

HOT BANANAS

Oakville Amateur Radio Club

December 2002



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You're Invited

The Oakville ARES net meets Mondays (on non club nights) at 1900 hours (local) on 444.325 followed by the OARC member's net at 1930 hours on 147.015MHz.

Denny's digital Christmas gift

For less than the cost of a bottle of wine, Denny, VE3OKD, gets you up and running on PSK 31. Soldering irons on!

Christmas season is upon us and most of us will enjoy free time from everyday office or work routine. Indulging into holiday food, drink and general laziness of life may be tempting, but we can also spend some time to be creative.

Here is a small project, which when completed, can bring you plenty of interesting time with your radio and the digital mode PSK31.

I will not go into the details of explaining principles and technical details of this digital mode. It can be found on numerous Internet web sites. For example: <http://home.teleport.com/~nb6z/psk31.htm> or <http://www.psk31.com>

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Calling 911

The January 20, 2003 meeting of the Oakville Amateur Radio Club will be held at the Halton Municipal Building.

A representative of Halton Regional Police will talk about 911 emergency services (hardware & software). Burlington ham radio club members are also being invited.

This is a "not-to-be-missed" once-in-a-lifetime chance to see how our emergency system works.

VE3HB

The Oakville Amateur Radio Club meets on the second Monday of the month at 7:30 p.m. from Sept. to June at the Red Cross, 167 Navy St. Guests are always welcome.

There is an informal gathering 7 a.m. most Saturdays at Angel's Diner at 369 Speers Rd. and a Friday 10:30 a.m. coffee session at Tim Horton's on Cross Road.

All are welcome.

VE3OAK - 147.015 +.600 (131.8Hz CTCSS)

VE3OAK - 444.325 +5 MHz

VE3OAK - APRS - 144.390 MHz

Net - Mondays at 7:30 p.m. (except meeting nights and holidays on 145.015.)

Web Site: www.oakvilleamateurs.net

Hot Bananas

Hot Bananas is published 10 times per year from September to June and is distributed to all members of the OARC. Articles may be reproduced without additional permission provided credit is given to *Hot Bananas* and the Oakville Amateur Radio Club.

Submit story ideas, feedback, comments, articles or artwork to ve3hg@cogeco.ca or mail to:

Hot Bananas

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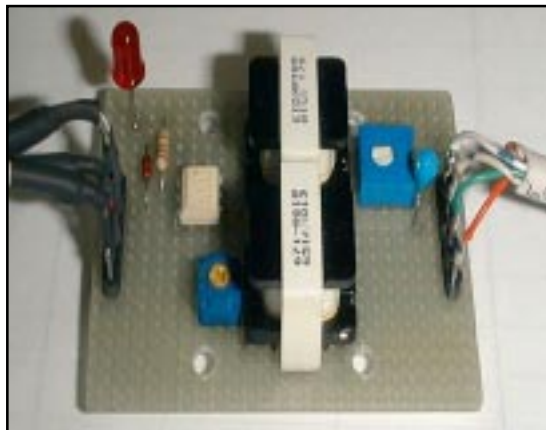
Peter West, VE3HG

Publisher:

Oakville Amateur Radio Club
President Jack Livingston, VE3ITM

Continued from pg. 1.

For those of you, who are not familiar with this mode I will explain – just briefly! PSK31 is a digital form of communication, where an audio signal from the radio is interpreted by the computer, decoded and displayed on the screen.



The PSK 31 board.

Because of the digital format of the signal, narrow bandwidth is needed and we can use low power from the transmitter. Generally 30 watts is sufficient.

Every band has a frequency, which is mutually agreed to be used for this form of communication. My favorite frequency is 14,070.15 MHz.

The interface of the transceiver with a computer was described in different flavors in numerous articles. The principle stays the same. The receiver generates audio output, which is fed to the computer's audio card connector, LINE IN.

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VE3HB Xmas Dinner

Don't forget the Oakville Amateur Radio Club's annual Christmas dinner coming Monday, Dec. 9 at 7 p.m. at The Mandarin Restaurant, 3105 Dundas St. W.

Call Carvel at 905-827-4956. Tickets, which may be sold out by now, are \$15.99 each.

