

CLALLAM COUNTY
AMATEUR RADIO
CLUB



BV Rambles:

Our first board meeting for the New Year was held on January 31st, minutes are else where in this QTC. One of the more important decisions made, was to have a youth out reach program to the middle and high schools. Dennis Tilton, WA6QWK has agreed to lead this endeavor, with Bob Kennedy AC7RK; Paul Honore', W6IAM; Bill Carter, W7WEC and Tom Newcomb, KE7XX filling out the committee. Hopefully we can get some volunteers in the other school districts (Forks, Joyce, Sequim) to make contact with their Middle and High schools to set up presentations and eventually Technician/General classes.

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Another item approved by the board, was a motion by Paul Honore' for the club to donate money to the ARRL Scholarship Fund.

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Paul made another motion, which was approved, to support a request for a Space Lab contact with one of the local schools. This idea was wrapped up within the committee headed by Dennis.

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Don't forget to make plans for the Mike and Key Flea Market March 8th, 0900, PUYALLUP Fairgrounds. This is your chance to pickup a used power supply or a used HF rig. Lots of goodies like nylon bags, or pickup a new battery for your hand held. See some of the newer Icom equipment.

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The raffle for the Kenwood TM-710 dual band mobile rig is plodding along. Sales have slowed down and unless 200 tickets are sold this will go the way of the wind. Proceeds will go our local ARES group to buy equipment. By permission of the ARRL there is a reprint of the recent QST review of the rig in this QTC issue.

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If you are not an ARRL member, let me make a pitch for you to join. Your membership fee gets you a very worthwhile magazine with lots of information, how-to articles, and reviews such as the TM-710 one reprinted in this QTC issue. It also supports the ARRL in its endeavors to represent U.S. Amateur Radio in Washington D.C. and the international agencies responsible for frequency allocations. While not everyone would agree with all their views, it is certainly better than ten thousand different voices!

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Another pitch is for you all, who have not paid your yearly membership to the Clallam County Amateur Radio Club to send in your membership to help the club continue to support the repeater that many of you use daily through out the county to stay in touch with one another. A budget is in this QTC issue. It is by these monies the club functions. Clearly you do not want to miss out on receiving the QTC on time in March, which is the cut off date by the Bylaws.

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As you can see by the minutes of the board meeting, participation brings forth many ideas to further our hobby, ultimately this will serve to keep our hobby alive and well.

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Tom Mitchell, KG7U answered the call for volunteers for the Official Observer program and has subsequently been appointed an OO for Clallam County. Congratulations Tom.

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Thank you for the space and your time.

Chuck N7BV

Get Your License Here!

Due to a decline in candidates this year, our plans for 2008 are to conduct training and an VE exam twice a year during April and September. We will accommodate a VE Examination in between these dates, as needed.

The PA Fire conference room has been scheduled for:

1. Saturday April 12, 19, 26, 2008
2. Saturday September 13, 20, 27 2008

Please have your candidates order manuals direct from the ARRL <http://www.arrl.org/hrlm/> or through Tom or I.

Contact: Chuck Jones, 452-4672 or Tom Newcomb 452-8228

Guess What! It's dues time again. The By-laws call for dues to be paid in the first quarter of the year.

To support our club and our repeater we need to stay current with our dues. See David McCoy at a meeting or mail a check for \$20.00, made out to CCARC, to: PO Box 2562 Sequim, WA 98382

We need articles for the QTC newsletter. This is after all 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 the better our newsletter will be.

Thanks, the staff!

PROGRAM FOR 13 FEBRUARY 2008

Mr. Jerry Nichols will be sharing some of his experiences in helping coordinate the activities of 4 aircraft accidents as well as terrorist attacks on his company's facilities/aircraft and how these experiences are helping him coordinate with the County and State for use of private aircraft in times of disaster. Because it interfaces and utilizes communications assistance from ham radio organizations like the Clallam County Amateur Radio Club, in addition to the Amateur Radio Emergency Service (ARES), it promises to be very interesting to all radio operators and members of the public.

Janet Parris

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.

As promised, here's the first installment of *Electronic Fundamentals* -- many more to follow. It's been fun putting this course together. I hope you enjoy it as much as I've enjoyed creating it. -PH

Electronic Fundamentals (Unit-1)

Direct Current; Ohm's Law; Watt's Law

Direct current exists everywhere in nature, including the human body. Electro-chemical exchanges of information between cells determine how we perceive the external world and how we react to it, Electric eels manufacture and store high voltage charges to stun or kill their prey. And we are all familiar with static electricity and lightning discharge.

The earliest documented effort to generate and store electrical energy is credited to William Gilbert c1550, although experiments with electrostatic charges can be traced to the ancient Greeks who discovered that amber could accumulate a charge by rubbing it with cloth. In fact the term **electricity** comes from the Greek word for amber, $\eta\lambda\epsilon\kappa\tau\rho\nu$ (*ilektron*).

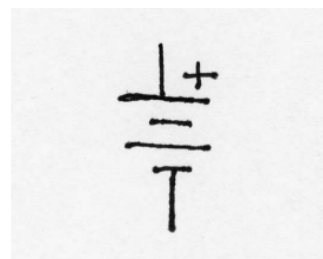
In 1800, Alessandro Volta, trying to duplicate the electro-chemical action of the electric eel, patented the "electric pile" made from zinc and copper discs separated by salt-water soaked cloth. Any time dissimilar metals are separated by a saline or acid solution, electrolytic action will take place. Ions will migrate through the solution from one metal to the other creating a difference of potential or **voltage** between them. You can do a simple "kitchen" experiment to prove this. Take an iron nail and a copper wire and poke them into an onion or a grapefruit. Connect a sensitive voltmeter to the nail and the wire and you will read a tiny but measurable voltage. Anyhow, Volta's electric pile remained a laboratory curiosity for nearly a hundred years, until the invention of the automobile created a need for a high capacity, re-chargeable battery. By 1918, the *Willard Company* was supplying lead-acid storage batteries to 80% of automobiles manufactured in America.

The lead-acid battery contains alternating plates of hard and spongy lead immersed in a bath of dilute sulfuric acid, H_2SO_4 . The schematic looks like this:

The positive terminal is indicated by the longer "plate" and the negative terminal by the shorter "plate." Rechargeable and non-rechargeable batteries, can be found in all sizes and shapes and fabricated from a variety of materials, but whatever the configuration, the goal is the same -- to supply a constant source of electrical energy for a reasonable length of time.

Direct current, **DC**, can also be generated by photovoltaic means -- direct emission of electrons by exposure to light, and by fuel cells, -- electron emission by combining gases such as hydrogen and oxygen. So far, these are not significant sources of electric current. The most common alternative to the battery is still the electric generator which converts mechanical energy to electrical energy by means of **magnetic induction**.

You can demonstrate magnetic induction by passing a magnet across a coil of wire to produce a pulse of electric current. Of course a single pass of the magnet wouldn't be much use but if you wind the coil around an armature and arrange it so that the free ends of the wire brush past a pair of electrical contacts and rotate the armature between the poles of a magnet, a series of electrical pulses will result. Current is interrupted each time the armature makes a half revolution but it always flows in the same direction.



Tom Edison used this approach at the end of the 19th century to make wholesale distribution of electric power feasible.

