



# SPARKS



Vol. 15, No. 5

Newsletter of the Puget Amateur Radio Society

May 1999

## **May program - Pearl Harbor**

This month's program diverges from the usual radio topics, but promises to be no less compelling: Les Ellis, KC7TQP, a survivor of the Japanese attack on Pearl Harbor, will give us a slide show and relate his personal experiences of the "date which will live in infamy".

Those of us who heard former PARS member Ivo Bricel, N7AY, talk about his ordeals in Europe during the war agreed that it was one of the best programs we've ever had. I'm sure that Les's account will be equally spellbinding.

## **Officer elections this month**

As noted in the Minutes, we'll be electing officers at this month's meeting for the 1999-2000 club year. I erroneously reported last month that elections would be held at the April meeting.

You'll still be able to nominate yourself or someone else for any of the positions, so you needn't merely rubber-stamp your approval on the existing nominees. I hope to see everyone there for this important club business.

## **PARS Fox Hunt - May 22**

Tallyho! Our annual Fox Hunt is scheduled for this Saturday, May 22. Participants should meet at the Senior Center at 9:00 AM. Talk-in will be on 146.82, and the fox will be on 146.48 or 146.50.

The fox will be somewhere within the boundaries formed by SR-520 to the north, I-90 to the south, Lake Washington to the east, and Lake Sammamish to the west. All you need to participate will be a 2-meter HT and a street map of the

Eastside, although a directional antenna and a compass will come in handy. Participants will decide on teams, etc. on Saturday.

## **Mirror, mirror, in the shack...**

(... For poetry, I claim no knack!) Our thanks to Tim Monk, KD7DEY, who donated to the club a mirror etched with the PARS name and logo. Tim created the mirror as a high-school art project.

Assuming we can find enough wall space, the club will frame and mount it in the trailer.

Tim's next project? Stained-glass QSL cards, of course!

## **PARS Net is history - for now**

For over a year now, I've been running a (mostly) weekly net on our 443.2 repeater on Rose Hill. It was intended to give the members a chance to schmooze in between eyeball sessions at the Senior Center, and to disseminate any "time-critical" information that couldn't wait for the next *Sparks*. Unfortunately, the members have stayed away in droves, so I've decided to put an end to it.

If the club expresses enough interest in having some kind of weekly net, we can reconsider. I'd recommend finding a two-meter machine with wide coverage and an owner willing to let us commandeer the frequency for a half-hour or so every week, day and time to be determined.

My thanks to everyone who checked in, especially Charles, KC7GMF, my most faithful "customer". - de N7UK

**Next general meeting** - Thursday, May 20 at 7:00 PM at the Bellevue Senior Center, 4063 148th Ave. NE in Bellevue. Our own Les Ellis, KC7TQP, will present a program on the Pearl Harbor attack (see article above). And be sure to join us at 5:30 PM for dinner at Coco's, 14804 NE 24th St. in Redmond. Visitors are always welcome at the meetings and at Coco's.

**Next board meeting** - At the home of Al Staples, N7VOF, 409 - 109th Ave. SE in Bellevue, Thursday, June 3 at 7:00 PM. All PARS members are welcome.

## 2-meter list

In response to a request from Jim Darby, W7FYH, this issue of *Sparks* includes a list of 2-meter FM repeater and simplex frequencies in use around western WA, along with a smattering of BC repeaters that we can hear in Seattle. This is a list I've compiled over several years for my own use, sorted by frequency rather than location. Let me know if you have any additions or corrections. I'll list the 75-cm repeaters in next month's *Sparks*.

The shaded rows indicate frequencies used for both voice and packet operation. City and county names in bold italics indicate simplex frequencies used by ARES/RACES teams for the areas listed.

"Shared non-protected pairs" are repeater pairs set aside by the Western WA Amateur Relay Ass'n (WWARA, the repeater coordinating body for our area) for use by temporary or experimental repeater installations, or by anyone wanting to put up a repeater and willing to risk interference from other machines on the same pair.

A few words about PL: I know there are some repeater owners who get apoplectic when somebody blabs about their PL tones; but in fact PL offers almost no security or exclusivity, and owners who think otherwise are simply deluding themselves. With only about 32 tones in common use, it doesn't take long for a determined operator to cycle through all of the tones until he finds the one that works. At any rate, on-air etiquette dictates that you refrain from giving out the tones over the air, unless you're sure that the repeater operators don't mind.

