

# 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 9:30am in "The Good Neighbor Center", 305 S 43rd St. Renton, Wa. All "Hams" invited. The MIKE and KEY net meets each Sunday morning at 10:00am on 3930 kHz. VHF check-ins on the K7LED Repeaters.

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AN ARRL AFFILIATED CLUB LOCATED NEAR SEATTLE, WASHINGTON.

VOLUME 14

OCTOBER 1986

NUMBER 10

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RELAY EDITOR  
13517 117th Ave NE  
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REPEATER FREQUENCY  
52.37 - 53.37  
146.22 - 146.82  
224.12

BOARD MEETING  
WA7EBH QTH  
1930 HRS  
4 NOV 1986

CLUB MEETS:  
9:30AM 15 OCT 86

UGN CENTER  
RENTON 10:00

ACTIVITY EVENING

BOWLING  
7 NOV 86

PETE HEDBERG K7WTG  
20904 NE 77TH ST  
REDMOND  
WA 98053



First Class

COFFEE AND DONUTS WILL BE READY AT 9:30

**NOTES - NOTES!!**

QSL Cards. So far there has been 10,000 cards printed for various members of the M&K. If there is anyone else that wants or needs QSL cards, please inform your Editor.

The Constitution and By-Laws committee will meet the later part of this month. There was a note in Sept. Relay in case any of you want to get in your two cents worth. So far, it looks like there will be only Board members there as they are the only ones that have shown any interest. In the event someone expressed their desire to be on this committee and I have forgotten about it, please refresh my memory.

On the invitation of Gene, WA7TAI, your Editor attended a meeting of the PARS or PARC which stands for the newly formed Puget Power Radio Club. Lots of nice people over there, not to many showed up for the meeting, however, there were 10 or 12. Gib, W7JIE, was there to give a little talk on sounds of things he has heard and identified on different frequencies. Chuck Graff administered a Novice test to one of the younger members, he passed OK, so we have another Ham.

I guess you know by now that Japan launched a satellite which is now called FUJI. This is a little different than AMSAT 10 is as much as the up-link is low and the down-link is high.

It's pityfull, do two stations constitute a net?

And how many Club members have you talked to this week?

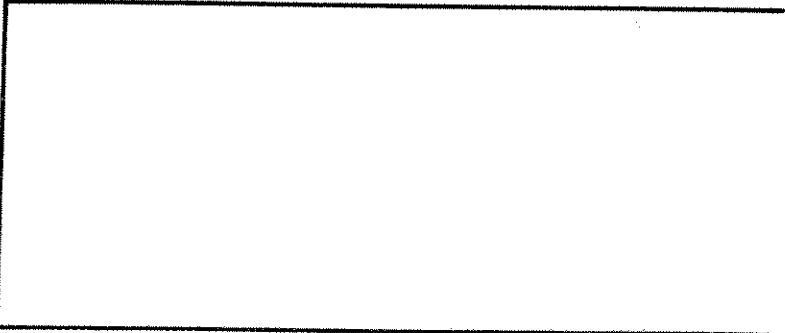
What about the "Friendship Award"? It was mentioned at the Club meeting last month. I believe the VP has the certificates. Why don't you go for one or increase your score, talk it up and lets get it going again. This award says a lot for our Club.

We now have, or will have, three repeaters in the Seattle area with fairly wide coverage. There are lots of people other than Club members using these repeaters, so, I suggest that we let it be known that we accept any and all donations toward the operation and up-keep of these repeaters. Like all the other repeaters in the area, you usually have to belong to it or donate something towards its operation. There will be a considerable expense so I think it is prudent that we let it be known to the Amateur world that we are accepting donations for the operation of these repeaters.

OK, so how did the code class go? Where is the report?

Why don't you take time out from your heavy work schedule and attend one of our M&K Amateur Radio Club meetings? We would like to see you!! Some of you have joined as an associate member and have never showed up for anything.

I guess most of us have digital clocks, the one with the little red number that show hours, minutes and seconds. Have you ever watched that thing click of the seconds, second after second, do you realize that each one of those seconds is lost. And each time it ticks over it is another second out of your life that you haven't done anything - why don't you get up and do something usefull, like come to a club meeting.



