

# Printed Circuit

Route 66 On the Air — September 9-17 — Joplin W6D

2006.09

## PSK FOR BEGINNERS

JEFF BRONE, WB2JNA  
ARRL WEBSITE

You may have heard about PSK31, a fairly new mode of communication that's getting quite popular with hams. With PSK, you use your home computer with your radio to send and receive digital signals with other hams. The signals come through the radio, are fed into the computer and are decoded by software as the words being sent appear on the screen. The computer then turns the words you type into a signal that is sent through your radio to the ham you're talking to. It all works amazingly well, and pretty simply at that. With that in mind, here's a basic explanation of how to get involved in PSK31.

### Getting Started

If you want to get started using PSK31, I suggest that you begin by listening (and watching) some PSK signals. First, go on the Internet and download the latest version of the Digipan program to your computer (just follow the links and instructions). Digipan is free and simple, so it's a good place to start.

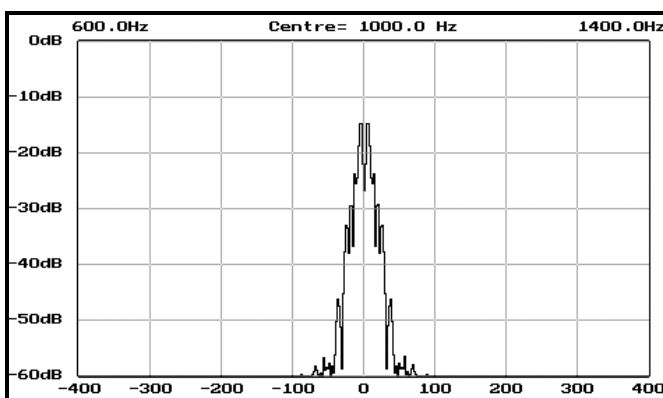
You'll want to run a cable from the

headphone or speaker jack of your radio to the "line in" jack on the back of your computer (next to this jack will probably be a drawing of an arrow pointing to the center of a circle). Keep in mind that not all computers have a LINE input (most laptops don't). If yours does not, you'll have to use the microphone input.

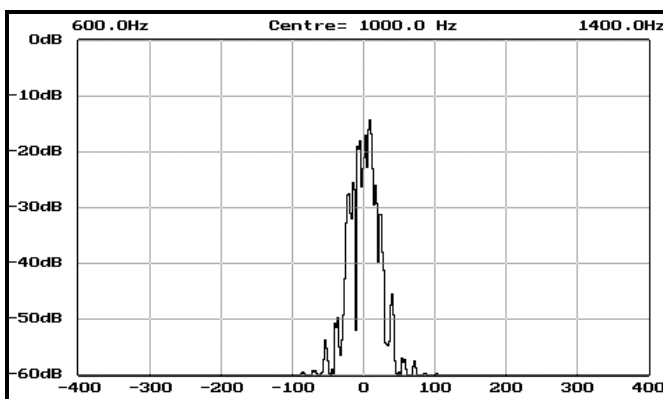
Next, adjust your sound card controls (double click the little "speaker" icon at the bottom of your computer screen) so the "line in" volume is at about 75 percent and is not muted. When you double click the tiny speaker, you'll see the VOLUME controls, which control transmit audio, not the RECORD controls that you need to adjust for receiving. To get the RECORDING window, you have to click on OPTIONS in the upper left corner of the VOLUME window, then click OPTIONS, then PROPERTIES, then RECORDING, then OK.

Next, open Digipan, tune the radio to about 14.070 MHz, adjust the

*(Continued on page 3)*



PSK31 in bspk mode



PSK31 in qspk mode

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## WADE WALSTROM, W0EJ, SK

ARRL WEBSITE

ARRL Midwest Division Director Robert W. "Wade" Walstrom, W0EJ, of Cedar Rapids, Iowa, died August 31 during surgery. He was 59. An ARRL Life and Diamond Club member, Walstrom was elected in 1999 to succeed retiring Midwest Division Director Lew Gordon, K4VX. He won a third term (2006-2008) as Midwest Division Director last fall. Born in Nebraska and raised in South Dakota, he'd been an Amateur Radio licensee for 46 years and previously held the call signs K0ZTV and WA6TXE.

