

'SEATTLE, WASHINGTON'

K7LED RELAY

VOLUME 9

FEBRUARY 1981

NUMBER 10

AN ARRL AFFILIATED CLUB

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K7LED RELAY EDITOR

Vern Nelson, W7ZLW, 16812 N.E. 107th, Redmond, WA 98052 telephone: 885-0473

The K7LED RELAY is the official publication of the Mike and Key Amateur Radio Club, 23206 S. E. 53rd, Issaquah, WA. 98027. Articles may be quoted in full or in part without prior permission, providing the K7LED RELAY is credited. Deadline is the 1st of each month.

The Mike & Key net meets each Sunday morning at 10 a.m. on 3,930 Khz with Novice and CW check-in on 3,730 Khz and VHF on 146.58 Mhz and K7LED/R 52.37—53.37.

Club meets the third Saturday of each month at 10 a.m. at "The Good Neighbor Center" located at 305 S. 43rd St. in Renton, which is across the street from Valley General Hospital.

MEMBERSHIP: 87

ACTIVITIES

- February 11 Board Meeting, 7:30 p.m.
Coolidge Propeller Restaurant
1608 Fairview Ave., E., Seattle, WA
- February 21 NOTE! — Business meeting 9:30 a.m.
- March 7 10:00 a.m., Special Meeting — Bunny Hunting
- March 21 Business Meeting 10:00 a.m.
Election of Officers
- April 4 Annual Awards Banquet

ACTIVITIES MANAGER'S REPORT

JANUARY MEETING PROGRAM

At our January meeting we were fortunate in having Mike Jones, KA7BZL, of Almac Stroum Electronics present a very interesting talk on integrated circuits and a display of some useful products using IC's.

Mike compared TTL and CMOS and listed their disadvantages and disadvantages. Both types are very versatile, widely used and widely available and very fast in performing logic operations. For a long time TTL were the most widely used. But now that CMOS have become lower in cost, they are competing with TTL. Probably the greatest advantages of CMOS is their very low power consumption and their tolerance to a non-critical voltage (ie. from 3 to 15 volts), whereas, TTL requires 5 volts \pm 5% and consumes considerably more current. Interfacing the two is possible but requires some planning. TTL is still faster but CMOS IC's types with greater capability are now available.

We would like to express our appreciation to Almac/Stroum and to Michael Jones for his excellent talk and presentation on TTL and CMOS IC's.

FEBRUARY MEETING PROGRAM

The committee for this program has had several meetings and has planned a program consisting of two parts. There will be a 30 minute (maximum) presentation which will cover "The microprocessor, The ham bulletin board, computer-aided instruction in morse code and for the general class license, sources for information via the computer, and computer programs personally useful to amateurs.

The second part includes demonstrations on how these computers can be useful. We expect to have a TRS-80, a Heath H-8, and two Apple II computers up and operating. You will be able to view the actual information presented in the earlier part. Also, you will have an opportunity to "program" an Apple II and have it work for you.

This program is being put on wholly by the club members who include Dennis, KA7IVQ; Al, WA7TIB; Harry, W7JWJ; and Gene, WA7TAI. They will be available to discuss some personal experiences and problems.

BUNNY HUNT MEETING MARCH 7 AT 10:00 a.m.

Saturday, March 7 is SPECIAL MEETING at the regular meeting place and time (10am). There will be no general business discussed. The program will feature "Bunny Hunting" and radio direction finding. WB7BDQ, Roger, from Burlington, who is chairman for the Skagit Radio Club bunny hunt, will present all the aspects of their annual competition "bunnyhunt". Coffee and donuts will be served. Plan on coming for an "Eyeball" even if you are not particularly interested. The committee members for this event are Ralph, WB7VLW; Bob, WA7TRI; Gene, WA7TAI; and Harry, W7JWJ.

MONTHLY RAFFLE

The subscription to "World Radio" at the raffle during the last meeting was won by Dick, K7PBT. At our next meeting we will again be raffling another one year subscription. Along with this, there will be a number of excellent prizes, including four books on IC's donated by Almac/Stroum. They are entitled: "TTL Cookbook", "110 CMOS Digital IC Projects", "CMOS Integrated Circuits", and "Digital Experiments". Remember that the proceeds of these monthly raffles go towards the #1 prize at the banquet.

