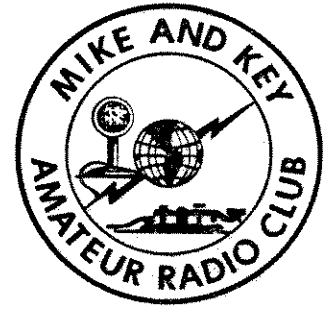
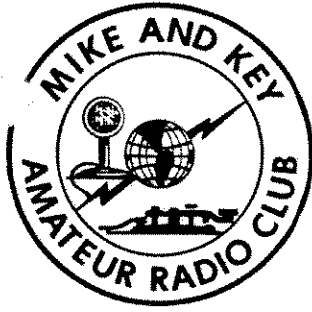


K7LED RELAY



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 18

JANUARY

1990

NUMBER 1

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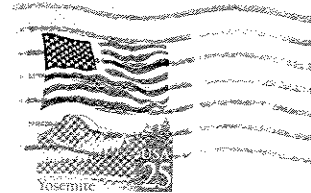
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RELAY DEADLINE 6 FEBRUARY 1990



REPEATER FREQUENCY
52.05 - 53.05
146.22 - 146.82
224.12

Check mailing label for date
that your dues expire. Mail
renewal to treasurer or pay at
next meeting.

First Class

BOARD MEETS

FIRST TUESDAY
OF EACH MONTH

CLUB MEETING
Third Saturday
of Each Month

20 JANUARY 1990

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

K7WTG 91/01
HEDBERG, PETE
20904 NE 77th ST
REDMOND, WA. 98053

Breakfast 0730
Riverside Inn, Tukwila

COFFEE AND DONUTS WILL BE READY AT 0930

The
Presidents
Corner

First things being first I would like to thank the Club for the flowers I received when I returned home from the hospital and to let those members that stopped by how much I enjoyed the break from daytime TV. Thanks for your thoughts.

Well Christmas and New Years are a thing of the past and it is time to look forward to 1990 and all that needs to be done. Fleamarket, Elections, Banquet and then Field Day.

The last word I had was that the fleamarket flyers were ready to mail and from that point on it will be a scramble to get all ready for March 10th. Lets get all those interested (and motivated) signed up, duties, etc assigned and as much pre-planning done as possible.

The election of new officers will also require some thought as those, newly elected, will be directing the M&K for at least the next year. As we grow, and are involved in more and more things, it becomes even more important to have responsible and dedicated leadership.

Lets have a good turnout on the 20th, and the rest of the meetings to come. Being a member of the Mike & Key ARC entails more responsibility than just paying your dues. Last month we did not have enough members on hand to conduct business.

See you then. 73, JACK

**BOARD MEETING HIGHLIGHTS
JANUARY 2, 1990**

Present: WV7R, W7QGP, KB7ZS, WA7EEH, KF7YB, KE7GEW, WE7AYU, KA7CSE, N7JFW, KPZX.

Future programs: January - Clay Freinwald, K7CR, will speak on Repeater Frequency coordination. He is currently president of WVARA. February - Packet Radio From All Angles.

Al, WV7R, resigned as Activity Chairman. It is suggested that an Assistant Activities Chairman be appointed in the future. It was also suggested that there be a standing committee for activities.

Flea Market publicity is underway. Flyers are at several businesses, has been announced on Country Cousins every week. Flea Market is March 10 with Set-up on March 9.

Nominating committee is KA7CSE, K7PHZ and W7VIH. Nominations are needed.

Three applications for membership: John C. Black, W7HIL, Dean Holtan, N7NKO, Lee Bertrend, N7NKQ. Approved by Board. To be voted on at January meeting.

Treasurer: Balance is \$5,488.00. Trustees to meet Wed, January 31 at 7:30 PM at the QTH of WA7EEH to prepare next year's proposed budget. Needs to be presented at February Board meeting.

NOTE: 1/3 of the ACTIVE MEMBERSHIP of the club must be present at a regular club meeting in order to conduct business.

