TARS
Tallahassee Amateur Radio Society
P.O. Box 37127
Tallahassee, FL
32315

The Printed Circuit

Newsletter of the
Tallahassee Amateur Radio Society
April 2013
Visit ***K4TLH.net***

JOIN IN ON *TOSRV!*

The Premier 2-Day Bike Tour of the South!
Your Ham Radio Adventure Awaits – April 20-21 *See Page 6…*

JUMP KIT SHOW-N-TELL

Ready When All Else Fails? *See Page 4…*

THE RADIO REUNION

The Grand Gathering of the Radio Clubs! – April 27 *See Page 7…*

April's Meeting - Thursday, April 4th, 2013, 7:00 p.m.

Please join us at the American Red Cross facility located at 1115 Easterwood Drive. *Page 4…*

The Tallahassee Amateur Radio Society meets at 7:00 p.m.
on the first Thursday of every month.

Talk-in is on the K4TLH repeater 147.030 (+.600, tone 94.8)

Upcoming Events

*See the **K4TLH.net Calendar** for more information*

April		May	June
Apr 2 (Tuesday) *- TESTING -* **Apr 4** (Thursday) *- TARS Meeting - The Jump Kit Show Off!*	**Apr 20-21** *- TOSRV -* **Apr 27** (Saturday) *Radio Reunion*	**May 2** (Thursday) *- TARS Meeting - Let's Plan For Field Day…*	**Jun 6** (Thursday) *- TARS Meeting -* **Jun 22-23** (All Weekend!) ***- FIELD DAY!!! -***

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Editor's Message

The Amateur Radio Bargain

As editor for the TARS newsletter, I enjoy the opportunity each month to impart a little wisdom for the sake of our hobby, and hopefully someone actually reads it. This month though, I speak to you as Vice President of TARS on a few issues concerning the good of the club. There are three things I wish to bring to light; our financial standing, what we get out of TARS and what we put in.

Many club members are not paying their dues and some have voiced that $15 is too much! Some still think they only need to pay $1.25 a month and whenever they want to. The TARS Treasurer tells me our finances are not looking that good and the coffers are drying up! Need a shock? We may actually fail financially unless we step it up. Last year we had to transfer $500 from savings for Field Day expenses. Membership to TARS is still a 'steal' compared to other clubs that charge $25 or more. What if we need to repair or replace a repeater? I think many members actually believe someone's going to slip in a donation to cover it when the need arises. Your love and stewardship of your radio club should be an honest reflection for the love of your radio hobby. Not everyone is 'well-to-do', and many have financial issues of their own. To them: if you can, please consider paying your dues. But some folks are 'well-off'. And to them I'll just say: Donate!

Radio club membership is a Good Deal!

If you're a member of TARS or even still considering membership, what's in it for you? In turn for providing emergency communications and harboring international goodwill, the FCC grants you license to communicate on bands of frequencies which could make the government *mo beaucoups* of cash if they chose to sell it! First, TARS gives you a network of hams to associate with in our area, but that's a given. Here are some other benefits: Great programs for the meetings. We've had some very interesting speakers and topics. Though, lining up speakers and their programs for the meetings is the job of the Vice President, but really, most of them have come about with help from the membership.

The TARS newsletter - The Printed Circuit graces the inbox of over 300 recipients, and you don't even have to be a member, or a paying one for that matter to receive it! In fact, it may actually be instrumental, besides word-of-mouth in bringing members to the fold. The newsletters let everyone know about different club activities as well as other ham radio topics of interest. There's club news as well as vital information. Not to mention the great tutorials from our many *Elmers*. But guess what? It's *your* newsletter - and you're allowed to write for it too... you got something of interest that's ham radio related - you'll have 300+ readers as an audience!

Going home so soon? We'll have fun!

I've noticed something odd; over the years, each month, our monthly TARS meetings have enjoyed good turnouts. For a town of our size, 30-40 attendees on average has not been too shabby. But when it comes to getting volunteers for our service events, and finding even Luke-warm bodies to enjoy free on-air use of their license, it's been like pulling teeth! …Did I fail to ever mention that TARS lets you enjoy your license? Sure. If you need a break from tailing bicycle racers and other grueling public-service work, TARS gives you plenty of chances to sit back and call 'CQ'. From our Get-On-The Air-Days to the grand weekend fiesta known as *Field Day*. If you get the hankerin' to 'tune in Tokyo', TARS has a rig and antenna with your call sign virtually stamped on 'em!

So I'm under the impression that TARS members in general are very hard workers, but happen to be very mic-shy. In fact, I know mic-shy hams! Yes, we'll have a great turnout for setting up stations at Field Day, but you still end up with the same five people making all the contacts through the night. I know we live in a day and age when the callings of work, family, church, illness and school demand more of our time and energies than have to give, and I can truly attest to that.

But, I invite you for just a moment to close your eyes and remember what it was like when you were a kid - spending the night with all your friends together at a camp site, or maybe in front of a television to watch that horror movie marathon. Maybe you were a Scout, or it was summer vacation... Did you really worry about getting home to bed on time? Did you worry about getting in trouble for being too loud or making a mess? *NO!* You were there to last through the night,

wide-eyed on caffeine and candy to have all the fun with your friends you could steal. Are your precious, more cherished memories of youth filled with afternoons of doing homework? Of course not – it's of the fun moments! Why not cultivate the same spirit, though more tempered and prudent in your maturity, with the on-air club events? You won't regret it!

Called to Serve.

Though dues and donations help keep the gears of the TARS machine rolling, it's the *service* aspect of TARS that marks the true nature of our organization. The TARS club is an underappreciated asset to our community. We both sponsor and participate by providing communications for many events throughout the year. To mention a few: the Gulf Winds Track Club *Tallahassee Marathon*, the Capital City Cyclists *Spaghetti 100*, *Blueline 100* and 200-mile *TOSRV* events. We've assisted ARES with the Annual Hospital Emergency Exercise and we've even done the *EAA445 Quincy Fly-In* in recent years and helped the Boy Scouts of America with many of their *Jamboree On-The-Air* events. Other groups such as the American Red Cross, and public-safety events such as *SKYWARN Recognition Day* and the airport exercises have benefitted from our assistance.

As an ARRL affiliated club, we're a viable and integral partner with ARES, and have assisted with local ARES events such as the *Simulated Emergency Test (SET)* exercises. Our assistance and member participation in these events not only allow us to serve the community but gives us the practice needed to be more prepared for emergencies. Other than community service, club members unite to help form public policy on important issues relating to amateur radio usage and pass their opinions on the appropriate legislative bodies. The TARS club is an effective platform for public discourse.

Spreading Goodwill is the law!

And finally, I feel the need to address a concern to the wellbeing of our club. In my time as a ham and member of TARS, I've had the misfortune to witness the squabblings and backbitings of certain individuals, not only within the ranks of TARS but 'other' service organizations, and even between the groups as well. I've sat back and listened with uneasiness to the on-air 'differences of opinions' between these hams whom are most likely serving their own self-interests rather than the good of ham radio. I'm aware of the ugly interpersonal histories between these 'characters'. On the surface, they call this 'politics', and someone's agenda or perspective rubs someone the wrong way. Public discourse and debate are not only healthy interactions but vital. However, often hurt feelings and grudges are the by-product. What is really at the root here is the sin of pride and the ill spirit of contention. I'm not the judge here, neither is it my personal business to intervene - but as TARS vice president, the wellbeing of the collective membership *is* my concern. Folks - I can't begin to count the number of hams (real people), I once knew that no longer attend TARS meetings or wish to deal with ARES or other groups due to hurt feelings and cross opinions. …I'm not 'cool' with that.

Many clubs serve as the hosting agency for local radio-oriented emergency communications programs such as ARES, CERT and SKYWARN, but ultimately, one group's effectiveness is inseparably linked to the other. Because let's face it, pretty much the same people share membership between these groups and most of all, will share the same pool of operators when the emergency call goes out! In the case of TARS and ARES, we are both under the same umbrella of the ARRL in one capacity or another. It's been said that you 'can't wear two hats at once', but this one is an ARRL hat.

Remember that we have an FCC part 97 mandate to proctor '[international] goodwill', the implied meaning here is that Amateur Radio is to be used as a vehicle for fellowship with an air of communication that is both conciliatory as well as positively constructive. Can we even feel easy about spreading 'international' goodwill, if we fail to champion it amongst ourselves? With that being said, I can also acknowledge there are many calm and competent voices within our ranks who stand up for our better interests and often put things in perspective. We're the hobby of *"73s"* - The hobby of fellowship, and these good people foster this image. Perhaps the biggest value to radio club membership, whether it be TARS, TARC, SPARC or whatever – is fellowship. 'Fellowship' in the greatest hobby in the world – its fellowship that makes joining the hobby and club worthwhile!

The ideals of *FCC part 97* are the *bargain* we must make to hold our license grants. Our communities stand the most to gain from our active and honest participation in the hobby, but they may stand the most to lose unless we put aside our

non-constructive differences and our selfish pride and ambitions. We must consider honoring our end of the bargain. The FCC lets us 'play radio', and in turn we must be supremely ready for emergencies and active in showing *goodwill* to all.

By the way: TOSRV is in a few days. Don't give yourself pause to see if you *can't* find time for it. Just make the time and call Alan to sign up! There's been some heat concerning whether or not this was a "TARS" or "ARES" event… Peanut butter or chocolate, ***who cares*?** If you hold an Amateur Radio license, you're there as a "ham". The cyclists want "hams" to watch their backs, not union picketers. If you're ARES, honestly use it as an ARES training exercise. If you're TARS, then just got out and enjoy the work. As a ham operating at a service event your prime directive is to serve your agency. … go and serve!

Also: Can someone please help another ham out? Paul Van Nostrand, W4HVD, simply needs a ride from to and from the TARS meetings. He lives on Lifford Circle in Killearn Estates and he'll even help with gas! He's 85 years old and has not driven for over 25 years but would really like to get to the TARS meetings. Imagine yourself sitting at home missing all the fun… *Just call Paul* at: 893-4309.

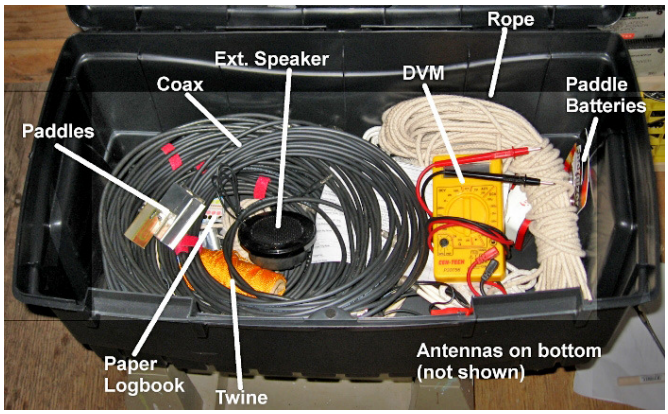
73, Mike Maynard, K4ICY k4icy@arrl.net (TARS VP/Editor)

Speaking! March's TARS Meeting Presentation

Jump Kit *Show-'n'-Tell* Night *April 4, 2013*

Join us at the **April 4th** TARS Business Meeting, 7p.m. at the Red Cross and **bring in your Jump Kits** and Go Kits! We plan on arranging the tables at the Red Cross to allow hams to display their kits so that all members can walk around the room to check each one out. **Dave Davis, WA4WES** will also provide an informative presentation on Jump Kits.

