



The (Vice) Prez Sez

Wie Geht's? Since our illustrious President is in Germany at the time the Relay is being published He asked me to fill in for him writing this column. I know his articles are a tough act to follow, big shoes to fill and all of those other clichés, but here it goes.

Our next big event is Field Day 2000. Most people think it is a great opportunity to go camping and participate in a nation wide contest. Granted, the contest is one aspect of the event, however, the real reason for Field Day goes far beyond that. It is to test emergency preparedness and to demonstrate the hobby of Amateur Radio to non-hams. Emergency preparedness does not consist of one weekend a year at Fort Flagler but should start at home.

Remember that Washington is Volcano and Earthquake territory. Your family will cope best by preparing for disaster before it strikes. Following are two items that you should do, at a minimum, to be prepared for any disaster.

- Create a disaster plan.
- Discuss with your family members the need to prepare for a disaster.
- Learn how to turn off the utilities (Gas, water, and electricity) at the main switches.
- Pick a meeting place.
- Pick one out-of-area and one local friend or relative for family members to call if separated by a disaster (it is often easier to call out-of-state than within the local area)
- Practice, improve and maintain your plan.
- Create a Disaster Supplies Kit: - You will need several kits - for home, office and each vehicle. They should contain such things as:
 - Water - you will need one gallon per person per day
 - Food - A three day supply of non-perishable food per person.
 - Non-Prescription medications - Aspirin or non-aspirin pain relievers, antiseptics, etc.
 - First aid kit
 - Tools and supplies - Mess kit, battery operated radio, flashlight, extra batteries, etc.
 - Sanitation - Soap, personal hygiene items, toilet paper, plastic garbage bags, etc.
 - Clothing and Bedding
 - Emergency Telephone numbers
 - A HT with a charged battery.

When an emergency occurs, you should first verify that you and your family are safe and then put into effect the skills you have honed at Field Day.

To obtain more information contact the King County Emergency Management Office or any American Red Cross chapter. In addition the Mike and Key ARC is planning on starting a program of Emergency Preparedness education for the club in the near future. With that said, the main thing is to participate in Field Day and have fun.

Ich muss auf wiedersehen sagen.

Viel Spass!

Wayne Heath, KC7ORB, Vice President

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General Meeting Minutes, 5/20/00

Officers Present: President - Alan Hughes (KB7SVU), Vice President - Wayne Heath (KC7ORB), Secretary - Jan M. Van Allen (K7YH), Activities Manager - Tressie Hughes (KC7BAL), Treasurer - Jim Etwiler (KD7BAT), Trustee #1 Jack Grimmert (N7IHS), Trustee #2 - Steve Kaney (N7MUT), Trustee #3 - James Hamlin (W7FKI), Trustee #4 - Mary Lewis (W7QGP), Trustee #5 - Michael Ross (KB7YXB), Radio Officer - Harry Lewis (W7JWJ).

The meeting was called to order at 10:00 AM with all members and guests repeating the Flag Salute at the Salvation Army Building in Renton. It was moved, seconded and passed to approve the minutes of the April meeting, with the following corrections: Wayne Heath's call is KC7ORB and Harry Lewis's call is W7JWJ. There were no other changes and the minutes as amended were approved.

Introductions of members and guests were made. Announcements regarding coffee fund and Break areas were made. We are an affiliated club, please be a responsible member and join the ARRL. Please sign the rosters at the table. Visitors are asked to refrain from voting on club matters requiring a vote.

Officer Reports

President: Alan (KB7SVU) made comment about genealogy studies, he has discovered that Wayne (KC7ORB) is his cousin. He also announced that he and Tressie would not be at the next Board meeting as they would be on vacation in Germany.

Vice President: Wayne (KC7ORB) introduced Ron Verschuyl K7AAE, for membership. He was elected and congratulated by the membership. Ron is also head of the Washington State Navy Marine Corps MARS, newly appointed.

Secretary: Jan (K7YH) reported only two pieces of correspondence, the Tacoma Radio Club newsletter, and a letter from the ARRL regarding club insurance.

Treasurer: Jim (KC7BAT) reports books are in good standing. Books available for members to review.

Make Plans for Field 2000, June 24th and 25th

Activity Manager: Tressie (KC7BAL) has raffle tickets available. Will raffle prizes at end of meeting. Prizes include Radio Depot gift certificates and World Radio subscription. Program today will be for new members by Jan (K7YH) and Dean (N7NKO) on Field Day.