In nature, for every action there is an opposing reaction. So it is with electricity. We can have a source of voltage and we can connect a load to it to do useful work but there is a certain amount of "loss" -- **resistance** to the flow of current in a circuit. If there were not, we could build a source of infinite power - a perpetual motion machine. Every electronic component exhibits resistance to the flow of current. It can work against us or it can be useful. Either way, we need to know the amount of resistance in order to predict its behavior.

A simple direct current, **DC**, circuit looks like this.

I'm using a battery here, but you could substitute any available source of power. The "load" is an incandescent lamp. As long as the two are connected and there is power available from the source, electrons will flow from the negative terminal, through the load, to the positive terminal. The lamp will light.

A controversy used to rage about which way current flowed in a circuit. That was before it was certain that current was a flow of electrons (negative charges) toward a positively charged terminal. Until then, it was thought that the mysterious "current" must logically flow downhill, from the greater to the lesser potential -- the positive to the negative. Nowadays, electron flow and current flow are considered to be the same. It really doesn't matter as far as we are concerned but, for the sake of consistency, throughout these discussions I will consider current flow to be from negative to positive.

This has led us to two very important "laws" that I recommend you commit to memory -- **Ohm's Law** and **Watt's Law**. The first, Ohm's Law, named after the German engineer and teacher, Georg Ohm, who discovered it, is expressed as $I = E / R$ where **I** = Current in Amperes, **E** = Electromotive Force in Volts, and **R** = resistance in Ohms, (Ω). Let's take an example: In our circuit, suppose the battery voltage, "**E**", is **12 volts**. and the load has a resistance, "**R**", of **6 Ohms**. What current, "**I**", will flow in the circuit?

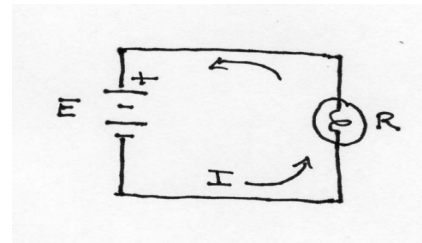
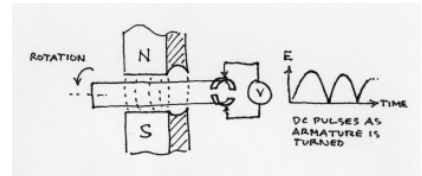
Answer: $I = E / R$, $I = 12 / 6$, $I = 2$ Amperes

Suppose the current is measured as **3A**, and the voltage is **12V**.. What is the resistance of the load?

Answer: $I = E / R$, $3 = 12 / R$, $3R = 12$, $R = 12 / 3$, $R = 4\Omega$.

Now, suppose the current in our circuit is **1A** and the load resistance is **6 Ω** , What is the applied voltage?

Answer: $I = E / R$, $1 = E / 6$, $6 \times 1 = E$, $E = 6V$



Ohm's law expresses the relationship between voltage, current and resistance in an electrical circuit but that's not all there is to it. It's also necessary to know how much power a load is dissipating. This brings us to

Watts Law The **Watt, (W)**, is the unit of power in electricity. The formula is

$P = I E$ where **P** = power in Watts. **I** and **E** we already know from Ohms Law. So, how much power is a load dissipating if it is drawing **3A** of current from a **6V** battery?

$$\text{Answer: } P = IE, P = 3 \times 6, P = 18W$$

Suppose we know how much power the load is dissipating and we know the source voltage, but we want to know how much current is flowing in the circuit.

$$\text{Answer: } P = IE, 18 = I \times 6, I = 18 / 6, I = 3A$$

Ohms Law and Watts Law are the most important formulas at your command. With them, you can determine most of the things you need to know when servicing electronic equipment. If you can measure any two circuit values, you can calculate the rest using these formulas.

In this unit we've explored ways of generating direct current and learned how to calculate voltage, current, resistance, and power in a circuit..

Next, we'll discuss alternating current.

Terms to remember:

| | |
|-------------------|---|
| E | Electromotive force in Volts (V) |
| I | Current in Amperes (A) |
| Ω | Ohm |
| Ohm's Law | $I=E/R$ |
| P | Power in Watts (W) |
| R | Resistance in Ohms (Ω) |
| V | Volt |
| W | Watt |
| Watt's law | $P=IE$ |

Paul Honore' W6IAM

Club Repeater

These pictures were taken a number of weeks ago as Bill Johnston, K7WZ, our repeater trustee, was replacing the FCC license on the Striped Peak repeater station.



On the top is an Astron 12 volt power supply which charges the emergency battery (unseen) on the floor. Under normal circumstances it provides power to all equipment.

Behind the gold colored door is the GE Master II repeater.

The silver looking shelf is a rack of 8 (yes, eight) fans used for cooling of the GE repeater.

The next shelf down with the black box on the right and the two silver round objects is the UHF control link radio and antenna filtering.

The next shelf down that is black is the controller that does all the repeater timing, voice announcements and ID. It is this device that hangs up now and then and causes the repeater to hang on the air.

The blue shelf is a pull out table top.

The tall silver device sitting on the floor is the duplexer that allows transmission and reception, simultaneously, on one antenna.

As a point of interest, the UHF control link radio is what receives UHF transmissions from Ellis Peak and Carlsborg remote 146.760 MHz. receivers. The audio received at the remote receivers is sent down the UHF link to Striped Peak, converted back to audio and plugged into the repeater controller which in turn sends it back out on the repeater transmit frequency for all to hear.

Striped Peak's main building and two antenna towers.



Close-up of fan rack on top; UHF link radio in middle; and repeater controller on bottom.



Winter Field Day

Out here in Joyce, we just beg for yet another reason to drag all of our radio gear outside, move the antenna systems, and reroute miles of Coaxial feeding the system. This Winter field day was just another excuse for us to do such.

We started out deciding just where we could setup, thinking that we may be able to do Salt Creek. After some planning problems, we decided that we could just camp out in the woods here on the property. Just about the time that brainstorm crossed our lip's, the temperature seemed to drop 25 degrees. Perfect time for a cold front to move into the area, with temperatures dropping down to the teens at times. we then decided, thanks to Becky, that it may be good idea to use the small shed out in the yard. We rounded up the boys, and moved about a cord of wood to the back shed, and went to work setting up our station. I also decided to set up a small battery system to run the radio's, and just run a battery charger off the generator every couple of hours. That would help to cut down on the noise, as well as save on the gasoline. we then set out to weatherproofing the shed. we stapled plastic to the inside frame to help keep in some heat. we then ran a small space heater to help warm things up a bit. It only warmed things up a bit.....

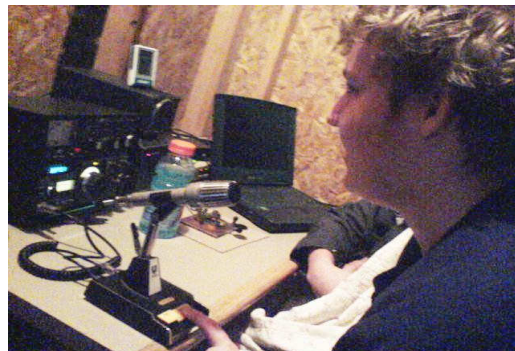
After getting a good nights sleep, we woke up at 8AM Saturday, an hour before the contest was to start. We got the coffee started and headed out to the shack to get things started. We spent most of the day on 20m, with me jumping to 15m and 10m a few times searching for new contacts. All in all Jody made 5 times the contacts I made. we had decided to have Jody do phone, while I handled all the CW work. There just weren't that many CW stations on the air. The few contacts that I did make were far and few between. At 3:30, when 20m was starting to drop out, I setup a quick 40m dipole out of bell-wire, strung it up in the tree's and was back on the air for 40m. I was able to make some really good CW contacts on 40m, up to about 8:30PM when the band went flat. About that same time 80m seemed to drop out as well, and the contacts were far and few again. after 4 more hours of almost nothing on either bands. we decided we had enough. we shut down and called it a night.

