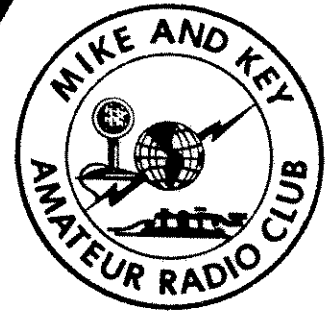


K7LED RELAY



The K7LED RELAY is the Official publication of the MIKE and KEY AMATEUR RADIO CLUB, P.O. Box 2121, Kirkland, Wa. 98083-2121. The Club meets the third Saturday of each month at 9:30am in "The Good Neighbor Center", 305 S 43rd St. Renton, Wa. All "Hams" invited. The MIKE and KEY net meets each Monday evening at 1930 hrs on 224.12MHz. Your check-in is welcome.

AN ARRL AFFILIATED CLUB LOCATED NEAR SEATTLE, WASHINGTON.

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REPEATER FREQUENCY
 52.05 - 53.05
 146.22 - 146.82
 224.12

First Class

BOARD MEETING

FIRST TUESDAY
 OF EACH MONTH

CLUB MEETS:

15 AUGUST 1987

UGN CENTER
 RENTON 10:00

BREAKFAST

BOB'S BIG BOY
 RENTON--8:00AM
 3RD SATURDAY

PETE HEDBERG K7WTG
 20904 NE 77TH ST
 REDMOND
 WA 98053

COFFEE AND DONUTS WILL BE READY AT 9:30

FROM THE PRES.

In case you didn't know we have topped the 100 member mark as of the last meeting. Now it's up to you to give your board members the ideas that you have to help us make the club even better. It seems to me that once you have entered into office no one has any more ideas. Why???? If you didn't have ideas then the club would not exist. Please help.

Soon we are going to have a new net controller who is going to need your help. Jump on the tracks and give him a hand. It doesn't take up much time but is a necessary part of our club communications network. If you can spend an evening a month helping out then let us know.

If you are new to the club you will probably have heard about our flea market that takes place every year in March. Your help is really needed to get this program off the ground. One person can't do all of the planning by himself. It's time that we all pitch in and give our chairman a hand. And he will be more than glad to find a job for you to do. Now is not to late ----- so lets get started early!!!! Rick NU7Z

COMMODORE C128

Lots of us have computers. We have our favorites and put them to various uses. Mine is a C128. If you have any programs you have written or wish to show off, I'm interested.

I prefer programs written for the C128 mode or CP/M, but I am open to good C64 programs which I can also run. (Maybe worth converting to C128).

I can run CP/M from Kaypro II/IV, Osborne DD, and Epson QX10. They do have to be on a 5.25 inch floppy disk.

Myself, I have written some stuff and you're welcome to it. I know Ben N7IVM has a C128 and has been busy writing and exploring the capabilities of this computer, also. Anybody else got something?

Most people think that transistors were invented by Schockley, Pardeen and Brittain at Bell Labs in 1947. Indeed, this represented the advent of the bipolar transistor (NPN and PNP). However, the first patent of a field effect device was granted to a physicist at Purdue University in the early 1930's. I have forgotten this fellow's name (shameful!) and, now being assigned to my ship, unfortunately cannot look it up. We will publicize it in a later edition of the RELAY.

This just goes to show that, no matter how brilliant the invention, the supporting technology must exist if it is to be a success. FET's did not begin to enjoy wide spread application until the late 1960's. Of course, they are now found in most RF applications and enjoy wide spread use elsewhere.

Here is a brief quiz on Field Effect Devices (JFET's & MOSFET's). The Radio Amateur's Handbook would make a good reference for answering some of these questions. Bob K6PQJ

1. The symbol shown represents:

- a) N Channel JFET
- b) P Channel JFET
- c) NMOS FET
- b) CMOS FET

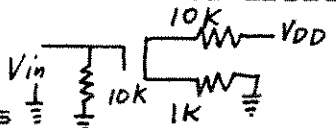


2. The device terminal marked "X" in question 1 represents:

- a) Source
- c) Collector
- b) Gate
- d) Drain

3. The Input Impedance of the FET amplifier shown below is about

- a) 1 M Ohms
- b) 10 K Ohms
- c) 900 Ohms
- d) 100 K Ohms

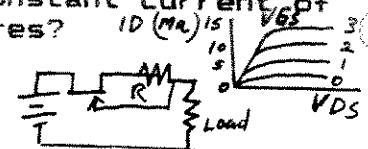


4. In an enhancement mode MOSFET employing an N-channel, what polarity voltage would be applied between gate and channel to increase channel current flow?