DATE	CONTACT	PHONE #	LOCATION	EVENT
Nov 1-2	K6DOW	271-5314	Shelton Area	Tour-De-Forest (Sports Car)
Nov 30	K6DOW	271-5314	Seattle	Seattle Marathon
Dec 6	---	---	Seattle Area	Boat Rlides for the Handicape
Dec 6	KA7CNT	825-5321	Enumclaw	Christmas Parade
Dec 17-24	K7QMI	547-0404	King County	"Santa Talks" (Hospitals)

Contact K6DOW or W7JIE to add or change this calendar of events.

15631 - 12th Ave. South  
Seattle, Wash. 98148.  
September 17, 1986.

To the Officers and Members of the Mike and Key Club:

I regret that I have not been able to attend any meetings for a long time because of ill health; and now, after surgery this summer, I'm still not up to par energy-wise.

So, I'm sending this letter because I want to express my special appreciation to the Mike and Key Club V.E.'s who have supported the monthly examination program so ably and so faithfully.

It has become a program that is well-known, and, they tell us, well-liked because of the quality of the V.E.'s and their kind and helpful attitudes. Also, the timing and the place of the examinations here in the south end fills a real need for a sizeable number of people. Interestingly enough, we have had a fair percentage of out-of-state and out-of-town participants. One person even phoned from Tennessee to make a date, since she had seen the exam notice in a ham publication!

I look forward to a long, successful program, especially due to the Mike and Key Club.

Sincerely,



Ivan Lee

N7IL

FROM YOUR V.P.

Last meeting we asked the question, "Why we are members of the Mike and Key Amateur Radio Club?" I have given this much thought and I know now my reasons!!

The friendship that has been extended to me is superb. Our activity for our community makes me proud. And last but not least, our bond as Amateurs is ever growing and getting stronger all the time. It's my pleasure to be a member and a privilege to belong.

73 - Rick - NU7Z

SURVEY RESULTS  
(Alias - Editorial)

There ain't any..... Out of the 65+ members in this "club" I managed 6 returns. And to think, there was \$10 on the line just for answering a few Yes/No questions. Frankly, I'm disappointed. 6 opinions does not a trend make!!

So, to those who took the time, Thanks. To those who didn't, if you don't like your club activities/programs.....

73 - Mike  
(end of Editorial)

October 4, 1986

Re-instatement Proposal:

A few weeks ago I was cleaning up in my Ham Shack in order to do some weather insulating for the coming winter and I found a Roster for the club dated March 17, 1978. This Roster had 115 members.

In looking over the list I found names of people still active on one band or the other in this area. We, as a club, have lost our ability to maintain. Some members have left for various reasons, i.e. moved out of the area, dislike the lack of Ham activities, increased family activities, a feeling of not belonging, a Club mostly of and for VHFers, boring meetings consisting mostly of how much money spent and/or put into the bank, etc. These are some of the reasons I've heard over the past 15 years.

We actually have a good club with some activities that really bring the club members out and together, such as Flea Market, Field Day, etc.

I therefore propose the following to the Club Members:

1. Any ex-member may be re-instated as full member or associate member with payment of current annual dues.
2. No requirement of meeting to be attended (as that requirement has already been done before)
3. This re-instatement time to be one year from the date the Radio Officer deems the 82 Repeater is up and ready to go.
4. This re-instatement offer be widely advertised in all M&K Publications, on all M&K nets and on all M&K Repeaters.
5. The Member who is most instrumental in the re-instating of greatest number of members be so honored in some manner.

This proposal is just a thought in order to maybe get back some of our old members and maybe with the 82 Repeater now a reality, some new members.

Would appreciate any comments and maybe we can come up with a good Proposal.

Jim Carpenter K7PHZ

GENERAL MEETING 9-20-86

Called to order by NU7Z at 1001  
w/pledge by NU7Z

Visitors: KE7TJ Bob, KA7YPQ  
Lenn, 22 members in attendance

New members: W7BQG Ellis, N7HKL  
Ted

Minutes accepted

Sec: Letter from Ivan Lee N7IL  
in re VE testing

Treas: \$7037.52 in assets

Act Mgr: 12 people took ferry  
ride to Bremerton - bowling  
dinner coming up - Christmas  
party Dec 6th

Constitution committee: chairman  
Ray WA7EKH - volunteers  
welcome - comments in writing

QSL Cards: see WA7EKH \$27.87/500  
\$52.01/1000

Public Service: Wheels of Fire went  
well - see relay for future  
events

Nets: Need alternate net controll  
220mhz see Rick NU7Z

Jackets/T-shirts/Sweatshirts: see  
Hal N7NW order to go in soon

SEA-TAC: Christmas station for MSG  
traffic - spot is open/reserved  
at airport

