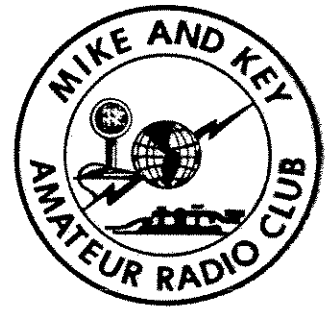


K7LED RELAY



The K7LED RELAY is the Official Publication of the MIKE and KEY AMATEUR RADIO CLUB, P.O. Box 2121, Kirkland, Wa 98033-2121. The club meets the third Saturday of each month at 9:30 AM in "The Tukwila Community Center", 4101 South 131st. Seattle, Wa. 98168. All "HAMS" invited. The Mike & Key Net meets each Wednesday evening at 1930 hr on 224.12 and 146.82-22 Mhz. The repeaters are linked. Your Check-in is welcome.



AN ARRL AFFILIATED CLUB LOCATED NEAR SEATTLE, WASHINGTON

VOLUME 17

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RELAY DEADLINE 5 JULY 1989



REPEATER FREQUENCY
52.05 - 53.05
146.22 - 146.82
224.12

First Class

BOARD MEETS

FIRST TUESDAY
OF EACH MONTH

CLUB MEETING
Third Saturday
of Each Month
17 JUNE 1989

HEDBERG, PETE K7WTG
20904 NE 77TH ST
REDMOND
WA 98053

TUKWILA COMMUNITY CENTER
4101 South 131st
Seattle, WA 98168
Phone 243-5198

Breakfast 0730
Riverside Inn, Tukwila

COFFEE AND DONUTS WILL BE READY AT 0930

The Presidents Corner
June 1989

Well as we go to press the uppermost thing in my mind is Field Day. It is just about here with many things left to do. The generator is in the trailer, waiting fueling and testing, there is one space left in the barracks, and plenty of space in the Wagon Wheel.

We are still looking for someone to bird-dog 75 Phone and plenty of help for 75 has been offered. Further discussion at the meeting.

I hope everyone comes prepared to fill in operating positions and times and finalize our preparations.

The Raffle needs your support, we need your papers, and the food drive is still in progress.

See you the 17th, 73
Jack, KB7ZS

M&K ARC MEETING MINUTES
MAY 20, 1989

Guest speaker Steve Kometz, KC7RO, gave a presentation on King county communications systems and emergency planning. Interrupted by duty, he would like to continue the talk at a later date.

The meeting was called to order at 10:20 by KB7ZS.

Pledge of Allegiance and Welcome.

Introductions of Officers and Members. 52 in attendance.

Motion moved by WN7NXC to accept the minutes of April 15. Approved.

KB7ERE introduced the new applicants: John Buse, KA7VEA; Eric Snyder, N7DLV; Eric Cusson,

KB7HTD; and Joe Orlando, WB7WCP. All were approved unanimously.

OFFICER REPORTS:

TREASURER: WA7EBH reported a balance of \$9,226. The meeting hall rent has been paid up to 6 months in advance. Will be getting a 31-day Certificate of Deposit.
VICE PRESIDENT: KB7ERE asks to be sure your information in the roster is correct.
SECRETARY: No report.

COMMITTEE REPORTS:

ATV Repeater up and operating - Group meets at PARS in Bellevue. Public Service - Beat the Bridge Race tomorrow morning. Contact WTAKA, Gene, for info on the Transamerica Bike Trek. More volunteers are needed June 5 to July 31.

OLD BUSINESS: Constitution and ByLaws - Review process is now underway. Jack, KB7ZS, reminded the membership of the amendment process.

NEW BUSINESS: Julian, KA7MCB, called for a Constitution Review Committee. Members volunteering were KA7MCB, KA7CSE, WA7EKH (chair), N7IVM, and WA7EBH. Field Day - A few more slots need to be filled. Generator Trailer - KF7QF; Tower Trailer - KA7SEH. Raffle - Drawing for handbook won by Eric Cusson.

There being no further business, the meeting was adjourned at 11:34 by Jack, KB7ZS.

Submitted by Mike, WB7AYU

NEXT BOARD MEETING
THURSDAY, JUNE 29, 1989
7:30 PM
HOLY CROSS LUTHERAN CHURCH
BELLEVUE

NOTE: This is a change due to the regular meeting night falling on July 4, a holiday.

A POSITIVE NOTE

I want to relate to you a situation that at first not only embarrassed me but made me want to scream, shout, yell, and words that need not be listed here.