Next meeting is February 6, 1990.
de...N7JFW

RUSH DRAKE, W7RM, RESIGNS

Rush Drake W7RM, ARRL North Western Division Director, has resigned as director. Effective January 2, 1990, Bill Shrader W7QMU, Vice Director of Medford, Oregon, advances to the director's position. Mary Lou Brown NM7N, Guemes Island, was appointed Vice Director North Western Division. Mary Lou will continue as Western Washington Section Emergency Coordinator (SEC).

Rush had a heart attack on December 9.
Mary W7QGP

Check mailing label for date that your dues expire. Mail renewal to treasurer or pay at next meeting.

**M&K ARC GENERAL MEMBERSHIP
MINUTES
DECEMBER 16, 1989**

The meeting was called to order at 10:00 by Mike, KF7YB, Vice President. The president was excused. In attendance were 50 members and 2 visitors.

The Welcome and Pledge of Allegiance were extended to all.

Announcements were made by the Editor concerning RELAY articles.

Gib, W7JIE, presented various subjects concerning radio security and tracing RFI.

Mary, W7QGP, spoke further of RFI responsibility and the possibility of Special Service Club assignment.

Dick, W7TWU, discussed recent ATV activities.

A Packet discussion was led by Tom, KA7SEH.

The visitors were then introduced.

Nominations for officers in the club were officially opened by the Vice President. Please advise the Nominating Committee or a Board member of your candidate.

Treasurer, WA7EBH, announced a balance of \$5,730.00. The insurance premium has been paid.

Secretary: Minutes of the previous meeting were read and approved.

Vice President, Mike, introduced a new applicant: John Post, N7MEJ. John was then voted into the membership.

A motion was made to have a letter sent to W.W.A.R.A. asking for any information on decisions made by them for our publications. The motion was defeated.

Earl, WZ7H, and Joe, WB7WCP, volunteered to make coffee and purchase donuts before each meeting.

Business over, the meeting was adjourned at 11:12.

Submitted by,
Mike WB7AYU, Secretary

CHANGE OF ADDRESS

Ken Jackson, K7PZX,
8415 - 110th St. Ct. E.,
Puyallup, WA. 98373
(effective 2/1/90)

Chuck Grazier, WA7RJT,
11826 - 21st S.W.,
Seattle, WA. 98146.
242 9576

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WITH 2 IC-BP3 BATTERY PACKS,
BC 25-U WALL CHARGER, RUBBER DUCK
ANTENNA, WRIST STRAP, INSTRUCTION BOOK,
ORIGINAL BOX. PERFECT CONDITION. ALL
FOR \$175.00.
GIB/ W7JIE 226-4222

FOR SALE

48 FOOT SELF SUPPORTING TOWER
500 to 2300 FEET 1/4" EHS GUY WIRE
CALL FOR DETAILS
Jerry Wolfer WAORCX
277-1251 in Renton

**FLEA MARKET
MARCH 10, 1989
YOUR HELP NEEDED**

**ELECTIONS IN MARCH
RUN FOR AN OFFICE
AND HELP YOUR CLUB
IN THE COMING YEAR.**

ROSTER UPDATE

Last month we ran a roster in the Relay. Please review the information and send any corrections to the Editor at the address on the front cover. We will try to publish a new roster next month so please send in those corrections.
Thank-you for your help

PACKET RADIO: An Introduction
by Larry Kenney, WB9LOZ

Packet Radio is the latest major development to hit the world of Amateur Radio. If you haven't already been caught by the "packet bug", you're probably wondering what it's all about and why so many people are so excited about it. Well, continue reading, because you're about to find out.

Packet seems to offer something different from other facets of Amateur Radio, yet it can be used for everything from a local QSO to a DX contact 2500 miles away (on 2 meters!), for electronic mail, message transmission, emergency communications, or just plain tinkering in the world of digital communications. It presents a new challenge for those tired of the QRM on the low bands, a new mode for those already on FM, and a better, faster means of message handling for those on RTTY. Packet is for the rag chewer, the traffic handler, the experimenter, and the casual operator.

A ham can get involved very easily with relatively small out-of-pocket expenses. All you need is a 2-meter transceiver, a computer or terminal, and a TNC. You probably already have the two meter rig and a computer of some kind, so all you need to buy is the TNC, which costs just over \$100. The TNC is the Terminal Node Controller, the little black box that's wired between the computer and the radio. It acts very much like a modem when connecting a computer to the phone lines. It converts the data from the computer into AFSK tones for transmission and changes the tones received by the radio into data for the computer. It's a simple matter of wiring up a plug and a couple jacks to become fully operational.