- a) Positive
- b) Negative

5. The circuit below shows a FET employed as a constant current source. Device curves are also shown. What would be the value of R for a constant current of 10 Milliamperes?

- a) 100 Ohms
- b) 200 Ohms
- c) 1 K Ohm
- d) Zero



6. Give an application of the circuit in Question 5. (No multi-

GENERAL MEMBERSHIP MEETING 7-18-87

K7SRZ and W7TWU presented a video tape of field day and the clam bake.

W7JIE talked about his visit to the FCC in Washington, DC and their new method of tracking down stations causing interference. He also read the Public Service announcements.

N7HKL collected newspapers but left before all papers were collected.

Contact N7NW for jackets.

Contact WB7TBR for badges.

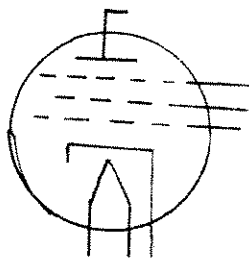
WA7UVJ announced the activities: picnic, fox hunt, etc.

K7PHZ gave a report on field day.

Three new members were voted in: WA7FMT, WB7WGB, KA7ZWN; each has paid dues. Applications for 5 new members were received: KB7BRT, KS7F, N7GHI, WA7F, KA7OVQ.

am class at North Seattle Community College announced by W7WJ

12 Visitors; 48 attendance. WB7TBR



MIKE & KEYER

The keyer is done. Schematics are drawn, parts lists made, the program assembled, and baptism of fire (Field Day) over.

In brief, this keyer is microprocessor controlled, with eight memories, an LCD display, and will loop in a controlled form.

If you enjoy CW, especially contests, you might be interested. I'll be happy to get you a copy of the above documentation. I'll also bring the device in for an eyeball at the August meeting. CW LIVES!!!
Mike WA7UVJ

BOARD MEETING 8-4-87

WA7EBH, N7JPW, WA7LNO, WB7TBR, NU7Z, N7NW, WB7UVJ, WB7AYU, K7PHZ, K7ND, K7YR.

Items discussed:

- 1) Field Day
- 2) Flea Market
- 3) Novice Class - Sept 24-Nov 19
- 4) Membership applications: KB7BRT, N7JHI, WA7F, KS7F, KA7OVQ - All approved.
- 5) 2M Repeater: Antenna changed To look at operating antenna Power out = 20W.
- 6) Treasury Report: \$8233.17
- 7) Trip to W7DK Radio Club of Tacoma.
- 8) Transmitter Hunt-September 19 after club meeting. Club picnic August 29.
- 9) TVI Committee: K7YR, Eastside K7PHZ, Southend; NU7Z, North.
- 10) Next Board Meeting at WA7EBH, September 1 at 1930. K7ND

DO YOU SPEAK MUMBLY?

Have you ever noticed how some hams give their calls on the air? Mumbles, fast-talking, impossible to understand, and almost unidentifiable. And the person being called ought not answer the way that call is uttered.

Wots sa matta! Yew afraid to speak yer call correct? Ashamed of it? Don't want no one to know yer call? Afraid someone might understand you?

Fer gosh sakes folks. It's your call. No one else in the world has a call like YOURS! Be proud of it. Use it with pride. Speak plainly, announce your call clearly, and make sure the other person's call is clear and understandable. That might explain why some folks never get their calls answered--no one can understand what they're saying. Think about it! Call a DX station on 20 meters and find out the wisdom of clear clean talking.....
W7JIE

*** COMMITTEES ***

The following are the active club committees and the contact for that committee.

REPEATERS -- Contact K7YR -- The antenna seems to have developed another problem and was removed on 8/3. Ken replaced it with a commercial antenna that has a 2 to 1 SWR, so the repeater will have to operate under reduced power until the antenna has been repaired. -- The 6 and 220 repeaters are continuing to operate normally.

HAM CLASSES -- Contact WA7UVJ -- The next class will be a Novice class and will start Sept. 24 and run for 9 weeks, completing on Nov. 19. A Tech/General class will be offered starting in January. The classed will be held at Highline Community College on Thursday at 7:00 pm. We would like to see more club members involved this coming fall.

NETS -- Contact K7YR is you can help out as net control. The net meets at 7:30 pm on Monday nights on the 224.12 repeater. The linking of the 2 meter repeater for net nights is in work and should be available soon.

FRIENDSHIP AWARD -- Contact K7KOT -- Contact 10 or more club members (no more than 5 on a repeater) and submit list to K7KOT for the certificate. -- How many members have you worked??

SCOUTING -- Contact WB7TBR -- Vic has provided an input to the TOTEM, a scouting newsletter that goes out to 8000 scout leaders. The input requests them to contact Vic if they are interested in involving the scouts with Ham Radio. Vic will need volunteers to provide Ham presentations if he gets any response.

