



View from the Bridge...



M&K Fleamarket & Club Elections

By Ivy Nelson-Groves WA7IVY, President

Now that the holiday season is over we can all look forward to the activities of the New Year. I learned a lot about radio last year, and all in all, I think it was a good year, but 2012 will be even better!

Last year I published my new year's resolutions. Between my regular resolutions and my Ham Radio resolutions, I accomplished just about half, so I still have some things I can work on this year. Most of all, I learned a valuable lesson: Never ever publish your New Year's resolutions!

There is a list of upcoming events later in the Relay, so I won't recite all of them, but to mention a few highlights.

In January, we need to pass our operating budget for 2012. A shout out to Dave KB7PSN: he has put in a tremendous amount of work getting this all ready for the membership and answering a lot of hard questions, from the board and from the general membership. Thanks so much for your efforts, Dave!

The M&K Fleamarket is only weeks away. This is the one event were we need everyone in the Club on board. Luckily there are plenty of jobs that almost everyone can help with. If it weren't for the flea market, our dues would probably be closer to \$75 a year or higher. Mike N7WA and Hal N7NW do a great job orchestrating the activities, but they can't do it alone!

At the March meeting, it will be time for our annual elections. All officer positions will be up for votes and three trustee positions, with the exception of the Radio Officer. If you have ever considered stepping up, now would be a great time. We will be taking nominations starting in January up until the time we actually vote in March. You can just go ahead and nominate yourself! Now is not the time to be shy.

Try to stay warm and dry... I'll see ya'll on the 21st.

M&K - Election 2012

By Tim Kane K7ANE, Trustee #3, CoB

Board elections are coming! Now that we are in the New Year, the club will elect our officers. Who do you think would make a good President or Secretary or Trustee? The Club needs the thoughts and ideas of all our members, their leadership and vision so we can continue to move ahead with amateur radio, and make sure its fun for all of us. Filling a position on the Board is the best way each of us can do that.

While a couple of the Trustees are in the middle of their terms, we need nominees for every other position. Which of your friends in the club would be a good leader for the coming year? You've got good ideas; you can volunteer yourself. Think about it. Nominate a friend, nominate yourself. Help make our Board and our Club the best they can be!

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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.



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www.mikeandkey.org

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

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

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Secretary	Robert Grinnell	KD7WNV	r-grinnell @ comcast.net	425-398-1466
Treasurer	Dave Smith	KB7PSN	kb7psn @ yahoo.com	425-235-5095
Activity Mgr	George Thornton	AE7G	GTLAW @ seonet.com	206-920-7072
Radio Officer	Hal Goodell	N7NW	n7nw.hal @ comcast.net	253-549-4178
Trustees --				
No. 1	Michael Dinkelman	N7WA	n7wa @ arrl.net	253-631-3756
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No. 3 (CoB)	Tim Kane	K7ANE	k7ane @ arrl.net	206-251-7467
No. 4	Alan Hughes	KB7SVU	kb7svu @ junos.com	253-840-4947
No. 5	Daniel Stevens	KL7WM	KL7WM @ arrl.net	206-228-9274
Logo Committee	Dan Humphrey & Dawn Humphrey	N7QHC KC7YYB	n7qhc @ arrl.net	206-243-0163
Webmaster	Jim Etwiler	KD7BAT	kd7bat @ arrl.net	425-788-7887
VE Testing	Scott Robinson	AG7T	ag7t @ arrl.net	425-788-0452

Mike & Key Online – The following Club resources are available:

On the Web – The Club's site at www.mikeandkey.org includes extensive information about Club activities and events, such as: VE testing, membership, past editions of the *Relay* and more.

Reflector – The Club's public message board offers an easy and free way to converse with Club members. To sign up, visit: <http://groups.yahoo.com/groups/mkarc> .

E-Relay – Help the Club save on printing and postage, Email the *Relay* Editor: kg7ku @ arrl.net.

January 2012

M&K January Activities

By George Thornton AE7G, Activity Manager

The Digital World Beckons

Our featured speaker at the January meeting will be Andy J. Ruschak. He will be talking about the P25 format for amateur radio. Andy works as a project manager for Sparling. His expertise is in commercial radio systems.

Analog and digital are complementary opposites. When used in tools they often provide alternate means to reach similar objectives. We are a competitive species and we prefer "the best". Are digital tools better than analog?

What does "digital" mean? Digital means information conveyed using discrete and separate pieces, as opposed to a continuous flow. CW code is discrete and thus digital. Letters and characters are also discrete. Human speech is continuous, as is music or a painting.

As a technological society it appears we nearly always prefer digital over analog. If we look at the trends over the past 30 years, we see digital is taking over everywhere. With photography at all levels digital has won, and film will soon disappear from mainstream stores. TV and radio broadcast are being converted to digital. Our cars are run by digital computers. Music is provided almost exclusively in digital format, analog records and tapes are rare. Everywhere you look digital is winning.

Why is digital technology so much more successful than analog? I believe it all has to do with the power of our digital computers. Computers extend the power of our brains, allowing us to quickly accomplish tasks that seemed impossible. When our tools can employ the power of a computer, the result is a more effective and useful tool.

At this point our best and most powerful computers are digital. The superiority of digital computers may be natural, or it may just be an accident that our greatest advances in computer technology have been on the digital side. There are analog computers; many believe the most powerful computer known, the human brain, is analog.

In the history of HAM radio, we are often at the cutting edge of developing technology. This has not been true with digital radio.

Our radios do make use of some digital technology. Most modern radios convert analog signals to digital for processing. The signals are converted back to analog to modulate a speaker. The human ear is, of course, an analog device.

Amateur radio operators continue to broadcast their signals in analog. Even CW is broadcast using analog dots and dashes.

HAM radio enthusiasts are among the last to use digital broadcast media. In the commercial market the first digital broadcasting standards became available in the 1980's. The most successful effort at digital use in two way radios came in 1989 with the development of APCO P25. The first P25 radios came on the market in the early 1990's and today nearly all new commercial two way radios are digital.

Digital formatting would not have become dominant in the commercial radio market if it did not offer significant advantages over analog. Digital uses less bandwidth, offers higher fidelity and allows the simultaneous inclusion of digital data. It becomes easy to use a digital computer to create all sorts of options for the routing and handling of digital transmissions.

Digital did not start entering the amateur world until about seven or eight years ago. All that is about to change, the digital revolution is about to hit our world.

The digital formats most prominently considered for amateur use are P25 and D Star.

