Field Days Past and Present

Photo: Carol McWherter, KC7LLW

Steve, KC7IAS, logs in a contact at the UARC '97 Field Day Novice Station

Utah US Army Military Affiliate Radio System

Volume XLII Issue 5, May 1998

the MICROVOLT

Periodical - Postage Paid

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Prologue

The Utah Amateur Radio Club was organized under it's 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.

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 Exhibition hall located on the Salt Lake County Fairgrounds just south of Murray City Park.

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. ARRL membership renewals should specify ARRL Club #1602.

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.

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.

THE MICROVOLT: *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. In order to maintain ease of conversion it is suggested that you contact Bruce at 943-1365, or via e-mail before making electronic submissions.. All submissions are welcome but what is printed and editing are the responsibility of the UARC board. Reprints are allowed with proper credits to *The Microvolt*, UARC, and authors. ❑

UARC 1998 Board - Partial Listing

President: Tom Schaefer, NY4I	569-2664
Exec VP: Ray Allen, N7TEI	963-0790
Vice Pres: Gordon Smith, K7HFV	582-2438
Secretary: Russell Smith, KC7ZDZ	463-2568
Treasurer: Chuck Johnson, WA7JOS	268-0153
Microvolt Editor: Bruce Bergen, KI7OM	943-1365
Book "Lady": Fred DeSmet, KI7KM	485-9245

Note: Detailed listing of board members address's, phone numbers, and email address's will not appear in every issue. For current information either refer to the January '98 issue or to the club's web-page: www.xmission.com/~uarc ❑

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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 ❑

The Microvolt
The Official Publcation of the Utah Amateur Radio Club, Salt lake City, Utah

Volume XLII, Issue 5 May 1998

QST from the Prez

Each year around this time, we breathe a sigh of relief because we finished our taxes. Maybe we are expecting that big refund. A new radio would sure be nice. As we look at all the money grabbing, frequency spectrum auctions going on in Washington, we, of course; have to look at the Amateur Radio frequencies. What do you expect the two meter repeater frequencies we use are worth? How about the more desirable 900 and 1200 MHZ frequencies? All of the spectrum that hams are **given** would be worth serious money if auctioned. So, are hams freeloaders on the coat tails of the US Government? What do we do to "pay" for those frequencies? Do you know what you can do?

The best way I can think of to help "pay" for those frequencies is to give something back. As a well-known club member frequently says: Pay the Rent. Yes, it is true that besides the test fee, it does not cost anything to get an Amateur radio license. But, does that mean it is free? We, as hams, have a responsibility to give a service back to the community in exchange for our use of these frequencies which we have so much fun using. There are many things that we can do to give something back to the general public. How about learning about emergency communications? The Amateur Radio Emergency Service (ARES) has a great program to train hams to become effective communicators in case of emergency. How about becoming a volunteer examiner? In order to create more hams to help out in emergencies, we need more examiners. I know that Gordon Smith, K7HFV, and the rest of the VE teams in the area are always looking for volunteer examiners to help out at the test sessions.

How many of you, like myself, owe your career to amateur radio? I became interested in computers because of amateur radio. Some of the engineers out there are in the same boat. Since amateur radio has given so much to you, why not **make** the time to help out in some way? Maybe you can become CERT trained as a communicator to provide life-saving communications during a natural disaster. Maybe it's as simple as talking up UARC so we can provide more services to the community by having more involved members? What about the Red Cross club station? When the Red Cross station is operational in June, we will have a great opportunity to participate in drills and such. Some training would be great and this is where ARES can help.

With all the fun we have in ham radio, we have to remember to use our training for good. Sure, it is fun to rag-chew with your friends on the repeater, but it is also fun to provide communications assistance to those in need. Please consider contacting someone on the UARC board to find out what you can do to make the best use of your amateur radio talents.

