Mt. AIRY V.H.F. RADIO CLUB, INC.



CHEESE 3173



ARRL Affiliated Club



Volume XLVII JANUARY 2005 Number 01

PrezSez

Happy, Healthy, and Peaceful New Year to all. This should be another banner year for the Packrats as we have so many things going in terms of meetings and speakers, contests, construction, and camaraderie. I see so much in the line-up, starting with tune-up "on-the-air" days scheduled for the Saturday mornings (Jan 8 & 15) before the VHF SS, the contest wrap-up and June contest kick-off in early Feb, the Crying Towel meeting (save your favorite VHF-SS capers), the Homebrew meeting in March, and then Awards and ARRL Night in April. Sprinkled between there will be on-the-air events like the first Sat AM and first Mon PM of the month are Microwave Activity Days, then there will be the Spring Sprints and the SBMS Microwave Contest weekend. Our June contest efforts are continuing to grow, and believe it or not, it will be here sooner than you think! Then there's the summer schedule: Field Day, with growing VHF activity, the CQ VHF weekend, White Elephant sale, Packrat picnic, UHF contest, 10GHz and Up weekends, the Sept VHF contest, the EME contest and the Fall Sprints. Now, who complained that there wasn't enough activity for VHF'ers? At least 4 Packrats have been active in EME in the past year. There's room for growth in that mode, especially with the availability of improved digital software, thanks to our member, K1JT. More folks need to get on bands above 1296 MHz: what are your intentions for 2005?

I am so pleased to see all the help and equipment loans being made for the contest effort. My thanks to all who gave of themselves, like WA3GFZ and WA3RLT who have spent time at the WA3EHD station, and especially to W2SJ, who with K3EGE and others have made numerous visits to the K3EOD QTH to improve it and ready it for action. I am experiencing the blast of cold sweeping our area today, and just hoping that weather conditions will be mild for the January VHF SS when we go out there to do our roving. I know that Leon and I still have a few things to do to get ready, and I will trust that all of you are putting the final touches and testing their stations to maximize their bands and QSO numbers in the contest. The \$1300 I just spent on a new front end for the rover van should keep it rolling for another 5+ years. My mechanic reminds me, "You gotta pay if you wanna play."

Planning will also step up a notch for our 2006 50th Anniversary Year celebration, and several Packrats have been asked to coordinate this effort. All of you suggestions should be directed to the Board of Directors. More Packrats need to make contributions to Cheesebits. I know that there's lots going on that can be put into print: 2304 power amplifiers, 24GHz construction, multi-op computer networking, independently operated concentric antenna masts, band-switching schemes. Please put your experience in our club's publication. And while we're at it, thanks again to Doc, W3GAD for the great job you're doing with the editorship.

Read the following, and in your mind, substitute radio club for company:

GOOD TO GREAT: "Greatness is cumulative--a company achieves greatness in much the same way you turn a giant, heavy flywheel--slowly it gains momentum by sticking to a core strategy.

Consistency enables change--understand what you do and do not do. Know what your company's DNA really is. You must adhere to a central idea and value.

Vibrant culture is productively neurotic—all great companies have cultures so tight they are almost cult-like. They require disciplined people who engage in disciplined thought and take disciplined action. The ultimate form of discipline is encapsulated in this thought; "never think of your company as great, no matter how successful it becomes. Instead, always stay irrationally worried that it is never really measuring up to its potential. Act like you have the largest inferiority complex."*

*Jim Collins; Good to Great; Why Some Companies Make the Leap...and Other's Don't, New York: Harper Collins 2001

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50.080, 144.284, 222.065, 432.295, 903.071,

1296.251, 2304.037, 3456.220, 5763.190, 10,368.140

MHz (as of 3/1/01)

