

The VHF Journal

Official Newsletter of the Rochester VHF Group

March 2000

<http://vhfgroup.rochesterny.org>

Club Memorial Call: W2UTH

This Month's Program: Tom Whitted, WA8WZG,
Friday March 10 at 7:30PM



**Are YOU ready for 10GHz narrowband?
The RVHFG project kits take shape!**

This month's saying:

*"Anyone who can't find North without
a compass shouldn't be let out of the house alone!"*

Gracie Heavyhand, the Dead Dog Cafe

By subscription: \$10 USD / \$15CDN annually

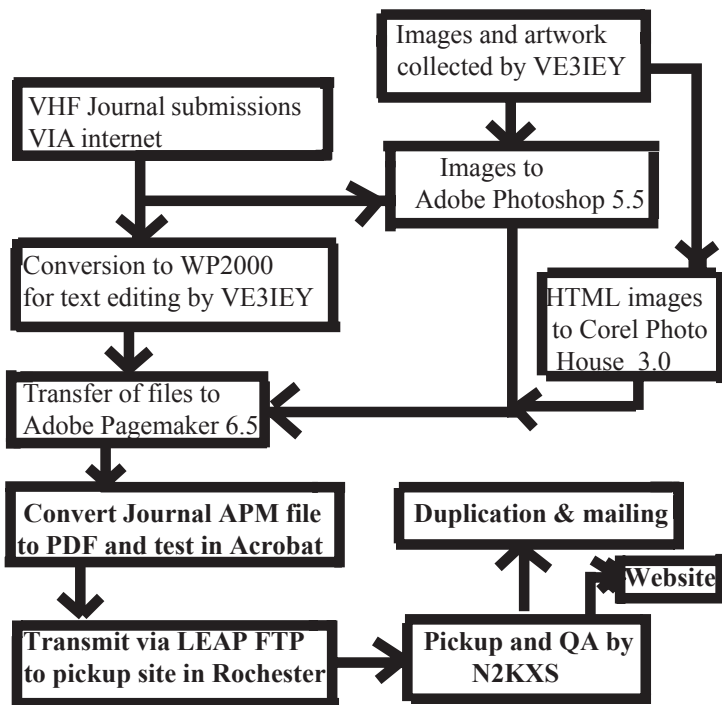
Editorial License

de VE3IEY

March already, eh? This is the 7th issue of the VHF Journal this year, and we just MIGHT have all the bugs worked out. Each month it's something- last month it was a particularly troublesome incompatibility problem with a **printer driver!** (hence the large amounts of *White Space* in the FEB 2000 issue). Live and learn- that problem had been dogging us for months- and we finally found it! Well, this month we're outputting it in PDF format. If all works out well, you'll actually get an idea of what I have been trying to send out for the past 7 months! Many tnx to Judy, Jeff and Mark for making this all **finally** happen!

We're still in the process of defining the "look and feel" of the Journal- I suppose most editors will tell you it's a continual process. My biggest problem is getting the technical people to write their stuff down and submit it for publication. I would LOVE for the Journal to be filled with schematics, diagrams and how-to advice, but we just don't get the submissions for it. As a matter of fact, I think we haven't had a single tech article this year- can that be right? **Let's see, does "Wash The Cat" qualify as a how-to article?** Hmm... We'll see what we can do about **that** in April.

Here is a flow chart of how the Journal is created now, in case U are interested- up to now it has been a WP creation only- it's a little more complex as of March. **BE SURE TO SEE THE FULL COLOR VERSION ON THE CLUB WEBSITE!**



To subscribe: Send your address, call, and \$10 US funds (or \$15 CDN funds), to: The Rochester VHF Group, PO Box 92122, Rochester, NY, 14692.

Commentary and articles: via e-mail to editor VE3IEY: tantonr@kingston.net. Use standard ASCII text, **Corel's Word Perfect** or send as a regular e-mail message.

Post editing, Data Magic, Printing & Distribution are courtesy of Judy N2KXS.

The Rochester VHF Group

*Club call W2UTH *

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Our "Who's Who"...



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Jeff, KB2VGH sez:

"There is only *one* mailing list [you'll ever need...]"

Rvhfg@vhfgroup.rochesterny.org

It is set up to broadcast to all RVHFG members

Schedule for the rest of 1999-2000

March 10- WA8WZG: See page 3, eh!

March 15- JOURNAL DEADLINE for APRIL!

April 15- VHFSS awards BANQUET.

May <Surprise Surprise

Photo, artistic and text credits (where not otherwise noted):

Ed Gable, Peter Aschwanden, Michael Eddenden,

J Barry Ludwick, T. Richmond,

Marty Natchel & Steve Ettlinger, Stephen Beaumont,

Cheese Bits, NEWS listserver, HWVHFS listserver.