COB: Jack (N7HIS) discussed club equipment and check out procedures, ARRL membership and the ARRL frequency defense fund. He invited all members to come to board meetings.

Radio Officer: Harry (W7JWJ) License upgrades have been granted to twenty-four members of the club. He also stated the ARRL had 25 thousand upgrades to process, which were submitted prior to April 15. They now have sixty-eight thousand since restructuring came into effect April 15th. ARRL is overloaded with work and has added new staff to expedite processing.

Relay Editor: Jack (N7IHS) has nothing to report.

Committee Reports

Education: Chuck N7STR announced the class to be held over Mothers day weekend at the Boeing Rec. center, graduated 12 new HAMS. He added that the lesson plans were being modified to fit the new license requirements and classes would be only two days from now on. Next class will be in August.

Public Service: Discussed upcoming opening day and Seafair parades.

Field Day: To be covered in today's program.

Alligator Award: Frank (K7VMG) still has the award. He still hasn't found a new recipient.

Old Business

There was none.

New Business

Alan called upon Jack (N7HIS) to take over the meeting in his function as Chairman of the Board. Jack announced that Mike Ross had experienced some difficulties and did not believe he could continue as trustee. He has submitted his resignation. Jack announced the vacancy and opened the floor for nominations. One nomination was made: Dan Humphrey (N7QHC). There being no other nomination Dan was unanimously elected by the membership.

Alan reassumed the chair and Vic (WB7TBR) reiterated the clubs scholarship proposal. Alan stated the scholarship proposal was under review by a lawyer to insure the process was legal and correct. Good of the Order

Alan announced that Mike LaFerla (K7JML) had successfully undergone hip replacement and was recovering at home.

There being no further business, Chuck N7STR moved the meeting be closed, seconded by Wayne KC7ORB. The meeting was adjourned at 10:50 AM.

Submitted and attested:

Jan M. Van Allen, K7YH

Secretary

May Relay Deadline

Submittals for the July Relay are due to the editor by **July 5th, 2000**. Early submittals would be appreciated.

Field Day Operating or What are those funny buttons on my radio?

Due to recent license restructuring, there will undoubtedly be many people who will be operating on HF for the first time during field day. The narrow HF bands will be crowded and since the HF bands aren't channelized, you will encounter QRM caused by signals on frequencies very close to the one you're using. You need to know how to deal with the sound of mad bees that can threaten to keep you from copying the exchange. But even if you're an old hand to HF you will probably be operating an unfamiliar radio. You will need to be able to identify and use the QRM and QRN fighting controls.

Most radios accept optional filters that narrow the bandpass (the width or frequency range of the received audio) and reduce the chance of hearing adjacent interfering signals. The drawback to filters is that it sounds like you're in a tunnel and the higher pitches of a YL voice get distorted. There may be a separate 'filter' button to switch narrow filters in and out. On other radios, the filters are usually turned on and off by touching the mode key either momentarily or holding it down for one or two seconds. There should be an indication on the display that the filter is engaged. If you turn the narrow filter on and there is no sound coming from the radio this is a sure sign that the optional filters haven't been installed.

One of the most common interference fighting tools is IF Shift, also called Pass Band Tuning or PBT. This feature shifts the center frequency of an intermediate stage in the radio while leaving the tuned frequency untouched. The effect is to knock out interference just above or just below the signal you are listening to by putting it outside the pass band. There will be a single knob that is normally kept in the centered position. In USB mode, turning the control clockwise knocks out interference below and counterclockwise knocks out interference above. In LSB mode the effect is 'upside down'. You should be careful to set the control to its center detent when not in use or you'll be wondering why the audio sounds funny or there is no sound at all.

Twin Pass band Tuning is actually two IF Shift controls combined, one working on an upper stage and the other on a lower stage. When the controls are both turned together in the same direction the effect is the same as IF Shift. When turned in opposite directions the effect is like having a customized narrow filter. On some radios the inner control for the upper IF is much more effective than the outer

Make Plans for Field 2000, June 24th and 25th

control for the lower IF so adjust the inner ring first and then adjust the outer control to fine tune the effect. If someone has turned the controls in fully opposite directions you may be wondering why you're not hearing anything at all.

