



Volume 34, Issue 4

Mike & Key Amateur Radio Club -- Seattle

April 2006

From the Hot Seat...

RAMBLINGS

by Sam Sullivan N7RHE, President

As the weeks between meetings ramble on, various events transpire. Some things make it out on the email reflector and some don't. This past week we were all a bit apprehensive, as news was related that Wayne, KC7ORB, went through a health scare - but all is well. The personal problems of our members are always a concern because we are more than a club, we're a family.

This week is the major social event of the year, the M&K Annual Awards Banquet. The time when we put on our finest, recognize the best and enjoy the company of some we don't get to see very often. I know many people are upset by the cost of this year's banquet but prices have really been going up for a quality evening meal that we've grown to like. I know, this past year the retirements and similar events I've been to average \$25. Some fundraisers are \$30 to \$50. If anyone has a better idea, volunteer to chair next year's banquet. I know Scott & Faith had a difficult time finding good quality locations for anything less in price. I thank them for their efforts with all the other events going on in their lives.

This weekend (9April) is also an antenna and other item work party at Alan, KB7SVU's QTH. I hope many hands were able to make it. Does anyone have a need for another work party? Do you need help with a tower or antenna project? Remember that many hands make for light work.

For education ideas or to join the committee, contact Guy N7ZG. For the technical committee,

contact Steve KD7IQL. If you have any ideas for a program or would like to present a program, contact Dawn KC7YYB. To assist the radio officer, contact Paul N7DOH. For field day, contact Brendan, KD7IKV or Steve, KD7IQL.

WWDXC Sends Their Thanks

Email received, Day after FleaMarket...

A big THANK YOU to the Mike and Key ARC for putting on another successful FleaMarket at Puyallup yesterday! This event is a great opportunity to touch base with old friends and meet the people behind calls! Along with seeing just about every piece of radio gear you ever owned or wanted to own!

The WWDXC table was staffed this year by Kirk, N7UK, Pat, W7GTO, and myself with support from Roger, W7VV, Marina, N7LSL, and other members. Thanks to everyone who stopped by, and we even caught up with some old members who renewed their active memberships.

73, Jim K7WA, WWDXC Membership

IN THIS ISSUE:

From the Hot Seat	1
WWDXC Says Thanks	1
M&K Club Contact Info	2
25th Annual FleaMarket	3
FleaMarket Attendance	4
FleaMarket VE Exams	4
April Meeting Program	5
Rock Bending Receiver	5
Math/Elec Vignettes	6
M&K General Mtg Minutes	7
M&K Board Mtg Minutes	8
Vignettes Revisited	9
Ham Radio Nets & Events	10



The *K7LED Relay*, published monthly, is the official newsletter of the Mike & Key Amateur Radio Club. Mike & Key ARC is an ARRL-affiliated club dedicated to the growth and betterment of Amateur Radio.

The club meets at 10 A.M. the third Saturday of every month at Salvation Army Headquarters, 720 S. Tobin Street, in Renton (near the southeast corner of Renton Airport). Anyone interested in Amateur Radio is invited to participate in the Mike & Key ARC and its activities. Annual dues are \$12 for individuals and \$18 for families.



Postal Address
P.O.Box 4234
Renton, WA 98057-4234

Web Site
www.mikeandkey.org

Send dues to
Jack Grimmett, Treasurer
33 Peterson Road
Port Angeles, WA 98362-8102

K7LED Repeaters
146.82 output / 146.22 input
(PL 103.5)
Squak Mountain
224.120 output / 222.520 input
(PL 103.5)
Tiger Mountain

Email
info@mikeandkey.org

Send newsletter submissions to
Gary Bryan, *Relay* Editor
34033 33rd Ave SW
Federal Way, WA 98023-7724
glacialview@att.net

Reflector
<http://groups.yahoo.com/mkarc>

Club Contacts

President	Sam Sullivan	N7RHE	svsullivan@comcast.net	253-631-0663
Vice President	Carolyn Pasquier	WV7Q	carolynp@sprynet.com	253-862-1157
Secretary	Dick Radford	WA7NIW	wa7niw@arrl.net	425-828-9791
Treasurer	Jack Grimmett	N7IHS	n7ihs@wavecable.com	206-437-2841
Activity Manager	Dawn Humphrey	KC7YYB	n7qhcdan@juno.com	206-243-0163
Radio Officer	Paul Roth	N7DOH	n7doh@arrl.net	206-550-9690
Trustees --				
No. 1 (CoB)	Brendan Burget	KD7IKV	kd7ikv@arrl.net	425-774-1946
No. 2	Pam Bryan	N7PRS	glacialview@att.net	253-661-7882
No. 3	Guy Molinari	N7ZG	guy_molinari@hotmail.com	253-630-2992
No. 4	Stephen Cook	KD7IQL	kd7iql@arrl.net	206-781-2293
No. 5	Frank Tate	NA7O		206-762-4732
Logo Committee	Dan & Dawn Humphrey	N7QHC / KC7YYB	n7qhcdan@juno.com	206-243-0163
Webmasters	Jim Etwiler / Dave Smith	KD7BAT / KB7PSN	kd7bat@arrl.net	206-633-1512

Mike & Key Online -- Several club resources are available electronically:

On the Web — The club's site at 'www.mikeandkey.org' includes extensive information about club events: VEC testing, membership, past edition of the *Relay* and more.