CLUB CALL

Frank, K7GSE, won the privilege of using K7LED for the month from the January meeting to the February meeting.

HELP WANTED

Relay Editor and Typist

Vern, W7ZLW, and his wife Bev have resigned as editor of the Relay and typist respectively. To assist potential editors and typists the following summarizes these jobs.

The relay is published each month with a news deadline of the first of the month. Information is received from the Activity Manager, Secretary, Vice President and from other officers. Jan, WA7HWX, also provides an interesting article each month. Other news comes from club members, the Sunday net, the repeaters, and by talking to members, non members, and others about items of interest. I also use information from HR Report, World Radio and other publications.

The information is pasted or taped together in proper sequence ready for reproduction. I have reproduced the paper on a high speed copier which copies, collates, and staples in one operation. If this type of equipment is not available, it requires separate operations.

The mailing labels are provided by Dick, W7KCX. These along with stamps are put on each paper, sorted by zip code and mailed.

The above job could be done by several persons, however, they should live reasonably close to each other or gather for an evening a month to put the paper together.

I will be available to help the new editor get started. I also have publications provided by the Amateur Radio News Service which are being used. If you have questions on these jobs, give me a call evenings at 885-0473 or during the day at work at 885-5000, ext. 396. Contact a board member if you would like to help in any of these jobs required to publish our paper.

73's
Vern, W7ZLW

REG. NR. _____
(off. use only)?



June 5, 6, 7, 1981

ARRL NORTHWESTERN DIVISION CONVENTION REGISTRATION

P. O. Box 920
SEASIDE, OREGON 97138

NAME _____ CALL _____ DATE _____
 ADDRESS _____ CITY _____ STATE _____ ZIP _____
 FAMILY REG. _____ \$7.00 Number in family _____ BANQUET \$12.50 per person
 SINGLE REG. _____ \$5.00 DINNERS: SEAFOOD _____ BEEF _____
 SWAP FEST _____ \$5.00 per table
PLEASE PUT NUMBER AND CHOICE

All early registrations before May 1, 1981 will receive an extra ticket for the large door prizes.
PLEASE MAKE ALL CHECKS PAYABLE TO: ARRL NORTHWESTERN DIVISION CONVENTION
COME TO THE BEACH AND HAVE A GREAT TIME FOR THE WHOLE FAMILY. SEE YOU THERE!
ADDITIONAL INFORMATION NEEDED _____

FOR MOTEL RESERVATIONS (Oregon - toll free - call) 1 - 800-452-6740 - others call - 1 - 503 738-8585

FIELD DAY - 1981

Plans for 1981 Field Day are in full swing. Jim Strang, W7GPW, Field Day Chairman, has most of the spots for chairmen filled. This was done at the January meeting. We will be returning to the Fort Flagler location the last weekend in June. The following are band chairmen:

20 P - K7PFR
15 P - K7CR
15/40 CW - N7NW, K7KOT
20 CW - WA7YCM, AD7G
75 P/80 CW - W7JWJ, W7QGP
40 P/10 CW - KA7IVQ
10 P - WA7HWX
VHF - WA7NIW

OTHER CHAIRMEN

Publicity

On site - W7ZLW
Advanced- KA7IVQ, W7JIE
Portable Power - WB7AYU
Oscar - WB7TIB
Natural Power - WA7TAI
Traffic - 75 P
Novice - ?
Site Contact ?

These are the chairmen but each band needs 6-8 operators/dupers, so pick your spot and enjoy the fun. Speaking of fun, the Hedberg's are chairing the Friday night happening and if you don't know what that is, join the club for Field Day and find out.

Another Field Day note, "Thumper" is no longer available so we need another power source. Contact Mike, WB7AYU, if you can help.

SHORT BURSTS.....SHORT BURSTS.....SHORT BURSTS

Pete's will power is better than yours, Chuck, WA7EBH - no donut holes for you anymore!

Vern, W7ZLW, "What size shoes do you wear?"

FINISTER'S LAW - "A CLOSED MOUTH GATHERS NO FEET"

Ralph, WB7VLW, nice to see your "better half" Marilyn at the meeting.

