

UARC Jackets and Hats Are Now Available!



Photo: Ron Speirs, KC7MWS

Joe Flurer, KD7EGY, holds a jacket patch which can be purchased now on personalized jackets and hats.

Volume XLIII Issue 7, July 1999



The MICROVOLT

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U.A.R.C.
c/o Russell Smith
3267 East 3300 South #115
Salt Lake City, UT 84109

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THE MICROVOLT (USPS 075-430) is published monthly except August for \$15.00 per year or \$1.50 per issue by the Utah Amateur Radio Club, 632 University St. Salt Lake City, UT 84102. Periodicals Postage Paid at Salt Lake City UT. POSTMASTER: Send address change to "The Microvolt", c/o Russell Smith, 3267 East 3300 South #115, Salt Lake City, UT 84109.

Prologue

The Utah Amateur Radio Club was organized under its present name in 1927, although its beginnings may date back as early as 1909. In 1928, it became affiliated with the American Radio Relay League (club #1602) and is a non-profit organization under the laws of Utah. It holds a club station license with the call W7SP, a memorial call for Leonard (Zim) Zimmerman, an amateur radio pioneer in the Salt Lake City Area.

Meetings: The club meets each month except July and August. The meetings are held on the first Thursday of the month at 7:30 PM in the Doxey-Hatch Medical Building located at 1255 East 3900 South in Holladay, across the street from St. Marks Hospital.

Membership: Club membership is open to anyone interested in amateur radio; a current license is not required. Dues are \$15 per year, including a *Microvolt* subscription. *The Microvolt* and membership cannot be separated. Those living at the same address as a member who has paid \$15 may obtain a membership without a *Microvolt* subscription for \$9. Send dues to the Club Secretary: Russell Smith, KC7ZDZ, 3267 East 3300 South #115, Salt Lake City, UT 84109 ARRL membership renewals should specify ARRL Club #1602.

Contributions: Monetary contributions are gladly accepted. Send directly to the Club Treasurer: Chuck Johnson, 1612 W. 4915 S., Taylorsville, UT 84123-4244. For in kind contributions, please contact any board member to make appropriate arrangements.

Repeaters: UARC maintains the following repeaters: 146.62 (-), 146.76(-), and 449.10. The repeaters are administered by the UARC Repeater Committee. Comments and questions may be directed to any Committee member. The Lake Mountain repeater 146.76(-) has Autopatch facilities on both the Orem exchange (covering Santequin to Lehi) and the Salt lake City exchange (covering Draper to Layton). The 449.10 repeater has autopatch facilities into Salt Lake City only. Due to the volume of traffic, only mobiles should use this autopatch. Autopatch use is open to all visitors to our area and to all club members. Non members who wish to use the Autopatch are encouraged to help with the cost of maintaining the equipment by joining the club.

Ham Hot-Line: The Utah Amateur Radio Club (UARC) has a Ham Hotline, 583-3002. Information regarding Amateur Radio can be obtained, including club information, testing, meeting information, and membership information. If no one answers leave your name, telephone number and a short message on the answering machine and your call will be returned.

Publication: *The Microvolt* is the official publication of the club. Deadline for submissions to the *Microvolt* is the 10th of each month prior to publication. Submissions by email are preferred (bbergen@xmission.com), but other means including diskettes and typewritten submissions can be mailed directly to: Bruce Bergen, 3543 Fieldstone Cir., SLC, UT 84121. All submissions are welcome but what is printed and how it is edited are the responsibility of the Editor and the UARC board. Reprints are allowed with proper credits to *The Microvolt*, UARC, and authors. Changes in mailing address should be communicated to the Club Secretary: Russell Smith, KC7ZDZ, 3267 East 3300 South #115, Salt Lake City, UT 84109. □

UARC 1999 Board

| | |
|--|----------|
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| Vice Pres: Gordon Smith, K7HFV | 582-2438 |
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| Historian: Ron Speirs, KC7MYS | 968-4614 |
| Field Day Chair: Joel Neal, KC7UBP | 352-0322 |

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|---|----------|
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| Engineer: Randy Finch, K7SL | 277-7135 |
| ATV Engineer: Clint Turner, KA7OEI | 566-4497 |
| Board Liason & Autopatch Engineer: Gordon Smith, K7HFV | 582-2438 |
| Provo Autopatch Host & ATV Engineer: Dale Jarvis, WB7FID | 224-3405 |
| Repeater Monitor: Allen Wright, N7QFI | 268-8482 |
| □ | |

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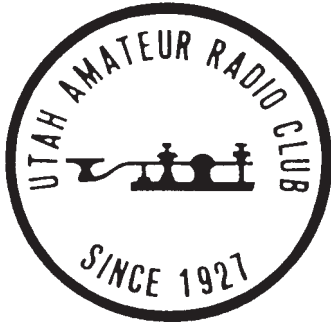
For late breaking news listen to the UARC Information Net Sundays at 21:00 on 146.62 or set your browser to:
www.xmission.com/~uarc/announce.html □

We are grateful to the management of XMission, our Internet Service Provider (ISP), for the donation of this Web-Page service. □



For account information go to:
<http://www.xmission.com/>
Or call 801 539-0852.

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The Microvolt

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Volume XLIII, Issue 7, July 1999



Photo: Ron Spellis, KC7MYS

QST From The Prez

I would like to thank those who supported Field Day.

Please remember the steak fry on July 17th at 5:00 PM at the Spruces, campground 7. Members \$2.00, Guests \$9.00, Children \$3.00.

Also if you are interested in Jackets or hats, please call Joe Flurer at 278-5258.

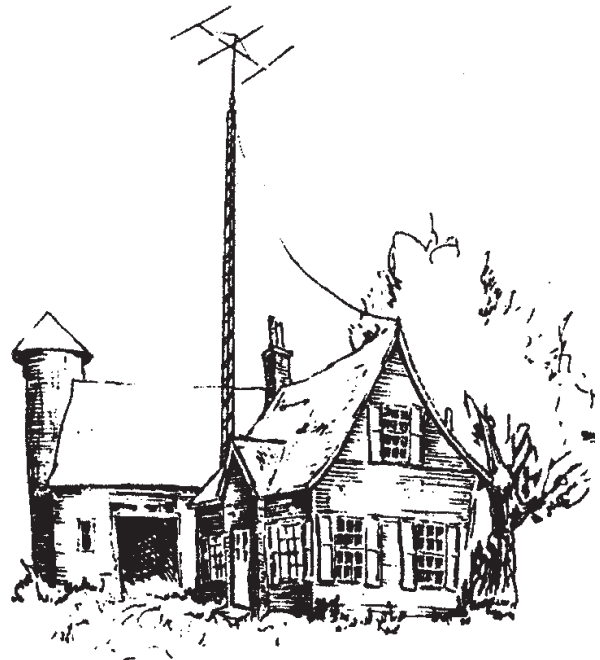
Summer is here and it is the time of year everyone seems to be busy with one thing or another. I hope we can spend some time finishing up the Club Stations antennas and working on Scott's Hill. It is also a great time for talking to your fellow-hams and encouraging them to join UARC.