73,

Tom Schaefer, NY4I ❑

QTX from the SM

Bruce Bergen, KI7OM has been after me for some time to write an article for *The Microvolt*. Under threat of pins in my coax, I have acquiesced and finally got around to putting words in print. I know all of you are just sitting on the edge of your seats anticipating a humdinger of an "exciting" article about ARRL administrative affairs, Legislative actions, tower ordinances, ARES, RACES, or even Field Day. (You are going to Field Day aren't you?) I just know that you can't wait to hear all about the exciting lifestyle of being the League Section Manager. You know, letters, Email, meetings, phone calls, and tons and tons of paperwork!

On second thought, as I gaze out the window of my hamshack at my beautiful 272 ft. full wavelength loop for 80 meters, I can't help but think I would rather write about something else a lot more interesting than League paperwork. Operating. That's right, OPERATING. That's what ham radio is all about anyway! So with that in mind, I thought it would be interesting if I took a look at what the word DX means, and what it actually means to you and I in 1998.

Throughout hamdom, DX has always meant distance. Pure and simple. Over the years though, DX has come to represent working a station in a foreign country. A ham who works lots of foreign countries is a DXer; A ham on the rig all evening working foreign countries is DXing; A world wide contest is called a DXTest; and a trip to a foreign country to operate is a DXpedition. You get the idea. When I was just a young squirt in radio, I didn't even know DX existed! What a surprise it was to me when one day ZL2ACP in Auckland, New Zealand answered my CQ. To this day I can still remember the thrill of talking to somebody that far away with just a simple dipole for 15 meters.

But, you don't have to work the world to work DX, because DX can take many forms. To a VHF specialist, DX can be working Boise, Idaho on 432 MHZ. To a Technician who has a relative in Provo, working DX can be devising a method to contact that relative on 2 meters simplex from Davis County. (You can do it too!) What about a satellite operator who is trying to work the Russian RS10,11,12,13, and 15 satellites? Is that DXing? I assure you since I have been trying to do that, it certainly is to me! What about 2 meters SSB? No repeaters there! Tall mountains, meteor bursts, and Sporadic E Propagation are the only available methods to working all states. (Speaking of W.A.S., Have you ever tried to work all states on a single band?) What about ARES folks? They're DXers too! Yes it's true. Trying to establish paths of communication between EOC's on HF or 2 meters can be just as much as a challenge as working the world on 10 meters. What about the local Club member who's only rig is a little HT and rubber duck antenna. Yep, a Dxer too. Try hitting the 6.62 repeater from Spanish Fork with a little rubber duck antenna and less than a watt. A challenge right?

How does a ham work DX? Simple. Challenging yourself to work longer distances with your existing station than ever before is DXing. By striving to do more with that little HT, dipole, QRP rig, or mobile station than you thought possible, is DXing. To build and design better antennas, understand propagation, and to work harder at learning more about the methods available for reliable communication is not only DXing, but it is also raising the level of excellence in the Amateur Radio Service.

Excellence. That's what it comes down to for us as amateurs. Challenging ourselves to become better communicators. So try out some new ideas. Find out how far you can work somebody simplex. Build a perfect dipole for a band that interests you. Ask questions, try things out. Who knows, you might just amaze yourself! Explore new horizons and become a "DXer" in your own right.

73 es Happy Operating de your friendly ARRL SM, Jim, NZ7T.

PS: The BIG Loop is a keeper for this year HI! ❑

UARC Steak Fry

The annual steakfry, one of UARC's biggest events of the year will take place on the afternoon of Saturday, July 18, along with its companion swapmeet. If you have yet to schedule vacations and other summer activities, then mark this date on your calendar. UARC has once again been able to secure a spot at *The Spruces* campground in Big Cottonwood Canyon. Tickets will be on sale at the May 7, and the June 4 UARC meetings. The price for members will be $2.00, non-members $9.00 and children $2.00. A map and other details will be provided in an upcoming issue of *The Microvolt*. ❑

Featured Member

This month we feature John Mabey W7CWK. John, an extra class license holder, has been an amateur radio operator for 44 years. He was a member of UARC for many years and at one time served as Vice President. In addition he recently held the office of President in the Davis County Amateur Radio Club. John is also currently a member of the Salt Lake Peaks Amateur Radio Club (SPARC), at L3.

