



N.E.W.S. LETTER



The Publication of the North East Weak Signal Group

NOV 1999

VOLUME SEVEN

ISSUE FIVE

President: KB1VC Matt Reilly
V P: WA1HOG, Dennis Hennigan

CURRENT OFFICERS

Secretary: K1MAP Mark Casey
Treasurer: N1DPM Fred Stefanik

NEXT MEETING

THE NEXT MEETING IS ON SATURDAY NOVEMBER 6TH, 1:00 PM AT THE HARLEY INN
ALL ARE WELCOME TO THE DIRECTORS MEETING AT 11:00 AM
WE WILL HAVE SPEAKERS ON THE PAST CONFERENCE PRESENTATIONS
FROM THE PACK RATS, CENTRAL STATES AND OUR OWN

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MEMBERSHIP in the N.E.W.S. Group is \$10 per year. Apply to Fred Stefanik, N1DPM, 50 Witheridge St., Feeding Hills, MA 01030 (413) 786-7943 You may download an application from our web page <http://uhavax.hartford.edu/~newsvhf>

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FROM THE VIRTUAL SHACK OF KB1VC

WOW! WHAT A SUMMER! The June and September contests are behind us. The 10GHz Cumulative contest ended with a beautiful day of fine weather and a good level of activity. The VHF conference went really well.

October will bring Packrats, Hoss Traders, Microwave Update, and no doubt some non-ham activities.

SO NOW WHAT? Well, the next NEWS meeting will be in November (See the cover of this newsletter for date, time and location.) Long time members know what the November meeting means! Mayhem! Hilarity! Technical Presentations! Elections!

YUP. ELECTIONS. All four officers are up for re-election: President, Vice President, Secretary, Treasurer. If you are interested in any of the posts, please see me at the start of the meeting, or send me mail at reilly@tiac.net

Two positions on the board of directors are up. Again, interested parties should let me know before the meeting or via email. The board is responsible for setting policy, and setting the direction for the club.

It may be your time to get involved in the club. There's lots of stuff to do, and it actually is more fun than ordeal. Do you think the club is "heading in the wrong direction"? Would you like the club to emphasize other topic areas? Tired of reading wandering missives in the president's column? Now is your chance! Seize the reins of power! Man the barricades! Get a chance to use lots of exclamation points!

Seriously, the club isn't run by elves. You probably have some talents that you could contribute to the club. We probably have an officer's position that fits you. -----end-of-officer-election-pitch-----

AT THE NEXT MEETING! AS regular attendees know, we have a technical presentation at each meeting. They've ranged from the fine points of cable design, use and evaluation to the ugly truth about cannibalism and DXpeditions. (Well, that last topic got canceled, but you get the point.)

For our next meeting, members will present their summaries of presentations from recent amateur conferences and publications. We'll also have a presentation or two on recent equipment or component announcements or advances. Each presentation will be about 5 to 15 minutes long. I've got a few folks lined up already to do presentations on Microwave Update, Packrats, and our own VHF conference. If you'd like to add your own summaries of those conferences or some other conference, please let me know. (The sooner the better, but if you come up to me at the start of the meeting, I'm sure we'll be able to fit your short presentation in.)

If you've seen an article in Dubus, QEX, QST, or some other magazine, that might be of interest to the group, consider making a short presentation on it. Just the high points. There's lots of material out there, here's your chance to call our attention to the best of it.

Have you found a little widget that solves a long-standing technical problem at VHF, UHF, or SHF? Prepare a short (5 minute) talk.

Five minutes doesn't take weeks of preparation. You'll be talking to a

group of friends and guys who've heard your voice after a long contest. Let's get some broad participation for this meeting.

Again, if you have something you'd like to present, let me know at reilly@tiac.net or just before the meeting starts.

NEWS BOARD MEETING 5-22-99

Convened at 11:30 AM

From KB1VC: Matt, Mark & Fred will bet together to create a statement about the membership list.

Millennial Cum. Contest: Rules have been presented at Dayton. Paul Wade will sponsor the 1st place trophy. NEWS should sponsor the 2nd place plaque and maybe other groups will join in. "The NEWS Group endorses the proposed rules and plaque, not to exceed \$100, and encourages other clubs to sponsor other plaques", Unanimously endorsed by the board.

Newsletter Editor change to redefine duties and to include membership on the Board of Directors will be voted on at a later club meeting.

Dayton- A resolution was passed unanimously to donate a door prize of a Bird Element at the Dayton Convention VHF Banquet, approx \$75. A resolution was passed to donate a door prize of a value not to exceed \$100 at future Dayton Convention VHF Banquets.

The Board Meeting was adjourned at 11:57 AM

Thanks to Tom Williams, WA1MBA for taking notes during the Board Meeting, Mark, K1MAP

NEWS GROUP MEETING 5-22-99

Pres. Matt Reilly, KB1VC, opened the meeting at 1:10 PM.

Tom Williams, WA1MBA, proposed that the NEWS Group sponsor the plaque for 2nd place in our Millennial Cumulative Microwave Contest. There was a discussion about the rules which will be in place during the contest. Paul Wade, W1GHZ, proposed the event, and is entertaining a fine tuning of the rules. The plaque sponsorship passed unanimously.

A break was taken at 1:48 PM and the Group reconvened at 2:07 PM

Larry Blouin, K1CA, gave a presentation on 2 meter EME. Larry's detailed and informative talk included a basis in the history of EME, operating, scheduling, and valued hints on equipment choice. Slides and a tape of both CW and voice ME QSO's topped off the segment. He took questions and comments from the group after his presentation.

After a short break from 3:06 to 3:30 PM a few more items of new business were completed.