The Notch Filter offers a very narrow rejection of a particular constant tone. There will be both a button to turn it on and a knob to adjust the notch frequency up or down. This is especially handy to knock out the beat frequencies often found on 40 meters caused by the mixing of your receiver's oscillator frequency with the carrier from foreign short-wave broadcasters who share the band.

Digital Signal Processing can not only reduce QRM by applying effects similar to those mentioned above but also can simultaneously reduce QRN (random atmospheric noise or static). This feature is only found on newer radios. There may be just a single button marked DSP or NR which turns the feature on and off. In that case the computer decides what to do based on the setting of other controls such as the mode keys. Better radios include a knob that allows you to control how strong the effect is. Still fancier radios may have multiple knobs which allow adjustment of the low and high cut frequencies and or center frequency and width which allow you to 'design' your own narrow filters. The downside of DSPs is that the computer algorithms can sometimes be fooled by certain noise patterns and the result is distortion.

The Auto Notch Filter, also called ANF or BC, is a DSP generated Notch Filter. There will be just one button to turn it on and off. You don't have to adjust the center frequency like you do on the Notch Filter because the computer figures it out. It automatically seeks out and destroys several beat frequencies simultaneously.

The Audio Peak Filter or APF is another DSP generated feature, which is specifically optimized for CW. The effect is to amplify a narrow portion of the CW bandpass similar to the effect of an extremely sharp narrow filter.

On some radios transmit audio is also tailored by the DSP. These radios usually provide a 'monitor' or MONI feature that allows you to hear your own output audio in the headphones. If the output from the monitor sounds odd or difficult to copy then it surely sounds the same to someone who is trying to copy you. In this case either adjust the MIC gain or the DSP or turn off the DSP.

As an aside, some microphones have pickup elements that are specially tuned for contest or DX operations. Examples include the Heil microphone and the Kenwood 'DSP' which has interchangeable elements. Some of these may require you to use more MIC gain than you would with other microphones because the technology produces lower output voltages, but this doesn't mean that they produce a weak signal. The MIC gain should be properly set for the combination of microphone and your voice charac-

teristics. Use the 'ALC' meter provided and adjust the MIC gain to keep the needle where it just comes to the top of the red bar at the peaks in your voice. You may have to select the ALC feature on a multi-function meter. You should always check the MIC gain because too little or too much will prevent others from hearing you well. There is no one perfect setting for all operators and all microphones.

Advanced Intercept or AIP, or OIF or something similar on Yeasu bypasses coupling capacitors and gives weak signals a direct path through the amplifier letting them through when they would otherwise be lost in the noise. Preamps (there can be more than one, each optimized for certain bands) give the signal an extra boost. The drawback for both AIP and preamps is that in the presence of strong signals or strong adjacent signals the receiver can become overloaded making the audio hard to decipher. For the conditions usually found during field day, AIP will probably cause more trouble than benefit so unless you're sure about what you are doing it is best to leave it off. Preamps are more useful but there will likely be times when you want to turn them off as well.

The opposite effect of pre amplification is to turn down the RF gain or add Attenuation (ATT). This is sometimes necessary when there are very strong signals or strong adjacent signals just outside the pass band. These keeps the receiver from being overloaded by the strong signals but even the weak signals you want to hear will be reduced will be attenuated.

One feature designed specifically to help make it easier for others to hear you is the Speech Processor, also called compression or COMP. There is usually both a button to turn it on and a knob to control how strong the effect is. This gives your signal extra punch to break through noise but this happens at the expense of clarity so you should use this feature judiciously.

Receiver Incremental Tuning (RIT) is not really an interference-fighting feature. It can be used to fine tune the receiver without changing your transmit frequency. RIT can also be used effectively in conjunction with the IF Shift feature. Transmit Incremental Tuning or XIT is a feature that I've never found much need for, particularly during field day. If you are 'running' a frequency it is best to keep your transmit frequency consistent, if you're hunting contacts it is best to respond as close to the other guy's transmit frequency as you can and let him RIT you if he needs to.

Noise Blankers or NB isn't as important as it used to be since the disappearance of the Russian 'over the horizon' radars. It might be useful if you are mobile or a vehicle with particularly noisy spark plugs passes near by.