D Star, which is aimed specifically at the amateur market, is offered by one manufacturer, Icom. Although there are a number of repeaters and a dedicated following, D Star has yet to reach the mainstream of amateur use, despite its many advantages.

Although P25 has been wildly successful in the commercial and public service markets, it has so far been all but invisible in the amateur community. As of a couple months ago there was

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only one P25 amateur repeater in Western Washington. No manufacturer offered a P25 radio for amateur use.

The situation with P25 is changing rapidly. As commercial users upgrade to newer models, quality used P25 radios have come on the market at attractive rates. Three or four new P25 repeaters are coming on line in the Seattle area. Further, an EMCOMM unit in Kent is in the process of setting up a new P25 system. As this article is being written Yaesu has announced that it will soon be marketing P25 digital radios for the amateur market.

Digital formats have been available in the commercial arena for 20 years. Why have amateurs been so slow to adopt this proven technology?

Price has certainly been a factor. P25 commercial radios are hideously expensive compared to the amateur market. Would you pay \$5000 for a top quality handheld monoband VHF or UHF radio? D Star, while not as expensive, still nearly doubles the cost for an equivalent non-digital amateur radio. If you want the latest true dual band D Star handheld with a GPS microphone, be prepared to spend over \$700. The Kenwood Th-D2A, which is a true dual bander complete with APRS and GPS, is currently priced at \$430.

Crowded spectrum has been less of a problem with amateur bands. Digital formats require less bandwidth. The FCC is imposing a narrow band requirement on commercial users to free up spectrum. The need for space in the amateur band is less crucial and the FCC has not imposed the requirement on amateurs.

We recently heard from a speaker about D Star technology. This month our speaker will talk to us about P25, how it works, what are its advantages and disadvantages, and what is happening with P25 in the amateur community.

M&K January Door Prizes

By Jim Aigner N7MU



Here's the line-up for January door prizes:

- MFJ-392B Headphones
- 32 LED 3 3/4" Flashlight – takes AAA batteries
- 1.5 Watt 24 Volt Solar Charger
- LA Police Gear Radio "Go" Bag
- 580 Piece Terminal Set
- MFJ-281 Clear Tone 3" External Speaker
- 15' of #12 DC Red/White Zip Cord
- Package of 100 11" Black Wire Ties
- MFJ-1722 Ultralite Dual Band Magmount Antenna
- Package of 13 30 Amp Anderson PowerPole Connectors
- Workman's small belt tool pouch



January 2012

Celebrate Our January Members!

By Dave Smith KB7PSN, Treasurer

As of January 2012, these have been Mike & Key members for the number of years stated. Congratulations to all of you, and thanks for your participation and service.

Each of you makes us who we are:

John Rehnstrom	WA7HQQ	41 Years
Dick Lundstrom	WA7UEW	39 Years
Joyce Stroehrer	N7JPW	25 Years
John Black	W7HIL	22 Years
Michael Hansen	KG7MX	21 Years
Mike Hansen	AC7UR	21 Years
Frank Henshaw	K7VMG	18 Years
Fred Lowell	N7PZ	15 Years
Mark Whitaker	KD7KUN	11 Years
Ron Stein	W7GAX	5 Years
Donald Cain	* No Call *	2 Years
Rich Hand	K7RFH	2 Years
Linda Jordan	* No Call *	2 Years
Timothy Mauery	NT9M	2 Years
Carl Reynolds	N7CJR	2 Years
George Thornton	AE7G	2 Years
David Burgasser	KB7ISA	1 Year
Kathleen Weiss	KF7MUD	1 Year

M&K: Radio Officer Report

By Hal Goodell N7NW, M&K-Radio Officer

The K7LED two meter repeater is continuing to experience a problem which has been isolated to some sort of inter-mod mix on the hill. As some have noticed we have a noise which occurs during the hang time after a station stops transmitting. The problem is intermittent, which of course makes it more difficult to trouble shoot. The noise will also cover up a very weak station and make copy difficult in that case. I have also observed the inter-mod at times when the 147.08 repeater is on and no one is using our repeater.

I have made a couple more trips to Tiger to try some grounding fixes to the tower and guy equipment. These apparently have had little if any impact on the problem. The site owner and myself are continuing to explore options. Please refer anyone who has any questions or comments regarding this problem to me at n7nw.hal@comcast.net.

I have received the backup ICOM repeater back from repair at ICOM. The receive lockup problem has been fixed and the repeater realigned. I have it currently running on the bench to check it out and to be sure it is ready to be installed if needed. However I don't think we will need to at this point.

The 220 repeater continues to perform just fine, just needs more activity.

Check out the camera which is mounted on the repeater tower on Tiger Mountain. The camera is fixed but does provide one with a view from the site looking west. To view the camera just put the following <http://www.wa7hjr.org:52101/> into your browser. You will have to enable the active X controls. Checkout the weather conditions! Snow up there now.

-Hal Goodell, N7NW.HAL @ comcast.net

K7LED Relay

M&K Fleamarket Workers Needed

By Michael Dinkelman N7WA @ ar1.net

(This is the annual begging article....)

At this writing, there are about 47 people signed up to work the Fleamarket. That includes about a dozen chairpersons. We really need 100 volunteers (beyond the chairs) and 120 would be better. This year, almost all areas are short with announcing being in the best shape (which is unusual).

For the newcomers among us, this event generates the majority of our annual operating budget. Without this event, there would be no repeater and no Field Day. Social events would have to go away unless participants were willing to pony up quite a few more dollars. Dues would have to be raised simply to rent the building we have our meetings in.

Let's do the math (based on the \$11,000 we actually spent last year). If the Fleamarket was to go away (and it will if we can't get enough workers), it would be up to the members to raise that \$11,000 to keep services the same. We have about 150 full dues paying members and about 200 on the roster (lots of Life Members in there that don't pay dues plus family members who pay a reduced rate). \$11,000 divided by 200 people is about \$55 a year. \$11,000 by 150 people is \$73 a year. So figure your dues would have to fall somewhere between \$55 and \$73 a year. Granted, we could get rid of the repeaters, the newsletter, meet in a Fire Station someplace, and work Field Day from home to reduce that cost. But then, it really wouldn't be the Mike & Key ARC anymore. The premier Amateur Radio organization we know would simply disappear. Sure,, the Club would probably still exist, it would just be a run-of-the-mill organization with few resources or attributes that would make it stand out from the crowd.

How about a better idea! Wouldn't it be a lot more fun and productive to volunteer for the Fleamarket? You become part of event that is renown throughout the Pacific Northwest, you get first dibs on all that **stuff**, and you help keep your dues LOW (that's pretty important in the current economic reality).