MEETING NOTICE:

10 MARCH 2000

Place: Monroe County Social Services Building,
111 Westfall Rd, Rochester, NY

Time: 7:30PM

Program:

WA8WZG – Sweeping the Nation! A VHF contesting how-to.

In the past few years, there have been a few dominant figures on the VHF Contesting scene. Only ONE has accomplished the Clean Sweep, winning the January, June, August and September VHF contests as a single-operator: Tom Whitted, WA8WZG.

Tom has recently taken his operations to a new level – hosting an all-band multioperator effort from his location in EN81om (Port Clinton, OH) on the shores of Lake Erie. From here, Tom can take advantage of his “over water” paths to places like Chicago, Buffalo and Rochester. Many local hams have been able to work him on MANY bands in any given contest.

This presentation will include slides of his operations, discussions about techniques, tips on how he did what he did, and some fun open discussions. Tom is a dynamic speaker, and this should prove to be a phenomenal evening. EVERYONE, contesters and non-contesters are encouraged to attend.

About WA8WZG:

Tom received a BSET from Kent State University in 1974, as well as a BS in Industrial Education from University of Toledo in 1989. He worked in R&D for Kelsey Hayes, Detroit in the 70’s and was a member of the design team for the first Anti-Skid control on the Lincoln Mark 1. He currently teaches electronics tech prep at high school level and operates a Marine Electronics business on Lake Erie in the summer months.

First licensed as WN8WZG, he now holds an Extra class ticket as well as First class FCC phone ticket with radar endorsement. An Avid contester and Microwaver, you can find Tom active on all bands through 47 GHz. He has presented at most of the major VHF/UHF conferences, such as the Eastern States VHF Conference & Central States VHF/UHF Conference. Many of the proceedings for these events include his contributions if you are interested in further reading.

In addition, Tom also hosts a terrific website, <http://www.wa8wzg.com> - where you can check photos of some cool operations, find some connectors for your heliax, and other microwave-related stuff. [I just couldn’t get these pictures to work quick enough to get them in the newsletter- sri! -ed]

(This really nice item was written by Mark Hoffman, K2AXX)



BANQUET INFO!

The 51st anniversary and awards banquet will be at the Burgundy Basin Inn, 1361 Marsh Rd. Pittsford, NY.

Tickets are \$18.50 each for the Buffet dinner.

The date is **Saturday, April 15th.**

6:30 PM appetizers, 7:30 dinner.

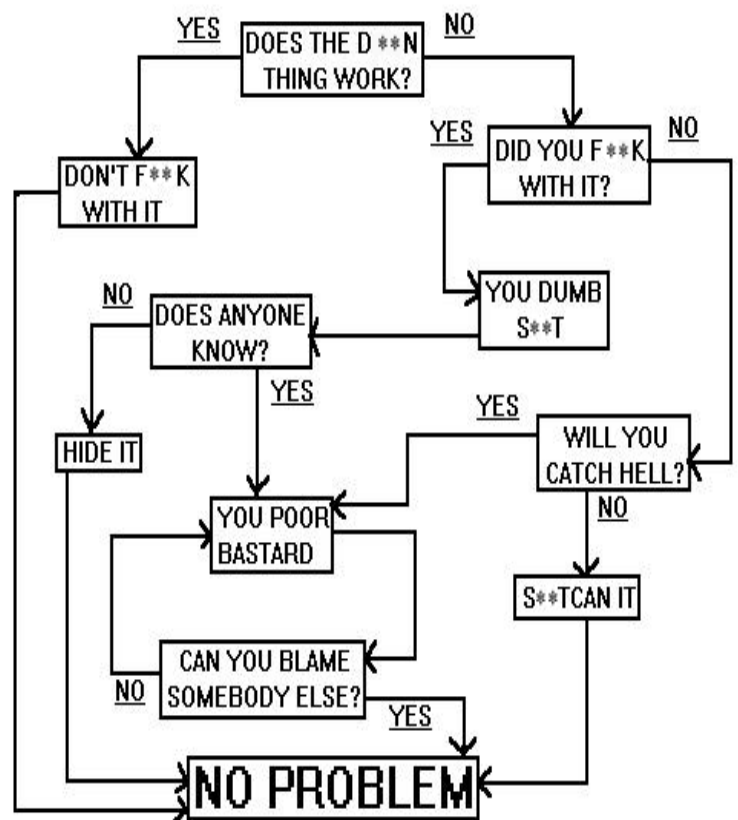
Music by DJ Brad.

PLEASE NOTE THE CHANGE IN DATE!!!!

Get your tickets from Tim NS9E, Paul N2OPW, Irv AF2K or. Len WA2ZNC (Banquet Chairman).

We hope to see all of our members there!