I can't tell you where to find these controls on the radio you will be using because every radio has a different layout for the controls and some low end

Make Plans for Field 2000, June 24th and 25th

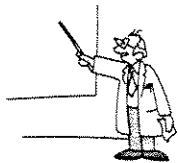
radios such as the Icom 707 doesn't have any of these features. All these features can be used to make you more effective as a radio operator but keep in mind that there is a reason why the manufacturer made these features optional and controllable. There is no golden bullet and each of these features provides an effect at the expense of another characteristic. Use them with care. But do use them if they're available. Steve Kaney (N7MUT), Trustee # 4 and Technical Committee Liaison.

May Ham Class

Our last Ham Class which took place on May 12th through the 14th signed up 12 students. Of the 12 students one was unable to attend on Sunday and did not complete the course, but he came back the following week and passed the test. 100% of our class passed the Technician class exam and one of the students already had a certificate for code. Speaking for the Club and the Education Committee, congratulations to them all.

Our next Technician Class will take place in August, and will be a 2-day course. It will be on Saturday and Sunday August 12th and 13th. The Education Committee is planning a General upgrade class for the fall. Chuck Benefiel, (N7STR), Education Committee Chairperson.

From The W7JWJ Notebook Operation Upgrade Field Day Tuners



The operation during Field Day consists of operating under very adverse conditions. Each station is surrounded by other transmitters all attempting to overload the front end of

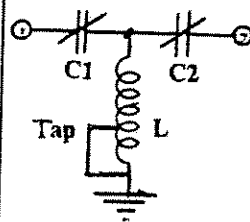
nearby receivers. We do not always take our best equipment to Field Day and when we do experience interference it is always the fault of those other stations. Right? Not necessarily so.

Chances are that the band chair as acquired some of the older equipment without good dynamic range and the first radio frequency stage will be overdriven by the received signals, thus creating difference signals that interfere with the signal of interest.

Secondly, the antenna tuner may be of the ultimate transmatch type. This tuner is basically a hi-pass device and was originally used as the impedance matching input for RCA radios manufactured in 1932. During the 1950s it was popularized as a wide range transmatch. (See Figure #1). Unfortunately this tuner does little to suppress harmonics or reduce the level of out of band signals. What to do?

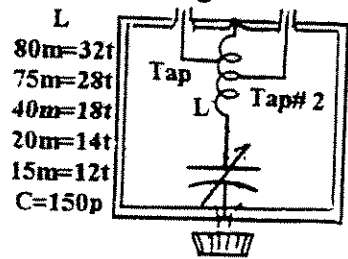
Build a Field Day Tuner! The circuit of Figure #2 shows a simple tuner that may be constructed in less than an hour. Coil L1 and capacitor C1 form a parallel resonant circuit that offers a very high impedance for undesired radio signals, but a very low impedance for the frequency of interest. Taps #1 and #2 are experimentally adjusted for best impedance match and Capacitor C1 tunes the circuit to resonance. When the taps and capacitor are adjusted correctly the transmitter will see a 1:1 SWR match. Almost any metal case will suffice, even an old tomato can. For those that are perfectionists Taps #1 and #2 may be made wwitch selectable.

Figure #1



Ultimate Transmatch

Figure #2



Field Day Tuner

Board Meeting Minutes, 5/31/00

Officers Present: Vice President - Wayne (KB7ORB), Secretary - Jan (K7YH), Radio Officer - Harry (W7JWJ).

Board Members Present: Trustee #1 (COB) - Jack (N7HIS), Trustee #2 - Mary (W7QGP), Trustee #3 - Jim (W7FKI), Trustee #4 - Steve (N7MUT), Trustee #5 - Dan (N7QHC).

Visitors: Nils (W7RUJ), Chuck (WB7EBH), Frank (KA7QHG), Chuck (N7STR), and Dawn Humphrey (KC7YYB).

Officer Reports

COB: Jack (N7IHIS) opened the meeting at 7:30 PM. The first announcement was that Dan (N7QHC) was newly elected to Trustee 5, due to the resignation of Mike KC7YXB. Dan will be the Liaison Trustee for the Public Service committee. Wayne (KB7ORB) made a motion the minutes for April, 2000 be approved as written, motion was seconded by Jim (W7FKI) and the motion carried. Jack distributed a memo, outlining the duties and responsibilities for Trustees.

President: Absent, no report

Vice President: Wayne (KB7ORB), presented an application from Mr. Choice Dalton (Call Pending) who was unanimously accepted by the Board.

Treasurer: Absent, no report.

Activities Manager: Absent, no report.

