



The October meeting is the semi-annual picnic at Tom Brown Park beginning at 7:00 p.m. Bring a potluck dish to share with friends and bring your friends to share the fun of ham radio. Also, don't forget to visit the TARS website at: [www.k4tlh.org](http://www.k4tlh.org) and the E-Groups site at: <http://www.egroups.com/group/tars>.

## PRESIDENT'S CORNER

**David Heupel, KG4ACF**  
**TARS President**

Fall has arrived, but there is still two month's left until the end of Hurricane Season. September saw some excitement with Hurricane Gordon coming into the Northeast Gulf Coast of Florida. I was glued to my shack on Sunday keeping an ear to the 146.655 repeater, as well as 3950 KHz, to stay apprised of the latest happenings with respect to the hurricane. Lucky, the storm fizzled out as it approached the Gulf Coast, and all we got here in Tallahassee was some much-needed rain.

The Spaghetti 100 is coming this month on the 21<sup>st</sup>. It's an all day event, and we'll need a lot of operators to cover the route. As most of you know, but for those who don't, the Spaghetti 100 is a bike ride event covering 100 miles in North Florida and Southwest Georgia. My fingers are crossed for good weather for our sakes, and for the riders. Tune in to the Sunday ARES Net on 146.655 at 8:00

EDT, for more details to be announced as the event nears.

My broadband DSL Internet connection has finally arrived! YIPEE! Let me tell you, broadband is the only way to go. I notice no interference with my radioactivities (pun intended) in the shack. DSL is a suite of technologies where digital information is transported over your regular, existing copper telephone line pair. RF transmits the digital signals, above the analog voice frequencies used by a regular modem or telephone. The upstream (from your PC to the rest of the world) bandwidth is from roughly 26KHz to 400KHz, and the downstream (from the world to your PC) bandwidth is from just over 400KHz to 1.1MHz beyond. OK, that's interesting, but what it means is speed! Up to T1 (1.54 Megabit per second – Mbps) downloads from the Internet is a very cool thing to have at home – and it doesn't cost a fortune either. This translates to 384Kbps upstream rates or more, and 1.54Mbps downstream or more. I understand that some implementations of DSL, such as G.dmt ADSL, can use frequencies up to 2.2 MHz, and can achieve downstream rates of almost 8Mbps!

With all the great information with respect to different aspects of our hobby on the Internet, a fast, always-on connection makes a good thing even better. No more dial-ups, and no more busy signals. Unfortunately, DSL services are not widely available yet, and there are limitations. If you're interested in boosting your Internet connection to the next level, one of the best places to get started is <http://www.dslreports.com>. This is a very comprehensive web site chock-full of great

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information about DSL, its availability, speed tests, message boards, etc.

Now that my network at home is on this DSL connection, you should see that the Capital District ARES web site (<http://latenight.net/ares>) loads much faster in your browser. I still have some work to do getting those update pages working the way they should. I'll get it figured out sometime, or I'll die trying; and if you haven't registered your call sign and information in the Capital District ARES database, I urge you to do so at your earliest convenience. This is where our local ARES Coordinators will look for information to establish station assignments in the event of an extended emergency situation, such as tornadoes or hurricanes.

If you weren't able to attend last month's meeting, and I'm sure it's in the minutes below, I reached Pete Cowdrey, KD4HFV, at Leon High School about getting an Amateur Radio club reestablished there. Pete was very excited at the idea, and believes there would be sufficient interest in the student body to warrant the time and effort. As a state employee, I am trying to take advantage of the Governor's Mentoring Initiative (GMI) to help get this off to a great start. It will make things easier on me, as I will have 4 hours a month, during normal business hours, to go to the school and help with getting a station on the air, present programs, etc. A couple of you expressed an interest in helping me with this endeavor – and THANK YOU. If you're a state employee, and would like to help, be available to provide a program, or discussion group at Leon High, contact your agency's Human Resource office about the GMI. You may be able to use Administrative Leave for this worthwhile effort. If you're interested in participating in this "Elmering" program, please also contact me so I can provide you with details. As I write this column, my immediate supervisor approved my request, and I am waiting for approval from the next level. I will stay in touch with anyone expressing an interest in this effort, and will advise you of scheduling and other pertinent information.

Last but not least, this month's meeting will be the Fall Picnic at Tom Brown Park. We'll have hot  
**The Tallahassee Amateur Radio Society**

dogs & hamburgers as usual, and feel free to bring a potluck type item if you wish. I'll bring my HF portable station again, for anyone that wants to throw out his or her call, or chase some DX. Hope to see you there!

Until next month,  
73!