PROBLEM SOLVING FLOWCHART



Forwarded to the VHF Journal By
J. Barry Ludwick, BSME, Cooper Union 1987

FOR SALE:

DC to AC inverter, NEW, 1500 w. cont., 3000 w. peak.
\$ 275.00 CONTACT: Len WA2ZNC at
(716) 229-5470 or wa2znc@juno.com

“Time is the longest distance between two places
Tennessee Williams”

Chairman s Letter

...de NS9E

With the business of January well behind us, we are now ready to try our hands at something more relaxing (I hope!): Construction! The unusual winter weather this year has given me nice blocks of time in which to spend happy hours with a soldering iron. In that time, what have I been cooking up? A 10 GHz transverter from kit!

This year's club project has proven to be one of the most successful ever. A total of 18 kits were purchased, and most of them are being built together on Saturday mornings. Dave, K2DH has been gracious to open the doors of the Microwave Data Systems microwave lab as a place to work. Besides having some nifty tools (Like soldering irons that are essentially dummy loads for a 14.5 MHz transmitter! They are really slick units!) and state-of-the-art test equipment, there is that camaraderie that only comes from doing things as a group.

Many of the kits are near completion; as of this writing, my kit is finished electrically, and the LO system and transmit are already aligned. This Saturday, Dave will use a noise figure meter to tune the receive. The transverter will then be ready to go in the cabinet. So far, it looks like I have a really hot unit. It well exceeds specs on transmit. We will see how good receive is on Saturday!

So, we will have 18 more 10 GHz stations working in the club. What does this mean? It could mean a lot of things to the people who get out and actually use them. For instance, a whole lot more fun in the 10 GHz and up cumulative contest. Or, with a preamp and some power, a good VHF/UHF contest station. Maybe we will QSY to 10 GHz for ragchews rather than to 144.210. The narrow beamwidth of the antennas suggests uses for public service work. Imagine clean point-to-point links to monitor parts of a parade or race. The transverters have enough bandwidth to handle FM and ATV, making them truly versatile. Of course, we can have a lot of fun at RVHFG get-togethers by just trying to communicate with one another with bounce shots, etc. Last, but not least, we can use all these new rigs for serious weak signal, DX and moonbounce work. If you have a 12 foot dish and 20 watts of power (Surplus TWTA), you can seriously consider moonbounce! Surplus TWTA's are still easy to find at larger hamfests.

This month Tom Whitted, WA8WZG will be our guest speaker. Over the last few years, I have spent a fair amount of time with him, through his association with Leon Ingerick, N2HLT. I can tell you from firsthand experience that whatever Tom will choose to present will be INTERESTING! Tom is a great guy and a great ham. Peter Shilton, VE3AX'es presentation was hard to top, but Tom is capable of topping it! I hope you try to make it.

Last, but not least, it's time for nominations for the W2UTH award. This award goes to the RVHFG member who has made a substantial contribution to the club over a period of years. Any RVHFG member is eligible to submit a name. The choice of who gets the award is made by a panel of past W2UTH award winners. This award is not given out every year, and wasn't last year. So, whoever gets it this year will be worthy of that much more honor! Submit your nomination, along with a description as to why this individual is worthy of the award, to the club P.O. Box. Please, no emails for this! The nominations are opened only by the W2UTH Award committee.

That's all for this month. See you at the March meeting!

Tim Stoffel, NS9E

Truth is Stranger than Fiction!



Found by N2GKM in the local WAL-MART flyer. So round, so firm, so fully packed, these little suckers boast FIVE HUNDRED WATTS OF POWER... But you can only get TWO miles of range out of `em? Must be the special 75GHz models..Maybe it's a pulse power rating. Who knows :^) (ed note: please note that this is NOT the April issue of the VHF Journal).

“If you try to please everyone, nobody will like it.

some very wise person

Looking for a good time, sailor?

Check out: <http://realbeer.com/>

“One of the oldest public offices in England is that of the ale-conner, or taster, a post created by William the Conqueror in the 11th century in order to keep the ale prices and quality in line. Not only was the ale-conner an expert judge of beer, but he had the power to condemn a batch of beer or order its sale at a reduced price if it does not meet his high standards.

This token civil position still exists, paying a small annual allowance with free beer thrown in for good measure.”

Physics for Hams.

Thomas R. Hodge WA2YTM, PRC

We can't escape the laws of physics. They affect us every day. This is why it is important to have at least a moderate understanding of physics. It has taken thousands of years for scientists to reach the level of understanding we have today. Along the way many famous people have added to our knowledge.

In 1589 Galileo proved that all objects fall at the same rate. But he was unable to explain why heavy objects are always attracted to our toes (**Newton's law of gravity 1665**). Or why small parts dropped from the bench disappear when they hit the floor (**quantum tunneling**).