K7LED OPERATING ACTIVITY -- The club call is available to members who wish to use it to publicize the club.-- Contact the Radio Officer, K7YR.

CLUB JACKETS -- Contact N7NW -- Orders will be placed about every three months if at least 11 are ordered. The jackets may be silver or white with the logo on the back. You may provide your own jacket if you prefer. The jackets cost \$25.00 and the T-shirts \$7.00. The last order was available at the July meeting. Several who ordered were not at the meeting. I will have them at the August meeting to be picked up. Please make out the checks to Hal Goodell.

PUBLIC SERVICE -- Contact K6DOW/WA7EBH -- The summer months host a lot of events that require help from the hams to provide coordination and emergency communications. These are opportunities to put Ham Radios best foot forward. Many events in August and Sept. will need our help. If you don't know what is involved please contact Wayne, K6DOW, or Chuck, WA7EBH for a briefing. The events are always fun if not rewarding.

ARES -- Contact N7HKL -- Ted, N7HKL, holds the ARES net on Thursday at 7:30 pm on the 146.82 club repeater.-- Please check in to see what's happening.

ATV -- Contact W7SRZ -- Chuck and Dick, W7TWU presented the video tape of our Field Day activities at the last meeting. -- Contact Chuck if you are interested in ATV.

PACKET RADIO -- Contact KD7NM -- This digital mode of communication is becoming very popular. Digital repeaters, called digipeaters, are available on the 2 and 1 1/4 meter and 70 cm bands. An organization for promoting Packet Radio meets monthly. Contact Bob, KD7NM, for information.

PICNIC -- WA7UVJ, Mike -- The picnic will be August 29th starting at noon at Van Doren park in Kent. There will be a softball game. See elsewhere in relay for details and a map.

FLEAMARKET 1988 -- N7NW, Hal --
There will be an advance planning
committee meeting after the August
club meeting.

TVI/RFI ---- Contact K7PHZ for the
south end, Contact K7YR for the East
side and NU7Z for the North end for
information and help. See roster
for phone numbers.

TVI ON 2 METERS & 220 MHZ

I continue to get calls regarding
"QRM" on 145.25 (+ or -) or on 220
Mhz at 221.75 or 223.25 (+ or -).
All 3 of these frequencies are used
by cable TV companies for their
transmissions. When you can "hear"
them on these frequencies, you are
really hearing "leakage" from the
CATV system. Some "leakage" is
permitted by FCC rules governing
cable TV systems. Less than 20
microvolts per meter on low bands
or 50 microvolts per meter on high
bands measured on a tuned di-pole
10 feet. This is not very much.
However, many ham receivers are
quite sensitive and can pick up
CATV radiation at much great
distance and much lower radiation.
It is possible for the CATV company
to be in trouble. People will
attempt to get "free" cable TV by
hooking into the system. Other
problems cause trouble: a broken
lead to a house, split coax
covering, open terminations, broken
amplifiers, and other causes.
Leakage can occur blocks away from
your QTH and still cause trouble.
If you experience "leakage", it's
best to drive or walk around with a
receiver tuned to the leakage
signal. Try to localize it's
strongest point. Then give me a
call. I have working arrangements
with all CATV companies in the
Greater Puget Sound area and can
usually rectify the QRM with little
trouble. To call them yourself and
"raise heck" will probably not
dear them to your heart. They
can be right and they can be wrong.
So many times they have "leakage"
and don't know it, and other times
hams have been known to make an
error!! "Gib" W7JIE 226-4222...

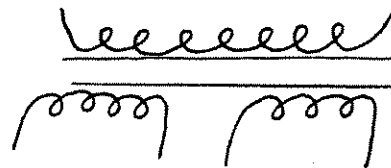
*** WELCOME ABOARD ***

At the July meeting the following
were voted into the club.

WB7WGB, Charlie Dill, is a Novice
class amateur. Charlie lives in
Everett and works for Mamco Mfg.
Charlie also enjoys Motorcycle
riding. Welcome to the club !!

WA7FMT, Jim Morris, is a General
class Ham. Jim lives in south
Seattle and works for Arnold Arnold
& Associates. Jim is interested in
hiking and electronics. Welcome
Jim!!

KA7ZWN, Don Richter, currently is
a Technician class Ham. Don lives
in Kent and is retired. Don likes to
get away with his RV.



SWEEPSTAKES

I don't know why I'm writing about
this now, except I feel like
writing and November is on my mind.