CQ CQ CQ

Executives & Coordinators

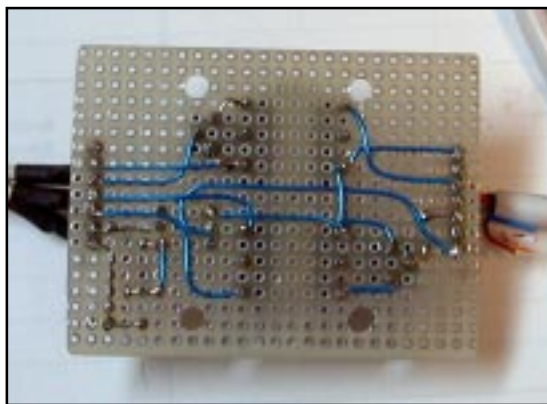
President	Jack Livingstone VE3ITM
Vice President	Denny Zidek VE3OKD
Director-Membership	Russ Schwandt VE3JUZ
Special Projects	Name Call
Director-Secretary	Greg Foster VA3GGF
Treasurer	Carvell Pelkey VE3CPQ
Director-Activity	Russ Schwandt VE3JUZ Denny Zidek VE3OKD

Emergency Coordinator	Rick Harrison VE3YRH
Assistant Emerg Coord.	Jack Livingstone VE3ITM
Assistant Emerg. Coord.	Phil Thompson VE3RD
Help Committee	Harry Kosterman VE3HKC
VHF Net Activities	Denny Zidek VE3OKD
Repeater Programming	Graham Chatfield VA3GPC
Repeater Maintenance	Gary Hetherington VE3TGH Harry Kosterman VE3HKC
Packet BBS	Michael Willems VA3MVW
Special Event Catering	Jack Livingston VE3ITM
Examiner	Jack Livingston VE3ITM
Internet Web Site	Michael Willems VA3MVW
Public Relations	Doug Smith VE3RG
Equipment/Shack	Mike Brown VA3GRL
QSL Manager	Ron O'Reilly VE3FII
DX Interest Group	Ron O'Reilly VE3FII

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The computer program - Digipan or WinPSK, converts the audio signal into written text on the screen. Conversely, when you type text on the keyboard, the computer will create the audio signal, which is then transferred from LINE OUT connector as an audio signal into the microphone input of the transmitter.

To provide galvanic isolation and prevent any ground loop problems, IN and OUT signals are passed through audio transformers. The push to talk (PTT) signal is again produced by computer and interfaced to the radio via RS232 output. Isolation of different voltage levels between the radio and computer for this switching signal is done through the optoisolator, connected into the circuit.



It doesn't get much easier than this to go digital.

So much for the theory!

The schematic shows all components for the project. In the true amateur spirit, you will search your shack first and probably find most of the components in your junk box.

If you are not successful, then you can visit Sayal store on Harvester Rd. in Burlington and purchase all components for the price of one bottle of wine - \$15.

I do not think you will encounter any problem to get the parts. There is only one item, which needs some explanation – the transformer.

Use any ferrite core small transformer with impedance of 600 ohm and winding ratio 1:1. If you do not want to purchase it, an old computer modem is one source.

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As for the enclosure, the possibilities are limitless. During your midnight raid of kitchen fridge, check all plastic boxes for content and size.

Or if you dare, take that plastic jewelry box from the diamond ring, you gave to your wife many years ago for Christmas. Keep in mind, packaging sells the product.

Now, heat up the soldering iron.

The schematic is shown on page 6. The interface is assembled on the perforated prototyping printed circuit board of approximate size 2.5" x 2.0". First, all components are soldered in and then connected with small gauge wire on solder side of the board. Interconnecting cables are terminated on soldering post.

Cables to computer's LINE IN and LINE OUT connection can be purchased already assembled, with 3.5mm connectors. Usually red and green connectors are attached to shielded cable. The parts list also shows individual components to make the complete cable.

No standard connections

Connection of your transmitter is a bit more complicated, because there is no standard connection. You will have to consult your manual and find out the correct connector pinout.

Here (in diagram) I am showing connection to an Icom 706 and Yaesu 1000FT. The Internet is also a good source of information where to find the connector layout.

Before you connect the complete interface to your transmitter, check the PC board for short connections or any bad solder points.

If everything looks OK, connect the interface and load the software on your computer. Print and read all help files. It usually saves some aggravation later on. Some setup of the program will be needed.

Assign the proper COM port for activation of transmit signal. Check Wave slide potentiometer for signal level. Set to mid range.

Press button "Tune".



The finished product.

When your computer sends transmit command (PTT), the LED on you interface will be lit. Use dummy load instead of an antenna for the initial setup. Set the Line Out trimpot on your interface to center of its range.

Later on, when you communicate with your friend, you can inquire about your signal quality and set the trimpot for best signal. IMD (Intermodulation Distortion) should be -22 dB below the carrier. Now, tune your receiver to the 14,070.15 MHz.

A warbling signal

Typical PSK warbling signal will be heard and the text will appear on the screen. Adjust the input signal with potentiometer on your interface board, so the "waterfall" screen will not show too much noise.

