



# K7LED Relay

Volume 25, Number 9

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September, 1997

## The Prez Says Chuck Benefiel, N7STR

I want to tell you a little story about four people whose names are Everybody, Somebody, Anybody, and Nobody. There was an important job to be done and Everybody was sure that Somebody would do it.

Anybody could have done it, but Nobody did. Somebody got angry about this, because it was Everybody's job. Everybody thought Anybody could do it, but Nobody realized that Everybody wouldn't do it. It ended up that Everybody blamed Somebody when Nobody did what Anybody could have done.

It is a constant battle that organizations go through, a few doing a lot for the larger group to enjoy. Everybody assuming Somebody will do it. Thankfully in the Mike and Key there is always a Somebody who steps forward and does it.

I want to acknowledge one of the Somebody's of the Mike and Key. He is at the top of everyone's list even though he as a Ham hasn't held office within the Mike and Key for 5 years. Yet somehow he has always been there, in support of the club. KA7QHG, Frank Krieger, Donut Man, Kitchen Helper, Net Control, and the Opening it Up and the Closing it Up guy in our club. In addition to being a major support within the club he does VE testing, and perpetuates what Ham Radio is all about. He is a past Pop Brown award winner, and a true example of what the Pop Brown Award Represents. He is a major Somebody in this club., whom everyone respects and whom everyone genuinely Loves. In the 6 years I have been attending this club, I have never heard a rumor, or a negative statement out of Frank towards any past, present or future member of this club. Yet I know he has been witness to rumors and statements from others many times. If someone needs help, he is one of the first to offer it, and if he needs help, he is the last one to ask for it. I don't write this to embarrass Frank, but to thank him for being such a fine example to all the rest of the members of this club. I say this even though he has possessed the Alligator Award more than any other member of the club. We know that if he could, he would control his obsession for timing out the repeater. We understand it has something to do with his being an HF'r.

Now I challenge the rest of the Mike and Key Club to follow Frank's example. Get in there and pitch in. Become involved in a committee, be a part of a work party, help set up, help clean up, greet the newcomer, be a positive example. Perpetuate this hobby of Ham Radio by example, not just to the general public, but to the membership within this club as well. We have some newcomers and old-timers that are carrying a lot of the load for the rest of the club. Believe me when I say, I know what it's like to be burned out, and to feel like I have done my part. I know what it's like to need a rest, but there is a time when I need to get back up and join the crew in the next job that comes along. Because, I also know what it's like to be part of the progress, working together towards a mutual goal.

Mailing Address  
PO Box 2121  
Kirkland, WA 98083

Internet Address  
mikeandkey@aol.com

RELAY Editor  
Jack Grimmert (N7IHS)  
18128 SE May Valley Rd.  
Renton, WA 98059

Telephone  
(425) 271-7955

Fax  
(425) 271-2075

e-mail  
grimmert@halcyon.com

Pardon me if I steal a quote from a great presidential speech, "Ask not what your Club can do for you. Ask what you can do for your Club." Thank you Frank for all that you continue to do for the Mike and Key, you are a true Gentleman.

One last note: 73 Chiu I will miss your smile.

## Board General Membership Meeting 8/16/97 Al Hopwood, KB7THX

**Officers present:** President - Chuck (N7STR), Vice President Sam (N7RHE), Treasurer - Chuck (WA7EBH), Activities - Larry (AB7FJ), Radio Officer - Harry (W7JWJ), Trustee #1 Al (KB7THX), Trustee #2 Mary (W7QGP), Trustee #5 Adrian (KB7BVL), Relay Editor - Jack (N7IHS).

