



From our Club President...

Year-End Volunteer Opportunities

By Ivy Nelson-Groves WA7IVY, President

October already... where has the year gone?

Although last month was Preparedness month, what with winter just around the corner, it seems as though it is always preparedness month here in the Northwest.

The issues with the Green River, Howard Hanson Dam, and flood season are still with us, and some are forecasting a colder than normal winter. Check your 'Go' kits, charge your batteries, and make sure that you have supplies for your family just in case. If you have a generator, it is important that you run it and practice setting it up before the need arises (That was last weekend's project at the Nelson-Groves home).

Here are some things coming up later this year that you might want to keep in mind:

- **The M&K Budget for 2011 is being prepared**, so now is the time to contact any Board member if there is an item that you think needs to be added or revised.
- **If we all wish to have a Christmas/Holiday party** this year, we need to have someone (or a couple of someone's) to volunteer to organize that event.
- **FleaMarket 2011 Planning meetings** will be held on the 2nd Tuesday of each month. If you would like to help out, please contact Mike N7WA or Hal N7NW.
- **We will soon be asked to donate a day of bell ringing for Salvation Army.** We have participated in this activity in past years as a way of showing our appreciation for the use of their facility for our meetings, and this has actually benefited us directly in that it has reduced the amount we have to pay for the facility. So, if you want to benefit the club and contribute to a fine humanitarian organization, think about spending a few hours ringing a bell. It can even be fun working for a good cause with fellow club members.

See ya'll on the 16th...

The Seattle Marathon At 40

By Gene W7AKA and Fran N7FWZ Underwood

[Event Date: November 27 & 28, 2010]

Amateur Radio has supported the Seattle Marathon for at least the last 30 years. Ham Radio support for this event has become more important each year as the number of Marathon runners around the country has grown, as have the number of runner health-related incidents – even deaths.

Last year there were 7 deaths around the country, with one averted when a support vehicle with a *Ham* and a RN used an Automatic External Defibrillator to restart the runner's heart. Four years ago, we did a similar effort on a runner that collapsed near the finish line. Both runners survived because of adequate pre-race preparation & timely support service response.

We actually have 2 events on Saturday – a 5K race open to all and a Kids Staged Marathon Finish Run with two- to three-thousand runners with one parent per kid runner, running around the Seattle Center.

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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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Mike & Key Online -- Several Club resources are available online:

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, surf to: <http://groups.yahoo.com/groups/mkarc> .

E-Relay — You will also save the Club some money in printing and postage costs. To sign up, send a message to the *Relay* Editor: kg7ku @ arrl.net.

M&K October Meeting & Activities

By Jim Aigner N7MU, Activity Chair

When our scheduled speaker was not available for the September program, Scott Robinson AG7T stepped up and treated us to an excellent presentation on high frequency radio wave propagation. In one hour, he covered all you need to know about propagation to work Field Day or your favorite contest. Scott included some useful references and web sites on the credit page of his presentation.

You can find that slide on Page 13 of this issue of the *Relay*. If you missed his program, you will soon be able to enjoy it on video because Gary Greve W7TRJ recorded it for the Club Library. Once the required speaker releases have been signed, you can check it out for home viewing. We ask that you don't copy it or upload it anywhere.

The October program promises an interesting look at APRS, the Automatic Packet Reporting System. It's an aspect of Amateur Radio not many of us have given a try. Matt Kozma AE7MK will be the speaker. Some of you know him from his public service and search and rescue activities. Matt has also contributed an article on APRS in this issue.

I know Phil DeCaire WB7AEI was disappointed he was unable to be here in September; I'll try to get him rescheduled for at a later date for his program: "Propagation Prediction Tools for Everyone."



This month's door prizes continue to include a few used items generously donated by the estate of ham friend. For example there is an MFJ 949EY Deluxe 300 Watt Versa Tuner II, a Radio Shack Pro 2052 1,000 Channel Dual-Trunking Scanner, a like-new Philip's U-105 rotator, controller, and support bearing. This light-duty rotator is suitable for small AM and TV antenna arrays, or a low wind-load antenna such as a 2-Meter Yagi.

We also have a new CSI digital temperature controlled solder station and a few items for your ARES Go-bag: emergency glass-breaker tool, and an EE-3 ultra-portable tri-band ground plane antenna. The "mystery box" makes its second appearance this month. Oh yes, we have 2 more Yaesu caps and log books.

See you Saturday.

Yet another addition to Year-End drawing

How would this look in your shack? I've added the Elecraft W2 Power / SWR Meter as a third prize for the end-of-year door prize drawing. It provides fast, high brightness LED bar graphs to track the performance of your transmitter and amplifier. It's compact and can easily fit next to your transmitter or amplifier. You can use it to monitor your HF rig or your VHF/UHF station, or both.

Two sensors can be connected to the device to support different power levels and different frequency ranges. This particular unit comes as a no-solder kit with a sensor supporting up to 200 watts on HF through 6 meters.

I've arranged for the winner to exchange the included



sensor for one that supports 2000 watts or a different frequency range (2 meters through 440MHz). If you win this and choose to exchange the sensor, do not open the portion of the prize that contains the sensor.

A second sensor can be added to the unit at the winner's expense. This prize itself makes it worth getting a few more tickets this month and next.

-- Jim Aigner, N7MU

M&K FleaMarket Past – Comments

By Diane Dinkelman KB7DNE

It's time to start thinking of FleaMarket again. And if you wonder if it's worth it I thought I would let you see how some of our 2010 customers felt:

- **Thanks for another great Hamfest!**
- **Fantastic**
- **Excellent event. My first time here and very impressed a very cordial and well run event. Thank-you.**
- **Good Show!!**
- **Excellent Job done by all. Thanks again for a great event.**
- **Nice! Well run!**
- **Thanks for yet another great event**
- **Excellent!**
- **Great as usual – still one of the best organized Swap Meets around.**
- **Great event as always.**
- **Absolutely excellent!**
- **Great Job!**
- **Another Great Show**

Sure, I Can Do That!

By Hal Goodell N7NW

I was reading this month's QST and came across the 'It Seems to Us' article that occurs monthly in the magazine. This month's article was titled 'Say Yes,' written by the new ARRL President, Kay Craigie, N3KN. In reading the article I thought how inspiring this might be for our club members.

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Sure, I Can Do That!... [Continued from Page 3]

It is an article about stopping and reflecting on how she got to be where she is today, the fourteenth President of the ARRL. She says "I am President of the ARRL today because twenty-six years ago, someone else said 'No.'" Of course she said 'Yes,' and continued to say 'Yes' when asked to do things over the years.