It would also be a great time to think about upgrading your license. The Morse Code is really fun once you try it on the air. I know the FCC is in the process restructuring the licensing classes of Amateur Radio, but it should not stop any of us from learning more or improving our communication skills. One way of doing this is upgrading your license, or at least attempting a Morse Code QSO.

If you are not interested in upgrading or have already achieved your class of license you are happy with, then maybe reviewing the material you once knew, but have forgotten would be a good idea. Consider a building project such as building your own transceiver, amplifier, antenna, or other equipment. I have visited a few Amateur Radio Operators homes and have been amazed at the equipment they have built themselves.

This is a great, fun hobby. What ever you put into it is probably the enjoyment and satisfaction you will receive from it. HAPPY HAMING.

73, KC7AWU. - Gary □



Feature Member Of The Month



Photo: Ron Speits, KC7MYS

Joe Flurer, KD7EGY, stands next to one of his high tech automated embroidery machines.

Featured this month is Joe Flurer KD7EGY, who is relatively new to the hobby. He obtained his No-code Tech license at the end of this last February.

Allan Arveseth KB7WVR spoke in Joe's ward at a combined Relief Society and Priesthood meeting about the importance of amateur radio in emergency preparedness. Allan told about the ERRS, which stands for Emergency Response Radio System. Joe became interested since he wanted to be involved in helping out in emergencies. What really impressed Joe was how small the ham equipment was. He has wanted to be a ham radio operator since he was a child, but was intimidated by the size and apparent expense of the equipment. A friend's father was a ham, with one of "those huge tube radios." Joe said it was as big as a refrigerator.

Allan committed to them that if they could get enough people he would teach a class. They decided to offer the class to the whole stake. There were 40 people in the class with a resulting 24 newly licensed hams. Joe indicated that it was a very interesting class. Among the presenters were Paul Michelsen, KC7QFS, speaking about satellites, and Eldon Kearl KB7OGM spoke about repeaters.

Ken Butterfield, KC7PPX, interested Joe in joining the local clubs. He is a member of UARC, The Utah VHF Society, and the ERRS.

Joe hopes to upgrade in order to use his Yaesu 847, a multi-band rig.

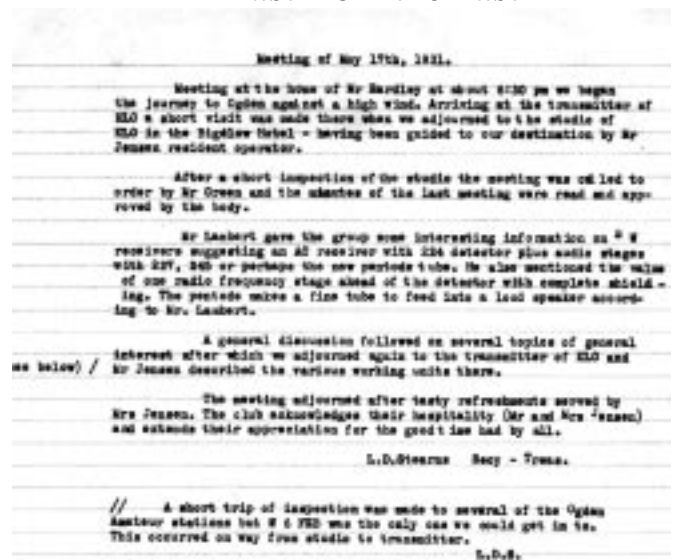
Joe and his wife, Dianne, have their own business,

Custom Design Marketing. They do custom embroidery of logos and names, on shirts, hats, jackets, bags, and other items. Joe proposed to embroider the UARC logo on jackets and hats, to the UARC Board some weeks back, with the profits going to UARC. The Board approved this in principal and presented the color selection to the membership. Royal blue was selected in the May meeting. The UARC logo (seen on the cover of *The Microvolt*) is a gold and black telegraph key and red text. The jackets are available and can be customized with your call sign for an additional \$3. Joe hopes this will help to promote the club image and also help raise additional funds for the club. It should also draw public attention at service functions and reflect a positive image of the club. Joe got the idea at the Utah VHF Society swap meet seeing DCARC (Davis County) members wearing their bright yellow shirts with the DCARC logo.

Joe, we wish you the best and appreciate what you are doing for UARC.

73 N7HVF Linda Reeder □

A Blast from the Past



I really think we need to reintroduce "tasty" refreshments after the club meetings. I know we have the *meetings after the meeting*, but pizza is not my idea of "tasty" refreshments. I propose that we begin with having hot fudge sundays served at the next UARC meeting - now that is a "tasty" refreshment. We could fall back to coffee or hot chocolate and donuts but nothing beats homemade chocolate chip cookies and milk. All in favor say Aye!

73 - Alan - N7OI □

Why You Should Join the ARRL or Renew Through UARC

Several months ago I encountered a friend of many years. I had not seen him for at least a year. The truth of the matter was that the last place, I saw him was at the test session where He and I both earned our first radio license. He recounted to me how he had just purchased his first radio. He said, "I do not talk on the radio very often, in fact I am not all that sure of how to program it." I have heard this same story many times.

My membership in this club has taught me a few new things about amateur radio, but beyond the learning aspect I have enjoyed the association with the other members of this club. We share a common interest in radio, and each other. I have recently discovered the many benefits of membership in the ARRL. Here is a list of what they offer:

QST magazine delivered to you every month (newsstand price is \$60.00 per year). In each issue you will find the following sections.