"Wade's sudden and unexpected passing is deeply shocking to all of us who worked with him during his many years of service to the ARRL," said ARRL Chief Executive Officer David Sumner, K1ZZ.

A member of the ARRL Executive Committee, Walstrom -- an electrical engineer and recently retired Rockwell-Collins project manager -- was a former three-term Iowa Section Manager before becoming Midwest Division Director. He'd previously chaired the ARRL Board of Directors' Volunteer Resources and Programs and Services committees, and he'd served on the Membership Services and Election and Ethics committees.

Walstrom was instrumental in the effort to end interference to Amateur Radio from a broadband over power line (BPL) pilot project in Cedar Rapids. He not only worked with local radio amateurs but co-authored a technical report that pointed out BPL's harmful interference in the amateur bands and the inadequacy of "hotching" techniques. Copies of the report went to each member of the FCC.

Walstrom also served on the Linn County Planning and Zoning Commission.

An active and serious DXer and con-

tester, Walstrom was a member of the Eastern Iowa DX Association, QCWA, AMSAT and the Cedar Valley Amateur Radio Club.

Walstrom was a graduate of South Dakota State University. He received his Ph.D. from Iowa State University.

ARRL First Vice President Kay Craigie, N3KN, worked with Walstrom on the Volunteer Resources Committee, which, in 2003, revised the rules and regulations governing the ARRL Field Organization.

"He could always find the right words when I got stuck for how to phrase something," Craigie recalled. "It was a pleasure to work with him, and I am very sad that there won't be any more opportunities for us to benefit from his intelligence and good sense."

ARRL Hudson Division Director Frank Fallon, N2FF, said he was shocked and saddened to learn of Walstrom's untimely death. "I had the good fortune to get to know this quite bright man pretty well, sitting next to him at meetings and working with him on committees. He was a very fair and intelligent individual. I think I can speak for all of us on the Board when I say we admired him and the values he stood for."

Survivors include Walstrom's wife, Solveig, and their sons Robert and Steve, KC0LGE. Visitation is Monday, September 4, 2-5 PM, at Cedar Memorial Funeral Home in Cedar Rapids. Members of the ARRL Board of Directors will attend the memorial service Tuesday, September 5, 10 AM, at St. Mark's Lutheran Church in Cedar Rapids.

The family invites memorial donations to the ARRL or to St Mark's Lutheran Church. ❖

## SECRETARY'S REPORT

MARK MITCHELSON, NOZPD

The meeting was called to order by president Martin Matarazzo at 7 p.m.

The minutes were approved, after a minor change, the Treasurer's Report was approved.

Andy Gabbert reported that the Red Cross had its radio licenses and needed some additional antennas.

Last minutes details concerning the testing, ribbons, hotels were discussed pertaining to the hamfest.

Larry Sparks told us about a plan to link the repeaters together; the members present approved Larry's plan, and he'll work with Martin.

We learned that Jerry Holcomb's father passed away, and Mark Mitchelson will send a sympathy card on behalf of the club. ❖

## TREASURER'S REPORT

JIM JOHANNES, NOZSQ

Income during July included dues and hamfest income (tickets and tables).

Expenses included ticket printing and flyer printing packets.

Both the checking and money market accounts have balances. ❖

## EDITORIAL POLICY

- 1 Articles are due the first Monday by 4:00PM.
- 2 Submissions may be handwritten, typed, or emailed.
- 3 Readers are welcomed to comment but should focus on the article.
- 4 Buy-Sell-Trade items may be posted for no fee.

All articles are subject to editing. ❖

## EASY PSK...

*(Continued from page 1)*

radio volume until the program's computer screen shows a neutral dark color and maybe some noticeable trails of signals that stand out clearly from the background. You are now looking at the "waterfall display." You also can try listening on or around 7.070 or 21.070 MHz.