The thing I found the most frustrating about this contest was trying to explain to people what it was, and why we were doing it. I know, I can hear you grumbling that we already have a field day in the summertime, why bother with 2, but to me it would make more sense to try and make contacts when the weather isn't so nice, and it's cold outside. We aren't always going to have emergencies when the weather is nice. I was really disappointed at the lack of people on the air practicing the skill's needed to handle such an environment. I know, I know, there's always next year.....

All in all it was great fun, and we had a good time setting up all of our gear, company of some really good friends, and learned a few things. Thanks to Becky (KE7KWG), Jody(KE7LKA), Becky's son Jeffrey, Jeff(KC9HNL) and John (KERFO) for helping and participating in this great event with us.

Hope to see you on the air next year.....

Theron KC7NPP



CCARC Student Outreach

By Dennis Tilton WA6QWK

In late January I was asked to chair a committee to develop an ongoing program to make middle and high school students in the Port Angeles/Sequim areas aware of the opportunities available by participating in the fun, exciting and educational hobby of Amateur Radio. Our first step was to contact Cindy Crumb, the principal of Lincoln High School in Port Angeles.

Bob Kennedy, Bob Sampson and I had a very productive meeting with Cindy on Wednesday 6 February. We explained our goal of establishing the program with the following CCARC commitments:

1. Members of the CCARC are willing to give demonstrations, conduct licensing classes, provide mentoring, tutoring and facilitate equipment acquisition.
2. Special emphasis will be placed on learning to work with the newer digital/computer operating modes that have become available in the last few years.
3. Help to establish a communication link from at least one of the schools to the International Space Station.
4. Make teachers aware of the ARRL sponsored "Teacher Education Program" and help to bring that about.

Cindy is excited about the prospects and has agreed to contact the math and science teachers in Port Angeles with the goal of setting up another presentation to be given by us within the next week. Our ultimate goal is to establish the program and expand it out as far as Forks. Once the teachers are aboard, the next step will be to do a true "dog and pony show" with the interested students. This will include on-air demonstrations of digital modes, SSB and CW.

We especially solicit input from club members in the Forks area who would be willing to Elmer students in that area.

This is an exciting opportunity to grow youth participation in amateur radio in our area. Please feel free to submit your ideas and suggestions to any of the committee members.

Continued top of next column...

CCARC Student Outreach Committee Members

| | |
|----------------------------|----------------------------------|
| Dennis Tilton WA6QWK Chair | wa6qwk@wavecable.com 452-1217 |
| Bob Kennedy AC7RK | ark@wavecable.com 457-6177 |
| Bill Carter W7WEC | w7wec@arrl.net 681-4375 |
| Tom Newcomb KE7XX | ke7xx@arrl.net 452-8228 |
| Paul Honore W6IAM | w6iam@olyphen.com 457-9110 |
| Bob Sampson K6MBY | k6mby@olyphen.com 582-9116 |
| Chuck Jones N7BV | n7bv@yahoo.com 775-8201 |
| Rebecca Winters W7RJW | w7rjw@yahoo.com 928-0127 |



Please welcome our new members who have joined the club in 2008.

- Alton, Michael S. KC7VXW
- Brown, Steve & Sue NL7US
- Church-Smith, Henry A. (Pete) & Missy KG4IXZ
- McPherson, Robert W. (Bill) & Nancy KE7RFM



Merry Christmas to You from Roger and Priss! 2007 has been a VERY eventful year for us, and now—we're writing from a whole 'nother world! The first of January we returned to Washington after our 6,600 mile trip last fall that took us gypsy-style in our motorhome as far east as Branson MO. We were joined in Missouri by a new Beagle puppy, Chester, and what a treasure and joy this little fellow has brought to our lives!

Priss taught Photoshop, & Digital Scrapbooking classes through Winter and Spring quarters for Peninsula College, and wound up a year of work with Scrapper's Guide (an online company for training digital scrapbooking.) In May she turned all her energies to "Scrapfest," two activity-packed days for digital scrapbookers and digital photography buffs who came to Sequim during the Sequim Lavender Festival. But that's not all that was happening in June and July. Rog enjoyed activities and participation (and Chairing the Board) of the Clallam County Amateur Radio Club, and, for the fifth year, we "put on" the food service for the annual Field Day Celebrations.

For several years we have considered buying property in the southwest, and have been watching plans develop for a new Del Webb Sun City in Mesquite Nevada. This came into reality this year—and Rog found himself in Mesquite for a VIP preview of a 4500 home community in May. He liked what he saw; he stepped up to the plate, and Father's Day weekend; we both flew back, picked out a lot, a floor plan, a house—and a new lifestyle!.....wrote the check, and.....

We went back to Washington as new home owners! We put our Sequim property on the market, and were shocked and thrilled that it sold in 3 days! Within a few weeks escrow closed, and we found our "stuff" warehoused in storage in Kent, WA, and we were on the road again for another autumn in our motorhome.. With start of construction not scheduled until December, we planned a side-trip, fishin-trip, sightseeing-trip, through the Pacific Northwest, and American West. But a month into our excursion, Priss broke her foot. After seeing an Orthopedic Surgeon in Portland, we bee-lined it for Nevada and set up in the Desert Skies RV park in Mesquite for the winter. Nothing is farther than four steps in our motorhome, so healing and repair were accomplished and she's walking fine now (not far) but fine now! On December 10th ground will break for the new house—with completion and occupancy expected March 10th. Del Webb has a strict build schedule, and once ground is broken, everything happens like clockwork right up until the minute you have the keys...guaranteed sixty working days later!

We're extremely excited, and thoroughly enjoying being back in the Desert Southwest again, and while we will terribly miss our dear friends & the lush green of the gorgeous Pacific Northwest, we are closer (4-5 hours) to the SO CA Family. Priss is teaching (tutoring and a small Photoshop class at the Resort) and looking forward to what's around the corner next year within the Del Webb Community. Roger is enjoying the tiny Amateur Radio Club in Mesquite, and is setting about to volunteer in the Community. We're both taking advantage of the wonderful Recreational Center at Sun City Mesquite, the putting course, the pools, the walking trails and some community events. Everything about our year is all chronicled on our blog, we hope you'll enjoy following our gypsy trail this year. Check it out <http://www.pssequimages.blogspot.com>.

Until March 2008, our regular mail address will remain PMB 70, 609 West Washington #11, Sequim, WA 98382.

AFTER March, 2008, our regular mail will be 1074 Wagon Trail, Mesquite, NV 89034. Until we are in our new house, our telephone numbers are: 360-775-0454 and 360-775-6056. Our new e-mail addresses are w7grs@beyondbb.com and prissequite@beyondbb.com. We can always be reached, too, at: pssequim@yahoo.com, or pssequim@fastmail.fm

W7GRS & W7PRS
Wishing you Everything Great in 2008!

