

CLALLAM COUNTY AMATEUR RADIO CLUB

QTC
APRIL 10

Hi Members,

It that time of year when we get those winds that love to take out or mess with our antenna's. I fell into the category myself. It stayed up on the mast, but the wires and guys were torn apart. I can't believe I actually crawled onto the roof, took it down, sat up there alone, and fixed something I thought I could never do alone. The best part was laying flat on my back...wondering why? I needed to find the direction my antenna should be pointed in. The break was nice too, as the sun was out, shortly. Plus my neighbors thought a man should be doing that work. My response was I didn't learn this to be saved, but to work. Of course, they just shook their heads, while I laughed.

It didn't need to be pointed due North, nor South, rather more of a South East direction to pick up the different Nets I work. Once done up there, the first time, I came in to tune up, and found a turn here and there was needed, and am I glad I didn't have to go back up. The winds picked up, and the rung on the ladder about ate my chin coming back down. But I did it, and once done alone, it sure made one wake up to all the fun Ham Radio really is. Not just the listening, and talking, but the actual figuring out the "how". I'm pretty proud of my self, but many miles to go before I can say I know what I'm doing. Practice I hear makes perfect..or close to it.

May all your antenna's withstood the winds we had, and from what I hear, more on the way. The best advice I can give is guy them down tight. Have fun taking that break too hi hi.

I would like to thank Bill Carter, W7WEC, for his dedicated work on the calling Hams who either haven't been checking in, or asking if they are remembering our meetings. If memory serves me right after being out of town, excuse me for not knowing all the details Bill, but THANK YOU. Your dedication to the Club is far above and beyond.

Make sure you get your tickets for the drawing on the HF 990 as mentioned by Chuck, N7BV. Becky, W7RJW and David, WE7JEJ still have some, so help the Club and good luck on perhaps winning the donated HF rig. The sooner we sell them all, the sooner we can hold the raffle. All monies help the Club in updating our repeater, and hopefully adding to our funds in the bank for future issues, trouble and fun!!

Hope to see all of you at the meeting on the 14Th, at OMC, Linkletter Hall. 7PM.

73, from Nita's Shack
KE7DRT
CCARC President

Get Your License Here!

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We kicked off our three week training class on April 10th with 13 Technician candidates 4 in the General class. Sessions continue on April 17 & 24th.

The open Exam session will be at 1300 on the 24th.

To register:  
Call Chuck, N7BV  
360-452-4672  
or  
Tom, KE7XX  
360-452-8228.

Thanks, Chuck, ARRL VE-L

**CCARC QTC Newsletter**

Just a little background on the QTC.

We use ccarcqtq@yahoo.com as a repository for information for the newsletter. So if you have something for the QTC, please send it to the yahoo address. Do not sent it to one of the editors as they will just have to turn around and resend it to the yahoo address.

Please make sure the article or information is complete. As we rotate editing the newsletter you cannot be sure which editor will be piecing the newsletter together.

Please remove as much formatting from within whatever program you are using (MSword, edit, clear, formatting) if you know how, before sending it to ccarcqtq. If you feel the creative urge to design a document—please open a design shop, but don't do it and then send it to us expecting to see your creative work transferred to the newsletter.

We do not edit, except to change fonts to a standard non-serif font (Arial which is easier to read than Times Roman). We will run a spell checker.

When first conceived the editors were given free license, it still is that way. It was understood they would endeavor to include everything submitted, within reason. For instance, off color jokes etc are not going to be printed.

Thanks,  
Chuck, N7BV & Bob K6MBY



**PROGRAM**  
**For April**

Rik, WX7RIK will bring us up to speed on Apples latest craze the iPad.

Have an idea for a club program? Pass them along to the members of the program committee: Bill Carter, Janet Parris, or Chuck Jones.  
Thanks.

We need articles for the QTC newsletter. This is your newsletter.

Tell us how you became interested in Ham Radio. What did you do over the summer (just like school) huh!

The more you submit the less we have to think of.

Thanks, the staff!

**2 METER NETS**

**CCARC :**  
Every Thursday 7:00 pm on the W7FEL Repeater.

**ARES/RACES:**  
Every Tuesday except 1st Tuesday of the month at 7:00 pm on W7FEL Repeater.

W7FEL Repeater: 146.76 MHz., offset down 600 KHz. with a tone of 100 Hz.