Reflector — The public message board offers an easy and free way to converse with club members. To sign up, surf to: <http://groups.yahoo.com/mkarc>.

E-Relay — Want the newsletter in color and a day or two before the print edition arrives by regular mail? You will also save the club some money in printing and postage costs. To sign up, send a message to the editor: kg7ku@arrl.net.

25th Mike & Key ARC FleaMarket

by Michael Dinkelman N7WA

So, how do you do this? This is the hardest part of this event every year – trying to sum up an event you just spent 6 months helping to organize and 36 hours busting your hump to execute. Here goes.....(in no particular order, just how it came to me)

Thank you Hal N7NW for consenting to lead this merry band. Thank you Diane KB7DNE for another fine job of Registration. Thank you Kathy KB7QMO and Jim N7MU for stepping up and chairing Tickets (for which we had no chair last year). Thank you Jack for coming down all the way from Sequim to attend meetings and sending out the monthly finance summaries. Thank you Curtis N7MWC for another year at Country Store. Thank you Gary for organizing the Pallet Crew and we hope you can actually attend next year. Thank you Pam N7PRS for an excellent job at Announcing; we even got email about the great announcing lady who kept it short and sweet. Also, thanks to Pam for pushing us on table stacking during tear down - we've never stacked 'em so fast. Thank you Chuck N7BV, Mike WB7AYU, David W7DOW and others for being my table tossing partners. Thank you Wayne KC7ORB for another fine year of food and drink. Thank you Scott AG7T for doing yeoman work as the Pallet crew lead in addition to the VE exams. Thank you Joyce KA7VXN and Michelle WA7PVE for being on pallet crew for most of setup and teardown. Thank you Guy N7ZG, Tressie KC7BAL, and Rick KF7VG for standing out in the wind, cold, and rain to man the pallet gate (I think Guy was on Pallet duty all the rest of the time he wasn't at the gate and did some VE work too). Thank you Calvin KC7IYP for transferring into the Pallet Crew as gate guard for Saturday load out. Thank you Jim KC7EVY and Wayne K6DOW for manning the Orange and Gold gates for pretty near the whole time of setup. Thank you Sally Robinson and Rusty Etwiler, two XYL's who could have easily stayed away but came down to support registration and their husbands. Thank you David Lee KC7FSR for sitting out in the cold to stamp hands. Thank you Stephen KB7FGV, Elliot for taking tickets – a job we have difficulty filling. Thank you Bill KD7JXM for being RIGHT there to take tickets, where you

were supposed to be, while I was wandering off to find you. Thank you Public Service Committee for another wonderful pamphlet. Thank you to the two vendors who came up from Oregon and volunteered to setup tables and do pallet duty because "it's fun" and "we're a great bunch to work with". Thank you Wes Moss and wife for coming out and standing in the cold for an event you helped to birth 25 years ago. Thank you Gil KB7ZQT and the Phone crew for flawless phones. Thank you Alan KB7SVU for putting your van in harms way to block the 4x4 dudes during load out. Thank you Chuck WA7EBH and Jim KD7BAT for playing Treasurer when Jack couldn't make it. Thank you Country Store for selling my stuff. Thank you Mike KD7LAX for not only sticking with the pallet crew but for taking care of your Elmer's estate which is a hard lesson in life. Thank you Hotpress for the hats. Thank you Main Garden for a place to eat and unwind. Thank you Kevin N7GXZ for storing and transporting our pallets. Thank you Jim N7MU for taking David Lee around the event during his break.