As hams who work on rooftops and towers, let us examine the laws of falling bodies. Any falling body experiences an acceleration of 32 feet per second squared due to the force of gravity at the earth's surface. Starting from rest (i.e. not falling) an object will gain speed as it falls. The speed and distance an object falls can be written as follows:

1: $V = aT$ (velocity equals acceleration multiplied by the time)

2: $S = (\frac{1}{2}) a T^2$ (distance equals one-half acceleration times time squared)

Since $a = 32\text{ft}/\text{sec}^2$ these equations become:

3: $V = 32 T$

4: $S = 16 T^2$

From these equations we can calculate the time it takes for an object to fall a certain distance and the speed it is traveling when it hits the ground. Here is a table of some typical numbers:

Distance Fallen	Time of Fall	Speed at Impact
6 ft	0.61 sec	19 ft/sec
16 ft	1.00 sec	32 ft/sec
25 ft	1.25 sec	40 ft/sec
50 ft	1.76 sec	56 ft/sec

From this table we can see, given a normal human reaction time of 0.3 sec, that from the top of a **6 foot step ladder** you barely have time to think "SHIT!!" before you hit the floor. **From the roof** of a single story house you have time to say "Oh Shit!" When you drop a wrench from the **25 foot tower** you have time to say "Heads up." And your assistant has time to look up before catching it in his teeth. From a **50 foot tower** you have just enough time to say "Holy cow, it's a long way down."

Interestingly enough the speed at which you impact from a **one-hundred foot fall** converts to **54.5 miles per hour** so you can easily simulate the experience by jumping out of your car.

As we have seen, an understanding of the underlying physics can give us a better perspective on just how important that safety belt can be. In a future article I will discuss elastic and inelastic collisions to determine **will you** and, if so, **how high can you bounce** when you hit the ground.

Eastern VHF/UHF Conference

from Bruce Wood, N2LIV, Conference Chairperson

The 26th annual Eastern VHF/UHF Conference will be held on August 25, 26 & 27 in the Radisson Hotel in Enfield, Ct. This is the same location as last year although the hotel was named the Harley Hotel at that time.

Conference Proceedings will once again be published by the ARRL. Speakers and articles are welcome. Please contact Bruce Wood, N2LIV at bdwood@erols.com if interested or any questions. Further info will follow as it becomes available.

Dale and Steve went on a camping trip. After a good meal and a bottle of wine they lay down for the night, and went to sleep. Some hours later, Dale awoke and nudged his faithful friend awake.



"Steve, look up at the sky and tell me what you see."

Steve replied, "I see millions and millions of stars."

"What does that tell you?" Dale questioned.

Steve pondered for a minute. "Astronomically, it tells me that there are millions of galaxies and potentially billions of planets. Astrologically, I observe that Saturn is in Leo. Horologically, I deduce that the time is approximately a quarter past three. Theologically, I can see that God is all powerful and that we are small and insignificant. Meteorologically, I suspect that we will have a beautiful day tomorrow. What does it tell you?"

Dale was silent for a minute, then spoke. "Steve, you idiot. It tells me someone has stolen our tent."

W2RTB Beacon Update ...de K2SPO

From Cheese Bits, February 2000

As of 29JAN, W2RTB/B located in FN12, is active again on 144.276, 222.059 and 432.306, 10-12 watts out on all 3 bands to M2 eggbeaters. Was unable to get the 1296.285 operating. Did not turn the 50.069 MHz beacon back on as there are already FOUR operating beacons within 250 mi of Rochester +/- 1 KHz and they just keep coming. After 10+ active years on that frequency. You'd think it would be "grandfathered". **How about some reports?**

Editors note: Al, who lives in Rochester, used to be a member of the VHF Group. Now he writes for Cheese Bits.

RVHFG January Meeting Minutes

The January meeting of the RVHFG was held on January 14 at 7:30 PM. The minutes of the November meeting were approved as published. The treasurer's report was also approved as published. Membership total is now 91.

Paul N2OPW will distribute the DEM 10 Ghz Transverter kits. Dave K2DH will organize any construction and/or tune-up dates as required. Tim NS9E asked for program presenters for the upcoming Rochester Hamfest. Two or three presentations are normally required.

The April RVHFG Awards Banquet will be held at the Burgundy Basin Inn. Len WA2ZNC stated that the tickets will be less than \$20.00 per person. There will be a cocktail hour followed by a buffet dinner and then the awards ceremony.

The monthly tutorial was given by Tim NS9E and covered proper logging techniques. This concluded the regular January meeting.

After a brief intermission, the January Contest meeting was called to order. After the introductions and upcoming contest plans were given by each member, Mark N2YB outlined what was necessary for the RVHFG to capture another ARRL gavel award.