Packet is communications between people either direct or indirect. You can work keyboard to keyboard or use electronic mailboxes or bulletin board systems to leave messages. Due to the error checking by the TNC, all of it is error free, too. (That is, as error free as the person at the keyboard types it.)

As the data is received it's continuously checked for errors, and it isn't accepted unless it's correct. You don't miss the information if it has errors, however, because the information is resent again. I'll go into how this is accomplished in a later part of this series.

The data that is to be transmitted is collected in the TNC and sent as bursts, or packets, of information; hence the name. Each packet has the callsign or address of who it's going to, who it's coming from and the route between the two stations included, along with the data and error checking. Since up to 256 characters can be included in each packet, more than three lines of text can be sent in a matter of a couple seconds. There is plenty of time between packets for many stations to be using the same frequency at the same time, and all using the same repeater. The repeaters, known as digipeaters, are simplex operations and occupy a single frequency, as opposed to the common two-frequency repeaters used for voice communications. You can link from digipeater to digipeater, too, extending your range tremendously. I've worked twelve states on 2-meters with packet, all with a ten watt rig, thanks to this linking capability.

If all of this sounds confusing, don't let it bother you, because that little black box, the TNC, does everything for you automatically. Packet might seem very confusing at first, but in a day or two you're in there with the best of them. In future parts of this series, I'll be telling you more about packet--how you get on the air, how to use it to your best advantage, and ways to improve your operation. We'll even talk about that little black box, the TNC, and tell you about all its inner-most secrets.

(Thanks to K4CEF and Westlink Report for providing "POINTS TO PONDER ABOUT PACKET - FOR THE NON-PACKETEER" in their November 14, 1986 issue. I've used information from that article in this column.)

2 METER 5/8 WAVE GROUND PLANE ANTENNA

Copyright December 24, 1989 by Eric A Snyder

The 1990 ARRL HANDBOOK shows how to build an excellent 2 meter 5/8 wave antenna for mobile use. Already having 2 meter mobile antenna, I wanted to use the antenna in the handbook as a basis for building a 5/8 wave fixed station antenna. The antenna described here is essentially identical to the mobile version with the exception of the materials used, and the addition of a ground plane radial system.

Table 1 lists the parts needed to complete this antenna. The brass tubing was purchased from a local hobby store. The aluminum and insulating rod was purchased at a local surplus outlet. Of course, substitutions are permitted. Use whatever is available.

Prepare the weather shield by drilling a 3/16" diameter hole in the center of the top of the semi-spherical PVC pipe cap. Epoxy or glue the cap to one end of the 5" long of PVC pipe. At the opposite end, cut 2 notches, 5/16" wide by 1/2" deep and opposite to each other. Set the weather shield aside for later use.

Supporting the insulating rod upright, drill a 1/8" diameter hole, 1/2" deep in the center of the top. Next to the 1/8" diameter hole, drill another 1/8" diameter hole sloping downward at about a 45 degree angle through and out the side of the insulating rod. Place the 1/8" diameter brass tube into the 1/2" deep hole. It is not necessary to glue it in place. Route one end of the #12 wire up through the 1/8" hole. Wrap the wire one turn around the brass tube and solder it in place. This will keep the brass tube in place, and make it easy to wind the loading coil.

Wind the #12 wire 10 & 1/2 turns around the insulating rod. Be sure to keep the spacing between turns at about 1/4". Leave an extra 1/2" of wire, and cut off the excess. Bend this extra 1/2" of

wire parallel to the length of the insulating rod and solder a terminal lug to it.

Slide the insulating rod into the aluminum mast, insuring that the terminal lug does not get caught between the insulating rod and the mast. If the fit is too loose, build up the diameter of the bottom portion of the insulating rod with electrical tape until a good friction fit is achieved. With the center of the terminal lug about 1/4" below the top of the mast, mark the mast at the terminal lug with a pencil. At the pencil mark, drill a 1/8" diameter hole through the mast. With a 3/8" sheet metal screw, mount the terminal lug of the coil to the mast at the 1/8" diameter hole. Perpendicular to, and 2" below the first 1/8" diameter hole, drill a second 1/8" diameter hole through the mast. Screw in a 3/8" sheet metal screw at each end of the second 1/8" diameter hole. The loading coil is not mounted to the mast.