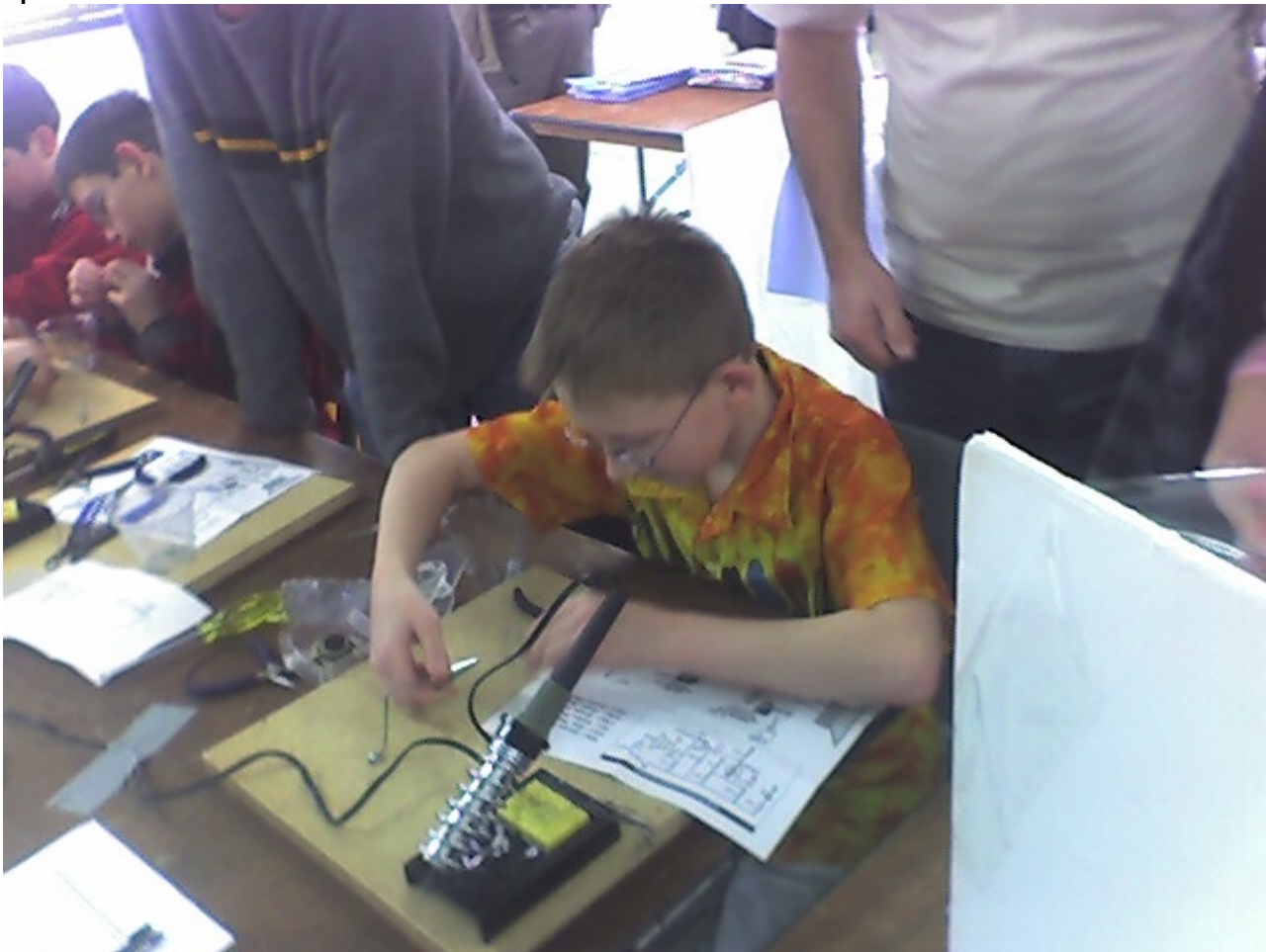
There are so many more. Those selling tickets. The Pallet crew, up and down stairs. The Announcing crew. Security. Country Store. Talk in. VE crew. Registration. It goes on and on. The names I listed were just SOME of the people I had reason to interact with directly. I know that some of you will be disappointed your name wasn't in there. It isn't because you didn't do something noteworthy, it's just I can't list everyone even if I could remember everyone.

I guess my intent, beyond the monotony of it, is to show this is a team effort and that it takes a whole bunch of little efforts (ok, some weren't so little) to go into making an event work like this work. Sometimes, we get put into situations that aren't so comfortable. Sometimes, we end up with sore muscles, smashed toes, and splinters. Sometimes we even get mad and irritated.

However, the one thing I don't want anybody to feel is unappreciated. If you played any part in this past weekend efforts (even if you couldn't make it in the end), you have my heartfelt thanks.

Rest assured you also have the thanks of several THOUSAND of your fellow Hams.

Now ain't THAT cool? Hope you'll join us for 2007.



FleaMarket - Attendance

Report by Michael Dinkelman N7WA

Following are the attendance figures for the past several FleaMarket. Totals are based on ticket roll start and end counts and include juniors (free):

2006

Gate:1749 (includes 85 Jr) Vendors:528
Total:2277

2005

(Corrected from what I reported last year.)

Gate:1740 (includes 76 Jr) Vendors:510
Total:2250

2004

Gate:1841 (includes 120 Jr) Vendors:489
Total:2430

2003

Total - just above 2500

(No break down, I am not sure how total was derived but that's what was reported.)

FleaMarket - VE Ham Radio Exam Results

Report by Scott Robinson AG7T

Please accept my thanks for all those who helped out at the Flea Market Exam Sessions... I got through with the paperwork in about 3 hours this morning...(Sunday, March 12)...the results:

Morning Session: 26
Afternoon Session: 9
Total: 35

45 Exam elements given

Licenses Awarded:

12 Technician
5 General
7 Extra
Total: 24

4 People walked away with nothing
7 People got element credit only
A note for **CW fans**...we had **7 Pass** and
2 Failed attempts! ...a good turnout.

73 - Scott AG7T

detail and describe its performance during the 2006 ARRL DX CW contest.