NOVEMBER!!!! "Are you daft?", my
better half says, "Why Summer isn't
even over, yet." November brings
one of my favorite contests, the
"Sweepstakes". CW, of course.

Like Field Day, I stay up too long,
eat and drink too much, and make
lots of "dupes". But, I don't have
to deal with bugs, cranky
generators
or feel guilty about not being out
in the nice weather.

Group efforts are common in the
"SS" and there are a couple forms
they can take. We can all compete
individually and then group our
scores together, or we can run
multi-operator station in shifts.
Either way, I would like to claim
the K7LED call for that weekend if
nobody minds. And if you are
interested in the "SS", maybe we
can make a group effort.

CQ SS CQ SS.....Mike WA7UVJ

PICNIC

Van Dorens Landing in Kent is situated on the Green River just south of the Kent Boeing Plant. It is reserved in our name for August 29th, the last Saturday of the month.

The park is large. It has two parking lots, a jungle gym/sandlot for the kids, and horseshoe pits. There is enough space to lay out a softball diamond and a volleyball court. If none of that appeals to you, fish along the bank of the Green River and enjoy the serenity.

Beer and wine are permitted. However, please do not imbibe to excess. The club will provide the hamburgers, hotdogs and pop.

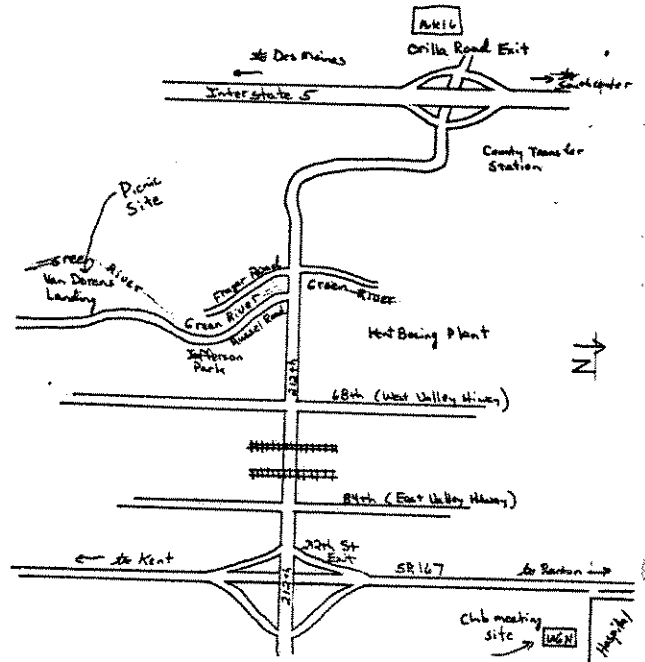
You get to bring what you signed up for, or potluck if you prefer. Please, let me know if you plan to attend. The signup will be at the next club meeting or, call me at home.

- 11:30 Picnic starts
- 12:30 Softball game begins
- 13:45 Softball game ends
- 1400 BBQ starts

- All day - Munchies
- All day - Volleyball
- All day - Horseshoes
- All day - Checkers

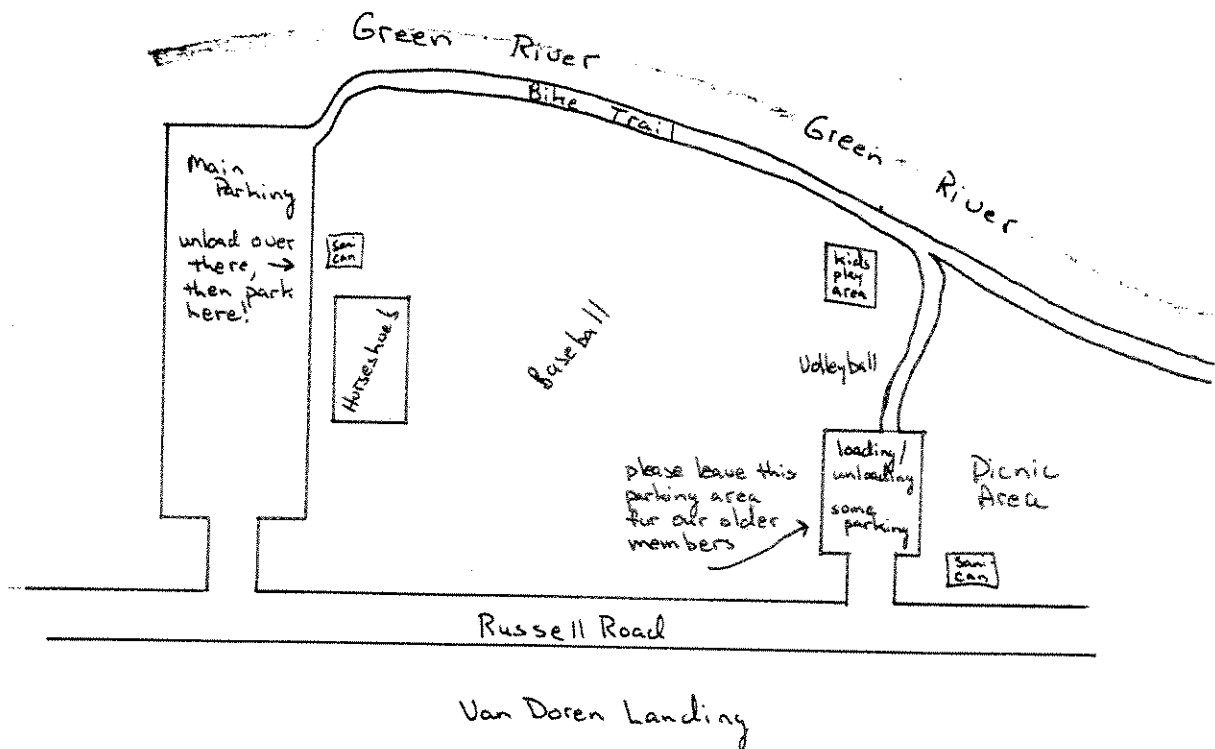
Right now, we don't have enough people for softball but are REAL close so make your intentions known. Bring a glove. We also need a count for the burgers and pop. Kids are welcome.