- NEW HAM COMPANION contains information for new operators. This may be just what is needed to help you get on the air.
- PRODUCT REVIEWS of the newest ham gear, to help you make informed decision about radio purchases.
- UPCOMING EVENTS relating to amateur radio.
- TECHNICAL ARTICLES and discussions on radio topics. many projects to build an experiment with.
- ADVERTISEMENTS from most suppliers of ham gear.
- HINTS and KINKS about amateur radio. A forum for hams to share helpful ideas to solve problems in amateur radio.(Gadgetry at it's best)
- CONTESTING information including announcements of upcoming contests, and the results of those completed.

- QST keeps you right up to date with amateur radio!

The ARRL becomes your lobby with the government, helping to represent your interests in Amateur radio.

The ARRL sponsors contesting, and administers the awards.

The ARRL offers an insurance program to cover loss or damage to equipment.

The newest service to members, is the members only Website. This site contains more articles and information about amateur radio. There are reviews in archive form, of all the radios reviewed in past issues of QST.

We invite all hams to strive for a higher level of understanding and enjoyment by joining the ARRL. You may join the ARRL at all club meetings and functions. The next opportunity will be at the steak fry on July 17. The cost is \$34.00 per year. We can also help you with renewal to ARRL. Please bring the renewal notice and \$34.00. Please make checks payable to UARC. For more information please contact Gregg Smith KD7APW Phone 255-0344

73 - Gregg -KD7APW □

Operation On Target -July 17, 1999

This is your invitation to participate in one of the most exciting national scouting events available. Operation On Target is an annual event for Varsity scouts held every year. The teams head for the highest points they can find and work at contacting other teams via mirror signals around the state and around the country. This a great opportunity to get out in the field and have some fun. Each teams experience is a little different. On Target is an activity that can cater to the direct needs of your team while reaching out and communicating with other teams.

To learn more about this exciting activity check around our site for resources and information on how to get involved with the nations biggest Varsity Scout event. And don't forget to sign up for a peak!!

What is ON-TARGET? ON TARGET is a national Varsity Scout special high adventure event scheduled for Saturday morning, July 17th, 1999. Varsity Scout

teams will choose mountains to climb (or drive to or ride to). From there, they use mirrors to signal each other. Each team communicates (and confirms mirror flash sightings) to each other with cell phones or preferably, by amateur radios. The contacts are plotted on a map to see how many other teams each team can contact and how far the mirror flashes can be relayed (a challenge has been issued to go from Alaska to Mexico).



HAMs should sign up by going to the On Target registration page(<http://www.xmission.com/~gslc/>) and sign up as if you were a Varsity Coach (be sure to list your call sign in the Call Sign box, your phone number) but rather than enter a team number enter "HAM" and we will help you get connected with a Varsity Team. If you don't have Internet Web page access, you can email or phone your request to:

John Blackham N7TEK W: 588-1216 / H: 295-3036

Ray Dahl KC7YVP W: 585-9039 / H: 963-6197

Rick Donkin KA7MMM W: 594-2167 / H: 968-3892
□

July 17: Steak-Fry

The annual club steak-fry and swap meet will be held Saturday, July 17, in Area 7 of The Spruces campground. A complete steak dinner for \$2.00 is a remarkably good deal, so don't miss this benefit of membership. The swap meet will start at 3:00 p.m., and the dinner at 5:00 p.m.

Parking at the campground is limited, so car pooling from the mouth of the canyon is advised. (Big Cottonwood Canyon is the canyon in which the Solitude and Brighton ski resorts are found.) The

Spruces is about 10 miles from the mouth of the canyon, on the right side.



You must make a reservation before July 10 in order to attend the steak-fry. Sign up with the club Secretary, Russ Smith, KC7ZDZ.

The prices are:

Members \$2.00

Guests \$9.00

Children \$3.00

Send reservation requests to:

Russ Smith, KC7ZDZ
2684 Kenwood St.
Salt Lake City, UT 84106-3628

Eating steaks with plastic utensils on paper plates can leave something to be desired, so you may want to bring a plate and a good steak knife. □

Tigger's Corner

As promised, this month's column I wanted to discuss some basic points to consider when installing antennas and feedlines in an AR or camper.

Running antenna cabling through your coach is going to require a little more forethought than it might if you were installing a feedline in an automobile. The first thing you are going to "discover" is that when you're trying to "fish" wiring through narrow 2x2 studded walls, stuffed with fiberglass insulation, the "shortest" rout may not be the most accessible path to follow. You're going to have to decide whether you can gain access to certain areas within walls or ceilings, or can you get to hidden spaces beneath cabinets, or built-ins, etc.

After spending a great deal of time working on various RV installations, I found a easy solution; wherever possible, I would follow the same route the

coach's freshwater plumbing tubing followed through the walls and cabinetry. It had relatively easy access throughout the coach but still remained out of view. I could run good quality coax (RG-213) alongside the plumbing quite easily without doing much disassembly of the interior of the coach.

This brings up another important point, feedline length and routing. Keeping the fact in mind that you're probably going to have to run your feedlines in a more "creative" fashion to get them where they need to be, they will be longer than if they could have been run in a straight line, so feedline loss becomes important. If you can avoid using RG-58 coax for anything in your coach, do so. It becomes very lossy in long runs with increases in frequency. Use good quality RG-8 or better yet RG-213. You only want to install this wiring once, make sure it doesn't become "obsolete" if you want to operate on a higher band later.

Another point to consider, don't run any feedline right next to refrigerator control equipment or space heater controls and their wiring. RF plays havoc with these systems causing all sorts of strange operational quirks when it gets into the digital electronics that control these devices. Also, there appliances can generate digital noise, and you won't want it affecting your ability to receive weak signals.

The last point I wanted to draw your attention to is the roof. If, for example, you're installing a VHF antenna up there, you need to determine whether you have a suitable ground plane - older rigs have no problem here, they used an aluminum sheet, or sheets to "skin" the exterior roof surface/ On these rigs most any good automotive type mobile antenna will work well. On the other hand, all newer coaches have a "rubber roof" skin, with plywood sheathing underneath. On these coaches you're going to have to use an antenna with ground radial such as Larsen's "BSA" kit, which converts a mobile "PO Coil" type antenna for this type of use. These work well. They're inexpensive and easy to install. They clamp or bolt to almost any vertical surface such as a ladder or whatever you have. You just need to get creative. A work of caution is in order here. The plywood sheathing is only 1/4" thick and doesn't offer a great deal of support. Be careful working on the roof, manufacturers suggest you kneel using hands and knees (with knee pads) to avoid puncturing the membrane, and avoid "caving in" parts of the coach's roof.