PRODUCT REVIEW

Kenwood TM-D710A Dual Band Mobile Transceiver



Reviewed by Howard Robins, W1HSR
ARRL Contributing Editor

How do you improve on perfection? That was the question I asked myself when Kenwood introduced the TM-D710A. I have been using its predecessor, the TM-D700A, for nearly five years, and considered it the finest, most feature-rich dual band mobile I had ever used.¹ So, when tasked with checking out the TM-D710A, I saw it as a great opportunity to answer my question.

Overview

The TM-D710A has the same core features and functions as Kenwood's TM-V71A.² The list is extensive, including a dual band receiver, 1000 memory channels, flexible scanning, tone squelch encode and decode and so on. As shown in Table 1, the 'D710A's performance is nearly identical to the 'V71A. The wide coverage receiver is best on the 2 meter and 70 cm bands, but sensitivity is good over much of its range. As with the 'V71A, you can listen to both receivers at the same time (both tuned to VHF, both UHF or one of each). Transmitter power is 50 W on both bands. Much of this review will focus on the data communication features not found in the 'V71A and significant changes from the 'D700A.

The 'D710A includes EchoLink sysop

capability described in detail in the TM-V71A review, as well as an internal TNC with Automatic Packet Position Reporting System (APRS) and AX.25 packet functionality.^{3,4} It's the APRS capability that the TM-D700A is best known for. With my 'D700A, I started with a Magellan GPS receiver and later upgraded to an AvMap G4T. Both GPS receivers worked well, but the G4T provides a large, brilliant color map that shows the *full* call sign and subsystem ID along with the location of received position beacons. We ordered the new AvMap G5 GPS receiver to use with the 'D710A. It's shown in the title photo and described in an accompanying review.

My TM-V71A review discussed Kenwood's *MCP-2A* memory programming software. *MCP-2A* works with the 'D710A too, requiring the same optional PC interface cable set. As with the TM-V71A, you can import repeater lists created with ARRL's *TravelPlus for Repeaters* and download them to the TM-D710A's memories.⁵

³EchoLink software allows licensed amateurs to communicate with one another over the Internet, using voice-over-IP (VoIP) technology. Connections may be made from station to station or from computer to station. For detailed information, software and registration, visit www.echolink.org.

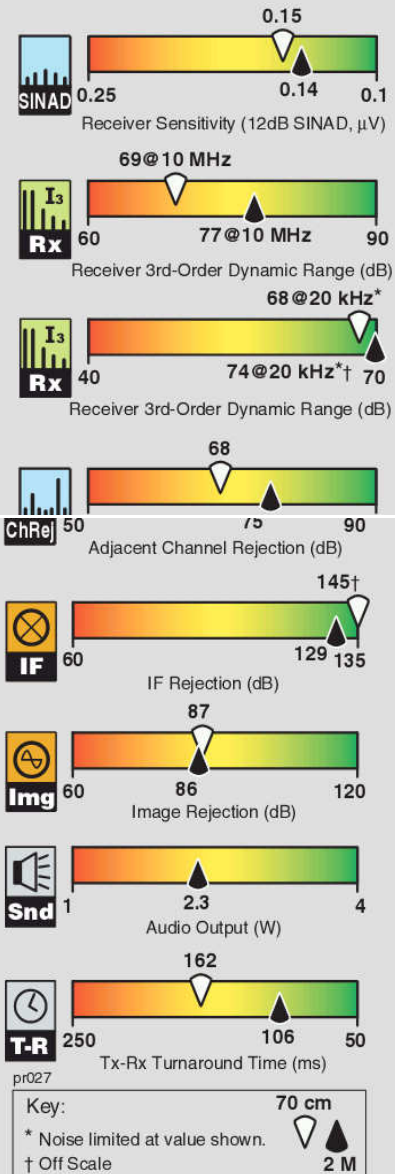
⁴APRS was developed by Bob Bruninga, WB4APR, to support rapid reliable exchange of information among amateurs connected to a network via packet radio. For more information on the technology and many useful links, see www.aprs.org.

⁵*TravelPlus for Repeaters* CD-ROM, 2007-2008 edition. Available from your ARRL dealer or the ARRL Bookstore, ARRL order no. 9930. Price, \$39.95 plus shipping. Telephone 860-594-0355, or toll-free in the US 888-277-5289; www.arrl.org/shop/; pubsales@arrl.org.

¹S. Horzempa, WA1LOU, "Kenwood TM-D700A Dual-Band FM Mobile Transceiver," Product Review, *QST*, May 2000, pp 60-64. *QST* Product Reviews are available on the Web at www.arrl.org/members-only/prodrev/.

²H. Robins, W1HSR, "Kenwood TM-V71A Dual-Band Mobile Radio," Product Review, *QST*, Nov 2007, pp 71-74.

Key Measurements Summary



Bottom Line

Kenwood's TM-D710A refines and enhances the capabilities found in the venerable TM-D700A. The 'D710A has all the features you expect for FM voice operation, plus a built-in TNC for APRS and packet as well as support for Kenwood's Sky-Command II remote control system.

In addition to a very basic printed book, a lengthy TM-D710A *Owner's Manual* is provided on a CD-ROM in multiple PDF files. Kenwood did a great job on much of this document. There is a lot to know about this radio, and the organization and detailed content mitigate much of the complexity. The radio's menus are also very well organized and leave little to the imagination. I strongly recommend participation in the Yahoo Groups that have been established for APRS, the TM-D710A and the AvMap G5. As good as they are, the manuals only scratch the surface, and interaction with other users will help you get the most out of your investment.

Little Black Box

The TM-D710A main unit can be mounted in any convenient location. A recessed RJ-45 modular jack on the front panel is for the umbilical cable from the control head. Another RJ-45 jack, on a side panel, is for the microphone.

Your antenna connects to a single SO-239 jack on the rear panel. A 6-pin mini-DIN data port is typically used to connect to an external TNC or PC sound card, while an 8-pin mini-DIN PC port connects to your computer's RS-232 serial port via an optional cable. The internal speaker provides superb audio quality, but you can connect external speakers for each of the receivers.

Control Head

As with the 'D700A, the 'D710A control head doesn't attach to the main unit. The radio comes with a desk mount and a mount for vehicle installation. The head is easily detachable so you don't have to leave it in your vehicle. (TM-D700A instructions warned about losing the control head: There are no direct replacements. Kenwood recently introduced the RC-D710A control head to convert a TM-V71A to a TM-D710A. The RC-D710A can be purchased to replace a lost 'D710A control head, but better to just treat the one you have with care.)

The control head's mounting arrangement is the same as for the 'D700A, but the connectors are RJ-45, not RJ-11. This is because the GPS receiver now connects to the control head, not the main unit. If you are replacing an installed 'D700A with a 'D710A, you will have to change out the umbilical between the main unit and the head and you won't need the GPS wire.

The control head has a COM port on the back not found on the 'D700A. It's for using the internal TNC for packet communication. Note that memory programming with the *MCP-2A* software requires connection between your computer's serial port and the

Table 1
Kenwood TM-D710A, serial number 90600349

Manufacturer's Specifications

Frequency coverage: Receive, 118-524, 800-1300 MHz (cell blocked); transmit, 144-148, 438-450 MHz.

Power requirement: Receive, 1.2 A (2 W audio); transmit, 13 A (max).

Modes of operation: FM.