The length some men will go to get a sponge bath. Ask Little John, WA7HQG.

How many days has it been, Les, since you've been without a puff.

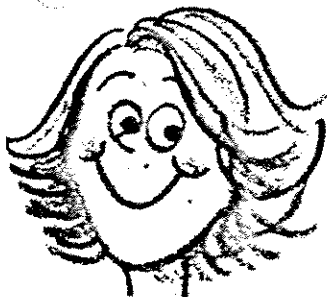
Debbie Holt - chicken feed doesn't come cheap even in Leavenworth.

Heard Jim, K7MBY, on 220 looking for nurses' uniforms. Did you find one filled out in the right places?

Gib, W7JIE, this one is for you. What do you get when you cross a centipede with a parrot?

Happy Anniversary — Jim Carpenter, K7PHZ, and Ken Jackson, K7PZX, who have celebrated 20 years as members of the M&K Club in January.

THINK THIS MONTH WE'LL TRY TO BRING YOU A CHUCKLE - TICKLE YOUR FANCY. FOR THOSE WHO HAVE TEEN-AGERS READ ON; FOR THOSE WHO DON'T READ ON ALSO - ONE OF THESE DAYS YOU'LL GET YOURS.....



QUESTION: How long does it take the average teen-ager to get ready for school?

ANSWER: About five more minutes.

QUESTION: Why is it that teen-agers are able to stay up so late at night?

ANSWER: They're just not tired.

QUESTION: Why don't they want to go to school the next day?

ANSWER: They're too tired.

QUESTION: What does a 15-year old boy want for his birthday?

ANSWER: An electric razor.

QUESTION: What does a 16-year old boy want for his birthday?

ANSWER: Permission to grow a beard.

QUESTION: What does a 17-year old boy want for his birthday?

ANSWER: Enough hair to grow a beard.

QUESTION: What does a 16-year old girl want for her birthday?

ANSWER: A 17-year old boy. (with or without a beard.)

QUESTION: What is every teen-age boy going to do when he turns 16?

ANSWER: Get a car.

QUESTION: What kind of a car?

ANSWER: The best car you ever saw, once he gets through with it.

QUESTION: How is he going to pay for the insurance?

ANSWER: GOOD QUESTION.....



REMEMBER - SAVE THOSE NEWSPAPERS. LET'S HAVE ANOTHER GOOD MONTH. MONIES GO TO WOMEN'S PRIZES AT BANQUET.

Reporters Note: Thanks to Vern Nelson, W7ZLW, our editor-in-chief who will be retiring March 1st. You did a excellent job! Will be hard to find someone to fill your shoes.

Jan

BANQUET TIME AGAIN - BANQUET TIME AGAIN

MIKE AND KEY AMATEUR RADIO CLUB banquet approaching! April 4th is the date. LAKE CITY ELKS is the place. PRIME RIB is the menu. \$12.00 per person is the cost (includes meal, tax and tip). Refreshments are extra. A GOOD TIME FOR ALL IS GUARANTEED..... Prizes this year are chaired by Pati Sutton and Hal Goodell. So if you have goods to donate get in touch with them.

FOR SALE: THE COMPLETE AMATEUR STATION OF SILENT KEY, W7BW, KEN CARTER.

COLLINS KWM - 2A (ROUND RED EMBLEM)	\$575.00
COLLINS POWER SUPPLY 516F-2 FOR KWM-2	\$195.00
COLLINS STATION CONTROL CONSOL 312B-4	\$195.00
COMPLETE IN NEW CONDITION WITH ALL CABLES, MANUALS, PACKING BOXES. ORIGINAL COST OVER \$5000.00	\$900.00

OTHER EQUIPMENT INCLUDES:

BEAUTIFULLY CONSTRUCTED HOME BREW PAIR OF 813 LINEAR
AMP IN COLLINS STYLE. MATCHING CABINET. WAS USED WITH
THE KWM-2. \$200.00