From Matt, KB1VC: A proposal to change the wording in the constitution in the Editor's duties. This will be voted on at a future meeting.

From Ron, WZ1V: There were 116 entrants in the 432 Sprints

From Matt, KB1VC: A motion to sponsor a plaque for the June Contest

at a cost of \$60 was passed unanimously.

A note about contacting Admiral Metals in Woburn for parts/pieces used in building projects.

From Mark, K1MAP: A short discussion of PSK 31 and how it affects the Band Plan.

From Art, W1TDS: Update and Discussion on the Brendan Trans-Atlantic 2 meter attempts.

We adjourned the meeting at 4:10 PM 39 Members and Guests were in attendance

Respectfully Submitted, Mark Casey, Secretary.

NEWS GROUP MEETING 7-17-99

This was our annual (outside) microwave+ meeting. We had a nice hot day and several members brought 10 & 24 Ghz equipment to the gathering in the rear parking lot of the Harley Hotel. In addition, many members brought VHF/UHF equipment and items to swap & sell from trunks and tailgates.

Pres. Matt Reilly, KB1VC, held a brief meeting on the side lawn.

The upcoming VHF Conference was discussed .

Mark, K1MAP, made a short presentation about the Central States VHF Society proposal to the FCC to protect weak signal spectrum. The following statement passed 18-0 "The NEWS Group supports the action of the Central States VHF Society to protect Weak Signal Band Spectrum and to eliminate (3 kHz or more wide deviation type) FM operation and other comparable non-compatible modes from the 144.100-300, 222.000-150 and 431.800 to 432.300. The NEWS Group supports an action affecting ONLY the aforementioned Band Segments."

The rest of the afternoon was spent with good company and plenty of cold soda

The gathering started at around NOON and broke off around 3:30 PM 36 members and guests were in attendance.

Respectfully Submitted, Mark Casey, Secretary.

NEWS GROUP MEETING 8-28-99

Pres. Matt Reilly, KB1VC, opened the meeting at the VHF Conference at 4:03 PM

Old Business: None to be considered at this time

New Business: Millennial Cumulative Microwave Contest-A motion was made and passed unanimously to sponsor this new contest with the noted changes in the rules.

1. All bands above 900 MHz will count
2. In subsequent months you may repeat contacts between the same grid squares as long as one station is more than 10 miles from any previous location.

The next meeting is Nov 6.

The newsletter deadline is one month before the next meeting (Oct 6)

The meeting was adjourned at 4:18 PM 41 Members and Guest were in attendance.

Respectfully Submitted, Mark Casey, K1MAP, Secretary

OH YES, IT'S ALSO FUN MAKING THE QSO'S.

Matt, KB1VC, struck a real chord with his message in the May, 1999 N.E.W.S. Letter. I've been "roving" since the days of Sections rather than grid squares and I consider the PR function an integral part of the roving experience. It can be fun too! I can think of only one contest where there wasn't an interested bystander at one site or another - June a couple of years ago when it RAINED all weekend. The FAQ's published in the issue are good. I've used similar answers with success. There are a few I'd add though: "No, it's not CB" and "Yes, your radar detector probably still works."

Funny thing, why do the questioners always show up just when your sked is about to start! The Police are always good for 5 - 10 minutes, as are the ex hams and inactive ones. There's fertile ground here, work it.

There have been some memorable sessions with the folks stopping by. Two of us were set up looking across a cemetery in FN33, with the usual assortment of antennas and dishes. A van stopped and a group got out, half of them in brown robes. They were Buddhist monks and they were sure we were trying to electronically detect the spirits in the graveyard. They were quite disappointed when they discovered it was only amateur radio.

Another time, in FN32, a different two of us had dishes aimed at mountains in Vermont and Massachusetts. The path happened to be in the vicinity of a federal defense facility. We had already had our conversation with the local PD (nice folks) when an official looking Jeep pulled up, wheels skidding. Two storm troopers jumped out, fully armed with M16's, demanding an explanation of why we were conducting surveillance of the plant. That took a bit of talking! I don't think we made any converts to the hobby but at least we didn't end up in Leavenworth or Danbury.

Phil Bradway, KB2HQ

PHOTOS EASTERN VHF CONFERENCE

Hi, I finally got around to posting photos from last months' Eastern VHF-UHF Conference, check it out, you might see yourself there: <http://www.qsl.net/vhfnews>

Look toward bottom for Photos from Recent...

-TNX to W1NWE for contributing.

-73, Ron WZ1V

A NEW MICROWAVE IF RADIO FROM MFJ PAUL WADE W1GHZ WWW.W1GHZ.CX

A question I'm frequently asked is: "what is the best IF radio for microwave work?" My answer has always been that there is no best radio, they all have flaws. Without any fanfare, MFJ recently came out with a 2-meter version of their small, inexpensive single-band SSB transceivers - would this be a good IF radio for microwaves? Apparently a few were available at Dayton, and WA5VJB got one. After hearing about it, I ordered one to try it out.

Our main interest is an IF radio for portable work; for home stations, an FT-1000MP with a DEMI transverter is quite satisfactory. However, for portable work, the major considerations are size, weight, power consumption, and simple operation. Then there are more subtle things: a frequency display visible in bright sunlight, mode switching to CW without shifting frequency, a switching output to control the transverter, operation at low battery voltage, output power adjustment without an initial spike, smooth slow tuning without those damn clicks. For hams, cost always seems to be a major factor as well.

Most of the recent multi-mode VHF and UHF transceivers have serious shortcomings meeting these requirements, particularly in power consumption, with high battery drain on transmit even on low power. Another failing is increasing complexity - lots of buttons and menus aren't what you need while contesting on a wet, windy mountaintop.