One Sunday afternoon, I was working out in the radio room making a modification to my TS520 low band transceiver so that I might be able to power transverters with low level ten meter power. This isn't really unusual, because I work on most of my own equipment anyway. But, what about SAFETY around high voltages??

I felt that I had taken all of the proper precautions to keep me from getting a shock of 350 or 950 volts while I worked near the final output tubes and their driver. But what happened next could really be a surprise.

My son came out to ask me a question concerning a model airplane that he was constructing and in turn I was listening to him so as to understand what his needs were. What I hadn't done is to take my hand out of the radio where it was hanging on to a meter lead that I was planning to use to make a measurement. I know the rule of only one hand in a circuit at any one time. I know to keep the other in my pocket too. But resting ones hand in a circuit isn't the best either! Needless to say my hand

relaxed and I got the shock of my life!!!!

I wanted to yell at my son, but I didn't because for that one fleeting moment I knew that it was my own fault. I did explain to him, however, that if he should see me working away with my hands inside of some equipment, to assess the situation and wait for me to be in a safer environment before distracting me with an inquiry. I, on the other hand, have since convinced myself not to fall asleep at the meter lead and be more aware of where I am, at all times, when working in this environment.

You may have heard this story before, but how sadly true to those who may have lost a life because something so simple to correct. Every ham must concern himself with the safety to himself and others around him. This might even include twelve volt power cables running under the floor mats of the family automobile. Don't ever believe that this low of voltage can't KILL!!!

SAFETY is everyones responsibility and I hope that when you come to work in my shop, you will feel that you're not taking your life into your hands. But, if you do, I would like to think that you would let me know of any unsafe situation that you might see and I, in turn, will try to do the same for you.

FOOD FOR THOUGHT? Certainly, but one that ALL of us must think about. Enjoy the troubleshooting, but be aware of the DANGER!!!
73 - Rick NU7Z

REMEMBER FIELD DAY
Don't Give It Away

At a backyard ham picnic, a man reminded me that we had met before. "You gave the talk at the Dallas ARC a couple of years ago about security...about not talking so much on the repeaters concerning our personal lives. I still remember the things you said."

Goodness. The talk was two years ago and this fellow remembered what I said. That's better than a lot of preachers, whose sermons may not linger past the final hymn. "Maybe you ought to write an article for QST," he continued. Not a bad idea.

I have spent a major portion of my adult life as a U.S. Treasury agent, and a CIA agent, and a writer and lecturer to citizen and police groups on the subject of security. I am more sensitive than most about locking my car and my house, and watching what I say concerning my personal comings and goings. While you may never share my total outlook, some of my observations should cause you to stop and think about some of the things you say on your local repeater.

Because repeater activity is usually confined to talking to the same friends - to the point that we recognize each other's voices - we tend to forget how many eavesdroppers there are. With all the scanners, portable radios that tune the VHF bands, ham rigs sold at flea markets, etc., there is a vast audience out there for your casual remarks. Couple that with the fact that you are listed in the Callbook, and possibly in a local ham directory, and you are inviting problems if you talk indiscriminately.

I let my ham license expire while I was in the CIA. Getting on the air and talking about my work was not a part of their master plan for me. When I returned to civilian life, in Dallas, I started studying my ticket, and bought a 2-meter rig. This was my first exposure to modern ham repeaters. I couldn't believe what I heard.

I made some profiles of people and families I heard on the repeaters and phone patches. I learned the names, addresses, and phone numbers of the husbands' and wives' employers, their home addresses and phone numbers, the names and ages and the schools attended by their children. Also divulged were long lists of personal possessions, their vacation plans (with dates and places), the nights they would be out for dinner or a show, and even when they would return home. Some folks told who was left at home (elderly parent, child, babysitter), and where they left the spare key to the house. On and on it went.

Also heard discussions of what kind of medications people were taking, the kind of booze they drank, and the general status of marriages. "Love you a bunch," or the irate XYL who answered the phone patch call with, "You've been talking to Mary Jane!"

"How'd you know?"

"Never mind how I know."

"Can't we talk about this later?"

Is any of this the business of a stranger? Would you go on the local AM radio station and talk about these personal matters? It's little wonder that you hear so many hams remark, "Well, I don't talk on the repeater much, but I listen a lot." I should think so. It's incredible what you hear.

"Well, I'm just about to get on the plane. See you all in a week, KH6IO clear." Each time I hear something like that coming into a repeater from the airport, I cringe. Anyone listening now knows you have gone on a trip and won't be back for a week. I don't have to draw a picture for you to understand the implications of the wrong person having that information.