You may need to tune the radio a few kHz either way to get a good signal to read. I find it best to tune the rig so the signal you're monitoring is around the "1000" marker on the waterfall display. PSK signals sound like high-pitched warbling, and they appear very thin and individual on the display. Use your mouse to double click on a trail, and the words being sent should appear on the larger receiving box on Digipan. You are now reading PSK signals, which should keep you busy for a while. Notice the friendly tone that the operators use and the relaxed feeling of most exchanges. This is something most PSK ops seem to enjoy a lot.

You'll want to send some signals and talk to other operators. Do a dry run practice session first. Connect the speakers (or a headset) to your computer and adjust your sound card to make sure you have moderate volume coming out of them. Then type some text in the smaller "transmitting" box and click the "T/R" button at the top of Digipan. You will hear a signal coming out of the speakers and see the text you would be transmitting scroll across the screen. If you again click the "T/R" button at the top while this is happening, the program will automatically finish sending the whole text before going back to receive (this trick will come in handy later). Play around with this for a bit and see how it feels. In fact, spend some time getting used to using the program in this "practice" mode.

### *PSK the "Easy Way"*

Eventually, you'll feel ready to send a

signal on the air. Here's a simple tip on how to send PSK the easy way. Put your computer speaker right up against your rig's microphone (make sure you're in a quiet room), and wrap them up in cloth or foam to keep out extraneous noise. Set the rig on the right sideband for the band you're using. Turn on the rig's VOX, or set up a little PTT switch (many rigs have an outboard connector for this on the back panel). You can send PSK directly from the computer speaker through the microphone. Although the rig's switch may say SSB, the mode you're transmitting is PSK, so it's quite legal. There are a couple of things to remember:

- \* The PSK signal drives the rig pretty easily, so turn the soundcard volume control for the speakers way down to about 15-20 percent.

- \* When transmitting, advance your rig's power output (slowly) starting from no power at all. I like to stop at about 20 percent of full power. You may be able to use more, but PSK is pretty much a full duty mode, so go easy on your rig.

- \* Watch your transceiver ALC (automatic level control) meter. If the ALC is indicating anything other than "zero," you are overdriving the radio.

This method may not provide quite as clean a signal as if the PSK went directly through the microphone plug, but I've used this method with about 20 W out with very good (clean) signal reports. One measure of a signal's purity is the IMD, which should be below -25. Another ham can check this for you, and Digipan will check this on a received signal in the little "IMD" box at the bottom. Check the IMD when a PSK signal is on "transmit," but while text is not being sent.

You also can feed the computer speaker's output directly into your microphone plug. Connect the ground side of the computer speaker jack to the mic

plug's ground side, and the center pin of the speaker jack to the non-ground, mic input side of the mic plug. If you don't have VOX or a PTT jack on the back of the rig, you may need to fashion a PTT connection switch through the mic plug. Turn the computer's speaker volume output way, way down (to about 20 percent), transmit a PSK tone and gradually inch up the rig's power to the desired level. I don't even use any interface circuit between the rig and computer, and it seems to work well. You may need an interface, and there are several on the Internet if you'd like to build one, or you can always buy one. Many QST advertisers, like West Mountain Radio, MFJ, Tigertronics, and RigExpert sell them, as well as other companies like MicroHAM and MixW. Remember: watch the ALC or you could be generating a horrible signal and interfering with others.

### *High Tech Thrills*

You can also experiment with the program's functions, including the macros, allowing you to assign transmission text to certain buttons at the top of the program. This makes it easier to send the standard information, such as call sign, location and rig, without retyping everything. You can clear the text in either or both of the transmit and receive windows. Check out the help file for lots of good ideas and information. There's a lot to learn to the program, and I recommend playing around in the previously described practice mode for a good while before you go on the air.