Another quote from the article: "That is what leaders in our Amateur Radio family have in common. No matter how we differ in our educational or occupational backgrounds, whatever the demographic details of our personal lives, regardless of our license class or favorite things to do in Amateur Radio, we are the first ones who say 'Yes.'"

And another: "What you invest in Amateur Radio – your willingness to lead, to serve, to work, and to learn – can never be lost. It will pay you back many times over and in ways you can't imagine."

Our club has many activities and all these require someone to coordinate, to serve and to work or it just doesn't get done.

We have several members who continually volunteer to take the lead and sacrifice their own personal time just to be sure the activity happens. It is easy for us to set back and let them do the work.

This past year we have had a few instances of new club members who have said 'Yes.' For example; Linda Jordan stepped forward and said 'Yes' to be the chairperson for last year's Mike and Key Annual Banquet. And what a banquet it was, best attended in years.

This is just what our club needs, new leaders with new ideas.

My sweet wife, Annie, had a favorite saying when she worked at Boeing when asked to do something, 'Sure, I can do that.' She never said 'No.' It didn't matter that she wasn't an expert or best qualified on what needed to be done, she knew where to get the help to get it done. She continues to this day to be the first one to say 'Yes,' or in her words, 'Sure, I can do that.'

So as the year goes by and the club has activities that need a chairperson or need help, please say 'Yes' early and often. (Hint, hint --- FleaMarket Time!!)

Hal N7NW, FleaMarket Chairperson

Special Event Contest

By Michael Dinkelman N7WA

The feedback I received at the last meeting indicates that a number of people are interested in the year-long competition I proposed last month so I guess it's time to come up with some rules.

In review, this test will involve the participants attempting to make contact with a number of Special Event stations to be listed in the Relay in the prior month. (These stations will be taken from the pages of QST and or CQ but since not everyone gets those

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magazines, I felt it best to list to them in our common newsletter.) The contest will last a year and there will be prizes in January of 2012.

Rules:

- Only special event stations listed in the Relay will be worth points.
- Each QSO with a special event station is worth one, at least, point.
- Some of the special event stations each month will be worth bonus points.
- You can work a special event station with Voice, CW, and/or RTTY.
- QSO's with multiple modes is allowed and additional points can be earned for each mode.
- QSO's on multiple bands (same mode) will not count for additional points.
- A multiplier effect will generated by working states. (Points earned by working special event stations multiplied by the total number of states worked in the contest will equal the total points.) A maximum of 50 multipliers (each unique state worked) is possible.
- Participants are encouraged to report their progress to me (N7WA) each month so I can include them in the Relay.

So those are the basics. The contest doesn't start until January so if there is some clarification needed, please get me some feedback and I can modify or add rules as needed. I'll also try coming up with a spreadsheet template that can be used to help track your points.

Seattle Marathon... (Continued from Page 1)

On Sunday, November 28, we will have a Full Marathon Walk, a Half Marathon Walk, A Full Marathon Run and a Half Marathon Run. These Sunday events share a common race course. Last year we had more than 16,000 runners in the Half- and Full-Marathon runs. Last year we recruited 110 *Hams* to support the Seattle Marathon. This year we wish to recruit 150 hams. Of this number, about 30 will work in the Seattle Center, the start and finish line location. 10 *Hams* with larger vehicles, equipped with APRS, will function as our "pooped-out-participant-pickup-patrol, also known as our SAG patrol. The rest of the *Hams* will monitor the runners as they progress on the race course.

This year we will have **5 main Networks**. Network-**One** will cover the Seattle Center. Network-**Two** will support the SAG patrol. Network-**Three** is our Medical specific net. Networks **Four** and **Five** will cover the *Hams* on the main race course.

On a personal level, this year hasn't gone as I had expected. In April I was diagnosed with colon cancer. I underwent Chemo and Radiation treatment, with surgery on August 31. I have two additional surgeries to undergo. The Doctors have said that I am now cancer free, which sounds very good to me. ***My energy level is not up to normal, so I must ask each of you to help me in the recruiting effort.***

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Seattle Marathon... (Continued from Page 4)

We have 15 water stops on the race course. We need to have a Ham with EMT, Paramedic, RN or MD training at each water stop, because most of the runners who decide that they want transportation back to the finish line, do so at a water stop. We want a medically trained Ham to screen them before one of our SAG units pick them up. All of the networks will require a 440MHz HT except the Seattle Center net, which is operated on 144 MHz.

There will be training sessions in our home in Newcastle, just north of Renton, one weekend before the events. We use a PowerPoint presentation to assure that all of the basic information gets to all of the Hams attending. The Marathon association provides Space Blankets, Orange Caps, and T-Shirts. We provide apples and Krispy-Kreme donuts for everyone at our training meetings. There will also be a large, custom made information packet for each ham.

Most Hams will be able to park their cars at or near their assigned positions and we expect that you will use them to warm your selves as necessary.

Please contact us at 425-226-4115, C- 425-890-5752 or w7aka@comcast.net.

--Gene & Fran Underwood W7AKA – N7FWZ

Celebrate our October Members!

By Dave Smith KB7PSN, Treasurer

As of October 2010, 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:*

Pete Hedberg	K7WTG	40 Years
Charles Stroehler	WA7EBH	40 Years
Jim Christiansen	K7ND	38 Years
Prahlad Ayengar	KB7AFS	23 Years
Diane Dinkelman	KB7DNE	18 Years
Brenda Doss	N/C	14 Years
Venessa Taylor	KC7SFT	14 Years
Rita Danielson	KD7CNU	12 Years
Darrell Plank	WB7BSP	12 Years
Sylvia Burns	KD7BMD	10 Years
David Mitchell	WA7DTM	10 Years
Greg Pietrucha	W7HRC	10 Years
Jim Telgenhoff	KC7EVY	9 Years
William Harris	W7KXB	5 Years
Tokuzo Okumura	AD7JA	4 Years
Erik Friele	KE7UYC	2 Years
Mindi Mattson	K7MAM	2 Years
Roy Heimes	N7AVN	1 Years
Russell Ralph	KF7AQR	1 Years
Ted VanTuyl	N7HKL	1 Years

M&K – Radio Officer Report

By Hal Goodell N7NW, Radio Officer

Not much new to report this month. Both repeaters continue to operate just fine. With the winter months approaching we are going to be doing some minor work to be sure we can operate though any power outages that might occur.

The backup batteries and charge are working just fine. The usage of the 220 repeater continues to be light. Later this fall and winter I'll be putting the EchoLink back on the 220 repeater.