MONDAY NIGHT NETS

TIME	FREQUENCY		NET CONTR	NET CONTROL	
7:30 PM	50.150	MHz	K3EOD	FM29II	
8:00 PM	144.150	MHz	N3ITT	FN20kl	
8:30 PM	222.125	MHz	K3TUF	FN10we	
8:30 PM	224.58R	MHz	W3GXB	FN20jm	
9:00 PM	432.110	MHz	WA3EHD	FN20kd	
9:30 PM	1296.100	MHz	WA3NUF	FN20le	
10:00 PM	903.125	MHz	AA3GN	FN20ig	
10:30 PM	2304.085	MHz	W3KJ	FN20hg	
		& go to	3.4G & up after	FN20hg	

Visit the Mt. Airy VHF Radio Club at: http://www.ij.net/packrats

Editor's Column

Well here it is the beginning of 2005 and many PACK-RATS are busy preparing for the January VHF Contest. Including your editor.

I am not the first and I am sure I will not be the last to wish you all a very happy and prosperous new year. If you where lucky you got lots of wonderful goodies for you shack plus the obligatory pair of socks and a new tie. I got a few goodies and the home improvement project that took precedence (a major redo in the kitchen) is finally at the point where it can be put on hold until after the contest.

Now it is off to the basement and try to get the laser station operational, move the third rack into place and get a better operating table set up. Hopefully I will get a chance to improve the interfacing to the transverters but first I need to get all the gear back on the air.

I hope none of you are faced with such ambitious programs this close to the contest. I remember last year N3NGE had a total rebuild of his station and, because of his work schedule, was still installing many of the parts for the higher bands well into the contest. This year Len and the crew have everything set to roll—you should find them on the lower band almost all the time and working them on the higher bands should be easy.

I am also hoping to hear AA2UK putting out a really nice set of signals from Southern New Jersey even though he has major obligations in Washington for the Inauguration that have kept him form beating the contest drum. Thanks to Steve N3FTI for taking the bull by the horns on short notice.

K3EOD will be making some big noise from Vineland NJ and K1JT will be multi-oping from Princeton. Both have really strong stations so most of us should have no trouble working them on all bands

I noticed the EME group is having a contest the same weekend as the VHF Contest with their scores counting for both contests. Hey it's another way to add grids on the higher bands. They are looking for Sector prefixes FN..FM..DN etc where we need a 4 digit grid for the contact to count. Please note the comments from the ARRL about the use of the slashed zero symbol—this little character apparently messes up the computers used for the scoring and it could cost you QSO's and points.

This issue is not as late as the past couple and I am trying to get these into your hands before the beginning of the month. The snail mail version, which costs \$1.07 to put in your hand, takes a little longer since we need to print, fold, staple, tape, label and stamp before mailing. There are rumors too that the postage will be going up another three cents soon, which is another reason for us to ask you to please subscribe to the e-mail version if you have internet connections. The saving amounts to over \$600.00 per year if we can do a total distribution by the internet. That represents the dues of 30 members per year that can be used for rent, and other programs.

2005 has me looking at the menus for the June contest Kitchen, making the trip to Dayton, my first time ever, and some really great contest operating with my ever improving station.

See you on the air and in my logs.

Listen for the WEAK ONES

73 W3GAD Doc

The Role of Clubs in VHF Contest Log Entries

Kevin Kaufhold, W9GKA Revised draft, 11-1-2004

Introduction. The large swings in log entries in the VHF Contests have been the subject of much thought and reflection going back more than 40 years (Tilton, 1959, 1960; Roseman, 1990). The role that VHF clubs play in these large variations has not been as well documented and researched, however. This may simply be due to the lack of solid, reliable, and available data. The purpose of this paper is to explore the impact from VHF clubs upon log entry and contest activity. The conclusions of this article cover new ground, as I have just finished compiling much of the data presented here (although I still have gaps in log entry numbers for 1986-1992 on the UHF, EME, and 10 Gig, and I am very desirous of band activity numbers from the 1960's and 1970's). Figure I shows the estimated or known log entries for ARRL sponsored VHF contests. The dramatic variation in yearly contest logs is obvious from the graph.