### Officer Reports:

**President:** Chuck paid gave special recognition to Frank WA7QHG (Quite Handsome Gentleman) for all of the volunteer work he has done for the club. In addition to overseeing the Wednesday Night Net, Frank arranges refreshments, set up and clean up for every club activity at the Salvation Army building. He has been doing this with a smile for years. Thank you Frank! We need two more volunteers ... one for Field Day Chairman and the other for Christmas Party Chairman. Those interested in either position please see Chuck (N7STR). Unfinished business from this years Field Day .... Michael (KG7MX) won the coveted Left Over Screw Award. Seems Michael found a screw in his pocket after the 20 meter beam was completely disassembled and put away.

**Vice President:** Sam (N7RHE) presented two applicants for membership. John (KC7WOX) won unanimous approval for membership. Chris (KC7YES) was also approved for membership; however, there was one negative vote from KF7VG .... something about loosing access to this radio gear.

**Activities:** Larry (AB7FJ) announced that the raffle was for a \$30 and \$10 gift certificate from Ra-

dio Depot as well as a one year subscription to World Radio. The program was a video on Satellite Communications.

**Treasurer:** Chuck (WA7EBH) reported the club is still solvent. Chuck needed to leave the meeting early to prepare for the Auburn Sea Fair Parade, he went on to say that 75 hams participated in the Torchlight Parade and we received good reports from both Sea Fair and the Seattle Police Department on our contribution to a smooth running incident free parade that was enjoyed by 100,000 spectators. Looking ahead to Flea Market ... the first organizational meeting for next March event will be September 4th at 7:30 PM at the Salvation Army.

**Picnic:** Jed KK7HS reminded us of the clubs summer picnic scheduled for August 23rd in Bellevue.

**For the Good of the Order:** The idea of having An Army of Elmers to help hams of all ages and skill levels was suggested. The club does have an Education Committee, a Radio Officer, a Technical Committee, a publish roster and monthly Elmer Sessions prior to the general membership meeting ... all designed to help hams have easy access to information and help.

The meeting was adjourned at 10:45 AM.

## From the W7JWJ Notebook Operation Upgrade

### The Evolution of a Repeater - Part Two

It is the turn of the century and the year is 1800 AD Emperor Napoleon Bonapart has sent his army to invade the country of Spain. As the invading French troops enter one small village they find it completely deserted. What they do find is a wire extending to the village previously invaded and the remains of some strange electrical apparatus. Apparently the inhabitants of the second village had been forewarned by means of some type of telegraphic system. There was no need to 'repeat' or 'relay' the message a second time. "The French are coming." The villagers were gone!

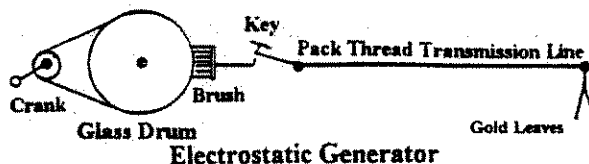
Now Napoleon was of course a Dictator and much of what he did was reprehensible. However, as one country after another was invaded by his troops they returned with knowledge of scientific discoveries in those countries. Napoleon revamped the school systems permitting study of science and permitting freedom of religion. This combination set the stage for the evolution of technology.

Meanwhile in England the study of philosophy (science) was forbidden by the church of England. Clandestine groups sprang up meeting in barns and basements. The discoveries made in one country were quickly 'repeated' by word of mouth and language translation. One small book-binding store in London was smuggling scientific news into the country and translating it into English. The store hired a nine year old street urchin by the name of Mike as an apprentice. They soon found that Mike could keep

his mouth shut and they also used him as an errand boy to deliver these forbidden books. Mike also pre-read the books.

One undercover group was headed by an older teenager call Hump Davis. Mike and Hump became fast friends. From the knowledge gleaned from smuggled literature, Hump invented a new safety lamp to be used in the English Coal mines where some two thousand miners a year were being killed by explosions. News of this invention was 'repeated' far and wide. For this work, Hump was knighted by the Queen as Sir Humphrey Davis and the study of science in England came out of the woodwork and for the next quarter century would be centered in the Royal Society of London first headed by Hump Davis and later by his young friend, Michael Faraday. Napoleon invited the pair to lecture in France and sent an armed escort and vessel to England for them. Strange? Yes! England was now at war with Napoleon as well the United States.