Got any ideas for a better picnic? I listen real good. Mike WA7UVJ



ya all come! ya hear?!!

Fun For All!!!



FROM THE FCC TO VIC WB7TBR

This is response to your recent inquiry regarding the Commission's proceeding in General Docket 87-14, which addresses the allocation of the 216-225 MHz band including the amateur use of portions of this band.

The 216-225 MHz band has been used on a primary basis for federal government radar operations. However, these operations are being phased-out, making the 216-225 MHz band available for other purposes. Therefore, in 1981, the Commission allocated the 216-225 MHz portion of this band for maritime mobile operations to meet the needs of the inland waterway systems. Further, in late 1983, the Commission allocated the 220-225 MHz portion on a primary basis to the amateur, fixed and mobile services until an allocation proceeding addressed all of the issues of this portion of the band. Prior to making that allocation in 1983, the 220-225 MHz band was available to the amateur service on a secondary basis to government operations.

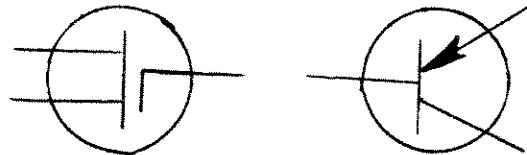
The government still has requirements for land mobile operations in part of this band. Further, non-government land mobile groups have petitioned the Commission, requesting that a land mobile allocation be made in some portion of this band for spectrum efficient technologies.

The Commission on February 2, 1987, adopted a Notice of Proposed Rule Making (Notice) in General Docket 87-14. Comments to the Notice were due by May 21, 1987, and the date for filing reply comments has been extended to July 31, 1987. In making this proposal, it was tentatively concluded that amateur and private land mobile operations could not share a common frequency allocation. Therefore, the Commission tried to strike an equitable balance between the spectrum needs of these two services. The Commission proposed that 2 megahertz, the 220-222 MHz band, be allocated to the land mobile service for both government and non-government oper-

ations and that 3 megahertz, the 222-225 MHz band, be allocated to the amateur service on an exclusive basis. We tentatively believe that this proposal, along with the other bands already allocated to the amateur service, will meet the needs of the amateur service.

However, please be assured that the Commission is cognizant of the public services and technical advances made by the amateur community and that careful consideration will be given to their comments and concerns before final action is taken in this matter. We anticipate that a final rule will be issued in this proceeding either late this year or early next year.

Thomas P. Stanley, Chief Eng.



A QUESTION -- OR PROPOSITION

I seldom participate in the club raffle because the merchandise offered is not worth consideration in most cases. Oh, now and then something appears that might be worth a purchase, but generally it's just not stuff I want. I notice that there are a few more folks at the club meetings, but the raffle just doesn't seem to have the invitation to participate.

Here's a suggestion to sweeten the pot: Take \$200.00 from the club treasury and go to each of the 3 radio stores in the area. Purchase 6 \$15.00 gift certificates, 6 \$10.00 ones and 6 \$5.00 certificates. Then, offer ONE OF EACH at the club meeting. Add to these certificates the other stuff that is usually available at the raffle. In the 6-months time the amount of input to the raffle treasury should more than repay the initial "loan" from the club plus more cash to buy more certificates. I bet there would be some really great participation in the raffle if there were some good values available! At least give it a try.