PL is very useful in allowing repeaters to coexist on the same frequency pair without mutual interference, or to allow you to access a particular receiver within a repeater system. But it won't keep out the riff-raff. - *de* N7UK

## In sympathy

Our sincere sympathies to Treasurer Charles Beckmeier, KC7GMF, whose mother passed away on April 15. We hope that you can find some comfort in our fellowship during this difficult time.

## May Board meeting minutes available

Minutes of the May Board meeting are available from the Secretary.

## Birthdays!

Ron Mawer, KB7TYB

May 28

## EARS hoping you'll call

Eastside Amateur Radio Service - interested parties contact John, W7HIL, at 425-391-8026 or Chuck, WA7EBH, at 425-392-5303. Always room for more help in this community activity.

## Programs, get your programs

We're still looking for a program for the June meeting. Call Lorie if you'd like to be a speaker, or if you have a program idea.

### PARS 1998 - 99 Club Officers:

President - Jim von Seggern, KC7FEH

360-638-1715

Secretary - Kirk Bellar, N7UK

206-542-6742

Vice President - Lorie Graff, N7LCO

425-392-5846

Treasurer - Charles Beckmeier, KC7GMF

425-822-2339

**The Puget Amateur Radio Society (PARS)** is an ARRL-affiliated club serving radio amateurs in the greater Seattle area. Meetings are normally held on the third Thursday of the month (except July, August, and December) at 7:00 PM at the Bellevue Senior Center, 4063 148th Ave. NE. Visitors are always welcome.

**Annual dues** are \$15.00 for individual membership, \$22.50 for family (2 or more persons at the same address). PARS will prorate the dues of new members joining after Jan. 31. Call Kirk, N7UK, for a membership application.

**Visit our Web page** at <http://www.qsl.net/k7par>. We've just started building this page, so check back often.

**Send articles**, comments, want ads, innuendo, etc. for inclusion in this newsletter to Kirk Bellar, N7UK, 19353 Greenwood Ave. N, Shoreline WA 98133, fax to 425-867-2160, or e-mail to [n7uk@aol.com](mailto:n7uk@aol.com).

**Send all other club-related correspondence** to PARS, PO Box 32, Kirkland WA 98083-0032.

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## *Minutes of the PARS general meeting, Apr. 15, 1999*

The club met at the Bellevue Senior Center. Thirteen members were present, a quorum. One visitor also attended. Treasurer Beckmeier was absent. The President brought the meeting to order at 7:06 PM.

Following introductions and the Pledge of Allegiance, the President introduced the night's speaker, Charles Scharlau, NZØI, who presented a program on fox hunting. Charles compared US and international competitions, and demonstrated some of his homebrew equipment.

After the break, the President proceeded with the business meeting. The members approved, without revision, the minutes of the March general meeting as published in the April issue of *Sparks*.

**Treasurer's report:** The Treasurer reported, prior to the meeting, that the club had a positive balance for the 30 days ending April 15. The President collected receipts for club expenses in the Treasurer's absence. [Financial statements are available from the Treasurer - Ed.]

**Trailer Committee:** The Secretary reported that most of his efforts for the month had been concentrated on collecting information about triband beams, to replace the club's existing beam. He still needed to replace the batteries for the 12V distribution system.

**Field Day:** Chairman Bob Adams, KJ7BP, reported that he had received permission for the club to use Downtown Park in Bellevue once again for Field Day. The club won't start setting up at the site until 1100 hrs. (local) on June 26, so that we'll have the entire 27-hour period to operate per the FD rules.

**Nomination Committee:** The Vice President noted that elections would be held in May, not April, as the President had announced at the March meeting. She solicited additional nominations for the four officers' positions. The President reminded the members that everyone would have an opportunity to nominate themselves or someone else at the May meeting.

**Old Business:** none

**New Business:** The President announced that the PARS fox hunt would be held on Saturday, May 22. Participants are to meet at the Senior Center at 9:00 AM. The area for the hunt will be bound approximately by SR-520, I-90, Lake Washington, and Lake Sammamish.

Tim Monk, KD7DEY, presented the club with a mirror etched with the club name and logo, which he had made for a high school art project. The mirror will be hung in the trailer.