## The Linear Accelerator, a technician's view

### Part-1 Overview

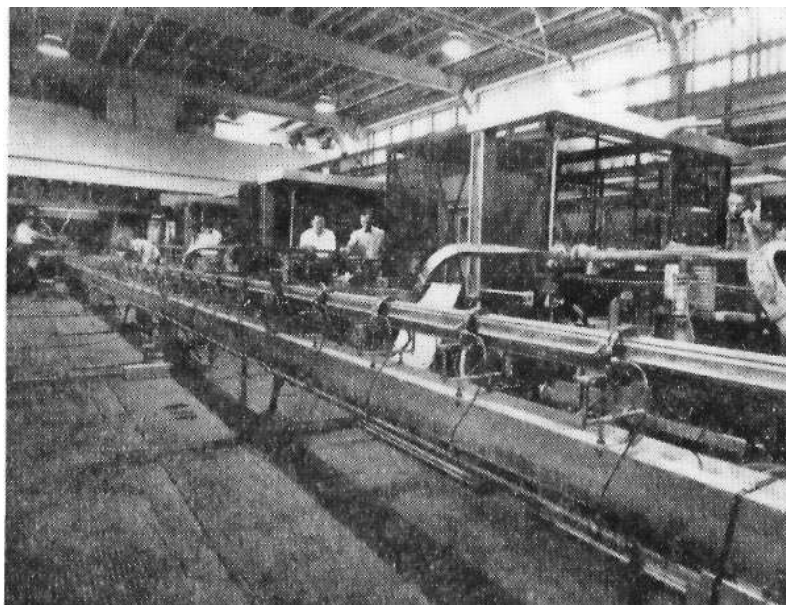
In 1952, while I was waiting for the Navy to call me to active duty, I began what I thought would be a summer job at the Stanford University High Energy Physics Laboratory. Little did I know that it was the beginning of a career in the microwave industry that lasted until the 1970s and then sidetracked in a whole different direction. But that's another story. What happened in between was a hell of a ride and yielded a wealth of practical experience and theoretical insight.

Leroy Franklin was boss of the electronics shop. He gave me a tour of the laboratory, pointing out refrigerator sized components and asking me to identify them. "Darned if I know," was my usual answer, to which he invariably replied "That's all right, you're a ham operator. You'll figure it out." When the tour was over, he handed me a shovel and a blueprint and showed me where to dig.

I dug, and dug, and dug until I had biceps like Arnold Schwarzenegger and calluses worthy of a ditch digger. Later, I was introduced to a pile of rebar and a cement mixer; and after that a fork lift and a transformer that was a good deal larger than a refrigerator. I was handed another blueprint and instructed to "Bolt the transformer to the concrete pad and hook it up to the 4160 volt PG&E lines." Working the "hot" power lines was a terrifying experience, knowing that my first mistake would likely be my last. It was also Leroy Franklin's perverse idea of a test.

Summer passed and the Navy didn't call so I was moved indoors to the Mk-III Linear Accelerator -- a nightmarish complex of wave guide, Klystron amplifiers, barn-sized electromagnets, tanks of liquid nitrogen and, scattered throughout the complex, vacuum pumps making "pockata pockata sounds like so many Model-T Fords. And there were lead bricks -- lots and lots of lead bricks. It was then that I noticed everyone was wearing personal radiation monitors. I felt as if I'd been transported to Dr Frankenstein's workshop. All it needed was a Jacob's ladder spark gap to complete the illusion. Actually, there *were* spark gaps but I'll get to them later.

Curious as to why I was hired as an Electronic Technician and then relegated to the concrete and power line business, I was told that, while I was doing the grunt work outside, I was being evaluated for AEC and ONR security clearances. They had now come and it was okay for me to become acquainted with the real work that was being done there, I can't talk about the classified experiments but I can tell you about the accelerator, itself.