I make it a practice never to talk about a trip as I leave town. Anyone who really needs to know that you are leaving already knows. Don't tell the whole world. Wait until you've returned and then go on the air to announce your triumphant return. Never mind that the first response may be, "Oh you have been out of town?" Your dog probably missed you.

Then there's the phone patch. Wonderful gadget. Lots of fun. But don't turn it into a daytime soap opera with revelations of your personal life. Every city seems to have a bachelor who asks directions over the phone patch for every new YL he is dating. "It's apartment 212, upstairs on the right. My blue 280Z is parked just under the bedroom window." Most likely, W5LOVER is trying to impress everyone on the repeater that he has a new girlfriend (any girlfriend). I'm sure she would be upset if she realized he had just broadcast her location to all those listening. And now that touch tone decoders are common, it's easy to get the phone number, too. Bad news.

Some things overheard recently on a local phone patch were: "If I go out before you get here, I'll leave the house open." And a guy talking on the patch to his YL around midnight, both agreeing that she

will spend the night alone at her place. The next day the same guy was talking with her again on the patch arranging for her to spend the night at his place. Wouldn't she be surprised to come home the next morning and find her apartment ransacked. I wouldn't.

Many times we use the repeater when direct communications would do the job. I make it a practice to use a portable transceiver on low-power simplex whenever I am giving final directions to my place. If you must talk about your personal life, at least limit the audience as much as you can. And don't do your fellow hams a disservice by talking to third parties about your friends' plans for evening outings or vacations.

Earlier, I mentioned Callbook listings and local ham directories. Think about listing a "mailing address" with the Callbook and the FCC that is different from your home address. It's not easy for some to do this, but it seems worthwhile.

You may think I'm being unrealistic and there is little left for you to talk about. No really. Simply use common sense. Ask yourself, "Is this something I want a complete stranger to hear?"

The concept of security is harder to sell than a 75-meter rhombic to an aeronautical mobile operator. A majority of customers for security products has already been victimized. Don't assume that it always happens to other people, or wait until something happens to you before you become conscious of your own security. Remember...our broadcasts can't have commercials. You'd be surprised what a crowd that can draw. Think before you punch that mike button. Someone may just be waiting for you to

supply that last piece of the puzzle. ARNS Bulletin

"Your Life Story on Repeaters"
Richard Rhodes, KH6IO
from WORLD RADIO

SMOKE!!

A BASIC TRUTH!! The president of the M&K ARC has discovered what makes integrated circuits (ICs) work. He says that SMOKE is what makes them work because everytime you let smoke out of an IC, it stops working. This can be easily verified thru tests.

I was flabbergasted by the thought of it! Of course! Smoke must make all electrical things work. Just recall the last time you were working on that voltage regulator and the smoke escaped from it. Or that LM386 audio amplifier. Didn't it quit working?

I smile as more of the truth dawns. It's the wiring harness that carries the smoke from one circuit to another, and when the harness springs a leak, it lets smoke out of everything at once, and then nothing works.

Take the starter motor on your car, for instance. It requires large quantities of smoke to work properly. That's why the wires are so large. It's so simple now that the truth is known. Why didn't someone think of this before?? It really is obvious. You can continue to expand on this hypothesis by considering this: Why are circuits made by Yankee firms fore likely to leak than others? Things that are Yankee always leak! Yankee convertible tops always leak. Yankee engines always leak oil. Yankee hydraulics lead hydraulic fluid. Yankee tires

always leak air. Even the government leaks secrets about everything. So it is only natural Yankee electronic circuits to leak smoke.

Recently smoke detectors were the answer. Put smoke detectors in everywhere for many reasons. Not the least is to detect smoke. Even the smoke detector proves the law about escaping smoke--when smoke escaped from the smoke detector, even the smoke detector did not work. Now if we could just figure out some way of getting the smoke detector to detect that it was losing smoke by sensing the smoke, we'd have it made. Somebody should work on that problem....

From QST-Canada & Palomar Research Club (W7JIE)

LIQUID CRYSTALS

We are all familiar with liquid crystal materials. After all they have pervaded the alphanumeric display industry for many years appearing in instruments such as watches, calculators, computers, portable television sets, communication hardware, and flight control systems. So when a friend asked me how a liquid crystal display (LCD) worked I was able to show off my knowledge with the following facts.