Hope to see you there! 73 - Guy, N7ZG

April's General Meeting Program

by Guy N7ZG

Now that we are approaching solar minimum

the low bands are better than ever for long haul DX'ing. The 40 meter band while normally a nighttime band throughout most of the solar cycle, can be open during much of the daylight hours. When the geomagnetic indices are quiet, 40M will often open to Europe at 3 or 4 pm local time. Sometimes even earlier!

Antennas for the low bands must be larger and higher. This is a problem for many of us who cannot afford a 100+ foot high tower, or live in neighborhoods that restrict antenna towers. For some hams, getting a dipole 20 meters in the air can be a challenge as well. Dipoles really provide limited gain, directivity, and are relatively high angle antennas.

This makes them less effective for DX. Vertical antennas are great as transmitting antennas but require a good ground system for radiating efficiency. They also are susceptible to noise. This is a killer on the low bands and often must be accompanied by a separate receive antenna such as a beverage. This adds complexity, cost and requires even more real estate.

I live on an 80 by 100 foot suburban lot. Luckily, I have a 60 foot crank up tower. This provides a single high support that can also support an inverted vee antenna for 40 and 80M. What I was looking for was a little more gain and directivity without breaking the bank. Page 6-38 of the 20th edition of the ARRL antenna book outlines an antenna design that is just perfect for my situation. The K1WA array is a system of 5 half wave sloping dipoles that act as a vertical Yagi (sort of). The directional pattern can be electrically rotated in any one of five directions via a very simple relay system. It provides 4dBi of gain and about 18dBi of front-to-back over typical Northwest soil and is easily reproducible for beginner to intermediate level hams. All that is required is a decent size tree or other single support 60 - 70 feet in height.

At the April club meeting and I will put on a program that details this antenna design. It will include pictures of the installed antenna and I will probably have the relay box there for show and tell. I will cover the construction of this antenna in

Rock Bending Receiver

by Michael Dinkelman N7WA

Last meeting, I took a straw poll of those interested in spending an evening learning about and building a small receiver from a kit. Quite a few hands went up so here we go...

On Friday, May 19th, the Club will be holding a special evening in my single car garage east of Kent. Yup, it ain't big but I figure we can get a couple 8 foot tables in there and some chairs. The kit consists of a single board and all the parts are included. The kit is called the Rock Bending Receiver and it was published in the August 1995 QST.

The receiver comes equipped to work in the Novice 40M CW band but can be modified to work on other bands as well. It's a direct-conversion type receiver and uses crystals which are "pulled" (hence the term rock bending) to accomplish frequency control. We'll spend a bit of time discussing the theory of operation while building.

This isn't just for builders either. We'll need some Elmers to help solder, teach theory, and assist in construction. I have 9 kits and there is no cost to build one. I figure if more than 9 people want to build, we can put a couple people on some of the kits and you can flip a coin over who gets to take it home. We'll need some more soldering irons too (I have two or three).

How many people can we get in Dinks garage? I dunno. It might get crowded but I'd hate to turn anyone away. I'll pass around a signup sheet at the next meeting with a cut off line just so we don't get 30 people trying to build 9 kits. Parents with kids interested in radio are certainly encouraged to signup.

I choose May 19th because it's a Friday and most people don't have school or work the next day. It's also the day before the May Club meeting. We'll start at 7PM and I figure we should be done by 9PM. If we run over a bit, it's Friday.

If you are not familiar with the Kent area, may I suggest grabbing a map off the internet, Dinks garage – just fill in the following address: 22222 148th Ave SE, Kent, 98042.

MATHEMATICAL & ELECTRICAL VIGNETTES

by Ted Roubal KC7ZEO

This is the second in a series of articles graciously contributed by M&K Club member Ted KC7ZEO.

The topics and concepts presented herein have been known to "excite the senses...send your head into a spin." -Ed.

THE IMAGINARY NUMBER j...Figured

prominently in the successful production of Walt Disney's classic 1940 film FANTASIA. It was the late 1930's, times were tough, and Walt Disney needed help. Walt was putting together his movie, FANTASIA, the first color movie in the all new Technicolor, and sound effects were to play a vital role. But oscillators then available weren't right for the job and so Walt went looking. He found what he was looking: for in circuitry called phase shift oscillators, oscillators of particular interest to two young graduates in electrical engineering from Stanford University. But before I tell you who these two entrepreneurial engineers were, let's pause a moment and take a look at some oscillator basics.

LOOP GAIN AND PHASE...Shown in (I) below is an ac source driving the input of an amplifier.