(Fig 1-1)

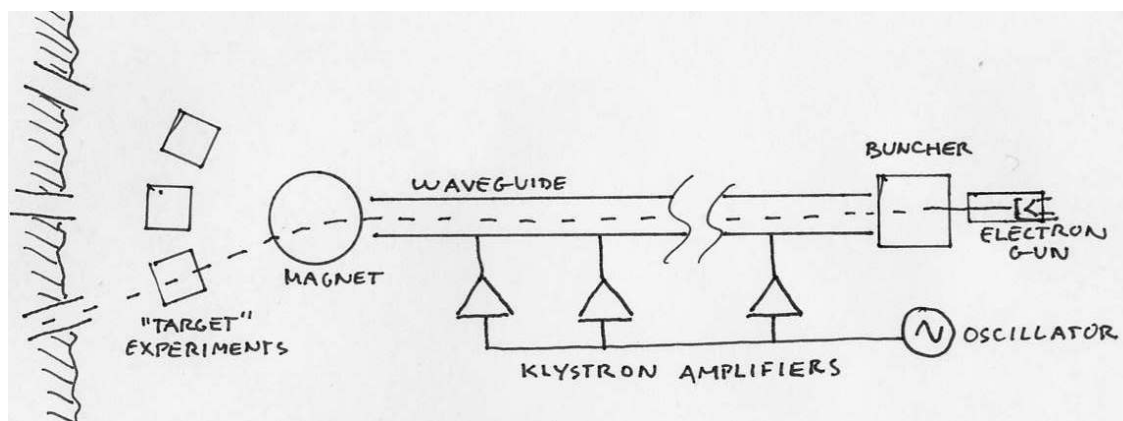
The Mk-III Linear Accelerator was a real brute, 220 feet long and, as I discovered, hand-

made in the laboratory's own electronic and machine shops. It was the brain-child of Dr. W.W. Hansen, who had done much to bring about shipboard RADAR in WW-II. He didn't live to see his dream fulfilled but he persisted for many years, despite ill health, by designing and wearing a portable iron lung so he could continue his work on the early prototypes.

So just what is a linear accelerator? Quite simply, it's a gun to shoot electrons into matter of various kinds much as bullets are fired into a target, except that, in this case, the goal is to examine the pieces of the target that are ejected from the impact to see what they are made of. It's very easy to make a gun to fire electrons like projectiles. In essence, that's what a cathode ray tube does in an oscilloscope or a video monitor. The problem is, electrons don't have much mass. It's like trying to stop an enemy tank by firing BBs at it. To make a real impact, you'd need a cannon. So, how do you turn a BB into a cannon ball?

$E=MC^2$ : If the speed of light (  $C$  ) is constant, mass (  $M$  ) and energy (  $E$  ) are essentially interchangeable. The mass of an electron can be increased by adding energy to it. The concept is elegantly simple but the process is difficult and expensive, as you'll come to see, but first let me give you an overview of the machine.

It consists, simply of an electron gun and buncher to produce compact "bunches" of electrons and accelerate them almost to the speed of light. The electron bunches then drift through a wave guide into which microwave energy is injected in such a way that each electron bunch seems to ride the crest of an RF wave as it travels along the wave guide. As it does so, RF energy is added to the electrons to increase their mass. When the electrons leave the wave guide, they are deflected by powerful electromagnets to one of several experiments and then they are harmlessly dissipated in an earth-fill trap. We called it Mt. Panofsky after the director of the lab, Dr Wolfgang Panofsky. Here's a diagram of the machine stripped to its barest essentials. Later, I'll fill in the technical details and describe their function



(Fig 1-2)

Bear in mind that this was the 1950s. Transistors were in their infancy and computers were room-sized dinosaurs with punch-card inputs and reel-to-reel tape drives. At our laboratory, control signals and data were handled in hard-wired analog format and calculations were performed using a slide rule. Research grants were few and miserly. There wasn't even money for equipment cabinets. I learned to weld them from angle iron and scrap sheet metal. And thereby hangs a tale. Next time, I'll begin to explain some of the horrific challenges we faced and I'll discuss the technical details of some of their more elegant solutions.

Paul Honore' W6IAM



## Lets play raffle?

This time the rig is a YAESU FT-990, 160m-10m, plus general coverage receive. Just look at all them buttons to push – well worth one raffle ticket alone!!



And if the Front Panel doesn't do it – check out the rear panel. Two tickets??



Coming to a ticket seller near you (David, Becky, Chuck). \$10.00 a ticket, 1 in 50 chance. Members only.