I hope some of this can be of help to you all. Happy camping!

CYA - John - KA7TGR □

Attention

UARC Jackets and Hats Now Available

Official Club apparel is now available through Joe Flurer, KD7EGY, owner of Custom Design Marketing.

Hats are available with the UARC logo for \$10.65. If you add your call sign to the back of the hat, the price is \$13.85. Jackets with the UARC logo on the back and your call sign on the front are \$48.92. If you add a small UARC logo to the front, the price is \$52.11. Golf shirts are also available with a small UARC logo on the front for \$28.71. All of the above prices include sales tax. You can order your apparel at club meetings or by contacting Custom Design Marketing, 6049 S. Highland Drive, 278-5258. REMEMBER... a portion of all sales goes back to the Club to support the repeaters. Wearing the apparel also helps promote the Club. □



The editor of *The Microvolt* finds that this simple exercise puts him in the proper frame of mind to begin assembling yet another newsletter for UARC.

2 METERSIMPLEX FREQUENCIES IN UTAH BY USERS

| GROUP | Primary | Secondary 1 | Secondary 2 | Secondary 3 | Secondary 4 |
|-------------------------------------|---------|-------------|-------------|-------------|-------------|
| R.A.C.E.S. | 146.44 | 147.40 | | | |
| A.R.E.S. | | | | | |
| Box Elder Co. ARES | 146.48 | 147.60*** | | | |
| Cache County ARES | 147.52 | 146.52 | 146.56 | 145.51 | |
| Davis County ARES | 147.42 | 145.57 | 145.75 | | |
| Morgan County ARES | 147.50 | 146.44 | | | |
| SL County ARES | 147.54 | 145.53 | 146.42 | 146.50 | 147.46 |
| Tooele County ARES | 145.73 | 147.48 | | | |
| Utah County ARES | 146.46 | 145.63 | | | |
| Weber County ARES | 146.58 | 145.65 | 147.58 | 145.55 | 146.56 |
| Statewide ARES Intercom | 145.71 | | | | |
| TERT | 145.63 | | | | |
| M.A.R.A. | | | | | |
| Cache/Rich County MARA | 146.54 | | | | |
| SL/Tooele County MARA | 145.69 | 145.31** | 145.67 | 146.60 | 147.44 |
| Utah County - South MARA | 146.54 | 145.79 | 147.44 | 147.48 | |
| Foothill MARA | 145.61 | | | | |
| E.R.R.S. | | | | | |
| ERRS North | 145.59 | | | | |
| ERRS Central | 147.56 | | | | |
| ERRS South | 145.59 | | | | |
| OTHERS | | | | | |
| C.S.E.R.G. | 145.77 | | | | |
| Evans & Sutherland ARC | 147.50 | | | | |
| National Simplex Freq. | 146.52 | | | | |
| K7HLR Code Practice | 146.58 | | | | |
| Utah DX Association | 147.60 | | | | |
| Highland ARC | 145.79 | | | | |
| Council of Utah Amateur Radio Clubs | 146.44 | 147.58 | | | |
| Utah Valley Community College | 146.48 | | | | |
| SO ARC | 146.50 | | | | |
| | | | | | |

THIS APPEARED IN THE MAY 1999 (ELECTRONIC) EDITION OF "THE SIGNAL", THE NEWSLETTER OF THE SALTY PEAKS AMATEUR RADIO CLUB, SPARC. THOUGH THE NEXT CHART SEEMS TO IMPLY "ASSIGNMENT" OF CERTAIN SIMPLEX FREQUENCIES TO SPECIFIC AGENCIES OR ORGANIZATIONS, IN REALITY THERE ARE NO SUCH ASSIGNMENTS. LIKE THE HF BANDS THEY ARE OPEN FOR ALL TO USE. THE MAJOR DIFFERENCE IS THAT SPECIFIC VHF FREQUENCIES HAVE BEEN DESIGNATED FOR SIMPLEX USE WITHIN THE BAND PLAN FOR 2 METERS.

2 METER SIMPLEX FREQUENCIES IN UTAH BY FREQUENCY

| Frequency | Assigned to | Assigned to | Assigned to |
|-----------|--------------------------|-------------------------------|-------------|
| 145.31* | SL/Tooele County MARA | | |
| 145.51 | Cache County ARES | Used by Packet Group in SLC | |
| 145.53 | Salt Lake County ARES | | |
| 145.55 | Weber County ARES | | |
| 145.57 | Davis County ARES | | |
| 145.59 | ERRS North | ERRS South | |
| 145.61 | Foothill MARA | | |
| 145.63 | Utah County ARES | TERT | |
| 145.65 | Weber County ARES | | |
| 145.67 | SL/Tooele County MARA | | |
| 145.69 | SL/Tooele County MARA | | |
| 145.71 | Statewide ARES Intercomm | | |
| 145.73 | Tooele County ARES | | |
| 145.75 | Davis County ARES | | |
| 145.77 | CSERG | | |
| 145.79 | Utah County - South MARA | Highland ARC | |
| 146.42 | Salt Lake County ARES | | |
| 146.44 | R.A.C.E.S. | Morgan County ARES | CUARC |
| 146.46 | Utah County ARES | | |
| 146.48 | Box Elder County ARES | Utah Valley Community College | |
| 146.50 | Salt Lake County ARES | SO ARC | |
| 146.52 | Cache County ARES | National Simplex | |
| 146.54 | Cache & Rich County MARA | Utah County - South MARA | |
| 146.56 | Cache County ARES | Weber County ARES | |
| 146.58 | Weber County ARES | K7HLR Code Practice | |
| 146.60 | SL/Tooele County MARA | | |
| 147.40 | R.A.C.E.S. | | |
| 147.42 | Davis County ARES | | |
| 147.44 | SL/Tooele County MARA | Utah County - South MARA | |
| 147.46 | Salt Lake County ARES | | |
| 147.48 | Tooele County ARES | Utah County - South MARA | |
| 147.50 | Morgan County ARES | Evans & Sutherland ARC | |
| 147.52 | Cache County ARES | | |
| 147.54 | Salt Lake County ARES | | |
| 147.56 | ERRS Central | | |
| 147.58 | Weber County ARES | CUARC | |
| 147.60** | Box Elder County ARES | Utah DX Association | |

145.31* is a repeater frequency

147.60** is used as a repeater input frequency in some areas (147.60 - 147.00)

information contact Alan Brubaker at 600 Komas Drive, Salt Lake City, telephone (801)588-7212 or email alan@es.com.