Club Impact on the January VHF SS – Qualitative Evidence. The first VHF Sweepstakes occurred in January, 1948. Almost immediately thereafter, contest write-ups began to note the large contributions of the

clubs. From the 3rd VHF Sweepstakes in 1950: "Much of the credit for the large turnout must be given to certain club groups whose organization work resulted in many new calls appearing on our v.h.f. bands." (*QST*, April 1950, at p.50). A few years later in the 6th VHF SS: "As it has been the five previous runnings of this popular event, the club award incentive brought out a large number of contestants." (OST, April 1953, at 54). In the 12th Sweeps: "As always in the V.H.F. SS. it was the clubs that made the contest the huge success that it was." (*QST*, July 1958, at 65). The

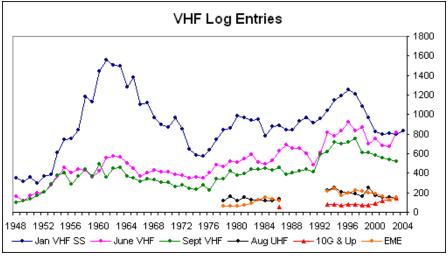


Figure I – VHF Contest Log Entries, 1948-2004

immense role that VHF clubs have in the contests becomes readily apparent when one realizes that the 1976 January contest occurred with notice being given primarily to just the VHF clubs. The ARRL had inadvertently left out the rules announcement of the contest from both the December 1975 and January 1976 *QST* editions. Upon realizing the mistake, the League quickly contacted several VHF clubs, including the Pack Rats and the Rochester VHF Group. The clubs then informed their members that the contest was still on. Through the efforts of the clubs, log submissions actually increased over the prior few years, and by a rather impressive 10%! (*QST*, August, 1976, p.80 and 83).

Club Impact on the January VHF SS — Quantitative Evidence. By all rights, the January contest should have the lowest participation levels of any of the VHF contests, considering the flat band conditions and notoriously bad weather. And yet, the January SS enjoys the highest log entry participation of all the VHF events, and at times has even had the 4h highest number of log entries of all ARRL contests, including HF events (ranking behind Field Day, the HF SS, and the International DX). Additionally, as can be seen in the Figure I, the 1961 peak in contest logs was largely limited to the January event, with far smaller increases in June or September occurring during that time. This suggests that club activity was the driving force behind January log entries in the early years of contesting versus the lack of organized club competition in the other contests. The disparities between January and all other VHF events have continued into more current time frames, although the differences between the three contests are much smaller in more current time frames.

The statistical evidence supports a club impact upon log entry levels. The following graph shows the number of VHF Clubs with members submitting three or more entries in the VHF contests.

In a simple linear regression conducted on the data forming the basis of Figure II, 76% of the variation

in VHF log entries submitted in the January contest was explained by the variation in the number of clubs. The model, $y = \beta_0 + \beta_1 VHF \ clubs + u$, was used for the regression. Various statistical tests inferred that the results were statistically significant at the 95% confidence level. Data was also collected on the number of log entries generated by club members, and this information was also regressed against total logs submitted by all contestants in the January VHF SS. The following graph depicts club log entries from 1961 forward, when the numbers were first reported in QST.

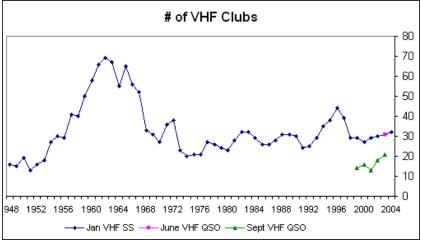


Figure II - Club Activity in VHF Contests, 1948-2004

The regression analysis on club log entries showed that 72% of the varia-

tion in VHF logs from the January VHF SS was explained merely by the variation in log entries from club members. The results were also statistically significant at the 95% confidence level. When a multiple regression was run with both the number of VHF clubs and the number of club member logs as independent variables, the results explained over 78% of the variation in total contest logs, and both the club and club member log variables were statistically significant. In addition to these regressions, the raw data clearly indicates that the January VHF SS has always enjoyed large participation from the clubs, both as to the percentage of point production and as to log entries. 51% of all points in the very first VHF contest in 1948, some 55 years ago, were made by participating club members. In 2004 January, 61% of points and 48% of the logs were from club members.