The main road to E. Tiger Mountain has been repaired so access is a lot easier and less impact on our vehicles.

Orca DXCC – Announcement

Email received from Jim Smith VE7FO

Announcing the birth of the Orca DX/Contesting Club (<http://www.orcadxccc.org/index.html>). Orca DXCC is committed to establishing and maintaining good relations with BCDXC. This club is open to all VE7 hams (and any interested VE6's/W7's) with an interest in DX and/or Contesting.

It grew out of a desire by a number of BC DX Club members to remove the cap on BCDXC membership necessitated by the practice of holding the meetings in members' homes. A number of members thought that this was a good idea and a number felt that they wanted to keep things just as they are (and two of us had a foot in each camp).

Rather than produce a split in the BCDXC membership, a new club has been formed - Orca DXCC. It currently has 47 members, including a little over 15 with dual membership in Orca and BCDXC.

Looking forward to a great contest season!

October 1985 in the Mike & Key

By Michael Dinkelman N7WA

- o Len W7MCU requests the use of K7LED for the CQWW SSB contest at the end of the month.
- o W7JIE writes an op-Ed article asking where are we headed as a Club. He broaches a number of subject including (but not limited to) the aging of Ham Radio and the need for youth, Elmering, Special Service Club status, and the need for leadership.
- o At the Club activity Evening held at Andy's Tukwila Station, Jerry W7BUN presented a slide show of a recent trip to Russia.
- o At the October meeting, the program was a presentation by Jim K7ND – a homebrew 220MHz amplifier for those Hand-helds. A schematic is provided in the Relay and all news parts will cost you about \$20.
- o We are all starting to learn about PRB-1 which was just formally adopted by the FCC in mid-September. Hard to believe this important ruling is now 25 years old.
- o There is excitement that the Comet Giacobini-Zinner might produce 6000-10000 meteors an hour when the earth passes through its tail on October 8th. (No it didn't happen).
- o Hal's Dump Cake Recipe was published with a half a pound of butter involved. (*You still cooking that recipe OM?*)
- o The new 220 repeater is still working from Federal Way (N7NW's) and plans are to take it up Tiger Mountain on the 20th (where it still chugs along to this day).
- o The first organizational meeting of the 1986 Flea Market will be held on the 23rd. (Some things just don't change.)
- o Club membership stands at 65.

WANDERING – When 10M was 2M

de Fred Roberts, W6TKV

Wandering back to a time prior to 2M repeaters and HT's to the time when 10M served the same function when local hams drove to work or went T-Hunting. To be sure, there were more than a few equipment differences between then and now.

First, the transmitters required 110 Volts, and so we installed a Military Surplus Motor Generator (the whole unit consisted of two sections, one about 15" long, 4-5" tall, 6-7" wide topped with a generator (about 15" long, 6" diameter). This went under the hood of the car, and that was a time when there was plenty of empty space under the hood of your car. Car batteries were 6V then, not 12V

The Transmitter was a separate unit - mine was Stancor holding 2 crystals (wow - I could choose between 2 frequencies). The unit was 8" long x 6" high and 6" wide), and this was mounted on the floor of the car.

The Receiver was my regular car radio, fed from the 10M antenna to a small frequency shifting box (2-1/4" x 2-1/4" x 4" had 2 tubes, 7 resistors, and 5 other components). This small box was built many years ago and was mounted on the side of the Stancor - it had a small tuning knob to line up the car dial display with the 10M signal - e.g. 24.567MHz would display as 567. It worked like a champ.

In those days, everyone who was mobile in our area transmitted on the same frequency, and copied on that same frequency, that is, we talked and copied on the same 10M frequency. Driving to work, we chatted just as we have done for years on 2M - except we had no repeater. Note worthy events:

On some mornings, one of our Group would be talking and all of a sudden he would go off the air. The reason became crystal clear when you viewed his rig. His transmitter was on floor behind the driver's seat, and was largely held together by a number of clips. When a clip fell off his rig, he was QRT. It was his practice to stop, reconnected everything, and then rejoin the Gang once again.

Our regular morning "drive to work" nets were always good times ... we even had a fellow located in England join us every day for a couple of months. What a kick.

We used to hold night-time T-Hunts, and used small vertical loops as our receive antennas. No directional antennas were needed as we were on Long Island and started our hunts from the south shore with our backs to the Atlantic Ocean ... for reference, Long Island is 120 miles long, about 25 miles wide. The north shore was fun as it has lots of inlets and channels. We had great fun, and most everyone found each Hidden-T and those who didn't get very close.

Notes From My Workbench

by Jeff Wandling W7BRS

It seems that amateur radio has way too much to offer because I've been too busy chasing more DX than sitting down to write a small article for the Mike and Key ARC. But, now that the deadline is upon me I have found something to focus on.

Last time we saw my call in this newsletter, I was writing about meter/shunt circuits for measuring HV, specifically for linear amplifiers.

I've also left some clues in this publication months ago about tips on getting started with home-brew linear amplifiers. More on that later in this article. What this article focus on is a current project that is in progress.

The Nature of the Goal

The goal is to build a simple 15-20A power supply for running radios in my shack. I wanted one that provided up to 20A continuously and was built around a linear power supply design (not switching).

I have pictures of my supply online – find them at: <http://w7brs.com/10A>.

I did not have to look far in my research to find some sample power supply schematics that are tailored for just this sort of project.

The goal included the requirement that the power supply be linear, provide 20A current, and have some ability to adjust voltage within the range most rigs will use. Those were the basic requirements.

Additional features that were not required, but nice to have are: Provide current and voltage meters, provide over-voltage and over-current protection, and be able to support either "banana plug" or APP power connections. I also wanted the whole thing to look home-made so there is a bit of boat-anchor look to it, but that was just a happy accident.

Where I've Come Thus Far

I started with the power supply design based on the venerable LM-723 Voltage Regulator. (URL to datasheets and reference schematics will be listed at the end.)

I started the project by building a few hand-etched PCBs for the circuits used to regulate the voltage and current provided by the power transformer.

The complexity of the PCB traces are not too difficult. A simple five by seven inch single sided copper clad board will suffice. Use art-tape or nail-polish to apply a resist on the copper that will be etched off with ferric chloride (Mouser# 590-415-4L).

I traced a few versions of the PCB after learning from a few mistakes made. The simple version of do's and don't's is as follows:

- **DO NOT** pre-drill the holes in the board before etching off the copper. The reason is that the etching solution will get through the hole and remove copper from the underside of the hole between the board/copper layer. The result is that the etching solution will make a ring around the hole that cannot be soldered and force your pad for the hole to be very large (too large!). Drill after etching and your pads will be the right size after etching.