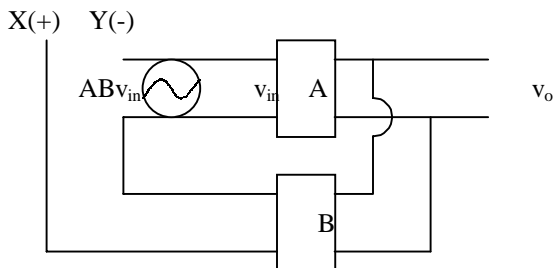


Diagram (I)

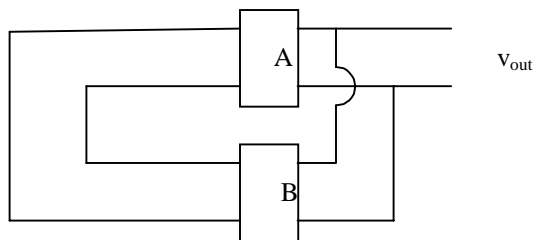


Diagram (II)

Today, the amplifier would be a solid state Op Amp device, but in the 30s and 40s, it was all vacuum tubes. The amplifier output voltage is $V_o = A v_{in}$, where A is the gain of the amplifier. The output of the amplifier drives a feedback circuit B, usually a tuned circuit (a filter). Therefore, we achieve maximum feedback at one frequency only, and the feedback voltage returned to point x is $v_f = AB v_{in}$. If the phase shift through the amplifier and feedback circuit totals 360 degrees, then ABv_{in} is in phase with v_{in} .

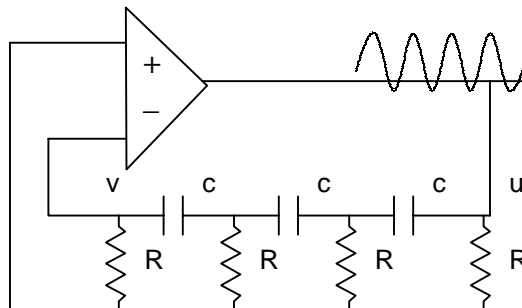
K7LED Relay

And if we now disconnect the input voltage source while at the same time connect points x and y together, then the feedback voltage ABv_{in} drives the amplifier input as indicated in (II). If AB is less than 1, ABv_{in} is less than v_{in} , and the output signal will die out. If $AB > 1$, ABv_{in} is $>$ than v_{in} then the output voltage builds up. If $AB = 1$ then $ABv_{in} = V_{in}$ and the output voltage is a steady sine wave. In this case, the circuit supplies its own input signal. Moreover, AB automatically decreases to 1 and the output p-p (peak to peak) sine wave voltage becomes constant.

STARTING VOLTAGE, or, ..WHERE DOES THE INPUT SIGNAL COME FROM?...If the input is connected to the output, we wonder how the oscillator gets started in the first place. The answer is THERMAL NOISE. All resistors contain free electrons. These electrons are in constant motion due to ambient temperatures, and generate noise voltages ranging to thousands of GHz. When the oscillator is first turned on, these noise voltages are amplified and appear at the output. However, due to the tuned feedback circuitry B, only the resonant frequency of B is the one that undergoes no phase shift (hence NOT tuned or filtered out) and becomes the frequency of oscillation.

PUTTING IT ALL TOGETHER...THE PHASE SHIFT OSCILLATOR...A phase shift oscillator with three capacitor / resistor (LEAD) circuits (the feedback or B circuitry of above) is shown below where the triangular shaped symbol is the standard designation for an Op Amp. Lead circuits are capable of producing phase shifts between 0 degrees and 90 degrees. At some frequency, the three lead circuits are capable of shifting the phase by 180 degrees. Add to this an additional 180 degrees of shift because the signal drives the inverting input of the device, and we have come full circle (back to 0 degrees of shift) and if $AB > 1$ at this particular frequency, oscillations will start.

A phase shift oscillator with three capacitor / resistor (LEAD) circuits (the feedback or B circuitry of above) is shown below where the triangular shaped symbol is the standard designation for an Op Amp. Lead circuits are capable of producing phase shifts between 0 degrees and 90 degrees. At some frequency, the three lead circuits are capable of shifting the phase by 180 degrees. Add to this an additional 180 degrees of shift because the signal drives the inverting input of the device, and we have come full circle (back to 0 degrees of shift) and if $AB > 1$ at this particular frequency, oscillations will start.



(Continued on next page...)

April 2006

K7LED Relay

Vignettes... (Continued from previous page)

ENTER THE IMAGINARY NUMBER j ($j = \sqrt{-1}$). Our description of oscillator operation has been semi-analytical in nature, and the electronics engineer such as the two from Stanford would demand better mathematics to back it up. As with most electronic applications, however, the real existence of their being is often shrouded in higher mathematics, most often involving a rigorous serving of calculus. And because you are not math majors, I'll tread lightly. Using Kirchoff's Laws we can generate a set of 8 equations in nine variables and solve for the ratio of any two, particularly the phase shifted voltages u and v (above). We then generate a third-order differential equation (you need not worry, you aren't expected to know how to do this just read on), and by making some substitutions and simplifying, we obtain an equation containing j terms:

$u/v =$

$$j \omega^3$$

$$(1/RC)^3 - 6\omega^2/RC - j\omega[5/(RC)^2 - \omega^2]$$

(Showing that imaginary numbers really do play a role in solving down-to-earth situations). Further simplification provides an easy solution, namely:

$\omega = 1 / (RC \sqrt{6})$, where C is in Farads, and omega (ω) - the frequency of oscillation - is in radians/sec.