UNDER CONSTRUCTION AND 95% COMPLETE WITH ALL MAJOR COMPONENTS
INSTALLED. OTHER PARTS INCLUDED. 4-1000 LINEAR WITH
TUBE, SOCKET, PYREX CHIMNEY, BLOWER, METERS, B&W PI
NET, FILAMENT TRANSFORMER, VARIABLE VACUUM CONDENSERS,
AND THE COMPANION POWER SUPPLY AT 220 VAC. BOTH UNITS
IN MATCHING CABINETS. EXCELLENT WORKMANSHIP. PARTS
ALONE COST OVER \$700.00 \$450.00

HR-2 REGENCY 2-METER TRANSCEIVER WITH 18 CRYSTALS. MIKE,
TOUCH TONE PAD, & MANUAL. \$95.00

SPECTRONICS DD-1C DIGITAL DISPLAY WAS USED WITH
THE KWM-2. EXCELLENT CONDITION. \$70.00

MISCELLANEOUS ITEMS INCLUDE: 960V 500MA Xformer,
speaker, mikes, tubes, (Some high power types),
coax, wire, new chasis, home brew SWR bridge,
other odds and ends.

CONTACT: M.L. Gibson, W7JIE, 226-4222. Evenings. Or write:
1215 N 28th Place, Renton, Wa. 98055. You should
see this gear before deciding as it is in excellent
condition and was operating when QRT.

HR REPORT HIGHLIGHTS

PROPAGATION FEBRUARY 3-16. Solar activity fell to a minimum
January 15, when flux hit 155, then bounced between 161 and 171
before climbing to 180 on the 25th with the return of active
regions and a Class-X flare. Solar activity should remain at mod-
erate levels for a few days, then decrease. The geomagnetic field
was quiet until the 23rd, when a disturbance began that continues
at press time. Following another disturbance expected early in
the forecast period, the field will again become quiet.

DX Conditions Should Be Very Good on the high frequency bands
during the first half of the forecast period, with strong trans-
equatorial openings to South Africa, South America, and Australia.
Conditions should then change to favor east/west paths on those
bands the second week. The lower frequencies should be good for
the entire forecast period, with some openings to unusual areas
the first week. Moonbounce enthusiasts should note that February
9 is the lunar perigee. KØRYW

OPERATION UPGRADE

CONDUCTORS

W7JWJ

CONDUCTOR: Substances through which a current flows with ease.

Current flow is nothing more than a movement of electrical charges under the influence of a potential (voltage). In a pure metallic circuit the electrons in motion constitute the electrical current.

In all substances there is a continual thermal agitation of molecules and atoms, causing them to crash into each other, rebound, etc. This agitation is a direct function of temperature and ceases only when the temperature of the material is at absolute zero. At other temperatures some free electrons will exist in any material. A conductor may then be defined as a substance which has a comparatively large number of free electrons at ordinary temperatures. Conductors may be ranked by the ease with which they will conduct an electrical current. In order of their conductivity: Silver, Copper, Aluminum, Zinc, Iron, Platinum, Nickel, Tin and Lead.

In dealing with conductors in radio the radio frequency conductivity of the conductor is often of greater importance than is its conductance at commercial power frequencies or for direct current. This is due to the fact that at higher frequencies the current tends to travel only on the outer surface of the conductor.. This is called 'skin effect'. The action of the current in the outer layers of the conductor may induce eddy currents in the center of the wire that do no useful work, but do consume power in the form of heat. Therefore at high frequencies many conductors are hollow tubes (A two-meter antenna), or they are flattened into thin wide sheets to expose more surface area for the electrons to flow over. For some receiver coils a form of stranded conductor is very extensively used. It is made up of a large number of strands of very fine hair-like wire, each wire being individually coated with enamel, or other non-conductor. This is called "Litzendraht" or "Litz" wire and is useful up to about 4MHz where displacement currents induced in the enamel may exceed current losses in the conductor. At frequencies from approximately 4 MHz to 14 MHz a copper wire is usually used for the winding of coils and may be of #14 or #16 gauge. At frequencies from 14 MHz and above, copper tubing is usually used and is frequently silver plated to improve its conductivity. At 100 MHz and above a flat width of copper, that has also been silver plated, is more often used. Most Amateurs use copper wire for construction of circuits. Bare copper wire that has been coated with tin is sometimes sold as "pre-tinned bus wire". This wire should not be used at high frequencies. Very often, for radio antennas, an alloy of copper will be used in order to take advantage of increased tensile strength. Phosphor bronze cable is commonly used for this purpose. For very long antennas a steel wire that has been copper coated may be used.