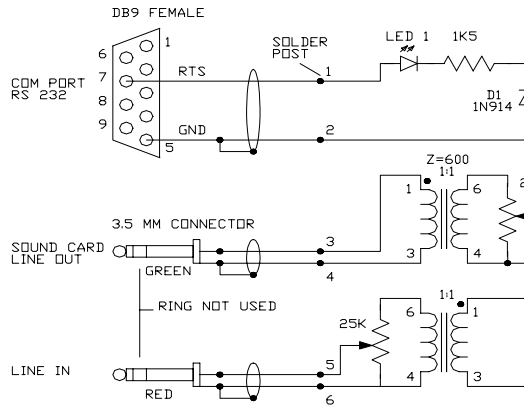
When you click the button TX on the screen, the transmitter will be activated and the fun can start. Word of caution! Use low power transmit signal.

I definitely recommend getting familiar with the software prior to first QSO. The program allows preparing number of "macros", so you don't have to type all details about yourself and your station. If you experience too much noise, activate the CW narrow filter on your receiver.

I have also successfully tried this interface for receiving of SSTV signal. Well, the world of digital communication is wide open. Enjoy this device and keep working PSK31.

Have a very merry Christmas.

73, Denny
VE3OKD



This is the schematic diagram for Denny's PSK 31 interface board.

Minutes of the Oakville Amateur Radio Club

November 11, 2002

1. Introduction of members and guests, a total of 29 attendees.
2. The newest club member was introduced by Greg VA3GGF. Brett VA3WST has recently passed his Basic test and is working on obtaining his 5 WPM CW, welcome to Amateur Radio Brett.
3. Brad VA3COX moved that the minutes be accepted as published. Seconded by Francis VE3FTC. Motion carried
4. Carvel VE3CPQ presented the treasurer's report. Membership is above the budgeted numbers, things look good on the financial picture.
5. Russ VE3JUJ reported we have 67 paid members with 2 life members. Included in the 69 members are 11 first time members.
6. Denny VE3OKD informed the club that January's meeting would be a joint meeting with Burlington Amateur Radio Club and the presentation will be from Halton Regional Police speaking on 911. February's meeting will see Peter VE3HG splitting his time between Contesting and publishing technical journals. Don't forget the Christmas dinner Dec 9th, please let Carvell know if you are planning to attend.
7. Rick VE3YRH reported on the successful turn out for the Halloween Patrol worked jointly with Oakville REACT. He also thanked those who participated in the Simulated Emergency Test (SET) on Saturday Nov. 9th. There were a number of lessons from the test that will be incorporated into future activities and training sessions.
8. Rick VE3YRH moved the meeting be closed, seconded by Denny VE3OKD. Motion carried.

Tony goes to TI5N for the CQ WW DX SSB contest

After many emails and pre-departure planning, I started the flight to Costa Rica on Wednesday, Oct 23rd. The flight was via Chicago where I met up with Brian, KA7KUZ and Ed, W1EP, two other operators. We then flew via Mexico City and finally arrived in Costa Rica at ten minutes past midnight. Baggage took another 20 mins so by 12:30am we were outside and meeting Keko, TI5KD and Harry, AC8G. After a short (20min) car ride we were at the QTH of Keko. Brian and I were too keyed up to sleep, so we went on 20m and worked a number of stations with the new TI5/VE3RZ call.

The next day we started to get the stations together for the contest. There was one room in which we had the 20m and 10m stations, next door the 40m station and then the 80m station was in the main house in Keko's shack. The 15 and 160m stations were in a warehouse just two doors down the street. We had tried a wireless lan to network the computers from the warehouse to the main area, however this did not work and we had to resort to 350 feet of CAT 5 cable.

One worry was that each day, the power failed for about 10 – 40 minutes. All had flashlights and Keko brought a 5KW diesel generator. He was trying this out to supply power to the guest houses when it was noticed that the regulation was not too good and very shortly the lights popped as the voltage surged. Fortunately none of the rigs were affected, however an MFJ switching power supply bit the dust.



The station setup was as follows:

- 160m Icom 751A plus TL922 amp.
Inverted V antenna and loaded vertical at 80 feet
- 80m Icom 756 Pro plus Alpha 77.
Delta loop and rotatable dipole at 100feet
- 40m Icom 756 Pro plus Henry 2k3.
2 element yagi at 110 feet and 2 element quad fixed on US at 60 feet
- 20m Kenwood 940S plus Alpha 89
3 element quad at 100 feet, KT36XA at 80 feet, 4 element fixed on US at 60 feet
- 15m Icom 756 Pro plus Henry 2k3
5 element at 110 feet, TH6DXX fixed on S. America
- 10m Kenwood 940S plus amp 500 watts.
3 element quad, KT36XA (both shared with 20m), 4 element fixed on US at 50 ft

Friday was a rush to finish the setup of all stations, Heil headsets and footswitches made up for all stations. 7 computers (all laptops) were configured with Writelog and the network checked. Trained couple of operators who had not used Writelog before.