New Business:

Flea-market meeting Oct 4th sat eve  
at 1900 at N7NW

Board meeting changed to Oct 7th

Friendship award to be looked into  
by vice-pres

Meeting adjourned 1053

BOARD MEETING 9-10-86

Present: NU7Z N7NW WA7UVJ  
K6DOW W7VIH K7ND WA7EKH WA7EBH

Items discussed:

1. 2m repeater is down for  
repairs
2. Idea of moving club meeting  
is tabled
3. Special sevice club status
4. SEA-TAC Christmas station
5. Cruise on ferry to Bremerton  
Sept. 12
6. QSL cards - \$100 approved by  
trustees to pay for QSL  
card blanks
7. Constitution/By-Laws committee  
to be formed Ray WA7EKH  
chairperson - volunteers invited  
written comments only
8. Treasury report

Next board meeting Oct 8th @  
W7VIH 1930

BOARD MEETING 10-7-86

Present: KB7ZS N7NW WA7EBH  
WB7TBR WA7UVJ W7VIH NU7Z WA7EKH  
K7ND K6DOW

Items discussed:

1. Bowling party Nov 7th, 6pm  
at Totem Lanes \$1.60/line  
dinner after
2. Christmas party Dec 6th  
potluck - White Elephant  
present exchange
3. Friendship award
4. Fleamarket - will be meeting  
Oct 18th after regular meeting  
volunteers for committee see  
Hal N7NW
5. Fieldday - check with Ft.  
Flagler for building rental
6. Relay, Qsl cards, ARRL letter
7. New directions for club as a  
unit
8. School contact to advertise  
next novice class - see Vic  
WB7TBR to help out

Next board meeting Nov 4th at  
Chuck's WA7EBH at 1930

**NEWSPAPERS \*\* NEWSPAPERS**

OH BOY!!, we had the 'ol pick-up down on the springs and the tires. Didn't know if I was going to get there or not with out blowing a tire, but we did.

I unloaded 1550 pounds of newspapers, etc., and 59 pounds of aluminum cans. (biggest load yet). This brought a total of \$36.23 - what a haul - the price of newspapers is now up to \$30.00 a ton. We hit it just right. So please save like you never saved before, get to the neighbours and anyone else that you think might help.

**NOTICE \*\* NOTICE \*\* NOTICE**

I UNLOADED QUITE A BIT OF "GARBAGE" THAT YOU HAVE BEEN THROWING IN WITH THE NEWSPAPERS. THIS INCLUDES LETTER TYPE ADVERTISEMENTS THAT COME IN THE MAIL, MAGAZINES, TELEPHONE BOOKS, ETC., THIS TYPE OF MATERIAL CANNOT BE USED. PLEASE BE A LITTLE DISCREETE ABOUT WHAT YOU THROW IN THE BACK OF MY PICK-UP.