3/4" from the top of the mast, drill a 5/16" diameter hole through the mast. Perpendicular to, and 3/4" lower, drill a second 5/16" diameter hole through the mast. Perpendicular to both 5/16" diameter holes, drill a 3/8" diameter hole through the center of each 5/16" diameter hole and through the mast.

Center a 43" long, 1/4" diameter aluminum rod in the lower 5/16" hole. At the two adjacent 1/8" holes, screw in 2 - 3/8" sheet metal screws until they make contact with the 1/4" aluminum rod. The rod should be held firmly in place. Do not over tighten the 3/8" screws, or the screw heads will break off, making disassembly difficult, if not impossible. Repeat the process for the upper 5/16" diameter hole. This completes the ground radial system for the antenna.

Prepare the coax by stripping away 2" of the vinyl jacket. Separate the center conductor from the shield. Cut off all except 3/8" of the shield closest to the coax. Solder a terminal lug to the 3/8" length of shield. Mount the shield to the mast by screwing a 3/8" sheet metal

screw through the terminal lug and into the remaining 1/8" diameter hole just opposite of the other terminal lug. Remove 1/4" of insulation from the center conductor. Bend the end 90 degrees and solder the center conductor to the loading coil 4 turns from the top of the loading coil. Wrap a few turns of electrical tape around the mast and coax where the shield and loading coil are mounted to the mast.

Slide the 3/32" diameter brass tube into the 1/8" diameter brass tube. This should be a snug fit. If it isn't, LIGHTLY crimp the 1/8" brass tube near the top. If too much crimping pressure is applied, you will not be able to adjust the top section for a minimum SWR.

Adjust the overall length of the radiator from the top of the insulating rod to the top of the top section to 46 1/2". In all previous antennas constructed using a similar design, the overall length has been within 1/4" of this value after the antenna was adjusted for minimum SWR at 146.00 MHZ.

Slide the weather shield over the top of the antenna and over the loading coil,

insuring that the notches of the weather shield fit over the upper radials. Seal the hole where the radiator goes through the weather shield with RTV.

Place the antenna at least 3 feet off of the ground and away from any nearby objects. Adjust the top section for minimum SWR at 146.00 MHZ.

To protect the brass tubing from corrosion, apply several coats of clear enamel paint to the radiator. Apply a small amount of RTV to the top of the antenna to prevent water from entering there. This completes the construction of the antenna.

Depending on the length of the mast, you can mount the antenna as is, or mount the antenna on some other support.

When compared to a 1/4" wave vertical, this antenna provides a significant increase in communication range and effectiveness. This antenna is simple to build and can be constructed for less than \$10.00. If you have a well stocked junk box, you can build this antenna for free.

PARTS LIST *

Quant.	Description
1	36" long, 1/8" diameter brass tube
1	18" long, 3/32" diameter brass tube
1	1" outer diameter aluminum mast longer than 6"
1	6" long, 3/4" diameter insulating rod. Use any non-conducting material that can be drilled.
1	1 & 1/2" diameter semi-spherical PVC pipe cap
1	5" long, 1 & 1/2" diameter thin-walled PVC pipe
1	36" 12 gauge bare copper wire
2	42" long, 1/4" diameter aluminum rod or tubing
2	round terminal lugs
8	3/8" sheet metal screws
	RTV
	EPOXY CEMENT OR GLUE
	50 ohm COAX, ANY LENGTH
	ELECTRICAL TAPE
	SOLDER
	CLEAR ENAMEL SPRAY PAINT

* Parts are not critical, use whatever is on hand.