John Black, W7HIL, said that he and neighboring hams were setting up an EOC at Providence Point, and solicited donations of CB equipment.

Les Ellis, KC7TQP, offered to present a slide show for the May program on the Japanese attack on Pearl Harbor. The members agreed to this.

The President congratulated the participants in the CQ WW WPX Phone Contest for their efforts. He suggested that the club should plan to participate in certain contests on a regular basis, as it already does with Field Day. The Secretary recommended the WA Salmon Run, the ARRL Phone Sweepstakes, and the WPX Phone Contest for inclusion on the club's contest calendar.

The Secretary read a card from Larry McIntyre's widow, Donna, thanking the club for its donation to the Mary Lou Brown Scholarship Fund. She mentioned that she wanted to donate some of Larry's radio equipment to the club.

The Secretary moved that the club purchase a new triband beam to replace its aging Hy-Gain TH3JR. The members voted and approved this motion. The Secretary then moved that the new beam should be a Mosley TA-33-M, based on his comparison of available models and features. The members voted and approved this motion also.

With no further business, the President adjourned the meeting at 8:43 PM.

*Respectfully Submitted -  
Kirk Bellar, N7UK  
PARS Secretary*

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## Emergency Supplies

With Y2K looming, and scenes of the Midwest tornado damage still vivid in our memories, it's a good time to think about what disaster supplies you should have on hand. The American Red Cross recommends that you keep these items on hand, so that you and your family can survive for 72 hours without assistance:

- ★**Water:** At least three gallons per person for drinking and sanitation, and extra water for pets. Store water in non-breakable plastic bottles. Replace it every six months.
- ★**Food:** At least a three-day supply of nonperishable food. Select foods that require no refrigeration, preparation or cooking, and little or no water, e.g. canned meats, fruits, and vegetables. Replace every six months unless it's specially packaged for long-term storage, like MREs. Pack a can of Sterno so you can heat the food if desired. For infants, include formula, bottles, and powdered milk. For pets, have a three-day supply of dry or canned pet food.
- ★**First aid, health, and hygiene supplies:** Include band-aids, safety pins, soap, 2 pairs of latex gloves, sunscreen, 2- and 4-inch gauze pads, triangular bandages, 2- and 3-inch sterile roller bandages, scissors, tweezers, needle, moist towelettes, antiseptic, thermometer, tongue depressors, tube of Vaseline, aspirin or Tylenol, Kaopectate or Imodium, antacid, Ipecac and activated charcoal (use only when advised by a Poison Control Center), and laxative. For sanitation: toilet paper, feminine supplies, garbage bags with ties, plastic bucket with tight lid, disinfectant, and household bleach. Personal hygiene items: toothbrush/toothpaste, shampoo, razor, denture needs. Include diapers for infants. Have a three-day supply of all prescription drugs, including drugs for the pets, and extra eyeglasses and hearing-aid batteries if needed.
- ★**Clothing and bedding:** At least one complete change of clothing and footwear per person, sturdy shoes or boots, rain gear, blankets or sleeping bags, hat and gloves, thermal underwear, and sunglasses.
- ★**Tools and emergency supplies:** Mess kits, battery radio with extra batteries, flashlight with

extra batteries, cash or traveler's checks, manual can opener, utility knife, small ABC fire extinguisher, tube tent, pliers, tape, compass, matches in a waterproof container, aluminum foil, plastic storage containers, signal flare, paper, pencil, needles, thread, medicine dropper, shut-off wrench for your gas meter, whistle, plastic sheeting, pet carrier or leash, and a local street map. Pack some games, playing cards, books for entertainment.

- ★**Important documents:** Keep these in a waterproof, portable container: Will, insurance policies, contracts, deeds, stocks and bonds, passports, social security cards, immunization records, bank account numbers, credit card account numbers and companies, inventory of valuable household goods, important telephone numbers, birth/marriage/death certificates (this all assumes that you don't have a safe-deposit box).

Store your kit in a convenient place known to all family members. Keep all items in airtight plastic bags, inside portable containers like plastic trash cans or duffel bags.

Whew! That's quite a list, but everything on it makes a lot of sense. Don't wait until Dec. 31 to start collecting your supplies.