The old favorite microwave IF is the IC-202. Just try to find one! This small box provided adequate performance with low power drain and a minimal number of controls, and it works until the battery is pretty dead. These advantages have prompted folks to find ways to overcome its shortcomings, particularly the coarse frequency readout, the fast tuning rate, and lack of switching output.

The MFJ-9402X (see the MFJ catalog at www.mfjenterprises.com, page 23) has a lot in common with an IC-202. It covers 144.0 to 144.3 MHz, USB and CW only, with an analog dial and only three knobs: tuning, fine tune, and volume. As the ad says, "no microprocessor mumbo-jumbo." Other features are an analog S-meter and a switching output. Receive current drain is claimed to be 60 ma with the pilot light disconnected. On transmit, mine puts out about 5 watts while drawing 1.6 Amps - more than a transverter needs, but a reasonable level if the same radio is used for liaison. The output power adjustment doesn't work in both modes, but it would be a simple mod to reduce the power and current. Since everything is on a single printed-circuit board, access is easy and modifications should not be difficult. One thing that the MFJ rig has in

common with the Japanese rigs is the black screws holding the lid on - the heads must be made of swiss cheese to strip out so easily.

The MFJ price is also reasonable, under \$300, with discounts at some dealers. An optional adapter board is needed for CW - a worthwhile addition even if you don't do CW, to transmit a carrier for antenna peaking.

A small digital readout might be a useful addition, and can be found for less than \$50.

I haven't used the MFJ radio in a contest yet, but I believe it will make a good microwave IF transceiver. I also suspect that anyone who goes mountaintopping with one in a VHF contest will discover the meaning of QRPainful - low power and a less-than-bulletproof receiver is a frustrating combination.

In summary, the MFJ-9402X is not the ideal microwave IF radio, but it could be a good one, offering simplicity and reasonable cost. I predict that it will become the successor to the IC-202, with many of the same features and flaws.

ROVER SOFTWARE FOR THE PALM™ ORGANIZER PAUL WADE W1GHZ

I recently acquired a PALM V organizer; the original version was the PALM PILOT, a name that is often used for all versions. For those who haven't seen one, think of a handheld computer about the size of a chocolate bar. Some useful software is included: an address book, calendar, memo pad, to-do list, and calculator. A wide range of shareware is also available; for instance, I quickly replaced the original calculator with a scientific calculator using Reverse-Polish Notation. Data entry is done with a stylus, either using a stylized handwriting or by tapping on a tiny keyboard with the stylus.

After growing accustomed to the PALM V, I could see that this is an ideal tool for rover operation — but what about software? On the internet, didn't find anything specific, but did find a shareware C compiler, so I could develop my own. For start-ers, the **BD** (Bearing-Distance) program has always been essential, and Matt, KB1VC, had already translated it into C code. I added some code for the Palm IO, and stripped the rest down to the essentials: enter two 6-digit Maidenhead locators, get back bearing and distance. The whole program requires only 4K of storage (Total PALM V storage is 2 Megabytes).



The other essential for a rover is logging. With the ARRL 10 GHz & up Cumulative Contest approaching, I wrote a simple logging program. Again the approach is minimalist: record the essential information as simply as possible. Each time the program is started, you are prompted for current location, then for a call and grid for each contact. Each QSO is time-stamped and recorded, including distance in kilometers. Powering down the PALM computer does not terminate the program — it picks up instantly where you left off — logging is quick and easy, and battery life is at least a week.



However, after the first week-end of use, we realized that switching back and forth between BD and the logger was inconvenient. KB1VC suggested that a better approach would be to incorporate BD into the logger: enter the grid, get the heading, then enter the call upon successful completion. The latest versions operate in this manner. All this sophistication has bloated the program up to 7K of storage.

There are two current versions of the logging program: **10g_log** for 10 GHz only operation, and **log_cum** for multi-band operation. The logged fields are band, date and time, calls, grids, and distance, as needed for the ARRL contest. If some other contest requires additional information, it would be easy to make another version. Non-essential operations like duping, formatting, QSO points, and totals are best done after the contest on a desktop system. The PALM transfers information via a serial port and keeps both systems current with a "Hot-Sync" button. This software is free for amateur use and available from the W1GHZ 10 GHz home page: www.w1ghz.cx For more information on PALM computing, start with www.palm.com. For shareware, there are links from these addresses. One potentially useful bit of shareware is a "sun compass" — point the PALM at the sun and it indicates which direction is north. Unfortunately, the sun rarely appears during microwave activity! The range of shareware is wide and eclectic — one program allows you to use the IR port as a TV remote control. For times when I am left waiting somewhere, I downloaded a copy of Homer's *Iliad* to read; I'm nearly halfway through.

Why the PALM organizer and not one of the others on the market? Some of the others run Windows CE and have fancy color screens. The color screens eat batteries, and it would hardly be slanderous to equate "Windows" with "big and slow". Still, if

you wish to have a go at one, sources for the programs are included, and there is a version of the **PocketC** compiler available for Windows CE.

PALM is a trademark of 3COM Corporation.

NOTES ON A NON-CONTEST

Every three years, I miss the September VHF contest; two organizations I belong to have triennial meetings in Plymouth MA that conflict. I even miss the Ballston Spa Hamfest! Instead of touring the various grids within striking distance of my FN32bt home, I end up in FN41 and, this year, in FN42 also. Solution! I'll bring the IC706 and work a bit of the contest in between times.

Saturday afternoon, about 4 PM: Activities are over at Fort Revere, Hull MA (a beautiful spot), FN42 and there's an hour's drive time ahead. I hear ONE station on 6 meters SSB (FN32 on a high hill - want to guess?). They were working to the South West and my 100 Watts and a 1/4 wave couldn't quite get their attention. Absolutely no activity on 6, 2 and 222 FM, my only other bands. Fifteen minutes later, NC1I popped in for about 10 seconds (dB over ESP). That was it.