I'll have the signup book at the January meeting. If you can't make the January meeting, please email me with your sign up request. Please let me know the work area, day, and time period. If you are a new member and you're scared to volunteer, talk to me. (In 30 years, we haven't lost, killed, or maimed a newbie yet). If you are an old member and haven't signed up, why aren't you showing the leadership we need? Already signed up? Maybe there is another job you could sign up for in a different area after you get tired of walking the aisles? It's your club, you joined it... it's time to support it.

VE Team Statistics for 2011

By Scott Robinson AG7T

The VE team had another great 2011!

I want to thank each of the VEs that helped during the year: KE7LLC, N7RHE, WT7I, KO7E, W7GIL, W7DUV, KD7IQL, WU7J, WA7NIW, WT0F, N7QLT, NU6A, KL7WM, KF7VG, AD7CT, AC7UR, and KG7MX – **You again showed the best of amateur radio.**

We had 177 people taking 197 exam elements leading to 68 Technician, 55 General, and 28 Extra class licenses awarded. The average session size was 13 people per session in 2011 this is the same as for 2010. Keeps the VEs very busy! 73, Scott AG7T.

2012 Calendar of Notable Events

By David Smith KB7PSN

As the New Year starts, here are a few Notable Events to put on the Calendar this year:

1. Saturday, January 21 - General Membership meeting, 10:00 am @ Salvation Army, Renton, WA.

This month, nominations for 2012 Board will be taken. The President, Vice President, Secretary, Treasurer, Activity Manager, Trustee #2, and Trustee #4 positions are up for Election. Mike Dinkelman/N7WA, Tim Kane/K7ANE, and Daniel Stevens/KL7WM will be staying as Trustees for 2012 Board.

2. Tuesday, February 7 - 2011 Board meeting, 7:00 pm @ Salvation Army, Renton, WA.

3. Tuesday, February 14 - 2012 Flea Market meeting, 7:00 pm @ Michael Dinkelman's house/N7WA, Kent, WA.

4. Saturday, February 18 - General Membership meeting, 10:00 am @ Salvation Army, Renton, WA

Second month for nominations of 2012 Board.

5. Tuesday, March 6 - 2011 Board meeting, 7:00 pm @ Salvation Army, Renton, WA.

6. Friday, March 9 - Flea Market set-up @ Puyallup Fair Grounds. Chairs = Hal Goodell/N7NW, Michael Dinkelman/N7WA.

7. Saturday, March 10 - Mike & Key ARC's Annual Flea Market @ Puyallup Fair Grounds.

Dinner at Main Garden Restaurant, Puyallup, WA, after the event.

8. Saturday, March 17 - General Membership meeting, 10:00 am @ Salvation Army, Renton, WA.

Election of 2012 Board from those nominated in January & February. Those nominated must be present to be elected.

9. Saturday, March 31 - Awards Banquet, 5:00 - 9:00 pm @ Tea Palace Restaurant, Renton, WA.

Each year at the Awards Banquet various, awards are given out to members to recognize many of their accomplishments. Newly elected Board Members are also recognized at this Banquet. Meal cost will be \$20 / person. Emcee = Gary Bryan/KG7KU. Chair = David Smith/KB7PSN.

10. Tuesday, April 3 - 2011 Board Meeting + 2012 Board Meeting, 7:00 pm @ Salvation Army, Renton, WA.

The 2011 Board passes the torch off to the newly elected 2012 Board Members.

11. Saturday, June 23 - Field Day @ Ft. Flagler State Park, Marrowstone Island, WA. Chairs = Ivy Nelson-Groves/WA7IVY, Richard Pasquier/N7MER.

12. Saturday, August 18 - General Membership meeting, 10:00 am @ Gene Coulon Memorial Park, Renton, WA. Chair = Hal Goodell/N7NW.

RAMROD to Honor Gene Underwood W7AKA [SK]

By George Thornton AE7G

RAMROD and the Redmond Cycling Club [<http://redmondcyclingclub.org/>] are taking unusual steps to honor our **silent key Gene Underwood W7AKA** for his many decades of quality and considerate public service.

RAMROD is the premier road cycling event in the Pacific Northwest. This year will be the 29th running of the event. Gene and his wife Fran N7FWZ have supported RAMROD almost from the beginning.

RAMROD 2012 will be identified as a memorial ride for Gene Underwood. Club riding jerseys and T-shirts will bear his call sign. Information on Gene and his many accomplishments will be distributed to all riders and information booths and signs will be displayed at RAMROD public events.

This is a special recognition that is both welcome and well-deserved.

Salvation Army Bell Ringing – '11

Jim Etwiler KD7BAT

On December 10, 2011, a near army of volunteers showed up to take turns at ringing the bell for the Salvation Army kettles. The Mike and Key ARC volunteered to "ring the bell" at two locations in Renton, starting before 9:00 AM and staying until after 6:00 PM.

A big thanks to Mike Dinkelman, N7WA, for chairing the sessions at Fry's. Also ringing at Fry's were Michael Hansen, KG7MX, Carl Reynolds, N7CJR, Andy Lengenfelder, W7ATL, Frank Tate, NA7O, Greg, W7HRC, and Linda Pietrucha, Dick, WA7NIW, and Merideth Radford with their dog Jack, Mike Foster, KM7F, Eric Snyder, N7DVL.

Ringling at WalMart were David Lee, KC7FSR, Gil Drynan with his jingle bells, Fred Lowell, N7PZ, and his daughter Sarah, Denise, KF7RSK, and Les, N2YNK, Johnson with their two dogs Griffen and Frogo, Dave Tebrink, K7NZU, Tim Kane, K7ANE, and Jim Etwiler, KD7BAT.

At the December general membership meeting, Captain Aird, Salvation Army, addressed our group to thank all who had supported the effort. He reported that together the two locations collected \$1023.51 (this works out to earning about \$56.85 per volunteer hour).

This helped the Salvation Army because they did not have to hire bell ringers to man the kettles. This also benefits the Mike and Key because we enjoy a smaller fee for use of the meeting hall.

Think about volunteering to "ring the Bell" for just one hour when it is suggested next fall. Everyone who rings the bell has enjoyed the time and many repeat year after year.