These numbers and ratios demonstrate that ARRL affiliated clubs have played an enormous part in the VHF contests. With one-half of all logs, 60+% of all points, and over 70% of all variation in yearly log entries being traced to the clubs, it is safe to conclude that the VHF clubs provide a critical base of support and a core of operators for the January contest.

Club Impact on the VHF QSO Parties – Quantitative Evidence. The support from the clubs is not limited to just the January VHF SS, however. Regression analysis cannot yet produce significant results for either the June or September contests, due to the small sample size on those contests, but the raw data and infor-

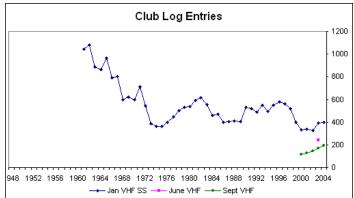


Figure III – Log Entries from Club Members, 1948-2004

mation shows a clear pattern. A good case in point is the 2003 June VHF QSO Party itself. In the first year of club competition, the 2003 June event was the only single contest since 1948 with more log entries than the January contest of the corresponding year! Indeed, 41% of all points in this event came from club members. (Please note that I feel excellent band conditions and moral persuasion had a lot to do with the high number of logs and points in this contest).

The September contest also has strong participation from the clubs: in the few years that the September QSO Party has had club activity, club percentages have dramatically increased. From an initial level of

19% of all log entries being from the clubs in 1999, the percentages have grown to 36% of logs in 2003. Further, 46% of all points in the 2003 September were made by club members. These kinds of numbers amply show the influence from the affiliated VHF clubs.

Arguably, the positive contribution that the clubs have made in January has carried over to the other VHF contests for many years prior to start-up of club participation in those events. It is hard to imagine that the clubs could have mustered one-third of all logs and almost one-half of all points by the 5th year of the club competition in September had not informal club activity been occurring all along. It is far more likely that club ac-

tivity in January has been regularly spilling over to the VHF QSO Parties, with many motivated club members participating in these contests on an individual basis. The club participation levels in the QSO Parties are rather amazing. In only a few years of club competition, the QSO Parties have generated close to the same percentages of points and logs as has January, with its half of century of club competition and tradition. With roughly 1 in 2 VHF contest operators being associated with a club for one or more of the contests, club activity levels can be seen as not only providing the backbone of support for January, but for the other VHF contests, too.

The Waxing and Waning of Club Influence. Just as participation in the VHF contests has gone through dramatic cycles, so too has club activity levels. In fact, the number of clubs as the number of log entries from club members bears an eerie similarity to overall log entry levels in the contests, as seen in Figures I through III. Club influence has undergone a downtrend over the years, with approximately 32 clubs now active in January and June events (down from 69 clubs in 1962). Club log entries are currently hovering at 400 for

January, and even less in the QSO Parties (down from over 1,000 club entries in the 1961 January VHF SS). Not only are these numbers down, but the rate at which clubs members are submitting logs has also declined, as shown in the following graph.

Club entries accounted for between 60 to 70% of all log entries in the January event in the early 1960's and 1970's. Today, between 40 to 50% of all log entries are from participating club members. On a bright note, the percentages in the September contest have been rising since the beginning of the club competition in 1999 (up to 36%, currently).