Dave, KG4ACF  
850.877.4046 – home  
850.321.3217 – cell  
[kg4acf@arrl.net](mailto:kg4acf@arrl.net)

## **CURRENT EVENTS**

**David Pienta, KG4DVW**  
**TARS Vice-President**

First a reminder that the Spaghetti 100 will be held on October 21<sup>st</sup>. We hope you can help out with this great biking event.

Also, don't forget that this month's meeting will be at Tom Brown Park for our semi-annual picnic.

I would also like to thank everyone for participating in the hurricane net for Gordon. Everything went very smoothly. Please remember that when a hurricane threatens, it is a smart move to monitor the .655 machine as much as you can.

David Pienta, KG4DVW  
219-6247 – home  
556-4025 – cell  
[weatherman\\_fsu@yahoo.com](mailto:weatherman_fsu@yahoo.com)

## **SEPTEMBER 7 MEETING MINUTES**

**Randall Bishop, KD6UAN**  
**TARS Secretary**

There were 27 people in attendance. One guest - Buck Jackson.

The meeting was called to order at 1930hrs.

Steve AD4E, and Ken KC4TO provided the program:

**“WHAT ARE QSL CARDS AND HOW DO THEY WORK?”**

## **COMMITTEE REPORTS**

**Repeaters:** 146.91 is working and playing the feed from the space shuttle mission. The repeater also has two receive sites that are also up and running. The 6-meter site is having a really hard time. We may have to find some better equipment to support the site.

**OLD BUSINESS** None.

## **NEW BUSINESS**

The National Weather Service received a silver metal award letter and they wanted to pass this recognition on to the local Hams. Please keep an eye on the website.

Thursday Sept. 28, 2000 - advanced SKYWARN class at 19:00 local in the Claude Pepper Bldg.

There is an interest in reviving an amateur radio club at Leon High School. See Dave KG4ACF for more info.

## **Future Plans**

The picnic is planned for the October Club meeting at Tom Brown Park.

November 11, 2000 Saturday - “Tailgate” at Gilchrist Elementary School.

The meeting was adjourned at 21:15.

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*According to TARS Treasurer Kent Hutchinson, KC4TOC, there has been no change in financial position since the last report but there will be activity to report for October. (ed.)*

## **TAILGATE SPECIAL**

**John Love, NZ4QJ**

A tailgate will be held at **Gilchrist Elementary School** November 11, 2000 starting at 8:00 a.m.

Directions: From exit 30 off I-10, proceed north on Thomasville Road to the first traffic light and turn left on Timberlane Road. Then proceed west to the school, which will be on the left. Turn left into the school at the road east of the school and proceed to the rear of the main building. If you miss the first road, go to the end of the school playfield, enter at the entrance, come back past the main building and turn right to the rear of the building. Look for a bunch of good-looking guys. Bring stuff to sell and bring money to buy stuff that others are selling. Hope to see you there.

## **STATUS OF AMATEUR SERVICES**

***Submitted by David Heupel, KG4ACF***

*I urge everyone to file a comment to the FCC requesting that Amateur Radio is granted a primary allocation at 2400 - 2402 MHz.*

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The FCC has assigned rulemaking number RM-9949 to the ARRL’s petition requesting that the Commission elevate the domestic status of Amateur and amateur-Satellite services from secondary to primary in the band 2400 to 2402 MHz. The League filed a Petition for Rule Making with the FCC on July 17. Amateurs already are primary at 2390 to 2400 and from 2402 to 2417 MHz. The ARRL says it’s necessary to secure the intervening spectrum slice “to provide some assurances of future occupancy of the band segments for the next generation of amateur satellites,” including Phase 3D. **Comments supporting or opposing the petition are due by the end of September.**

To file comments in this proceeding, visit the FCC’s Electronic Comment Filing System page, <http://www.fcc.gov/e-file/ecfs.html>.

## PL TONES

*Reprinted from the "Florida Repeater Council, Inc. Newsletter", vol. 8 no. 1, July 2000.  
Submitted by Randy Pierce, KC4YWP*

CTCSS stands for Continuous Tone Coded Squelch System, often referred to as PL [Privacy Lock] (Motorola's trade name). Many repeaters require the use of a PL tone to access the repeater.

Contrary to popular belief, the requirement of a PL tone to access a repeater does NOT mean it is closed. PL is frequently used to preclude nuisance kerchunks in high RF environments as well as helping solve interference problems. Some repeaters may also generate a PL tone on the repeater output so that repeater users who are equipped with a radio capable of decoding PL will not hear other interference sources on the channel that would otherwise open the squelch on the user's radio.