Sunday AM-ish: I found a ridge South of Plymouth (a local ham said it was the high point) and worked one station in FN41 and one in FN43, Still nothing on 6, 2 and 222 FM. On a second ridge overlooking the bay I heard the FN32, high hill group, still working 3's. Same result as the day before! So endith the contest.

Conclusions: It seems to me that there is some fertile ground to plowed in Boston and the immediate South. Where are all those multi-mode, multi-band radios that are selling like hot cakes? They sure aren't on the air! A little spade work with the FM crowd might be profitable, too. Then again, if the big guns don't occasionally swing the beams, the casual rover will never make many contacts anyway.

Well, at least the meetings were fun.

Phil Bradway, KB2HQ
50 MHz through 24 GHz

WHAT HAPPENED TO THE JULY NEWSLETTER ??

Well the deadline is one month before the next NEWS meeting.

Nobody sent me a thing so we didn't have one. Hopefully this will not happen again.

I got so much ahead of time for this one that we have 12 pages, i hope this makes up for the missing one.

73 Del
k1uhf
editor

SEPTEMBER VHF CONTEST RUMORED SCORES DE KB1VC

| CALL | GRID | NEWS | CLASS | SCORE | 50 | 144 | 222 | 432 | 903 | 1296 | 2304 | 3456 | 5760 | 10368 | 24G |
|--------|-------|------|-------|--------|--------|--------|--------|--------|-------|-------|-------|------|------|-------|-----|
| K1WHS | FN43 | Y | U | 367275 | 342/65 | 257/49 | 88/28 | 121/32 | 25/18 | 41/19 | 20/12 | 13/8 | 13/7 | 16/10 | 3/1 |
| K1UHF | FN31 | Y | S | 197225 | 140/25 | 340/53 | 83/29 | 114/29 | 28/14 | 35/14 | 10/6 | 0 | 0 | 6/5 | 0 |
| K8TQK | EM89 | N | S | 106894 | 106/51 | 113/50 | 49/29 | 56/32 | 15/12 | 15/12 | 5/5 | 3/3 | 0 | 0 | 0 |
| K5IUA | EL29 | N | S | 86426 | 159/68 | 99/30 | 34/15 | 50/20 | 13/11 | 26/13 | 1/1 | 0 | 0 | 0 | 0 |
| WA8RJF | EN91 | N | S | 71765 | 55/29 | 110/48 | 44/26 | 44/22 | 13/12 | 17/12 | 4/3 | 3/2 | 1/1 | 0 | 0 |
| W2SJ | FM29 | N | S | 57330 | 60/24 | 74/21 | 41/16 | 54/18 | 21/8 | 33/10 | 10/5 | 5/3 | 0 | 0 | 0 |
| N6HKF | DM13 | N | S | 52407 | 84/17 | 174/22 | 63/17 | 94/19 | 0 | 25/6 | 0 | 0 | 0 | 0 | 0 |
| AA3GN | FN20 | N | S | 40290 | 30/11 | 72/18 | 40/13 | 52/16 | 19/9 | 25/9 | 9/5 | 4/3 | 1/1 | 0 | 0 |
| K4ZOO | FM08 | N | S | 29008 | 63/29 | 72/26 | 34/19 | 36/19 | 0 | 7/5 | 0 | 0 | 0 | 0 | 0 |
| WB2WIH | EL96 | N | S | 26136 | 175/69 | 52/10 | 8/3 | 27/6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| K9YR | EN52 | N | S | 24750 | 60/19 | 122/31 | 16/7 | 58/18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| KB8O | EN82 | N | S | 23320 | 63/25 | 120/45 | 0 | 41/18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N0KQY | DM98 | N | S | 21344 | 40/27 | 77/36 | 0 | 32/18 | 0 | 17/11 | 0 | 0 | 0 | 0 | 0 |
| W5UWB | EL17 | N | S | 20880 | 81/43 | 53/20 | 17/10 | 20/11 | 0 | 8/6 | 0 | 0 | 0 | 0 | 0 |
| WG2E | FN22 | N | S | 20550 | 183/46 | 63/25 | 14/4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W4DEX | EM95 | N | S | 11868 | 34/17 | 36/19 | 13/10 | 21/14 | 0 | 6/6 | 1/1 | 1/1 | 0 | 2/1 | 0 |
| K1LPS | FN34 | Y | S | 8400 | 38/17 | 56/25 | 3/2 | 25/12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N1TLW | FN34 | N | S | 7752 | 51/19 | 37/13 | 16/9 | 16/10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W4FVQ | EM79 | N | S | 6250 | 23/12 | 24/12 | 12/9 | 12/9 | 5/4 | 5/4 | 0 | 0 | 0 | 0 | 0 |
| W1NWE | FN32 | Y | S | 4536 | 0 | 64/20 | 15/9 | 16/7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| KT1VT | FN34 | N | S | 4042 | 53/24 | 41/19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| K1VWX | FN31 | N | S | 3230 | 25/11 | 28/12 | 10/6 | 8/4 | 0 | 2/1 | 0 | 0 | 0 | 0 | 0 |
| VE9AA | FN65 | N | S | 2812 | 55/30 | 9/5 | 0 | 5/3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| K1KI | FN32 | N | S | 2040 | 93/16 | 5/3 | 0 | 2/1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W3IIT | FN20 | N | S | 336 | 6/4 | 12/6 | 4/1 | 1/1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N1MJJD | ROVER | N | R | 143256 | 222/23 | 218/24 | 122/20 | 122/18 | 21/9 | 31/12 | 11/7 | 0 | 0 | 0 | 0 |
| N2MH | ROVER | N | R | 15785 | 42/11 | 77/16 | 37/10 | 47/12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| K8DOG | ROVER | N | R | 10404 | 55/13 | 51/11 | 19/6 | 24/7 | 2/1 | 2/1 | 0 | 0 | 0 | 0 | 0 |
| KF6LT | ROVER | N | R | 7257 | 31/10 | 86/18 | 8/4 | 22/7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N6ZE | DM04 | N | R | 2088 | 21/6 | 44/11 | 0 | 11/3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NCII | FN32 | Y | L | 292950 | 440/62 | 473/55 | 128/31 | 203/38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N5XU | EM10 | N | L | 12864 | 38/21 | 61/19 | 20/11 | 31/13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