Mike & Key ARC – Elmer Contacts – By Jim Aigner N7MU

Area	Elmer Coordinator	Email	Phone	Also...
Homebrew, DX, antennas	Jeff Wandling, W7BRS	dew7brs@gmail.com	206-605-2278	New Hams, satellite work
Beams and Towers	Alan Hughes, KB7SVU	kb7svu@juno.com	253-840-4947	Beam antennas and towers, safety
Contesting	Mike Dinkelman, N7WA	mwdink@clearwire.net	253-631-3756	Contest operations
CW	Mike Dinkelman, N7WA	mwdink@clearwire.net	253-631-3756	Learn CW, operating proficiency
Digital Modes	Earl Palmer, N7EP	earl_palmer@msn.com	206-818-9246	Digital modes, software, TNC's
D-STAR	Steve Hatch, WA7DAD	stephen@hatch.net	206-851-8842	D-STAR technology and operation
Emergency Comm	Tim Kane, K7ANE	k7ane@arrrl.net	206-251-7467	CERT, ARES, organizations & Eq't
HF Operation	Dale Tongue AC7NP	dale.tongue@gmail.com	425-432-4254	Eq't, Antennas, best HF operating practices
New Members	Dick Radford, WA7NIW	wa7niw@arrrl.net	425-828-9791	Getting started, eq't selection and operation
QRP	Frank Qualls, AB7HA	franklin_qualls@hotmail.com	425-802-1837	Low power operation, design & construction
VHF/UHF Operation	Dave Smith, KB7PSN	kb7psn@yahoo.com	425-235-5095	6 meters and up; radios, antennas, modes

M&K General Meeting Minutes

By Dick Radford WA7NIW, Acting Secretary

Meeting held December 17, 2011

Meeting was called to order at 10:03 hours by the President, Ivy WA7IVY.

Pledge of Allegiance.

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.

The new Salvation Army officer, Captain Chris told us that we raised \$1023.51 during our day of bell ringing.

Introductions. During introductions we were informed that David Lee KC7FSR was Seafair's ham volunteer of the year for 2011. Good going David.

Officer Reports:

President – Ivy WA7IVY: Report was in the *Relay*.

Secretary – Robert KD7WNV: Not present, Dick WA7NIW acting secretary.

Treasurer – Dave KB7PSN: Reminder to get your invoices, etc. turned in for reimbursement.

Activities Manager – George AE7G: Door prize tickets are a great investment. They return more than the purchase price. Program today is by Mike Dinkelman on DX [program was actually on *Salmon Run – Sec.*]. Upcoming topics include P-25.

Chairman of the Board – Tim K7ANE: Elections are coming up, please start thinking about serving a term as an officer. The President and Secretary are term limited.

Radio Officer – Hal N7NW: Nothing wrong with our repeater, but there is some kind of mixing going on that causes the 147.08 machine to bring ours up, and ours bringing up the 147.08 machine. This is an intermittent problem, so has been difficult to track down. Our annual report to the Secretary of State, Washington, has been filed. We received a Christmas Tree ornament from the Puyallup Fair Event Center which will be included in this month's drawing.

Quorum present.

Is there a motion to approve the minutes of the previous meeting as printed in the *K7LED Relay*?

Sam N7RHE made a motion to approve the minutes; seconded Gil W7GIL. Motion passed.

Vice President – Kathy KB7QMO: Membership applications: Kathryn Shuman, KF7TTM; Kenneth Nielsen, KE7QNP. All approved by the membership.

Relay Editor – Gary KG7KU: Thanks for all the articles. They keep the *Relay* healthy, please keep them coming.

Webmaster – Jim KD7BAT: Nothing to report.

Standing Committee Reports:

Strategic Planning – Mike N7WA: Project this year was to collect pictures of club activities for archiving to preserve our club history.

Facilities – Daniel KL7WM: Rental agreement and insurance are in place for the next year.

Education – Tim K7ANE: Upcoming classes are listed in the *Relay*. Radio Club of Tacoma has a Technician class coming up in early January, does not include testing.

Public Service – Robert KD7WNV: Not present. Ivy reported on the passing of Gene Underwood W7AKA. A moment of silence was observed. Tim Kane K7ANE reported on the Special People's Holiday Cruise. There was also a report on the Seattle Marathon.

Technical – Steve KD7IQL: No report.

Other Committees (as appropriate)

VE Exams – Scott AG7T: We had 14 people take exams last month. Awarded 7 Technician, 2 General, and 3 Extra.

Logo: Nothing to report.

Field Day – Ivy WA7IVY: If you are staying in the Wagon Wheel or the Barracks, a copy of our reservation confirmation will suffice for you and your vehicle instead of each of us having to buy a Discover Pass. The tower trailer has had primer and a first coat of paint, and the tower sections are in place on it. We will need to put another coat of paint on it before Field day.

Flea Market – Hal N7NW/Mike N7WA: Please sign up. Thanks to your work folding, stuffing, addressing

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January 2012

M&K General Mtg Mins... [Cont'd from Page 6]

flyers, we have 12,000 ready to go out at the first of the year. This is our only fund raising event of the year. Without this event club dues would be about \$85 per year to cover all of our activities. The food costs for workers have been rising, so this next year there will be an opportunity for those who are participating to help offset the costs by making donations at the time.

Awards Banquet – Dave KB7PSN will chair the Banquet.

In House Contest: Mike Dinkelman reported on the In House Contest for 2011. After corrections, Michelle WA7PVE took First Place. Jim N7MU took Second Place.

Audit Committee: Audit of the club books will take place before the January meeting.

Budget: Dave KB7PSN discussed the budget for 2012. There has been discussion via email of the amounts in the "Actuals" column. Chuck WA7EBH moved that approval of the budget be postponed until January, keeping existing amounts in place. Seconded by Tim K7ANE. Discussion. Budget has \$4,000 deficit. Has for years at the beginning of the year. By the time the year is over, spending has been less than the budget amounts resulting in not actually spending more than we take in. There is money in the bank to cover the deficit, it just hasn't been needed in the past. Missing amounts in budget sheet. Motion passed.

Alligator Award – Dale AC7NP still holds the award. Tried to entice 91-second speeches on the repeater.

Old Business: None

New Business: None

Good of the Order:

Michelle WA7PVE knows of an oscilloscope for sale, will be on Swap page.

George AE7G said that there will be a special remembrance for Gene Underwood done by the Redmond Cycling Club for his years of help organizing hams for RAMROD.

Jim KD7BAT reported on Bell Ringing. Thank You all for participating. We made about \$50+ per hour for Salvation Army.

The next Mike & Key Board meeting will be on the first Tuesday of the month, January 2 at 7:00 pm, at the Salvation Army in Renton.