Frank Pollino - Secretary

From the Treasurer:

Paul N2OPW February 23, 2000

CHECKING ACCOUNT Previous Balance.....	\$1074.93
Income:	
Dues collected.....	00.00
50/50 profits.....	9.00
Awards collected.....	30.00
Banquet tickets	18.50
Expenses:	
Newsletter Supplies	-153.12
Banquet ticket printing.....	-16.00
Current Balance.....	\$963.31
SAVINGS ACCOUNT Previous Balance.....	\$1253.38
Income:	
Interest.....	0.00
Expenses.....	0.00
Current Balance.....	\$1253.38
Balance on Hand: Checking.....	963.31
Savings.....	1,253.38
Total.....	\$ 2,216.69

“Blessing of your heart, you brew good ale.”

William Shakespeare

“Rule #1: Nobody looks up

Rule #2: Paint it white and nobody will notice.”

T. Richmond

This space reserved for two articles that never arrived.
Was one of them YOURS?

Haven't written that newsletter article yet, well then....

Here is WA2YTM with his latest homebrew project.

“It is a wireless communication device. Most of the time I don't even need to send, *just pointing it* at the intended recipient is enough for them to get the message.

No RFI complaints (*or any other kind*) have been received as yet. Let me know when the next homebrew night is at the RVHFG. I'll bring it in.”



Suitably inspired after a conversation with Kent Britain, WA5VJB, Editor of the NTMS FEEDPOINT. The RVHFG Journal Editor wishes to advise the readership that he has placed WA2YTM under contract to secure articles for the VHF JOURNAL by any means necessary. Mr Hodge in particular is getting tired of writing so many articles himself. You wouldn't like him when he's upset... he might put tacks and rock salt in that thing!

Finding True North

... de W2EV

As usual, there are *two* ways to look at the problem: the geek-way and the practical-way. :o) Before running out and following this example, <http://www.ibutton.com/weather/truenorth.html> (which is a very cool mathematical exercise) **try doing this:**

1. Depending on your economic status, either: purchase a driveway reflector from a high-price hardware store -or- find a really tall stick in your backyard.
2. Wait for a clear night.
3. Go outside, and place yourself generally North of your antenna.
4. Face north, and find Polaris (the North Star...not your neighbor's snow mobile).
5. Stake the marker in such a way as to align Polaris with your antenna.
6. Go inside, get a cup of hot chocolate, spend some time with the family engaging in meaningful conversation and otherwise biding time until dawn's early light, when you can use the stake as your "North marker".
7. Be sure to remove the stake from your yard. It tends to draw dogs and angst from the wife.



In honor of our Presentation last month on **The Big Dish at Algonquin Park**, The VHF Journal Editor plied four of our members with 6-packs of **ALGONQUIN BLACK and TAN**, (Brick Brewing Co, Formosa, Ont.) “smuggled” across the border from the great white north in an ordinary passenger vehicle. Below, he takes his lumps like a man.

Black & Tan — great stuff!
by Judy Stonehill, N2KXS

The Algonquin Black and Tan, a combination of a stout and a pilsner lager, is an excellent beer, requiring **six** tests to ensure that the results were consistent.

A check of the bottle revealed good fill level, excellent clarity, color, and no sediment. The beer is moderately carbonated with uniform beading and good head retention. There is little aroma, and it was not its best quality. The taste and body, on the other hand, are some of the best I have encountered in a beer. There is a durable, pleasant aftertaste, not overbearing as some stouts can be. There are none of the objectionable flavors found in some beers such as those caused by high levels of phenols or esters. Overall, the Algonquin Black and Tan has quickly become one of my favorites.

Algonquin Black and Tan: A critical evaluation

by Mark Hoffman, K2AXX

I can't say enough good things about a true Canadian beer. This one is no exception. Thanks to Tom Richmond for bringing it down for me to sample *A little bit about the brew*: If you don't like dark beers, a black and tan is a wonderful (just a combination of an ale and stout) way to start. The TRUE black & tan is Guinness stout and Bass Ale in a 50/50 mixture. However – you can certainly substitute others in the mix with varying results.

The head is pretty thick on this brew, and the taste is a bit nutty. Very smooth taste, that is a very refreshing drink after contesting or after tower work (*BUT DON'T DRINK AND CLIMB!*). Probably a bit TOO heavy for summer drinking, but tasty nonetheless.

Overall, I'd rank this 8 elements (out of a possible 10). Renee has also sampled this beer, which she ranks at 3 horseshoes (out of a possible 5). If it were available in the states, this might easily become one of my faves. I'd recommend this with red meats – especially a nice steak or prime rib. Don't do chicken with this – the flavor of the food will be overrun by this beer.

ABnT - I like it

Tom Richmond, VE3IEY

The government of Ontario operates all the “Beer Stores”. They have up to **200** different brews available at the best outlets: It's like being in a candy factory (*on the web at: www.LCBO.com*). I'm a fan of darker beers and tried ABnT on a whim. HERE's your warning: **If you drink it out of the bottle, it SUCKS.** It's one of those strange brews that MUST be drunk from a glass- it needs to breathe... The head on it isn't as thick or persistent as Guinness, but it has a nice amber touch to it. It's not overpowering like some dark beers, and as Mark noted, a good intro to darks beers for someone who doesn't like them. *I dare you not to like ABnT!*

Remember: “Life is too short for cheap beer!”