As one of the 5 individuals who founded the Utah VHF Society club in the '60s, he currently serves as secretary for the Society.

He also helped with the original design of the 146.76 UARC repeater and helped put it up on Lake Mountain.

Taking part in the annual Friendship Cruise has been an enjoyable activity for John.

John's favorite facet of amateur radio though, is home brew. He loves to build and design things.

He also enjoys working with emergency services and is currently the Emergency Coordinator for the Davis County ARES.

John works for L3 Communications which has changed names several times in the 40 years he has worked there. Names like Sperry, Univac, Unisys, Lockheed, Loral, and now L3, all at the same address.

He is married and together he and his wife Kathy, have 3 children (2 boys and one girl), and 10 grandchildren. John said that he just couldn't get anyone in his family interested in the hobby.

John, thanks for your contributions to amateur radio.

73 N7HVF, Linda Reeder ❑

A Scouter in Need of Some Cheering

I am a "closet" UARC member, and avid Microvolt reader. Judging by the friendly nature of the publication, I decided to bring a special person to your attention that needs some support from the ham community.

Stan Peters, N7PLE, of Orem was involved in a serious snowmobiling accident the weekend of the 14th of March during a scout campout at Strawberry Reservoir. He broke his neck and was initially paralyzed from the neck down. He is currently in the spinal rehabilitation unit at University Hospital, where he will remain until sometime around the beginning of June. He has regained some mobility in his arms, which is much more than the initial prediction, but still cannot move his legs.

Stan has worked for University Computing Services at BYU for many years. He has been an active ARES member and the secretary of the Sheriff's Communication Auxiliary Team since he joined six years ago. He and his wife have seven children.

All those that know Stan cannot say enough good about him. He is well liked and easy to be around. The rehabilitation unit is a rather dreary place, so if you would like to add some cheer, you may send cards to his family at 180 N 600 W Orem, UT 84057.

Thanks and 73,
Heidi Spencer, KC7OXP ❑

CW Morse Code Net

CQ CQ CQ DE KC7CSE CW NET CW NET CQ NET BT

NET IS OPEN TO ALL FOR MORSE CODE PRACTICE BT

PSE CHECK IN WITH CALL AND NAME ONLY BT

CHECK OUT WITH CALL AND QNO BT

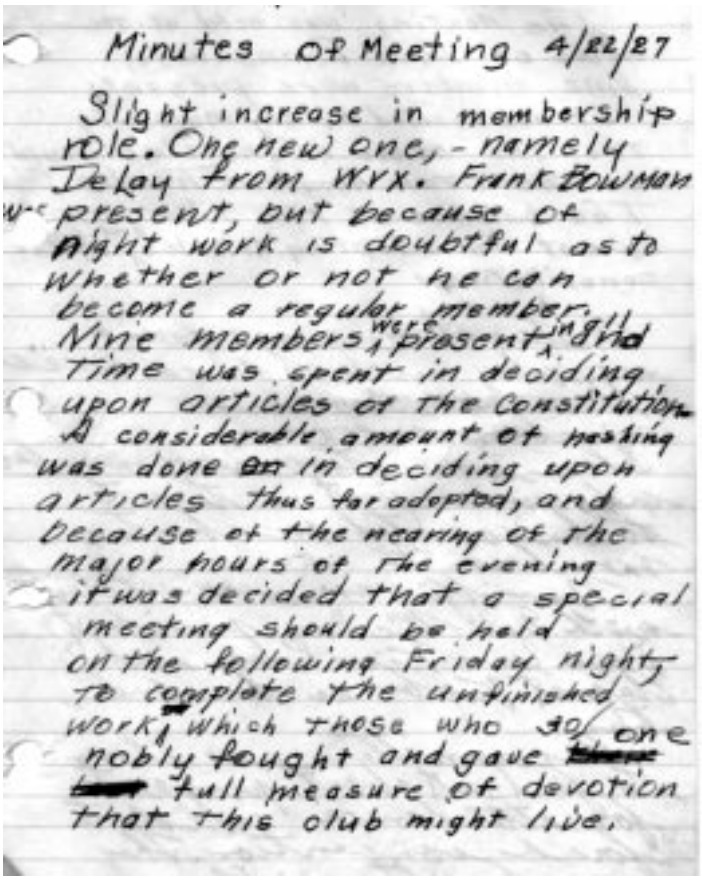
CHECKINS NOW PSE K

All those with HF privileges wishing to help or improve their code skills are welcome. Others without HF privileges but wishing to improve their receiving skill, for upgrading, might also benefit from listening in and copying the traffic. This net will be on the air at 0300 hrs (Zulu), 2100 hrs local, on 28.110.0 MHz, each Tuesday evening.