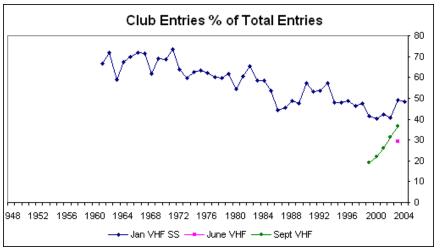


Figure IV – Club Log Entry Percentages, 1961-2004

Even the initial June club competition in 2003 had almost 30% of all log entries coming from the clubs. That's quite an achievement, considering that June is the one contest in which an individual could do very well on his or her own, given the right band conditions.

The Maturity of VHF Contesting. The reduction in club member entry levels, the number of clubs, and club log entry percentages all may be symptomatic of a larger trend – the maturation of the VHF rules set. At the start of VHF contesting in 1948, the clubs reigned supreme: January was the only large contest in existence, and the non-club events of June and September had far lower counts. Only one operator class existed until 1954, when multi-ops were added after many people grouped together in joint runs. The January event patterned itself closely on the HF Sweeps, with one contact per station, regardless of band, and ARRL sections were used as the multipliers. In that environment, one simply had to congregate on the workhorse bands of 6 and 2 meters and revolve around other club members to do well in a VHF contest.

Contrast that with more current time frames. Starting in 1978, January adopted varying amounts of QSO points per band, thereby starting the trend towards microwaves. The UHF and EME contests were developed at the same time, as was the QRP category. Grid squares were adopted in 1983, revolutionizing VHF operating and contesting activities. The 10 Gig was added in 1987, and was then expanded to "10 G and Up" some years later. Rovers and limited multis arrived on the scene in 1991, and single ops were split into low and high power categories in 2000. "Quasi clubs" have been known to form around the bigger multis and rovers, thus generating coordinated contesting activities. The Internet has also aided in disseminating much information regarding the whereabouts and activities of various contesting stations. Individual VHF contesters have more operating choices than ever.

While I have previously written that many of the individual rules changes did not generate an increase in log entries (Kaufhold, Other Impacts, 2004), they certainly have accelerated contest point production. Total club aggregate points in 1977, the last year before the rules started down a more modern path, stood at 1.8 million points. By 1985, the combination of QSO points and grid squares in the January VHF SS helped to produce over 6 million club aggregate points. In 2004, 11.2 million points were scored by club members, and this was down from 13.3 million points in 2003.

When all rules revisions, starting in 1978, are lumped together as the "modern rules", the impact upon log entries

becomes more discernable. It does appear that log submissions began to increase around the time that the rules were modernized, as shown in the following graph.

In terms of statistical analysis, the total log entries in the ARRL "big three" contests as well as all six ARRL VHF contests can be described as a 6th order polynomial, with 2 local maximas in 1962 and 1996, and three local minimas in 1948, 1974, and 2002. In a simple linear regression run on the modern rules regime starting in 1978, 26% of the increase in log submissions in the three main VHF contests can be traced to the mere use of a single dummy variable simulating the onset of rules revisions. The regression results were significant at the 95% level of confidence. Thus, individual rules changes have not only gen-

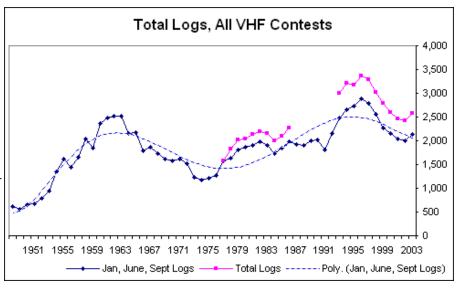


Figure V – Total VHF Log Activity, 1948-2004

erated an increase in club point levels, the rules as a total regime may have been responsible for a large increase in log entries across all contests.