The unit of Conductance is the Mho. Expressed as G. It is the readiness, or ease in which a conductor conducts an electrical current. It is the reciprocal of electrical resistance. $G = 1/R$

Usually an increase in temperature will decrease the conductivity of a conductor.

US QSL SERVICE

USQS - - A DOMESTIC QSL BUREAU

PURPOSE

This is an INCOMING and OUTGOING service that allows all US (and Canadian) amateurs to send QSLs to other US (Canada) amateurs at a minimum of cost and effort. The service is owned and managed by active hams. Available to all on an unlimited use basis. Nominal handling charge of 25¢ for each 20 incoming QSLs (or portion thereof) is requested for cards coming to USQS.

ADVANTAGES

Save the cost of postage and envelopes, the trouble of looking up addresses for individual mailings. You can QSL new hams not yet in book, your contest QSOs and any contacts whose address is not available. Plus the assurance that you will have your incoming QSLs forwarded to your correct address, as you address your SASE for their return from USQS. NO CHARGE for handling your SASE and forwarding your incoming QSLs!!! QSLs are always in the best condition when you receive them, as they are spared the wrath of the postmark!!

NOTE: We have MANY QSLs on file, Check WORLD RADIO monthly starting in October 1980 for updated list of calls - one could be yours!

REQUIREMENTS

1. At any time you can send SASEs to be kept on file for us to forward your QSLs to you. NO CHARGE FOR SASE HANDLING! Correctly address your SASE (legal size is best) and attach current postage (15¢). OR we will put SASEs on file for you - 2 for 50¢ or 5 for \$1.00. If you wish you may specify a certain number of QSLs you wish us to enclose before returning SASE. Otherwise we will hold for 1 oz of cards, to give you the most for your postage.

2. Pre-sort your QSLs by Call sign area (0-9). With each batch of QSLs enclose 25¢ for each 20 QSLs or portion thereof. Send as many as often as you wish. ONLY the Call sign of the ham to receive the card is needed, NO POSTAGE, ADDRESS OR ZIP NECESSARY ON QSL, only your info to him and his call!

3. The service will not accept postage due material. If in doubt, have it weighed before you mail it.

4. The Post Office requests Zip Codes for delivery. Please use them. Ours is 97042, and remember to put yours on your SASE.

5. When requesting someone to QSL via the service, you may simply refer to us as USQS, we hope to be well-known soon!

6. Please enclose an SASE with any correspondence requesting an answer, along with a note so we don't file your SASE as business!

OUR ADDRESS IS:

USQS

PO BOX 814

MULINO, OR 97042

I hope we can serve you. Your comments and suggestions are always welcome.