It is up to the owner/trustee of the repeater to decide whether or not to make public the PL tone for a particular repeater. The Florida Repeater Council (FRC) follows the wishes of the owner/trustee in publishing the PL code only when so requested.

The FRC strongly recommends the use of PL on repeaters' receivers. PL is a minor inconvenience when you consider how many potential problems it can eliminate. The use of PL may be required for a coordination to be granted if conditions so warrant, such as proximity to a co-channel repeater, or in an area where band openings frequently aggravate co-channel interference problems.

The FRC has designed a PL tone plan in the hopes that repeater owners/trustees in a given area will standardize on a particular PL tone and incorporate it into their operational plans. The reason for this plan is to make it easier for users to operate the local repeaters in an area, as some older radios are only capable of a single PL tone as compared to modern radios, which can have PL tones selected on a per-channel basis. A PL tone has been recommended for each region based upon actual usage, as listed as follows:

REGION	TONE
NORTH WEST	1Z (100.0 Hz)
NORTH CENTRAL	3Z (123.0 Hz)
NORTH EAST	3A (127.3 Hz)
WEST CENTRAL	4B (146.2 Hz)
CENTRAL	1A (103.5 Hz)
EAST CENTRAL	1B (107.2 Hz)
SOUTH WEST	4Z (136.5 Hz)
SOUTH CENTRAL	8Z (206.5 Hz)
SOUTH EAST	2Z (110.9 Hz)
DEEP SOUTH	2A (14.8 Hz)

You can assist your users in getting PL boards for their radios. Ask any two-way radio shop and they will most likely recommend Communications Specialists, 426 Taft Ave., Orange, CA 92665-4296, Phone: (714) 998-3021. They can provide tone boards for a modest sum that will fit inside most radios, including handhelds. They are available through Amateur Electronic Supply and the Ham Radio Outlet.

See the PL tone area map on the FRC web site at: <http://florida-repeaters.org/frcdist.htm>.

## HISTORY OF SOLAR AND GEOMAGNETIC STORMS

*Article by Paul Harden, NA5N, which was submitted by John Reynolds, AD4DO.*

*While several reference sources were used, the one that might be the easiest to find in a local/university library is: "Solar Flares and Coronal Mass Ejections," S.W. Kahler, p. 113-142, in the "Annual Review of Astronomy and Astrophysics" Vol.30, 1992.*

Observations that sunspot activity follows an 11-year cycle go back centuries. Observations of geomagnetic storms, mostly from auroral activity at mid-latitudes, also go back centuries. However, making the scientific link of this sun-earth coupling is far more recent than you might think.

In 1852, E. Sabine was the first to show the frequency of auroral activity followed by an 11-year cycle, and thus must somehow be linked to the 11-year solar cycle. This, of course, was based strictly

on statistical analysis. It wasn't until 1928 that two astronomers, Greaves and Newton, observationally noted that geomagnetic storms (GMS) seem to occur about a day and a half following a large sunspot group just approaching the sun's central meridian. This apparent connection to solar activity and geomagnetic storms was based on sunspots, however, not solar flare activity.

In 1931, G. Hale drew the first connection between geomagnetic storms and large flares by reviewing past observations. In 1937, J.H. Dellinger was the first to associate shortwave fadeouts and SIDs (sudden ionospheric disturbance) to flare activity, even though at the time they were attributed to increases in ultraviolet radiation from the flares.

One must remember that the 1930s was the decade of explosive growth in the communications industry. The number of AM radio stations went from a couple of dozen to hundreds; transoceanic telephone cables were overloaded with traffic forcing phone companies to explore using HF circuits; everything from ships to airplanes were suddenly using this new "wireless" technology. But not without its problems. These communications companies were expending large sums of money trying to figure out why some frequencies only worked at night, others during the day; what was the source of the static and noise on HF circuits; why some frequencies experienced "fluttering" to occasional periods of blackouts (due to geomagnetic storms).

Many amateur radio operators of this era were instrumental in plotting times and paths that frequencies could be used on an empirical basis, but no real physical explanation had yet been discovered. Carl Jansky was hired to isolate the source of noise and static at 18MHz, proposed by the phone company for transoceanic "wireless" telephone circuits. Noting that the static seemed to peak daily at a sidereal rate, he was able to finally realize the source of this noise was from the center of our galaxy. Jansky is credited as the father of radio astronomy. He was not a scientist or astronomer, but an electronics engineer merely trying to find the source of HF noise for commercial communications.