We do not have many scores posted to Matt's web page, we have to talk this up and make sure that everyone understands that the more scores the better and that it is not just for the NEWS Group. Ed.

GEORGE ELLIOTT, VE2LI, SK

I am very sorry to report that George Elliott, VE2LI, of Montreal, Quebec, Canada passed away at the age of 83 on Canada Day, July 1, 1999 after suffering from a massive heart attack the previous week. He was predeceased by his wife of 42 years, Kay Elliott.

George was born in the UK in 1915 and worked in the engineering department of the BBC (British Broadcasting Company). He was first licensed as G5LI in the mid-1930's. In his early amateur radio days he enjoyed HF DXing working the rare AC4YN and others. He also worked W6's on 80-Meters from the UK in the late 1940's when this was a rare occurrence.

He emigrated to Montreal in 1951 and joined the CBC (Canadian Broadcasting Company) where he later was a supervisor in the Transmission Systems Division until his retirement in 1979. He became a very avid VHF DX'er working 144, 432 and 1296 MHz. He was a real home-brewer, who built all of his equipment.

George had an acute hearing problem and was not able to hear much below 2,000 Hz. except with a hearing aid. As a result, he operated almost exclusively on CW, enjoying long haul tropospheric and aurora propagation. His most treasured contact was to be one of the few

amateurs to work KP4BPZ in Arecibo, Puerto Rico on 432 MHz. EME in 1965 before EME contacts were commonplace.

I, Joe Reisert, W1JR, in 1976 introduced him to amateur Satellite operations and George became an avid operator on OSCAR 7 and 10 and other LEO (Low-Earth-Orbiting) satellites until a few years before his death. He was the first person to obtain a WAC on OSCAR 7, and soon completed a satellite DXCC.

In George's later years he preferred to ragchew with HF DX, especially on 30 and 80 Meters. His favorite operating time was very late at night when he would work many Europeans at their sunrise.

I first worked George on HF in the mid-1950's and have know him personally for over 25 years. We exchanged yearly visits and took family trips together in New England and Quebec. George and Kay loved the ocean. I miss him very much, especially our weekly CW schedules on 144 and 432 MHz.

A memorial service for George will be conducted in Montreal, Quebec on Friday, July 7, 1999.

Joe Reisert, W1JR

\$25 GPS KIT REVIEWED BY RON KLIMAS, WZ1V

Electro Mavin currently offers a GPS circuit board for \$25. For this price, everyone can have a GPS in their shack or for use on the run, so you'll know your 8 digit grid square at all times! Speaking of time, that's the other nice feature of these units: it provides exact atomic time in UTC. Not to mention speed and bearing if you're mobile.

Sole credit for finding this item goes to my co-worker, Bob KA1RNB, who also wrote a QBASIC program to access and display the serial data from this thing on a PC. To use the board, all that is required is 2 trace cuts and 2 jumper wires. Hook up is simple: wire up 12 VDC, plug in the magnetic mount GPS antenna (included), plug the 8 pin mini-DIN end of the data cable into the board and the 9 pin RS-232 end of the cable into your PC's serial port. You can also buy the unit without the data cable for \$20. I did, but it cost me almost \$5 for the 2 connectors. Spend the extra \$5 and get the cable - it's worth it!

An important note on these boards is that they were originally set up for automotive use in Japan. Therefore, the GPS Satellite almanac that is preloaded into it's non-volatile RAM is for that side of the world. You need to let this thing run for the better part of a day the first time you power it up in North America, so it can log all the satellites for this part of the world into memory. After that, it functions normally. At my QTH, with the antenna indoors on a window-sill, I usually obtain a 3D lock (using 3 satellites) within a minute or so. Results are better with the antenna outside, naturally.

Full details of ordering info., specs., how to cut/jumper the board, and a programmer's manual are on the web at <http://mavin.com/slickitems.html> and KA1RNB's QBASIC program is posted at <http://www.qsl.net/vhfnews/gps.html> just save it as gps.bas and you'll have it. Electro Mavin is located at 2985 E. Harcourt St., Compton, CA 90221 and their order phone is 800-421-2442.

EDITORS NOTE: I called them and ordered one for myself. I asked if it was possible to get a club discount, they said it would have been when they had thousands of them but there was only a few hundred left and they were going to stick to the price. I have them working well and ready to phase lock my oven oscillator so I know where 10,368.1 is.

1999 N.E.W.S. GROUP VHF CALENDAR:

November 6, 1PM - 4PM - N.E.W.S. Group Meeting
November 18, 0140Z - Leonids meteor shower
December 14, 1530Z - Geminids meteor shower

* for details see <http://www.arrl.org/contests/>

THE 1999 CUMULATIVE 10GHZ AND UP CONTEST DE KB1VC

Once again, the 10GHz and Up Cumulative Contest offered about as much fun as a microwave enthusiast could stand.