W7JIE

*** AMATEUR CALLSIGNS ***

During our last class I gave a brief rundown on how amateur callsigns are issued and some of the history behind amateur callsigns. Mike, KA7CSE, suggested that I write an article for the relay as he thought that information would be interesting to the newer hams. I'm sure that this information is not 100% accurate but I think it will give you an idea of the development of ham callsigns.

The United States is assigned callsign prefixes beginning with the letters W, K, N and A. These assignments are agreed upon internationally. The FCC currently has a system of callsign issuance based upon the class of Amateur license held. The assignments and the classes are as follows:

Novice	2X3; ex. KB7WSE
Tech/General	1X3; ex. N7TFW
Advance	2X2; ex. KF7CF
Extra	1X2 or 2X1 ex. N7GF or AG7D

One is allowed to keep the callsign originally issued or can be changed when you upgrade or move out of your current district. When one prefix is exhausted the next one is started. This system came into being about 1980/81.

When radio communications was first started in the early 1900's, there was little if any regulation. One simply used their initials to identify their station. Then as regulation and licensing came into being the US was divided into districts and call signs such as 7AG were used. When I came into amateur radio in 1956, all callsigns were 1X3 with the first letter being a W or a K, except for those old timers who had original 1X2 calls. To identify a novice a N was inserted into the prefix. My novice call was WN7DNU and when I got my General the N was dropped and I became W7DNU.

In 1958 all of the W prefixes had been issued and callsigns beginning with K were then issued. Such as K7KOT. The novice identifier was

still being used. Callsigns were continued to be issued with WA the WB being the next prefixes. The novice identifier was dropped with the issuance of the WA callsigns. During this time if you held an extra class license and were licensed over 25 years you could apply for a 1X2 callsign, such as K7AU or W7RG. However you were not allowed to choose which call you were to receive.

In about 1976 The FCC has instigated what was called incentive licensing and with that they attempted to reward those who had upgraded to extra class. For about a two year period the FCC allowed extra class hams to choose which call they wanted. During this time alot of hams traded calls which they had held for many years to either obtain a more personalized and shorter call. In 1977 I traded W7DNU for N7NW.

Shortly after that the FCC instituted the existing callsign assignment plan. Well thats it briefly and I'm sure not entirely correct, but should give you an idea of the history of ham calls. Hal N7NW

WELCOME

In the past few months, we have seen a tremendous growth in our club ranks. Much of this has been the result of exposure from the new repeater. Hopefully, we will offer more than just repeater access to these new members.

I invite all of you, new and old, to participate in our board meetings, social activities, and radio functions. We are a diverse group. Just look at the number of different activities reported in the Relay.

We have builders, contesters, HF, UHF/VHF, ATV, nets, public service, and training. You aren't going to be dragged screaming into something you don't like, but variety is the spice of life. Give it a try, it might be fun.

Of course, if none of that appeals to you, we have a repeater.....

Mike WA7UVJ

SOUTHERN NEIGHBORS

The "Radio Club of Tacoma" means something different to everyone. For me, it was always that large, old (hear the creaking?) and respectable, (like a maiden aunt) ham club to the south. Picture in your mind, Whistler's Mother with arthritis, and you would have my impression, until last Wednesday night, July 22.

Yes, they were large. But, I found an active and vibrant fellowship and I'm glad I went for a visit. Truthfully, I've been curious about our friends in Tacoma for quite a while, and the Field Day Award made a good excuse for a visit. (More on that later).

It started out at the Poodle Dog Restaurant in Fife. Present were Mike (KA7CSE), Jim (K7PHZ), Jim (WA7LNO), Hal (N7NW), and Monty (W7EVS). Unfortunately Hal couldn't go to the meeting, but provided the rest of us with directions.

After dinner, we met up with Mary (W7QGP) at the Lakewood Library where the Radio Club of Tacoma meets. At 8 the meeting began. Needless to say, we did draw stares, more out of curiosity than anything else.

Purpose #1 of our travels to "DK" Land was to accept a Field Day Competition Award. In case you didn't know, the Mike & Key went head to head with the "RC of T" on 20 CW this past field Day. Providence was with us and we won this year's trophy. Along with the trophy, we took a little good natured ribbing and were told next year would be different. (We'll see!) As a sidenote, this year's effort was the best ever for their 20 CW group. We let them down easily by telling them it was only our second best.

Purpose #2 of the trip, and maybe more important, was just to say HELLO! We hope to visit many of this area's ham clubs in the future. Our hobby is one of communications and personal contacts are just as important as

ones over the air. Our's are privileges under attack as the world looks greedily at our allocations (i.e. 220 Mhz). Let us remember we are of the same interests and (most of all) friends.