INPUT	OUTPUT	ACCESS	LOCATION	R.SITE	ELEV	R.CALL	FEATURES	CONTACT
144.51	145.11	0,103.5	NORTH BEND	RATTLESNAKE	3400'	N7HDH	X,E,L	BILL STOCKHAM, N7HDH
144.51	145.11	CLOSED	SKYKOMISH	MALONEY RDG	4410'	N7HDH	X,E,L,	BILL STOCKHAM, N7HDH
144.53	145.13	CTCSS	*** ANY ***	*** ANY ***	ANY	ANY	S.N.P.	WJARA
[REDACTED]								
144.55	145.15	0,114.8	PT. TOWNSEND	PT. TOWNSEND	170'	K7RBT	A,CA,E,R	K7RBT 120189
144.57	145.17	0	VICTORIA	VICTORIA	700'	VE7RCU		PARFCA
144.57	145.17	0	LONG BEACH	NASELLE RDG.	2050'	KB7PL	R,Y	NM7R 020188
144.59	145.19	0	SEDRO WOOLLEY	LYMAN HILL	4250'	N7HOC	E,R,X	N7HOC, 011488
144.61	145.21	0,PL	TACOMA	CHANNEL 28 TWR	770'	AE7X	CA	CAROL BIRKLAND, AE7X
144.63	145.23	0	FERNDAL	SWEDE HILL	300'	K7SKW	A	JIM GRINTON, K7WNI
144.63	145.23	0,PL	SEATTLE	McMIKKEN	450	KL7BB	L, DA.	BILL BALZARINI, KL7BB
144.65	145.25	0,114.8	ELECTRON	ELECTRON HGTS	1540'	WA7NAN	E,L	PUGET ARS
144.65	145.25	0,127.3	ANACORTES	MT. ERIE	1270'	WA7NAN	E,L	PUGET ARS
144.65	145.25		SNOQUALMIE PASS	SNOQUALMIE PAS		WA7NAN	L	BOB ST ANDRE, WA7NAN
144.67	145.27	0	VANCOUVER	UBC CAMPUS	300'	VE7RHS		PARFCA
144.69	145.29	CTCSS	*** ANY ***	*** ANY ***	ANY	ANY	S.N.P.	WJARA
144.71	145.31	0	BREMERTON	EAST BREMERTON	523'	KC7FA	A	HERB POSNER, KC7FA
144.73	145.33	C,PL	SEATTLE	TIGER MT.	3004'	K7NWS	E,A,L,X	B.E.A.R.S. CLUB
144.75	145.35	0	GIG HARBOR	OLALLA	525'	W7ZLJ	A,CA,E	K7PAG 022788
144.77	145.37	0, PL	ENUMCLAW	GRASS MT.	4382'	KA7HAM	CA,E,L,R	KA7HAM, 050688
144.79	145.39	0	EVERETT	EVERETT	600'	W7CSK	A,2,E,L	W7CSK 120189
144.81	145.41	0	VICTORIA	MT Mc DONALD	1500'	VE7RSR		PARFCA
144.83	145.43	0	WINLOCK	BUCKHORN PK	1000'	N07S	E	MT ST HELENS R.G.
144.85	145.45	0	VANCOUVER IS.	CHEMAINUS	4200	VE7RMT	E	PARFCA
144.85	145.45	0	SEASIDE, OR.	SUGERLOAF	2750'	W7KCA		ORRC
144.87	145.47	0	OLYMPIA	CAPITAL PK	2750	W7URM	X	EARL HURLEY, W7URM