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Notes From My Workbench...[Cont'd from Pg6]

- **DO** trace the geometries of the parts on the board before etching to make sure there is room to fit all the parts where they need to go. Nothing worse than having to re-etch because the spacing won't allow you to solder the parts onto the board.
- **DO** test the direction/pins on variable resistors so that clockwise and counter-clockwise are in alignment with the way the pins trace to the board. If you are using variable resistors for the voltage adjustment make sure that the direction you turn the shaft corresponds to the increase/ decrease you intended in the voltage. Check the pins before etching and adjust your traces accordingly before etching.
- **DO** drill the holes AFTER etching and use a precision sized drill bit for the parts involved. The right sized bit can make a difference. A hole too large will increase the amount of solder required to attach the part. The right sized hole for the diameter of the wire leads will help make your production clean and soldering minimal.
- **DO** make allowances for extra parts connected to the components like heat-sinks. A part sometimes needs a heat-sink. You can build your own or make them. But in any case, plan ahead when laying out the traces that you have room for the heat-sink to be safely attached: Some heat sinks are common with the collector. This may or may not matter, but in this design it is important. The collector of the pass-transistors are NOT grounded.

Primary Challenges Faced

The primary challenges were to physically locate each sub-system in the chassis, and making sure the PCB was properly etched and the components installed correctly.

The chassis dimensions were originally smaller than what I ended up with. The final version of the supply used a chassis that was about 10in wide, 7in tall and 12in deep. The bigger components like the transformer, filter capacitors and meters were the main concern. I needed to reserve enough room to hold the heat-sinks for the pass-transistors and main circuit board with the regulator.

Etching the board requires some planning. The challenge is to take the time to layout the parts on the board and pencil their outer dimensions to make sure there is enough room between the parts to fit.

Length of Concept in Current Stage

The time from concept to current stage is about two months. It took some time to get the parts I needed, but once I had the parts, the real time worked was on the chassis layout and preparing the PCB to etch.

Estimated Time Yet To Go

I think that the project is nearly complete. There are some last-bits to finish on the supply. A good power supply should have a bleeder resistor across the filter-caps. The bleeder resistor should not be too low value.

You don't want to make too much current. So, keep the bleeder value about 1.0k, no less. The bleeder resistor value depends exactly on how much time you want to discharge the filter capacitors AND what the capacitance is of the filter capacitors. A 1.0k bleeder with 8k uF filter capacitance should be fine to bleed off the voltage and not create a circuit that draws very much current relative to the load. $i = 13.8V/1.0k$.

I also need to get some more aluminum sheet to finish off the chassis cover, so there is probably another month of time spent building a mount for the bleeder resistors and to make a nice cover for the unit.

I also want to put a proper light above the meters inside the chassis to light up the faces to read the voltage from the supply.

To Be Continued

What else is there to do? The power supply is used now, even with a cover missing. What will be documented next time is the finishing touches on the power supply and a new introduction to a home-brew linear project.

Power Supply Notes

The URL to the basic power-supply built around the LM-723 regulator is:

<http://www.rason.org/Projects/powsupply/powsupply.htm>

The URL to the LM-723 data-sheet is:

<http://www.st.com/stonline/books/pdf/docs/4553.pdf>.

(In the data-sheet skip to the example circuit Fig 17.)

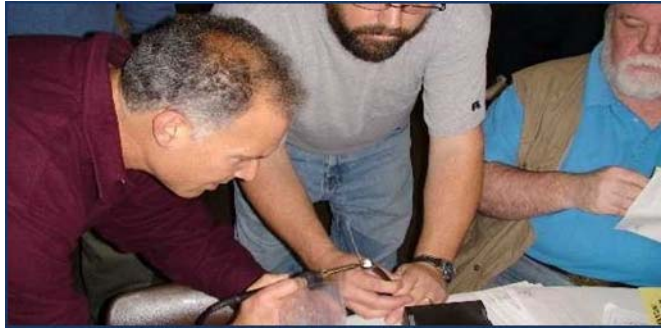
The pass-transistors 2N3055 are used in this design, and they are relatively inexpensive. 2N3771 is a good replacement for even more current handling. The Collector-Emitter junction limits max ICE in the data-sheet should be carefully considered.

Linear Amp Notes

The linear amplifier project is evolving. From one point of view, it is done. But there's always something to add to it in order for it to be more complete. The sections of the amplifier that need 're-work' are:

1. **Re-solder the tank circuit** with a silver-plated tank coil. The coil I am using has worn plating and is not bright smooth silver.
2. **Re-tap the coil for WARC bands.** I find that I'm making a few errors when I try to load 17m. I don't have a good antenna for 12m, and 30m has a power limit of 200W so 17m seems to be the only band that would make sense now for reworking.
3. **Bias selection.** I am using a single bias 6.8V Zener for the filament transformer. In general, it works. But, it would be better to have a selection switch for CW vs. SSB mode and the corresponding bias Zener used for that selection.
4. **Last, a true and honest list of materials,** part numbers, and design document would be needed in order to help other Hams build their own linear amplifier. The specifications of the amp for a future builder need not be a pair of 3-500Z, there are easier configurations to start with.

Special Focus: Elmers' Corner... by Jim Aigner, N7MU



Please visit the Elmer Wiki at <http://k7ledelmerwiki.wikispaces.com/>.

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	Andy Lengenfelder, KE7ZGR	ke7zgr@arrl.net	425-430-1804	All 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@arrl.net	206-251-7467	CERT, ARES, organizations & Eq't
HF Operation	Dale Tongue AC7NP	dale.tongue@gmail.com	425-432-4254	Equipment, Antennas, and best HF operating practices
New Members	Dick Radford, WA7NIW	wa7niw@arrl.net	425-828-9791	Getting started, equipment selection and operation
QRP	Frank Qualls, AB7HA	franklin_qualls@hotmail.com	425-802-1837	Low power operation, design and construction
VHF/UHF Operation	Dave Smith, KB7PSN	kb7psn@yahoo.com	425-235-5095	6 meters and up; radios, antennas, modes

D-STAR Workshop Returns to FW

Email received from Michael McCoy N7VWD

Back by popular demand! Another D-STAR workshop is being presented in Federal Way on Saturday November 20th from 9am to 5pm at the City of Federal Way Community Center.