Another troublesome problem on HF circuits was seemingly unknown causes of very high noise levels to blackout conditions. As mentioned above, it was Dellinger in 1937 who discovered these shortwave fadeouts and SIDs were related to solar activity and geomagnetic storms. Between Jansky, and later Dellinger, it was finally established that there indeed existed a coupling effect from our galaxy and our sun to the earth. This launched an era of interest between communications engineers and astronomers to discover the true physics behind this coupling for predictive purposes. It is noteworthy to mention that these geomagnetic storms, that arrived unexpectedly, affected land-line and oceanographic telephone circuits as well as HF circuits.

These efforts came to an end as a result of World War II. Since these effects were detrimental to military communications during the war, all research done during the war years was cloaked in secrecy. Following the war, research continued again, but independently as astronomers and the communications industry seemed to have lost their mutual interest during the war.

From the 1950s through the 1970s, numerous researchers devised means to strengthen this correlation between geomagnetic storms and solar flare activity, with especially heightened work in 1957 for the International Geophysical Year. Several astronomers developed models of solar flares producing shockwaves to piston-driven energies directed at the earth, all fairly accurate in retrospect, but without any observational proof.

This long sought proof finally occurred in 1973 with the launch of the OSO-7 satellite and Skylab. Chronographs on these two platforms showed large coronal eruptions, spewing huge amounts of solar mass into inter-stellar space, as the result of some large flares. Two astronomers very instrumental in the work of this era were T.J. Gosling and G.A. Dulk. They were the first to realize these flares coincident with coronal eruptions, now called Coronal Mass Ejections (CME), were the particle wavefronts that under favorable trajectories, struck the earth, providing the compression to our magnetic field that caused geomagnetic storming.

Finally, the observational proof of the sun-earth coupling was established as scientific fact, and by observing the sun for these flares and CMEs, predictions of geomagnetic storms were finally possible.

After Skylab and the work of Gosling, Dulk and others, it was obvious that to properly model and forecast solar and geomagnetic storms, real-time imaging of the sun at all wavelengths would be needed. This included sufficient resolution and dynamic range of the instruments for determining both spatial and temporal relationships (the exact position and timing of these events on the sun and in interstellar space). This became the driving force for the host of invaluable spaceborne platforms we now have, such as the GOES, LASCO, ACE, WIND and SOHO satellites.

Now heading towards the maximum of cycle 23, this array of real-time solar imagers are providing data invaluable to astronomers that will be analyzed for years to come in an attempt to understand more fully the physics of the solar phenomenon and the sun-earth coupling.

## ARRL NEWS SUMMARIES

*The following are highlights of recent ARRL News items. To subscribe, ARRL members must register at <http://www.arrl.org/members/>.*

- As authorities ordered the evacuation of some Florida Gulf Coast areas in advance of Hurricane Gordon, Amateur Radio operators went on alert to assist. The Hurricane Watch Net was activated on 14.325 MHz when the storm was upgraded to a Category 1 hurricane. Amateur Radio emergency nets on VHF and UHF as well as regional HF nets were called up as the storm threatened. At one point, the FCC Tampa Field Office declared a voluntary communications emergency for frequencies on 75 and 40 meters. While Gordon came up quickly, Florida Amateur Radio Emergency Service and SKYWARN teams were not caught off guard. SKYWARN ran nearly continuously all weekend, forwarding more than 100

severe weather and damage reports. Hams also went on alert in Northern Florida, but Gordon didn't show. "We dodged another bullet," reported Capital District EC Kent Hutchinson, KC4TOC. "We planned, and we were ready."

- Two of the victims of mob violence September 6 in West Timor, Indonesia, were Amateur Radio operators. United Nations relief workers Carlos Luis Caceres, KD4SYB from Jacksonville, Pero Simundza, 9A4SP, of Croatia, and Samson Aregahegn of Ethiopia, died when thousands of armed pro-Indonesian militiamen and their supporters stormed a UN office in Atambua, West Timor. Memorial Web sites for the two amateurs killed were established at <http://www.qsl.net/kd4syb> and <http://www.qsl.net/9a4sp>.
- David Myers, W4USA, of Orange Park, Florida, has been selected as the 2000 Florida State Law Enforcement Officer of the Year. Myers heads the Fraudulent Identification Program and is recognized as one of the nation's leading experts.
- Atlantis blasted off on schedule recently from the Kennedy Space Center delivering amateur VHF and UHF hand-held transceivers for the multi-national ARISS program, as well as a TNC for packet, a specially developed headset and signal adapter module plus power adapters and interconnecting cables. However, no Amateur Radio operation will take place from the ISS until the Expedition 1 crew arrives in early November. A Russian call sign, RZ3DZR, has been issued for the ISS ham radio station. For more information about Amateur Radio on the ISS and SAREX, visit the ARISS Web site, <http://ariss.gsfc.nasa.gov/>.
- Hams in Northern New Jersey and just up the Hudson River in Dutchess County, New York, rallied to provide assistance as severe

weather and flash flooding struck the region twice in August. At one point, Hams were called on to replace failed landline communications, involving a combined effort between the county RACES and local ARES operators.