The Trend in Contest Activity. Going past statistical wizardry for the moment, one can easily see in Figure V the impact from the modern era in contesting. Even though many people currently complain about the lack of VHF contest activity, the overall trend in log activity has been generally upward since 1975. In the early 1960's peak, some 2,525 logs were entered in the three VHF events. Compare this to 1996 peak, when 1,000 to 1,500 more logs were submitted in the VHF contests, totaling 2,890 logs for the big three contests, and 3,362 logs for all contests. This same trend is evident at the minimas: Only 1,169 logs were received and counted in 1974 while 2,009 logs were entered for January and the two VHF QSO Parties in 2002, and some 2,426 logs for all six ARRL events. In the most current year having complete data (2003), the numbers expanded to 2,136 logs being counted for just the big three contests alone, representing 550 more logs than were submitted in the last year prior to the beginning of new rules, contests, and categories (1977, with some 1,572 logs).

The modern era of VHF contesting has resulted in a healthy, diverse, and fully mature contesting experience with a great variety of individual operator options. With almost 1,000 more logs currently being submitted in the three main contests than in the last minimum in 1974, VHF contesting is alive and well. Most critically, with 50% of all log entries still coming from the affiliated clubs, a very large "bang for the buck" can be generated by simply continuing the emphasis on the club format. Frankly, we should be concerned about the potential adverse impact upon VHF activity levels from the next likely regulatory change to the amateur licensing structure, that of the no-code proposal on HF. We should also not turn a blind eye to serious, well-thought out ideas designed to increase the diversity and fullness of the modern rules regime. But when over 70% of the ups and downs in contest log activity can be statistically explained by the changes in the number of VHF clubs and club member logs, rules proposals are simply not complete unless they continuously factor in the huge role that clubs have on VHF contest activity.

Future Research. Prior articles on the swings in VHF log entries have focused on major impacts from technological and regulatory matters (Kaufhold, Trend I, 2003; Trends II, 2004). Overall participation levels and participation to log entry ratios have also been discussed and analyzed (Frenaye, Final Report, 2004). While it is evident that regulatory changes have resulted in tremendous shifts in log entry rates, this article shows that VHF oriented clubs have also been responsible for much of the variation in contest log entries. Perhaps, the regulatory, technological, and demographic changes exert a joint effect upon both VHF club activity and overall log entry levels. That would explain the symmetry of pattern in the number of clubs, the amount of club logs, and total operator entries.

The dramatic shifts in log entries over the years are obviously the result of a complex mix of factors simultaneously impacting VHF contest activities. I doubt if simple linear regression analysis can adequately explain those impacts. Future efforts will focus on "detrending" the data through a time series format, and more extensively utilizing multiple regression analysis to account for possible effects. Ultimately, I hope to develop a generalized model of all known or probable causative factors underlying the VHF contests.

Note on data availability: A companion VHF data file that was the source of the data used for the statistical

analysis of this article can be found at: http://w9smc.com/SMC VHF/uvhfdata.pdf.

Note on joint publication: This article is also being published in an upcoming issue of the Mt. Airy VHF Club's Cheese Bits.

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K3EOD gets help with his antennas





Net Manager and Primary operator of the K3EOD Multi-op Station in Vineland, NJ Al Boblitt—looks very pleased after an antenna party to install new feed lines on his tower. Thanks to the help of K3EGE, K1DS W2SJ and others the station is ready to "MAKE SOME NOISE" in the 2005 VHF/UHF/ MICROWAVE contest season.

K3EGE doing a bit of tower work

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JANUARY 2005 7 CheeseBits

WHATS HAPPENING

A listing of interesting events

1 January 2005-HAPPY NEW YEAR EVERYONE

8 January 2005—ON-THE-AIR TUNE UP—pre-contest Activity hours 0800 to 1300—Get on the air and check out your station.

13 January 2005–PACKRATS BOARD of DIRECTORS meeting at the home of WA3EHD

15 January 2005—ON-THE-AIR TUNE UP—pre-contest Activity hours 0800 to 1300 Final pre-contest activity hours Check you rotator calibration and work a few for practice.