"We know that the liquid crystal material is hermetically sealed between two sheets of closely spaced flat panels of glass forming a display of numbers composed by selecting appropriate bars from a seven bar display. Displays are not limited to digital or alphanumeric types but are also available in thermometer or analog form in which successive elements in a row can be activated, or in mimic diagram and dot matrix forms. One of the great advantages of liquid crystal displays (LCD) is

that they require extremely low power, consuming only about one thousandth of the power of other common forms of display. In fact they are the only practical electronic display which retains, in fact improves its visibility in direct sunlight. They do have the disadvantage, for some applications, in that they cannot be seen in the dark without a power consuming ancillary light source because they do not generate light only scatter light by reflection or transmission."

"That's fine." said my friend but I asked you, "How do they work?" and you have told me what they do. To understand "how" Lcd's work it is worth while to understand what liquid crystal material is and its principles and types.

Liquid crystal material is an oil-like organic compound which in bulk as a cloudy appearance, resembling milk or honey but when seen as a thin layer sandwiched between two sheets of glass is clear and practically transparent. The rod-like microscopic molecule of the material can best be visualized as a greasy transparent sausage that possess an electrical dipole axis which is at right angles to the main axis of the molecule. The material flows like a liquid but exhibits optical properties similar to solid crystals over a working temperature range between a melting temperature of 23 degrees Fahrenheit and 149 degrees Fahrenheit above which it loses its special crystal properties and acts like any normal liquid. Within its working temperature range the liquid material has properties similar to those of solid crystals, in that the light passing through the material from various angles undergoes different degrees of refraction or bending of the light rays.

There are three main types of liquid crystal material. In the first type, smetic, the molecules are the most highly ordered. They form themselves in discrete parallel layers; all the molecules in one layer are parallel to one another, and the molecules in different layers all point the same way. In the second type, nematic, the molecules arrange themselves with their long axis parallel to one another but take up any position along their axes with respect to adjacent molecules, so that they exhibit a 'grain' but do not form layers. The third type, cholesteric, the molecules all point the same way in each layer but each layer is slightly twisted with respect to the ones above and below it so that over a large distance a continuous twist is observed to be superimposed upon the parallel arrangement.

In a nematic type display at rest it is usually arranged by pretreatment of the glass for the long axes of the molecules to be normal to, that is, standing up on the glass surface. When the operating voltage is applied across the two sheets of glass sandwiching the nematic material it has the effect of turning the molecules through a right angle so that the electric dipole axes are brought into line with the electrical field. If this was all that happened the liquid in the display would still appear as a clear liquid, because the molecules would still be lying parallel to one another. However, free negative and positive ions within the liquid are drawn to the oppositely charged conducting surfaces. These ions locally neutralize the field across the liquid which in turn randomly disorients the nematic molecules in a turbulent manner. It is these randomly arranged groups of

molecules which scatter light at their interfaces to produce what visually appears to be a 'milky' or 'ground glass' effect. This effect is described as a dynamic scattering type of display.

Displays using cholesteric liquids are normally operated on a different principle. These displays make use of the fact that the regular twist in the molecule layers causes light passing through the liquid to be twisted. With no applied voltage, polarizing filters are placed on either side of the glass sandwich with their acceptance planes so arranged that light passes through. A small potential is then applied across the parts of the display to be shown of sufficient amplitude to twist the molecules through 90 degrees. The light entering through one polarizing filter will not now be able to pass out through the polarizing filter on the other side and will hence look black to a viewer. Alternatively, if the polarizing filters are initially arranged to stop all light, a 90 degree twist will produce a clear display.

Smectic type material has not been used by LCD manufacturers.

A typical display using nematic liquid might for example, be constructed of seven-bar digits between two one eighth of an inch thick glass plates sandwiching a liquid thickness of one thousandth of an inch. The inside of the glass surfaces would have, typically, a transparent layer of tin oxide sintered or baked onto the glass in the desired pattern. The line of conducting material from the pattern to the edge connectors is laid out such that so that it is not facing any conducting area on the opposite plate. Cholesteric liquids are now

being used in a similar construction except that in this case the display is viewed through polarizing filters.

So now if your friends ask YOU how do LCD's work, tell them it is by magic. You will probably find it a lot less trifling than explaining Electro-optical dynamics. Written by Bill WA7VEH. Submitted by W7JIE

BOARD MEETING HIGHLIGHTS JUNE 6, 1989

REPEATERS: K7YR reports the 6M is up and working. The 2M is back working. Looking for new repeaters. WA7EBH and K7YR have leads. Guidelines for using the club repeaters to be published in the RELAY.

Recommend to make club P.O. Box number the permanent mailing address with the land address to remain at QTH of K7YR.