My code skills are not good, but I'm getting better. I hope to see you there.

TNX DE EUGENE - KC7CSE AR ❑

A Blast from the Past



Minutes of Meeting 4/22/27

Slight increase in membership role. One new one, - namely Delay from WYX. Frank Bowman was present, but because of night work is doubtful as to whether or not he can become a regular member. Nine members were present and Time was spent in deciding upon articles of the Constitution. A considerable amount of hashing was done in deciding upon articles thus far adopted, and because of the nearing of the major hours of the evening it was decided that a special meeting should be held on the following Friday night, to complete the unfinished work, which those who [redacted] one nobly fought and gave [redacted] full measure of devotion that this club might live.

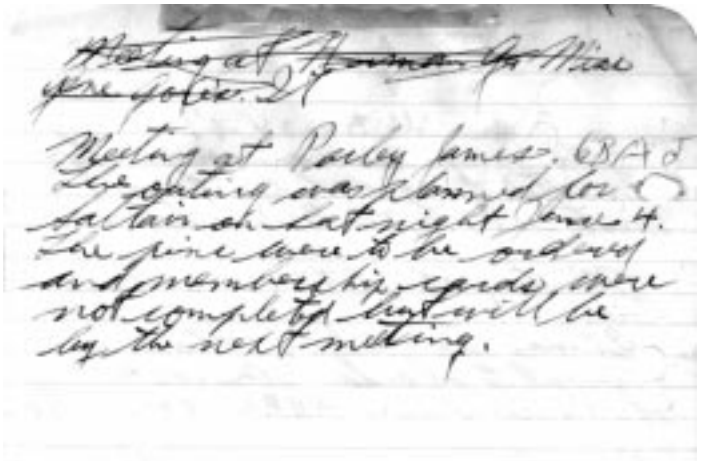
Minutes of Meeting 4/29/27

~~Meeting held at~~ The Meeting was held at the home of Dick Evans (6AYJ) Nine members were present. It was decided by a ⅞ majority that the name of the club would be the Utah Amateur Radio Club. The balance of the time was spent in adopting Articles 1 and 2 of the Constitution.

Meeting at Herman Greens was also very much of a success. ~~There were [illegible] members and each~~ There were two new members who were just in time to be counted as charter members.

New officers were elected with Don McRae, president, Dave Jones Vice Pres. and August Vogler as Sec and Treas.

A committee was chosen to find out about prospects for attendance and date for a convention. They were Leo Manser, Chairman, Herman Green and Marvin Johnson



~~Meeting at Norman's~~ Miss yere jotter 2?

Meeting at Parley James. 6BAJ The outing was planned for Saltair on Sat night June 4. The fine were to be ordered and membership cards were not completed but will be by the next meeting.

These minutes from two meetings in April of 1927 relate, in a rather interesting prosaic style, the events leading up to the first constitution of the club. The name, *Utah Amateur Radio Club,* was selected and voted upon in the meeting of April 29. It appears that there were several subsequent meetings, starting with one at Herman Green's, but no dates are given. In the meeting at Parley James, 6BAJ, (the last quarter page) an outing is planned for Saturday June 4th at Saltair. ❑

Archive material scanned and provided by Alan, K7OPT

Field Days Past & Present

Photo: Carol McWherter, KC7LLW

Have you heard people talk about "Field Day"? Have you wondered what this thing was all about? Well, for those that don't know, pull up a chair and I'll tell you all about Field Day. On the last full weekend of rain in June, hams from all over America embark on a curious quest. Not just any ham radio quest like a road trip to Las Vegas just to go to a ham store, or a trip to Dayton for the Hamvention. This quest involves a certain degree of insanity, just a bit of sadism, and the inert desire for fun (at least in the opinion of 30,000 hams). But, what is Field Day? Why do 30,000 hams from all around the country leave the comfort of their homes for the heat, the humidity, the bugs, the cold, the rain, the snow, "the food" and all the other challenges that living in the woods for two days causes? In a word, FUN!