Radio Officer: Harry (W7JWJ) reported that

Make Plans for Field 2000, June 24th and 25th

ICOM has introduced a new line of repeaters, key-board controlled. Cost is approximately \$2500.00, further discussion was made about the necessity of Cavities, and we should retain and use our old ones if at all possible.

Committee Liaison Reports

Technical: Per the discussion last month regarding VHF antennas for Field Day, investigation and discussion has determined that purchase of the antennas is the best option. Acquisition will be pursued immediately.

Public Service: In addition to the normal public service committee activities, the committee will undertake emergency planning in the coming year. Mike Hanson (KG7MX) will be asked to accept appointment as Emergency Planning Liaison.

Education: Chuck (N7STR) reported a successful class had just been completed, Next class is to be held in August at the Boeing Recreation Center. Mary (W7QGP) reported the new Technician study manual was being printed and Chuck (N7STR) will be ordering them for classes.

Long Range Planning: Budget planning for new repeaters and the revision of our present by-laws in the future was discussed as a matter of importance.

Facilities: Mary (W7QGP) distributed a new property inventory for club assets, Discussion regarding who had been issued keys to the building and to the equipment closet ensued. Inventory will be checked and updated as activities are held.

Field Day: Report on planning and status was made also antenna acquisition. FD is progressing well.

Old Business

Discussion was held concerning the ARRL Frequency Defense Fund, COB proposed the club donates \$500.00 to the fund, motion was seconded by Harry (W7JWJ) and carried by the Board. A report on the club jacket survey was submitted and further consideration delayed until next meeting due to time constraints.

New Business

Frank KA7QHG presented a proposal and explanation of the recent changes taking place in the VE teams. The Boeing BEARS team, headed by Rick Anties (KF7VG), has resigned, and the Mike and Key Team headed by Jim Christiansen (K7ND) has been disbanded also. Primarily because Jim has been involved for ten years and wished to retire from VE activities.

Frank proposed that the members of the former Bears team and members of the Mike and Key team combine and become a new Mike and Key Team. This new team will be headed by Frank (KA7QHG), and will test after the monthly general meetings as before. Jan (K7YH) will be the team contact person. The Board accepted and unanimously sanctioned these actions. The new team will assume testing duties in July 2000.

There being no further business COB Jack closed the meeting at 9:00 PM.

Attested:

Jan M. Van Allen K7YH

Secretary

Events Calendar

June

June 15th, Thursday - Public Service Net, 7:00 PM on 146.82 repeater

June 17th, Saturday - Mike & Key Net, 9:15 AM on 146.82 repeater

June 17th, Saturday - Mike & Key General Meeting, 10:00 AM at Renton Salvation Army HQ

June 22nd, Thursday - Public Service Net, 7:00 PM on 146.82 repeater

June 23rd, *Field Day set-up*

June 24th, *Field Day set-up and operation.*

June 24th, *Field Day operation and tear-down.*

June 28th, Wednesday - Mike & Key Board Meeting, 7:30 PM at Renton Salvation Army HQ

June 29th, Thursday - Public Service Net, 7:00 PM on 146.82 repeater

July

July 6th, Thursday - Public Service Net, 7:00 PM on 146.82 repeater

July 13th, Thursday - Public Service Net, 7:00 PM on 146.82 repeater

July 15th, Saturday - Mike & Key Net, 9:15 AM on 146.82 repeater

July 15th, Saturday - Mike & Key General Meeting, 10:00 AM at Renton Salvation Army HQ

Field Day Checklists

The following items are needed to operate as Band-Chairpersons for any or all stations during field day. This list is provided to help in your set up. Tents, pens, pencils, scratch paper, clipboards, and log/dupe sheets will be provided by the Club and will be available at Fort Flagler. In addition, the towers, antennas, antenna rotors, and towers are at Fort Flagler. Every one is expected to pitch in and help put up all of the towers and antennas Friday afternoon and Saturday morning:

- Transceiver and power supply
- Computer
- Headphones, microphone, and key
- Extension cords, multiport outlet w/surge protection
- Tables chairs and lamps, clock
- Fuses for above
- Personal license (club license supplied for each band)

Make Plans for Field 2000, June 24th and 25th

In addition, you probably will need some electrical tape, barrel connectors, solder, soldering pencil, mechanics tools, ribbons for guy wires/ropes etc. It would be a good idea to have a back-up radio, some duct tape, handi-talkie, ground stake and wire, and some spare light bulbs

You might want to bring some water jugs, coffee pot, cooler for sandwiches, snacks and flashlights and by all means *a sense of humor!*

Of course you can come without any of these things, and if you yell loud enough the guys on the beach may hear you!