Early Telegraph-Vintage 1800



## Help Keep Archie Alive From the ARRL Letter

Archie Comics have traditionally been one of the best Amateur Radio tools for use in classrooms, Scout gatherings, and other youth get-togethers. These books introduce young people to lifetime adventures they can enjoy through Amateur Radio. In many cases, these comics are the first step toward getting a license and getting on the air. But, we gave away the last ones several months ago. We need your financial assistance, to help defray the costs of replenishing our supply of these popular Amateur Radio materials. Our current goal—the cost of the minimum print run of 100,000 comics is \$30,000. Donations towards Archie Comics will be used only for that purpose.

We'll list the names of contributors making donations of \$25 or more in the front of each book. We'll give special recognition in print to clubs and others who make substantial contributions. The ARRL is a 5010(3) organization, and donations to the League are tax-deductible to the extent permitted by the IRS. Please make checks or money orders payable to "ARRL Educational Activities Fund." On the memo line, please write "Archie Comics." You may put your donation on a credit card. A donation form is on the Web, <http://AMMN.arrl.org/> or you can call 860-594-0340. Be sure to designate "Educational Activities Fund." Our deadline to receive donations is Oc-

tober 31, 1997.

*Note to the Club Members from N7STR: Your board has voted to contribute \$200 to this fund, and it was requested that at the next club meeting we "pass the hat" for anyone wishing to make an additional contribution.*

## 40 meter QRP Meeting

*Bill Balzarini, KL7BB*

At 9:30 on Saturday 9-20-97 there will be a special meeting for all of the Mike & Key Club members to tune up and tweak out the 40 meter receiver/transmitter project. This is also a great time for all members to watch the technical tricks used to find those little bugs and solder shorts. Harry Lewis (W7JWJ) will be bringing lots of portable test equipment and his special bag of tricks to perform any open PC board operations. Please bring your 40 meter QRP rigs to this meeting.

## On The Positive Side

*Carolyn Pasquier, WV7Q*

*Jack Grimmert, N7IHS*

The first thing is an apology to **Vic ZumBrunnen** (WB7TBR). His e-mail address was incorrect in the last Relay. His correct address is [vzwb7tbr@gte.net](mailto:vzwb7tbr@gte.net). Sorry Vic.

It was a great meeting last month. The highlight was **Al Hopwood's** (KB7THX) conspiracy theory about the Alligator Award. For those who are not familiar with the award, it is given each month to a member who has been caught timing out the Mike & Key ARC Repeater. It seems that Al has had the award for some time and can't catch anyone to pass it on to. He claims that there was a conspiracy by **Jan Van Allen** (N7WJB) and **Harry Lewis** (W7JWJ). He thinks that Jan (who had the award at the time) was waiting specifically for Al to violate the repeater knowing that Harry would shut it down for repairs as soon as Al was caught. That's an interesting theory Al, by the way have you sighted Elvis recently.

I hadn't given much thought to what the name Al was short for, but after this meeting I began wondering if it was short for "Alligator". Maybe so. How about Al "**The Alligator**" **Hopwood**. Isn't that awesome, it strikes fear in my heart and will probably scare even the "Beach Bunch". Anyway, members beware for out there lying in wait is "The Alligator" his kids, wife, neighbors, and friends ready to catch you violating the repeater.

See what you miss when you don't attend meetings. Why even **Larry Smith's** (AB7FJ) spiel about the monthly program and selling raffle tickets is worth climbing out of bed early for.

I forgot to check with Carolyn on any inputs for the column this month so it's a little short. Sorry Carolyn. I know that there are a lot of positive things going on out there, members are just not reporting them. Even if they are not great get them to Carolyn or myself, we probably can make read even worse. A special thanks to Al for providing the entertainment this month.