- The launch campaign for the next-generation Amateur Radio Phase 3D satellite is tentatively set to go into space aboard an Ariane 5 rocket no earlier than November 4. A specific launch date has not yet been announced. More information about Phase 3D is on the AMSAT-NA Web site, <http://www.amsat.org/>.
- The IARU Administrative Council has selected “Providing Disaster Communications: Amateur Radio in the 21st Century” as the theme for World Amateur Radio Day 2001 next April 18. The selection was designed to help dispel the notion that technological changes have bypassed and diminished the future role of the amateur services. The IARU also wants to reaffirm the importance of Amateur Radio as a resource to help mitigate the effects of disasters by providing communications to aid humanitarian efforts.

### **Advice for Northerners Visiting or Moving to the Southern States** *Submitted by Randy Bishop, KD6UAN*

If you are from the northern states and planning on visiting or moving to the South, there are a few things you should know that will help you adapt to the difference in lifestyles:

If you run your car into a ditch, don't panic. Four men in a four-wheel-drive pickup truck with a 12-pack of beer and a tow chain will be along shortly. Don't try to help them, just stay out of their way. This is what they live for.

Don't be surprised to find movie rentals and bait in the same store. Do not buy food at this store. Remember, “ya'll” is singular, “all ya'll” is plural,

and “all ya'll's” is plural possessive. Get used to hearing “You ain't from around here, are ya?”

You may hear a Southerner say “Ought!” to a dog or child. This is short for “Ya'll oughta not do that!” and is the equivalent of saying “No!”

Don't be worried at not understanding what people are saying. They can't understand you either.

The first Southern expression to creep into a transplanted Northerner's vocabulary is the adjective “big ol',” as in “big ol' truck” or “big ol' boy.” Most Northerners begin their Southern-influenced dialect this way. All of them are in denial about it.

Be advised that “He needed killin'” is a valid defense here.

If you hear a Southerner exclaim, “Hey, ya'll, watch this,” stay out of the way. These are likely to be the last words he'll ever say.

Do not be surprised to find that 10 year olds own their own shotguns and are proficient marksmen. Or that their mammas taught them how to aim.

### **EDITORIAL POLICY**

ANY and ALL submissions made by members in good standing will be printed as space permits. These articles are in NO way to be taken as representing the opinions of the group as a whole but only as the opinions of the author whose name and call will be clearly stated in each article. Submissions for *The Printed Circuit* may be emailed to: [carliane@msn.com](mailto:carliane@msn.com).

Don't forget that we now have *The Printed Circuit* in electronic format. If you would like to give this a try first before making a decision, e-mail me at [carliane@msn.com](mailto:carliane@msn.com). As you know, the money saved on copying and postage can then go to better equipment and other club activities.



TO:

## Activities/Events/Info

DATE/TIME	WHAT	WHERE
October 5, 7:00 p.m.	Semi-Annual Picnic	Tom Brown Park
October 7, 6:00 a.m.	Bahia Shrine Tail Gate (contact: <a href="mailto:ky4e@excite.com">ky4e@excite.com</a> or <a href="mailto:king4con@netzero.com">king4con@netzero.com</a> )	Orlando
October 14, 8:00 a.m.	Ham/Computer Fest (contact: Jay Strom at 727/822-9107 or <a href="mailto:k9bsl@juno.com">k9bsl@juno.com</a> )	Tampa
October 21, TBA	Spaghetti 100	North Florida/South Georgia
October 28, 9:00 a.m.	Jacksonville Hamfest	Go to: <a href="http://www.ccse.net/~lrich/jaxhamfest.html">www.ccse.net/~lrich/jaxhamfest.html</a>
November 11, 8:00 a.m.	Tallahassee Tail Gate	Gilchrist Elementary School
Sundays, 8 p.m.	ARES Net	Talk-in: 146.655
Sundays, 8:45 p.m.	APRS Net	Talk-in: 144.390
Fridays, 11:30 a.m.	Lunch	Kosta's Subs & Salads S. Adams & Oakland
Saturdays, 8:30 a.m.	Breakfast	Golden Corral, N. Monroe Street
Any Time Chat	TARS E-Group	<a href="http://www.egroups.com/group/tars">http://www.egroups.com/group/tars</a> .