73



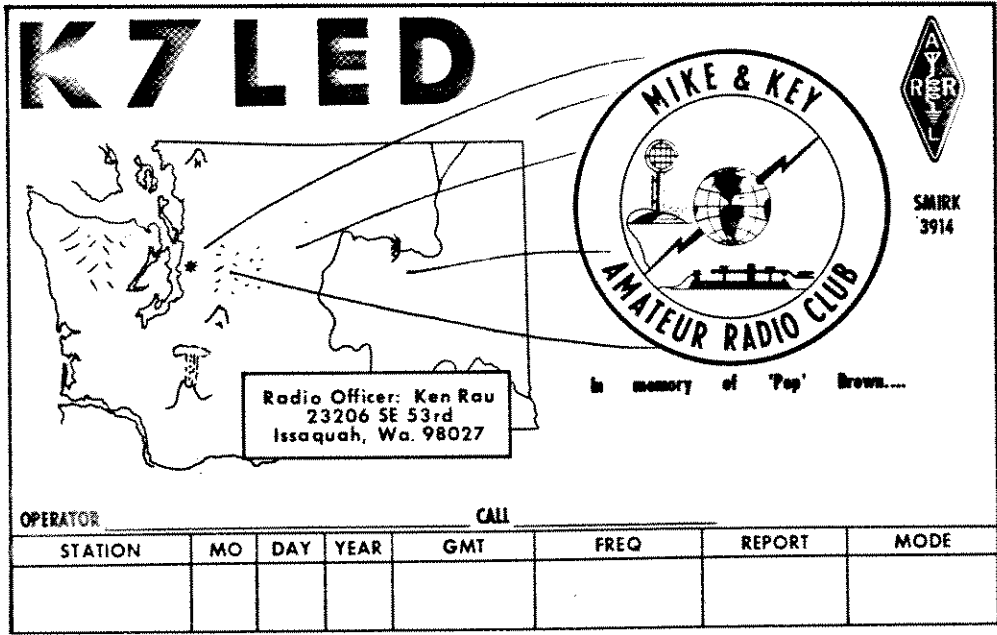
Larry Myers N7BMY

NEWSPAPER DRIVE FOR LADIES PRIZES

HO, HO, and a HO !!!!!, things are getting better --- we taxed the springs on the pick-up a little last club meeting. The scales at the paper factory indicated that we had a total of 1140 pounds, that computes out to \$11.40. Congratulations is in order to all who contributed their share. As long as we can do this good lets try for \$20.00 worth this next meeting. As you know this is a NEWSPAPER drive, so please do not include any other type of paper other than newsprint. Brown bags from the grocery store or cardboard boxes is okay but nothing else. I'll have the pick-up or someone will have a vehicle out front with the back open so you can fill it up. WA7EKH.

QSL CARDS

At the last club meeting I passed around a few copies of a QSL card that I designed for the club. Since that time, with a few suggestions from some of the members, I have made a few changes. It is pretty hard to describe all of the card, however, the center of the Club Logo, the Club Call Letters and the State of Washington are planned to be printed in green and the rest of the card will be in black. This card can be adapted to those members that would be interested in using this basic design for their own QSL cards. I am open for comments - good or bad - on this design. WA7EKH



ANNUAL MIKE AND KEY AWARDS BANQUET

The annual Mike and Key Awards Banquet will be held on the 4th of April this year at the Lakecity Elks Club. We have planned a prime rib dinner without desert for the price of \$12.00 each. I know this sounds like a lot but it includes the meal, gratuity and tax. We get the use of a banquet room and after the awards they will open the room to the main floor for dancing and entertainment. There will be a no host bar starting at 1830. WA7EKH

 Mail or give to the Club Treasurer

Here is \$ _____ for _____ reservations for the MIKE and KEY AWARDS BANQUET to be held on 4 April 1981. (\$12.00/person)

ELKS CLUB
 Lake City
 14540 Bothell Wy NE

Name _____ print
 Address: _____

HAPPY BIRTHDAY!

2-Harry Lewis W7JWJ
3-Elmo Smith WA7YCM
7-Jack Burrell N7BVB
12-Max Craig WB7QHO
17-Ray Leslie WA7EKH

24-Vern Nelson W7ZLW
25-Bill Iverson WA7HUL
25-Ernie Davis W6JCN
28-Andrew Madsen WB7USQ



VOLUNTEERS PLEASE!!!!!!!!!!!!

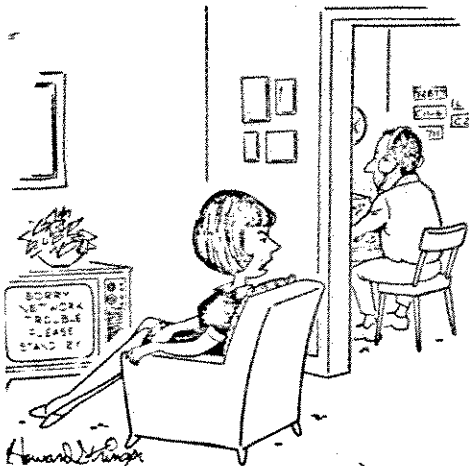
We need someone to become the Editor of the Relay! If you have an interest in it please say so, if you know someone who would like to but is too shy-tell us.

The Swap N Shop needs operators, at least one and ideally two more are needed, please raise your voice and volunteer, if we don't do it you can be assured another group would love to.

MIKE AND KEY AMATEUR RADIO CLUB
16812 N.E. 107th
Redmond, WA 98052

ADDRESS CORRECTION REQUESTED

FIRST CLASS



"Edward, you're fouling up the TV again!"