## Buy, Sell, Trade, or Wanted



*This column is available members and relatives or friends of member (no dealers please) who have electrical/electronic equipment (including computers and software) related to Amateur radio for sale or trade. Ads will be run for two months unless the editor is notified otherwise.*

### For Sale

- ICOM 2GXAT HT with Cigar Lighter Adapter, \$175. OBO

Call (206) 655-6879 or (253) 770-5533 and ask for Mike Foster (N7MF) or leave a voice mail message.

### For Sale

- Kenwood TS-520S (with CW filter). Excellent condition includes all manuals. \$400.00
- Matching Speaker. \$60.00
- Kenwood Antenna Tuner model AT-230. \$155.00
- Kenwood Antenna Tuner model AT-200. \$125.00
- Kenwood Mic. model MC-50. \$65.00
- MFJ Dummy Load. \$35.00
- Kenwood Frequency display model DG-5. \$150.00
- 2 Meter Radioshack model HTX-202. Very new. \$170.00

zHave manuals for all equipment and have original cartons for most. For further equipment information, contact Jack Davis (W7IMU) at (253) 564-3997.

## 40 Meter Rx-Tx Project

*Bill Balzarini, KL7BB*

When this 40 meter was started in late 1996, PC boards were purchased from FAR Circuits and a working prototype was constructed. This was done so that all of the parts could be tested and the project evaluated. In this same early time frame, key parts (Single Balanced Mixer, diagrams) were given to Harry Lewis W7JWJ for his evaluation. Harry built the entire project from scratch. In the process of his construction lots of improvements and new designs have evolved. From a simple "receiver only" to including a way to also make it into a Transceiver, Code practice oscillator, general coverage Receiver, etc. The frequency range on the single Balanced

mixer is from .5 MHz to 600 MHz. That means that this part will work on the AM broadcast band, the HF shortwave bands 2-30 MHz, the Low and Hi VHF ranges, the 88-108 MHz Range, TV channels 2-13 VHF, the 2 meter Band 144-148 MHz, the 220 MHz band, the 450 MHz Ham and 450 MHz Commercial Bands. With a very large amount of bandwidth this is a great little part for wide bandwidth projects like video & TV. The only limitation is your imaginations dreaming up yet more and interesting uses for the RF applications.


At this next club meeting on Saturday September 20th, there will be time for all kit builders and those that would like to join in on the RF Fun of building a kit to come on board and start a 40 Meter kit. We would like to point out that this rig can be changed to 80 meters or up to 20 meters buy just changing 2 capacitors, a coil and the crystal. For the folks that have the units assembled, this meeting is a great time for you to get a final checkout before going on the air. Please bring your kits and use this meeting to complete your projects. If you have any additional questions please contact Harry Lewis W7JWJ at 523-9117, or Bill Balzarini KL7BB at 927-1054.

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### A Message with the Music

Michael Dinkleman, N7WA

*The following article was taken from the ARRL Letter.*



A recent "Mr. Music" column by syndicated writer Jerry Osborne addresses the appearance on some music albums of messages or phrases in Morse code. For example, at the beginning of the Barclay James Harvest's Ring of Changes, the album's name is spelled out in CW on the first track. Barclay James Harvest member John Lees is a ham (WD4FHD).

Rocker Joe Walsh, WB6ACU, taps out the words "Register and vote for me AR" at the start of the song "Vote for Me" on his album Songs for a Dying Planet. The characters YYZ are belted out on percussion then by the bass guitars on the song of the same name on the Rush album Moving Pictures. Osborne says YYZ is the beacon ID for the Toronto International Airport, and the group's guitarist is a private pilot.

The B-52s use some CW in Planet Claire. So did the Blues Magoos in their album "I Can Move a Mountain". In the song "Pencil Rain" by They Might Be Giants, a stretch of code spells out a refrain, in Spanish, of a popular Mexican song. The Roger Waters album Radio K.A.O.S. is filled with Morse code messages, much of it under the music. The cover also has the titles of the tracks spelled out in code.