Topics presented at the workshop include "Getting Started with D-STAR", "Gateways, Reflectors, & Rattlectors", Northwest D-STAR Repeaters, and various hands on labs. John Davis-WB4QDX will be the keynote speaker for the workshop.

Coffee and snacks will be provided throughout the workshop in addition to lunch.

Door prizes!

Cost of this D-STAR Workshop is \$35 per person, with discounts for folks signing up prior to October 25th and parties of five or more. Seats are limited to 100 attendees.

To register for this upcoming D-STAR Workshop, please visit the Federal Way Amateur Radio Club's web site (<http://fwarc.org>) and click on the D-STAR logo.

Mike McCoy-N7VWD
 Web Master - FWARC
n7vwd@fwarc.org

Auburn Veterans Day Parade–Nov 6

By Liz Budbill N7ZXH

Come one come all. This parade is supported by the Seafair Parade Marshals and the *Hams* like you. This is the largest Veterans Day parade west of the Mississippi, with at least 200 units every year. **That's HUGE, so the Seafair Parade Marshals could use all the help we can get.**

This parade runs the same route as the Auburn Good Old Days parade with Assembly on E. Main and Dispersal on W. Main.

This parade is also special because the High School holds a Marching Band competition, which becomes a major parade feature.

This means we could have as many as thirty (30) High School bands in the parade. Auburn is very proud of this parade and works very hard to make it a great day for all. Please consider volunteering. Go to: hamsignup@seafairparademarshals.org.

Typically, Check-In begins at 9am, with parade start at 11am. Be sure to arrive prior to street closures to avoid challenges to road surface movement.

Thank You – for all you do.

Liz Budbill N7ZXH, DVM of Communications 2010
 Seafair Parade Marshals

October 2010

M&K General Meeting Minutes

Meeting held September 18, 2010

Meeting called to order at 10:00 AM 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.

Officer reports:

President- Ivy WA7IVY: Nothing to report.

Secretary- Robert KD7WNV: Not present.

Treasurer- Dave KB7PSN: Picked up mail, nothing else to report.

Activity Manager- Jim N7MU: See Relay for upcoming programs. Speaker for today could not get back in time from a work assignment, Scott AG7T will do program on HF propagation. Nice selection of door prizes, thanks to Lee for donations including a "mystery box". See Mike's article proposing a contest, all year contest. Mike N7WA discussed the idea. There was a general discussion of ideas for how the contest could be run. Please give your ideas to Mike. Dale AC7NT talked about a temporary HF mast that could be useful for field use. Plan generally is to videotape presentations and make them available through the library. Gary W7TRJ agreed to do the taping.

Chairman of the Board- George AE7G: Anyone interested in attending a Board meeting should check on date and time as we are changing meetings to accommodate Board members' schedule problems.

Radio Officer- Hal N7NW: Nothing new to report, see Newsletter.

Quorum present.

48 members present, 6 visitors, 44 ARRL members.

Vice President- Steve KD7IQL: Gary Greve, W7TRJ new member application. Approved.

Approval of last month's minutes: Motion to add list of officers attending. Motion Sam N7RHE second Scott AG7T approved.

Relay Editor- Gary KG7KU Not present.

Webmaster- Jim KD7BAT Report by email: There are some new entries on the swap web page that may be of interest to some members. I have also received a listing of Motorola radio equipment that should be posted by Sunday evening. Check out the swap page.

Standing Committee Reports:

Strategic Planning- Daniel KL7WM: 40th anniversary coming up. Looking for ideas.

Facilities- Mike N7WA: Nothing to report.

Education- Tim K7ANE: Announced the library is going to start wrapping it up at 11 AM. Get your books early. Library explained to new member.

Public Service- George AE7G: Meeting to be held after next membership meeting.

Technical- Alan KB7SVU: Not present.

Other committees:

K7LED Relay

VE Exams- Scott AG7T: Awarded three Technician three General, total seven tested. Many Extra applications this month.

Flea Market- Mike N7WA: Starting to get organized for next year, the worker sign up book will be brought to next meeting. March 11/12 is the Flea Market date.

Field Day- Ivy WA7IVY: Will reserve Wagon Wheel shortly. June 25th AND 26th will be Field Day

By-Laws- Dave KB7PSN: Close to publishing a report.

Picnic- Hal N7NW: Not present. Had quorum. Went well.

Old Business: None

New Business:

--Former Club President K7CR elected chair of Society of Broadcast Engineers.

Alligator Award: Roy N7AVN still has the award.

Good of the Order:

--Highline Amateur Radio Club formed, they had a swap meet. Lot of people showed up to buy, fewer to sell. Comments were that it was successful.

--Report: Gene W7AKA is recovering well and should be back in action for Marathon

--Harstine Island tower project (Guy, N7ZG) discussed. Large project, want to have a club activity out there once it is done. Two towers at 150 ft. Will put something in the *Relay*.

--Discussion of swap meet notice, how did people hear about it.

Next Mike and Key Board meeting October 6, General meeting third Saturday of the month, October 16.

Motion to close meeting - Little John, WA7HQQ, second by Eric KE7UYC.

Meeting closed at 10:30pm.

Submitted by George Thornton, AE7G.

M&K Board Meeting Minutes

Meeting Held October 6, 2010

Officers present

President – Ivy Nelson-Groves (WA7IVY)

Vice President – Steve Cook (KD7IQL)

Secretary – Robert Grinnell (KD7WNV)

Treasurer – Dave Smith (KB7PSN)

Activity Manager – Jim Aigner (N7MU)

Radio Officer – Hal Goodell (N7NW)

Trustees present

No. 1 – Tim Kane (K7ANE)

No. 2 – George Thornton (AE7G) (CoB)

No. 3 – Mike Dinkleman (N7WA)

No. 4 – Alan Hughes (KB7SVU)

No. 5 – Daniel Stevens (KL7WM)

Other officers (non-voting)

Relay Editor – Gary Bryan (KG7KU)

Webmaster – Jim Etwiler (KD7BAT)

Trustee Daniel KL7WM called the meeting to order at 1907 hours.

Minutes: Steve KD7IQL noted a correction needed on the September Board minutes: Radio Officer was listed as present but actually was not. A motion to approve the minutes of the previous board meeting, as amended, was made by Ivy WA7IVY, seconded by Steve KD7IQL. Motion passed.

[Continued on Page 10]

October 2010

K7LED Relay

M&K Board Mtg Mins...[Continued from Page 9]

Officer Reports

Chairman of the Board – George AE7G: Not present.

President – Ivy WA7IVY: Will be absent for November General meeting. VP Steve KD7IQL will preside.