PSK can be quite a thrill, as it seems kind of high tech, yet still is good old radio at heart. Have fun! ❖

## THE "TRIO BOB" WELCOMES YOU TO ARRL HEADQUARTERS

ARRL WEBSITE

Now when you arrive at the ARRL for a tour, your host will be one of our new Volunteer Tour Guides. It might be Bob, or it could be Bob -- depending on the day, you might just luck out and get Bob!

No, we're not re-creating The Newhart Show; our first three Volunteer Tour Guides, while not brothers, are all named Bob!

On Friday, July 28, ARRL Chief Operating Officer Harold Kramer, WJ1B, along with Membership Manager Katie Breen, W1KRB, and Sales and Marketing Coordinator Jackie Cornell, presented framed certificates recognizing their volunteerism to the three new Volunteer Tour Guides: Bob Allison, WB1GCM, Bob Burke, KA1KOV, and Bob Stanwood, KB1EYZ.

"We are very thankful and appreciative of your enthusiasm for Amateur Radio and the League. I know our guests will enjoy their visit to Headquarters even more now because of you -- thank you!" said Breen.

And just who is the "Trio Bob"? Bob Allison, WB1GCM, has been a ham for 32 years; he holds an Amateur Extra class license. His Amateur Radio hobby led directly to an education in electronics and a 27 year career in broadcast television and radio. "Ham Radio opens many doors in life, and I've had the opportunity to help people through this wonderful hobby," he said. Bob and his wife, ARRL staffer Kathy, KA1RWY, reside in Coventry, Connecticut. Bob also enjoys sailing and working on Model A Fords. "It's a privilege to be able to volunteer here at ARRL HQ," he said. "I am pleased to be your tour guide!"

Bob Burke, KA1KOV, got into Amateur Radio, as he says, "by accident." When he was Scoutmaster of Boy Scout Troop 29 in the early 1980s, another Scout leader had heard of a Novice class starting at the Newington Amateur Radio

League (NARL). Since the Scouters had to travel to New York for their license upgrades, it was a long time between Tech and General, but Bob now holds an Amateur Extra class license, is a Volunteer Examiner, as well as a past president of NARL.

Bob Stanwood, KB1EYZ, has been involved with Amateur Radio since building a crystal set when he was 10 years old; it led to his discovery of short wave radio and experimenting with TV antennas in high school. After earning two degrees in electrical engineering from Cornell University and four years of piloting C-130s for the US Air Force, Bob was hired by Pratt & Whitney, eventually in program management. He retired 13 years ago and worked another four years as a consultant, and in full retirement, turned to Amateur Radio. Since earning his Technician license in 2000, he has progressed to Amateur Extra, continuing to build antennas and participating in public service events. He and his wife Peggy have been married 42 years, and have two adult children and two wonderful granddaughters, aged four and seven. In addition to his family and Amateur Radio, Bob also volunteers at the New England Air Museum.

Tours are given every day the ARRL HQ is open, at 9, 10 and 11 AM, and 1, 2 and 3 PM. Part of the tour includes W1AW, so be sure to bring a copy of your license, as you are encouraged to operate. While tour reservations are not necessary, large groups should notify Jackie Cornell at 860-594-0292. ♦

## N5TR RECOVERING

John Tudenham recently reported that Charley Borneman, N5TR, was home recovering from pneumonia. The Bornemans are in the process of selling their home in Greenville, Texas. Cards may be sent to Charley Borneman, C/O Howard Utech, 2830 W. 23rd, Joplin, MO, 64804. ♦

## HAMFESTS

22-24 September 2006. **Macon, MO. Radio Rendezvous, Macon County Park, US 63 South. Macon County ARC.** Talk-In: 146.805-. Contact: Dale Bagley, 1402 Eastern Drive, Macon, MO 63552. Phone: 660-385-3629. Email: [dbagley@cvalley.net](mailto:dbagley@cvalley.net) <http://www.qsl.net/n0pr>