Osborne says the track "Miss Morse" on the album One Nation Underground by the rock band Pearls Before Swine reportedly spells out various vulgarities in CW.

### 50 MHz to 500 MHz DFER Project

Bill Balzarini, KL7BB

At the beginning of 1997 a large number of club members built the DFER Project. This is a follow-up article for the beginner on how to view the RF environment and the challenges it presents in using the DFER to find the hidden transmitter. Imagine Reflecting Mirrors and a small Pen Light Flashlights. The Pen Light Flashlight becomes the Transmitter and the Reflecting Mirrors become all of your surrounding environment. When you turn on the Flashlight it starts to be reflected (bounced) off of any Mirror surface (house, mountain, trees, etc.) that it strikes. Just the way that RF bounces off the same objects only your eye does not see the radio wave.

The way to use the DFER is to start by using bigger objects like cars, trucks, big metal buildings to your advantage as RF Blockers or Directors. If you hear the signal on you DFER/Radio while walking up alongside of a large Semi-van Truck and the RF signal goes away, the large metal truck is blocking the RF signal coming from the RF transmitter to your DFER. Stop. Turn around and go back to a spot that the RF signal re-appears.

At this point, use the DFER to try and get a "fix" on direction that the signal is coming from. Follow the new direction while determining if it is getting stronger or weaker. If the RF signal is getting weaker. Stop and go in the other direction. You will now cross back over the point of the path where the signal had disappeared. Now you have determined at least 2 directions in which the signal appears that is not coming from.

You now get to choose a new direction in which the signal might get stronger. The secret to finding the hidden RF Transmitter is to keep on trying new directions until you have exhausted all paths and directions, where the transmitter is not located. You should now be standing at the hidden transmitter location.

I have used big metal objects to get initial headings on where the transmitter might be located. The big Airplane hanger on the North end of Boeing Field in Seattle (called the B-52 Hanger) makes for a great starting point. By simply walking around in its shadow you can get really good nulls and peaks. Follow the best peak out and away (you don't follow the null) from the building. This will give you a Base Line direction. When you are many blocks away take another reading and get another bearing to follow. It is the constant shifting of the triangulation attempts that will lead you to the hidden RF transmitter.

It is best to start with a very low power transmitter out in a large field so that you can see its location. This will let you get very familiar with all of your RF Dfer and radio equipment. Once you have figured out what kinds of readings point you to a transmitter you can see, it is then time to introduce RF Blockers and Reflectors. If you were to drive a large truck or motor home out in the field near you RF Transmitter

location, it can provide you with a chance to see how the signals will hide from DFER view.

RF does not go through metal very well and you can experience a great amount of signal loss if the large truck is between you and the RF transmitter. Behind the Blocking truck is a great place to start practice. Once you see the effects of finding the signal by walking along a base line that leads you out and away from the shadowing effects of the truck, you will reappear in a direct path coming from the RF transmitter. Take another bearing reading and follow the new direction to the hidden transmitter.

Another way to practice is to put the RF transmitter at one edge of the field and park a large truck or motor home at the opposite end. Then start by standing between the RF transmitter and the truck. Stand much closer to the truck than the RF transmitter. You might get a confusing double heading direction reading from your DFER/Radio equipment. If you try to follow the stronger signal it might lead you to the RF transmitter. Some times the bounce off the motor home/truck can appear to be just as strong as the hidden RF transmitter.

If you chose to follow the signal coming from in the direction of the truck, Watch out! You are about to walk into a Truck. Ouch. Have fun trying out all of the millions of combinations with your Dfers. If you own a 2 meter rig that can also receive up in the commercial and marine bands, give the constant broadcasts of marine weather on 162.55 and 162.475 MHz a try at locating them. They tell you in their broadcasts what their locations are so you can get a sense of DFing direction.