The next Mike & Key General Membership meeting is the third Saturday, January 21, 2012.

Greg W7HRC made a motion to close the meeting. The motion was passed. Meeting adjourned at 1121 hours.

12 guests; 62 members, 54 ARRL members

Attested: Dick Radford, WA7NIW, Acting Secretary

K7LED Relay

M&K Board Meeting Minutes

*By Robert Grinnell KD7WNV, Secretary
Meeting held January 3, 2012*

Officers present

X **President** – Ivy Nelson-Groves (WA7IVY)

X **Vice President** – Kathy Martin (KB7QMO)

X **Secretary** – Robert Grinnell (KD7WNV)

X **Treasurer** – Dave Smith (KB7PSN)

X **Activities Manager** – George Thornton (AE7G)

X **Radio Officer** – Hal Goodell (N7NW)

Trustees present

X **No. 1** – Mike Dinkelman (N7WA)

X **No. 2** – Kathleen Weiss (KF7MUD)

X **No. 3** – Tim Kane (K7ANE) (CoB)

 No. 4 – Alan Hughes (KB7SVU)

X **No. 5** – Daniel Stevens (KL7WM)

Other officers (non-voting)

X **Relay Editor** – Gary Bryan (KG7KU)

 Webmaster – Jim Etwiler (KD7BAT)

Visitors

Michael Hansen, KG7MX; Carolyn Pasquier, WV7Q; Chuck Stroehler, WA7EBH; Loras Gassmann; Pete Hedberg, K7WTG.

Chairman of the Board Tim K7ANE called the meeting to order at 1901 hours.

Minutes: A motion to approve the minutes of the previous board meeting was made by Daniel KL7WM, seconded by Ivy WA7IVY. Motion passed.

Officer Reports

Chairman of the Board – Tim K7ANE: Solicited a motion to dispense with most officer and committee reports, proceed directly to the Vice President report on new membership applications, then on to discussion of the 2012 budget. So moved by Ivy WA7IVY, seconded by Daniel KL7WM. Motion passed.

Vice President – Kathy KB7QMO: New member applicants: Mike Canaan, KF7IUP Renee Canaan, KF7IUQ (family application); Larry Canaan, KF7IUO . All recommended for approval.

Old Business

Budget for 2012: Resumed consideration of the 2012 budget, pursuant to concerns raised and postponement motion passed at the December (2011) general membership meeting. Treasurer Dave KB7PSN presented a budget document, with proposed revised amounts for certain line items. With regard to the overall deficit in the budget, the Board took the approach that a deficit amount up to the beginning-of-year balance in the general fund (general checking account) would be acceptable. Following further discussion, the Board took an approach of budgeting individual line items more tightly to actual expected activity, while boosting Board Discretionary as a general contingency against negative variances that might occur due to unexpected levels of activity. With revisions made to several lines, and the (above) overall deficit target achieved, Daniel KL7WM moved approval of revised budget. Seconded by Ivy WA7IVY. Motion passed.

There being no further business, Tim K7ANE adjourned the meeting at 2109 hours.

Attested: Robert Grinnell KD7WNV, Secretary

ARRL Launches New DIY Campaign

ARRL Online [www.arrl.org] – <http://www.arrl.org/news/arrl-launches-new-diy-campaign>

Article and Content Copyright – ARRL.org

Contributed by Rich Hand K7RFH

12/27/2011

The ARRL Public Relations Department has released the Do-It-Yourself (DIY) suite of interrelated promotional materials aimed at exposing the growing Do It Yourself/Maker community to Amateur Radio opportunities. The DIY movement is nothing new to Amateur Radio. For more than a century, hams have been working in basements and attics, taking things apart and putting them back together in new ways, just for the fun of it. Meanwhile, there has been a growing population of DIY hobbyists who do not know about the opportunities of Amateur Radio. “[Maker Faires](#)” have popped up in several areas of the country, from New York to Los Angeles, and according to ARRL Media and Public Relations Manager Allen Pitts, W1AGP, look suspiciously like ham radio conventions.

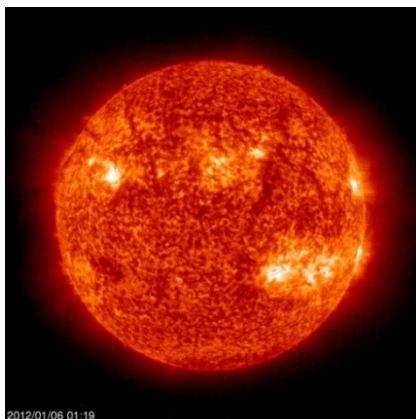
“The DIY crowd is as diverse as hams,” Pitts explained. “Many are into computer programming, using new computer chips and open-source electronics prototyping platforms, such as [Arduino](#) that are based on flexible, easy-to-use hardware and software. They are artists, designers, hobbyists and anyone interested in creating interactive objects and applications. DIYers work with everything from wood and clothing, to energy and chemistry projects, with many interested in robotics.”

To reach this growing group, the ARRL Public Relations Department has created an entirely new set of campaign materials for ARRL Public

Information Officers, groups and individual hams to use in reaching out to the DIY/Maker community. Bill Pasternak, WA6ITF, and Dave Bell, W6AQ, were recruited to create the new video. Recruiting volunteers throughout 2011, the duo shot more than 65 hours of high-definition video, and then edited it down to a mere 8 minutes. Titled *The DIY Magic of Amateur Radio*, it shows ham-makers projects from around the country. You can watch it on the [ARRL website](#) or on [YouTube](#).

“But a video alone cannot accomplish the goal of linking the viewers with ham radio,” Pitts noted. We also crafted an auxiliary flier as a hand-out to go along with the video. A PowerPoint presentation and speaker’s notes also are available. In addition, ‘Ask Why I DIY with Ham Radio’ buttons were made as a way to encourage informal conversations about our hobby with the non-hams we encounter. We even held a contest, asking hams to provide a scripted 30 second answer to the question ‘What is Amateur Radio?’ that 12 year old Chris Tate, KJ4UBL, of Burlington, North Carolina, took top honors.”

The video is available on DVD discs, along with the printed handout from the ARRL. Find information about ordering or downloading these materials [here](#). For high-definition MPEG versions of the video, please contact Pitts via [e-mail](#) (please be aware that this version is almost 500 megs). ARRL members can get a free ‘Ask Why I DIY with Ham Radio’ button at the ARRL table at larger hamfests and conventions while supplies last.