INPUT	OUTPUT	ACCESS	LOCATION	R.SITE	ELEV	R.CALL	FEATURES	CONTACT
144.89	145.49	0	LK WENATCHEE	NATAPOE RDG	3243'	WA7LZH	E	WA7LZH 040486
144.89	145.49	103.5	ENUMCLAW	CRYSTAL MTN	6900	WA7OEE	X,L	K7TTQ, 052588
146.02	146.62	0,PL	BREMERTON	W. GOLD MTN	2000'	W7JEH	CA,E,X	W7UWF 030988
146.04	146.64	0	TACOMA	11TH/GRANT TWR	736	W7ZTG	E,	DENNIS SALITINO, W7ZTG
146.06	146.66	0	ASTORIA	MT WICKIUP	2700'	W7FBM	A,E,Z	ORRC
146.06	146.66	0	VAN. IS.	50mi N/VICTORI	4198'	VE7RMT	L	PARFCA
146.08	146.68	0	VICTORIA	SATURNA IS.	300	VE7RVC		PARFCA
146.08	146.68	0	VANCOUVER IS.	NEWCASTLE RDG.	4200	VE7RNC		PARFCA
146.10	146.70	103.5	N. BEND	RATTLESNAKE	3200'	WA7NAN	E,	WA7NAN 120489
146.12	146.72	0	SHELTON	SHELTON	375	W7FHZ	E	W7BCK 120489
146.14	146.74	0	BELLINGHAM	CONSTITUTION	2180	K7SKW	E,X	MBARC, K7WNI
146.16	146.76	0	ASTORIA,OR.	MT NICOLAI	3000	WA7WIW		ORRC
146.16	146.76	0	PT ANGELES	STRIPED PK	1200'	W7FEL	E	CLALLAM CNTY ARC/W7LG
146.18	146.78	0,	LYNWOOD	LYNWOOD		K7CHN	A,CA,Z	W7JPH, 011489
146.20	146.80	0	OLYMPIA	TUMWATER	300'	N7ICG	A	N7ICG, 120388
146.22	146.82	0,	SEATTLE	SQUAK MTN	2000	K7LED	E,X	K7YR 040588
146.24	146.84	0	PORTLAND	LARCH MTN, WA.	3400'	W7KYC	E	ORRC
146.24	146.84	0	VICTORIA	MT McDONALD	1500	VE7VIC	A	AL MUIR, VE7BEU
146.26	146.86	0	ILWACO	SAHALEE HILL	250	W7RDR		LYLE CLARK, W7RDR
146.26	146.86	0	WHIDBEY IS	OAK HARBOR	400	KE7C	E	BILL GOSNEY, KE7C
146.28	146.88	0	SEATTLE	GREEN MTN	1650	K7PF	E,X	K7PF, 052588
146.30	146.90	0,	ABERDEEN	SADDLE HILL	350'	W7ZA		K7AJT 030988
146.30	146.90	131.8	ORCAS IS	OWL HILL	330	WA7TWB		BILL BOYD, WA7TWB
146.32	146.92	0	EVERETT	MT PILCHUCK	3000	K7KSZ	X	DWAYNE LEWIS, K7KSZ
146.34	146.94	0	VANCOUVER	MT SEYMOUR	3200	VE7RPT	A	PARFCA
146.34	146.94	0	PORTLAND	MT SCOTT	1000'	W7HYG	CALLING	ORRC

INPUT	OUTPUT	ACCESS	LOCATION	R.SITE	ELEV	R.CALL	FEATURES	CONTACT
146.36	146.96	0,	SEATTLE	CROWN HILL	325'	KA7MCP	CA,Z,L	K7RSD, 071188
146.38	146.98	PL,T	CUMBERLAND	BALDI	4000	WB6VAC	E,Y,X	DOUG LUX, WB6VAC
146.40	147.00	0	SEATTLE	SUMMERSET HILL	1000	WA7GRE	DX INFO	W7LFA, 020389
147.62	147.02	0	VANCOUVER	MT SEYMOUR	3200	VE7RAG		PARFCA
147.64	147.04	0	PORTLAND, OR.	KOIN-TV TWR	950	W7CLU	A,E	ARRG
147.64	147.04	0	FEDERAL WAY	FEDERAL WAY	600'	W7YCP	A	LYNN DOODY, W7YCP
147.66	147.06	0	CENTRALIA	BOISTFORT PK	3100	K7OKC	X,E	K7OKC, 060288
147.68	147.08	0	SEATTLE	COUGAR MTN	1450'	W7WJI	A	GARY HART, W7WJI
147.70	147.10	123	KANASKAT	MCDONALD	3281'	K7TTQ	E,L	K7TTQ, 100388
147.72	147.12	0	VANCOUVER	HOLLYBURN RDG	2650'	VE7VAN		PARFCA
147.72	147.12	0	PORTLAND	MT HOOD	7000'	W7CLU	Z,E	ORRC
147.72	147.12	110.9	OLYMPIA	DEPHI HILL	800	N7EHP		N7EHP 120489
147.74	147.14	0	TACOMA	GRAHAM HILL	1100'	KL7ELD	E,L	KL7ELD 111689
147.76	147.16	0,	ABERDEEN	COSMOPOLIS HIL	520'	W7ZA		K7AJT 030988
147.76	147.16	0	BELLINGHAM	KING MTN	554'	K7SKW	A	MBARC/K7WNI
147.78	147.18	0	EVERETT	BAKER HGTS	300'	KK7M	A,CA,L	KK7M, 112288
147.80	147.20	0&PL	SEATTLE	COUGAR MTN	1452	K7PP	A,E,L	K7PP 030988
147.82	147.22	0,T	WHIDBEY IS.	FREELAND	394'	K7IYN	A,E,R	K7IYN, 020189
147.84	147.24	0	AUBURN	EAST HILL	500'	K7SYE		KIETH CARLIN, N7ACW
147.86	147.26	0	LONGVIEW	COLUMBIA HGTS	1000	K7ZW	CA,Z,E	MIKE HART, K7ZW
147.88	147.28	0	TACOMA	W7DK CLUBHOUSE	420	W7DK	A	RCT/WA7FUS
147.90	147.30	0,114.8	LONGVIEW	MT BRINION	1400'	WA7ILC	E,R	WA7ILC 031188
147.92	147.32	0	HILLSBORO, DR.	S.SADDLE MTN	3460'	W7CLU	A,E,Z,X	ARRG
147.92	147.32	0	VICTORIA	SALT SPRG IS.	2400	VEYRSI		PARCFA
147.94	147.34	0	WOODINVILLE	HOLLYWOOD HILL	600'	K7PER	CA,E	K7PER, 070388
147.96	147.36	0	OLYMPIA	OLYMPIA	220'	W7JLF	R	OLYMPIA ARS/W7HMJ
147.98	147.38	0	TACOMA	SPAR POLE HILL	1980'	W7DK	X	RCT/WA7FUS