Vice President – Steve KD7IQL: New member applicants: Curtiss E. Hedges, KF7LZG. Recommended for approval.

Secretary – Robert KD7WNV: Mail was picked up and delivered to appropriate officers.

Treasurer – Dave KB7PSN: Presented the current budget status. The meeting hall donation has been

Activity Manager – Jim N7MU: Phil De Caire could not make it to present the program at the September meeting. Jim will try to reschedule him to another month.

Mike N7WA would like to have FleaMarket announcements prepared for mailing at the November General meeting again this year, but would like to do it during the meeting (instead of afterward) to keep things from running as late. Robert KD7WNV suggested that we could show a DXpedition DVD for November while processing the announcements, to avoid disrupting a live presenter. Jim said he thought we had seen all the good DVDs, but will review a couple recommended by Frank NA7O. Matt Kozma, AE7MK, will present the October program, on APRS. Maybe Grant Hopper from ARRL in December. Gary W7TRJ has video of last meeting's program; is waiting on release from the speaker. Jim sought direction on content of a video release agreement to have speakers sign. Discussion. Jim will work with Michael KG7MX for legal advice on such an agreement. Gary also has video of 2010 Field Day. Door prizes doing well. Have a Trakker2 and several other items for next month. Discussion of end-of-year door prizes – need not be present to win; can win only one prize. Mike N7WA is proceeding with ideas for an intra-club contest. Will establish an official list of qualifying events. Article to appear in the *Relay*.

Radio Officer – Hal N7NW: The old road up Tiger Mountain has been repaired--can now get up almost without 4WD. Things are working fine; not much activity on 220.

Relay Editor – Gary KG7KU: Not present. Jim N7MU is concerned that no elmers are producing anything for the *Relay*; should we discontinue the section in the *Relay*? Should we continue to publish things that never change? Discussion. Jim will try to find a way to make the Elmer stuff look different from time to time.

Webmaster – Jim KD7BAT: Frank Vyborny, KF7TX, donor of the Club's 756PROII radio, has become a Silent Key. Jim has received a file listing several DXpeditions that will be on the air on 10/10/10. They have coordinated a schedule so as not to interfere with each other. Jim will post on the website. Received email from a party interested in advertising in next year's Public Service pamphlet; forwarded to committee chair Robert KD7WNV. Also received an email from a university professor describing how she has been using our website as a reference in classes for some time.

Standing Committee Reports

Facilities – Mike N7WA: The meeting hall payment was finally made. Close to wrapping up inventory, waiting on details of what is up in the mountains with the repeaters. Hal N7NW has marked up the sheet and is passing it

along to Steve KD7IQL for his input, then will get it to Mike.

Strategic Planning – Daniel KL7WM: Still thinking about things to do for Club's 40th Anniversary. Maybe a large Christmas party. Would like to get a committee together.

Education – Tim K7ANE: The Red Cross will be offering back-to-back Tech and General classes on Tuesday evenings beginning November 2nd (Tech class in the early part of the evening; General class following). Daniel KL7WM announced both Tech and General classes to be offered simultaneously, in different rooms at Station 62 in Federal Way, on a weekend in November. Cost is \$50, which includes course book and exam fee. Tim also indicated that the Red Cross will be conducting a Life Safety class October 23rd, 9:00 AM to 3:00 PM, and a class on preparing for terrorism incidents involving weapons of mass destruction, on Saturday, November 6th from 9:00 AM to 3:00 PM. Red Cross courses are free if you are part of their communications team; otherwise there some cost. Robert KD7WNV announced a Tech class in the north end, sponsored by ESCA RACES in Brier, running Tuesday nights 7-9, October 19th through December 7th. The class itself is free, but students need to purchase their own book and pay the standard \$15 exam fee. Contact is Dan Good at ESCA: 425-776-3722 or dan@esca1.com. Details on all the licensing classes will posted to the Website.

Public Service – George AE7G: Not present. Robert KD7WNV announced we will try to have a standard committee meeting after the October General meeting, to begin working on assignments for next year's booklet. He is compiling information and emails received throughout the year that have bearing on the booklet.

Technical – Alan KB7SVU: No report.

Other Committee Reports

Field Day – Ivy WA7IVY: The Wagon Wheel has been successfully reserved for next year. She is just starting up planning for next year.

Flea Market – Mike N7WA / Hal N7NW: Kickoff meeting next week, Tuesday, October 12th at 7:00 PM at Mike's. Will debrief from last year for ideas for improvement.

By-Laws – Dave KB7PSN: Dave is finalizing the input from last meeting, and will pass on questions to Michael KG7MX before the next committee meeting.

Logo – Jim N7MU: Jim has been talking to a vendor who will set up a virtual store on the Internet. Jim has selected items from various suppliers, but needs help on colors, and items for women. Steve KD7IQL suggested Brendan KD7IKV for colors; Ivy WA7IVY will help with women's items.

Old Business

--Daniel KL7WM noted that we need a chairperson for the Christmas Party.

--Regarding the party with the tower and antenna southeast of Renton, discussed at September Board, Alan KB7SVU indicated that he checked out the tower, it looks safe to climb, and may go up Sunday, October 17th (depending on weather) with Mike N7WA and Steve KD7IQL to take it down. Alan will haul the pieces down to his place for now.

New Business

--Steve KD7IQL reported that of the VE fees that Scott AG7T collects, he holds back a certain portion to cover costs, and now has a surplus that has reached a critical mass where it would need to be returned to ARRL; it will be donated to Salvation Army.

[Continued on Page 11]

October 2010

M&K Board Mtg Mins...[Continued from Page 10]

--Steve KD7IQL pointed out that the Web address "mikeandkey.com" is expiring February 5, 2011. We may be able to apply for it and get it away from current holder, which seems to be a reseller looking for a profit.

--The November Board meeting will be moved to Tuesday, November 2nd, to allow the Treasurer to attend budget discussions. Jim KD7BAT will confirm availability of the Salvation Army hall.

Good of the Order

--Robert KD7WNV expressed his appreciation for George AE7G for filling in as secretary for the September General meeting, while he was out of town participating in the Washington QSO Party, the "Salmon Run." He described how he joined Matt Kozma, AE7MK, and JD Wallace, N8JD, in doing a Field Day-style activation of Skamania County from a (rain-soaked) campground at 4000' in Gifford Pinchot National Forest. With a G5RV antenna at 35', running multi-op, single transmitter on phone only, they had 341 QSOs, including 37 of the 39 WA counties, 44 states, and 4 DX—Japan, Ireland, Brazil, and the Azores.