I'M NOT YOUR "GARBAGE MAN".!!!!  
TAKE YOUR GARBAGE TO THE DUMP

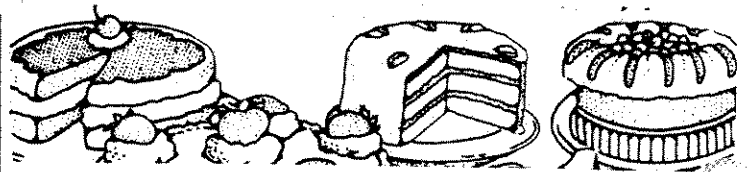
I'LL TAKE ALUMINUM CANS THO

	M	A	M	J	J	A	S
\$	19.90	19.50	10.00	7.62	10.00	10.20	36.23
	D	N	D	J	F		
\$						TOTAL	
						\$93.45	

WE NEED MORE PAPERS \*\*\* WE NEED MORE PAPERS  
\*\*\*\*\*

**CHRISTMAS PARTY**

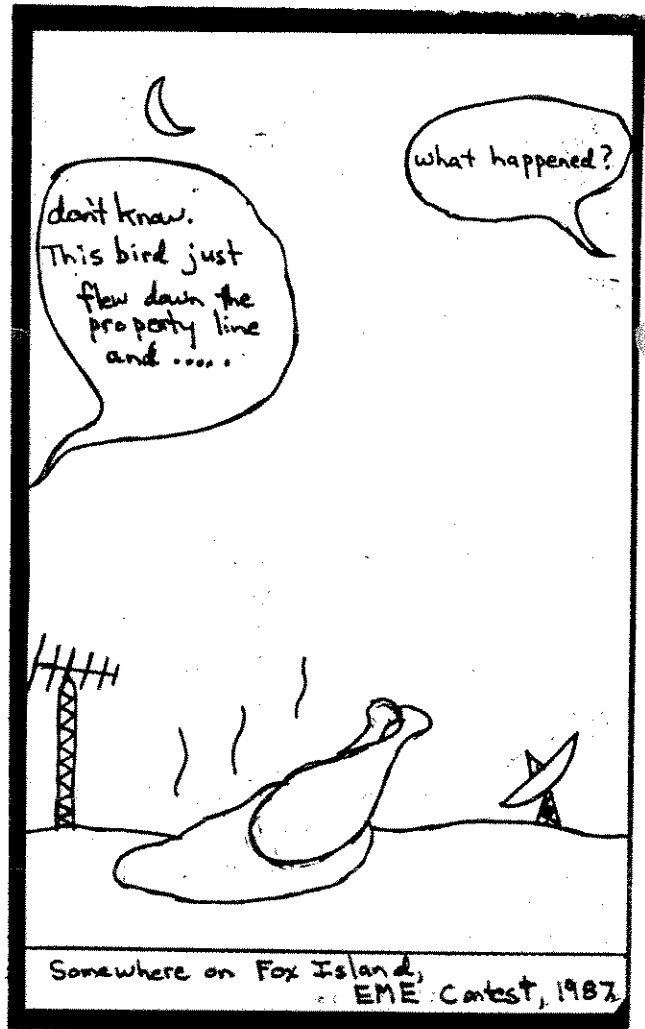
The leaves are changing, the air is cool, and the days are getting shorter, Fall and Winters come. Also coming is the annual Mike and Key Christmas Party. This year it will be December 6th and we need people to help out as usual. Give it some thought. Then mark your calenders and make a date for a bang-up time at the Christmas Party.



**\*\*\*\*\* LIME JELLO SALAD \*\*\*\*\***

- 1 Pk Lime jello
- 1 C Cream, whipped
- 1 C Crushed pineapple
- 1 1/2 C Peacans, chopped
- 1 Pk Cream cheese

Dissolve jello in 1 cup hot water. Drain juice from pineapple & finish filling cup with water. Add to jello mixture. Chill until slightly thickened, add pineapple, cream cheese which has been softened with small amount of cream, whipped cream & nuts. Chill until set. - Ellen Leslie



**HAM PLATES**



I have applications for HAM license plates for your automobile. If you want one - let me know. Rick - NU7Z (NUTS)



# M & K NOV 1986



SUN MON TUE WED THU FRI SAT

						1 ACT. EVE.
2 HF NET	3 VHF NET	4 ELECT- ION DAY	5 BOARD MEETS	6	7	8
9 HF NET	10 VHF NET	11 VETER- ANS DAY	12	13	14	15 CLUB MEETS
16 HF NET	17 VHF NET	18	19	20	21	22
23 HF NET	24 VHF NET	25	26	27 TURKEY DAY	28	29
30 HF NET	 					

THANK YOU FOR NOT  
SMOKING DURING CLUB MEETINGS

FROM SGT. BOB WOSLE, RA-10

As of June we had a total of 418,279 licensed Amateurs in the US. This is up from 417,167 in May. The November World Radio says we now have 420,193 Amateurs as of July.

The city of Lakeside Park, KY. is challenging the Constitutionality of PRB-1 in that the city is trying to keep John Thernes, WM4T, from putting up a tower and an amateur antenna system. They, the Amateurs, down there are looking for donations to help pay for the fight against the city. Donations for the cause can be sent to the Northern Kentucky Tower Fund, P.O. Box 17721, Lakeside Park, KY 41017.

KB4KAW passed some traffic on to someone else and later he found out it hadn't been relayed nor had the guy sent a service message back saying that he couldn't handle it. KB4KAW goes on to say "There ought to be a rule that would suspend their licenses for 30 to 90 days!" was his reaction.

FCC slapped a fine on three amateurs in South New Jersey for out of band operation.