### Picnic '97 Wrap-up

*Jed Clawson, KK7HS*

Friday, August 22nd at 11:20 p.m. - I sat watching the weather forecast for the next day - date of the Mike & Key Club Annual Picnic. "Mostly cloudy and chance of rain"! Boy oh boy was that encouraging news? The next morning I arrived at Enatai Beach Park at 9:45 am to find it cloudy and VERY windy. I brought some tarps to use for cover in case of rain but the wind was blowing so hard I couldn't get them up.

About 10:30 AM our Club President (N7STR) and Carolyn (WV7Q) arrives and - what do you know the wind died down and it started getting brighter! Never realized the influence these two really have!

The food was great, the company was distinguished and the chat was great to hear and participate in. Enatai Beach Park was a lovely facility sitting above Lake Washington on its Eastern shore just under the I-90 bridge. Okay, so having a picnic under a bridge doesn't sound particularly inviting. But you find a (mostly flat) grassy area leading up to our reserved patio offering a lovely view of the water. It is a very clean and "roomy" area. Everyone I heard

from really enjoyed the picnic and thought the site was very nice. We had our usual desert contest attended by some very good entries. It was a difficult decision however Karen Balzarini was our winner this year with her apple crisp topped with vanilla ice cream. (I had been doing so good on my diet too - and I think I gained 5 pounds at that picnic!). Karen is the winner of \$25.00 gift to be spent at the restaurant of her choice (now Karen, you get to choose - just let Bill tag along!)

There must have been a ham fest somewhere that day because few showed up but those who did enjoyed great food and great company. Hopefully next year we can anticipate attendance by a larger percentage of our membership. For those of you who are on special diets we do provide alternative items such as Garden Burgers in lieu of the BEEF. If you all have any ideas on what we can do to make this annual event more inviting we are all ears! Hope to see you all there next year! - No, that doesn't mean I am volunteering to be chair for the picnic for 1998 - just to support it!