Grand Mesa Repeater Users Group, Grand Junction CO, operates repeaters located on the western slope of Colorado with coverage of west central Colorado and eastern Utah. Repeater Frequencies are 145.145, 145.22, 146.82, 147.39 and 147.57 (simplex remote) that are linked together on a full time basis. 147.12 and 147.36 are linked part time from their end. Contact Person: Robert Kirner - NØMBJ Mail:3087 Bookcliff, Grand Junction, Co. 8 1 5 0 4 . W e b p a g e U R L is:<http://www.bewellnet.com/fgriffee/>

The High Valley Net from Heber City, which has in the past met every Monday at 9:00PM on the 147.18 repeater, is currently inactive. Their contact person is KB7RAC, Brian Menzel.

Idaho Society of Radio Amateurs has two chapters serving South Central Idaho: The Magic Valley Chapter and Mount Harrison Chapter. Magic Valley is a general purpose organization and Mt Harrison exists to support several repeaters including: 146.06 in Jerome, 146.16 in Twin Falls, and 146.16, 449.20, on Mt Harrison near Burley. They also support the ATV Repeater on Mt Harrison with a 434 Mhz Uplink and 1253.125 MHz Downlink. Contact person for the Magic Valley Chapter is WI5E, Joe Herring Twin Falls (208)736-7027. The club's monthly meeting is 7:00 PM the 2nd Wednesday in Shields Building, Room 102, College of Southern Idaho in Twin Falls. ISRA has a Webpage with links to both chapters at <http://netnow.micron.net/~wb7cyo/isramvc.htm#CA>.

IREAN or Intermountain Repeater Emergency Amateur Network based in Salt Lake City, Utah is a collection of 222 MHz repeaters spread across the state. It is an open 222 Mhz linked repeater system for amateurs of all license classes. The IREAN system also provides open autopatches, frequency-agile remote bases, voice messaging and telemetry of weather and site conditions. Contact person is Bruce Larner WB6CDN, Riverton, 801-278-3516. IREAN maintains the following repeaters Riverside 223.9, Little Mountain 224.5, Kaysville Peak 224.0, and Ensign Peak 224.8. and a link to the SINBAD system. Monday and Tuesday at 19:55 scheduled announcements are made immediately prior to the Mt Harrison and Utah VHF Society Nets respectively. The organizations webpage URL is: <http://www.asd-webtec.com/irean/>.

JARS -Juab Amateur Radio Society of Nephi has a club call sign of KD7AGX. The Club newsletter the *JARS Roundtable* can be viewed on the Club's website: <http://members.xoom.com/kf6lor/jars.html> Dues range from \$3 to \$5 depending on the status of the prospective member. They hold a weekly net on 2 meter simplex, 144.330, at 20:00 Mountain Time on Thursdays. Club contact person is A. J. Grantham, KF6LOR, who can be reached at (435)623-1179, and emailed at kf6lor@broadcast.net.

KC Amateur Radio Club, Kanab, UT. Contact Person: Joyce Ross N7KDU Pres. Mail: 57 N Dry Gulch #6-14 Kanab, UT 84741

Las Vegas Radio Amateur Club, Las Vegas, Nevada. Contact person is Tom Allen, N7GBJ (702)362-8107. Regular monthly meetings are held on the 2nd Tuesday of each month, 19:00 local, at the Nevada Power Company offices. The Club conducts a net each Tuesday at 19:00 Pacific Time on the 146.94 repeater with a PL of 100. It also maintains a repeater on 449.70 MHz. Mailing address for the club is PO Box 27342, Las Vegas NV 89126-1342. E-Mail to the Club Editor, Craig Brunson n7tsz@anv.net

Las Vegas Repeater Association (LVRA) owns and operates VHF and UHF amateur radio repeaters throughout Southern Nevada. The following are its open repeaters: 146.88 (PL 100, linked to the Snowbird system), 145.11, 147.99, 449.150 (PL 127.3 & linked to Arizona). The coverage and linkages of these repeaters are detailed on their web page: <http://www.hxo.com/>. Contact association President Craig Brunson n7tsz@anv.net

MARA or Mercury Amateur Radio Association is a world wide group of radio amateurs dedicated to training and traffic handling for emergency operations. They conduct VHF nets each Wednesday at 9:00PM. They also conduct health and welfare traffic net on 3.873 MHz (80 meters). The Salt Lake area is on the 146.74 repeater and their contact persons is Willy Peake N7VVL at 446-1144. The Ogden area is on the 145.49 repeater. The Utah county area is on the 145.37 repeater with Walt Nicholes, P r e s i d e n t , W A 7 Y P L , 2 2 4 - 0 6 6 8 , w nichole@nuskin.net or nicholes@inet-1.com , as their contact person. The Provo/Utah Country group m a i n t a i n s a w e b p a g e a t <http://physc1.byu.edu/~peterson/marautco.html>. Their general site is <http://www.mara.net>.

OARC or Ogden Amateur Radio Club meets the

3rd Wednesday of each month in Ogden at 7:00PM. The meetings are held at the Red Cross building at 2955 Harrison Blvd. Members and nonmembers are invited. Dues are \$15.00 per year and can be sent to P.O. Box 3353, Ogden, UT 84409. OARC supports the 444.60, 146.82, 146.90 and the linked 146.92 repeaters, all with a PL of 123.0. The OARC Web Page URL is <http://www.lgcy.com/oarc.html>. The contact person is Greg Moore, KD7BPQ who can be reached at 782-3064.

Payson High School Amateur Radio Club (KC7PJY) is composed of students who are interested in radio communications at Payson and Springville High Schools in the Nebo School District. The Club holds the call sign of KC7PJY. Club advisor is Bob Strange, K7VVU, 754-3535 and can be reached via email: srobert@admn.phs.nebo.edu. Coadvisor is Reed Thomson, N7YVJ.

Rainbow Canyons Amateur Radio Club of Cedar City meets at 7:30 PM the 3rd Tuesday of each month in the FAA Building (north door) at the Cedar City airport. They sponsor the 146.94 Frisco Peak WR7AAA repeater (part of the linked Snowbird system), and the 146.76 Iron Mountain repeater. Club president is Larry Gaboury, KC7VAV. The URL for their webpage is: <http://www.netutah.com/rcarc/>.