2012/01/06 01:19

K7RA Solar Update Excerpts from ARRL.org –

01/13/2012 | [The K7RA Solar Update](#)

The average daily sunspot numbers were up this week by a tiny bit, from 88.1 to 90.6, while the average daily solar flux was down slightly, from 136.2 to 134.9. Sunspot numbers for January 5-11 were 99, 118, 110, 90, 90, 63 and 64, with a mean of 90.6. Th .

[Learn More](#)

Amateur solar observer Tad Cook, K7RA, of Seattle, Washington, provides this weekly report on solar conditions and propagation. This report also is available via W1AW every Friday, and an abbreviated version appears each Thursday in [The ARRL Letter](#). You can find a guide to articles and programs concerning propagation [here](#).

Wear the Mike & Key Club Logo

By Jim Aigner N7MU

Over the last few months you may have noticed the Mike and Key logo prominently displayed on fleece jackets and an assortment of shirts. Our logo was digitized in two sizes, a small version for the chest suitable for embroidery on the front of shirts, vests, and jackets and a large version for use on the back of sweatshirts, vests, and jackets.

You can buy new clothing with the club logo or have your own items embroidered by a vendor or do it yourself. There are a few vendors who have our logo and can do the work for you. You can find just about everything - shirts, vests, sweatshirts, and jackets in the online catalog: <http://www.sanmar.com> . Prices with the logo are about 10% less than catalog list prices.

If you have questions, see a Logo Committee member: Jim Aigner N7MU, Dawn Humphrey KC7YYB, or Dan Humphrey N7QHC. Let's continue to wear the Mike and Key logo proudly at club meetings, the summer picnic, and Field Day.

Pacific Northwest Hamfairs & Events

Source: PNW Hamfair webpage at <http://www.n7cfo.com/amradio/hf/hf.htm>. (Used with Permission)

February 18, 2012. Salem Hamfair & Computer/Electronics Swapmeet. Rickreall, Oregon at the Polk County Fairgrounds. <http://www.w7sra.com> .

March 10, 2012. Mike & Key Swap Meet. Puyallup fairgrounds exhibition hall, Puyallup, WA. For information, contact dmdink@yahoo.com or n7wa@arrl.net . <http://www.mikeandkey.org/flea.htm>, [Flyer in PDF](#). (298K)

March 31, 2012. MicroHAMS Digital Conference. Redmond, WA. <http://www.microhams.com/softcontent.aspx?scld=58>

[Statements as posted on the Website:] Please email any comments, corrections, questions, etc. to n7cfo [at] n7cfo.com. N7CFO-Disclaimer: I do my best to keep up with scheduling changes on these events, but there is always the chance that one will be canceled or re-scheduled and I will not find out about it. Please verify all dates and locations with the sponsor.

Link to an interesting site received from Allen Evenson KF7EST...
[Note - The group Moderator KC is KD8LZB]

RADIOGRAMS YAHOO GROUP

I am the moderator of a Yahoo Group for those that are interested in Traffic Handling.
 It's easy to join. Please take a minute, click on the link below, and take a look.

<http://groups.yahoo.com/group/radiograms/>

YOUR HELP IS GREATLY NEEDED. ON THE RADIOGRAMS YAHOO GROUP WEBSITE WE ARE BUILDING A DATABASE OF "RADIOGRAM RECIPIENT VOLUNTEERS". IF YOU WOULD BE WILLING TO RECEIVE RADIOGRAMS FROM ANY STATION FOR THE PURPOSE OF TRAINING, CONTESTING, ACCURACY TESTING / SCORING, SET's, ETC. OR...

...if you just plain enjoy getting Radiograms from other Hams... THIS DATABASE IS THE PLACE for you to place your contact info. It is SIMPLE... all you have to do is join Radiograms (it's easy and painless). You click on the link above. Once you join, just go to the Database file, open the RRV file, and fill in the info fields.

Thanks for your interest in the NTS. Please take time to include your info in this database... and spread the word. We hope to have 100 names in the RRV database by the end of the year.

73, KC - KD8LZB Radiograms Yahoo Group Moderator

Auburn, WA – Ham Related Classes: January thru February

Contributed by Bill Balzarini KL7BB

These Workshops-Classes open to All Washington FCC Licensed Hams and CERT Members and is conducted at no charge to attend. Also see: <http://HamShare.com>. Location: Auburn Annex Building 98002.

Jan 21, 2012 9AM to 5 PM Saturday Doors open at 8:45 to 9:00AM (lunch 11:30 to 12:45)

Digital Messaging Tools, Workshop-Class (Class #501 FLX)

FLdigi, RMS-Express.

Guest Presenter Curt Black WR5J. Puget Sound Digital Hams and President of the West Seattle Amateur Radio Club

This hands on Workshop-Class will make the Digital World of Ham Radio Fun, come alive with

your Software Programs & Lap-top computer. Using: FLDIGI, FLMSG, CheckSR, RMSEXPRESS, and EASYPAL.

Please bring any laptop you may have - and a VHF/UHF handheld - if you don't have these no problem - the demos are just a bit more fun if you actively decode along with the program.

We will start with FLDIGI a piece of software that runs on Windows, AppleOS and Linux. We'll explore some of what it offers us for use in our daily radio operations and how it can really shine in emergency communications applications.

We will next explore EASYPAL - a Windows digital application primarily used for image transmission, but actually very capable of transmitting error free any file on your computer.

Then I hope we can play a bit with RMSEXPRESS - a way to send messages on VHF or HF into the WinLink2000 system using the Winmor protocol on HF or packet radio infrastructure on VHF. Don't have a Packet TNC? I think by the time of this workshop, we will have the ability to use some software called Sound Modem to replace the hardware - we will see. Traditionally, hardware for packet is the reliable way to go - maybe that is changing.

To Register Send: Your Name, Call Sign, Phone#, Email address and the words **Class #501 FLX**

to: Email.HamShare (at) Yahoo.com Also see: <http://HamShare.com>

Jan 28, 2012 9AM to 5 PM Saturday Doors open at 8:45 to 9:00AM (lunch 11:30 to 12:45)

Basic Electronics Workshop-Class. (Class #102)

Amplifiers. Detectors, Amplitude, Frequency Shift, QPSK, Digital. Oscillators, Xtal, 555 Timer IC & Software Design. IC Integrated Circuits. Isolation circuits for Analog & Digital. Balanced Line, Impedance and Levels.

Signal Analysis, Distortion, Noise Floor, Interference.

Methods to connect your Radio to your Computer for Data and Control. Hash-Noise control.