### Events Calendar

#### September

**September 18th, Thursday** - Public Service Net, 7:00 PM on 146.82 repeater

**September 18th, Thursday** - Long Range Planning Committee, 7:30 PM at Denny's Southcenter

**September 18th, Thursday** - Public Service Committee, 7:30 PM at Denny's Southcenter

**September 20th, Saturday** - Mike and Key General Meeting, 10:00 AM at Renton Salvation Army

**September 20th, Saturday** - Technical Committee, 9:15 AM at Renton Salvation Army

**September 20th, Saturday** - Facilities Committee, 9:15 AM at Renton Salvation Army

**September 24th, Wednesday** - Mike & Key Net, 7:30 PM on 146.82 repeater

**September 24th, Wednesday** - Mike & Key Board Meeting, 7:30 PM Renton Salvation Army

**September 25th, Thursday** - Public Service Net, 7:00 PM on 146.82 repeater

#### October

**October 1st, Wednesday** - Mike & Key Net, 7:30 PM on 146.82 repeater

**October 2nd, Thursday** - Public Service Net, 7:00 PM on 146.82 repeater

**October 2nd, Thursday** - Flea Market Meeting, 7:00 PM Renton Salvation Army

**October 7th, Tuesday** - Education Committee 7:30 PM Denny's Southcenter

**October 8th, Wednesday** - Mike & Key Net, 7:30 PM on 146.82 repeater

**October 9th, Thursday** - Public Service Net, 7:00 PM on 146.82 repeater

**October 15th, Wednesday** - Mike & Key Net, 7:30 PM on 146.82 repeater



**October 16th, Thursday** - Public Service Net, 7:00 PM on 146.82 repeater

**October 16th, Thursday** - Long Range Planning Committee, 7:30 PM at Denny's Southcenter

**October 16th, Thursday** - Public Service Committee, 7:30 PM at Denny's Southcenter

**October 18th, Saturday** - Mike and Key General Meeting, 10:00 AM at Renton Salvation Army

## General Meeting Minutes, 06/21/97

*Melissa Donimirski, KB7TFF*

**Officers present:** President - Chuck a.k.a. Buster (N7STR), Vice President - Sam (N7RHE), Treasurer - Chuck (WA7EBH), Secretary - Melissa (KB7TFF), Activities - Larry (AB7FJ), Radio Officer - Harry (W7JWJ), Trustee #2 - Mary (W7QGP), Trustee #3 - Pete (K7WTG), Trustee #5 - Adrian (KB7BVL). Guests were: Bill (KL7BB) and Carolyn (WV7Q).

### Officer Reports:

**President:** Chuck a.k.a. Buster (N7STR) announced that two members have signed up to co-chair Field Day for next year. They are: Jed (KK7HS) and Brian (WA7PBE). No one signed up to chair the Christmas Party, so Chuck asked that the trustees put together a joint effort to put it on this year. The party will be the first Saturday in December. ARRL is asking for money for Archie comic books. Due to the large popularity for these books, the Board decided to contribute \$200, and ask the membership if they would like to contribute more.

**Vice President:** Sam (N7RHE) presented some applicants for membership. They were: Mark (KC7TBE) and John (KM7O). Both were okayed for approval by the general membership. Sam gave the secretary the check from Barbara Oppenheimer for membership to return to the family due to her unexpected demise.

**Treasurer:** Chuck (WA7EBH) announced that the Club is solvent. He would like to move \$700 from the general club bank account to the flea market account which has a \$3000 dollar minimum. This would avoid the \$8 service charge every month.

**Activities:** Larry (AB7FJ) announced that the proposed presentation for September may cancel, however if this should happen Larry has some interesting tapes on QRP. In addition, Larry finally won a raffle prize, and so he will stop complaining now, thank you very much.

**Radio Officer:** Harry (W7JWJ) notified everyone that there is work being done on the back up repeater, and if you hear any deliberate interference please call or e-mail Harry. In addition, the QRP radios made for the club build-it project do not work due to difficulties in how instructions are differently interpreted by different peoples. Harry will have some very interesting articles regarding this for everyone at the next meeting. Chuck (WA7EBH) suggested having new classes before the general meetings.

### Committee Reports:

**Facilities:** Pete (K7WTG) announced that Jed (KK7HS) is now chair, but Pete had the wrong phone number for Jed, and thus has nothing to report. However, the committee is moving along due to the many different talents members have to offer the committee and the Club.

**Education:** Mary (W7QGP) announced that she has been working with Harry on the QRP project on how to instruct others on how to build radios.

**Flea Market:** Meeting will be the first Thursday in September.

**Picnic:** The picnic was a success, though not as many attended as in past years. The new location, however, is terrific.

The Board meeting dismissed at 9:10 PM.

## Silent Key

A former member and friend of many, Dick Dietsch, W7KCX and his wife Cheryl were killed in a traffic accident in British Columbia in Saturday August 30th. Dick joined the club in 1976 and was very active for many years. His many interests besides ham radio were motorcycling, flying, and computers. There was a memorial service held Saturday, September 6th at 1:00 PM in the Faith Lutheran Church in Redmond.

## FCC Revises RF Safety "Threshold" Levels

*From the ARRL Newsletter*

The FCC has revised the power level thresholds to trigger a routine Amateur Radio station RF exposure evaluation, and the changes will be welcome news for most hams. When the FCC first decreed a year ago that ham radio stations would have to comply with RF exposure guidelines, it set a 50-W threshold level. The updated guidelines, announced August 25, increase that threshold level on all HF bands except 10 meters, where it remains at 50 W. The FCC made no changes in the RF exposure limits it announced last year.

The new RF safety guidelines are scheduled to become effective January 1, 1998, for Amateur Radio stations.