If the Rs for example are 26k ohms and the Cs are 0.001 μ F, then $f = \omega$ (rad/sec) / 2π = 2500 Hz, an audible sound. With regard to j in electronics, the famous German-American scientist, Charles P. Steinmetz (1865-1923), is probably best remembered for his work with imaginary numbers, and was known at GE as the wizard who generated electricity from the square root of negative one. In Steinmetz' own words, "we are coming more and more to use complex numbers instead of sines and cosines, and find great advantage in their use for calculating all problems of AC and throughout the whole of physics. Anything that is done in this line is of great advantage to science."

AND THOSE TWO YOUNG ELECTRICAL ENGINEERS WERE...None other than William HEWLETT and David PACKARD, who sold phase shift amplifiers to Walt Disney. William and Dave then co-founded HP, one of the most prestigious electronics firms that ever existed. One could conjecture that the imaginary number j was an underlying factor in guiding these two engineers to fame and fortune.

**General Membership Meeting Minutes -
March 18, 2006:**

Officers present:

- ✓ **President – Sam Sullivan (N7RHE)**
- ✓ **Vice President – Carolyn Pasquier (WV7Q)**
- ✓ **Secretary – Gary Bryan (KG7KU)**
- ✓ **Treasurer – Jack Grimmett (N7IHS)**
- ✓ **Activity Manager – Dawn Humphrey (KC7YYB)**

✓ **Radio Officer – Paul Roth (N7DOH)**

Trustees present:

- ✓ **No. 1 – Brendan Burget (KD7IKV) Chairman (COB)**
- ✓ **No. 2 – Dick Radford (WA7NIW)**
- **No. 3 – Guy Molinari (N7ZG)**
- **No. 4 – Dick Vance (K7NEX)**
- ✓ **No. 5 – Frank Tate (NA7O)**

President Sullivan called the meeting to order at 10:03 a.m. at the Salvation Army building in Renton, Wash. All members and guests recited the Pledge of Allegiance.

President Sullivan made several announcements: The Mike & Key ARC is affiliated with the ARRL, which members are encouraged to join; everyone, including visitors, should sign the rosters; visitors are reminded not to vote on membership matters; smoking is allowed in the parking lot but not in front of the chapel. Members and guests introduced themselves. Quorum present.

Minutes: Motion by Brendan KD7IKV and seconded by Richard N7MER to approve the minutes of the previous meeting as printed in the *K7LED Relay*. Motion passed.

Officer Reports

President – Sam N7RHE: The next Mike & Key General Membership meeting is April 15. Please note the article in the March Relay, that Mike N7WA is calling for help with the Coffee & Donut service for the Club meetings here at the Salvation Army each month. See Mike if you are willing to help with this.

Vice President – Carolyn WV7Q: No new memberships. Application forms are available - just see Carolyn.

Secretary – Gary KG7KU: Nothing new to report at this time.

Treasurer – Jack N7IHS: The Club's books are in good order. Gave P&L and Balance Sheet summary. The FleaMarket summary will be issued by Email to the Board. Checks for the Country Store take a little while to process, so please be patient.

Radio Officer – Paul N7DOH: Nothing new to report at this time.

Activity Manager – Dawn KC7YYB - Please see me to participate in the raffle.

Chairman of the Board – Brendan KD7IKV - The Mike & Key Board meets March 29, at Galliano's Cucina in SeaTac.

Webmaster – Jim KD7BAT: Please share with me your ideas, suggestions or needs regarding the M&K Website.

Standing Committee Reports

Technical – Dick K7NEX: (No report)

Education – Guy N7ZG (No report)

Facilities – Brendan KD7IKV: See Field Day report.

Public Service – Dick WA7NIW: Events needing Ham radio support are on the tables. The committee will meet at the Cedar River Smoke House, in Renton, following the meeting today.

(Continued on next page)

General Membership Meeting Minutes...*(Continued from previous page)*

Strategic Planning – Frank NA7O: Nothing new to report at this time.

Flea Market -- Mike N7WA: The results were good for the FleaMarket, held this past Saturday. Thanks to all who pitched in to help make this a successful event again this year.

VE Exams -- Scott AG7T: At the FleaMarket, there were two examination sessions held, with great results. In all, 45 exam elements were given, with the following results --12 Technician, 5 General and 7 Extras. A note for CW fans -- 7 passed, 2 failed attempts -- a good turnout. My thanks to all from the Club who helped with the exam sessions: James Darby NY1R, Michael Hansen KG7MX, Guy Molinari N7ZG, and Dave Walter AD7GG.

Field Day -- Steven KD7IQL & Brendan KD7IKV: Activity will begin in earnest, now that the FleaMarket is behind us. The GOTA station needs a Chair. From the floor, Michelle WA7PVE volunteered as Chair. Meetings and work parties will be scheduled and become active soon, so all the Chair persons keep a lookout for the emails and announcements.

Awards Banquet - Scott KC7UOC: The M&K Awards Banquet is set for Saturday, April 8, at the Muckleshoot Casino in Auburn. If there are more than 50 sign-ups, a Buffet style will be presented, else a By-Plate service will be provided to your table. Cost is \$25 each. Make checks payable to Scott Castonguay (KC7UOC).