## *Radio games in Portland this Aug.*

This summer the tenth anniversary Friendship Radiosport Games will be held in Portland, Aug. 6-13. The Friendship Amateur Radio Society (FARS) is the organizing group for the Friendship Radiosports Games. The events are: CW sending, CW receiving, CW pileup (receiving through simulated QRM/QRN), HF contesting, and ARDF (foxhunting).

In conjunction with the Radiosports games the first-ever IARU Region 2 ARDF Championships will be held in Portland Aug. 9-13. This event will provide ARDF practice sessions and two international-style foxhunts, one using 2 meters and the other using 80 meters. These will involve 5 foxes each transmitting for 1 minute in a "round robin" fashion.

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These events bring hams and their families from all around the globe to our back yard for sport, fun, and friendship. The local ham community is urged to become involved in these activities and help make them a success. An event like this needs a lot of volunteer help. Some of the areas of assistance needed are: Drivers, score keeping, hosting foreign competitors in your home, planning and logistics, donations, and event setup and registration.

This is a great opportunity to meet foreign amateur operators and take part in a unique event. For more information visit the FARS web site: <http://www.pacifier.com/~fars>

### ***MFJ buys Hy-Gain***

From the ARRL newsletter: "MFJ Enterprises has acquired Hy-Gain, a well-known manufacturer of antennas, towers, and rotators. Hy-Gain was owned by Telex Communications of Lincoln, Nebraska. The deal closed Monday, according to MFJ President Martin Jue, K5FLU, who declined to reveal the purchase price. Jue said today that MFJ plans to move the antenna manufacturing facility to Mississippi and staff it with local employees. He anticipated production at the new site could begin within a few weeks.

" 'We bought everything -- the whole deal,' Jue said. 'We're going to have to shift some things around to make room.' Jue said MFJ would tackle the moving job after the Dayton Hamvention.

"As it has done with other enterprises it's acquired, MFJ plans to keep the Hy-Gain name and operate the antenna manufacturer as a separate entity. Hy-Gain products will compete with MFJ's own line of antenna products, but Jue said the short-lived Ameritron antenna line would be discontinued in favor of the Hy-Gain line.

"Former Cushcraft Production Manager Art Hambleton, K1ART, joined MFJ Enterprises last fall. Jue said Hambleton will be involved in the new Hy-Gain venture, but he was not sure in what capacity.

"Jue said Hy-Gain would immediately start selling the entire product line through the Amateur Radio

dealer network. For the past year, Hy-Gain had sold its products factory-direct. MFJ said it expects there to be a 'small transition period' as stock, parts, equipment, and production are moved to Starkville. As part of MFJ, Hy-Gain will continue its current product line and introduce several new ones -- including two new verticals that will be announced later this week at the Dayton Hamvention.

"Jue said customers can contact Hy-Gain at 800-647-1800; fax 601-323-6511; [or see their Web site at] <http://www.mfjenterprises.com>."

### ***The Prez Sez ...***

This year has gone by very rapidly, it seems. Here we are already coming up to the last scheduled events of the year, and it seems like we just started. I personally am looking forward to hearing this month's program by Lester Ellis KC7TQP. While it isn't likely to be about ham radio related topics, I think it will be interesting to hear about Pearl Harbor from someone who was there. Many of us are too young to have much memory of that event, and some of us weren't even born yet, but it is a very significant piece of history that we all should know about.

The fox hunt will be held on Saturday, May 22, and the more hunters the merrier for the hunt. We are likely to have a few hunters from outside our own ranks, and we welcome them. All the details are found elsewhere in Sparks. Hopefully we'll have a good turnout.

Lastly, we are fast approaching Field Day on June 26-27. We can use all the help we can get over that two-day period to get set up, conduct operations, and talk with visitors to the trailer. We have an easy location to get to at the Bellevue Downtown Park, so come on out and get involved!

Don't forget dinner at Coco's at Overlake at 5:30 pm before the next general meeting. See ya there. - 73 de *Jim KC7FEH*