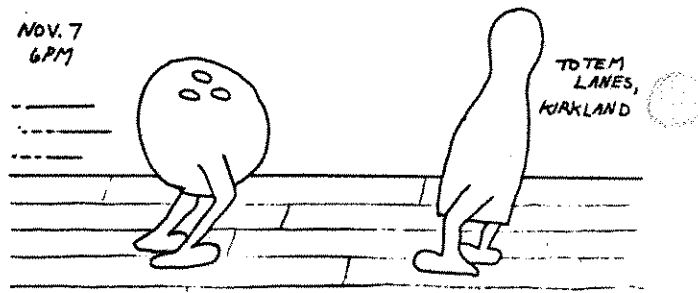
An 11 meter transceiver in La Habra, CA, has been shot to death by an armed intruder. The intruder shot it three times and left. Guess he didn't like CB rigs.

The electronics communication privacy act, reported as HR 4952 has now been passed by the House and sent to the Senate.

A Amateur arrived in Seattle on a flight from Hong Kong and was supposed to be met by K7ZQ. He had made prior arrangements to meet on 146.52 once he was in the Terminal. Well, he got in the terminal, pulled out the HT and established contact with K7ZQ who was waiting on the other side of the Customs area. A Custom man spotted the HT, came over and told him to get out of line. Then the guy ran into all kinds of trouble, they took his passport and took his HT. Finally he got his passport back but not the HT until he cleared customs. The Customs man told him he was about to draw his gun when he spotted the HT as he thought the guy was one of those terrorists type. Lesson here is; don't display or use a HT in the Customs area, wait until you get through and out the other side.

SIGN UP FOR THE Mike + Key BOWLING TOURNEY

NOV. 7 6PM



### MIKE & KEY BOWLING TOURNEMENT

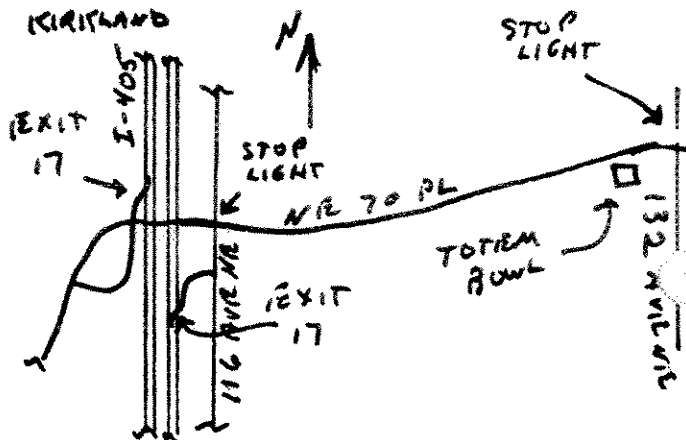
QST, QST, QST. Calling all keglers to the Mike and Key Bowling Tourney. November 7th, a Friday night, I have reserved 6 lanes at the TOTEM LANES in Kirkland, for an enjoyable evening of strikes, spares and the occansional beer frame.

We will begin at 6 o'clock, and when finished, lead out to a local establishment for awards and maybe a bite to eat or drink. Scores WILL be handicapped afterwards so that lousey bowlers like myself will have a chance at one of those fantastic(?) trophies.

A line of bowling costs \$1.60 (plus tax) so expect to spend about \$6.00 for the 3 games. Shoes are 75 cents if you don't have any.

Now, 6 lanes can only hold so many people so if you're interested, better sign up soon, and bring your spouse or friend, it promises to be a FUN evening. (Now....where did I put that ball.....?)

WA7UVJ -- MIKE





DUE TO SPACE LIMITATION, THIS ARTICLE BY WATSEB WILL BE RUN IN INSTALLMENTS. HOPEFULLY, IT WILL ONLY TAKE TWO RELAYS.

For those of you that are interested in how multi-line and single line telephones work I am enclosing a brief description and schematics for your use. These are for single line, 5 line (6 button), and 9 line (ten button) phones. You may find these of interest in adapting these phones for use in the ham shack. You can use these for phone patch equipment, remote control of equipment, interconnecting two or more phone lines, etc. On the multi-line phones you can remove a screw that will allow more than one button to be pushed down at the same time. This screw is normally located on the front of the key strip and interfaces with the return strip. If any of the club members need them I can supply a few cut ends that you can use for pigtails to hook up these phones.

