

*Club President:*

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*Vice President:*

Terry Lenehan - WM9M

*Secretary/Treas.:*

Craig Cooper - KB9JDW

*Emergency*

*Coordinator:*

Mark Phillips - W9PC

*VE Testing Liason:*

Sam Paul - W9AH

*Repeater Trustees:*

Jon Crispin - K9JRC

Larry Neal - N9SFA

*Club Website:*

<http://www.qsl.net/wm9m/ccarc.htm>

## What is PSK and getting started?

Translated literally, it's an acronym for "Phase Shift Keying, 31 Baud". PSK31 is a form of modulation (or "mode") that offers a new and higher level of performance in conversational communications (keyboard-to-keyboard) that we "hams" (amateur radio operators) can enjoy. And it's been made instantly usable by all of us, due in part to the proliferation of the personal computer, and in part to the superb and generous efforts of some very talented ham/programmers.

In the short time that PSK31 has been in use, its popularity has grown by leaps and bounds. It may in time replace or at least greatly supplant RTTY and other modes for person-to-person communications. It's fun, easy, and well worth the effort to get set up, which is not very much at all.

It should come as no surprise that the PC is transforming the way we operate. Think about it, in your little PC you've got one of the most powerful tools for digital signal processing, spectrum analysis, database, logging, and much more.

Incredibly enough most of the software is easy to find and **absolutely free for the taking!!!**

### **Here is what you need to get started:**

- A Windows95/98 or DOS PC (or Linux) with Sound Blaster compatible sound card installed.
- A "stable" HF SSB ham radio and legal operating privileges (license not required to monitor).
- A digital mode software package for your operating system.
- About \$5 worth of Radio Shack or junk drawer parts to make hook-up cables and attenuator pad.
- Approximately 1-3 hours time to put it all together.

### **Here is what you must do:**

- Install the digital mode software package on to your PC. Test your program for compatibility with your sound card by placing the program into the TX mode and listening to hear the digital sound from your PC speakers.
- Read the operating fundamentals found in the Operators Manual and keep a copy handy for reference.
- Assemble, solder and install two cables for audio IN and OUT (or purchase an interface) between the sound card jacks and the radio.
- Use the audio level controls found in most programs to make a one-time adjustment to the Windows sound card Mixer Control program.
- Practice tuning in stations and operating your digital mode program before you answer or call your first CQ.

Believe it or not, all of this takes just one Saturday afternoon to do. Be warned however, it will be late Sunday night before you will decide to shut down, and perhaps months before the euphoria wares off. *Have Fun...*

### What else should you know?

- The heart of this method of digital operation is the PC sound card which is being used by the software program as a DSP (Digital Signal Processing) unit. Slower PCs (less than 90 Mhz) may experience sluggish operation with some software packages.
- PSK31 is the most popular of the new DSP modes but will not be the best mode for all band conditions and communication needs. You should try other modes such as MFSK16 and Feld Hell when phase distortion makes PSK31 impractical.
- Most SSB transceivers in use today are stable enough for the narrowest of these digital modes. A transceiver that is known to drift slightly during SSB or CW operation may not be suitable for PSK31, but may be used for Hellschreiber modes.
- Tuning in a PSK31 or MFSK16 signal is the most frequent complaint by new operators to these modes. The precise tones require precise tuning; but this is made easier with point-n-click features and by AFC techniques built into the programs. Tuning becomes second nature after you get familiar with the sight/sound of your program.
- Other active audio programs that use your PC's sound system may interfere with the sound card program and should be disabled during ham radio operation. It is possible that other audio programs may re-set your sound card mixer settings, causing you to readjust the levels next time you run the program.
- The attenuator pad that you install must provide a simulated MIC input level to the radios MIC circuit. Adjusting the MIC gain will not compensate for an excessive signal level. You must use plenty of attenuation from the sound card output or adjust the sound card output level very low to prevent a distorted signal on the air!
- Software packages to run these modes on your PC are available by searching the Web. There are at least six digital mode sound card programs that are available for PC and one for Linux and Macs. They range from very basic "stand alone" PSK31 only programs to complex programs where PSK31 was an "add-on" feature. The latest generation of sound card software packages contain multiple modes with control features for most ham radio models. Programs like the MixW are user configurable and contain many extra ham radio features.
- Some other modes offered in sound card programs are: Packet (ax25), RTTY, HF Fax, AMTOR broadcast, THROB, Hellschreiber, MFSK16, MT63, Slow Scan TV and Morse Code. ARQ modes like Pactor are not offered in sound card programs presently, but at least one program (MixW) will allow you to use your TNC to operate ARQ as well.
- I have personally used the West Mountain Radio's Rigblaster M8 for my PSK work, if you visit their website at [www.westmountainradio.com](http://www.westmountainradio.com) you will find a variety of software both freeware (meaning no charge at all) or shareware (meaning software can be copied or loaded for free, but usually a registration fee is appreciated).
- Another software package used by some club members can be found at [www.mixw.net](http://www.mixw.net) and this package supports many modes included packet, SSTV, etc.