Old Business -

Alligator Award- We have a winner. Jeff KE7FRJ has been identified as the new recipient of this prestigious award. The report carries a tinge of dubiousness, however, in that the time-out occurred while conversing with Calvin KC7IYP.

New Business -

Nominations - Brendan KD7IKV: We complete the Nominations and election process today. Open positions are Secretary, Trustee #2 and Trustee #4.

The results of the Nominations are as follows: President- Sam N7RHE; Vice-President- Carolyn WV7Q; Secretary- Dick WA7NIW; Treasurer- Jack N7IHS; Activity Manager- Dawn KC7YYB; Trustee #2 & #4- Steve KD7IQL, Alan KB7SVU, Pam N7PRS, Michelle WA7PVE.

Nominations - Brendan KD7IKV: The Election portion was conducted per Roberts Rules of Order, with the following results: President- Sam N7RHE; Vice-President- Carolyn WV7Q; Secretary- Dick WA7NIW; Treasurer- Jack N7IHS; Activity Manager- Dawn KC7YYB; Trustee #2 - Pam N7PRS, and Trustee #4- Steve KD7IQL.

Good of the Order -

Mike N7WA - Comments were good from the floor regarding the announcing this year, thanks to Pam N7PRS.

Michelle WA7PVE - My thanks to the tireless efforts of Joyce KA7VXN, who filled in for Pallet Crew Lead this year, in Gary's (KG7KU) absence.

Pam N7PRS - This year, my boss placed an ad in the Puget Sound Guide. The Angle Lake Locksmith business was willing to support the efforts of this club by doing so. Please consider the many other opportunities to gather interest and support for next year's Guide release, by asking those who own Radio-related businesses -- and others -- to help.

There being no further business, Richard N7MER moved and Paul N7DOH seconded a motion to adjourn. Approved and President Sullivan closed the meeting at 11:12 a.m.

Attested: Gary Bryan KG7KU, Secretary

Board Meeting Minutes - March 29, 2006:**Officers present:**

- √ President – Sam Sullivan (N7RHE)
- √ Vice President – Carolyn Pasquier (WV7Q)
- √ Secretary – Gary Bryan (KG7KU)
- √ Treasurer – Jack Grimmer (N7IHS)
- √ Activity Manager – Dawn Humphrey (KC7YYB)
- Radio Officer – Paul Roth (N7DOH)

Trustees present:

- √ No. 1 – Brendan Burget (KD7IKV) Chairman (COB)
- √ No. 2 – Dick Radford (WA7NIW)
- √ No. 3 – Guy Molinari (N7ZG)
- √ No. 4 – Dick Vance (K7NEX)
- √ No. 5 – Frank Tate (NA7O)

Visitors in attendance: Jim KD7BAT, Dan N7QHC, Pam N7PRS, Dave KB7PSN, Steve KD7IQL, Mike N7WA, Loras Gassmann

Chairman Brendan called the meeting to order at 7:01 p.m. at Galliano's Cucina in SeaTac, Wash.

Minutes: A motion for the minutes of the previous meeting to be approved, was made by Sam N7RHE and seconded by Frank NA7O. Motion passed.

Officer Reports

Chairman of the Board – Brendan KD7IKV: The next scheduled Board Meeting is April 26.

President – Sam N7RHE: Next General Membership meeting is April 15.

Vice President – Carolyn WV7Q: New applicants: Bert Nielson (no call), Philip Sheridan III (no call), David Swanberg KD7ZP, and Michael Pastore WA7SCH. All were approved by the Board, to be recommended to the Club at the next General Membership meeting.

April 2006

Secretary – Gary KG7KU: Nothing new to report at this time. Carolyn WV7Q- Relative to the Relay (of which Gary is Editor), it is good to have the 'Membership Expires' date on the labels for the mailed portion. There needs to be a way to provide the equivalent 'electronic notice,' to those of the general membership who have email addresses.

Treasurer – Jack N7IHS: The full reporting of the FleaMarket fiscal activity will be ready soon.

Activity Manager – Dawn KC7YYB: The program for April will be one by Guy N7ZG, on an antenna project. Details to be known soon.

Radio Officer – Paul N7DOH: Not present, no report.

Committee Liaison Reports

Facilities – Brendan KD7IKV: A letter of appreciation was received from The Salvation Army for the generous donation by the Club to help the needy victims of Katrina. Facilities-wise, the selection for a new generator is down to two...(general discussion on the merits of the two followed)... Sam N7RHE- Made a motion that 'Brendan be authorized to purchase the Honda EV6010, 6kW generator, using funds as allocated by the Treasurer,' which was seconded by Guy N7ZG, motion passed.

Strategic Planning – Frank NA7O: Nothing new to report at this time.

Technical – Dick K7NEX: Nothing new to report at this time.

Public Service – Brendan KD7IKV: The 2006 M&K Puget Sound Guide has already been distributed widely, and many good comments continue to be received from a wide variety of sources. The committee did an excellent job this year.