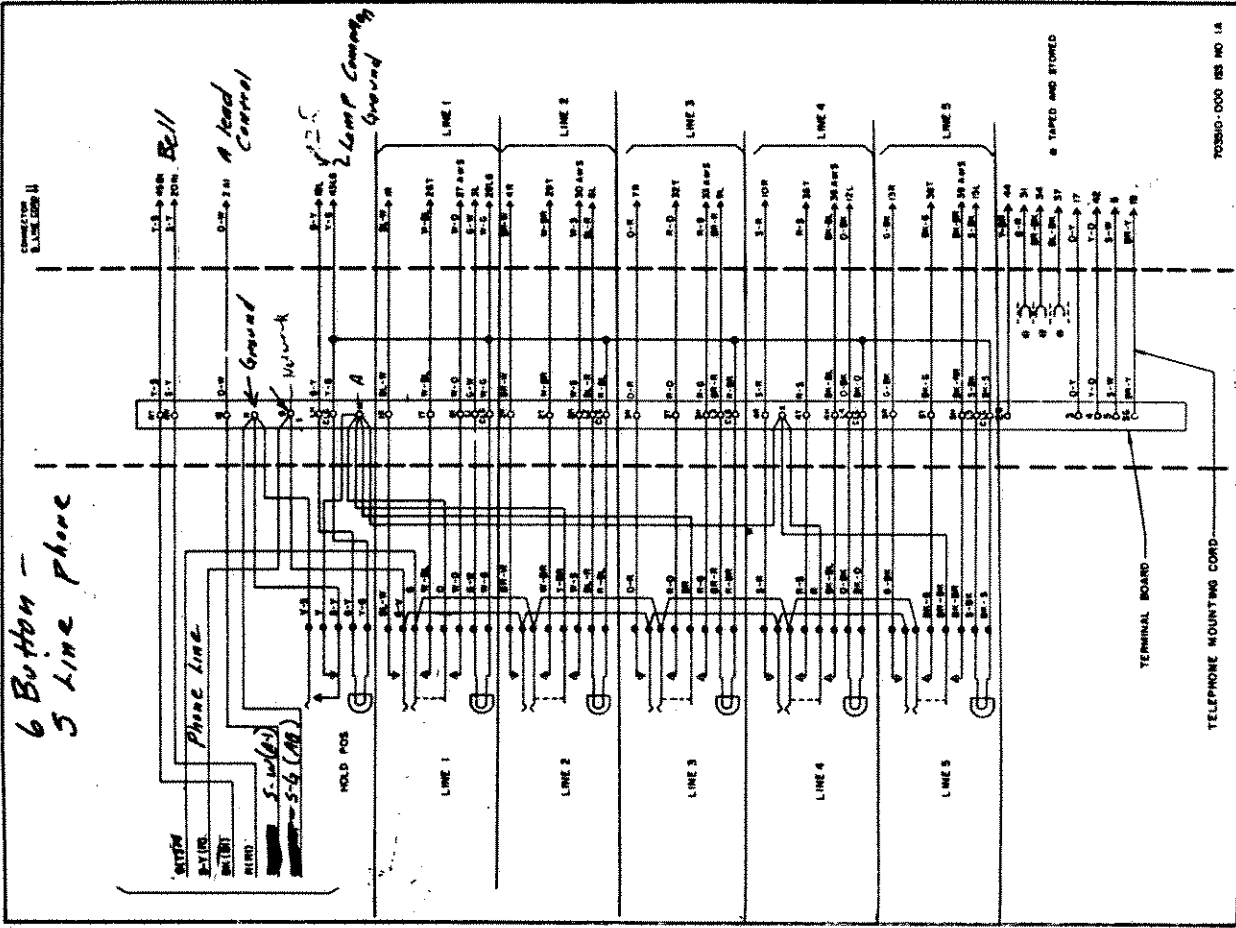
From the diagrams you can see that the tip and ring phone lines are parallel through switches in the key strip, that lamps have a hot lead and a common ground (note on some phones the lamp ground is not common), the A1 lead is connected through the key strip and then through the HOLD button and hook switch and then out, and the bell leads are separate (B1-R1). All of the functions are controlled by a "400 CARD" that connects the phone line, lamp voltage, hold function etc.

For those of you who wonder how a multi-line phone works, here is a brief description and theory of what happens when you pick up your phone. When you go off hook and press down a key strip button the A-lead control circuit is completed. This causes the 400 card for this line to pull in a relay lighting the light, causing the phone line to connect and causes the phone to stop ringing if it is doing so.

