness program to educate public safety agencies about alternative technologies and to encourage agencies to provide regular training on any alternative technologies to be used," including educating public safety agencies about alternative technologies.

The recommendations said that several Amateur Radio operators recommended changes to Part 97 of the FCC's rules; Part 97 is the section that covers Amateur Radio. Many of the suggestions, the report said, have already been implemented, and as such, require no further action. For example, "the Commission recently eliminated Morse Code proficiency as a license qualification requirement, an action supported by several commenters in this proceeding."

The FCC once again made clear that Part 97 "does not prohibit Amateur Radio operators who are emergency personnel engaged in disaster relief from using their amateur radio bands while in a paid duty status." This changed this past December in WT Docket 04-140, the "Omnibus" Amateur Radio Report and Order (R&O).

The Commission also previously decided to phase out RACES station licenses, "making proposed changes to rules relevant to these licenses moot." ARRL Regulatory Information Specialist Dan Henderson, N1ND, notes that the FCC "is not phasing out the RACES program, just the RACES station licenses."

In his comments to the Katrina Panel, W. Lee McVey requested that the FCC initiate a rulemaking to create a new radio service in the 148-150 MHz band "to facilitate interoperability between different first responders during and following a national emergency." The FCC noted that the 148-149.9 MHz band is allocated on a primary basis for the federal mixed, mobile and mobile satellite (Earth-to-space) service, and the 149-150.05 MHz segment is allocated on a co-primary basis for federal and non-federal mobile satellite (Earth-to-space) and radio navigation.

The FCC's report said "[This] petition does not address this use nor does it explain what rules would be necessary to govern access to this spectrum. Given the potential impact of McVey's proposal to spectrum allocated for federal use, we direct PSHSB, together with the Office of Engineering and Technology (OET), to seek feedback from the National Telecommunications and Information Administration (NTIA) on this petition."

The FCC said that when it receives the feedback, they will direct PSHSB and OET to make a determination on the appropriate action to be taken on McVey's petition.

## **ARRL EXPO at 2007 National Convention in Huntsville**

Join the ARRL in Huntsville, Alabama the weekend of August 18-19, 2007 for the ARRL National Convention, held at the Huntsville Hamfest, in the all air-conditioned Von Braun Center. The Global Amateur Radio Emergency Communication Conference (GAREC) will meet in Huntsville prior to the hamfest on Thursday and Friday, August 16-17.

# SILENT KEYS

It is with deep regret that we record  
the passing of these amateurs:

W2JUP Sternberg, Norman J., Plantation, FL  
WA4FUW Binenfeld, Macs, Tamarac, FL  
WA4LHO Johnson, Guice W., Pt Charlotte, FL  
KD4WCS Huerta, Genaro, Tampa, FL  
W4WJB Nutting, Norwood V. Jr, Winter Park, FL  
K4YNT Wallace. Robert E., Hawthorne, FL

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## The Radio Amateur is...

**CONSIDERATE**...never knowingly operates in such a way as to lessen the pleasure of others.

**LOYAL**...offers loyalty, encouragement and support to other amateurs, local clubs, and the American Radio Relay League, through which Amateur Radio in the United States is represented nationally and internationally.

**PROGRESSIVE**...with knowledge abreast of science, a well-built and efficient station and operation above reproach.

**FRIENDLY**...slow and patient operating when requested; friendly advice and counsel to the beginner; kindly assistance, cooperation and consideration for the interests of others. These are the hallmarks of the amateur spirit.

**BALANCED**...radio is an avocation, never interfering with duties owed to family, job, school or community.

**PATRIOTIC**...station and skill always ready for service to country and community.

--The original Amateur's Code was written by Paul M. Segal, W9EEA, in 1928.

## Amateur Radio Now Legal in all Texas Public Schools From the ARRL

In what can only be termed a huge victory for the future of Amateur Radio in Texas, Governor Rick Perry signed Senate Bill 11 (SB11) into law in June. Among many disaster response specifications, the new law contains two important Amateur Radio-related provisions: State employees who are ham radio operators may take up to 10 days of paid leave while participating in a disaster response or training exercise, and Amateur Radio is now allowed in all Texas public schools.