For me, it opened inauspiciously with rain, wind, and equipment failure on Mt. Wachusett. When the wind blew over the new offset-fed dish and buried parts of the tripod in the mud, it was time to go home and lick my wounds.

After hacking at the IF transceiver for a while, it became clear that I wasn't going anywhere on Sunday unless I could scare up a portable 432 rig for a replacement. Fortunately Paul, W1GHZ, stepped in and offered a stand in replacement.

The second day on Wachusett brought better weather and better luck. Eight grids isn't going to set any records, but compared to one grid on the day before, this was a step in the right direction. W1VT, KA1OJ and N1GJ shared the mountain top and the company made the whole experience that much better.

Weekend two was supposed to start on Mount Washington, but with winds on Friday at a steady 89MPH and gusting to 126 (At least one wire-service bulletin listed the gusts as 99, since they didn't have space for more than two digits.) I wasn't quite ready to risk a quick flight from FN44ig to EM31 on Saturday. Humidity was 100% on Friday and Saturday with snow, fog, rain, pestilence, and the normal hospitality that Washington offers in the fall. Washington was not a good spot for Saturday.

So, Don WB1FKF and I set up shop on the south face of Mount Kearsarge. What a view! The weather was perfect, the surroundings were quiet, and we only got one or two visits from the standard pack of Harley enthusiasts. (Nice people, nice looking machines, but don't they have electronic ignition for those things yet?) Participation from the VT, NH, MA, and CT crowd was pretty good. Most of the active stations were on. My logs don't show a whole lot of activity (or at least, traffic) to NY and NJ. Perhaps they were preparing for Sunday.

And what a Sunday it was. Larry K1LPS and I met on Mount Washington. Winds were light and variable at about 15 MPH with occasional gusts to 20+. The weather was clear. Just in case, I had purchased a portable radome for my gear to keep it out of the wind and fog. (Go to an L.L. Bean outlet and ask for their radome -- they may refer to it as a "six man tent" -- go easy on them as they are not technical people.) No fog materialized, but the guys from PA sure did. Thirty contacts, seven grids, and a best DX of 550km (back to back contacts with KU3T and W3RJW) made Sunday a very good day.

Next year will, as always, be better. So, get ready, the Y2K cumulative contest is only 11 months away.

RADIO LINE OF SIGHT PLOT SERVER BY MATT, KB1VC

WHAT IS THIS? The form on the following page will allow you to make a request to a radio line of sight plot server. By return mail, you will receive a GIF picture of the elevation of each point on the earth between the starting point and ending point that you specify. This elevation plot is pre-warped to account for the fact that microwave radio signals don't really propagate in a straight line. They curve toward the earth so that the apparent radius of the earth is $4/3$ the actual radius.

If a line drawn from the starting point to the end point intersects the earth profile on the chart, then you probably don't have a line of sight path between the two points. If the line doesn't intersect the profile, you may have a line of sight path. (The plots don't take into account trees, buildings, local obstructions, or geographic features that are too small to be resolved on the digital elevation maps.)

WHAT ARE THE LIMITATIONS HERE? The first and most concrete limitation is that these plots are for amateur use only. No commercial, industrial, governmental, or other use is permitted. The author of these tools, the service providers involved, the manufacturers and producers of the hardware, software, and databases may not be held liable for any damages or disappointments resulting from the use of these plots. We all disclaim all responsibility for any damages or disappointments resulting from use of these plots. If you use it for commercial purposes, you'll be tracked down and haunted for the rest of your life by the ghost of the thousands of freeware producers that have shed this mortal coil.

Other than that, things seem to work reasonably well. The limitations include

The Digital Elevation Maps provide a grid of most of the continental US at 3 arc-second intervals. In New England, this translates to an interval of one data point every 90 or 100 meters. The altitude resolution is about 3 meters.

This service is new. I'm still working out bugs.

There is a limit to the length of a path that the server will calculate. The current limit is about 4000 Km. I can't vouch for the accuracy of plots at that length, but you and I already know that there are no line of sight paths that long for anybody but pilots and mountain climbers.

I'm doing this as a part time service. I'll try to see to it that the server sends back responses once a day, but vacations, power outages, equipment changes and such may make service a little more erratic.

The responses are mailed to the requester. You must have a valid mail address and a mailer capable of handling GIF files that are mailed to you. If you don't have that stuff, I can't help you. I can't help you with mail problems, mail handler problems, ISP problems, or much of anything.

WHAT DO I NEED BEFORE I FILL OUT THE FORM? You need to know the grid square or latitude and longitude of the start and end of your path. You need to know your return mail address. You need to know how to fill out a web form. You need to read the sections above about appropriate use limitations of this service.

If you know how high the antenna at each end will be above local ground that will be helpful, otherwise I'll assume that they are 2m above ground level.

If you specify a location as a grid square, the server will find the highest point in the grid square before calculating your plot. This makes a big difference for grids that include mountain tops. I'm assuming that if you're in a grid with a mountain, you'll drag your stuff up the mountain. If you need greater control, supply a lat/lon pair for one or both end points.

WHERE DO THE PLOTS COME FROM? THE plots are produced on my Compaq Computer Corporation Alpha Personal Workstation. Each night, Murphy permitting, the workstation collects requests made in the previous period and scans a very large database of digital elevation maps provided by the USGS. Each profile takes about one second to produce and is then mailed (in GIF format) to the mail address that you provide.

WHY ISN'T THIS IN REAL TIME? The data set required to produce the plots is huge. The maps covering the continental U.S. occupy a little less than 600MB of disk space. My internet provider charges for space, so storing the maps on the web server isn't practical. More importantly, the time to calculate a plot is dominated by the generation of a great-circle route from the starting point to the end point. This calculation can dominate the cost of producing a plot on processors that don't provide good floating point performance. The plot server that generates these plots is a 600 MHz Alpha workstation with pretty impressive floating point performance. It is also my home computer.