The FCC went along in part with a request by the ARRL to establish a sliding scale for threshold levels, depending upon frequency. The revised thresholds are 500 W for 160 through 40 meters, 425 W on 30 meters (where the maximum legal power is 200 W), 225 W on 20 meters, 125 W on 17 meters, 100 W on 15 meters, 75 W on 12 meters and 50 W on 10 meters. The threshold for all VHF bands is 50 W. On

UHF, the threshold level is 70 W on 70 cm, 150 W on 33 cm, 200 W on 23 cm, and 250 W on 13 cm and above. Stations operating at or below these respective power levels are categorically excluded from having to perform a routine RF radiation evaluation. However, all stations, regardless of power level, still must comply with the RF exposure limits.

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# K7LED RELAY

The RELAY is the official tabloid of the Mike and Key Amateur Radio Club. The Mike and Key ARC is dedicated to the growth and betterment of Amateur Radio. We meet the third Saturday of every month at the Salvation Army Renton HQ, 720 Tobin St., near SE corner of the Renton Airport. The Club operates repeaters on 146.82 MHz (103.5 CTCSS) and 224.12 MHz under the call sign K7LED. The following nets meet on the 146.82 repeater: the Club net on Wednesdays at 7:30 PM and the Public Service net on Thursdays at 7:00 PM. The Club's mailing address is PO Box 2121, Kirkland, WA 98083. All persons interested in Amateur Radio are invited to participate in the Mike and Key ARC and its activities. Yearly dues are \$12.00 for individual memberships and \$18.00 for family memberships.

Volume 25, Number 9

September, 1997

#### President

Chuck Benefiel - N7STR  
(425) 312-5341  
cbenefiel@sprynet.com

#### Vice President

Sam Sullivan, N7RHE  
(425) 631-0663  
sam.sullivan@faa.dot.gov

#### Secretary

Melissa Donimirski - KB7TFF  
(425) 226-2856  
mellibot@aol.com

#### Treasurer

Charles Strocher - WA7EBH  
(425) 392-5303  
strochc@wsdot.wa.gov

#### Activities

Larry Smith - AB7FJ  
(253) 848-4998  
ab7fj@juno.com

#### Radio Officer

Harry Lewis - W7JWJ  
(206) 523-9117  
w7jwjw7qgp@aol.com

#### Trustee No. 1

Al Hopwood - KB7THX  
(425) 747-5192  
kb7thx@aol.com

#### Trustee No. 2

Mary Lewis - W7QGP  
(206) 523-9117  
w7jwjw7qgp@aol.com

#### Trustee No. 3

Pete Hedberg, K7WTG  
(425) 868-1563  
petehedberg@compuserve.com

#### Trustee No. 4 (COB)

Jeremy Donimirski - W7YG  
(425) 226-2856  
jdonimi@uswnvg.com

#### Trustee No. 5

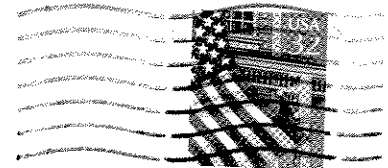
Adrian Roth, KB7BLV  
(425) 312-5341  
cbenefiel@sprynet.com

#### Relay Editor

Jack Grimmett - N7IHS  
(425) 271-7955  
grimmett@halcyon.com

#### Return To

Jack Grimmett  
18128 SE May Valley Rd.  
Renton, WA 98059



First Class Mail

#### Next Club Meeting

Saturday, September 20th at 10:00 AM  
Salvation Army in Renton  
720 Tobin, Renton  
Doors open at 9:30 AM for donuts  
Talk-in on 146.82 RPTR

Sam Sullivan N7RHE 7/98  
13626 - SE 232nd  
Kent, WA 98042

#### Next Board Meeting

September 24th at 7:30 PM  
Salvation 5th Army in Renton  
720 Tobin, Renton

#### August Program

Effective QSLing



Check Mailing Label for Dues Status