On Field Day weekend, hams take to the wide-open spaces of these United States to operate their radios for 24 hours straight. Now, sometimes the wide open spaces are parking lots, mountain peaks, local parks, schools, churches, the backyard, and countless other variations of the "Field". Regardless of the place, hams flock to the field to setup a temporary communications facility to participate in Field Day. Some go to Field Day for the operating. Others go for the food, the company, the challenge of improvisation, or the times just after setup until just before tear down. Field Day gives hams a chance to test what they and their equipment can do in a "pinch" without having a hardware store on the corner. This is the emergency aspect of Field Day. While no actual emergency messages are passed, the techniques to establish a station in a remote area, with only the equipment on hand, is exactly what is required in an emergency. But, just to make it a bit more interesting, the sponsors of Field Day decided to create an operating contest out of it.

If a marathon is the ultimate test of a runner's ability, an operating contest is the ultimate test of a ham's operating ability. In a contest, hams try to contact as many other hams as possible. On Field Day, this goes on for 24 hours straight. Voice and Morse code (CW) communications are used and the winner is the one that gets the most points. Of course, this is easier during the day when Field Day starts, but the real test is at about 4:00 AM when the bugs are swarming and the heat is draining. Some would say that the real contest of Field Day is against the elements. As I have operated in Field Day in Florida, Virginia, and Utah, I thought some comparisons would be in order.

The first Field Day I went to was on the west coast of Florida; near the Gulf of Mexico. As you may know, Florida is extremely humid and warm. Most summer nights, you really need air conditioning to stay remotely comfortable. At Field Day, air conditioning is not normally used as it drains power from the generators. Many times at Field Day after operating for quite a while, I would go into my truck and run the air conditioning for a while just to cool off. This is quite the contrast to the 1997 UARC Field Day. Since we were in the mountains, it gets quite chilly at night. In order to operate the CW station, I bundled up in my winter coat with a sweatshirt and my winter gloves. Of course, I was still cold, but it was bearable. To operate the computer, I used the eraser part of a pencil to type the callsigns into the logging program. Fortunately, we did not have any rain this year. There were not too many bugs either. In Florida and Virginia, we have to strap the operators to their chairs because the mosquitoes will carry you off. With all the extremes I have seen at Field Day, I still wouldn't miss it for the world. Another great aspect of Field Day is the learning and camaraderie.

At Field Day, you will certainly learn how to install antennas, generators, cable, radios, computers, and a multitude of other items. Most Field Days require

some amount of improvisation. With the number of installations happening at once, it's very hard to bring every nut and bolt you would possibly need. Since Field Day is usually in a remote location, you have to make things work with only the supplies on-hand. At the UARC Field Day, we typically run three stations. That means three antennas, at least two computers, getting the generator running, and much more. Last Year, we installed some aggressive antenna systems as I suspect we will do again this year. If you are interested in getting antennas into the trees with a slingshot, Field Day is the place for you.

No matter what your license class or experience level, Field Day has something to offer. Many of the most successful contesters got their start as new hams at Field Day. If you are just starting out building a ham shack, you are sure to learn something at Field Day which will be very useful in building your own station. Some of the most dedicated UARC members make it a point to come to Field Day. This is certainly a great place to get to know some of the members better. To me, Field Day is something that I just would not want to miss. I can think of no place I would rather be on the last weekend of June than bundled up on a nippy night in the mountains running CW on 40 meters. Where else will you get to spend 48 hours (setup begins on Friday at Noon) with bunches of hams talking about all kind of things. If you are looking for a challenge, come out to Field Day on June 27th and 28th. Setup begins at Noon on June 26th. The site is near the Payson Lakes Campground in the mountains east of Payson, Utah. Joel Neal, KC7UBP, is the Field Day chairman this year and he has asked for as much as the members can supply. He will need people to help with setup and to help in planning and preparations. He can be reached at 801-352-0322. So, get your tent, warm sleeping bag, long underwear, winter coat, and gloves and come out to Field Day. I guarantee you will not regret it.