A single sentence in Article 2 of SB11 modifies the legal definition of a banned paging device by adding the following ham radio exception: "The term does not include an Amateur Radio under the control of an operator who holds an Amateur Radio Station License issued by the Federal Communications Commission."

Texas is the first state to enact such a sweeping change allowing school-based ham radio programs statewide. It is hoped that similar measures will be enacted in other states. Local clubs in Texas are urged to contact their school boards and encourage them to bring school policies regarding student possession of RF devices into compliance with the new law.

A decades-old provision in the Texas Education Code (Section 37.082) long ago granted Texas schools blanket authority to ban student possession of all RF devices, including ham radios. The old law was originally enacted with the best of intentions, but had unintended negative consequences both for student safety and for the cause of Amateur Radio. More than 20 years ago Texas -- like many states at the time -- passed a law granting schools sweeping authority to ban student possession of "paging devices." The original intent of the law was to prevent on-campus drug dealers from communicating with one another using now-obsolete numeric pagers. Cut off their communication, the logic went, and drugs on campus would be seriously curtailed.

The old law broadly defined a prohibited "paging device" as any RF device which had the ability to vibrate, emit a sound, display a message, or in any way convey a communication to the possessor. There was no exception for school-based Amateur Radio programs or clubs. Practically all Texas schools immediately exercised their newly granted right by banning all RF devices to the maximum extent allowed by law -- and sometimes to a greater extent than the law allowed.

The result of the old law was that in most Texas schools, starting a ham radio club was simply out of the question. Existing ham radio programs were even removed from some San Antonio area schools as a direct result of the old law.

Although schools can still have basic rules of classroom decorum to insure that ham radio activities do not disturb academic instruction, SB 11 effectively puts ham radio programs on the same legal footing with all other student-initiated clubs and activities. Texas school teachers are now free to start ham radio programs. Students are now free to form school-based ham radio clubs. Individual students who have a ham license are even legally allowed to possess ham radios at school regardless of whether a club exists yet. SB11 takes effect on September 1. - James Alderman, KF5WT

## Local Net News:

**Sportsman's Paradise Amateur Radio Club** meetings are every 3rd Thursday of each month at the Wakulla County Emergency Management Facility (Sheriff's Department) at 7:30pm. **Wednesday Night Net Meeting 2000 Hours 146.550 MHz Simplex**

**Thomasville Amateur Radio Club:** This net meets every **Tuesday night at 8:00pm on 147.195MHz Duplex**. Club meetings on the first Saturday of each month at the Plaza Restaurant at 7:30pm. **Temporarily now using 145.17MHz Duplex - tone 141.3**

**Capital District ARES Net:** Every Sunday, 8:00 p. m. Eastern on the AE4S repeater 146.655 (tone 94.8)

**The Big Bend Hamster Net:** This net meets on Tuesday nights at 7:30pm Eastern on the AE4S repeater 146.655 (tone 94.8). Call 574-7965 for more detail information.

**Morse Code Practice Net:** This net meets Monday through Friday on 28.250 (cw) at approximately 8pm or at the conclusion of the North Florida Phone Traffic Net.

### UHF Nets:

**The "Friday Friendly Net":** It is moderated by Mary, KI 4JOO. This net meets on Friday evenings on the 443.400 UHF repeater. The offset is 5 Mc plus and the PL encode/decode tone is 131.8. Check-ins can also join in via echolink by connecting to Node #3950 from other areas or from their PC. This net is scheduled for 1 hour. It's very informal and we discuss anything callers want to talk about. Everyone is invited to participate.