When you hang up the phone the A-lead control line is opened which causes the phone line to disconnect. The incoming light blinking, hold winking and bell ringing on incoming calls are all functions of the 400 card. The HOLD button works by opening up the A-lead control while allowing both the tip and ring of the phone line to remain connected. When the 400 card senses this condition it puts the line on hold. To release the hold condition you push in the key button, once again connecting the A-lead control to the 400 card, pulling in the relays and connecting the line thus allowing the call to be completed as above.

I hope that this brief explanation and schematics will help you understand the mystery of the phone system and allow you to use them in the ham shack for whatever you need them for. If anyone has any questions I will try and answer them for you.

Chuck WATSEB



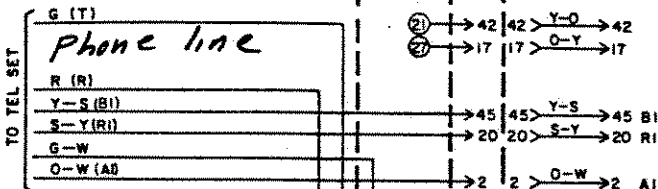
TELEPHONE MOUNTING CORD

KEY & CONNECTOR BLOCKS

TERMINAL BOARD

TEL CONN LINE CORD

10 Buttons /  
9 Line



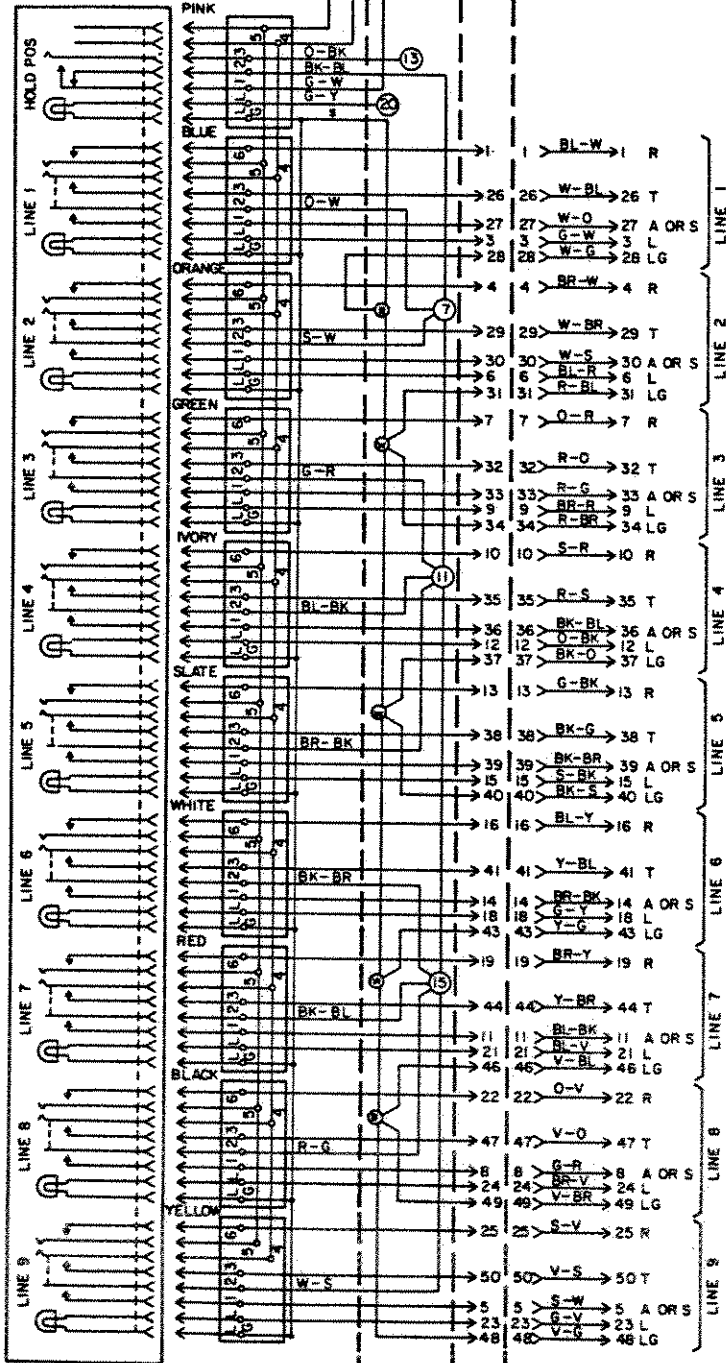
Bell

A lead Control

T- Tip of phone Line  
R- Ring of phone Line  
A- A lead Control out with #2 o/w  
L- Lamp input (6 to 10 volts)