Receiver

AM sensitivity: 10 dB S/N: 118-174 MHz, 0.4 μ V; 174-230 MHz, 0.5 μ V; 230-300 MHz, 5.6 μ V; 300-350 MHz, 1.0 μ V; 350-400 MHz, 0.56 μ V; 400-500 MHz, 0.36 μ V; 500-524 MHz, 0.71 μ V.

FM sensitivity, 12 dB SINAD: 118-174 MHz, 0.32 μ V; 174-230 MHz, 0.4 μ V; 230-300 MHz, 5.6 μ V; 300-350 MHz, 1.0 μ V; 350-400 MHz, 0.56 μ V; 400-500 MHz, 0.28 μ V; 500-524 MHz, 0.56 μ V; 800-1240 MHz, 7.1 μ V; 1240-1300 MHz, 2.2 μ V.

FM two-tone, third-order IMD dynamic range: Not specified.

FM two-tone, second-order IMD dynamic range: Not specified.

FM adjacent channel rejection: Not specified.

Spurious and image rejection: Not specified.

S-meter sensitivity: Not specified.

Squelch sensitivity: 0.1 μ V.

Receiver audio output: 2 W at 5% THD into 8 Ω .

Transmitter

Power output (H/M/L): 50/10/5 W.

Spurious-signal and harmonic suppression: 60 dB.

Transmit-receive turnaround time (PTT release to 50% audio output): Not specified.

Receive-transmit turnaround time (tx delay): Not specified.

Bit-error rate (BER), 9600-baud: Not specified.

Size (height, width, depth): Main unit, 1.7 \times 5.6 \times 5.7 inches; control head, 2.8 \times 6.2 \times 1.5 inches; weight: main unit, 2.6 pounds; control head, 0.66 pound.

Price: TM-D710A, \$600; VGS-1 voice unit, \$70; PG-5H PC interface cable, \$60.

Note: Unless otherwise noted, all dynamic range measurements are taken at the ARRL Lab standard spacing of 20 kHz.

*Measurement was noise limited at the value indicated.

Measured in the ARRL Lab

Receive, as specified; transmit, 144-148, 430-450 MHz.

Receive, 1.4 A; transmit, 9.6 A. Tested at 13.8 V.

FM, AM (receive only).

Receiver Dynamic Testing

For 10 dB S+N/N: 120 MHz, 0.55 μ V.

For 12 dB SINAD: 144 MHz, 0.14 μ V; 222 MHz, 0.25 μ V; 430 MHz, 0.15 μ V; 906 MHz, 1.9 μ V; 1240 MHz, 1.5 μ V.

20 kHz offset: 146 MHz, 74 dB; 440 MHz, 68 dB,*
10 MHz offset: 146 MHz, 77 dB; 440 MHz, 69 dB.

87 dB.

20 kHz offset: 146 MHz, 75 dB; 440 MHz, 68 dB.

First IF rejection, 146 MHz, 129 dB; 440 MHz, 145 dB.
Image rejection, 146 MHz, 86 dB; 440 MHz, 87 dB.

Max indication: 146 MHz, 3.8 μ V; 440 MHz, 3.7 μ V.

At threshold: 146, 440 MHz, 0.1 μ V.

2.3 W at 5% THD into 8 Ω .

Transmitter Dynamic Testing

146 MHz, 51 / 10 / 3.9 W;
440 MHz, 45 / 12 / 4.8 W.

VHF, 72 dB; UHF, 66 dB.
Meets FCC requirements.

S9 signal, 146, MHz, 106 ms;
440 MHz, 162 ms.

146 MHz, 75 ms; 440 MHz, 76 ms.

146 MHz: Receiver BER
at 12-dB SINAD, 3.2×10^{-4} ;
at 16 dB SINAD, $< 1.0 \times 10^{-5}$;
at -50 dBm, $< 1.0 \times 10^{-5}$.
146 MHz: Transmitter BER
at 12 dB SINAD, 1.6×10^{-3} ;
at 12 dB SINAD +30 dB, $< 1.0 \times 10^{-5}$.
440 MHz: Receiver BER
at 12-dB SINAD, 3.8×10^{-4} ;
at 16 dB SINAD, $< 1.0 \times 10^{-5}$;
at -50 dBm, $< 1.0 \times 10^{-5}$.
440 MHz: Transmitter BER
at 12-dB SINAD, 1.8×10^{-3}
at 12-dB SINAD +30 dB, $< 1.0 \times 10^{-5}$.

PC port on the main unit. So, if your main unit is in the trunk as mine is, and you frequently change programming, consider running a data cable to the passenger compartment. You will also need a shielded Ethernet type cable and coupler for the mic. (Sure would be convenient if the mic connected to the control head.)

There are seven buttons below the LCD screen, one more than the 'D700A. The new button is called KEY. The KEY button switches the functions of the other six buttons from radio functions (F, TONE, REV, LOW, PF1, PF2) to a new set of APRS specific functions (F, MSG, LIST, BCON, POS, PMON). The change makes accessing APRS functions a lot more convenient. The layout of the other buttons and controls are similar to the 'D700A — CALL, VFO, MR on the left, and PWR, PM, TNC on the right. Press F, followed by the tuning control, to get into menu mode.

While the control head is only slightly larger than the 'D700A's, the display area and fonts are larger and easier on the eyes. A vertical bar in the center helps segregate information for the two bands. Above the frequency display, a new information line displays the current time, along with call signs of received duplicated APRS packets and an indicator of what sort of packet it was. When your beacon or sent message is received (from a digipeater) MY POSITION or MY MESSAGE is displayed in this screen position. Only new packets interrupt the frequency display and are displayed across the full width of the screen (a settable option).

APRS Features

Beaconing, messaging and routing functions have been enhanced, full digipeater capabilities added and menus streamlined. The control head display and dedicated APRS buttons make accessing these functions more straightforward.

- The received station list can be sorted by call sign, date/time or distance. The list can be filtered to create lists of digipeaters, mobile stations, weather reports and so on.

- Packet filtering allows you to select a position distance limit and to choose the types of packets you want to receive (weather, digipeater, mobile and so on). This is useful to keep the amount of information manageable in areas with lots of APRS activity.

- The 'D710A supports 29 station icons; the 'D700A supports 19.

- Many 'D700A users send a 100 Hz tone with beacons and set the receiver subaudible tone to 100 Hz on the APRS channel. This opens the squelch so we hear beacon packet



Figure 1 — Here, the TM-D710A's control head is set up for APRS operation on the left side and voice operation on the right.

clatter when within range of one another, indicating that we are close enough for simplex voice communication. There's now a settable menu option called Voice Alert on the 'D710A for this function.

- You can set one of the 'D710A's bands for APRS data operation and the other band for voice operation. Using the settable QSY function, the 'D710A can embed your voice (QSY) frequency into a status text. When this voice frequency information is received by another 'D710A, it is displayed on the station list. Pressing the TUNE button sets the voice band of your radio to the QSY frequency of the selected station.

- You can select the packet path type from N(new) PARADIGM, RELAY PARADIGM, STATE/SECTION/REGION or OTHERS. Each of these selections brings up an appropriate set of parameters.

- Several selectable beaconing strategies are available to help you control how much traffic you add to the APRS frequency data.

Manual — Pressing KEY then BCON sends a beacon.

PTT — Pressing and releasing the mic push-to-talk (PTT) button sends a beacon. One interesting application: During a public service operation you make a report from the field by voice, and your position is sent to the command center when you release your PTT button.