INPUT	OUTPUT	ACCESS	LOCATION	R.SITE	ELEV	R.CALL	FEATURES	CONTACT
29.54	---	B-1800	N.W. WASH.	BLYN MTN	2060'	Rx W7ZFX	X,L,E	JIM KAUFMAN, W7UMH
UHF	29.64	--	N.W. WASH.	MT. CONST.	2435'	TX1 W7ZFX	E,L	JIM KAUFMAN, W7UMH
UHF	29.64	--	N.W. WASH.	LYMAN MTN.	4300'	TX2 W7ZFX	E,L	JIM KAUFMAN, W7UMH
52.03	53.03	0,PL	OLYMPIA	NORTH MTN	3000'	K7RBR	A,E,X	CARL HOLMAN, K7CH
52.05	53.05	0	SEATTLE	KSTW TOWER	950'	K7LED	E	K7YR 040588
52.07	53.07	100/110	ELECTRON	PUY. RDGE	4933	W7UMH	PROP.	W7UMH 011089
52.09	53.09	103.5/1	SEDRO WOOLLEY	LYMAN HILL	4257'	W7UMH	X,L,E	W7UMH, 011089
52.11	53.11		VANCOUVER	VANCOUVER	TBD	TBD	TBD	PRARFCA
52.15	53.15	0,PL	ISSAQUAH	W. TIGER MTN.L	3148'	K7CR	E,X	K7CR 112689
52.19	53.19	0,PL	MARYSVILLE	7001 40TH NE	400	KW7W		KW7Y, 100388
52.29	53.29	0	SEATTLE	TIGER MT.	3110'	W7FHZ	E,X	JON MARCINKO, W7FHZ
52.37	53.37	0	BOTHELL	BOTHELL	450'	WR7V	CA,L	WR7V 120489
52.69	53.69	103.5	SEATTLE	SEATTLE	1600'	K7PP	L	PETE POLICANI, K7PP
52.93	53.93	AM	EVERETT	CLINTON	450'	K7KHJ	AM ONLY	JOHN HUBSCHMITT, K7KHJ