20 January 2005—Regular meeting of the Mount Airy VHF Radio Club (PACKRATS) at the Southampton Public Library at 8 PM—WA3RLT will give his very informative statistical analysis of the 2004 contest.

22, **23** and **24** January **2005**—JANUARY VHF SWEEPSTAKES 2005 Get going on all those repairs, construction and antenna projects. Chairman, N3FTI Steve Kerns.

NOTES FROM EVERYWHERE or Just a little plagiarism to share

The following swipped FROM THE ARRL CONTEST RATE SHEET 29 December 2004

From Dan N1ND at the ARRL Contest Desk, "Folks, please do not use the "slashed zero" character in your logs (ALT 0216 on the PC keyboard). It is not interchangeable with a true zero. Computers read them as two separate things." Using the wrong character means call signs get sorted and stored as a different call than you intended, leading to log checking problems.

Next some food for thought:

Resolutions Three

Here we are at the New Year once again and I'm sure that many of us are making firm resolutions of one sort or another. More exercise, quit [fill in the blank], do more, do less, and all are admirable in their intent. What about ham radio? Shouldn't there be a few resolutions for our favorite past time? (It IS a past time, isn't it?) I have a suggestion; three suggestions, actually, in order of difficulty.

Resolution One - Improve The Station This one isn't so hard. Maybe all you have to do is dust! Surely, there is one gadget missing or some nagging problem that needs repair. Mine is a goofy mike cord on a VHF/UHF rig that I keep "meaning to fix" but never quite seem to find the time for. You might choose to do a major upgrade, too. At any rate, put shoulder to the wheel and improve your station's performance. Maybe I'll finish that new sound card interface!

Resolution Two - Improve The Operator Getting a little more difficult, this time. I know, we are all stellar operators and couldn't be any better. Right. In our honest moments, we all know that there are a few deficiencies in our operating or understanding skills. Is there some style or mode that you haven't mastered? Maybe your logging accuracy isn't what it could be? Now is the time to pick something to focus on this year to be a better operator. Perhaps it's a technical challenge instead. You could buy a book or take one of the ARRL's on-line courses. Pick an area that's new to you - satellites, low bands, digital modes. Get those neurons shaking off the rust. Look for me to get on meteor scatter this year - ka-ping!

Resolution Three - Improve The Amateur Service Ah - this is the tough one. It's one thing to put effort into your own abilities and station. It's quite another to figure out how to improve the hobby itself. Your personal contribution of time and energy is usually required. Is rotten operating giving you heartburn? Why not invite some young dogs over for a multi-op and lead by example. (You ARE a good example, right?) Bemoaning the lack of new blood? Go give a talk on contesting at a general-purpose club meeting or volunteer to help them out on Field Day.

Take a good look at the excellent set of personal skills you have developed by contesting. How can these be put to work to improve the Amateur Service - and that's just what it is, a service - for everyone, not just contesters? You'll probably have to get out of your comfort zone a little bit, meet someone new, and take a chance. The result is guaranteed to expand your consciousness of ham radio as it enters the 21st century. It's a lot bigger than you might think, particularly if you've been licensed for a long time.

There may not be a clear topic that leaps to mind right away. That's fine - just hold the thought as the year wends it way along. The opportunity will present itself, I'm sure. As the line in the movie "Polar Express" goes, the secret lies in getting on the train when it stops for you! As midnight comes on December 31st and the digit counters roll over to 2005, I wish all of you the best for the coming year. Natural disasters and conflict of various sorts will likely test our abilities in ways we wish they didn't.

The world has funny ways of making things happen unexpectedly. And yet, there is a brightness to be found behind the front panel of a radio that is our special secret, shared by hams the world over. Hope to see you there!

73, Ward N0AX

New Distance Record on 403 GHZ

I'd like to report a new QSO on 403GHz that should be a new DX record for that "band".