## PARS Roster - May 1999

Name	Call	Address	Home Phone	Work Phone	E-Mail Address	Spouse	License	ARRL?
Bob Adams	KJ7BP	9528 Shoreland Dr, Bellevue 98004	425-454-0506		kj7bp@aol.com	Marge	Advanced	Yes
Charles Beckmeier	KC7GMF	636 12th Ave, Kirkland 98033	425-882-2339		cebeck@gte.net	Kathy	Technician	Yes
Doug Bell		12755 27th Ave NE, Seattle 98125	206-362-1390		warrenhb@msn.com	Margaret		Yes
Kirk Bellar	N7UK	19353 Greenwood Ave N, Shoreline 98133	206-542-6742	425-882-3778	n7uk@aol.com	Lisa	Extra	Yes
John Black	W7HIL	4031 Providence Pt Dr SE, Issaquah 98029	425-391-8026			Alice	Advanced	Yes
Mel Carlson	W7KDZ	330 7th Ave W, Kirkland 98033	425-822-0677				Advanced	No
Jim Darby	W7FYH	12731 SE 25th Pl, Bellevue 98005	425-746-6139				Advanced	No
Lester Ellis	KC7TQP	13431 121st Ave NE, Kirkland 98034	425-821-5818			Barbara	Technician	Yes
Eppy Eppenstein	N7CAL	12822 NE 61st St, Kirkland 98033	425-822-7043				Extra	Yes
Chuck Graff	K7CHV	16307 Tiger Mtn Rd SE, Issaquah 98027	425-392-5846	425-882-4465	squimmer@aol.com	Lorie	Advanced	Life
Lorie Graff	N7LCO	16307 Tiger Mtn Rd SE, Issaquah 98027	425-392-5846	206-575-8250	jehlor@aol.com	Chuck	Tech. Plus	Life
Don Hickman	KC7MDA	12807 NE 136th St, Kirkland 98034	425-821-7025			Pat	Technician	No
John Heflin	KD7E	1218 2nd Ave, Kirkland 98033	425-828-3034	800-233-2369	kd7e@yahoo.com	Sandra	Extra	Yes
Joe Langjahr	KJ7DG	13440 NE 29th Pl, Bellevue 98005	425-881-6555			Cinda	Advanced	Yes
Bill Martin	N7EU	9212 NE 142nd St, Bothell 98011	425-821-6027		wmart378@concentric.net	Claire	Extra	Yes
Claire Martin	KC7ARX	9212 NE 142nd St, Bothell 98011	425-821-6027		wmart378@concentric.net	Bill	Technician	No
Ron Mawer	KB7TYB	12008 79th Ave NE, Kirkland 98034	425-823-4957				General	No
Tim Monk	KD7DEY	14505 NE 6th Pl #2, Bellevue 98007			kd7dey@amsat.org		Technician	No
Dick Schwanke	W9HXM	10901 176th Circle NE Apt. 2326 Redmond 98052	425-556-1211		rschwanke2@juno.com	Carita	Extra	Life
Al Staples	N7VOF	409 109th Ave SE, Bellevue 98004	425-454-2882		aln7vof@msn.com		Advanced	Yes
Jim Von Seggern	KC7FEH	8319 NE 360th St, Hansville 98340	360-638-1715		arzetta@aol.com	Arzetta	General	Yes