In keeping with the spirit of our previous article, we present:

Black & Tan Barbecue Sauce

from Stephen Beaumont's “World of Beer” website:
<http://worldofbeer.com>

“Now that barbecue season is [soon to be] back in full flight— although personally, I must confess to being a chronic, year-round barbecuer who recognizes no such season—I thought that it might be time to trot out a beer-based barbecue sauce recipe I developed a couple of years ago. Enjoy!

2 tbsp vegetable oil
1 med onion, diced
2 cloves garlic, minced
1 jalapeno pepper, minced (optional)
1 medium macintosh apple, peeled, cored & diced
1 tbsp lemon juice
1 - 156 ml (5.5 oz.) tin tomato paste
1/2 cup dry stout
3/4 cup pale ale
1 tbsp bourbon
1 tbsp molasses
1 1/2 tbsp dry mustard
2 tbsp dry basil
salt & pepper to taste



Heat the oil in a large saucepan on medium heat. Add onion, garlic and optional jalapeno and saute until the onion becomes translucent. Add apple and lemon juice and continue cooking until the apple softens. Add tomato paste and stir it well into the mixture. Cook for 1 minute before adding the remaining ingredients. Mix well and allow to simmer for 5-10 minutes. Transfer to a blender or food processor and puree. Return to the saucepan and allow to simmer for 45 minutes longer. Makes 2 cups of sauce.”

New North American 47 GHz Distance Record Claimed

(from *The Canadian Amateur*, March/April 2000)

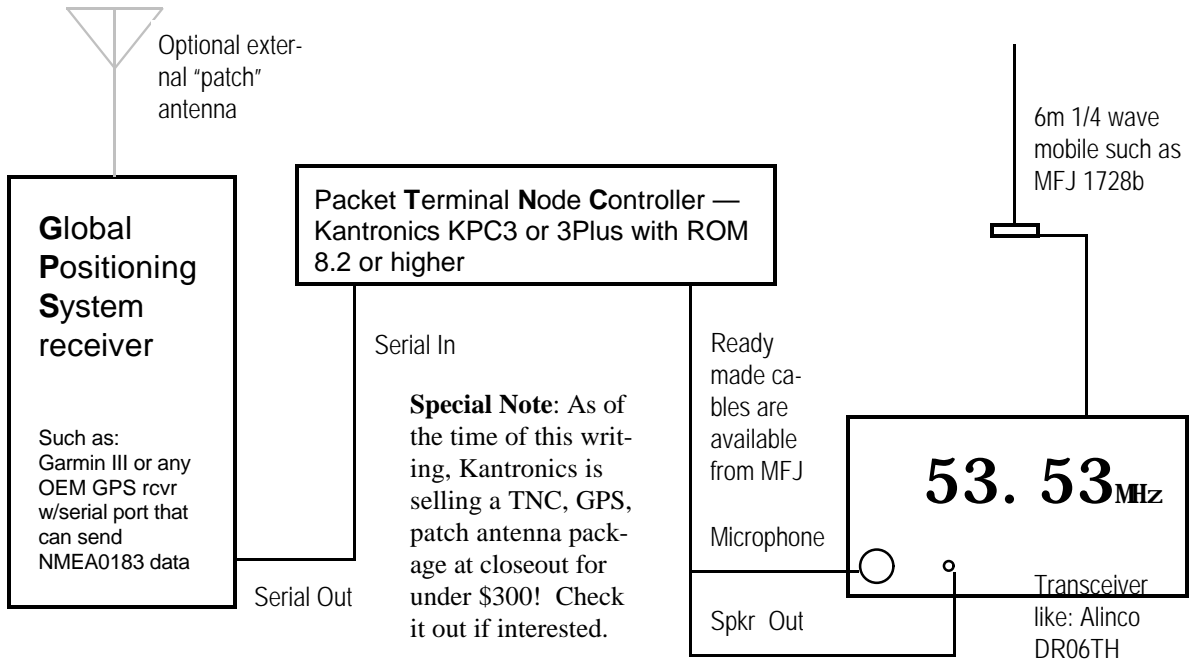
KF6KVG and W0EOM are claiming a new North American distance record on 47GHz. On December 8, 1999 after some testing and waiting for the right day, W0EOM went to Mt. Vaca (CM88WJ) near Vacaville, California, and KF6KVG went to Loma Prieta Mountain (CM97bc), south of San Jose. **They calculate the distance to be 137km [62.27 miles- ed.]**

At about 2:15pm they acquired signals about 1 S-unit out of the noise. Approximately 10 minutes later, KF6KVG found he was on a side lobe, and signals jumped up to S8 on both ends. Both used 23” dishes. Weather was 50 degrees F, humidity about 60%, and there were high clouds.