Do you have a ready Jump Kit? Whether you are an ARES volunteer or a regular walking-around radio enthusiast, having what you need at arm's reach, to set up a station when 'all else fails' may be a matter of life and death! Come to the next TARS meeting and see for yourself what other hams are doing to be prepared! Bring your kits and show them off.



What's in a Jump Kit? In a nutshell, whatever radio mode you're into, make sure you have enough parts and battery power to last (at least) *72-Hours*. Survival goods such as food, water, first aid, money and clothing should be made to last 72-Hours. Include ID's such as your driver's license and 'ham ticket', as well as phone numbers, repeater frequencies and rig instruction manuals… Each kit is up to you, but please consider preparing and maintaining your own kit. Whether is fills a nap-sack, a plastic container or your car's trunk, get your gear in it and *get ready!*

LEARN HOW YOU CAN *BE PREPARED* – SEE YOU AT THE NEXT TARS MEETING!

The Meeting — April's TARS Business Meeting

Join us (the first Thursday of the month ***April 4th*** - at ***7:00 PM***) at the Capital Area Chapter facility of the ***American Red Cross***. Topic of discussion will be on "Jump Kits" and portable/emergency communications. Bring in your Jump Kits for 'Show-N-Tell' and see how other hams prepare to operate when the power goes out and things get rough! – *Don't miss it!*

The Tallahassee ***+ARC+*** is located on 1115 Easterwood Drive (off of Capital Circle NE, just south of Hwy 90) between the animal shelter and the new '911' county dispatch center, in the vicinity of Tom Brown Park and the National Guard Armory.

Bring your friends and family. The TARS meetings are welcome to hams and non-hams alike. Interested in ham radio and wish to find out more? Be our guests and let us tell you all about our hobby.
"Talk-in" is on the K4TLH repeater 147.030 (+.600, tone 94.8). ***Look forward to seeing you there!***

TESTING! TESTING! TESTING! — Get Licensed – Get Upgraded

TARS – *ARRL*:
The next TARS license exam session will be held **April 2nd**.
Stop by Tuesday, April 2nd at The American Red Cross HQ, 1115 Easterwood Drive, near Tom Brown Park. The session typically starts at 7:00 pm. Bring a photo ID and $15, cash or check.

TARC – *W5YI Group*:
Offering testing once a month on the third Saturday of each month **(April 20th)** at the *Thomas County EOC* located at *1202 Remington Avenue* in Thomasville, GA.
The cost is $14 and two forms of ID are required, one with a picture. Children require a SSN to process. For more information please visit: http://thomasvilleamateurradioclub.com/ve-team/ or contact **Mike Brown, KE4FGF** at ke4fgf@arrl.net or phone ***229-226-5060.***

The Lunch Bunch — All The *Ham* You Can Eat!

Join us Fridays, about 11:30 a.m., at the **Golden Corral** on N. Monroe Street for lunch! The Lunch Bunch gathering on Fridays is a grand opportunity, not only for folks to meet and greet each other, but to discuss topics of interest that can't really be done in the club setting – the Lunch Bunch is waiting for you! A *club away from the club*, this is sometimes the only chance some hams get to make that "eye ball" contact when they're not able to make the TARS meetings. Invite your friends and family to join in and please think of the hams with special needs that would also enjoy the good company of other hams. Providing a little transportation maybe all that's needed. Here's your chance to get that HT programmed! Bring your appetite and great stories and enjoy the grand buffet!
Just look for all the antennas outside… ***See ya' there!***

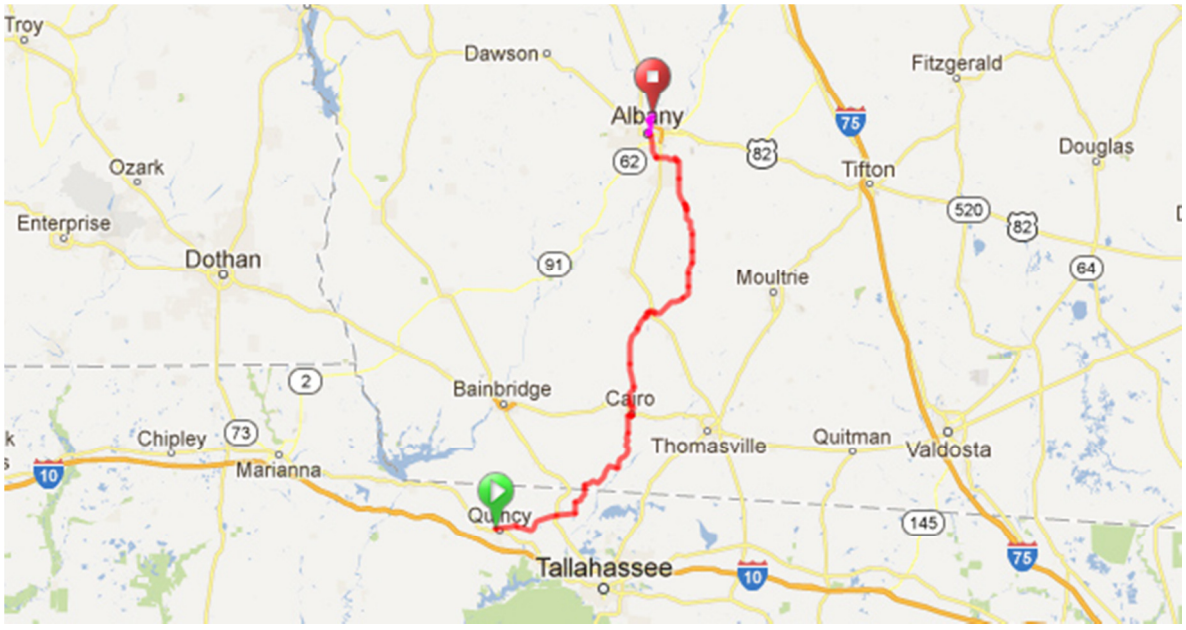
TOSRV South

URGENT! - HAM VOLUNTEERS NEEDED

Alan Torledsky, W1ABT is in need of ham volunteers willing to assist the TOSRV event! Positions are especially required for the Sunday afternoon trip from Cairo, GA back to Quincy, FL. and a couple of adventurous hams to accompany Alan in operations running the course to Albany, GA and back.

Please keep in mind that whatever 'hat' each of us wears, we are all 'hams', and groups such as CCC depend on our watchful eyes and skillful expertise. The *Tour of Southern Rural Vistas*, a two-day fully supported bike tour across the backroads of North Florida and South Georgia, takes place on ***Saturday, April 20th*** through ***Sunday, April 21st, 2013***. There are many positions available for hams with mobile/vehicle setups, and ride-along positions as well. Cell phone coverage is spotty through some of these areas, and the rural roadways are often long and sparsely populated, so the watchful assistance of hams is appreciated.

TARS usually shares the support of TOSRV with the Thomasville and Albany radio clubs on the route north of Cairo, GA. The distances are great and radio operations can be quite a fun challenge. Basically, an amateur radio mobile adventure! **Alan Torledsky, W1ABT, needs to be contacted as soon as possible** so that planning can be concluded torledsky@msn.com - *there are only a few days left!!!*



Are YOU Coming to the Radio Reunion?

The time is rapidly approaching for the ***2013 Radio Reunion***. Hopefully, you and your family are already making plans to attend!

This is mainly a social event, designed with the idea of getting everyone together for "eyeball QSOs" to allow you to see "the face behind the voice."

This is mainly a social event, designed with the idea of getting everyone together for "eyeball QSO's" to allow you to see "the face behind the voice." Many folks from other radio clubs in the region are sure pay a visit!

With that in mind, the only radio present will be the talk-in station, which will be listening to the 147.195 Repeater (+offset, with a 141.3 Hz. Tone).

The other reason for '***no radios***' is to make sure the "non-ham" members of your family will attend with you, and we want this to be a true family event!

The main dish is Barbecue smoked chicken, **and we need an RSVP from you by April 15th**, so that we can make sure we have enough to feed the group, and you can send that to w4ucj@arrl.net. We also ask that you bring a side dish to help fill out the table, and we'd like to know what the dish is, so we have a good mix and not just *chicken and cake* (is that REALLY a bad thing?). If you need a suggestion for what we need in side dishes, just ask with your RSVP.

For those who are not "kitchen savvy," a donation jar will be available if you simply want to help offset the cost of the event, without doing any cooking. We'll be eating at about 2pm and the date is the ***final Saturday in April, the 27th***. The event will take place in the social hall of the ***Morningside Methodist Church***, which was the location of the first Radio reunion, held in 2008. The church is located at 2007 Smith Avenue, in Thomasville. A map to the location will be on our website: http://thomasvilleamateurradioclub.com

We promise a good time, with great food, so make your plans now to load up the family and join us on April 27th for the Annual Radio Reunion in Thomasville…*you'll be glad you did!!*

Best Regards, ***Mike, KE4FGF - TARC President***

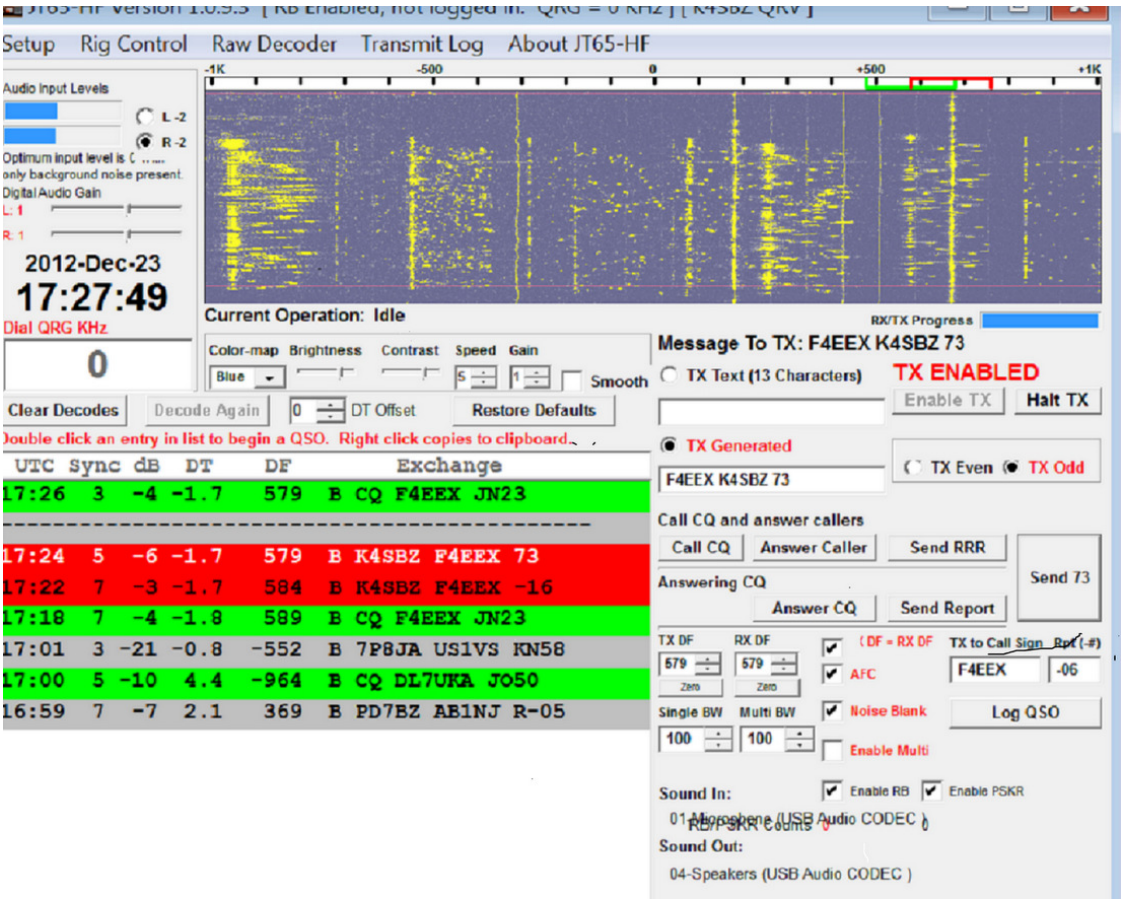
Graduate to JT65-HF - By Stan Zawrotny, K4SBZ