Report additions / corrections to K. Bellar

## 2 Meter Channels

Page 1

Ch.	Rx Freq.	Tx Freq.	PL	Call	Location	Comments	Sig.
	144.31	144.31			<b>Fire Zone 2 community response</b>	Simplex, Satellite input	
	144.33	144.33			<b>Issaquah F-2, Maple Valley Alt</b>	Simplex, Satellite input	
	144.35	144.35			<b>Fire Zone 2 community response</b>	Simplex, Satellite input	
	144.37	144.37			<b>King Co. SAR secondary freq.</b>	Simplex, Satellite input	
	144.39	144.39				Simplex, Satellite input	
	144.41	144.41				Simplex, Satellite input	
	144.43	144.43				Simplex, Satellite input	
	144.45	144.45				Simplex, Satellite input	
	144.47	144.47			<b>Shoreline</b>	Simplex, Satellite input	
	144.49	144.49				Simplex, Satellite input	
	144.91	144.91			<b>Mt. Vernon, Tacoma packet</b>	Phone & Packet	
	144.93	144.93				Phone & Packet	
	144.95	144.95			<b>SEANVG Internet Gateway</b>	Packet - <b>Sea, Tac, Issaquah</b>	
	144.97	144.97			<b>Pt. Angeles, Renton, Tacoma</b>	Phone & Packet	
	144.99	144.99			<b>Kitsap BBS, Bremerton, Lynnwood</b>	Phone & Packet	
	145.01	145.01			<b>Medical Services Team packet</b>	Phone & Packet	
	145.03	145.03			<b>Pt. Angeles, Pt. Townsend</b>	Phone & Packet	
	145.05	145.05			<b>Bothell, Graham, Renton, Tac, Yelm</b>	Phone & Packet	
	145.07	145.07			<b>Olympia, Renton, Yelm</b>	Phone & Packet	
	145.09	145.09			<b>Everett, Lynnwood, Marysville</b>	Phone & Packet	
	145.11	144.51	103.5	N7HDH	Rattlesnake Ridge	King Co. Search & Rescue	
	145.13	144.53				Shared non-protected pair	
	145.15	144.55	103.5	K7RBT	Port Townsend		
	145.17	144.57	103.5	KC7FN	Bremerton	Kitsap AR League	
	145.19	144.59	127.3	KG7HQ	Lyman Hill		
	145.21	144.61	141.3	N7QHX	Tacoma	Ch. 28 tower	
	145.23	144.63	103.5	W7FHZ	Sumas Mountain	J-MAR	
	145.25	144.65	127.3	WA7NAN	Anacortes (Mt. Erie)	Linked to 442.275	
	145.27	144.67	103.5	W7UVH	Minot Peak		
	145.29	144.69	103.5	NM7E	Belfair (N. Mason ARES)	Shared non-protected pair	
	145.31	144.71	103.5	KC7FA	Bremerton		
	145.33	144.73	179.9	K7NWS	W. Tiger Mountain	BEARS	
	145.35	144.75	103.5	W7ZLJ	Gig Harbor		
	145.37	144.77	136.5	WC7AAO	Octopus Mountain		
	145.39	144.79	103.5	W7CSK	Everett	Phone patch	
	145.41	144.81	118.8	W2QSR	Tacoma		
	145.43	144.83	103.5	NO7S	Toledo	MLTRS	
	145.45	144.85	103.5	KB7CNN	Alder (near Elbe)		
	145.47	144.87	—	K7CAH	Capital Peak	Capital Repeater Group	
	145.49	144.89	179.9	KG7VL			
	145.51	145.51			<b>Boeing</b>	Phone & Packet	
	145.53	145.53			<b>Redmond alternate</b>	Phone & Packet	
	145.55	145.55				Phone & Packet	
	145.57	145.57			<b>Cross-state link</b>	Phone & Packet	
	145.59	145.59				Phone & Packet	
	145.61	145.61			<b>Kirkland, Snoqualmie, Fire Dist. 10</b>	Phone & Packet	
	145.63	145.63			<b>Auburn</b>	Phone & Packet	
	145.65	145.65			<b>Kent, SAR</b>	Phone & Packet	
	145.67	145.67			<b>SEANVG TCP/IP in Lake Tapps</b>	Phone & Packet	
	145.69	145.69				Phone & Packet	
	145.71	145.71			<b>DX packet cluster, Tacoma</b>	Phone & Packet	
	145.73	145.73			<b>DX packet cluster, Bothell</b>	Phone & Packet	
	145.75	145.75			<b>DX packet cluster, Marysville</b>	Phone & Packet	
	145.77	145.77			<b>DX packet cluster, Seattle, Sequim</b>	Phone & Packet	
	145.79	145.79			<b>Marysville BBS</b>	Phone & Packet	
	146.42	146.42			<b>Redmond, Med. Services Team</b>	Simplex	
	146.44	146.44			<b>King Co. SAR, ESCA RACES</b>	Simplex	