RMRA: Rocky Mountain Radio Association is open to all Utah hams and they support the 447.900, 448.800, 448.400, 448.700 + 6 mtr gateway repeaters. Contact Marc Peterson KB7YJJ at 977-9845 for information. They also house other affiliated repeaters: 447.450 linked to 146.660 Manti system. The URL for their webpage is: <http://www.inconnect.com/~rmra/>.

Salt Lake County ARES (Amateur Radio Emergency Service) conducts a net each Wednesday Night at 8:00 PM on the 146.88 repeater (PL tone of 88.5) (Note: for the net they tie together the 146.88 repeater with 449.90 repeater). All amateurs are welcome to participate. Their in-person meeting is held the third Wednesday of each month. For more information please contact Don Scarlet N7DIZ at 278-3204. Call the ARES Infoline, 333-7400, for the upcoming inperson location and other info. Their webpage URL is: <http://www.members.home.com/slars/>.

Sinbad Desert Amateur Radio Club (SDARC) meets the first Thursday of each month and rotates between at least two counties, Emery and Carbon,

(South Central and Eastern Utah) during winter months either in local restaurants or individual homes, during spring, summer, fall, we try and get in several campouts. The Club conducts a net on Tuesdays at 2000 local using their entire system. SDARC sponsored repeaters are linked together on a full time basis and cover most of Eastern Utah with the following repeaters: 147.06 Horn Mountain, 145.31 Ford Ridge, 147.14 Cedar Mountain, 147.32 Bruin Peak, 146.61 Abajo peak, 146.76 Bald Mesa (linked), 146.90 downtown Moab (linked). Other repeaters not fulltime linked to the system include: 447.700 Horn Mountain, 223.920 Skyline Drive, 224.480 Navajo Mountain, 448.550 Cedar Mtn., 145.43 Dwntrwn Price, 442.025 Star Point, Club Dues: \$25.00 First Year. \$20.00 Each Year thereafter. Contact Person: Communications -Jim Anderson, KG7BC, Email jima@ecso.co.emery.ut.us. The Club has a webpage at: <http://ecso.com/sdarc.html>.

SPARC or Saltlake Peaks Amateur Radio Club (sponsored by L3 Communications In Salt Lake City) normally meets the 2nd Wednesday of each month at Noon in the L3 Communications Building "F" Cafeteria (640 N. 2200 West, Salt Lake City, UT 84116). Dues are now set at \$12 per year. SPARC supports the 448.050 repeater and conducts an emergency committee net there each workday at 7:05 a.m. The current president is Ray Riding, KC7FGT, who can be reached during working hours at (801) 5947132. SPARC also publishes "The Signal" monthly. The editor is Rick Donkin, KA7MMM, who can be reached on workdays at (801) 594-2167 (email to: donkin@cs.w.L-3Com.com). Webpage for the club is at: <http://sparc.csw.L-3Com.com/>.

UARC or Utah Amateur Radio Club meets the first Thursday of each month except the months of July and August. The meeting is held in the Doxey-Hatch Medical Building located at 1255 East 3900 South in Holladay (a Salt Lake City suburb), across the street from St. Marks Hospital at 7:30 PM. There is a newcomer's meeting held prior to the main meeting 7:00 PM. UARC conducts an information net every Sunday nite originating on the 146.62 Farnsworth repeater. UARC maintains the following repeaters: 146.62 (-), 146.76(-), and 449.10. The UARC Web page can be found at <http://www.xmission.com/~uarc/>. E-mail can be sent to uarc@xmission.com. The Club (UARC) has a Ham Hotline, 583-3002. Information regarding Amateur Radio can be obtained, including club information, testing, meeting information, and membership information.

UBET (Utah Box Elder Thiokol) holds a net every Wednesday at 8:00 PM on the 145.43, 448.300 p.l. 123.0, 145.29 repeaters. Contact Wayne Jensen AB7TS for details about net. Although the club is sponsored by Cordant Technologies (formerly Thiokol) many of its members are not employed there. The majority of the club members live in Box Elder County but many also live in Cache and Weber Counties. Club meetings are held the first Tuesday of every month at 7:00 PM at Mills Montessori School 575 N. Main Brigham City. Dues are \$15 per year. Club President is Bob Anderson AA7TR, Email anderra@thiokol.com. Their webpage URL is: <http://members.xoom.com/ubet/>.

The **University of Utah Radio Club** is open to University staff, alumni and students. There is a fully equipped station available 24 hours a day. Their contact person is Marvin Match, KA7TPH, MEB 2575, at 581-8761 or Clint Turner KA7OEI at 566-4497, Email: ka7oei@uugate.wa7slg.ampr.org.

UPRA (Utah Packet Radio Association) is open to all radio amateurs interested in packet radio and its applications, including TCP/IP, highbandwidth, and digital repeaters. The purpose of the club is to coordinate packet activity within the state and interface to adjoining states. Meetings are scheduled as necessary, and there are no dues (at this time). For more information contact Jack Christensen KD7NX at (801) 581-0897 or email jack.christensen@icn.siemens.com.

Utah Army MARS (Military Affiliate Radio System) VHF nets are held Monday, Wednesday and Thursday at 2100 local. Frequency is 143.99 rcv 148.01 xmit. Membership information can be requested from Bill Spatz, N7OKD, bspatz@earthlink.net, (801)774-8772 State MARS director for the Army, or Dave Christensen State Training Director (801)936-9242. The Utah Army MARS webpage is: <http://osm7.cs.byu.edu/people/dubois/MARS/index.html>.

The **Utah Contest Club**. The President is Jim Lawrence, W7CT <mailto:w7ct@qrq.com>. The club callsign is NC7J and the trustee is Matt George, NG7M <mailto:ng7m@qrq.com>. If you are interested in learning more about the UCC (and or contesting in general), contact W7CT Jim Lawrence at (801)546-4399 or send email to <mailto:w7ct@qrq.com>. The Utah Contest Club also sponsors the "NC7J Utah DX Packet Cluster". Information about the "NC7J Utah

DX Packet Cluster" can be found at: <http://nc7j.qrq.com>

Utah County ARES holds their general meeting the first Tuesday of every month at 7:00 PM. They also conduct a net each Tuesday at 9:00 PM on the 147.34 repeater. The contact person is Derick Wolsleger KC7KRS phone 465-1134 email: kc7krs@ucares.org Their Webpage URL is: <http://www.ucares.org/>

The **Utah TCPIP Users Group** or **UTUG** is an informal group that discusses TCP/IP protocols and other packet information. They are geared to all levels of users, new and seasoned. They hold a weekly net Sundays at 8:00 PM on the 146.62 repeater. Their contact person is Clint Turner KA7OEI at 566-4497. Email: ka7oei@uugate.wa7slg.ampr.org.