Auto — Beacons are sent based on a settable time interval.

Proportional Pathing — This function allows you to give local stations frequent updates while reducing the number of updates sent to distant parts of the network to help reduce network congestion. Proportional pathing automatically cycles your packets through different transmit paths so that direct (local) paths are used more often and multihop paths less often. For example, your data transmits direct path every minute, via a one-hop path every three minutes, via a two-hop path every nine minutes, and so on.

Decay Algorithm — If position data does not change, the time between transmissions lengthens according to a decay algorithm

(1-2-4-8-16-32-32-32 minutes, and so on). You can also set the radio to use a decay algorithm for transmitting, if the speed is 1 knot or slower, and switch to proportional pathing when the speed picks up.

- Weather station support includes wind direction and speed, temperature and rainfall in last hour. Connect your compatible weather station to the GPS port on the 'D710A, set some options, and you are an APRS weather station.

- A Kenwood proprietary data sentence is available for output to the AvMap G5 with target speed, course and altitude in addition to target ID and position. The 'D700A only outputs ID and position data.

AX.25 Packet

The COM port on the back of the control head connects the internal TNC to a computer. Using *Windows HyperTerminal* software, I was able to connect to packet nodes and even leave a message in a friend's personal mailbox.

When I tried to use *Airmail* software to connect to a local Telpac gateway (the interface between local VHF packet radio activity and the Winlink 2000 network), I discovered that *Airmail* didn't have any Kenwood models in its list of compatible TNCs. I tried a few of the other TNC setups but none worked correctly. Even though Kenwood indicates its TNC is Winlink compliant, there are no indications that *Airmail* will support Kenwood built-in TNCs in the future, so I looked for other options.

Someone suggested that I try *Paclink* to see if it would work with the TM-D710A to interact with Telpac gateways. I did and it does. *Paclink* allows you to use common email applications to send and receive mail via your radio link. This is a fairly complex implementation involving several programs. In addition to your e-mail software, you need *Microsoft.NET Framework*, *Paclink AGW Packet Client*, *Paclink Post Office* and *AGWPE Pro*. For details, see www.winlink.org/Client.htm. *AGWPE Pro* has a long list of compatible TNCs. The TM-D700A selection worked fine with the 'D710A.

Kenwood cautions that the built-in TNC does not offer all functions that might be supported by external TNCs. The parameter and command sets seem to be as complete as my Kantronics KPC-3+ standalone TNC.

Other Features

Different operators will make frequent use of different functions, so Kenwood provides some pushbuttons (PF keys) that can

be programmed with features that you use most often. There are two PF keys on the control head and four on the mic. In addition to receiving the NOAA weather channels, the 'D710A includes weather alert. You can program a PF key for quick access to the weather band.

The review radio included the optional VGS-1 voice guide and storage unit. The *voice guide* function announces changes in mode, frequency and other settings. It tells you just what you want to know, and at the right time. The announcement vocabulary seems to cover every detail. *Storage unit* refers to three voice recorder channels for storing voice memos, and a single channel for recording conversations.

SkyCommand II uses two compatible Kenwood dual band radios to remotely control specific Kenwood HF radios, or one V/UHF radio with the TS-2000. One of the dual band radios is connected to the mic and external speaker jack on the HF radio. Control signals are sent on the 70 cm band using the built-in TNC, with audio signals sent on 2 meters.

Wireless remote control enables you to use a dual band handheld radio to control the 'D710A. In this case, control tones are transmitted on a frequency in the 70 cm band. I was able to activate and deactivate crossband repeat with this feature.

Limitations and Restrictions

Although the TM-D710A does a lot, it can't do everything at the same time. For example, when the TNC is on for APRS or packet communications, weather alert cannot be turned on. You can manually tune to weather frequencies on the non-data band, but the PF key for this will not work with the TNC on. Likewise, Echolink sysop mode doesn't work with the TNC on, precluding the possibility of using the TM-D710A simultaneously as an APRS digipeater and EchoLink node. Use of the repeater mode (crossband, locked band), wireless remote control or SkyCommand II features prohibit the use of the TNC. A new firmware release, V1.11, available at no cost on the Kenwood Web site, reportedly resolves some of these problems. It was not available during our testing.

Final Analysis

If you are new to the world of mobile APRS, the TM-D710A and AvMap G5 or other GPS receiver will launch you into the mainstream without too much effort. If you are not interested in APRS or SkyCommand, then the TM-V71A might be a better choice.

The APRS community is growing rapidly as more equipment like this comes to market. Consequently, the volume of traffic on the APRS frequency is also growing. Strategies that allow you to control how much traffic you contribute to the mix is a valuable addition to Kenwood line.

The TM-D710A offers some new and updated capabilities. Programming enhancements simplify the use of the many features and functions. It plays well with AvMap G5, and both products offer great value for their respective prices.

Manufacturer: Kenwood USA Corp, 3975 Johns Creek Ct, Suite 300, Suwanee, GA 30024; tel 310-639-4200, fax 310-537-8235; www.kenwoodusa.com.

The above February 2008 QST article is published with the permission of the QST editor Steve Ford, WB8IMY.

By now you should have seen the emails or have heard about the ARES raffle for this great Kenwood TM D710A UHF/VHF mobile. Jack Hubley, the ARES treasurer, and David McCoy, the CCARC treasurer, are handling the ticket sales. You may purchase raffle tickets at ARES or CCARC club meetings or email Jack Hubley at jbhubley@olypen.com with your ticket request. Let Jack know how many tickets you would like and your mailing address. Jack will mail you the tickets....you fill out the requested information and send you money and 1/2 the ticket stub back to Jack. Couldn't be easier. At last count **88** tickets have been sold with 17 more in the mail. Don't wait to buy tickets as we may have the raffle earlier than Field Day should the 200 tickets sell out very early. You do not need to be present at the raffle to win.

I probably knew this at one time.....

Does anyone remember why lower side band is used on amateur frequencies below 20 meters and upper sideband on 20 meters and up? I ran across the answer in a 1995 QST article and will try to shorten it some. Early SSB rigs used hetrodyning to achieve the desired output. Hetrodyning involves the mixing of two signals to produce two new signals; one the sum of the two original frequencies and one the difference. Early home-brew equipment used WWII 5.0 to 5.5 MHz. command transmitters as VFOs as they were readily available. The 5.0 MHz VFO frequency was then mixed (hetrodyning) with a 9.0 MHz. SSB generator. The result of the mixing was 14.0 to 14.5 MHz. (the sum of the two mixed signals) and 3.5-4.0 MHz. (the difference of the two). When switching from 20 meters to 80 meters, however, signals inverted from upper sideband on 20 to lower sideband on 80 meters. Rather than force people to build additional circuitry simply to maintain the same sideband, the convention developed that USB would be used on 20 meters and up and LSB on bands below 20 meters. Today, with new technology, there is no longer any reason for this convention to be followed, but, as the article in 1995 concluded, old habits die hard.

73,

Bob
K6MBY

AMATEUR RADIO EMERGENCY SERVICE

c/o CLALLAM COUNTY EMERGENCY MANAGEMENT

223 East Fourth St., PO Box 863, Port Angeles, WA 98362
(360) 417-2497

“Providing auxiliary communications to Clallam County”

Minutes

**ARES Meeting 5 February 2008 1900 hours
Emergency Operations Center (EOC)
Port Angeles, Washington**

Attendees: 26 members and guests were in attendance. 8 Forks members were in attendance via video conferencing, for a total of 34.