*Dave Tyler, N7DRT now SK, a former Club President and Trustee purchased the FT990 on January 7, 1994 from HRO in Portland, OR. In 1997 he had the radio aligned to Yaesu specifications by Richmond 2-Way Radio in Port Angeles. Dave purchased a MD-1AX8 microphone for the radio. The radio has been used by Dave and his son. It was also used during the 1995 Clallam County Fair. The radio comes with said microphone, purchase documentation, power cord, and operating manual. . After Dave's passing his wife offered the radio to the club for its use. The writer checked out the operation of the radio into dummy load and found it to be sound, but he did not test it on the air. The radio is in very good cosmetic shape. While this radio is a bit dated as it does not have DSP circuitry, it meets most of the requirements of an Amateur Radio Operator.*

*Roger Uhden, K7RGR*



### **On the Air: The First Rookie Roundup -- Coming April 18!**

The ARRL's newest contest -- the Rookie Roundup -- is getting a lot of buzz among newly-licensed amateurs. Designed as a modern equivalent to the ARRL Novice Roundup from a few decades ago, this new incarnation combines a competitive event with some on-the-air training. The first Rookie Roundup is scheduled for April 18 and will be an SSB contest.

The Rookie Roundup is six hours of fun on a Sunday afternoon that is designed to give new hams a chance to get their feet wet on HF and 6 meters. Old-timers are encouraged to get on the air and work the Rookies, just as in they did in the Novice Roundups. The six hour event -- from 1800 UTC-2359 UTC -- will be held on the third Sunday of April, August, and December. SSB, RTTY, and CW will be featured in the different months. Read more

### **'HAVE YOU TRIED LOW POWER QRP'**

"Turn that radio down!" How often have we heard that? Yes, many HF radios (power) can be turned down. Even to five watts or less. And suddenly you are in the low signal power of QRP.

Recently I put together the "MFJ Cub Kit". It is a 40 meter cw transceiver with an output of two watts. With a dipole antenna up 25 feet tuned to approximately 7.04.0 and SWR close to 1.5. Sending a signal out I suddenly received my call sign coming back from Belen, New Mexico and then later from Los Altos, Calif. What a thrill - a ham heard my call that far away and returned it.

Think of your 100 watt radio at S9 going down 6 decibels to S8 to 25 watts and then to S7, 6 decibels to 6.25 watts. Then turn down a little more and "yipee" QRP country at 5 watts or less.

Like a changing 100 watt light bulb to 25 watt bulb and then to a flashlight bulb to 2.5 watts. An exciting experience to realize a signal can be received at such low power.

So give it a try, turn the power down and realize the amazing power we have to be heard even at 5 watts or less.

73 Bob  
AC7RK

### CCARC Web Site Changes Coming

In case you were not aware, a new committee position of Web Site Administrator was created in the 2009 update to the Club Bylaws, and the 2010 calendar year marks the first time this position has been formally staffed. This new position has been filled by Rik Scairpon WX7RIK, who is supported by the Web Committee: David Hannon KE7TTT, Sheldon Koehler N7XEI, Al Popowski W7ALP, and Bob Sampson K6MBY, who previously had been handling the web site updates.

Just for your information, there are a number of changes planned for the upcoming year for the olyham.com web site. For many years our web site has been hosted on a server graciously provided by Sheldon Koehler, but that arrangement is coming to an end. The server is old and nearing the end of its life expectancy, so the time has come to step out on our own.

The Club has contracted with a hosting company and we have obtained a new domain name: olyham.net (olyham.org was already taken.) The old olyham.com will still work, but our intent is to migrate to the .net domain, as this is more appropriate since the Club is not a commercial operation. We will always have the .com domain in case someone miss-types the address. We do not have a set date set for the migration; we have till approximately mid-summer to complete the migration. But there is some content out there now, and anyone should feel free to check it out (bear in mind that much of it will not be working until we announce the release.)

I know that I am probably opening a can of worms here, but if you have any feedback on the current web site design, things you'd like to see, or suggestions for the new web site, please feel free to email me or any of the committee members.