RS-232, and the FT-857D. USB, including Software Device-Driver Chaos. TTL, CMOS. IC Fan-out. Discrete Device

Open Collector NPN PNP. V-Power-FET Devices and applications.

To Register Send: Your Name, Call Sign, Phone#, Email address and the words **Class# 102 AMPX**

to: Email.HamShare (at) Yahoo.com Also see: <http://HamShare.com>

Feb 04, 2012 9AM to 5 PM Saturday Doors open at 8:45 to 9:00AM (lunch 11:30 to 12:45)

Basic Electronics Workshop-Class. (Class #201)

RF Receivers from antenna jack to speaker. Simple Rx for Portable Backpacking (QRP).

Computer Software controlled, SDR (Soft-Rock-40). Pre-amps. Front End Pass-Band.

Dynamic Range. Roofing Filters, Software Filters. Mixers, Intermod specs. Detectors, Water-Fall Display.

To Register Send: Your Name, Call Sign, Phone#, Email address and the words **Class# 201 RX**

to: Email.HamShare (at) Yahoo.com Also see: <http://HamShare.com>

Feb 11, 2012 9AM to 5 PM Saturday Doors open at 8:45 to 9:00AM (lunch 11:30 to 12:45) Basic Electronics

Workshop-Class. (Class #202)

RF Transmitters from the Microphone to Antenna Jack.

Microphone Types. Patterns, Frequency Range. Modulation Types, SSB, DSB, AM, FM, FSK(RTTY).

Signal Analysis. Test Equipment Types and Application. Big RF Power Amplifiers (1000 watts and up). RF Burns and the #2 Lead Pencil for Troubleshooting. High Voltage Supplies, Cautions and Spiders.

To Register Send: Your Name, Call Sign, Phone#, Email address and the words **Class# 202 TX**

to: Email.HamShare (at) Yahoo.com Also see: <http://HamShare.com>

Feb 18, 2012 9AM to 5 PM Saturday Doors open at 8:45 to 9:00AM (lunch 11:30 to 12:45) Basic Electronics

Workshop-Class. (Class #203)

RF Transceivers.

HF (KWM-2A, IC-7800, TS-440S) VHF and UHF (IC-2820, IC-80AD, TH-7D)

Digital Synthesizer for frequency control. Phased locked Loops and Divide by N. Digital Tuning for RF "VFO A & B".

Accessory Jacks "Input and Output". Transceiver Computer Control Formats, Levels & Jacks.

To Register Send: Your Name, Call Sign, Phone#, Email address and the words **Class# 203 XCVR**

to: Email.HamShare (at) Yahoo.com Also see: <http://HamShare.com>

Feb 25, 2012 9AM to 5 PM Saturday Doors open at 8:45 to 9:00AM (lunch 11:30 to 12:45)

Basic Operating Practices Workshop-Class (#204)

Nets: Voice and Data.

OSCAR VHF-UHF. Tracking Rotator Control (AZ-EL). HF-DXing, QSL, EQSL, LoTW.

Repeaters FM and DSTAR, Reflectors REF035C and the Connected Digital World.

IRLP.Controller and the Internet.

To Register Send: Your Name, Call Sign, Phone#, Email address and the words **Class# 204 BOP**

to: Email.HamShare (at) Yahoo.com Also see: <http://HamShare.com>

73 de Bill KL7BB 206-400-1723 KL7BB@Yahoo.com

M&K-K7LED Club Library

By Tim Kane – K7ANE



If you drop by the club library at Toku's (AD7JA) TV repair shop in Skyway in the coming weeks or stop by the library table at the next Club General membership meeting you'll find five new books. The books were selected based on the preference survey we held at the general meeting a couple months back, plus input from the board and others.

The nice weather and the impulse to get outdoors seems to have influenced the results. Antennas are clearly the number one interest of club members at present, as reflected in the fact that three of the five new acquisitions relate to this key outdoor element of our stations. The other two publications focus on mobile amateur operations, by car, boat, and even airplane.

Based on what you told us the new books include:

- *Stealth Antennas, 1st Edition, 2010*
- *Amateur Radio on the Move, 1st Edition, 2005*
- *GPS and Amateur Radio, 2007*
- *ARRL Guide to Antenna Tuners, 1st Edition, 2010*
- *Small Antennas for Small Spaces, 1st Edition, 2011*

If you don't see a book on your primary interest, don't worry. We'll put in another order or two later in the year, working from the survey, and member input. Let me know if there's something you'd like to see the club acquire, that's not already on the list.

In the meantime, take a look at the new books at the library at Skyway TV & Radio Service, 11818 Renton Avenue South, Seattle. Enjoy some of the benefits of your membership, expand your knowledge, or just have a nice summertime read.



HamRadioBooks'dot'Com

By Andrew Baze AB8L



Did you know that the **Mike & Key** club is referenced in the book? In the text below you can see one reference. In the book I include additional text (as an endnote) about Mike & Key, its history, etc. You're famous! ☺

If you didn't know already, you're reading the serialized version of *The Road Home*, which is available in full form in your **Mike & Key library** (as well as **HRO, Universal Radio, and Amazon.com**).

You can experience "the rest of the story", which includes the adventures of a few more characters, and additional radio and emergency preparedness details (non-fiction), by getting your own, full copy of the book or Kindle e-book.

Whether you're only reading the shortened serial or the full book, I hope you love the story! And for more radio tips& a couple reviews (more on the way!), please take a look at www.EmergencyCommunicationsBlog.com. It's geared toward beginners, so if you're old-school, you might find some of the content a little light. But if you know anyone just getting started, or are interested in learning more about EmComm basics, take a look. 73, Andrew, AB8L.

Still on the Way!

At Jeff's request, Robbie drove in the center lane of Interstate-90, slightly under the speed limit. They wouldn't get a ticket for exceeding the speed limit, but Jeff wanted to make sure they had enough time to see any damage in the road before they hit it. While he desperately wanted to get home, they had to stay safe.

"Dad, what's that?" Robbie asked, as he instinctively swerved to the right, into the slow lane. "That guy's going the wrong way!"

"I see it Robbie. Don't worry. Stay in this lane and keep going."

Robbie gripped the steering wheel even harder now as a full-sized, dark green pickup truck sped by in the far left lane, going the wrong way. They saw the driver for an instant as he passed them, and he didn't even look over at them. He had both hands on the wheel, and was staring straight ahead. The tailgate was down. Evidently he hadn't even taken the time to shut it before taking off. Jeff turned back and saw that the truck bed was completely empty. He had no extra gas cans or supplies.