To the Radio Club of Tacoma, we enjoyed your meeting, and we invite you to ours. Oh! Whistler's Mother? She can climb a tower with me anytime. 73 Mike WA7UVJ

OPTIMISM: An optimist is someone who tells you to cheer up when things are going his way.

PUBLIC SERVICE ANNOUNCEMENT WALK 'N ROLL Seaward Park on August 23

WALK 'N ROLL, a community fitness event, is the perfect excuse for you to enjoy the beauty of Seaward Park on Sunday morning, August 23. Learn the whys and hows of fitness from a physician, a nutritionist and a fitness instructor beginning at 9:00 AM. Have your pulse and blood pressure checked. Then, at 9:30 AM (or 8:00 AM. if you prefer) practice fitness by participating in a muscle-powered move-a-thon. Walk, run, cycle, skate or row your way around the park's flat 2 1/2 mile perimeter. Move at your own pace and go as far as you wish. Everyone will receive refreshments and prizes with special awards for the oldest, youngest, and most pregnant participants and for the people who make the most loops around the park, use the most unique mode of travel and wear the best costume. Registration is \$4.00 for individuals and \$8.00 for families with all proceeds going to Operational Emergency Center for its' food bank and to Neighborhood Health Centers for their new clinic in Southeast Seattle. The first 250 registrants will receive Walk 'N Roll visors, so call 326-6076 today to request registration forms and information. This event is co-sponsored by Seaward Park Store Council of Puget Consumers' Cooperative and the Rainier Medical Center Council of Group Health Cooperative, both "consumer-run" organizations. Join in the fun and the fitness and support a healthy community.

Well another year has gone by and the Hams have helped put another Torchlight Parade, plus several district parades, down the street. For those of you that helped out, I wish to offer my thanks and that of the Parade Marshals for a Job well done. For those of you that were unable to help out, you missed a great time. We even had several new people that want to come back next year.

For those that missed the action here is a brief run-down on how it went. It started pouring down rain at 5 PM, the check-in time, and continued to pour until around 7 PM. Well the clouds started to go away and the evening warmed up to a comfortable 65 or so degrees. Just in time for the parade.

Tim, K7QMI, called the net to order and proceeded to run an excellent operation. As per normal we had our share of emergency calls for medical aid, float breakdowns, and missing units. But as the night went on it seemed like the action quieted down and those along the route were able to see an excellent parade.

We had about 53 Hams taking part in the operation using 8 frequencies in the vhf/uhf bands. We also received excellent PR coverage from the announcers on the review stand and from the TV stations that were not covering the parade. I don't know what happened to the one that we were helping with the coverage. Again I wish to thank all of the Hams that helped with the coverage and invite those of you that didn't help to come out next year and enjoy some excellent company from fellow hams and the great after parade functions. If you have any questions on how much fun it can be ask Mike UVJ, a first timer who has put in reservations for next year, all about it.

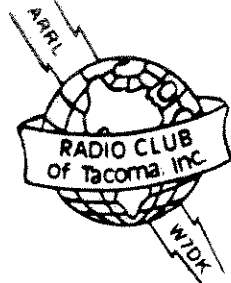
CHUCK WA7EBH

Tacoma

HAMFAIR

AUGUST

22 & 23



ACTIVITIES

Hard to believe, but we are in the last third of summer. But, not to worry, we have plenty of activities to make this month a memorable one.

This month brings the ever popular Hamfair. Sponsored by our friend at the Radio Club of Tacoma, this two day event has plenty of seminars, exhibits, and a flea market. Plan the whole weekend for this one.

The next weekend is the Mike & Key Picnic. Details are somewhere in this Relay along with a map. It's better than the Field Day Clamfest - no mosquitos!! Sign up at the club meeting or call me at home.

September brings the first transmitter hunt in a long time. Dust off the 2 meter antennas and tune the rig to 146.58. Better yet, grab a newcomer to the ham ranks and show him, or her, how it's done. The hunt starts at 12:30 after the club meeting on September 19. We start from the UGN center and the hunt will be in south King County. Afterwards, beer and pizza sounds good to me.

I don't have an activity planned for October, any ideas? Gotta start thinking about the Christmas party in December, too. Got any ideas for that? WA7UVJ Act. Junkie

I noted in the W5YI report for June 15 (page 3) that SEA, Inc. (a commercial outfit making and selling land mobile equipment), in their comment to FCC regarding the 220-225 MHz ROBBERY, that: "an amateur population of 425,000 licensees has access to 69 MHz of VHF/UHF spectrum. This amounts to the availability of 1.62 MHz of available spectrum in the 30-1,000 MHz range for each 10,000 operators. By comparison, the private land mobile radio services have 90.8 MHz of VHF/UHF spectrum in the 30-1,000 MHz range which is occupied by at least 8 million transmitters. That usage represents the availability of 0.11 MHz for each 10,000 private land mobile transmitters. (That is what SEA, Inc. said).