We had a special call for the contest – TI5N, and Tango India Five November became a very familiar phrase!! Contest started for me on 40m wall of QRM but punched hole and started to run Europe and NA. After 2 hours on 40, moved to 80m and then to 160m. From then on, it was follow the schedule that Harry, AC8G had made up and see where you would be next operating.

Highlights of the contest – having 2 hours on 10m with 453 Qsos including a 245 hour. With 15 and 20 running at the same time, the combined rate was over 600/hr.

Had a very good pileup on 40m on Sunday morning after sunup. Ran Asia, JA's, DU's, 9V's, then had a ZL call for double mult and he told me there was a VK6 in zone 29 calling me – worked him for another double mult.

Recognized some of the calls from Ontario, particularly working VE3DC, VE3EJ, VA3SK etc.

Final score was as follows:

Summary:

Band QSOs Zones Countries

160:	147	8	20
80:	842	25	71
40:	1463	29	103
20:	3144	36	136
15:	4036	36	154
10:	2318	27	107



Rz at work!

Total: 11950 161 591 Total Score = **21,836,952**

List of operators were:

AC8G – Harry. KA7KUZ – Brian. KD6WW – Bruce. K1EP – Ed. K6GXO – Keith. K8QOE – Joe. NH7C – Sid. N0AT – Ron. N6JRL – Don. TI5KD – Keko. VE3RZ – Tony. WA8LOW – Ron. W8ILC – Ron. W8KKF – Eric.

The day after the contest, most people went on a sightseeing trip to one of the local volcanoes. I stayed behind and worked about 450 qsos on WARC bands, including some big pileups on 30m.

All too quickly the time passed and it was off to the airport on Tuesday morning, at 4:00Am (for a 6:00am flight!!). So now the contest is over, the memories are packed away so where to next???

73 de Tony, VE3RZ

Editor's Note: The ARRL 10 meter contest is on Dec. 14/15. VA3EC, VA3GGF, VE3RZ and VE3HG will be competing at VA3EC's QTH.

2002 CANSET Exercise Evaluation

by Rick Harrison, VE3YRH
Emergency Coordinator
Oakville Amateur Radio Club

The 2002 CANSET was held on Saturday, November 9, 2002 and was a combined ARES - Canadian Red Cross exercise. Known as "Exercise Messenger," the event made use of the following scenario.

A tornado, traveling north-east, touched down in the south-west corner of town cutting a path of destruction 3 miles long and 1/2 mile wide. In the path of destruction, 55 homes in the Edge Brook subdivision have been destroyed and another 80 have reported severe damage. The Red Cross has opened a reception center at the local community center and three evacuation centers in area High Schools. Red Cross is currently providing Family Reunification, Feeding and Lodging for 345 evacuees.

The telephone company's main switching station was in the path of the tornado. It was destroyed when the microwave tower collapsed into the building. The phone company reports it will be several days before service to the community can be restored. At this time, there is limited phone coverage within the community. Cellular phone service is also affected due to the loss of the microwave tower.

ARES operators are your only means of communications with people external to your community (eg: Regional Office and Ontario Zone)."

This scenario was followed by the Oakville Red Cross Branch. The exercise started at 9 am. At 9:30 am., the Oakville ARES team was placed on standby, with a request to report how many radio operators we could have available by 10 am.



VE3YRH and VA3GGF initiate the call-up procedure.

I initiated the Oakville ARES telephone call out system at this point. Greg Foster, VA3GGF, manned the amateur radio station at the Oakville Red Cross building and started logging in available ARES members. By 10:00 am., we had 14 ARES members and 2 non-ARES volunteers awaiting assignment. An additional Oakville ARES member turned up on the air and volunteered to assist shortly afterwards.

This made a total of 17 radio operators available in less than one hour.

Russ Schwandt, VE3JUZ, (Assistant EC - Region of Halton Liaison) responded to the Red Cross building to serve as the ARES station supervisor. Dave Fekyt, VE3DPD, also responded to assist with radio operations and log keeping. The scenario was read out over the air so that the stations on standby knew what was going on and what to expect.