At the January TARS meeting, I presented an overview of HF digital communications. In that discussion, I stated that PSK31 was the most popular of the HF digital communications and two months ago I wrote an article about getting started with PSK31. For those of you that have tried PSK31, you are now ready to graduate to the second most popular mode – ***JT65-HF***.

What is JT65-HF? JT-65 is one of the WSJT ("Weak Signal Communication, by Joe Taylor") digital modes. Joe Taylor, K1JT, is an astrophysicist who has received a Nobel Prize in physics for his studies with pulsars. The WSJT modes include FSK441 for meteor scatter, JT6M for ionospheric scatter, JT65 for EME (Earth-Moon-Earth) communications on VHF/UHF, and the JT2, JT4 and WFPR experimental modes. Although JT65 was originally designed for VHF/UHF, JT65-HF is an implementation of the JT65 protocol with an emphasis upon its usage in the HF Amateur Radio bands.

Why Use JT65-HF? The thing that makes JT65-HF so special is that the protocol that enables it to be used for Earth-Moon-Earth (EME) communications (moonbounce), gives us a communications mode that will allow us to carry on QSOs with signals that are below the noise level on HF. And, like PSK31 and the other digital modes, you don't need high power for JT65-HF. Most contacts are made with less than 25 watts. So if you are interested in working DX with low power and average antennas, here is a great mode!

How Does It Work? JT65-HF QSOs are not your everyday QSOs. A typical QSO consists of a series of one-minute transmit/receive sequences, each starting precisely on the minute and lasting for about 48 seconds. Each station transmits only a maximum of 13 characters at a time. For example, if you look at the accompanying screen shot, you can see F4EEX calling CQ at 17:18. I answered him (you can't see my transmissions) at 17:21. He replied to me at 17:22 with a signal report of 16 db. I sent "73" at 17:23 and he sent his 73's at 17:24. He is back calling CQ again at 17:26. The JN26 following his callsign is his locator grid.



As you can see, JT65-HF is not a conversational mode. There is no ragchewing here. But if you are looking for DX, it's a winner. As an aside, if you are on the lazy side, there is a positive here too. If you set the software macro to call CQ, you have to set it to call on an even or odd minute. It will then continue to call every even or odd minute for the next half hour, while you read a magazine or do something else. All you have to do is keep half an eye on the screen for a red line to pop up signifying that someone is answering your CQ!

What Do I Need? Operating JT65-HF is not expensive. All you need is your standard transceiver, antenna, PC, a soundcard interface and the JT65-HF software. Out of that, the only thing that might cost you some additional money is the soundcard interface, which is the same one that you bought for PSK31. I'm assuming that you have the transceiver, PC and antenna. As I mentioned earlier, you don't need high power or a beam antenna. 25 watts or less and a dipole or a vertical will do well. The software is free. It can be downloaded from http://jt65-hf.sourceforge.net/.

Get Started Now! Download the JT65-HF software and tune to the most active frequency which is 14.076 mHz USB. The website for the JT65-HF software will fill you in on many of the details about the mode. Google JT65-HF and learn a little more about it. There are some books in the ARRL and CQ Magazine bookstores on digital communications that will provide additional information about JT65-HF and the other modes.

Now that you are hooked on PSK31 and have graduated to JT65-HF, there are other exciting HF digital modes to explore. Their software is also free. They are fun. They are contagious! Look for another article about a different digital mode in a future newsletter.

Stan, K4SBZ K4SBZ.Stan@Gmail.com

From The Freezer Elmer novelties and other frozen treats from Mike Maynard, *K4ICY*

Choosing the Right Co-Axial Feed Line Cable

In my last edition, as part of my New Ham's Antenna Series, we dealt with station grounding. Now it's time to move up in the world and get our signal from the rig to the antenna. The question always arises with new hams: *what kind of co-ax should I get?* You'll no doubt be bombarded with facts and figures that will make your head spin. As an Elmer here, I'll try to give you the 'condensed guide' to choosing station co-ax. If you're a new ham, you shouldn't have to worry too much about what to string up just to get on the air, as long as it performs decently.

So when choosing the right co-ax feed line for the job, you'll have to consider factors such as your operating frequency, amount of power, length vs. loss, and stealthy-ness (for you homeowners.) Yes, different co-ax performs better for different frequency ranges, and each type of co-ax cable has what's called a "velocity factor" which basically determines power loss (or attenuation) of your signal for any given length. And the power loss factor increases with frequency too!

If you wish to have as little power lost as possible, I'd like to suggest using "ladder line" which comes in a few styles and types but has their own installation considerations. Many hams still prefer to use it. Co-ax is often preferred, despite its setbacks for many reasons; including weather resistance and the ability to be routed around metal structures. There are two mainstay types of co-ax for basic Amateur Radio use, and they are named by alpha-numeric designations: **RG8/U**. It's great for home use, but not very stealthy for covenant controlled properties, as it measures nearly half an inch in diameter. Then there's **RG58/U**. it's slightly thinner in diameter than the stuff used for TV cabling in your home at about 3/8 inch dia., so it's great for packing in a jump-kit. But its more compact size comes with a price: RG58/U at mid-HF frequencies has around 2 dB power loss per 100 feet of length, which means if you put 100 watts in, your antenna is only going to see around 63 watts! That's only 2/3 of your signal. Where does the rest go? Why, in the form of heat, making this a tasty treat for squirrels to gnaw on!

If you're going to work with longer lengths, especially over 100' try RG8/U. At around 1.2 dB rated loss, you'll lose just a quarter of your power - down to 75 watts at 100 watts in at a length of 100'. RG58/U and RG8/U are generally the more cost effective coax because of supply and demand from the many hams out there. But just be careful about the quality of the coax sold. Visit *eHam.com* or talk to an Elmer to go over the various possible quality pitfalls; such as the type of inner-copper braid, dielectric material, and types of insulation, which by the way come in varieties that you can bury in dirt and even leave out in UV-intense sunlight. Both have a rated impedance of 50 ohms, which means they

should match electrically to your transmitter's output circuits. By the way, the "RG" stands for "Radio Guide" and the "/U" stands for Universal, which are WWII era government designations. "MIL" or "M" means mil-spec.

RG8-Mini and *RG8/X* have the lesser loss factor of RG8/U and is about the same diameter of RG58/U, it's much more expensive, but worth it for more compact EmComm jump kit use. *LMR600* has become a favorite of hams with premium station setups. It's nearly the same diameter as RG8/U but it's expensive, however, at 0.25 dB of loss in the mid-HF range, if you can afford it, the low loss may be worth the coin to you. RG-213/U is an inexpensive alternative for many hams, but it has the unfortunate combination of RG8's thicker size with RG58's loss. If you can save up a little more for RG8/U, you'll thank yourself later.

RG-174/U is attractive because of its very thin diameter of only a 10th of an inch, but with its extremely high loss should only be used for short runs as RF-shielded jumpers inside of homebrew equipment or in your vehicle where lower power equipment is to be used. Don't pack this kind in your jump kits and expect to perform well. I need to note that the types of coax I've mentioned here are **not** usually rated for more than 500 watts of RF power. If you're going the "big gun" route and would like to use a linear amplifier on a precision antenna system, then I'm sure you're already knowledged on what to use. If you do your research before buying, you'll be happier in the end – and with more contacts in your log.

Personally, I use RG8/U at home and in the yard, while I pack RG58/U for portable stations and my jump kit.

There are plenty of sites dealing with coax and charts available to compare specs:
http://en.wikipedia.org/wiki/Coaxial_cable or http://www.w4rp.com/ref/coax.html are a couple, http://www.thewireman.com/ is a great site. Check out the *Coaxial Cable "Technical data table"* PDF in their 'Products' menu. Well, this should get you through the next phase of installation for your first HF antenna. But I'll have to leave the soldering of the dreaded PL-259 connectors for another article!

73! DE Mike, K4ICY k4icy@arrl.net

A *Newcomers* Guide to HF - By Phil Ashler, N4IPH

During the past few months we have had several new "hams" enter the hobby through our Technician Class and others up-graded their license class by attending Ivan's General License discussion course. Hopefully they'll have the opportunity to operate on the HF Amateur Bands, experiencing the excitement of talking to someone thousands of miles away using their own call-sign!

I'm sure we all have our own favorite Amateur band of operation for one reason or another as well as our favorite mode of communication. Patrick Tice WAØTDA, has written a very good article for the *HandiHam* group: "Learning the Bands can pay off with a better Ham Radio Experience" HandiHam-Learning the Bands. The HandiHam group has been experimenting with a 'remote-base' software client for the past couple of weeks. One interesting note from Pat: "*Sometimes the stations are tuned to what essentially a dead frequency for many minutes at a time and the user seems to be tuning around in a futile effort to locate on-the-air activity*."

This raised a question with Pat*: "What do newcomers to the HF bands really know, or not know, about which bands are most likely to be open and useable at any given time of day?"* We all know that band conditions are subject to change for a variety of reasons; the time of day and season of the year, the sunspot cycle. We learn in studying for our first Amateur License that sunspots can affect certain bands. Thunderstorms can cause static, atmospheric and extraterrestrial conditions such as solar storms and tropo-ducting can allow signals to be tunneled over greater distances especially in the higher frequencies (also in the

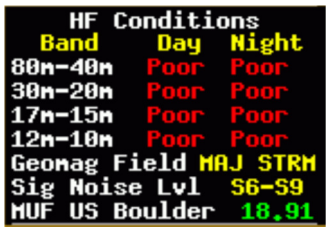
VHF & UHF portion of the spectrum). There are a number of factors that can determine when and where you can make reliable contacts with other amateurs in different parts of the world.