Now here is what appeared in "Industrial Communications" (a commercial land mobile weekly newsletter for June 5, 1987). In an article about the number of units in use, the number of pages, etc., the article noted that for stations below 800 MHz (they are talking about commercial stuff) that less than 2/3 of the authorized stations are active and the active stations have less than 2/3 of their authorized radios in use!!! They said further that above 800 MHz the situation is even worse because the frequencies have not been developed!!

Note above that I have underlined two spots, "8 million" and "in use". Taking these figures, it appears to me that 44% of the stations SEA, Inc. talks about are valid!! This is less than their claimed 8 million. More like 3.5 million, or better than .5MHz for each 10,000 private land transmitters!! Quite a difference in figures. I hope that FCC catches this wide difference in figures. Actually FCC is the source of the figures quoted above since both SEA, Inc. and others have taken their figures from the FCC files. de W7JIE "Gib"

ANSWERS TO QUIZ ON FET's:

1. The symbol shows a Junction Field Effect Transistor. Since the gate is P type material, the channel has to be N type. Hence, we have an N channel JFET. "A" is the correct answer.
2. X represents the gate. "B" is correct. The other terminals are called source (for electron source) and drain.
3. The impedance looking into the gate of this MOSFET is virtually infinite. Hence the input impedance of the amplifier is determined solely by the input resistance of 10 K. "B" is the correct answer.
4. In A MOSFET, the gate and channel represent the two plates of a capacitor. Since we have an N-channel device, we will free up electrons (majority carriers) in the channel by applying a positive voltage to the gate with respect to the source. By freeing more majority carriers, current flow will increase for a given source-drain voltage. "A" is correct answer.
5. On the device curves, 10 milliamperes corresponds to a gate-source voltage of 2 volts. Hence, $R=2$ volts divided by .01 amperes, or 200 Ohms. "B" is correct.
6. The defining formula for a capacitor: CHARGE (Q)=CAPACITANCE (C) x VOLTAGE (E) Since current is rate or change of charge

$$(I = \frac{\Delta Q}{\Delta T})$$

this formula can be rewritten:
 I (current)= C (capacitance) times rate of change of voltage (ΔE divided by ΔT). Hence if we replace the load resistor in the circuit for question 5 with a capacitor, the voltage build-up across the capacitor will be a truly linear ramp. We have a ramp function generator. Of course, in a practical circuit, the voltage across the capacitor can only climb so high before breakdown occurs. More circuitry is needed to limit the peak voltage of the ramp. Can you think of other applications for a constant current generator??



SEPTEMBER 1987



S M T W T F S

		1 R _E	2 	3	4	5
		BOARD MEETING 1930 AT QTH OF:	TIM, W7QMI, HAS A "WESTLINK" PHONE CALL 634-3636 TO HEAR			
6	7 M&K UHF NET 1930 HRS /224.12 LABOR DAY	8	9	10	11 CROSS-COUNTRY HORSE COMPETITIONS IN NORTH BEND KD7TJ 634-0870 12 SEPTEMBER	12 ←FRONT→ TRI-ISLAND BIKE TREK. CALL W7AKA 226-4115 VHF QSO PARTY STARTS AT 1800 UTC TODAY---
13 GRANDPARENT'S DAY- CONTINUE TRI-ISLAND BIKE TREK - QSO PARTY ENDS TOMORROW 0300	14 → M&K UHF NET 1930 HRS /224.12 END TRI-ISLAND. START MOTORCYCLE TOUR	15 END MOTORCYCLE TOUR	16	17 CITIZENSHIP DAY	18	19 CLUB MEETING. COFFEE AT 0930. MEETING STARTS AT 1000 - BRING A FRIEND AND NEWSPAPERS!!
20 TRI-ISLAND BIKE TREK ON 19-20-21 OF SEPTEMBER THEY NEED HELP	21 M&K UHF NET 1930 HRS /224.12	22	23 AUTUMN BEGINS	24 ROSH HASHANAH	25	26 ←FRONT→ ANOTHER TRI-ISLAND BIKE TREK CALL W7AKA 226-4115
27 →TO→ CONTINUE TRI-ISLAND BIKE TREK	28 M&K UHF NET 1930 HRS /224.12 END TRI-ISLAND BIKE TREK	29	30			