The following is a reminder list for everyone. Because of the varying weather conditions you will need cool and warm weather clothing. Days can be hot, nights cold and windy. It can also rain fairly hard. Hats and rain gear is appropriate. Bug repellent is a must. Extra trash bags, your personal medicines should be included in all of the stuff you have in your camping setup. Food water and utensils are your option, other than the Friday night potluck you are basically on your own. There is water available at the Wagon Wheel community faucet. Sunscreen is a good idea too.

For those of you who seldom camp or haven't had much out door experience, bright clothing attracts bees and mosquitoes. Perfume and after shave the same. Bees love scented underarm deodorant, use unscented everything. The use of plastic insulated bottles for soft drinks is a good idea too, bees especially love cola products. Look before you drink otherwise you may swallow one. You have not hurt until you have been stung inside your mouth. Jan Van Allen, K7YH, Field Day co-chairperson

the afternoon the tents go up for each station. Friday evening is the annual potluck barbecue. The club provides the hamburgers, hotdogs, and soft drinks. The members provide side dishes, salads, and deserts. The food is always great along with visiting by the campfire later in the evening.

People sleep in tents, vans, cars, trailers and RVs as well as the Fort Flagler barracks. Take your choice but be sure to bring a warm coat, it tends to get quite chilly in the evenings. In general just bring every thing that you would take on a regular camping trip. If you get lost, check the club's repeater on 148.62 MHz as well as 146.54 simplex as you get closer to the Wagon Wheel.

We always have a good time but the more that show up the more fun we all have. Se you there!
Jack Grimmert (N7HIS), Chairman of the Board.

COB Report

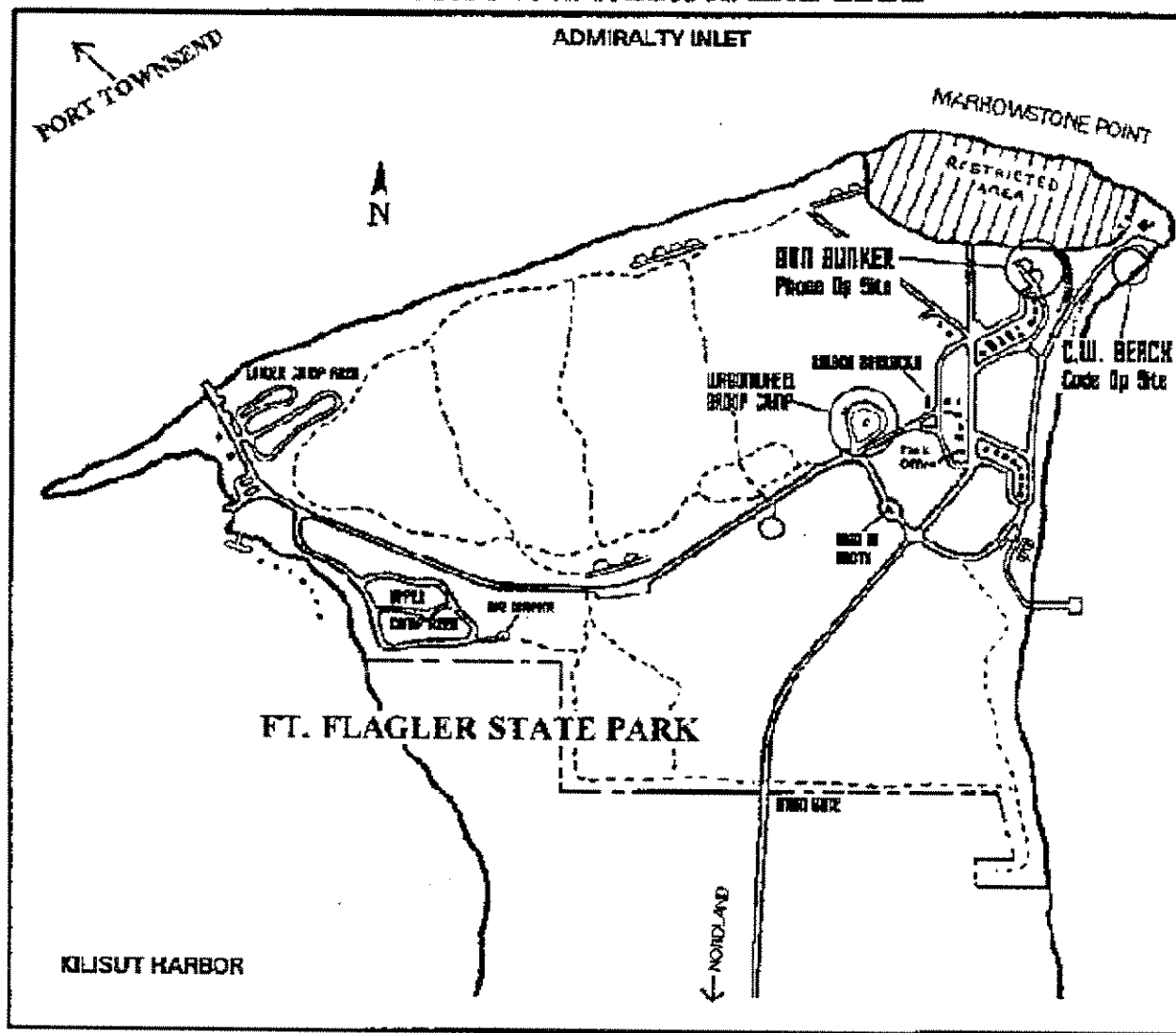
I received an e-mail from Chuck Benefiel (N7STR) concerning Casey Angeloff, K7JX. Casey is home recovering from a triple by-pass heart operation. He apparently had additional complications with a staph infection. I am sure that all members of the Mike and Key ARC wish him a speedy recovery.