Let's consider a common scenario for many new hams: You just received your Technician Class License, purchased a rig (new or used) and wanted to try your hand at HF voice. Ten meters contains the only portion of RF spectrum you would be allowed to use for voice with your Tech license. You carefully measure a 10 meter antenna and take great effort to get it up in the trees. You find you have a fairly good SWR and sit down to try for that first contact. You turn on the rig, adjust the volume and start tuning from the bottom of the 10 meter band up looking for a signal… nothing. Nothing is heard! You check your connections and follow the feed line back outside to the antenna - it all looks ok. But your ears don't fool you, neither does your S-Meter! You can't even hear one of those innumerable 10 meter beacons! You drop down to 15 or 20 meters to check if maybe the problem is with your receiver and low and behold; it sounds like the whole world is talking to each other. But they're outside of your privileges. You know now your rig and antenna system is working, so you head back up to 10 meters and start carefully tuning around looking for that 'first HF contact'. Still, all you hear from the speaker is background white noise. *How would you feel?*

Hopefully as a new ham to HF you don't give up on 10 meters – or HF for that matter. We are nearing the *solar maximum* during the current cycle and some even predict we may have a double-maximum before the downward trend in the next 5 years to the *solar minimum*. **Now is the time to get out there and make those contacts!!** All you need is a modest 16.5' dipole, some coax and very little power to work DX when the band is open. I can remember one of my first 10 meter contacts a number of years ago. The op was sitting on the hood of his car only using an HT through a local repeater which had a 10 meter link. He was at *Waikiki Beach* on the island of Oahu in the Hawaiian Islands!

We have a number of newly licensed Amateurs in our area that have gone through our classes and have been attending our monthly meetings. We have re-started our Saturday morning ***Get On The Air - Day*** program to provide a chance for both newly licensed hams and others who haven't experienced HF to try their luck at working some DX. We've had a number of HF-experienced hams ready to assist and several stations ready to go - but only a few took the opportunity to come out and give HF a try. We'll be having another Saturday morning *GOTA-Day* event at the Red Cross parking lot shortly after the next VE Testing Session, on the morning of April 6th in April 2013. (Tentatively planned – an announcement will be released via email. –ed.)

What's a new, non-experienced HF operator to do? Well, ask your Elmer! Don't have one? Go to H4TLH.net and contact any 'Elmer' on the list, and good advice and help should be not too far. Also, you can look online through some of the many resources available: *HamUniverse* has a very good article on 'band characteristics' and when the bands are likely to be open, during what time of the day and what season of the year. Check this link for the article http://www.hamuniverse.com/hfbands.html. There's another article at HamUniverse concerning 10 meters and the New Technician: http://www.hamuniverse.com/10meterinformation.html. There's a good PowerPoint presentation by W9XT on HF at http://www.w9xt.com/page_talks_hr_talk.html. VE2XIP has a very extensive article on 'A Beginners Guide to HF Propagation' http://ve2xip.cactus.net/?p=1526. I did a quick search on YouTube for videos dealing with HF Operation and found a few that may be informative. In the past the ARRL has published a few good articles on HF Operation, so if you're an ARRL member do a quick search on their 'QST Archives'.



Just before I finished this article I decided to check the current *band propagation* conditions posted on the internet at http://www.solarcycle24.org (W4HM) to see what bands are 'open' Just my luck the current data showed a Major Solar Storm with S/N level of between a S-6 and a S-9! *Are conditions improving?* ***See you on the HF Bands!***

de Phil, N4IPH philashler@comcast.net

TARS Officers

Who's in charge here anyways? Positions available – Enquire inside…

President: **Dan Moniz, KI4HGO**
Vice President: **Mike Maynard, K4ICY**
Secretary: **Brady Lyon, KJ4YSP** (candidate)
Treasurer: **Nick Adams, W4EAF**

TARS Committees:
Repeater Trustee #1: Randy Pierce, AG4UU
Repeater Trustee #2: *Vacant*
Newsletter Editor: Mike Maynard, K4ICY
Equipment Manager: Steve Welsh, AD4E

Education: Phil Ashler, N4IPH
Testing Coordinator: Alan Terrell, N4KGT
Webmaster: Melissa Raulston
Public Information Officer: *Vacant*

TARS Elections – Will be held at the June 2013 Business Meeting. A special elections committee will be formed prior to election time and a ballot should be provided via email and discussion will be held at the May 2013 meeting. Only paid TARS members will be allowed to vote on TARS officer positions. Currently, the position of TARS Secretary will be open with no contention. The TARS President position may be under contention pending decision by current president Dan Moniz, KI4HGO.

EmComm

Emergency Communications • *Training - Preparedness - Action - Service*

Field Appointment of Mike Lee, WB6RTH – ARES NFL Section Emergency Coordinator - Effective March 20th, 2013

Good afternoon ARRL Officials, neighboring Section Managers, NFL DEC's, NFL Net Managers, FDEM, retired officials and key people. 'Thank you' goes to Ron Mettler, WB4GHU, who after a long career as a volunteer as an ARRL Field Appointed Official, is stepping down. He's a good friend and has worked hard to better Amateur Radio in his tenure and is to be commended.

Mike, WB6RTH, and I have been talking by PX this last weekend in Orlando where we met while working the *Tour de Cure* bicycle event, we all had a meeting Saturday evening and he stated he would like to be active in assisting the section in building up its emergency communications operations, working with EOCs, and promoting Amateur Radio with ongoing training and preparation programs for the future needs of our served agencies.

Mike has over 40 years as an Amateur Radio operator, an ARRL member in good standing, and has served in field appointed positions with extensive training in the NIMS-ICS courses including field experience. Mike has a superior background in electronics. His experience in management and working in the volunteer world is 'top shelf'. Mike has a background in "HF", VHF/UHF, computer, IT and the 'digital world', he's a strong supporter of all modes of emergency amateur radio communications. In the very near future, Mike will have section information transferred to him, and will then, by protocol, take the helm as the Section Emergency Coordinator as the ranking official in the emergency services. He'll be responsible for training, field appointments such as DEC's, EC's and Assistant-EC's, coordinating major events, deployments and working with the FDEM.

Please welcome Mike, WB6RTH, on board and look for him to be in touch soon.

Regards,

Paul L. Eakin, KJ4G@arrl.org *NFL SM/Liaison to FDEM,* 850-591-0442

Check In To the Leon County ARES Net

Tune in every Tuesday night at 8:15 PM EST on the 147.030 K4TLH repeater for the Leon County ARES Net. ARES officials check in first, but the floor is then opened to ALL hams from anywhere interested in ARES. This net focuses on the current issues pertinent to Leon County as well as the Capital Area District, but will move to ad-hoc topics of interest. Though, this is a directed net, there is a casual atmosphere geared to foster a spirit of collaboration. Erik Brooks, KC4NVU is usually net control. See you Tuesday night!

Leon County ARES Wiki

Erik Brooks, KC4NVU, and Jonathan Liedy, KK4JWK, have introduced a new 'WIKI' internet site dedicated to Leon County ARES. The wiki is a live resource for local ARES officials as well as an information base to the general public. Information contained within the wiki can be edited by ARES official with the approval of the site moderators. Check out this wiki to find information on everything from repeater lists, to served agencies. You can also find the current Emergency Action Plan for Leon County ARES as well as vital links to served agencies and EmComm resources. More information and updates are to be written in continued editions of The Printed Circuit.

Visit the Leon County ARES Wiki at: ***http://www.leoncountyares.org***
To join in, just submit your call sign as your log-In and create a password.

Are you interested in 'EmComm'? Would you like to use your talents and radio skills to assist Leon county agencies like LCSO, ARC, and local hospitals when disaster strikes? Consider the rewards of helping *save the day*…

Alan Torledsky, W1ABT Leon County EC and his AEC's are given the charge to structure a timely emergency communications response when and where needed. As an Amateur Radio Volunteer, you can have a vital part to play. Whether it be as a message handler for a Red Cross shelter, or a 'shadow' assistant for a public official – Emergency Communication Training is important and should be done ASAP before a disaster strikes! The more you (as a ham) knows about what you can do in event, the better able you able to assist the EC and AEC is coordinating 'less-than-active' hams when they arrive on the scene willing to serve, but lacking skills.

Taking EmComm courses, learning how to handle messages, and building you own 'Jump-Kit' are just some of the tools that can not only help the efforts of ARES, but will prepare yourself as well.

To learn more or to volunteer, contact one of the AEC's or contact ***Alan Torledsky*** (EC) at torledsky@msn.com

RF Interference

QRM From Local Utilities? - Contact Alan, W1ABT

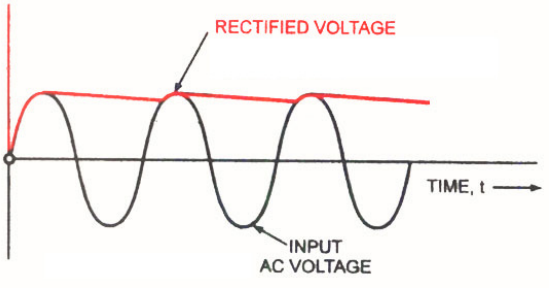
Are you getting unusually bad 'buzzes' and arcing noises on your HF receiver that you can't eliminate *even when you cut your home's main power*, chances are the interference is coming from the city utilities power system. Aging lightning arrestors and insulators are often the cause of strong RFI. The city of Tallahassee has an award-winning utilities department and perhaps one of the best-kept systems in the world! The city will work to remedy your power utilities RFI issues. First: *do your part* as an Amateur Radio operator to SAFELY investigate all possible causes, even if it's just with an AM radio and a brisk walk around the neighborhood. A detailed report will allow the experts to pin-point an issue and will cut down on unnecessary city expenses. Then: ***All you need to do is ask.***

Alan Torledsky, W1ABT, will work with city officials on your behalf. And in good time, you'll be on-the-air again…
Contact ***Alan*** at torledsky@msn.com

RF Peak Voltage Detector Circuit

- **Find your transmitter's output wattage by using these circuits and your multi-meter!**

Whether your into home-brewing your own transmitters, QRP operation, or have lack for a wattmeter, there's a solution to finding the output wattage of your rig by just by simply measuring the 'voltage' through a peak voltage detector circuit with your multi-meter and using a little Ohm's Law math. Yes, your rig's signal is more than just an invisible force – it starts off with voltage and current components well before it leaves your antenna as magical electro-magnetism.



How much voltage is in my signal? Well, for example: your rig at 'barefoot' will deliver 100 watts of average power to a 50 ohm load, provided that your rig is putting out a perfect sign wave (CW-mode) signal and a resistive "dummy load" is attached.