Opening comments: Dan Abbott, EC, welcomed everyone to the meeting, and turned it over to Mike McCarty to introduce Clallam County Sheriff’s Dept Neighborhood Watch Coordinator Al Camin. Al discussed the program and that it is transitioning to a Neighborhood Empowerment Program with more responsibilities to the residents.

Dan commented on the fact that the keys to the EOC no longer will work, as the entry system has been changed to a cypher lock system, not requiring keys. Also, Dan started a sheet around the room to obtain member’s cell phone numbers, which will be held Confidential.

Program: Dr Thomas Locke, Health Officer for Jefferson and Clallam Counties presented an informative program with slide show on Seasonal, Avian, and Pandemic Influenza.

After Dr. Locke’s presentation, communications with Forks included discussion of their ticket requirements for the raffle, and collection of the time and miles expended by Forks people. (Note: the Forks report was sent by e-mail and was received by the undersigned upon return to home)

The meeting was closed at 2030.

NEXT MEETING: 4 March 2008 EOC
continued top next column

Program: FEMA and Border Patrol issues

Submitted 5 Feb 2008,

John Moore K7NIA

Clallam County Amateur Radio Emergency Service (CCARES)

The Clallam County ARES is organized in two levels; as an affiliate of ARRL/ARES and as the recognized RACES organization by the Clallam County Division of Emergency Management. Membership in CCARES is open to all licensed Amateur Radio Operators that are residents of Clallam County, who first register with ARRL/ARES through the Emergency Coordinator. They are not required to attend training meetings and function as a second response unit in emergencies.

CCARES members in good standing may register in the RACES program with the Clallam County Division of Emergency Management (CCEM) and serve as a primary responder during emergencies. RACES members are the core of the organization and are expected to attend training meetings and participate in drills and other events.

Clallam County ARES/RACES

Clallam County ARES/RACES is actively seeking new members and would like you to consider joining. This is a chance to prepare to be part of a solution during an emergency.

The March 4th meeting program will be about border security.

All RACES members will be required to pass the FEMA/NIMS training IS-100 and IS-700. These courses are free and have been mandated by Homeland Security. They are available on-line at <http://training.fema.gov/EMIWeb/is/>.

Dan Abbott, N7DWA, EC Clallam County

CLALLAM COUNTY AMATEUR RADIO CLUB

Minutes of the General Meeting January 9, 2008

The meeting was called to order at 7:00 P.M. by club president, Chuck, N7BV.

The Pledge of Allegiance was given.

Chuck read a card received from the Steelmans, who are now in Arizona. He also announced he has a new dog "Riley".

Nola KC7ZNW noticed that if the club processed new or renewal subscriptions for ARRL membership/QST subscriptions, the club could benefit. Discussion followed about the value vs. the hassle. David KE7JEJ will research the possibilities and report back.

Dennis WA6QWK did a show and tell with a software-defined radio kit he purchased. He spoke of the possibilities for this and other kits, and referred us to www.softrockradio.org and Yahoo users for more information.

It was told that a Kenwood TM-710A dual band mobile will be raffled off by ARES. The proceeds will be used to buy TNCs to improve emergency communication capability. Tickets are \$5 each, and are available from both the club and ARES. The drawing will be held once enough tickets have been sold, possibly at Field Day.

It was moved and seconded that the minutes of the December General Meeting be approved as published. Passed.

Introductions were made around the room.

Paul W6IAM presented the program. He is planning an electronics course, has created a workbook, and will publish serially in QTC. The course may be held in Carlsborg. He gave a presentation on AC and DC current with lots of explanation, and demonstrated that an onion can act as a power source, providing 30 millivolts of power!

An educational presentation, with some fun thrown in, appreciated by those present.

During break, raffle tickets were sold for the ARES radio, and for the club prizes.

More announcements and items: Jody KE7LKA is looking for work to earn money for Driver's Ed. The Puyallup Ham flea market is March 8th. Per Mike KE7EZO next month's ARES program will be a presentation on influenza pandemics. John K7NIA mentioned that the radio to be raffled has APRS capability and told a bit about that. Bruce W7DNA showed a T-shirt with a club logo (that another club sells) that could be sold as a money maker. He asked if this club might wish to do the same. Tom KE7XX made a point of the fact that 146.52 MHz is a national calling frequency.

The raffle drawing was held for a prize of \$14, plus a book and a meter.

There was some discussion that a local club flea market could be held when we are ready, possibly at the Fairgrounds kitchen. No action was taken at this time.

Moved, seconded and carried, to adjourn the meeting. The meeting was adjourned at 8:36 P.M.

There were 22 in attendance.

Minutes by Rich N7NCN

COMING EVENTS

~ ~ ~ ~ ~

March 8th 2008
Electronic Show and
Flea Market at the
Puyallup Fairgrounds

~ ~ ~ ~ ~

CLALLAM COUNTY AMATEUR RADIO CLUB
BOARD OF DIRECTORS MEETING
January 31, 2008

Board members and officers present: Tom Newcomb KE7XX, Bob Sampson K6MBY, Rich Golding N7NCN, Chuck Jones N7BV, Bob Kennedy AC7RK, and David McCoy KE7JEJ.

Visitors: Shirley Newcomb KC7ZQA, Paul Honore' W6IAM.

The meeting was called to order at 2:30 PM by Tom Newcomb.

The minutes of the Board meeting of November 8, 2007 were read and approved.

Bob K6MBY advised that the repeater coordination renewal has been completed, but acknowledgment has not been received yet.

Chuck N7BV advised that the trailer for mounting a portable tower is "dead issue", and that recognition certificates were purchased by John K7NIA; reimbursement is in the works.

Paul W6IAM suggested (A) that the club could put funds into the ARRL Scholarship Fund on an annual basis. He asked (B) if the club has made school contacts in regard to the ARISS Program. Recognizing that ARES needs funds for upgrading and standardizing equipment, he asked (C) if the club would consider donating to ARES.

After discussion of (A) above, a motion was made that the club donate to the ARRL Scholarship Fund, \$50.00 or more, annually, subject to annual approval by the Board. An amendment was offered, to wait until after 4/1/08 to release payment. (This, so dues will be in and financial condition can be reviewed.) The amended motion was seconded and passed. Regarding (B) above, It was suggested the club work with Stevens Middle School. It was pointed out that the School would have to invite the club. Chuck read an email from Dennis WA6QWK regarding such presentations. Chuck will ask Dennis, Paul, Tom, and Bob Kennedy to form a group to prepare and give presentations. Regarding (C) above, the Board would like to see ARES' specific plan and then consider the question again.

David KE7JEJ reported there is \$2710.63 in the bank, not counting dues money for 5 new memberships or the \$4,000 in CDs.

The club's 2008 proposed budget was reviewed, and has been approved.

Bob K6MBY discussed new software for operating the club Web Page. A motion was made and seconded to authorize expenditure of \$110 for new software, if we are not able to negotiate a free conversion soon. Passed.

Bob AC7RK advised that Ward Silver N0AX will present a program in June, and Bob expressed concern about adequate reimbursement for travel expenses. A motion was made that the club will reimburse travel expenses to those who travel here from other areas for presentations. Seconded. Passed.