I hope I have convinced you to give it a try! Don't let your lack of typing skills stop you. Typing is just like operating a morse key; the longer you stick to it, the better and faster you become. Have fun and see you on the digi bands...

## What is a Net check-in?



The CCARC has a net that meets each week at 8:00 PM (0100 UTC) on the linked club repeater system. The net provides those participating with practical experience of operation through a controlled manner in preparation for an emergency event which requires activation of amateur radio operators for emergency operations.

### Where can the club repeaters be found?

Great question, the club repeaters can be found on the 146.61 MHz with a (-) offset configured for 2 meter operation. The other frequency is 442.575 MHz with a (+) offset configured for 70cm operation. In the event the 146.61

machine is unavailable we will operate simplex on that frequency or move to the 147.045 machine.

#### What is a linked repeater system?

You are filled with great questions. A linked repeater system provides a mechanism to tie two active repeater systems together thereby providing additional flexibility for simultaneous operations on different bands in addition to the increased coverage area that is provided by the use of repeater systems.

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## Upcoming Testing Session

The next club testing is upcoming for the month of July, it will be at the Frankfort Public Library on the 2<sup>nd</sup> floor across from the Theatre. The testing session starts at 9:00AM and typically ends at 11:00am. If you plan to attend, please let one of the many VE's that participate know so that we can look for you. They include Sam Paul – W9AH, John Guffy – W9ILO, Don Reeder – K9DGS, Mark Phillips – W9PC, Stephen Tharp – K9MD, or Terry Lenehan – WM9M to name a few.

Please see the website <http://www.qsl.net/wm9m/ccarc.htm> for specifics about the testing session. *Special Reminder-If upgrading, please bring your license or a copy of your license.*

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## Code Practice Net (CW for all)

*on HOLD temporarily, but to return soon.*

Every Tuesday evening (except the first Tuesday of the month, which is the club meeting) at 7:30 PM on the 146.610/442.575 MHz repeaters will be a Code Practice Net. The net is sponsored/directed by Mark Phillips – W9PC and all are welcome to listen, participate, and/or check-in.

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## May Club Meeting Minutes

The May club meeting was held on May 5<sup>th</sup>, with the following information recorded:

#### Attendees:

Terry Lenehan	WM9M	John Davey	N9SEZ
Taylor Hall	KC9DYL	Kevin Hall	KC9DYM
Tony Hardesty	KB9LKD	Don Reeder	K9DGS
Mark Phillips	W9PC	Bill Stong	K9FUE
Bill Caldwell	KC9ERL	Jon Crispen	K9JRC
Chris Hosfield	KC9CQD	Larry Neal	N9SFA
Ray Smith	KC9EPH	Bruce Butler	KB9DHI
Duane McHale	KC9ZNN		

#### Minutes:

##### **Old Business:**

The month of April had 6 nets with 4 Monday night nets, 2 code practice nets on Tuesday evenings and a Skywarn net, a total of 16 different stations and 40 total check-ins were reported, 17.5 man-hours.