The **Utah VHF Society** is a group dedicated to maintaining and operating a system of repeaters in the state of Utah. Dues are \$10.00 per year and can be sent to PO Box 482 Bountiful, UT 84011-0482. The Utah VHF Society holds a swap meet annually, usually on a Saturday in February. The Society holds a traffic and swap net for its members each Tuesday night at 8:00 PM on the 146.940 repeater (PL 88.5). Contact is Eldon Kearn KB7OGM at 571-9955. The UVHFS maintains a webpage at <http://www.ussc.com/~uvhfs/>

Voice of Idaho Amateur Radio Club is a Boise, ID based organization. They maintain the following repeaters: 147.24 Cinnabar Mtn; 443.600 Cinnabar Mtn; 146.840 Shafer Butte (PL 100) with an emergency autopatch; 146.620 Snowbank Mountain; and 443.850 on Lone Mountain, near Baker, Oregon will be relocated to somewhere in the Treasure Valley for local coverage on an interim basis. The VOI net meets every week on Thursday evening at 8:00 PM. on 147.24, 443.600, and 146.62, which are linked during the net 147.240 and 443.600 cover all of southwest and southern Idaho (as far as Twin Falls normally) and south sometimes to Winnemucca, Nevada. 146.620 covers all of west central Idaho as far east as Stanley and west into Oregon. Club Contact person is N7HQT Jeff Shinn, email jshinn@compuserve.com. The VOI website URL is: <http://www.interplus.net/~voi/>. Mail address is Post Office Box 812, Boise, Idaho 83701.

The **West Desert Amateur Radio Club (WDARC)** Meets the 1st Tuesday of each month (Except Jul. & Aug.) 7:00 pm at the Tooele County Courthouse, 47

S. Main St. Tooele, Ut 84074. Meeting room is in the Tooele County Emergency Management Conference Room located in the basement of the Courthouse. Access is Via the Public Safety Entrance at the Sheriffs Department off of Vine St. next to Clair's Auto Repair 64 E Vine St. A net is conducted on the 3rd Tuesday of each month at 7:00 pm on the 146.980 / 145.390 linked repeater system. WDARC supports four repeaters; the 146.980 / 145.390 Linked System (Delle; I-80 & Vernon, Ut Rt. 36); 147.300 Tooele City PL 100.0 Hz; and Wendover Peak, Wendover, Ut. 147.200. Contact person is Gene May KC7MBF (Public Relations) (435) 882-1222 or David Haag KC7PVD Secretary at P.O. Box 208 Tooele, Ut. 84074-0208. E-mail contact is Dave Haag, KC7PVD, KC7PVD@erda.net

Wood River Amateur Radio Club is located in the Sun Valley Idaho area. WRAC supports the 147.18 repeater on Della Mountain in Hailey. They conduct a net on that repeater on Tuesday nights at 8:00 pm. Contact person is Fred Naumann at (208) 788-4540. The club webpage URL is <http://www.geocities.com/SunsetStrip/9202/>

Last updated 19 June, 1999. For corrections, additions, deletions, changes or updates email Bruce J. Bergen, KI7OM., Bbergen@xmission.com. □

3PI and Road Rage

From: Mark T <g0gbd@hotmail.com>
 To: FT100@onelist.com
 Subject: [FT100] Break through on 10m
 Date: Monday, April 26, 1999 3:38 AM
 From: "Mark T" <g0gbd@hotmail.com>

Hi,
 Just purchased an FT100 and am very very impressed indeed. The only problem I have found is that I can hear am broadcast stations in the 10m band. These are very weak signals but I wonder if anybody else has noticed this. I have only had the radio two days so maybe I need to look at optional filters that may be available.

Regards
 G0GBD

REPLY-----

From: Jack Kovar <kovar@ia.net>

To: FT100@onelist.com <FT100@onelist.com>
 Date: Monday, April 26, 1999 7:26 PM
 Subject: [FT100] humor in understanding the FT-100

From: "Jack Kovar" <kovar@ia.net>

It is likely the two of the strongest signals in your area are over loading the front end RF amp of the receiver. In work I do this is called the 3PI. Third Point intercept. It is the point strong signals push the RF amp PAST its normal linear operating range. Like Scotty of Star Trek Said: SHE CAN'T TAKE NO MORE SIR! At this point the amp becomes a non linear device" know as a mixer". Same process when mixing two strong rabbits together, they develop many off spring.

Put two signals into a mixer and you get out, two original frequencies, the sum and the difference of the two. If the signals are really really strong they can mix again and you have a frequency SHAKE AND BAKE with all sorts of mixing products to spit out. If any of theses Shake and Bake, Rabbit mixing output products end up close to the first IF frequency or the original desired frequency, the barn door is open and your radio will try to demodulate it This is know as letting the salesmen in the house! NOT GOOD!

Here is a example of local problem for a local FM repeater on 146 MHz here in Cedar Rapids. A high power TV station on 52MHz is located north of town. A high power FM radio station on 94MHz is located North of town. When people drive north of Cedar Rapids their radios buzz and chatter and can not hear the repeater. $52\text{Mhz} + 94\text{MHz} = 146\text{MHz}$ of TV raster and some rock and roll. See the concept! The trick is reduce the gain on your receiver or FILTER OUT the strongest signal BEFORE it pushes the receiver to 3PI, no mixing occurs. Known as stopping the salesman at the front door.

So the question I leave you with: If you design a receiver to work on Broadcast bands, ham bands, everywhere band, How do you keep the salesman out of the house? If you leave the front door open they will come!

Tracking filters would be a starting point. Filters that adjust to the band you are using. Hey! These filters take up valuable space fast in these little radios. You think they might have cut a few corners on the filters for pocket fisherman size radios?

Lets talk a bit about front end gain of the receiver. In

the mixing process two undesired "salesman signals" add their signals strength together. When pushed you past your 3PI you go non linear on them! They have the edge and it gets ugly! If you can reduce your gain by 3db you can reduce there interference by 6db. Reduce gain 6db and reduce interference by 12db. Cool Beans Right!