This "100" watts is actually *Root Mean Square* (RMS) power, even though "power is power" and is the same whether in AC or DC form; RF power, as with its characteristic sign wave pattern is alternating back and forth in polarity at its given frequency, and is not constant when measured at any given instant. It's harder to quantify. *Your General License manual goes into detail about "RMS"*. We can find the equivalent RMS Voltage (E) for our signal if we know the resistance (R) which is of course; 50 ohms. Using the Ohm's Law formula Voltage (E) = the square root of the wattage (P) times resistance (R) we can deduce that our 100 watt signal contains a Voltage of 70.7 volts RMS.

Well you ask - my meter can read AC voltage, why can't I use it? Sure you can, as long as the AC frequency is lower than a few hundred kilohertz. But a multi-meter was not designed to read higher AC frequencies, and if you look at the specifications for your meter, you'll see that as the frequency goes up, the accuracy goes down! Most stop listing specs at more than 20 kHz, which is barely out of the audio range let alone radio. So I present to you three variations of a simple detector circuit to convert the RF voltage of your transmitter signal to a measurable DC voltage readable by any voltmeter. All you have to do is a little math to get the power level.

Since the measured voltage will be a constant DC signal and our input RF (AC) signal is an RMS sign wave, how do we convert this DC voltage reading to RMS Power? By converting the DC voltage to RMS and then using the Ohm's Law formula:

$$P = E^2/R$$

Ohm's Law Power Formula

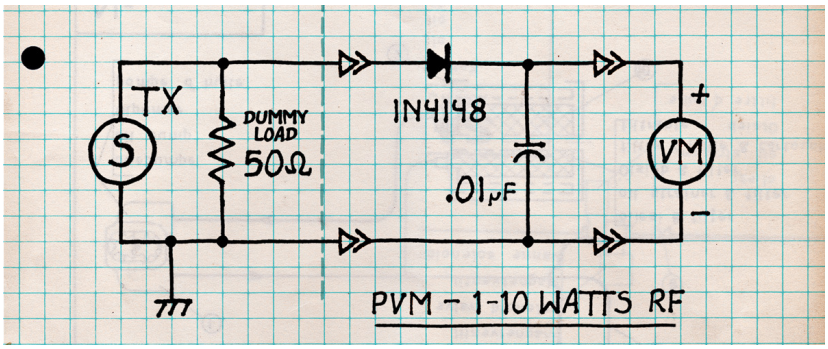
RMS conversion is another thing. The math alone would cover half this page, but we hams don't need to worry about all that as we, for the most part, deal with *pure sign wave* signals, which requires much less math. 'Pure', as in CW (constant wave) and not an SSB voice signal. Since the *Root Mean Square* (of a sign wave) can be found by getting the square root of '2', then we'll want the inverse of that to go from a 'DC' value to RMS: $1/\sqrt{2}$. Simply put, for a pure sign wave, hams can use the multiplier: "1.414" for RMS and "0.707" for the *inverse*-RMS. So when we read the DC voltage from our meter using our Peak Voltage detector circuit, we can take that reading and multiply it by 0.707 and we'll have our "RMS" voltage. Then we can derive our RF Power figure (which is in RMS) using Ohm's Law. *Don't worry, the formulas are below...*

The base of this circuit is as about as simple as it gets; it only requires a *diode* and *capacitor*.

First, make sure your rig's (transmitter) output is connected to a 'dummy load' that is rated to handle the range of wattages you want to test. A 50 ohm dummy load is typical because your transmitter's finals are most likely designed to work into an antenna system that optimally has 50 ohms of impedance. Next, you'll need a way to sample power from this line. I used a 'T' splitter... actually, a bunch of adapters that ended up making a 'T', that was terminated by a center connector for a dipole. I used "alligator" clips to

connect the terminals to the circuit. Using an actual RF connector with very short wire-lengths overall is preferred! Build one of these circuits and connect your multi-meter. Make sure that your meter is set to a higher voltage range first. You want no surprises that would zap a good meter. Once set up – *YOU NOW HAVE AN RF VOLTAGE PROBE!*

Reading RF Output in the QRP Range - If you're into experimenting with home-brew transmitter circuits or enjoy building QRP kits, the measurement of your output signal power eventually becomes a necessity. Without an oscilloscope or QRP-level wattmeter you might be left guessing. Try this *1-10 watt version* of the PVM circuit shown to the left.



$$P = (E_{DC} \times 0.707)^2 / 50\Omega$$

RF Watts | Volts DC Measured | Inverse RMS $1/\sqrt{2}$ | Dummy Load

Peak Voltage Detector 1-10 Watts

One 1N4148 switching diode rectifies the incoming RF (AC) voltage, which should be a pure sine wave, and passes that on to charge a small capacitor. Once the capacitor fills to its peak input voltage, a more level voltage is available to be sampled by any standard volt-meter. The resultant measured voltage will be the DC equivalent to the RMS voltage of the sampled RF output. To take our measured DC voltage to find the RF output power (wattage) of our transmitter, we first figure the RMS voltage by **multiplying the DC voltage times 0.707**. So for instance, if your volt-meter reads 21.1 volts; 21.1 times 0.707 gives us 14.92 volts RMS. Finding the wattage of our signal is now a simple application of Ohm's Law.

Use the Ohm's Law chart to help. So power (P) = voltage (E)-*squared* divided by resistance (R). **$P=E^2/R$** The resistance is of course, the 50 ohm dummy load connected to our transmitter output. By the way, because this is resistance load is measured when RF power is present, your dummy load my not read 50 ohms when power is not present, depending on the type of load... but that's another lesson. My dummy load along with the splitter detached from the rig reads 72 ohms… but it sees 50 when running. So using the formula we find that ***$(14.92)^2/50$*** = **4.45** watts! Now with lead-lengths and stray capacitance, the subsequent losses on the line may cause your reading to not be very accurate, but it should be close. I measured 4.3 watts with the commercial wattmeter.

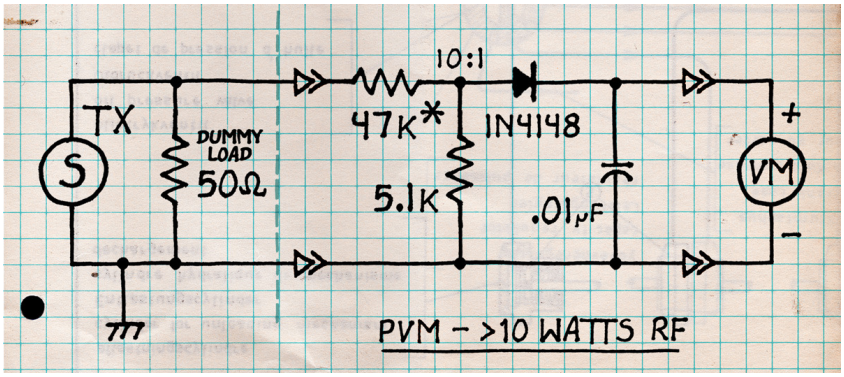
Considering Diodes - Because you're working with RF, 'fast-switching' diodes such as germanium, Schottky, or other RF-rated diodes should be used in this type of circuit. Standard '1N4148' switching diodes should work fine on frequencies up to 30 mHz, but above that other diode types will have to be considered. Forward and Reverse voltage rating maximums should be considered; after about 20 watts, the RMS voltage across these small diodes will surely breach their max rectified DC voltage ratings. The following circuit will address this. Voltage drop is an expected diode trait, though once you find the specified drop for your diode; it's usually somewhat constant over different frequency ranges. Bigger diodes that are made for handling higher voltages are generally designed for 60 hz power supply circuits and thus are not really built for speed.

Reading RF Output Above 10 Watts - If you use the circuit described above, once the input power gets into the 20+ wattage range, you'll surely destroy your diodes! By using a simple resistor divider network to scale the input voltage down, you can spare your diodes an eminent death and still have something useful to read by your meter. In fact, the higher the values of the network resistors, the lower the current consumption of the circuit.

$$P = (E_{DC} \times 10 \times 0.707)^2 / 50\Omega$$

RF Watts | Volts DC Measured | Scale 1:10 | Inverse RMS $1/\sqrt{2}$ | Dummy Load

Peak Voltage Detector >10 Watts



A more in-depth explanation of divider networks would be a great topic for another edition, but basically, we're using two values of resistors, configured together to scale the output voltage down to a 10th of its input.

Therefore all we have to do is multiply the metered voltage by ten before we enter it into the formula.

A few caveats* to consider when using a resistance dividing network in this PVM circuit: Resistors have manufacturing tolerances and do not generally contain all the resistive goodness advertised on its package! A network will adversely scale the potential inaccuracies too, so a little adjustment will need to be made when building this circuit. Try reading DC voltages with just the divider portion of the circuit in a simple DC circuit to adjust one or both of the resistors so that you'll know you're going to get a 10 to 1 reduction of input voltage. Since this is an RMS/RF voltage on the divider, if you use a potentiometer to fine tune the divider, make sure that the leads are short and that the potentiometers are non-inductive or capacitive. In my experiment, my resistors were way off from the get-go, so I changed the resistor values and my final reading was within just a watt or two even when testing up in the 100 watt range!

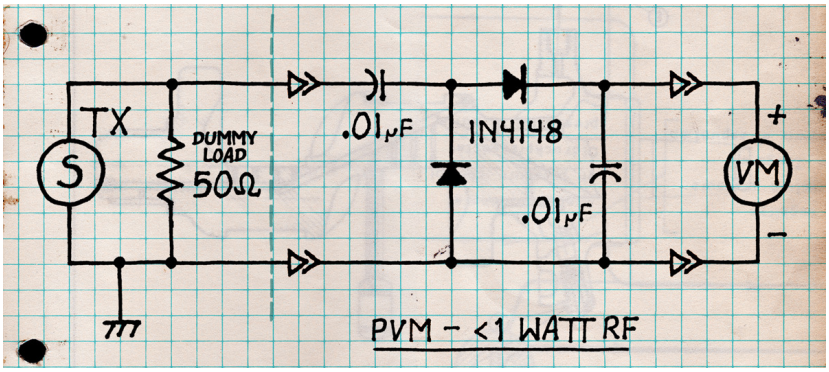
Of course, anyone using over a few watts can simply use any readily available wattmeter, but what about the experimenters trying "*QRPp*" (less than a watt)?

Reading RF Output at Less-Than a Watt - At less than a watt of power input your multi-meter should have no problem giving you accurate low-voltage measurements, but now the common 0.6 to 1.6 voltage-drop on some diodes becomes an issue. It generally worsens with smaller voltages. In the following circuit, I added another diode in parallel to the source to give full-wave rectification, adding power coming from the other direction on top of the capacitor charge and

$$P = \left(E_{DC}/2 \times 0.707\right)^2/50\Omega$$

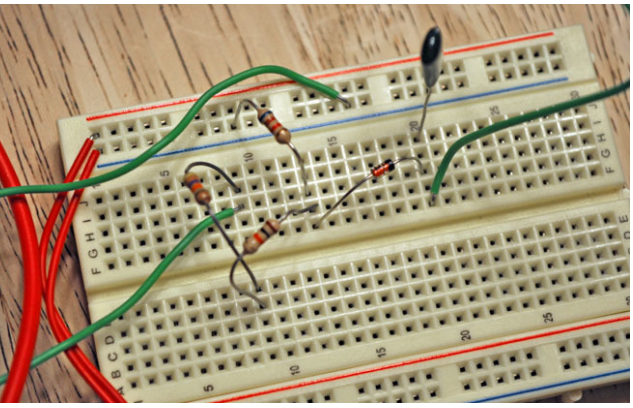
RF Watts | Volts DC Measured | Scale 2:1 | Inverse RMS $1/\sqrt{2}$ | Dummy Load

Peak Voltage Detector <1 Watt



we double the voltage! So you can get a double voltage boost from this configuration, but don't forget to divide the measured DV voltage *in half* before entering it into your RMS/power formula. Perhaps subtracting the voltage drop.