Tom, NY4I ❑

Your Technician Accent ... And What to Do about It!

By James 'Jay' Craswell, WOVNE
321 4th Street West
Jordan, MN 55352

To quote from "Your Novice Accent," the classic November 1956 *QST* article by W6DTY, "People speak a language with the same accent as those with whom they live and work. New hams pick up habits and operating procedures of the gang they chew the fat with." How true this still is. I feel that the large influx of Technician licensees has created some of the same problems experienced by Novice operators of the '50s. I hope that people won't see me as finding fault with my fellow hams. Please take it in the spirit it was intended. It was prompted by my wife's (NOKJH) honest question: "Tell me what you think is correct procedure?"

FM and Repeater Procedure

"KD9XYZ KD9XYZ KD9XYZ this is KE9ABC calling and listening, bye."

KD9XYZ KD9XYZ KD9XYZ here is KE9ABC are you around Fred?"

"Negative contact. KE9ABC clear."

On FM a single call is all you need. I suppose in some rare cases the person being called is operating their receiver in the scan mode and won't catch the more acceptable "KD9XYZ, KE9ABC." And there is no reason to throw in "negative contact," "clear" and so on. Everyone who can hear the repeater knows quite well that you have had "negative contact." I think habit arises from people who spend too much time listening to police scanners and not enough time listening to proper Amateur Radio procedures. Being "clear" on the police band is a signal that you are free for the next assignment. On Amateur Radio if you are not in contact with a station it is assumed you are "clear." Let's ditch the Highway Patrol procedures and extra yakking. It sounds silly.

Endless Calling

You will often hear the same long calls repeated over and over. This is unnecessary. On FM your signal is copiable, or it isn't. As my friend Tom says, "If you weren't there you didn't miss anything." If you call and no one responds they will rarely change their minds two seconds later. Most of the time a general call should be as simple as "KDOYXZ listening." Once in a while I'll say, "CQ 2 WOVNE." This gives some people the giggles, but everyone immediately understands that I am calling any station.

Listen!

One rude practice is turning to a new frequency (or

flipping on the power switch) and talking without listening. *Listen first!* Before you pick up the microphone for the first time, spend hours, even days, listening. Learn the proper procedures on your local repeater before jumping in.

Q Codes, Spelling, RST and The Weight of Correct Operating

"QSL your hamster died, QSL on the good old days, Bob. Yeah, QSL on your new antenna. You're eight pounds now, Bob. I suppose you could get a linear for that FM rig and push me 9 or 10 pounds, huh? The handle here is Frank. F-R-A-N-K."

The dreaded Q codes are making another stab at polluting the phone bands. Q codes are meant for CW. This habit of "QSLing" everything is a little like the idle character on a teletype circuit. Please assume that everything is received unless otherwise specified. It sure makes for tedious listening when every single thing said is repeated. If you must acknowledge a transmission, you don't need to repeat yourself over and over. "Good copy, Bob" is short and to the point.

When words must be spelled, they should only be spelled phonetically. For example V, B, E, G, D and C all sound pretty much the same. That's why phonetics were created. Spelling your name on an FM repeater (even phonetically) is questionable at best. The exception might be if your name is truly unusual, or if your signal is marginal into the system.