Remember this trick next time you go to purchase a car. Keep the interfering salesmen separated and keep them from talking too loud, which pushes you into 3PI and all Hell breaks loose.

This concept may work for Road Rage in larger cities, I have not been able to prove it here in Iowa! I have heard of people addressing a "third pointing intercept finger" 3PI, that develops when pushing people nonlinear in heavy traffic.

Happy trails, Jack Kovar, SPE Toddville, Iowa

EOM-----

Submitted by Alan Seyboldt, N7OI□

The Ten Most Common Tower Building Mistakes

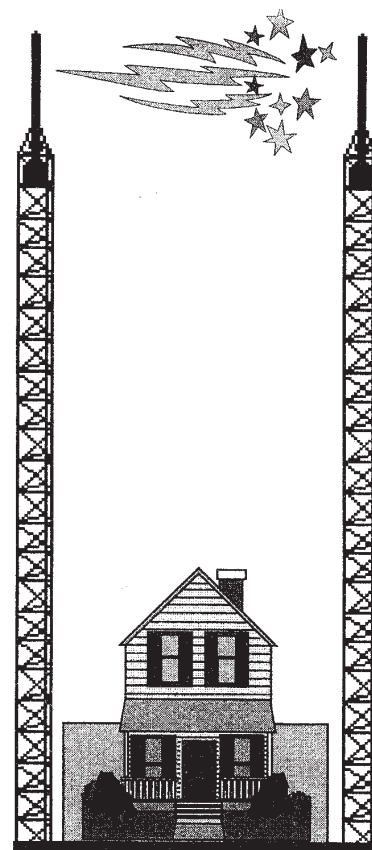
This appeared in the April 1999 (electronic) edition of "Sunspots", the newsletter of the Redwood Empire DX Association, Steve Bertsch-WA6YFD Editor. Copyright Steve Morris. Permission was given to reprint this information and credit is given to "Steve MorrisK7LXC, Champion Radio Products".

After working on over 100 amateur radio tower and antenna systems over the last 15 years, I have seen many problems and failures that could have, and should have, been avoided. By not making these mistakes, you can make your tower and antenna system safer and more reliable. It'll even let you sleep nights better.

1. Not following the manufacturer's specifications - Commercially manufactured towers have to comply with current standards for wind loading and structural integrity. Licensed Professional Engineers (PE's) design the towers and make the calculations to make them safe. If you don't follow their specs at a minimum, the tower will not take the stresses and loads that it is subject to. In other words, it'll probably fail.

2. Overloading - This is the most common reason for amateur tower failure. The first thing you need to know to plan and build a tower and antenna system is what the wind speed rating for your county is. Next, you need the manufacturer's specifications for that wind speed. Then you must not exceed the wind load rating based on those factors. This is even more important for crankup towers. Refer also to number 1.

3. Underestimating wind forces - Wind pressure on a tower and antenna system can be tremendous. Unless you've been up on a tower during -a windstorm to feel the pressure and the forces, it's difficult to appreciate how significant they are. Increases in wind pressure are not linear, they are geometric.



4. Not building to the wind speed rating for the county - While many counties in the US are only rated for 70 MPH winds, many other counties have ratings much higher, up to 115 MPH. Find out what the wind speed rating is for your county, or your specific location, and use that as the minimum design paraineter for your tower and antenna system. See also number 1 and 3 above.

5. Using the wrong mast for the job Medium to large sized HF beams can put huge stresses on your

mast. Know the difference between pipe and tubing

as well as the pressure that your antenna system will put on the mast (tubing is generally acceptable, pipe is not). Then you can make sure that your mast will not bend or break in a big windstorm.

6. Not having the guy wires tensioned properly - Proper guy wire tension is a critical part of a tower's ability to handle wind stresses. Having the wrong tension can be like driving your car with over or under-inflated tires; it is potentially dangerous and is not the proper specification from the manufacturer. Find out the proper tension for your installation and tension them correctly.

7. Not having a proper ground system A good ground system is necessary not only for lightning protection but also for minimizing RFI to adjacent electronic devices.

8. Not doing an annual inspection Your tower and antennas system is in a constant state of deterioration. While it may be a slow process, it is going on continually. The best way to find and fix small problems before they grow into big problems and potential calamities is by doing an annual inspection.

9. Not fitting the tower sections on the ground - Tower sections, new or used, may not fit easily together. It's much easier to correct alignment problems on the ground than up on the tower.

10. Using the wrong hardware - Since tower and antenna materials are in a constant state of deterioration, you should only use hardware that minimizes corrosion. Galvanized or stainless steel materials are the only ones that will survive outdoor use reliably. Using the wrong hardware includes using nonclosed-eye eyebolts. Use only forged or welded eye-bolts since the wrong type can open up accidentally with disastrous results. □

September 2: Swap Meet

On Thursday, September 2, we will return to our regular meeting place in the Doxey-Hatch medical center for the annual swap-meet. It will start no earlier than 7 p.m. (This is a change from previous years when there was an early start.) Bring any amateur radio equipment you'd like to sell or swap. □

Examination Schedule for July and August

07/07/99 (Wed.) Farmington
Marc Uhrey, AB7PL
Phone (H) 771-0105 (W) 536-4782

07/14/99 (Wed.) Mantua
Contact: Niko Takahashi, AA7OL
Phone: (435) 753-9544

07/21/99 (Wed.) Provo
Contact: Steve Whitehead, NV7V
Phone: (H) 465-3983 (W) 225-5200

07/23/99 (Fri.) Vernal
Karl Swain, KJ7ZQ
Phone (435) 789-3164

07/27/99* (Tues.) Salt Lake City
Contact: Eugene McWherter, N7OVT
Phone: 484-6355

08/07/99 (Sat.) Salt Lake City
Gordon Smith, K7HFV
Phone (H) 582-2438 (W) 534-8116

08/11/99 (Wed.) Mantua
Niko Takahashi, AA7OL
Phone (435) 753-9544

08/18/99 (Wed.) Provo
Steve Whitehead, NV7V
Phone (H) 465-3983 (W) 225-5200

08/27/99 (Fri.) Vernal
Karl Swain, KJ7ZQ
Phone (435) 789-3164
08/31/99* (Tues.) Salt Lake City
Eugene McWherter, N7OVT
Phone 484-6355

*Only Novice and Technician elements (1A, 2, and 3A) given at this session.

For more detail either call the contact or checkout the information on our webpage
<http://www.xmission.com/~uarc> □