"I wonder how far he'll get?" said Jeff. "If the pass is blocked he's going to be a refugee up there."

Before Jeff could say anything else, another vehicle sped toward them. This one was a station wagon. As it passed, they could see that it was packed to the roof with luggage and other stuff, and there was a child in the back seat. Two large, cardboard boxes were tied haphazardly to the roof rack with rope. The ends of the rope fluttered as they sped by.

As Robbie and Jeff continued toward Bellevue, an occasional car passed them the wrong way, driving eastbound in the westbound lanes. Before long, light traffic grew into a steady stream. Most of the drivers stayed in the fast lane, their instincts apparently still telling them that even in this unusual situation, going the wrong way was dangerous and they should keep to the left side of the road as much as possible. Even so, traffic increased and started to fill the middle lane too. Jeff and Robbie were quickly running out of highway.

With no other choice now, Robbie continued to drive in the slow lane, ready to drive onto the shoulder at any moment. Jeff had turned on their emergency blinkers a few minutes ago, and showed Robbie how to flash the headlight high beams whenever he saw another car coming in the middle lane.

As they drove closer to Bellevue city limits and passed more and more houses and buildings visible from the highway, it was easy to see different kinds of damage. In the last several miles, they had seen three different fires, big ones that had engulfed several buildings. But they didn't see a single set of fire department flashing lights. They saw some collapsed and partially-collapsed buildings, with crowds of people standing around outside the rubble, huddling together in the cool air. Robbie kept driving. He kept both hands on the wheel and continued to flash his high beams whenever he saw someone approaching. Mile after mile, they continued.

[Continued on Page 13]

HamRadioBooks'dot'Com... [Continued from Page 12]

"Let's try to reach your mother again," said Jeff. "Maybe we can reach home now."

Jeff picked up the radio and switched to the Mike and Key repeater, which they used most often when in the Seattle area. "KD7KFT, this is NM8J, can you read me?"

There was no beep. This repeater was also off-line.

"The repeater must be down. I'll switch to our main simplex frequency," Jeff said.

Robbie continued to drive, staring straight ahead as he made white-knuckled corrections to the truck's path. Cars, trucks, station wagons, and even occasional motorcycles (with riders usually wearing large backpacks) continued to pass them in the opposite direction.

Jeff changed the channel on the radio until it said "Primary 2M Home", and called again for Marie. "KD7KFT, this is NM8J, can you hear me?" They waited. The radio was silent. They kept driving toward Bellevue at an even 50 miles per hour, emergency lights flashing. In two more exits, they would be home.

They approached Exit 13 and saw something new. They looked more closely as they passed the exit. Though the off-ramp wasn't elevated, it had still been damaged. A large crack, over a foot wide in places, stretched across the pavement that ran parallel to the highway. If they had taken the exit, they might have been able to cross the crack, but not without putting down some boards or finding another way to improvise a bridge. Hitting the crack at 50 miles per hour would have probably been disastrous, though.

"You should probably slow down a bit," Jeff said. "We might find a crack in our path, and if we do we want plenty of time to stop."

Robbie slowed down to 35 miles per hour. And they would need the extra reaction time.

Less than a mile later, Robbie had enough time to see large chunks of concrete sitting in the road. A footbridge crossed over the highway. It hadn't collapsed, but it was obviously damaged in places. Several large pieces of concrete had fallen from the cracked underside. Robbie and Jeff held their breath as Robbie crossed under the bridge, swerving gently to the left, then to the right, to avoid the obstacles.

As they cleared the bridge, they both exhaled. Nothing had fallen on them. Robbie kept driving.

About a mile ahead, the off-ramp to 148th Avenue waited for them. And 148th would take them home.

For Sale: IC-7000 **Contact: Scott Dwyer, KF7ELB 206-552-4713, Kent**
bedeadnomore@comcast.net

Transceiver – HF, plus 6m, 2m, and 70cm

- 100 watt HF/6m, 50w 2m, 35w 440 MHz
- All band multimode (SSB, CW, digital)
- Detachable control head w/separation kit
- Wide band receive: .03 – 199 MHz
- Dual VFOs; 503 Alpha memories

Excellent condition; HF transmitter never used;
 minimal VHF/UHF use. **Asking \$1050**



Also For Sale: Icom IC-91AD
Handheld Transceiver

- 2m and 440 MHz
- .5 to 5 watts
- Receive .5 – 999 MHz
- Analog/digital ready

Gently used. **Asking \$300**



Ham Nets & Events – 2012 JANUARY / FEBRUARY

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
15 1700 – NWWA-LDS Net 147.34 (Weekly) 2000 – King Co. ARES Net 147.08 (Weekly) 2015 – Kids Net 145.49 (Weekly)	16 0545 & 1645 – Weather Net 145.33 (M-F) 1700 – Evergreen State Net 147.08 (Weekly) Traffic System Net 145.19 (Daily) 1830 – WA Emerg. HF Net-ARES 3.985 (Weekly)	17 2000 – Seattle Red Cross Comm Team Net 147.080 (Weekly) 2000 – Snohomish Co. ACS/RACES Net 146.92 (Weekly)	18 2000 – Evergreen Intertie Gen/Tech Info Net – 145.33 (Weekly) 2000 – Educational Radio Net – PSRG 146.96 (Weekly)	19 1900 – M&K Public Service Net 146.82 (Weekly) 2000 – Computer & Packet Net 145.33 (Weekly)	20	21 1000–M&K Club Meeting, Renton 1230– M&K Ham Radio Exams, Renton. Scott- ag7t@arrl.net
22 2200 – NW Astronomy Net 145.33 (Weekly)	23 1900 – Seattle ACS Net 146.90 (Weekly) 1930 – PSRG Net 146.96 (Weekly) 2000 – YL Net 145.33 (Wkly)	24	25 2100 – NWSOAR Net 146.82 (Weekly)	26	27	28 0900 – WA State Emerg. Net (WSEN) ARES HF Net 3.985 (Weekly)
29	30	31	01 –February–	02	03	04
05	06	07 M&K Board Mtg Salvation Army Bldg Renton, 7pm	08	09	10 Relay Articles Due – 23:59:59	11
12	13	14 M&K Flea market Committee Mtg Mike Dinkelmann's N7WA residence, 7pm	15	16	17	18 1000–M&K Club Meeting, Renton 1230– M&K Ham Radio Exams, Renton. Scott- ag7t@arrl.net Salem Hamfair – Rickreal, OR. Contact: http://www.w7sra.com