Construction - With this circuit, you could be potentially working with ***dangerous voltages and RF energy***, especially at the input end, it would be like touching your antenna during transmit. Shocks can be deadly, and RF-burns can hurt worse. As always; think ***Safety first!*** It would be in line with 'best practice' to build this and any circuit dealing with RF on copper-clad PC board. I was able to use my prototyping plug-in board with great success. You only need to worry about losses on the RF-side of the circuit. All you'll need is a 50 ohm dummy load and a splitter-tee with terminals. Having an actual wattmeter will be good as a comparison if experimenting.



Considerations - A Peak-Voltage Meter circuit has many useful radio applications, especially when it's impractical to use a dedicated wattmeter. The DC output voltage could be useful to trigger comparator circuits and for T/R switching relay circuits. If you're working with live RF into an antenna system, your results should still be useful as long as the impedance is at a known value such as 50 ohms. Since you'll have the voltage and resistance, you'll also know the current of you signal as well.

At A Loss - Though, since this circuit reads Peak Voltage only, you'll not be able to measure directional current or standing waves (SWR). That would require a circuit using current transformers. And for UHF/VHF, unless you're using diodes rated for higher frequencies, anything over the HF range might not be accurately readable. You'll also most likely see substantial 'losses' due to all the connectors and wire lengths. A circuit like this is not able to read the complex impedances, capitances and reactances involved. I provide this article only as an academic exercise, and perhaps a way for some of you hams to get to know a little bit more about what comes out of the back of the thing you call a "rig". I had fun with this, and I've been able to better tweak the output of my current QRP rig. I didn't even need to warm up my soldering iron. So with that…

The weekend is here – *go and build something!*

73! DE Mike, K4ICY k4icy@arrl.net

Topics of Interest - Submissions to *The Printed Circuit*

10 REASONS WHY YOU SHOULD SUBMIT TOPICS OF INTEREST TO THE TARS NEWSLETTER:

- You know of a future event that would be of interest to hams. i.e.: Swapmeets, HamFests, Gatherings, etc.
- You're interested in a new digital mode and would like more hams to know about it.
- Found a blog or web-site that's choc-full-o ham goodness.
- Have an opinion that needs to be expressed: *positive and/or negative*.
- You would like to submit an article – on any topic useful to ham operators, the public, or ham radio in general.
- You have great pics to show off: taken at recent events, on your adventures, your shack, whatever…
- You have homebrew circuits or maybe you have something you built that other hams would like to see.
- Ham-related cartoons, sardonic commentary – nothing slanderous or mean-spirited.
- Information on upcoming contests and DX spots…
- Elmer advice, training, educational information, and anything beneficial to the progression of the radio art.

Readers are encouraged to submit items of interest for publication. Submitted articles (are suggested) to be no more than three pages in length unless absolutely necessary. Content may (and most likely will) be edited for content and grammar. TARS officers and the newsletter editor reserve the right to determine which items will be included in *The Printed Circuit*. ***The deadline for publication is the 20th of the month.*** The publication date will be around one week prior to the next business meeting and changes and error corrections are allowed up to that instance. If you are reading this line then maybe you actually care about what goes into The Printed Circuit. And maybe you should consider writing something for it too. You'd be surprised by how many readers might actually appreciate your wisdom and experience!

Remember the Pictures!. If you've taken pictures at an event and would like to submit them for possible inclusion in the newsletter, forward them to the newsletter editor. Got pics of your rigs and shacks you want to show off? We'll gladly publish them in this newsletter!

Disclaimer

The Printed Circuit is not representative of, or ultimately responsible for the views or opinions of the whole organization, and such views and opinions expressed herein are of the individual author(s).

Updates of Information

If you are aware of any updates, changes or corrections to any of the information in this newsletter such as information about Our Neighbors, Local Nets or Repeaters, please forward that information to us at *TallyAmateurRadio@Gmail.com* for inclusion in future newsletters. Corrections and additions cannot be reflected until the following month's edition.

E-mail Addresses

Please forward any additions or changes of e-mail addresses for delivery of the Newsletter to: TallyAmateurRadio@Gmail.com . or *Mike Maynard, K4ICY* (Editor) at k4icy@arrl.net

Also, notify us if you wish to no longer receiver the newsletter and would like to have your address removed.

Thomasville Amateur Radio Club (TARC) http://thomasvilleamateurradioclub.com/
Meetings: The first Saturday of each month at 7:30 p.m. at *Morningside Methodist Church, 2007 Smith Avenue, Thomasville, Georgia*

Net: TARC Thursday Night Net – 8 pm local every Thursday night, 147.195 repeater, + offset, with a 141.3 PL tone.

South West GA ARES Net – 9 pm every Thursday night, 145.170 Repeater, - offset, 141.3 PL tone.

Sportsman's Paradise Amateur Radio Club (SPARC)
Meetings: Third Thursday of each month at the Wakulla County Emergency Management Facility at 7:30 pm.

Jefferson County
Net: Monday evening at 8:00 pm on the Monticello, WX4JEF, 145.43 repeater; 94.8 PL tone.

The **Military Auxiliary Radio System** (MARS) is a United States Department of Defense sponsored program, established as a separately managed and operated program by the United States Air Force, Army and Navy/Marine Corp. The program is a civilian auxiliary consisting primarily of licensed amateur radio operators who are interested in assisting with communications on a local, national, and international basis as an adjunct to normal communications.

It is up to the individual Ham to select one of the MARS services. Although we have slightly different structures and separate reporting chains of command, we all work together. Members of one service can participate on the frequencies and the nets of a sister service. In addition we have specific 'Joint Services Interoperability Nets'.

Membership eligibility:

- **Be 17 years of age or older.** (Signature of parent or legal guardian is required when an applicant is under 18 years of age.)
- **Be a United States Citizen or resident alien.** (Possess a valid amateur radio license issued by the FCC)
- **Possess a station capable of operating on MARS VHF and/or HF frequencies.**
- **Agree to operate a minimum of 12 hours per calendar quarter with 6 hours being on VHF and or HF networks.**

For further information contact one of the three Florida State MARS Directors or visit one of the services web sites:
http://www.navymars.org/ http://www.netcom.army.mil/mars/ http://www.afmars.org/USAF_MARS_Today.shtml

QCWA • The Big Bend Chapter of the Quarter Century Wireless Association, Inc.

Was your original amateur radio license granted in or before ***1988***? Then the ***Quarter Century Wireless Association***, (QCWA) is for you. A local chapter has been established for the Tallahassee-Thomasville area. QCWA members, active or not are invited to join. This chapter is social only and meets quarterly, alternating between meeting in Tallahassee and Thomasville. Except for national dues, there are no dues for our chapter.

If interested please email ***Gerry Gross, WA6POZ*** wa6poz@arrl.net or phone ***850-877-8134***.

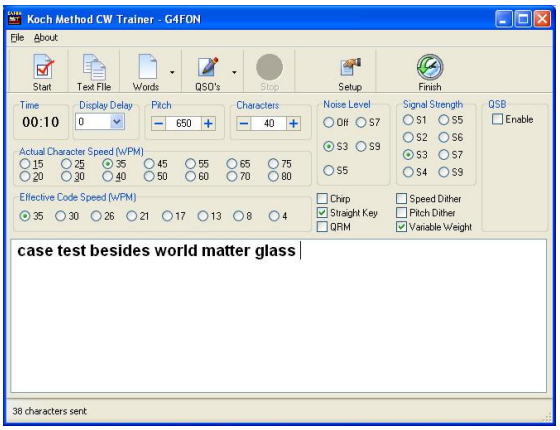
Wanna Learn Code?

Since there's no longer a 'code requirement' – you can learn at your own pace!

Are you new to this whole Morse Code thing? Have you always wanted to try it found but found it hard to learn even a few characters? There a **FREE** online Morse Code training tool which can not only teach you code but get you copying faster. Sign-up is free and you learn in your own web browser. LCWO.net teaches with the *Koch Method* of learning, where you train by learning to copy from 'sound', and you progress with new characters ONLY with proficiency. Over 20,000 users registered and many now operate on CW!

Koch Method Morse Course, in your web browser!
Speed Training, Text to CW, Stats, Forum…

LCWO.net
LEARN CW ONLINE



Try the G4FON Koch Method CW Trainer. If you don't have ready access the net, this program will do the trick. Learn at your own pace with customized settings to change speed, tone, QSB fading, QRM from other ops, and more! You can copy from custom TXT files and even include your own custom characters and pro-signs! Thousands of successful CW ops have used the G4FON trainer – and you can too!

Visit http://www.g4fon.net/ and download the 'Koch CW Trainer Version 9' today! ***And YES, IT IS FREE!***

Don't give up! It's the QUALITY of your copying/sending that counts, not the SPEED. Learn it one letter at a time and practice 15 min daily!

A Place for You to Practice!

The 10-Meter Morse Code (CW) Practice Net is Still a Viable Concept

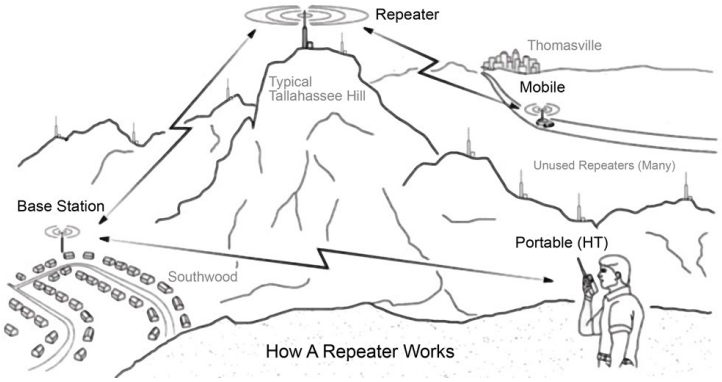
The Morse Code Practice Net was active until about 2009, however TARS would again like any of you that are not quite ready for 'prime time' to consider trying it out. So far, since this has been talked about, there hasn't been any activity yet, but the frequency, time and place are still available – All it takes is two hams to make a contact and enjoy a good QSO! First operator on simply sends a 'CQ' to get things started, but keep an ear our between 8:30-9:00.

- The Frequency: ***28.180 CW*** (10 Meter Band)
- The Time: ***8:30 P.M.*** EDT (Try through 9 pm)
- Nights: Tuesday, *Wednesday*, Thursday
- Mode: CW, Speed: 13 WPM and Below
- Talk-In: 147.030 Repeater

Though code proficiency is no longer required by the FCC, many hams still desire to know how to copy and send CW. All they may need is a 'SAFE PLACE' where they don't have to worry about speed and accuracy – a place to learn those things through experience and practice. And learn how to QSO too!