## 2 Meter Channels

Ch.	Rx Freq.	Tx Freq.	PL	Call	Location	Comments	Sig.
	146.46	146.46			<b>Med. Services Team - N. King Co.</b>	Simplex	
	146.48	146.48			<b>Med. Services Team - S. King Co.</b>	Simplex	
	146.50	146.50			<b>Shoreline alternate</b>	Simplex	
	146.52	146.52				Nat'l simplex calling freq.	
	146.54	146.54			<b>Maple Valley</b>	Simplex	
	146.56	146.56			<b>Seattle, Issaquah</b>	Simplex	
	146.58	146.58			<b>Bellevue, Fire Zone 2, Fire Dist. 10</b>	Simplex	
	146.60	146.60				Simplex & cross-band repeat	
	146.62	146.02	103.5	WW7RA	Gold Mountain	WWA Repeater Association	
	146.64	146.04	103.5	KB7CNN	Tacoma		
	146.66	146.06	100.0	N7QDY	North Point		
	146.68	146.08	—	VE7RNA	Parksville?		
	146.70	146.10	127.3	W7FHZ	Buck Mountain		
	146.72	146.12	103.5	KC7NCQ	Shelton	Mason County ARC	
	146.74	146.14	103.5	K7SKW	Mount Constitution	Mt. Baker AR Repeater Gp.	
	146.76	146.16	103.5	W7FEL	Striped Peak	N. Olympic peninsula	
	146.78	146.18	103.5	K7CHN	Lynnwood	Sno-King Repeater Group	
	146.80	146.20	100.0	WC7I	Tumwater		
	146.82	146.22	103.5	K7LED	Squak Mountain	Mike & Key ARC	
	146.84	146.24	103.5	VE7VIC	Victoria		
	146.86	146.26	103.5	W7QNF	Oak Harbor	NW Repeater Association	
	146.88	146.28	—	K7PF	Green Mountain	Seattle Repeater Group	
	146.90	146.30	103.5	W7SRZ	Seattle	Open autopatch (★ on, # off)	
	146.92	146.32	103.5	WB7VYA	Mount Pilchuck (near Granite Falls)	RACES	
	146.94	146.34	103.5	VE7RPT	Vancouver BC	Also K7DG, Tacoma	
	146.96	146.36	103.5	KB7CEQ	Seattle	Puget Sound RG	
	146.98	146.38		N7NKJ	Mount Baldi	Packet repeater	
	147.00	146.40	—	W7DX	Bellevue	Western WA DX Ass'n	
	147.02	147.62	103.5	KE7LE	Tacoma		
	147.04	147.64	103.5	W7YCP			
	147.06	147.66	110.9	N7PRJ	Baw Faw Peak	Baw Faw Repeater Group	
	147.08	147.68	103.5	W7WWI		Seatac Repeater Group	
	147.10	147.70	103.5	WA7NAN	Tiger Mountain		
	147.12	147.72	127.3	N7EHP	Tacoma		
	147.14	147.74	103.5	KL7ELD	Graham		
	147.16	147.76		K7SKW	King Mountain	Mt. Baker AR Repeater Group.	
	147.18	147.78	103.5	WA7LAW	Everett	Snohomish Co. Ham Club	
	147.20	147.80	127.3	K7PP	Gold Mountain		
	147.22	147.82	—	K7IYN	Whidbey Island		
	147.24	147.84	103.5	K7SYE	Auburn	Academy ARC	
	147.26	147.86	100.0	KB7WYL	Sumner		
	147.28	147.88	—	W7DK	Tacoma	Radio Club of Tacoma	
	147.30	147.90	103.5	WA7NAN	Redmond		
	147.32	147.92	—	VE7RSI	Salt Spring Island		
	147.34	147.94	—	K6RFB	Woodinville	FZ 1 ARES, ESCA RACES	
	147.36	147.96		NT7H	Olympia	Olympia Amateur Radio Society.	
	147.38	147.98	—	W7DK	Tacoma	Radio Club of Tacoma	
	147.40	147.40			<b>Black Diamond, Renton, W. Seattle</b>	Simplex	
	147.42	147.42			<b>Val. Comm (FZ 3), Pt. Orchard</b>	Simplex, & <b>Sno. Co. ARES</b>	
	147.44	147.44			<b>Mercer Island, Port Orchard</b>	Simplex & Packet & <b>ESCA</b>	
	147.46	147.46			<b>Enumclaw, S. Kitsap</b>	Simplex	
	147.48	147.48			<b>FD 40, Vashon Island, Bremerton</b>	Simplex	
	147.50	147.50			<b>Woodinville, Kitsap Co.</b>	Simplex	
	147.52	147.52			<b>N. Kitsap Co.</b>	Simplex	
	147.54	147.54			<b>Normandy Park, Tukwila, Kirkland</b>	Simplex, also <b>Bainbridge Is.</b>	
	147.56	147.56			<b>Issaquah, Vashon Is, Kitsap Med.</b>	Simplex	
	147.58	147.58			<b>Burien, Federal Way, Seatac</b>	Simplex, also <b>Pt. Orchard</b>	
	147.60	147.60			<b>SEAVNG TCP/IP - Northgate</b>	Packet	