Field Day '00 is scheduled for the last full weekend of this month. This has to be the best activity we have and is something the whole family will enjoy. It's a great time to take the family camping. Fort Flagler State Park is an old military base with large gun emplacements and bunkers to store shells as well as quarters for the soldiers that were on duty. There is lots of history to see. The Park is well kept and there is plenty of space for kids to play. We camp in a camping area called the Wagon Wheel that has been reserved by the club for the weekend and is available to members and their guests at no cost.

Most people start showing up around 12:00 noon on Friday and continue until early evening. At noon we start setting up the towers and antennas later in

Make Plans for Field 2000, June 24th and 25th

ARRL FIELD DAY OPERATING LOCATION MAP MIKE & KEY AMATEUR RADIO CLUB



Directions to Marrowstone Island and Ft. Flagler:

- I. From Kingston Ferry terminal head on Hwy 104 toward Port Gamble. Turn due west to find the Hood Canal floating bridge.
- II. From Tacoma cross the Narrows Bridge on Hwy 16 which heads northward to Bremerton. There connect with Hwy 3 and continue toward junction with Hwy 104 from Port Gamble. Turn left and cross the Hood Canal floating bridge.
- III. From either start point continue on from the floating bridge on Hwy 104 for 3 1/2 miles then turn right at the sign for Ft. Flagler and Chimacum (Hwy 19). Upon reaching Chimacum turn right for approximately one mile to Hadlock. In Hadlock turn right again (eastbound). In 3/4 of a mile the road will "Y". Stay to the left toward Indian Island and Ft. Flagler. You will cross the end of Indian Island and onto Marrowstone Island where the road will swing northward toward Nordland and shortly thereafter directly into the fort's main gate.

Make Plans for Field 2000, June 24th and 25th



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., Renton, WA. The Club operates repeaters on 146.82 MHz (103.5 CTCSS) and 224.12 MHz under the call sign K7LED. All persons interested in Amateur Radio are invited to participate in the Mike and Key ARC and it's activities. Yearly dues are \$12.00 for individual memberships and \$18.00 for family memberships.

Volume 28, Number 6

June, 2000

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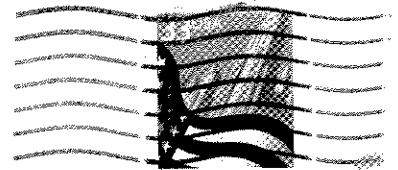
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First Class Mail

Next Club Meeting

Saturday, June 17th 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

Next Board Meeting

Wednesday, June 28th at 7:30 PM
Salvation Army in Renton
720 Tobin, Renton

Sam Sullivan N7RHE 7/1/00
13626 - SE 232nd
Kent, WA 98042



Check Mailing Label for Dues Status

Mike & Key ARC Web Page: <http://www.mikeandkey.com>