--Hal N7NW passed around a "mystery" photo of a tilted tower and antenna, which turned out to be a pair of 5-element Yagis pointed at the moon on a polar mount. He constructed the setup in order to work 3D2LR, which was being operated by Lance Collister, W7GJ, of Montana, who went to Fiji to put it on 6-meter EME for two weeks. Hal also has a 9-element Yagi that can only work on the horizon. Although he did not work 3D2LR on the EME setup, he heard him, and was able to work W1JJ and K2ZD. He also did work Fiji on the 9-element on the horizon at moonset.

--There being no further business, Daniel KL7WM adjourned the meeting at 2022 hours.

Attested: Robert Grinnell KD7WNV, Secretary

Frank Vyborny, KF7TX (SK)

Contributed by Sam Sullivan N7RHE



Frantisek 'Frank' Vyborny, born Jan. 14, 1915 in Kutna Hora, Czechoslovakia. During World War II, Frank was captured by the Germans and sent to a work camp. Once liberated, he met his wife, Sara, in Paris. Frank and Sara were among the last few immigrants to travel through Ellis Island.

They eventually moved to Seattle, along with Sara's sister, Deborah, her husband, Victor, and Sara's sister-in-law, Bronka. Frank was known for his undying affection for his wife, who preceded him in death in 1991, and for his devotion to his extended family, including his nephew, Alex Sytman and niece, Janine Rosenbaum (Guttman).

K7LED Relay

Even though Frank survived the horrors of World War II, you would never know it from speaking with him. He was a positive, amiable presence and without foe. Well into his senior years, Frank converted to Judaism perhaps the ultimate statement of victory against the Nazis - and an affirmation that good will conquer evil.

Frank passed away on the first day of Rosh Hashanah, the Jewish New Year, Sept. 9, 2010/1 Tishrei, 5771. Remembrances in his name may be made to the Kline Galland Home, 7500 Seward Park Ave., Seattle, 98118.

Ed. Note- Source: The Seattle Times. -Gary KG7KU

TRAINING OPPORTUNITIES

By Tim Kane K7ANE & Daniel Stevens KL7WM

There are several training opportunities coming up this Fall, including several licensing, upgrade and other courses of interest. Included are:

-- Technician and General evening licensing classes, sponsored by the Red Cross, each Tuesday evening at the ARC chapter, 1900 25th Ave South, Seattle, starting Nov 6 thru Dec 15, and offered back-to-back. The Tech course will be given in the early evening each night, followed by the General class. For further information, contact Kevin Kopp, KE7COD, at the Red Cross, 206-720-5296.

-- Technician and General weekend licensing course, 10, 11, 12 November in Federal Way, at Fire Station #62, cost \$50 (includes book and test fee). Contact Daniel Stevens, KL7WM at DStevensGroup@aol.com for further information.

If you have friends who might want to become hams, pass along the above information.

Two other non-Ham radio classes are coming up at the Red Cross, which may be of some interest:

-- Introduction to Life Safety and Asset Protection, Sat, 23 Oct, 9am-3pm. This is a course for individuals who might wish to assist the Red Cross in safety and security functions during disaster situations. Some background in fire, rescue, law enforcement, or building safety would be useful. Contact Tim Kane K7ANE, for further information.

-- Weapons of Mass Destruction/Terrorism, Sat, Nov. 6, 9am-3pm. This course discusses response considerations for workers and volunteers during WMD and terrorist disaster situations, with emphasis on Red Cross experience and response, but applicable/useful to other responders as well. Again, contact Tim Kane, K7ANE, for further info.

Both these classes will be held at the Red Cross Chapter in Seattle. To registration contact the acting Chapter training coordinator, Carolyn Isom, 206-323-2345.

New Arrivals at the Club Library

Tim Kane – K7ANE



Special Note for 3rd Saturday Library Activity

At the request of our volunteer librarian, on the Saturday mornings of our regular club meetings, books may be checked out before the meeting starts at 10am, and only until 11am. This will allow others to set up for follow-on activities without conflict in the entry foyer area, e.g. VE license testing. Your cooperation is greatly appreciated.

Members have several newly acquired books to check out and enjoy from the Mike & Key library.

As part of our annual efforts to expand and improve our Club library we've just obtained five great new books, suggested by various members:

- **ARRL's Low Power Communications - the Art and Science of QRP, by Rich Arland K7SZ (2009)**
- **The ARRL Handbook for Radio Communications 2010 (including the entire volume on CD-ROM)**
- **ARRL's HF Digital Handbook, by Steve Ford WB8IMY, 4th Edition (2007)**
- **ARRL's VHF Digital Handbook, by Steve Ford, 1st Edition (2008)**
- **The ARRL's General Q&A, 3rd Edition, good through June 30, 2011 (2007)**

The Low Power Communications book includes sections on equipment and station accessories, antennas, operating strategies, emergency communications, and surplus military equipment. The complete assembly manual for the MFJ Cub QRP transceiver kit is also included.

This new QRP volume was donated by a member. Donations by members are always welcome, and gratefully appreciated.

The new 2010 Handbook, now over 1,250 pages, has great new sections on digital communications technology, solid state RF power supplies, switch mode power supplies, as well as projects for antennas, solid state amplifiers, and more.

The HF Digital Handbook covers assembling your digital station, RTTY, PACTOR, PSK 31, Winlink 2000, and other topics. The VHF edition includes packet radio fundamentals, APRS, D-Star, and much more.

The General Q&A will give you the entire Element 3 question pool, to aid in your license upgrade preparation and review.

Some additional volumes, mostly older, were donated by Universal Radio. Included are:

- **Listening to Longwave – the World below 500 KHz, by Kevin Carey, 1st Edition (2007)**
- **Discover DXing!, John Zondio, 3rd Edition (2006)**
- **Joe Carr's Loop Antenna Handbook, 1st Edition, (1999)**
- **RTTY Today, by Dave Ingram K4TWJ (1983)**
- **The RTTY Listener, Issues 1-25, Editor Fred Osterman, 2nd Edition (1991)**
- **Buying a Used Shortwave Receiver, by Fred Osterman, 4th Edition (1998)**

Thanks to the tireless efforts of Toku (AD7JA), who brings the library holdings to each meeting, any of these books can be checked out at any regular Club meeting. Members can retain a book for up to a month at a time.

Or you can check them out any workday at the M&K Club library in Toku's television service shop in the Skyway neighborhood of Seattle, not far from the Club's Renton meeting site.

The library is located in Skyway Radio & TV Service, 11818 Renton Avenue South, Seattle. It's just across from the Skyway Park Bowling center. You can't miss Toku's tower and multi-band HF Yagi!