Details of QSO:

Dec 21, 2004 at 01:27z WA1ZMS/4 worked W4WWQ/4 on a frequency of 403GHz over a distance of 1.4km. W4WWQ/4 was located at: N37-21-13.7 W79-10-15.0 WA1ZMS/4 was located at: N37-21-24.3 W79-11-11.1 The weather at the time of the QSO was:

Temp: -7.8C Dew Point: -18.9C Relative Humidity: 41% Station pressure: 1000mb

These weather conditions resulted in an atmospheric loss of 3.46dB/km.

The gear used for this QSO was the same gear used previously on 241/322/403 GHz. Signals were very weak on the W4WWQ end, while several dB of margin existed on the WA1ZMS end. The exchange had to be sent several times for W4WWQ to copy the CW by ear.

This new QSO exceeds our former DX of 0.5km as well as conquers the 1km barrier for amateur frequencies above 400GHz (except for visible light).

I hope to have an audio file and a photo posted on the web at www.mgef.org with in a few days.

73,

Brian, WA1ZMS

WISDOM GAINED

FROM THE 10 GHz and Up CONTEST or
What I learned form the contest

- 1) Always put you call on the back of the dish so you don't have to run around front to remember it.
- 2) Always dump the dirt out of your feedhorn first and never blow into the waveguide after being out in the field. It makes a big dust cloud. What ever you do don't inhale.....
- 3) There aren't any car washes on dirt roads except in Mexico

I'm certain there will be more after the second weekend....

73 Chip Angle N6CA Chip@anglelinear.com

I keep my ideals, because in spite of everything I still believe that people are really good at heart.

Anne Frank



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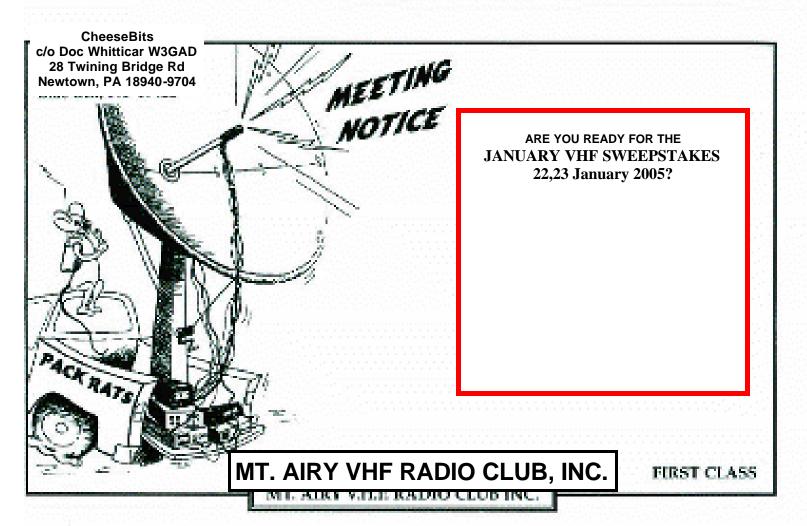
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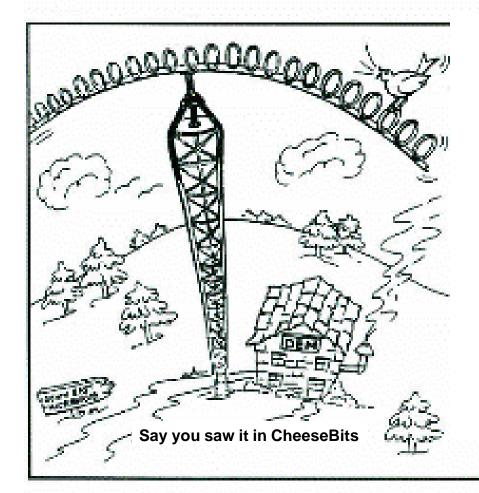
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