TREASURER: WA7EBH will get 31-day C.D. with self renewal soon.

PATCHES: WV7R has faxed copy to The Philippines and they are being made

NO CODE: The board decided a statement on the NO CODE should be prepared and sent to ARRL with proposals. K7YR will put an article in the June RELAY to encourage input from the members. Comments, suggestions and the like may be sent to him. A draft will be drawn from these responses and presented to the next Board meeting on June 29, 1989.

MEETING PLACE: Board members agreed to continue meeting at Holy Cross Lutheran Church in Factoria area of Bellevue. From N7JPW.

BEHOLD THE TURTLE!!! He makes progress only when he sticks his neck out.

SEAFAIR PARADES

The upcoming 1989 seafair parades are as follows:

KENT JULY 16 at 10 am
REDMOND July 22 at 8 am
DesMoines July 29 at 4 pm
CHINATOWN July 30 at 5 pm
U DISTRICT July 31 at 5 pm
GREENWOOD Aug. 2 at 5 pm
TORCHLIGHT AUG 4 AT 4:30 PM
LAKECITY Aug. 5 at 5 pm

I hope that you can find time to come out and help with these parades as they are alot of fun. If you need any further information please call me at 392-5303. Parking this year for the torchlight will be at the Seattle Center Parking Garage so I will need to get you a free parking pass. Thanks for your help and participation.
Chuck Stroehrer...WA7EBH

SEASIDE 1989 ONE RESTAURANT TO AVOID and ONELINERS

Our first evening we decided to go to the Bounty as they have had good food in the past. What a fiasco!! The waitress was harried because she was training a new one and the lady obviously had not done the work before. She couldn't get anything straight - not even 3 soups and 3 salads for a table of six!!! (Not ours, thank goodness). It was Jeannette (Curly's wife) and her group from Oregon. Jeannette, by the way, had a glass of ice water spilled on her. The main waitress was also training 2 very young girls (about 14 years old) to be bus people. They didn't even

know how to properly set a table, but Lorie, N7LCO, nicely showed them how. One fellow ordered prime rib. It came cold so he sent it back to the kitchen. When it returned, barely luke warm, his baked potato was replaced with french fries. They had run out of baked potatoes, and Oregon food laws state that anything sent back to a kitchen has to be thrown away and the entire place of food replaced. These people asked for an adjustment on their bill and the waitress stated very loudly, "if they were so unhappy, how come they ate the whole thing?" What do you do when you are so hungry, anyway?

When asked if we had seen the specials, she showed us the board from the window. "What are pet lobsters?" we asked very seriously. "Petite lobsters," she frantically explained. There was no indication that "pet" was short for Petite. Then the fun and comments began. Our bread came with no plates, (cold, too). Mike, KA7CSE, got tired of waiting for two more beers, so got up and got them himself. Joyce, N7JPW, never did get her wine.

"I hope you wanted your prawns deep fried," she said to Debbie, XYL of Mike, with a sigh of relief when she said yes.

Fortunately the food was very good. We felt sorry for another group of people who were told three times that the item they ordered each time was out. The owner told us that they were told the Hams were coming, but not how many, so they were unprepared. We found out the next day that the health department closed them down during the week. Great! I should have seen my friend that owns a gift shop sooner and saved us some grief. She did the next night. Our favorite restaurant, "The Crab Broiler", had

changed hands and people were getting sick from the seafood, so we quickly changed our reservations. We went to Norma's where they serve the best crab louie. There must have been two pounds of crab on each one along with the other goodies.

Chuck, K7CHV, said, "We settled for Romaine instead of Ptomaine".

ONELINERS

"Why would a ham buy a piece of equipment for \$16.00? Because hams buy anything that has a knob on it."

"I feel like a salmon going upstream," stated flea market customer fighting the crowds.

Heard from a passerby outside, "I have never seen so many personalized license plates before."

Edie, XYL of Clay, K7CR, said, "I've never seen so many dogs down here." Clay said. "Me neither," as we were standing on Cruise Blvd. Ask him about the girl by the fountain tho; that was no dog!!

Jimmy, WM7A, bought a bird (plastic kind that runs by a rubber band). After flying it on the beach for awhile to a rather large audience, it ended up on the roof of the Shilo swimming pool. We'll let him explain how he got it off the balcony of a room.

We had a great time and great weather. They're hoping to expand the convention center before next year with a 2-story parking facility. I hope so. It was so crowded, us ladies just had to go shopping!!! Pati, WB7VJA, with N7JPW.

FOUND AT A HAMFEST