By this point, message forms for transmission to the Red Cross Zone office in Mississauga were beginning to show up at the ARES radio desk. Michael Willems, VA3MVW, and Russ Gordon, VE3RMG, responded to the Oakville Red Cross building to provide communications services to the mocked up evacuation centers.

In addition to acting as Station Supervisor, Russ Schwandt, VE3JUZ, spent much of his time giving impromptu lessons in how to fill out formal message forms to Red Cross personnel.



VA3MVW

Complicating Factors

Most radio operations took place on the 147.450 MHz. simplex link directly into the Red Cross Zone office in Mississauga. Due to the extremely large amount of traffic (22 Red Cross branches each attempting to forward 21 different messages at the same time) it was very difficult to get messages through to the desired destination.

The Burlington Red Cross office was unable to use 147.450 MHz. due to extreme interference on that frequency. They had no HF operators or radio equipment available either and so were unable to access 7.055 MHz. - the HF frequency chosen for this exercise.

Thus; they were unable to pass any message info to the Mississauga Zone office. The Burlington ARES management telephoned the Oakville ARES EC and requested that we relay all of the Burlington Red Cross messages to Mississauga. Because of the large amount of additional work this request generated, Doug Smith, VE3RG, was brought into the Oakville ARES station to deal with it on the OAK VHF repeater.

Some message traffic for the Red Cross in Hamilton, Ontario was generated by the upstairs crew at the Oakville branch. As there didn't seem to be any way to deliver these messages on VHF, Denny Zidek, VE3OKD, who had just arrived at the Oakville Red Cross, was pressed into service to try sending them via the National Traffic System (NTS) by way of the Trans-Provincial net on 7.055 MHz. Traffic on this net was also extremely heavy; Denny had to wait approximately 15 minutes in line before his turn to transmit came up. By the time his turn had arrived, the exercise had ended.

According to Oakville ARES log sheets, "Exercise Messenger" was officially ended at 12:14 pm.

Lessons Learned

- i) Red Cross personnel need instruction on how to fill out formal message forms.
- ii) Oakville ARES members need a refresher course in how to fill out formal message forms.
- iii) Oakville ARES members need instruction in proper log keeping procedures.
- iv) The physical layout of the VE3HB amateur radio station should be modified to make ARES operation more efficient.
- v) People (ARES members and non-members alike) should not congregate in the radio shack unless they are actually assigned to an operating position. Unnecessary personnel in the radio shack generates a large amount of conversation and related noise, making radio operations extremely difficult.

A lounge or waiting area should be set up somewhere within the Oakville Red Cross building where ARES personnel who are taking a break from the radio room, waiting to go on shift, or awaiting an assignment can gather, chat and partake of refreshments. Such an area could also be used by ARES management personnel to provide briefings and debriefings to parties involved in an operation.

- vi) Headphones, boom mics and foot switches should be considered for all radios that may be used in ARES operations.
- vii) Some method of sound deflection should be used to keep noise distraction to a minimum at each operating location.
- viii) The RAC message form should have a space for message originators to print their name as well as sign it. Frequently, signatures are illegible.

Suggestions From Exercise Participants

- i) All ARES members should keep pens, paper, message forms and a clipboard with them at all times.
- ii) More practice events of this type should be undertaken.

My thanks to all those who participated - Oakville ARES members and non-members alike. Special thanks to those stations that checked in to the operations net and then remained on standby throughout the event. Had this been an actual emergency, you wouldn't have remained on standby for very long.

QRT by VE3HG

Thanks to everyone who contribute articles or ideas for this issue of *Hot Bananas*. It's always easier when there's lots of articles and photos to pick out of the pile.

Next month we'll feature an excellent report from, Tony VE3RZ, who has supplied an informative writeup about how a modest contest station, VE3DC, appears to have come first in Canada in the new multi-two category in the CQ WW DX SSB contest. Tony says anyone of us could do the same with a little effort. I guess this means staying up for 48 hours at a time! Hi.

The crew at VE3DC (This is the Hamilton club.) took 5th in the muti-op category of the 2002 CQ WW DX SSB portion of the 160 contest. Congratulations to all.

Here's a final thought. If you think ham radio is dying here's some news from *CQ Magazine*.

In 1980, there were just under 382,000 hams in the U.S. At the end of Sept. 2002, there were just over 683,000, a 22-year growth rate of an astounding 79%.

Looking at more recent numbers, there were just under 675,000 hams in the U.S. in March of 1999 so the U.S. is up 10,000 hams in three and half years. They're averaging 18,000 newly licensed hams in each of the past five years. That's 90,000 new licensees in a five-year period.

Of course, these numbers don't reflect the average age of ham radio operators but that's a topic for another issue.