LG - Lamp Common Ground

Note: Some sets the lamps are not common grounded



Cable 1 Cable 2

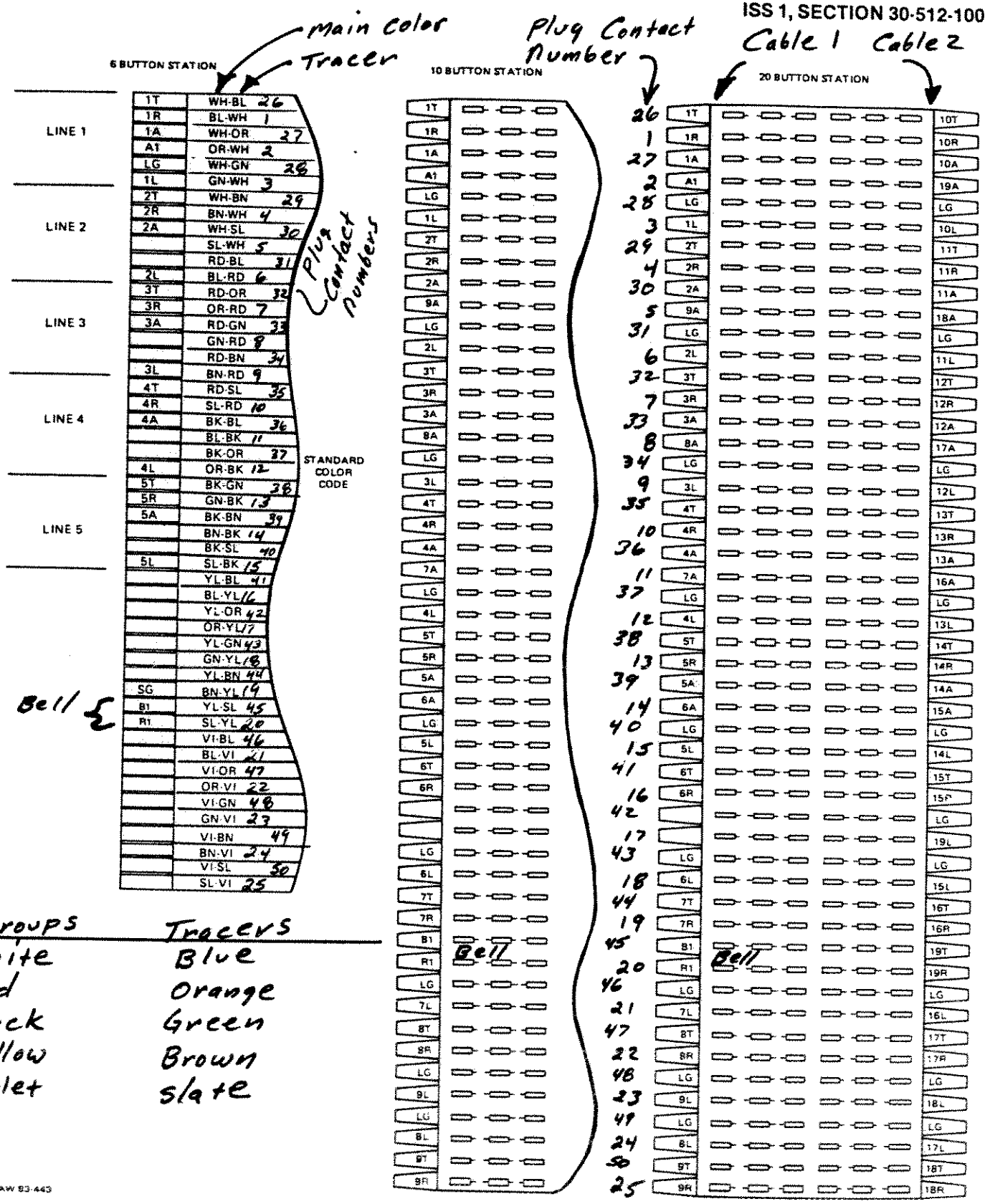


Figure 6: Typical Station Block Layouts

# Multi-Line Simple Telephone Operation