Location	County	Call Sign	Backup Power	Digital Mode	Output Freq	PL	Aux or Remote Site	Height
Crawfordville	Wakulla	K4WAK	No		145.450 -	94.8		300
Crawfordville	Wakulla	K4WAK	Yes		444.450 +	94.8		400
Greensboro	Gadsden	K4GFD	Unk		147.390 +	94.8		300
Monticello	Jefferson	WX4JEF	Unk		145.430 -	94.8		Unk
Quincy	Gadsden	W4EAF	Yes		147.165+	94.8		250
Tallahassee	Leon	N4PG	Yes		146.610 -	203.5		200
Tallahassee	Leon	AE4S	Yes		146.655 -	94.8		600
Tallahassee	Leon	K4TLH	Yes	P-25	146.910 -	94.8		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 links with: Lake City 444.9 / 110.9 Yulee 442.9 / 127.3 Jacksonville 444.2 / 127.3 Madison 444.3 / 94.8 Ft. Lauderdale 442.85 / 110.9	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	AE4S	Yes		443.950 +	94.8		500
Tallahassee	Leon	N4NKV	Yes		444.400 +	131.8		CRMC (200)
Tallahassee	Leon	KD4MOJ	Yes		444.000	94.8		TMH (200)
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
Reno	Georgia	KE4URL	Yes		145.170 -	141.3		600

The Repeater list is available on the TARS website (*www.k4tlh.net/repeaters*).



North Florida Amateur Radio EmComm Net	Daily • 9:00 AM EST *except Sunday*	**3950** kHz
Capital District EmComm Training Net	Sunday • 7:30 PM EST	**147.030** MHz, K4TLH *+ 600, 94.8*
Capital District ARES Net	Sunday • 8 PM EST	**147.030** MHz, K4TLH
Leon County ARES Net	Tuesday • 8 PM EST	**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
TARC Thursday Night Net	Thursday • 8 PM EST	**147.195** MHz, *+ 600, 141.3*
TARC Kid's Net	Tuesday • 8 PM EST	**147.195** MHz, *+ 600, 141.3*
Morse Code Practice Net (Informal / Open)	Tues-Thurs 8:30 PM EST	**28.180** MHz CW Mode
Jefferson County Net	Monday • 8:00 PM EST	**145.430** MHz, WX4JEF, *94.8*
Morning Drive-Time Net (Informal with KA5USN)	Mon-Fri 7:30 – 9:00 AM EST	**147.030** MHz, K4TLH
Southwest Georgia HF Weather Net	Third Thursday 7:30 PM EST (or after GA SSB Net)	WX4TAE, **3975** kHz (+/-)
SKYWARN NET *(See below)*	First Sunday 7:30 PM EST	WX4TAE, **3810** kHz (+/-)

SKYWARN • Join in the ARES/SKYWARN Net on the first Sunday of every month at 7:30 PM (1930 hours) EST. The net starts at 3810 KHz on 75 meters (+/- for QRM), after initial check-in, operators attempt to trade R/S reports with WX4TAE. The net then moves to (QSY) to 40 meters on or around 7245 KHz and continues there. Later at 8:00 PM (2000 hours) EST. on the K4TLH 147.030 MHz repeater, the weekly Capital Area ARES net meets for its weekly net where during the call for special business, we are joined by station WX4TAE, at the National Weather Service Office in Tallahassee where one of the staff meteorologists joins us to provide a retrospective on the weather situation and patterns for the previous month as well as a brief seasonal forecast. The floor is then opened to questions to the meteorologist. You do NOT have to be an ARES or SWYWARN member and the net is great practice for your emergency-ready HF station.

• Have any **corrections** or **additions**? *Contact Mike, K4ICY: k4icy@arrl.net* prior to the 20th of the month.

Contest and QSO Parties

03 Apr	0100Z - 0230Z	QRP Fox Hunt (also Apr 5)	http://www.qrpfoxhunt.org/winter_rules.htm
06 Apr	1800Z - 0500Z 07 Apr	Missouri QSO Party	
07 Apr	1800Z - 2359Z		http://www.w0ma.org/mo_qso_party.htm
10 Apr	0030Z - 0230Z	NAQCC Straight Key/Bug Sprint	http://www.ncjweb.com/sprintrules.php
13 Apr	0000Z - 2400Z 14 Apr	Montana QSO Party	
	http://www.fvarc.org/sites/default/files/library/2013%20MT%20QSO%20Party%20Rules.pdf		
13 Apr	1200Z - 2400Z 14 Apr	SKCC Weekend *Sprintathon*	
	http://www.skccgroup.com/operating_activities/weekend_sprintathon/		
13 Apr	1800Z - 2359Z 14 Apr	Georgia QSO Party	http://www.georgiaqsoparty.org/
20 Apr	1600Z - 0400Z 21 Apr	Michigan QSO Party	http://www.miqp.org/Rules.htm
20 Apr	1800Z - 1800Z 21 Apr	North Dakota QSO Party	http://www.k0ln.com/ndqsop13.pdf
20 Apr	1800Z - 1800Z 21 Apr	Ontario QSO Party	http://www.va3cco.com/oqp/rules.htm
20 Apr	2000Z - 2200Z	Feld Hell Sprint	https://sites.google.com/site/feldhellclub/Home/contests/sprint-rules
21 Apr	1800Z - 2359Z	ARRL Rookie Roundup, SSB	http://www.arrl.org/rookie-roundup
27 Apr	0001Z - 2359Z 28 Apr	10-10 Int. Spring Contest, Digital	
	http://www.ten-ten.org/Forms/QSO%20Party%20Rules.pdf		
27 Apr	1500Z - 0300Z 28 Apr	QRP to the Field	http://www.zianet.com/qrp/QRPTTF/ttf.html
27 Apr	1600Z - 2159Z 28 Apr	Florida QSO Party	http://www.floridaqsoparty.org/rules.html

Z= UTC; L-local – Contests and QSO Parties Source" QST & WA7BMW

DX

From	To	Prefix	Call	Info
14-Aug	01-Jul	RI1F	RI1FJ	
19-Mar	02-Apr	T2	T2/NL8F	
22-Mar	08-Apr	A2	A2/K5LBU group	
25-Mar	12-Apr	FH	TO7BC	http://www.qslnet.de/member/dl7bc/en_TO7BC.htm
26-Mar	16-Apr	A3	A3EAQ	http://sp5drh.com/a3eaq/
26-Mar	03-Apr	CU	CS8/PD9DX+	
26-Mar	03-Apr	P4	P41P	http://www.df7zs.de
29-Mar	01-Apr	KH2	W3JH/KH2	
30-Mar	13-Apr	VK9C	VK9C/G	
01-Apr	13-Apr E5	E51DXX		
01-Apr	06-Apr PA	PA/DL5DCL		http://www.dl5dcl.de
03-Apr	09-Apr KP2	K1HP/KP2		
03-Apr	09-Apr KP2	KP2/JF1BVG		
03-Apr	09-Apr KP2	WH7P/KP2		
03-Apr	11-Apr V6	V63XG		
04-Apr	18-Apr 5W	5W0M		http://5w0m.hkmann.de/
04-Apr	17-Apr S7	S79VJG		
04-Apr	18-Apr TK	TK/G4BKI		
05-Apr	16-Apr J6	J6/N7QT		
06-Apr	13-Apr 8P	8P9HI		
06-Apr	13-Apr C6A	C6/K6RB		
06-Apr	29-Apr FR	FR/F5MNW		

From	To	Prefix	Call	Info
06-Apr	20-Apr	J7	J75PX	
06-Apr	06-Apr	JW	JW6ZFA	
06-Apr	12-Apr	V3	V31HU	
06-Apr	12-Apr	V3	V31MV	
06-Apr	12-Apr	V3	V32EE	
07-Apr	08-May	5H	5H3MB	http://www.buffoli-pm.it/5h/Tanzania%202011.htm
08-Apr	20-Apr	PJ4	PJ4/SP6AXW	
08-Apr	20-Apr	PJ4	PJ4/SP9FIH	
10-Apr	15-Apr	VK9L	VK9/OH1VR	
10-Apr	15-Apr	VK9L	VK9LT	
11-Apr	15-Apr	T8	T80W	http://blog.rental-shack.com/?eid=224
12-Apr	14-Apr	9G	9G5EME	www.emelogger.com/ghana/
13-Apr	26-Apr	OZ	OZ/PA1H	
13-Apr	26-Apr	OZ	OZ/PA7PA	
15-Apr	21-Apr	SU	SU8N	http://www.qsl.net/eara/ERASDActivieties.html
15-Apr	20-Apr	V6	V63DX	
15-Apr	20-Apr	V6	V63T	
18-Apr	21-Apr	XE	4A8DMR	
19-Apr	20-Apr	4X	Holyland Contest	http://www.iarc.org/~4z1pf/HOLYLAND CONTEST 2012 RESULTS.pdf
19-Apr	27-Apr	9G	9G5EME	
19-Apr	21-Apr	OE	OE13M	
19-Apr	26-Apr	PA	PA0WRX/p	
19-Apr	21-Apr		64th Annual International DX Convention	www.dxconvention.com
20-Apr	28-Apr	5H	5H1DX	
20-Apr	21-Apr	BY	Worked All Provinces of China	http://www.mulandxc.org/144
20-Apr	30-Apr	FG	TO5PX	
20-Apr	21-Apr		CQMM DX Contest 2013	http://www.cwjf.com.br/
20-Apr	20-Apr		International Marconi Day	http://www.gb4imd.com/
21-Apr	26-Apr	XE	XF2E	http://www.it9ejw.it/xf2e/
22-Apr	27-Apr	GM	MM0KLR	
22-Apr	04-May	JD1/O	JD1BMH	http://jd1bmh.zxq.net/
23-Apr	30-Apr	8Q	8Q7KP	
25-Apr	08-May	ZK3	ZK3N	http://www.tokelau2013.de/
27-Apr	03-May	DU	DU1/R6AF	
27-Apr	04-May	F	TM0SI	http://www.cdxg.org
28-Apr	05-May	JD1/O	JD1BLC	
28-Apr	04-May	JD1/O	JD1BLY	http://www.ji5rpt.com/jd1/
28-Apr	05-May	JD1/O	JD1YBT	
28-Apr	28-Apr		9th International DX Convention	www.dxitalia.it
29-Apr	06-May	3V	TS8TI	http://www.i8lwl.it/

+ more than 1 operator/call *DX sources - The Daily DX, 425 DX News, or DX Zone*

Gerry, WA6POZ *wa6poz@comcast.net*

2-Meter vertical coaxial antenna, commercially made w/ coax **$25**
2 - ten foot 1-1/2 inch aluminum masts
$15 for both.
Rotary Antenna Switch (coax) for 6 antennas **$25**
Heath Cantenna KW dummy load $20
Contact: **Paul, W4HVD** at 850-892-4309

HF Tri-Bander
Used ***A3S Tribander***, just removed from my tower. 10/15/20 meters, the 15 meter trap needs some work. Boom and elements are in great shape. I have the beam assembled in the back yard for inspection. Prefer a local sale over shipping. **$225.00**
Also: Used 40ft heavy metal ***crank-up tower***, 2 20ft sections. It has rust and needs a lot of attention. ***Free!*** It is going to the scrap yard if no takers.
Contact: **Paul, Wood N4VHF** *850-228-5094*

Speaker System
*I have **your** sound system!*
Altec Lansing VS4121 Speaker system (2.1) with powerful sub-woofer! Great for adding theater-quality sound to your electronics – even better for your transceiver!. The price is right at ***$30***
Contact Chief at: ***KA5USN@hotmail.com***

***CALL SIGN* (or anything) embroidered, screen printed, or applied in vinyl**
Contact *Marshall Griffiss*, N4DOG of ***Stitching by Design***
Locally owned and operated.
n4dog@comcast.net **Phone: (850)391-4967**
www.stitchingbydesign.net

If you have personal amateur radio items that you would like to sell or need, we will publish short requests in the newsletter, subject to editorial review. Please send your requests to the newsletter editor (Mike Maynard K4ICY) at k4icy@arrl.net by the 15th of the month.