Go to http://www.tiac.net/users/reilly/los_form.html to make a plot request.

Matt, KB1VC

See an example of the plot in the next article. Editor

FN31 TO EM95 ON 3CM

Saturday July 24th I was getting ready to go out and meet some friends and had no intention of turning on the radios, fortunately my kids were watching network TV on the VHF antenna not the DSS dish and I saw strong co-channel interference. I forgot about getting ready to go out, ran downstairs and checked the bands.

I heard lots of DX from the South and hooked up with Dex, W4DEX. Dex was 20 over on 2 running only 10 watts and we QSY'ed to 1296 and worked easily with S9 signals. We went back to 2 and even though he said he had "all" the bands it didn't occur to me that he had 10 GHz.

Once I figured that I asked for that band. Dex said he had to warm up his TWT so I said I would send dashes to see if he heard me. The dishes were all lined up. About 5 seconds after I put the key down I heard my signal coming back on 2 meters, I just about fell out of my chair when I realized he was sending my signal back. He called me on SSB and he was about S6, we exchanged the info about 3 times, just to make sure, I think he was as excited as I was.

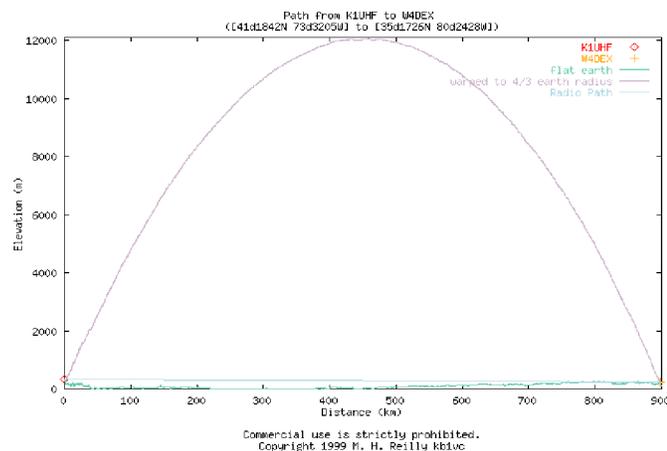
Dex is in EM95tg and I am in FN31fh for a distance of 557.8 miles. I am still amazed that my 1 watt can go that far on 3 cm. I wish I had had more time that morning I had to leave so I did not work anyone else. I am sure others could have worked him further North and I could have picked up a couple of other new states and grids if I had had time and phone numbers to call. I would have like to have tried with K1RZ and N4MW.

A few weeks later I was heard at WA8WZG and Tom heard me but we did not complete. Also Tom, WZG worked W5ZN for about 620 miles a week or so after Dex and I worked.

I since have compiled a 10 GHz home station list that is available if you send me an email, I don't want to print the list here or on the web. The idea is a list of station that are always QRV and ready to go next time the band opens.

Below is a KB1VC plot (see more about the plot server on the previous page) of the path between Dex and I.

73, Del, K1UHF



DETAILS OF 2M QSO BETWEEN KH6HME AND W1LP/MM

I first started hearing the KH6HME 2M beacon at about 0200 Z on 8/20/99. The ship was in DL17 (off Baja Mexico) heading for the Panama Canal from San Francisco. We were also having good tropo conditions up towards Los Angeles at the same time. I got KH6HME's phone number from one of the W6's and gave him a call on the satellite phone. I told Paul that I would be far enough away from him for a world record QSO at about 1800Z on the 20th and I'd give him another call at that time if I was still hearing the beacon.

I woke up a couple of times during the night and the beacon was still there. It faded out at my sunrise but then came back again mid-morning at 1730Z. I gave Paul a call and he headed for the beacon site at the volcano. After I hung up the phone, the 432 beacon came out of the noise also. I copied the 2M beacon until about 0200 Z when it faded out, before Paul's arrival. I called Paul all afternoon on 2M and still was able to copy the 432 beacon. I never heard a thing on 2M except for W6's of the side of my antenna at 1000 miles! At about 0100Z the 2M beacon emerged again from the noise. Both beacons were loud by 0200Z. I was puzzled and began to wonder if Paul had ever made it to the volcano. I gave his house a call, and he was just walking in the door. Paul said he had been calling me all afternoon on 2M and never heard a thing. I then told him I was hearing the 432 all afternoon and would of killed to have had a way to get him to shut it off and listen. I played the S-9 2M beacon into the phone for Paul. He said he would grab a quick bite to eat and then head back to the volcano.

This time we had a little better luck. At 0740Z, I heard the 2M beacon shut off and new he was there. I glanced at the GPS in my cabin and it read DL51CE. I gave Paul a call and was greeted by: "W1LP this is KH6HME, congratulations on a new world record". I gave Paul a 52, and he gave me a 51. We exchanged grids and said 73, see you on 432 and that was it. I called Paul on 432 on CW and SSB until 1000Z to no avail when we sailed through a front and squall line. The tropo had already disappeared but now I knew it would not be back.

It was a shame we never made it on 432. The beacon had been S-5 only moments before Paul arrived at volcano. I do know that the QSO we had on 2M was as far as that weather system would support....BK29go to DL51ce 4743 KM / 2947 miles. My station on the ship is a Yaesu FT-847, 200W 2M brick amplifier, 9 element M^2 on 2M, 21 element M^2 on 432, both antennae are about 80 ft above the water.