1990 **Jan 14 - Feb 24** 1990

JANUARY AND FEBRUARY EVENTS

SUN	MON	TUE	WED	THU	FRI	SAT
Jan 14	Jan 15 7:30pm PARS MEETING Puget Power Bldg. Bellevue Martin Luther King, Jr.	Jan 16	Jan 17 7:30pm MIKE AND KEY NET ON 146.82 RPTR.	Jan 18 7:00pm PUBLIC SERVICE NET ON 146.82 RPTR.	Jan 19	Jan 20 7:30am Breakfast at Riverside 10:00am CLUB MEETING in Tukwila 1:00pm VE EXAMS at Good Neighbors Center
Jan 21	Jan 22	Jan 23	Jan 24 7:30pm MIKE AND KEY NET ON 146.82 RPTR. 7:30pm FLEA MARKET MTG. @ KA7CSE	Jan 25 7:00pm PUBLIC SERVICE NET ON 146.82 RPTR.	Jan 26	Jan 27 Chinese New Year (Horse)
Jan 28	Jan 29	Jan 30	Jan 31 7:30pm MIKE AND KEY NET ON 146.82 RPTR. 7:30pm BUDGET MEETING @ WA7EBH	Feb 1 7:00pm PUBLIC SERVICE NET ON 146.82 RPTR. 7:30pm ISSAQUAH RADIO CLUB MEETING	Feb 2	Feb 3 8:00am CAMANO ISLAND HAM BREAKFAST
Feb 4	Feb 5	Feb 6 7:30pm Board Meeting **RELAY DEADLINE FOR NEXT ISSUE**	Feb 7 7:30pm MIKE AND KEY NET ON 146.82 RPTR.	Feb 8 7:00pm PUBLIC SERVICE NET ON 146.82 RPTR.	Feb 9	Feb 10 9:00am SALEM HAMFEST
Feb 11	Feb 12 Lincoln's Birthday	Feb 13	Feb 14 7:30pm MIKE AND KEY NET ON 146.82 RPTR. Valentine's Day	Feb 15 7:00pm PUBLIC SERVICE NET ON 146.82 RPTR. 7:30pm PARS RADIO CLUB	Feb 16	Feb 17 7:30am Breakfast at Riverside 10:00am CLUB MEETING in Tukwila 1:00pm VE EXAMS at Good Neighbors Center
Feb 18	Feb 19 President's Day	Feb 20	Feb 21 7:30pm MIKE AND KEY NET ON 146.82 RPTR.	Feb 22 7:00pm PUBLIC SERVICE NET ON 146.82 RPTR. Washington's Birthday	Feb 23	Feb 24

FOR ADDITIONS CONTACT EDITOR

The Mike & Key ARC has grown tremendously in the Past couple years. In fact, there are many new members I have never had the chance to chat with on a face to face basis. I wouldn't doubt that the same is true for our club officers. As a result, it is difficult to determine what is the makeUp of our membership. Are we old or young? Do we Prefer HF or VHF? Is SSB the king, or CW?

Well, the following Poll (if answered) will help answer these questions. I know that Polls can be a nuisance; however, they can also be a source of vital information if enough of you answer. In addition, we will be electing new officers this Spring and this information could be helpful in directing the club. Please help us help you and spend a couple minutes answering these questions. Please - no names or calls. Send to WA7UVJ or bring to Club Meeting. Circle the most appropriate answers.....(be honest)

Personal:

Age - (less than 20) (20-40) (41-60) (more than 61)

Work - (N/A) (Blue Collar) (White Collar) (Retired)

Radio:

License Class- (Novice) (Tech) (Gen) (Advanced) (Extra)

Preferred Mode - (Phone) (CW) (Digital) (Image)

Preferred Freq - (HF) (UHF/ VHF) (no Preference)

Preferred Activity - (if more than one, Please rank by number)
(Ragchew) (DX) (Contest) (Build/Experiment) (Public Service)
(UHF/VHF Weak Signal) (Space) (Other ?)

Club:

Membership - (less than year) (1-5 yrs) (5-10 yrs) (10+ yrs)

I consider myself an (active) (inactive) member.

I like (social) (operating) (all) (no) club activities.

We should (keep) (dump) (modify) the raffle.

The club Programs are (satisfactory) (unsatisfactory).

Club activities cost (too much) (too little) (just right) (don't care)

I joined for (fellowship) (the repeater) (other.....?)

The club officers (do) (don't) represent my views.

Elections (can) (will not) change things.

I (would) (would never) consider running for election to the Board.

This Poll (was) (wasn't) worth the time it took to fill out.

(optional) What I like about the M&K.....?

(optional) What I dislike about the M&K.....?

(optional) Comments, Suggestions, Help?.....

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