There was discussion of the club roster. It will be done electronically, accessible on-line, and provision will be made to supply printed copy for those who need such. It will be updated every two or three months on the Web.

Moved, seconded and passed to adjourn the meeting. Adjourned at 3:50 PM.

Minutes by Rich N7NCN

Net check ins

Here's the list of 100% checkins for January. Please note that new members checking in 100% from the time they join will also be counted as checking in 100%, for the year tally. Good job!

- KE7DRT Nita
- AC7IY Mary
- KE7KWG Becky
- KC7LTW Donald
- K5MTW Don
- K7NIA John
- KD7TFK Al
- K7WZ Bill
- W7YLV Al

TREASURER'S REPORT

Good Afternoon!
 As of January 31st, 2008:
 First Federal Savings & Loan of Port Angeles Balance is \$2,832.84
 Outstanding Cheques: -122.00
Outstanding Deposits: + 90.00
 Current Balance: \$2,800.84
 CD at WestSound Bank (6-month): \$1,000.00
CD at WestSound Bank (18-Month): 3,000.00
 Total Cash Assets: \$6,800.84

Okay, here is the scoop on Membership ("..to conduct the business of the CC-ARC and operation of the repeater.") from Article IX of the CC-ARC By-Laws:
 P Membership dues for the CC-ARC are \$20.00/year, payable by March 31st.
 P One paid membership (one vote) shall cover family members living under one roof.
 P Additional licensed family members that wish to become a voting member may do so by making an additional 50% regular dues payment annually (= \$10.00).
 P Students & Active Duty Armed Forces personnel will receive honorary membership with no dues required.
 P Members that join after March 31st will pay prorated based on the quarter they join (2nd Quarter = \$15.00, 3rd Quarter = \$10.00, 4th Quarter = \$5.00).

⇒ **Members in arrears shall be kept on the CC-ARC rolls for the remainder of the year but shall have no voting rights nor receive the CCARC-QTC after March 31st. If not paid by year's end, they will be moved to the inactive list.**








David R. McCoy,
 KE7JEJ
 CC-ARC Treasurer

FOR SALE OR TRADE

~~~~~  
 I am looking for work on weekends and after school (2:30) to make money to pay for my Drivers Ed. I can be reached at (360)452-6614 or ke7lka@yahoo.com Thanks, Jody

~~~~~  
 2m/440 dual band J-pole antenna. Excellent antenna and price \$20. Similar to <http://arrow-antenna.com/j-pole.html> Made by KN7R. Proceeds for ARES. Chuck, N7BV

FEBRUARY BIRTHDAYS:

| | | | |
|---|------------------|--------|--------|
|  | Dillard, Don | K5MTW | Feb-06 |
|  | McCoy, David R. | KE7JEJ | Feb-19 |
|  | Tate, Mary | AC7IY | Feb-20 |
|  | Cain, Jerald | KE7BVZ | Feb-25 |
|  | Ladwig, Lewis R. | WBONAI | Feb-26 |
|  | Robin, Neil | WA7NBF | Feb-28 |
|  | Abbott, Dan | N7DWA | Mar-09 |

Happy Birthday!

YL LUNCHEON

15 February
Old Mill Cafe
721 Carlsborg Rd.
Carlsborg
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!**

2008 - CCARC Ladies Luncheon Schedule
Reservations are made for 11:30 – 2nd Friday of each month

February – Old Mill Café – 721 Carlsborg Rd. – Carlsborg
March – Gordy's Pasta and Pizza – 1123 E. 1st – Port Angeles
April – Oak Table – 292 W. Bell – Sequim
May – Downriggers – 115 E. Railroad Ave. – Port Angeles
June – Danny's - JC Penny Plaza – Next to Police Sta. – Sequim
July – Airport Diner - Port Angeles Airport Terminal
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 – Paradise – 703 S. Sequim Ave. - Sequim

| Description | Time/Date | Location | Contact |
|--|---------------------------------|---|-----------------------------------|
| Clallam County ARES/RACES meeting | 7 pm, first Tue of every month | Clallam County Courthouse EOC, 223 E. 4 th St., PA | Dan Abbott 360-582-3824 |
| Clallam County Amateur Radio Club general meeting | 7 pm, second Wed of every month | Port Angeles Fire Station 5 th & Laurel Streets, PA | Tom Newcomb KE7XX 360-452-8228 |
| Clallam County Amateur Radio Club social breakfast | 8 am, first Sat of every month | Joshua's Restaurant Hwy. 101 & Del Guzzi Dr. | Tom Newcomb KE7XX 360-452-8228 |
| Clallam County Amateur Radio Club YL social lunch | 11:45 am 2d Fri of every month | Rotates - announced on Thursday night Net | |

CLUB OFFICERS For 2008

President: Chuck Jones N7BV 360-452-4672 n7bv@yahoo.com
Vice President: Bob Sampson K6MBY 360-582-9116 k6mby@olyphen.com
Secretary: Rich Golding N7NCN 360-683-9309 n7ncn@myfam.com
Treasurer: David McCoy, KE7JEJ 360-461-5470 mccoy.d.r@olyphen.com
Chairman of the Board: Tom Newcomb 360-452-8228 ke7xx@arrl.net
Board Member: Bob Kennedy AC7RK 360-457-6177 ark@tenforward.com
Board Member: Bill Carter W7WEC 360-681-4375 bcarter@olyphen.com

2008 CCARC Budget as approved by the Board at the January 31, 2008 meeting.

| Budget | Expense | Income | Est # Members | Dues | |
|--|-------------|-------------|------------------|------|--|
| Dues | | 1600 | 80 | 20 | 117 current members (2007) |
| Investment Income | 25 | | | | Projected, due 05/19/2008, per e-mail of 11/20/2007 |
| Repeater Site Rental | 100 | | | | DNR Striped Peak site rental |
| Insurance | 225 | | | | State Farm |
| PO Box | 36 | | | | New Rate for 2008 |
| Safe Deposit Box | 50 | | | | Projected, Annual Fee, Document Storage |
| Sec State Reg | 10 | | | | |
| WWARA Membership | 5 | | | | per request of Bob S. |
| Field Day Food | 400 | | | | |
| Xmas Party | 200 | | | | |
| NC Party (Annual) | 100 | | | | per minutes of 11/2007 |
| Repeater Repair | 0 | | | | |
| Printing (odd years) | 0 | | | | Club register printed in odd years. (Opposite of summer picnic) |
| Equipment Purchase | 0 | | | | Field day. |
| Mailing | 100 | | | | |
| Misc | 100 | | | | |
| Exam testing/books | 1400 | 1600 | | | Club purchase and sale of license material. |
| VE Picnic even years | 250 | | | | Approximate, from Checque book entries |
| Raffle Income | | 100 | | | |
| ARRL Scholarship | 50 | | | | Per Board Meeting 1/31/2008 |
| Speaker Fund | 100 | | | | Per Board Meeting 1/31/2008 |
| Newcomer Lunches | 100 | 100 | | | This should balance out if we get an equal number of sponsors. |
| Web Site from Olyhost. | 200 | | | | Should we need to acquire web space for a fee. Currently free |
| | 3426 | 3425 | | | |
| Repeater repair fund cial assessment. | 1000 | | | | Repairs only. Upgrades from balance of bank account or special assessment. |

Note: The 2008 budget assumes a minimum of 80 paying members. In 2007 there were 117 members.