* * A Pictorial is Worth a Thousand Words * *

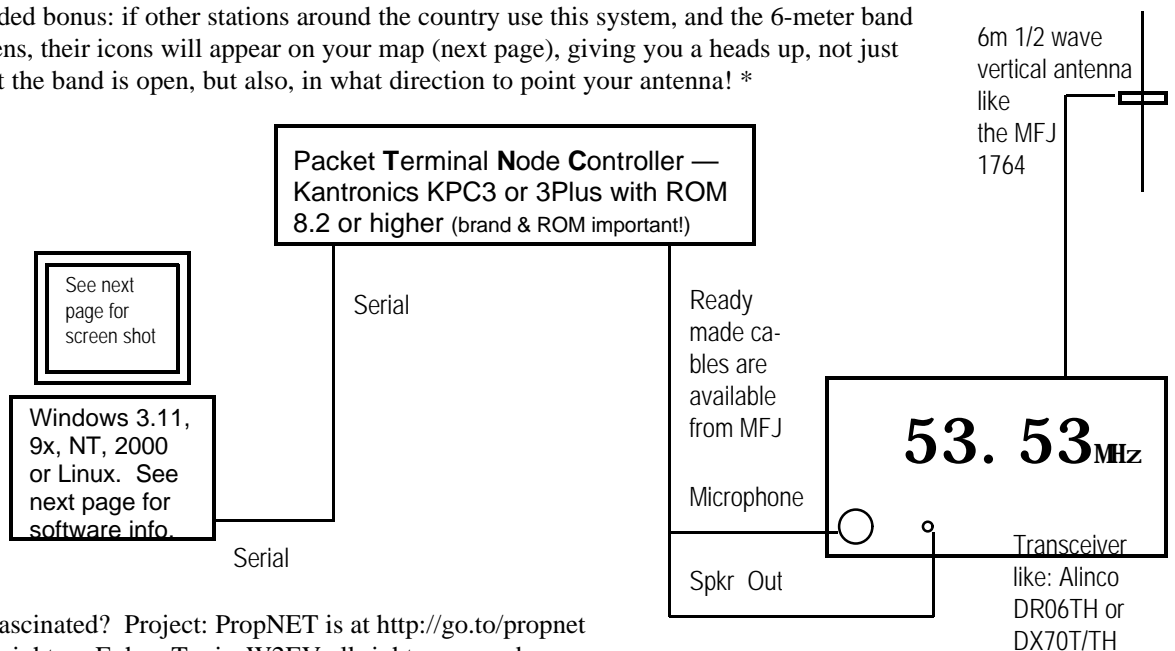
Tracking Rover (never having to whistle for 'im again) by Ev Tupis, W2EV

How the Rover-side system works — The GPS gets a latitude/longitude fix on your position using a constellation of orbiting satellites. The TNC accepts the lat/lon from the GPS as a serial signal, and modulates it into audible tones, which then feed the transceivers' microphone jack. The transceiver is keyed (by the TNC) and transmits the stations' latitude and longitude every several minutes on 53.530-MHz. A Rover can even attach a message text, such as, "Listening 146.49-MHz", "Listening 144.245-MHz" or "Work us on A,B,C,D,9,E,F,I".