**The "Winlink Conference":** This net is held every Wednesday evening starting around 8PM. This is moderated by Al, W3YVQ, out of Baltimore, Md. Hams can connect direct to "Fred's happy serve" on node #129799, or tune into 443.400 UHF repeater to participate. This is a loosely directed net and pertains solely about digital communications. Regulars check in from around the USA and discuss all issues of Em Comms using digital equipment. It's mostly a technical group. A large amount of the success of the TLH DIGITAL GROUP comes from the emering from this group. This net can be lengthy in time, sometimes lasting up to 3 hours.

**Other nets** are listed on the K4TLH website. All the new ham radio operators are welcomed to use the repeaters and join in on the nets.

# New Membership or Renewal Form



2007 has arrived and so has TARS membership renewal. Make the form easy on yourself. If you have not changed any information from last year, merely make payment to TARS. Complete the form with your name and indicate your member type and ARRL membership status. For Family status, complete a form for each member.

Name: \_\_\_\_\_ Callsign: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_ ZIP: \_\_\_\_\_-\_\_\_\_\_  
Member type: Indiv. \_\_\_\_ Family \_\_\_\_ Student \_\_\_\_ (check one)  
Home Phone ( ) \_\_\_\_\_-\_\_\_\_\_  
Work Phone: ( ) \_\_\_\_\_-\_\_\_\_\_  
Cell Phone ( ) \_\_\_\_\_-\_\_\_\_\_  
E-Mail Address: \_\_\_\_\_  
ARRL member (y/n) \_\_\_\_ TARS Van trained (y/n) \_\_\_\_

Membership dues for the Tallahassee Amateur Radio Society run \$15 annually per individual or family. **Students** (with valid ID) can **join for free!** You need not be a licensed amateur radio operator to join the Society. An interest in radio communications is all that is required. New members pay pro-rata based on the number of months remaining in the calendar year (\$1.25 per month). Renewing members pay \$15 dues; except after July, dues become \$7.50.

Please make your dues check payable to the Tallahassee Amateur Radio Society (or TARS). Bring your check with the additional information to the next monthly meeting of the Society and give it to the Treasurer, or mail your check and information to the Tallahassee Amateur Radio Society, C/O Treasurer, P. O. Box 37127, Tallahassee, FL, 32315.

If you are interested in becoming a member of the American Radio Relay League (ARRL), their dues are \$39 annually. TARS is an ARRL sanctioned organization. Go to <http://www.arrl.org/join.html> for more membership information.

# TARS Officers

President: Dan Moniz - KI 4HGO  
Vice President: Alan B. Torledsky - W1ABT  
Secretary: Chantal Blanton - KI 4NBU  
Treasurer: Lary Pushor - KI 4MAJ

## TARS Committees:

Repeater Trustee #1: Randy Pierce AG4UU  
Repeater Trustee #2: Vacant  
Newsletter Editor: Dan Moniz KI 4HGO  
Historian: Shawn Wilson AG4VE  
Equipment Manager: Carlton Wells AG4UT  
Education: Phil Ashler N4IPH  
Special Events: Carliane Johnson KG4CJT  
Webmaster: David A. Heupel WE4RA

## Upcoming Events:

**TARS Meetings:** Every first Thursday of the month at 7:00 p.m. EDT at Publix at Ocala Rd.  
Friday Lunch 11:30 a. m. EDT at Golden Coral on No. Monroe St.  
Capital District ARES Net: Every Sunday, 8:00 p. m. Eastern on the AE4S repeater 146.655).  
North Florida ARES Net: Every morning, except Sunday on 3950 KHz at 9:00 a. m. Eastern

## EDITORIAL POLICY

Submitted material received by the editor on or before the 20<sup>th</sup> of the month will appear in the following month's newsletter as space permits. Comments and/or suggestions to improve the newsletter are welcomed. The Printed Circuit is not representative of the views or opinions of the whole organization, and such views and opinions are of the individual author(s). The editor is Dan Moniz KI 4HGO. Submissions for The Printed Circuit may be emailed to: [KI4HGO@arrl.net](mailto:KI4HGO@arrl.net)