– Rik Scairpon, WX7RIK, CCARC Web Site Administrator

### COMING EVENTS

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10-11 Apr 2010

Communications Academy (CommAcademy 2010)  
Western Washington Medical Services Team

See: <http://www.commacademy.org>

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8 May 2010

SCARC 19th Annual HamFest  
Stanwood-Camano Amateur Radio Club

See: <http://www.scarcwa.org>

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4-6 Jun 2010

Northwestern Division Convention (SeaPac)  
Oregon Tualatin Valley ARC

See: <http://www.seapac.org>

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## CLALLAM COUNTY AMATEUR RADIO CLUB

### Minutes of the General Meeting 10 March 2010

The meeting was called to order at 1910 by the Club Vice President Dennis Tilton, AD7TV. Twenty eight people attended the meeting. We'll just report the number of people because the Board decided that a sign in sheet wasn't needed.

The meeting started a few minutes late because the Hospitals overhead projector wouldn't accept the Laptop computers output. Chuck, N7BV had brought a portable projector and we used it. Dennis introduced the evening's presenters who were Chuck Jones N7BV and Bill Carter W7WEC.

Subject: Computer logging programs.

Bill started the presentation with a demonstration of a computer software controlled radio. He explained that the radio being used, an Elecraft K3 was a Software Defined Radio (SDR) which was also a Software Controlled Radio (SCR). He defined the difference. Bill demonstrated how the computer can set the bands and change the frequencies. He used a free program called Ham Radio Deluxe.

Bill then used a small digital tape recorder to simulate the audio output of any radio into the laptop. The laptop showed an RTTY and PSK signals he had recorder earlier.

Then Chuck explained some of the capabilities of the N1MM logging program. This included demonstrating how to make the basic entries, the computer checking for dupes, and score keeping. This is a program with many capabilities from the basic written type log to multi-station logging. It has many different windows to show such things as sections worked and spotting capability. Much more is available if you have an internet connection at the same time as operating.

Just prior to the break Dennis asked if there was any equipment for sale or trade. There was some discussion about what was available. (Ed. Note: see the ads in the QTC for more info.)

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After a break Dennis called the business meeting to order.

First we had self introductions around the room.

The next item of business was a report by Dennis on the field day preparations. He and George, W7TTY are leading the operation. He had a list of items that were needed and most were volunteered by the members present. Dennis explained how we are having two stations. One is the GOTA station and the other will be multiuse. Next month and during field day there will be signups for the multiuse station. The station will be set up for SSB, CW, and digital modes. It's your choice while using it.

Chuck N7BV reported that Paul, WB8BVK had a Cochlear implant. We are all hoping he gets his hearing back so he can join us more often. Janet, WA7JEP provided the actual term for his surgery.

Al, KD7TFK asked if anyone know's where the AC power GFI's were that the club bought the parts



for last year. Let Al or Dennis know if you know where there located.

The next order of business was to review the minutes of the previous meeting. A motion was made and seconded to accept the minutes as published in the February QTC. There was some discussion and the minutes were amended to exclude the statement about the Census. That statement was at the previous meeting. The vote was unanimous. No nays and no abstentions.

Officer reports: Chuck, N7BV reported that there will be Ham license class sessions April 10, 17, 24 and the exam on the 24th. He also mentioned to note that lessons will be taught on the last Saturday before the review session unlike previous classes.

The meeting was adjourned at 2047.

Bill Carter, Secretary, CCARC

### **CCARC Committees**

**Activities Chair:** Callie Kroll N7YMU

**Public Relations Chair:** Becky Winters W7RJW

**Publications (Newsletter):** Bob Sampson, K6MBY, Chuck Jones N7BV

**Membership Chair:** Valerie Hannon KF7VAL

**Health and Welfare Co-Chairs:** Chuck Jones N7BV, Rich Golding N7NCN

**Technical Co-Chairs:** Bob Sampson, K6MBY, Steve Debiddle, W6MPD

**Field Day Co-Chairs:** Dennis Tilton AC7TV, Al Fisk KD7TFK, George Hutchinson W7TTY

**Net Coordinator:** Becky Winters W7RJW

**Education and Training:** Chuck Jones N7BV

**Web Site Administrator:** Rik Scairpon WX7RIK

**Program Co-Chairs:** Janet Parris WA7JEP, Bill Carter W7WEC, Chuck Jones N7BV

**FROM OUR TREASURER:**

As of March 31st, 2010:

First Federal Savings & Loan of Port Angeles Balance: \$ 9,084.32

Outstanding Cheques: - 0.00

**Checkbook Balance: \$ 9,084.32**

*David R. McCoy,*

**KE7JEJ** - - . . . . .

**CC-ARC Treasurer**

**Birthdays for April, 2010  
and the first week of May, 2010:**

Baranowski, Stephen A. N1SB Apr-10

Dawson, Al W7YLV Apr-13

Golding, Julia KB7SBB Apr-16

Ray, Jody KE7LKA May-07

**YL's Birthdays for the same period:**

Fromm, Nancy (Robert WB7EGD) Apr-11

McPherson, Nancy (Bill W6JEQ) Apr-26

Jude Sales (Stephen Baranowski N1SB)  
Apr-27

**Happy Birthday!**

**FOR SALE OR TRADE**

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**For Sale**

- HF Radio. Kenwood TS-430S. With mike, four filters installed and matching power supply. \$500.
- VHF 2M Radio, Kenwood 2550A with mike and no tone module. \$60

This is a Silent Key sale. A portion of the sales benefits the Club.

Contact Bill Carter, 360-681-4375

~ ~ ~ ~ ~  
A Universal m-400 decoder for sale. It is in like new condition with an owners manual. Asking \$100.00 or best offer.

See Universal Radio web site for detailed information of item. If interested call Rick Anderson at (360)374-6809.

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**NEXT YL LUNCHEON**  
**May 14**  
**Downriggers, PA**  
**Time: 11:30 a.m.**

**Find us on the web at**  
**www.olyham.com**  
**Check it out. Lots of**  
**information about ham radio**  
**in Clallam County!**

**2010 - CCARC Ladies Luncheon Schedule**

**May** - Downriggers - 115 E. Railroad Ave. - Port Angeles  
**June** - Mariner - 707 E. Washington - Sequim  
**July** - Toga's - 122 W. Lauridsen Blvd. - Port Angeles  
**August** - Tarcisios - 609 W. Washington - Sequim  
**September** - Sergios - 205 E. 8th - Port Angeles  
**October** - Fortune Star -145 E. Washington - Sequim  
**November** - Chestnut Cottage -  
 929 E. Front - Port Angeles  
**December** - Cedars at Dungeness -  
 1965 Woodcock Rd. - Sequim

| Description                                        | Time/Date                       | Location                                                         | Contact                           |
|----------------------------------------------------|---------------------------------|------------------------------------------------------------------|-----------------------------------|
| Clallam County ARES/RACES meeting                  | 7 pm, first Tue of every month  | Clallam County Courthouse EOC,<br>223 E. 4 <sup>th</sup> St., PA | Dan Abbott N7DWA<br>360-582-3824  |
| Clallam County Amateur Radio Club general meeting  | 7 pm, second Wed of every month | Olympic Hospital<br>Linkletter Room, PA                          | Tom Newcomb KE7XX<br>360-452-8228 |
| Clallam County Amateur Radio Club social breakfast | 8 am, first Sat of every month  | Joshua's Restaurant<br>Hwy. 101 & Del Guzzi Dr.                  | Tom Newcomb KE7XX<br>360-452-8228 |
| Clallam Country Amateur Radio Club YL social lunch | 11:45 am 2d Fri of every month  | Rotates - announced on Thursday<br>night Net                     |                                   |

**CLUB OFFICERS For 2010**

**President:** Nita Lyman KE7DRT 360-457-5022 Nita\_lyman@yahoo.com

**Vice President:** Dennis Tilton AD7TV 360-452-1217 3tiltons@wavecable.com

**Secretary:** Bill Carter W7WEC 360-6814375 w7wec@arrl.net

**Treasurer:** David McCoy KE7JEJ 360-457-8550 mccoy.d.r@olyphen.com

**Board Member (Chairman):** Johan Van Nimwegen KO6I 360-681-7300  
 jvn@olyphen.com

**Board Member:** Al Dawson W7YLV 360-457-0752 adawson@tfn.com

**Board Member:** Chuck Jones N7BV 360-452-4672 n7bv@yahoo.com