Education – Guy N7ZG: N7WA- Will be helping put together a DX class, the description of which will appear in the upcoming Relay.

Field Day – Brendan KD7IKV: Band chair assignments are completed, but we are still in need of a food preparer.

Awards Banquet – Scott KC7UOC: Sam N7RHE- Although reports of high prices abound, \$25 a plate is reasonable these days.

Old Business-

Dick WA7NIW- Status of the agreement of terms of usage of the 146.82 M&K Repeater, also known as, and held in document entitled: 'Memorandum of Understanding (MOU) between King County ARES @-RACES and the Mike and Key Amateur Radio Club.' The ARRL has taken the document under consideration, and for review by their Legal Staff. Seems the process of reaching an understanding is much more complex now than before. We are awaiting their response.

Sam N7RHE- [Read a letter which] Stated the list of approved signatures for club fiscal activity now includes Mike N7WA and Sam N7RHE, as previously approved by the Board.

New Business-

Sam N7RHE- Has given the Relay Editor additional names to be placed on the electronic distribution list, including ARRL Section Manager, Ed N7NVP and ARRL Division Director, Jim K9JF.

Good of the Order- Nothing for the Good of the Order.

There being no further business, Jack N7IHS moved and Guy N7ZG seconded a motion to adjourn. Approved and Chairman Brendan closed the meeting at 8:11 pm.

Attested: Gary Bryan KG7KU -- Secretary

[Sec. Note- The installment of new officers per the results of the recent elections occurred. What followed the evening's Board meeting was a quickly held meeting to establish the order of the remaining and new officer positions. The minutes of that meeting are recorded, as follows, by Dick WA7NIW.]

=== Beginning of New Board meeting =====

Trustee meeting 3/29/06

The new trustees listed below met briefly following the final meeting of the old board. Committee liaison positions were decided on as also listed below. Brendan was elected Chairman.

- No. 1 – Brendan Burget (KD7IKV) Facilities**
- No. 2 – Pam Bryan (N7PRS) Public Service**
- No. 3 – Guy Molinari (N7ZG) Education**
- No. 4 – Steve Cook (KD7IQL) Technical**
- No. 5 – Frank Tate (NA7O) Strategic Planning**

Meeting adjourned.

Attested: Dick Radford WA7NIW, Secretary

=== End of New Board meeting =====

(End of Meeting Minutes)

Math / Elec Vignettes Revisited - Stuck In Zeno's Paradox...

Original article by Ted KC7ZEO, *this apology by Gary KG7KU*

The March M&K *Relay* carried an article which will have you walking forward and yet never get where you intended. We all have Zeno -- and Ted KC7ZEO -- for pulling us into this dimension.

Well, that is exactly how it felt to me as I struggled with its transcription into Microsoft Word in order to present the article for *Relay* release. I was out of time, out of luck... Stuck...in Zeno's Paradox.

Here then, for the record, is the Geometric expression which was placed in text form which was just less than justice for the article, but that's how it is in Zeno's Paradox: "Geometric series...of the form: "

$$ar^0 + ar^1 + ar^2 + ar^3 + ar^4 + \dots = \sum_{n=0}^{\infty} ar^n$$

Ham Nets & Events for 2006 -- April / May

Nets are on 146.82 unless indicated otherwise

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
09 2000 -- King County ARES (Weekly)	10 0545 & 1645 -- Weather Net 145.33 (M-F)	11 2000 -- Snohomish County RACES 146.92 (Weekly)	12 2000 -- General /Tech Info 145.33 (Weekly) 2100 -- NWSOAR Net (Weekly)	13 2000 -- Computer & Packet Net 145.33 (Weekly) 2000 -- Amateur TV Net 147.08 (Weekly)	14 2000 -- Youth Net 145.33 (Weekly)	15 1000 -- M&K Club Meeting 1300 -- Ham Radio exams
16 2000 -- Amateur TV Net 147.08 (Weekly)	17 2000 -- YL Net 145.33 (Weekly)	18	19	20 1900 -- Public Service Net 145.33 (Weekly)	21	22 0900 -- WA ARES HF Net 3.985 (Weekly) <u>Parade:</u> Daffodil - Tacoma, Puyallup, Sumner, and Orting <u>Public Service:</u> March of Dimes 'Walk America' - Pt. Defiance Pk, Tacoma
23 2030 -- Snohomish Co. ARES 146.92 (Weekly)	24 1730 -- Puget Sound Traffic Sys. (Daily) 1800 -- WA Emerg. HF 3.985 (Weekly)	25	26 1900 - M&K ARC Board Mtg	27	28	29 0900 -- NW Swap Net 145.33 (Weekly) <u>Parade:</u> Oak Harbor - Whidbey Island
30 2200 -- NW Astronomy Net 145.33 (Weekly)	01 (MAY) 1830 -- WA ARES 3.985 (Weekly) 1930 -- PS Repeater 146.96 (Weekly)	02	03	04	05	06 <u>Public Service:</u> Husky Crew Races, 8am, University of Washington
07	08	09	10	11	12 Relay deadline	13