ICOM Rigs:
YOUR NEW STATION AWAITS!!!

ICOM IC-7000
Mobile HF/UHF/VHF Transceiver:
160 m - 440 Mhz (HF/UHF/VHF),
SSB/CW/Digital (100 Watts),
stuffed to the gills with advanced features!

Extras Include:
- Power Cable
- Mic
- Beautiful, feature-packed 7" Ext. Display
- 2 Mobile Head Brackets
- 2 Mobile-To-Head Brackets
- CAT Cable
- Turbo-Tuner for Tarheel Antenna

Asking ***ONLY $999.99*** FOR ALL!

ICOM IC-2820
D-STAR Radio
with D-STAR Board.
The future is here!
$749.99

ICOM IC-2820
D-STAR Radio
without D-STAR Board.
NEW IN BOX! ***$499.99***

Don't delay!, email **Norm Scholer, K4GFD** at k4gfd@tds.net or call: 850-251-6430

Equipment Available for loan from TARS

If you are interested in temporarily borrowing or procuring TARS radio equipment, or have good and working equipment to donate to TARS - email Steve at *ad4e@arrl.net*

- **MFJ 259 antenna analyzer**
- **MFJ 949C VersaTuner II Antenna Tuner**

Minutes on record for the preceding TARS business meeting – March 7th, 2013

Compiled and Submitted by Brady Lyon, KJ4YSP

The TARS business meeting was held at the American Red Cross facility on Thursday, March 7, 2013.

CALL to ORDER at 7:10 p.m.

President Dan Moniz, KI4HGO, opened the meeting welcoming the 42 members in attendance.

INTRODUCTION OF GUESTS: Junior Lolley, KG4ITD, EC of Liberty County, FL., Art Horovitch, VE2AHH/W4, and his spouse; Susan, special guest: Bill Stoye, K2WHS ,Communications Manager, of the Florida State Emergency Operations Center, as well as others.

GUEST SPEAKER: David Miner, W4SKG, introduced area Emergency Coordinators for a presentation highlighting our Capital Area Amateur Radio Emergency Service – *Here is a re-cap*:

- Junior, KG4ITD – the only active ham in Liberty County with a 100' tower. If there is an emergency, he plans to call the DEC to request 5-6 hams with HF capability because most likely the towers will be there but the antennas won't. It was mentioned that the antenna at the Liberty County EOC is a 35' delta loop on utility pole.
- Doug Bennight, K4GKJ, the EC of Wakulla County would ask for up to 20 + hams in an emergency. One tower available for law enforcement, and other services. Emergency power vulnerable to wind. UHF and 2 meter on another tower but with only a 5-6 mile footprint. His Emergency director doesn't want politics but wants ham volunteers to be familiar with NIMS/ICS protocols. They have a portable tower but no operational capabilities except for a generator.
- Nick Adams, W4EAF, Gadsden County Assistant-EC says the 147.165 has been operational since 1964, but barely used. The 400' tower at the Sherriff's dept. is in bad shape. W4EAF is the only operational repeater. Crisis management may be inadequate in Quincy and would be totally dependent on other counties in a crisis. Jerry Kessler, N4JL, has tried to get people licensed, but now all equipment is missing.
- Alan Torledsky, W1ABT. EC of Leon County – has Assistant-EC's: Mike K4ICY – Operations, Eric Brooks, KC4NVU – EOC/Joint Ops Center and Jonathan Liedy, KK4JWK, Hospitals. Erick and Jonathan presented the new Leon County ARES WIKI: challenges 1. Organization / knowledge-base (member distribution, vertical and broad knowledge of served agencies, contact info etc.) 2. Recruiting – how can we join ARES & what can we do? How do we familiarize people with testing etc. Goals include: Attracting attendance to the new Leon ARES NET (147.030 repeater, Tuesday at 8:00) the solution being a WIKI that is simple, mobile, accessible, secure, editable (hidden till approved). All information and links to served agencies. The website is http://www.leoncountyares.org/
- Sal Martocci, K4YFW, (Liaison for the Capital Are Chapter of the American Red Cross). The local ARC covers eight counties – Franklin, Madison, Taylor included. Says ARC has a good relationship with TARS. Gadsden is the largest and poorest county. Most emergency resources come form ARC. Usually 50% participation will only volunteer to do communications when no other means (cell etc.). Nine shelters: 2 in Gadsden,1 in Wakulla and 4 in Leon. Most people take care of themselves in these remote counties. If you do volunteer you report to the main ARC facility first.
- David Minor, W4SKG, DEC – In charge of Recruiting.
- Special guest Bill Stoy, K2WHS, State EOC – Says state has equipment that's maintained. He asks Paul Eakin, KJ4G, Section Manager for help with hams (RADOs) to operate equipment. Recent EmComm event (Operation RADAR II) went very well (D-STAR, UHF/VHF, Winlink) wants voice and data, Redundancy is good! *EM Constellation* gives tracking for (State) liability reasons and is evaluated by FEMA. Operation RADAR II communications problems were encountered ("We will look into them".)
- David Minor, W4SKG - HF ops relay support for out of area emergencies to Section Emergency Coordinator – whom Paul is filling in for (Capital District ARES responsibilities) [begins his power point presentation] gets a call from Bill and subsequently calls David Minor for hams volunteers (Extra Class license preferred). Paul Eakin, KJ4G showed a PowerPoint presentation outlining ARES/ICS-Styled command structure and organizational relationships. Relates to structure use at TOSRV event.
- David Minor – if something happens, the 600 hams in Leon county will come out and require a crash course so we need people trained in advance with an understanding of required policies and procedures to teach it to volunteers.

8:35 p.m. - There was no Break and TARS business; including announcements and committee reports were cancelled by motion from David Miner, W4SKG.

TARS Treasurer's Report for March 2013

Compiled by Nick Adams, W4EAF, TARS Treasurer

Beginning balance March 19, 2013

Checking Account:	$ 775.57
Savings Account:	1090.96
	$1866.53

Summary of month's activities:

Total receipts for the month	$ 92.50
Total Expenses for the month	$ 00.00

Receipts, derived from the following:

$ 92.00	Member dues
$ 92.00	Total

Expenditures:

Total	$ None

Outstanding Expenses:

Talquin Electric	$ 28.56

Ending Balances on February 13, 2013:

Checking Account:	$ 868.07
Savings Account:	1090.96
Total	$ 1959.03

---

5 Members renewed or joined since last report.

5 Individuals
0 Family memberships
0 Students

Notes: The renewals include donations totaling $10.00. Thanks.

Treasurer's Special Note:

The bank balance remains dangerously low and our biggest event of the year expense-wise , **Field Day**, is rapidly approaching. If you have put off renewing or it has slipped your mind,
please consider paying your dues for 2013.

The Radio Amateur is...

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

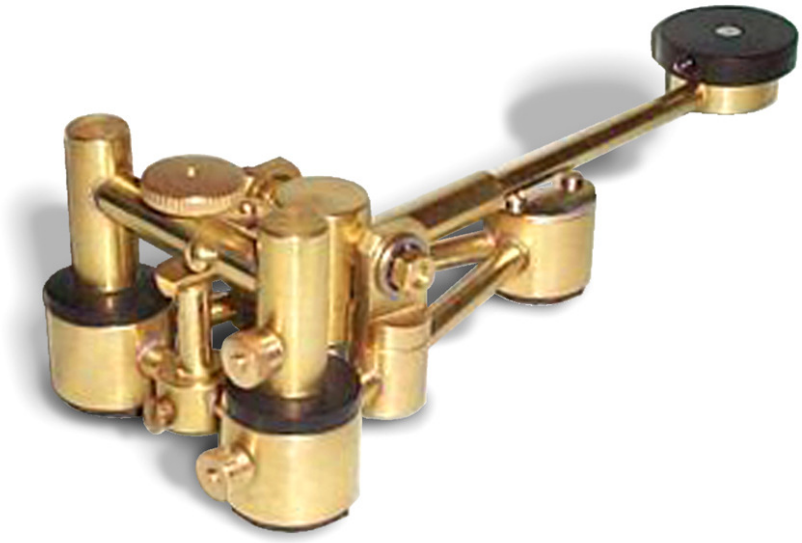
LOYAL
Offers loyalty, encouragement, and support to other amateurs, local clubs, and the American Radio Relay League, through which Amateur Radio in the United States is represented nationally and internationally.

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

FRIENDLY
Slow and patient in operating when requested; friendly advice and counsel to the beginner; kindly assistance, cooperation and consideration for the interest of others. These are the hallmarks of the amateur service.

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

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



Tallahassee Amateur Radio Society

New Membership / Renewal Form

This form can be used for new members or for renewals. 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:		**Call Sign:**
Address:		
City:	**State:**	**Zip:** -
Member Type: ☐ Individual ☐ Family ☐ Student		
Home Phone: ( ) –	**Work Phone:** ( ) –	**Cell Phone:** ( ) –
E-Mail Address:		
ARRL Member: ☐ Yes ☐ No		**Skills:** ☐ EmComm ☐ Elmer
Interests: ☐ I would like an ***Elmer*** ☐ I am younger than age 25, tell me more about the ***TARS Youth Council***		

You need not be a licensed amateur radio operator to join the Society. An interest in radio communications is all that is required.

Membership dues for the Tallahassee Amateur Radio Society run ***$15*** annually per individual or family.

Students (with valid ID) **can join for free!**

New members pay a reduced prorated amount 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. After September, they drop to $5.00.

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 this form 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 and includes a subscription to *QST Magazine,* that is published both by mail and in an online format. Go to http://www.arrl.org/join.html for membership in the ARRL. TARS is an ARRL sanctioned organization.

TARS
TALLAHASSEE AMATEUR RADIO SOCIETY
P.O. Box 37127
Tallahassee, FL
32315