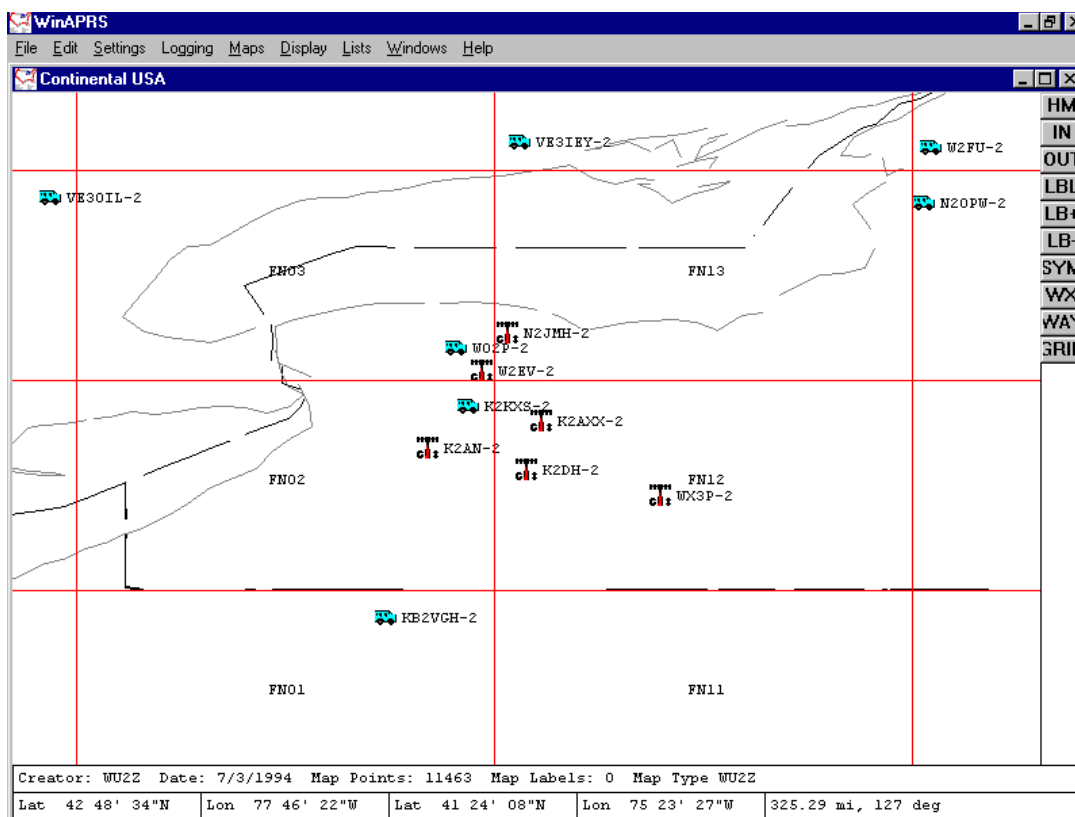
How the Fixed Station-side system works — The transceiver picks up the transmission from other participating fixed stations as well as Rovers. The TNC accepts the audio, demodulating and sending it as serial data to the attached computer. The computer runs software that places an icon corresponding to the received station on a map — correct according to the received lat/lon! As Rovers move, their icon will move on the screen!

Added bonus: if other stations around the country use this system, and the 6-meter band opens, their icons will appear on your map (next page), giving you a heads up, not just that the band is open, but also, in what direction to point your antenna! *



(*) Fascinated? Project: PropNET is at <http://go.to/propnet>
 Copyright — Evhen Tupis, W2EV all rights reserved

A portrayal of what a well-located (at altitude) participating multi-op fixed station may see on their computer screen. The “Tower Icons” represent received transmissions from other fixed location stations. The “Truck” icons represent Rovers. Because “the trucks” have GPS’s attached, their location is updated in real time. Everyone can watch as they go mobiling to their next location.



TNC and Program Setup Parameters that are common to Fixed and Rover stations:

There are distinct advantages to using Kantronics KPC3 or 3+ TNC’s with ROM 8.2 or above (it is beyond the scope of this article to describe them, though). Assuming the use of a KPC TNC, all participants need to do the following:

1. Get your TNC communicating with a terminal package on your computer (probably on COM1: 9600,8,N,1)
2. Issue the following command to restore factory default settings: RESTORE D
3. When asked to press (*) to set baud rate, do so.
4. The next prompt will ask you for a callsign. Enter your callsign with a -6 afterward (for 6-meter operation)
5. Place the TNC into Terminal mode by issuing the command: INTFACE TERM

Rover Specific Setup:

6. ABAUD 4800 to reset system to operate at 4800 baud (that’s a GPS need). Change your terminal software to this new baud rate (may require exit & relaunching).
7. Enter the following TNC commands:

```
GPSHEAD 1 $GPRMC      GPSHEAD 2 $GPGGA
BLT 1 EVERY 00:03:00  BLT 2 EVERY 00:03:01
LTP 1 GPSLJ VIA HOP7-7 LTP 2 GPSLJ VIA HOP7-7
CONOK OFF              INTFACE GPS
```
8. Your GPS *may* need to be setup to send NMEA data out the serial port. Check the instructions for your model.
9. Plug everything together and watch the transmitter key every 3-minutes or so, sending GPS lat/lon!

Need more information? Need something to be clarified? I will help you!
 Ev Tupis, W2EV evman@ix.netcom.com

Fixed Station Setup:

6. Enter the following commands:

```
UITRACE HOP,30
CD SOFTWARE
LTP 1 CQ VIA HOP7-7
LT 1 [GRIDSQ] <-Put YOUR grid between [ ]
BLT 1 EVERY 00:15:00
```
7. Load WinAPRS software (download from <http://go.to/proprnet> under the Construction Plans link) and follow these instructions exactly:
 SETTINGS|STATION - Enter Callsign, OK
 SETTINGS|TNC - Receive Only, Kan, OK
 SETTINGS|Open VHF TNC
8. Turn transceiver “ON”, open the squelch, watch and wait!



< VE3AX making his presentation at the February meeting on the 46M dish in Algonquin Park, complete with audio tapes of local ops working VE3ONT. We told you that you'd be missing out if you weren't there!

Now you have **another** chance at a GREAT VHF+ program!
On MARCH 10th Tom Whitted, WA8WZG will be making his presentation.

Info is inside *The VHF Journal* this month!

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