73, Clint

W1GHZ MICROWAVE ANTENNA BOOK - ONLINE

I've just uploaded the whole chapter on dual-mode feeds, including a rewrite of the previous section, plus some corrections to other material.

www.w1ghz.cx has been having temporary problems, but you can also reach it direct at www.qsl.net/n1bwt or through the 10 GHz home page: www.tiac.net/users/wade

A CONTEST REPORT FROM LEBANON, ME

I had been working on getting my station whipped into shape, for most of August as time permitted. There was so much to be done, we actually had a work party scheduled in late August to drill holes in the bedrock to install a new 222 tower. The crew of K1CA, K1OR K0ZK and myself were all set to go. I picked up the rock drill, carbide bit, and 4 cylinder gas engine air compressor with visions of Rohn 45 extending into the heavens. All we got was hydraulic fluid spewing all over the ground. The day was a disaster. The drill was defective with blown seals, and no air drill replacements in sight. The plans were scrapped, and I managed to get a new drill several days later. Somehow, I convinced my wife to assist me in handling the 100 ft of large air hose, and keeping an eye on the compressor while I drilled. She was great! We got the holes drilled in the rock, and soon a Rohn 45 tower started taking shape. K0ZK and I got to 30 ft one evening, Larry, K1CA came over another evening, and we hit 60 ft. The last 40 ft were done the Friday before the contest! We had a real crew now! Plenty of help! Of course it rained 4" that day. It was miserable, but we got the 100 ft of tower up and hauled 4 X K1FO yagis for 222 up and onto the H frame. We even hauled the 160 ft of 1 5/8" coax. We were so wet when it was all over. Steve, N2CEI stamped his foot while up on the tower, and water shot straight up out of his boot! We were all soaked to the skin. Raincoats didn't matter! We had many rain related problems. The 3456 rig resembled a reservoir. Luckily we drained it before the tadpoles hatched. There was water in everything. Even the HF rigs inside the shack were wet! I think it finally dried out Sunday morning!

We tried something new this time. Living in Maine, one soon becomes aware that almost no one is QRV on any band above 144 MHz. The only other microwave ham in the State, K1DY, was also operating at K1WHS! We figured that to get our grid totals to even come close to those of luckier hams in the more populated regions, we would have to send a rover team out to hit all those vacant grids. A plan was devised to outfit K1ORs SUV with every band from 50 MHz through 10 GHz. All the antennas were mounted on the vehicle on Thursday night in the dark, and John and Larry took off in the darkness with the biggest antenna farm ever witnessed in these parts. I closely checked the TV news after they left for any news stories of captured KGB spies, or aluminum worshipping religious cults. Everything was quiet. No news was good news. They made the trip home with no problems. All this with a 19 element 903 looper, a 42 element 1296 looper, a 52 element 2304 looper, a 76 element 3456 looper, an 11 element 432 yagi, an 8 element 222 yagi, and a 144 & 50 MHz horizontal loop pair all mounted on the car!! They stowed the 5 and 10 GHz dishes while travelling Thank God!

The rover plan was a good one. It was executed very well and we only missed two QSOs, both due to equipment problems. 10 GHz

worked at every site! The rover team of K1CA and K1OR travelled to FN54, FN55, FN64, FN44, FN43 and FN53. That was 5 grids on almost every microwave band! By the end of the contest, they could get on the air, make all the contacts, and be leaving in about an hour. Things were that rushed, as there was much driving to find the sites. This was the team's first try, and the GPS mapping software sure came in handy!

During the contest, we had all sorts of expectations to work lots of DX, but the 144 MHz band was very noisy and we could not hear any weak stuff through it. (S-8 to the West and East) It was only late Sunday morning that we realized that the noise was coming from the 10 GHz TWT switching supply which was conveniently located 10 ft below the 144 antenna! Of course the 144 kilowatt would also trip the supply to standby at times, so there were more than a few trips up the 80 ft of tower to reset the TWT, and most were at night, with a flashlight!

The 903 transverter rx section died, and, not to be outdone, the transmit section driver amp went out on strike as well. We hobbled along at low power with deaf ears on that band for the whole contest.

The newly revamped 222 station worked like a bomb! We were close on the heels of the 432 station in grids for the entire contest. Usually, 222 has been the orphan and gets a low score.

Some interesting QSOs: On 144, we tried to sked K0MQS (Iowa) on meteors, but could not hear a thing through the TWT noise. Sunday evening, we worked him on Aurora! We worked AA4ZZ EM96 on the four lower bands for some great DX. On 903 and 1296 we worked K8GP, and came real close to completing on 2304, but the final RR was lost in QSB! That is quite a shot on 2304! We worked K1UHF on 10 GHz for a nice QSO. We worked W5UN 3 minutes before our moonset on 144!!

Six meters was slow, K1TOL was operating and his operating methods reminded me of root canal work! It was tough! He kept at it using his Raytrack amp and FT-920. The other station we had (OMNI V and 8877) was kaput with HV problems. He was good at wringing many grids out of the band!

We never tried any FM contacts. In fact, there are no FM antennas anywhere at my QTH, and no one seemed interested to try. I think I get nose bleeds if I try FM.

When the weekend was over, we all knew we had done something. It was a tremendous amount of work even before the contest began. I think everyone does agree that the hard work was worth it! This was our best September score ever!

73
Dave K1WHS

FOR SALE OR SWAP

For sale, Cushcraft 18XL 2mtr ant. 18 els on a 28 ft boom. Vv good condx. \$80

For sale: Wilson SY33 3 el triband (HF) ant. Good condition. \$45

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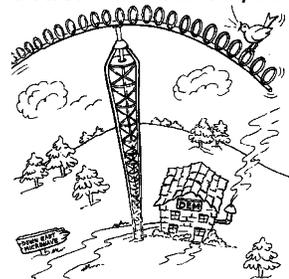
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