30 September 2006. **Tulsa, OK. Green Country Fall Classic, Big Top, 700 South Frankfort. Green Country Hamfests, Inc.** Talk-In: 146.88- (88.5). Contact: Merlin Griffin, WB5OSM, 11804 East 80th Ct. N, Owasso, OK 74055. Phone: 918-272-0066. Email: [wb5osm@hotmail.com](mailto:wb5osm@hotmail.com) <http://www.greencountryhamfest.org>

7 October 2006. **Chanute, KS. Chanute Hamfest, Zion Lutheran Activity Center, 1202 W. Main St. Chanute Area ARC.** Talk-In: 146.745- (PL 100). Contact: Keith Rather, KB0ZAI, 7630 220th Road, Chanute, KS 66720. Phone: 620-431-0930. Email: [krather@terraworld.net](mailto:krather@terraworld.net). <http://www.caarc.org>

13-14 October 2006. **Springfield, MO. Missouri State Convention/Ozark Regional Hamfest, Remington's Entertainment Complex, 1655 West Republic Road. Southwest Missouri ARC.** Talk-In: 146.64 (PL 162.2) and 146.91 (PL 162.2). Contact: Lee Brown (KE4VSK) and Mike Rains (K0RFI), PO Box 11363, Springfield, MO 65808. Phone: 417-831-3016. Email: [hamfest@smarc.org](mailto:hamfest@smarc.org) <http://www.smarc.org> ♦

## ROUTE 66 ON THE AIR

Mark your calendars for September 9-17 for the Route 66 On the Air. Joplin will be W6D this year; for more information, visit <http://www.qsl.net/w6jbt/>. ♦

# September

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
					1	2 9:00AM--Breakfast
3	4 6:30PM—VE Testing 7:30PM—Monday Night Net	5	6	7 5:30PM—Pizza Night	8	9 9:00AM—Breakfast ROUTE 66 ON THE AIR
10	11 7:30PM—Monday Night Net	12 7:00PM—Club Meeting	13	14 5:30PM—Pizza Night	15	16 9:00AM—Breakfast
17 ROUTE 66 ON THE AIR	18 7:30PM—Monday Night Net	19	20	21 5:30PM—Pizza Night	22	23 9:00AM—Breakfast
24	25 7:30PM—Monday Night Net	26 7:00PM—Club Meeting	27	28 5:30PM—Pizza Night	29	30 9:00AM--Breakfast

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PRINTED CIRCUIT

2006

Note: W4VEC testing information is on the back page; those with questions should contact Martin Matarazzo, VE Manager.

## Printed Circuit

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### ADDRESS CORRECTION REQUESTED

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#### PRINTED CIRCUIT

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<http://groups.yahoo.com/group/JARC-Members/>

The *Printed Circuit* is the monthly newsletter of the Joplin Amateur Radio Club, a 501-C Non-Profit Corporation.

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### CLUB INFORMATION

**Meetings**

The Club meets on the second and fourth Tuesdays each month, except December. Meetings are held at the Joplin Red Cross (4th and Jackson) and begin at 7:00 PM. All amateur operators welcomed at meetings and other club functions.

**Club Repeaters** - Open for all to use

WØIN - 147.210+ (No tone)

WØIN South - 145.390- (91.5)

**Weekly Net (Mondays at 7:30 PM, 147.210+)**

All operators are welcome to check in the net. ARRL Audio News, ARES, buy-sell-trade, and other announcements are made.

**W4VEC Volunteer Examining Sessions**

On the first Monday of each month, exams are offered at St. Paul's United Methodist Church on W. 26th Street, west of Maiden Lane. Applicants need to bring 2 pencils, 2 forms of ID (including 1 photo ID), and the *original and 2 copies of any current license and/or Certificates of Successful Completion if applicable*. Registration begins at 6:30 PM. For questions, contact Martin Matarazzo, VE Manager.

**Social Gatherings**

On Saturdays, members gather at Granny Shaffer's (7th & Illinois) for breakfast, beginning at 9:00 AM. On Thursday evenings, members gather at a local restaurant. Check with John Tudenham (624-8058) for location.