It was also suggested that the library obtain some video DVD's or tapes of DXpeditions and other Ham events. Research found that most of these videos are available for free short term loan to Clubs, for only the two-way postage.

We'll coordinate with the program chairman, and schedule some for upcoming meetings. Let us know if any DXpedition has especially caught your imagination, and we'll see what we can do.

If you want the Club to obtain other particular books or have some volumes you'd like to donate to the library, contact Tim K7ANE.

Scott Robinson AG7T Presentation – Propagation Credits and References PowerPoint Slide

Introductory Credits

- **Marc Tarplee, N4UFP** for many slides in this presentation
 - http://www.arrl-sc.org/tech_presentations
- **Marcel H. De Canck, ON5AU** for his great Propagation Column in Antennex online magazine (diagrams and ideas)
 - <http://www.antennex.com>
- **NOAA Space Environment Center** (data and history)
 - <http://www.sec.noaa.gov>
- **Jim Secan** of Northwest Radio Associates (data)
 - <http://www.nwra-az.com/spawx>
- **Greg Hand** now retired from Institute for Telecommunication Sciences (Modeling Software)
 - <http://www.greg-hand.com/hf.html>
- **University of Massachusetts Lowell Center for Atmospheric Research** (data)
 - <http://umlcar.uml.edu/DIDBase>

2

License Renewal Online

By Gary Bryan KG7KU

I absolutely **FREAKED** when I received my Amateur Radio License Renewal Notification in the mail. Just the concept that my Ham Radio privileges would go 'poof' in an instant caused quite a bit of anxiety.

This was a big deal. OMG – INOP – SHUT DOWN.

So I wrote the date of 90 days prior to License expiration on the envelope and set it aside for a quieter time when I would be at less of an emotional impasse.

After some thought, I sent an email to our very own VEC-Scott Robinson AG7T (ag7t@arll.net) and requested information on how to go about it. The response from Scott was prompt and registered in a confident tone. He said the Online renewal process is probably the best – it is easy – which made it seem like it was no big deal, and that had a calming effect on me.

It came time – and I mustered up the courage, even had my coffee ready for the 'Online Onslaught.'

Given my awkwardness in producing an FCC Registration Number (FRN) and setting up the registration account, the whole thing took all of 30 minutes. I even felt good about the enabling of managing my personal FCC account to allow making future updates affecting my license. Wow... Whew... Cool!

What about you? Where might you be in the process? You can set up your account for editing at any time, and I suggest that you do so as soon as practical. For me, it created an excitement and an awareness of all the resources available to me at the ARRL website www.arll.org.

Here's a starter kit. If you have received the License Renewal Notification, then you are already on the ARRL trail, since they are the ones who provided this as a courtesy. The first four cover sheet pages will help direct you.

Extensive resources and links are available at the ARRL website www.arll.org. Once there, for license renewals, follow the links: 'Licensing, Education & Training' – 'Licensing, Preparation & Exams' – 'FCC License Info & Forms' – 'Call Sign Renewals or Changes' – 'Learn More.' You will be taken to a complete step-by-step description of the process, and the reading begins as follows:

"Amateur applications can be filed manually using paper forms or electronically over the Internet. Amateurs may electronically renew their FCC-issued licenses "on line" via the FCC web using [FCC ULS](http://www.fcc.gov). FCC permits on-line renewals at 90 days or less before a license will expire, and when the license has expired but is still within the two-year grace period for renewal. Licenses that have been expired for more than two years are not eligible for renewal or reinstatement."

Hey, renewing online is easy – just go ahead and do it.

2010 -- Ham Nets & Events -- OCTOBER / NOVEMBER

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
10 1915 -- Kids Net 145.49 (Weekly) 2000 -- King Co. ARES Net 147.08 (Weekly) 2200 -- NW Astronomy Net 145.33 (Weekly) 2030 -- Snohomish Co. ARES Net 146.92 (Weekly)	11 0545 & 1645 --Weather Net 145.33 (M-F) 1730 -- Puget Sound Traffic System Net 146.82 (Daily) 1800 -- WA Emerg. HF Net 3.985 (Weekly) 1830 -- WA ARES Net 3.985 (Weekly)	12 2000 -- Seattle Red Cross Communica- tions Team Net (includes Elmers Corner) 146.82 (Weekly) M&K FleaMarket Meeting 7pm - Mike NTW/A's House - (2222 148 th Ave SE Ken, 98042)	13 2000 --General/Tech Information Net 145.33 (Weekly) 2000 -- Educational Radio Net -- PSRG 146.96 (Weekly) 2000 -- HARC CW Net 28.055 (Weekly)	14 1900 -- M&K Public Service Net 146.82 (Weekly) 2000 -- Computer & Packet Net 145.33 (Weekly)	15 2000 -- Youth Net 145.33 (Weekly) PACIFICON October 15-17 San Ramon, CA. http://www.pacificon.org/	16 1000 -- M&K Club Meeting, Renton 1230 -- M&K Ham Radio Exams, Renton 2000 -- HARC CW Net 28.055 (Weekly) Hamfest SARA Fleamarket. Calgary, Alberta.
17 2100 -- LDS Net 146.82 (Weekly)	18 1900 -- Seattle ACS Net 146.90 (Weekly) 1930 -- PSRG Net 146.96 (Weekly) 2000 -- YL Net 145.33 (Weekly)	19 2000 -- Snohomish Co. RACES Net 146.92 (Weekly)	20 2100 -- NWSOAR Net 146.82 (Weekly)	21	22	23 0900 -- WA ARES HF Net 3.985 (Weekly) 2000 -- Amateur TV Net 147.08 (Weekly) Hamfest Snoapoberfest, Mid-Valley ARES, Polk County Fairgrounds, Rickreall, OR. Contact: Chris Portal, W7CLP (503)559-7837. W7CLP@arrl.net 520 South Pacific Highway http://www.snoapoberfest.net
24	25	26	27	28	29	30
31	01 -NOVEMBER-	02	03 M&K Board Mtg Salvation Army, Renton, 7pm (Subject to change)	04	05	06 Public Service- Veterans Day Parade -- Auburn, 9am. Contact- Al WV7R 206-240-6400, radio@seafairparadema rshals.org
07 Hamfest- Maple Ridge Amateur Radio Club Swap Meet Pit Meadows BC. Contact Nick, (604)465- 9476. ve7Nt@telus.net . http://www.mra.c.ca	08	09	10	11	12 Relay Articles Due 23:59:59	13