Stations reporting for March were as follows:

- KC9ERL & N9SEZ – 100%, 6 nets
- W9PC – 4
- KB9LKD, WM9M, KB9ZNN, K9FUE, KC9DYM – 3
- K9MD – 2
- N9XQ, KC9DYL, KB9JDW, KC9DHI, K9DGS, KF9IZ, N9SFA – 1 each

Larry discussed the funnel cloud spotted and touched down in Clinton County moving to Kokomo. See the NOAA weather link path of destructions from all tornadoes on this date at: <http://www.crh.noaa.gov/ind/tor2420.jpg> as well as some damage pictures: [http://www.crh.noaa.gov/ind/april20\\_damage.htm](http://www.crh.noaa.gov/ind/april20_damage.htm).

VE Testing was at the end of the month on April 24, 2004 at 9:00-11:00 AM. 4 present for testing, one upgrading w/ the General theory element, KC9EPH (congratulations to Ray); and new operator Samuel Seifert, KC9FZA.

Code practice net will go on hold for Tuesday nights for the next month or so to give everybody a short break.

Mark discussed the power connectors again. The power plug from Anderson Power, W9PC will order a sack of them and we can all purchase a few for our rigs so we can share the same connections to move around in the event of emergencies. The connectors are \$1.00 a piece. [www.PowerWerx.com](http://www.PowerWerx.com)

Indiana QSO Contest, May 1. W9PC and WM9M had the shacks open to others to work HF and the contest for preparations during field day. Those present at WM9M included: KC9DYL, KC9DYM, KC9ERL, KB9LKD, K9JRC and W9PC had K9JRC as well. WM9M station had 101 SSB/CW contact; 20 different Indiana counties, 25 different states, and 8 DX contacts. W9PC had 176 SSB/CW contacts.

Repeater is still acting up, need to talk to Vern to update him on the status from testing. Mark and Larry will go talk to Vern, they didn't make it since the last meeting.

#### **New Business:**

Discussed date of Field Day operations: June 26 & 27, an attempt will be made in the coming meetings to work up a schedule for operations. W9PC and K9JRC surveyed the sight for field day and we are sure that we are within regulations for distance of the station being within 1000 feet of each other (actually is 750 feet).

We are going to need a new cook, Bill will be undergoing knee surgery this month and won't be able to do the FUEburgers this year. We will miss him.

Discussion of the time and day for the net. Potential moving it forward an hour 7:00pm, but no decisions were made during this meeting.

## Upcoming Dates to Remember

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|-----------------|---|
| May 29-30, 2004 | Great Lakes QSO party info at <a href="http://www.mdxa1.org/1aglpq.html">http://www.mdxa1.org/1aglpq.html</a> |
| May 31, 2004    | Net checkin – KC9ERL, Bill (net control operator)   |
| June 1, 2004    | Club Meeting – Frankfort Public Library   |
| June 7, 2004    | Net checkin – W9PC, Mark (net control operator)   |
| June 14, 2004   | Net checkin – N9SEZ, John (net control operator)  |
| June 19, 2004   | Kid's Day Operating Event, 1800Z-2400Z.   |
| June 21, 2004   | Net checkin – N9SEZ, John (net control operator)  |
| June 25, 2004   | 2004 Field Day, preliminary setup (move trailers and tents)   |
| June 26, 2004   | 2004 Field Day, setup starts first thing in the morning,  |

contacts to begin at 1:00pm. See the club website for details and directions to Camp Collum.

June 27, 2004

2004 Field Day, contacts stop at 1:00pm, cleanup to follow.

June 28, 2004

Net checkin – KC9ERL, Bill (net control operator)