Your *handle?* When I heard this for the first time, I thought, what the heck is this goofball talking about? Sorry, I have *knobs* on my radio, but no *handles.* The most important lesson is to speak plainly, just as you would in person. When you meet someone new at the radio club you don't ask them for their handle. You ask for their *name.*

Signal reports should follow the RST (Readability, Signal Strength and Tone) system. Not in "pounds," "feet," or "shoe leather." You will hear old-timers saying "Q5" once in-a while (historical note: The readability or intelligibility scale goes from I to 5-see QRK in any list of signals). But for most voice operations, RST works best. Of course, you drop the Tone figure unless you hear some unusual noise on their signal (such as alternator whine). Some stations just give the signal strength in S units. "Bob, you're S8 now." Others provide the readability and signal strength by saying, "You were 5 by 8 on your last transmission. " If someone specifically asks for a report, it is important that you give an accurate report. My minority opinion is that DXers and contesters who give 59 for everything (while asking for several repetitions of "all after crackkkle-spfffft") is awaste of time. If you give a signal report, give a real one.

Phonetics

Cute nonstandard phonetics are questionable at best. My wife sometimes tells people her call is November Zero Keep Jay Hopping. Kind of silly, but it might help some folks remember her call sign. The line is crossed when you become vulgar.

lDing

"KD9XYZ this is KE9ABC for ID. Yeah, Bob, we got our ticket back when you had to memorize the license manual. Our transmitter is a GadZooks 1001. We like to operate with our feet hanging out the window."

"For ID?" Isn't it understood that you are identifying? And the royal "we" is heard so often that "we" have to comment. Who is this other half of the "We" / "our" in your transmissions? When I was a young squirt and picked up this bit of silliness I was asked by one of the old-timers who was this "we" ? Me and the mouse in my pocket?

Endless Signoffs

"Well, Bob, may the good Lord take a liking to you and yours. Have a good day today and a better day tomorrow. We will be clear on your final and I wish you 73s and a goodnight. This is KDOXYZ clear and QRT."

Nice sentiments (I do hope the good Lord takes a liking to me), but let's lose the canned "CB" jazz. The point is that these sign-off benedictions drag out an otherwise nice conversation. 73s? Best Regardses? Is this a form of stuttering? I won't belabor the fact that 73 is CW shorthand since everyone (even me) uses it, but let's use it correctly.

If you avoid some of the operating pitfalls we've just discussed, I guarantee you more contacts ' Best of all, you'll rapidly earn the respect of your fellow amateurs.

US Army Military Affiliate Radio System

What is MARS?

The Military Affiliate Radio System (MARS) is an organization of Federal Communications Commission (FCC) licensed Amateur Radio Operators working with military stations who are interested in military communications and electronics. MARS creates interest and furnishes a means of training members in military communications procedures. It provides a potential reserve of trained radio communications personnel to provide auxiliary communications for military, civil, and/or disaster officials during periods of emergency and provides Department of Defense sponsored emergency communications on a local, national, and international basis as an adjunct to normal communications. MARS provides a volunteer manned communications system for handling MARS administrative traffic, morale and quasi-official record and voice communications traffic for U. S. Armed Forces and authorized U. S. government civilian personnel stationed throughout the world. Finally, it offers training designed to stimulate interest in military communications and electronics career fields.

The primary mission of Army MARS is emergency communications support for the Army, for federal agencies, and for civilian agencies as needed. To develop a fine degree of interoperability with the various agencies, joint Army MARS/agency emergency communications exercises are held periodically. In many of these exercises, the agency is the controlling entity developing the protocols for the exercise. The proved flexibility of Army MARS and its volunteer members has enabled very successful participation in these exercises and in support of actual emergencies.

A joint FEMA/Army MARS exercise was held from 28 Feb 95 through 03 Mar 95 with two emphases -- Army MARS EEI reporting and informing FEMA of the geographical area that the Army MARS communications system covers. Army MARS members set amazing new records in participation and in geographical coverage, in EEI reporting -- both exercise and actual -- and in the enthusiasm with which the entire exercise was conducted. Reported participation was 2900 members with 2200 zip code locations represented.

MARS provides message service (MARSGRAMS) for the following personnel. In addition, DoD personnel stationed overseas including civil service employees may use both MARSGRAMS and phone patches provided by stateside MARS stations to stay in touch with their loved ones.
Active military personnel - all services
Regular military personnel - all services
National Guard personnel - all services
Reserve military personnel - all services
Retired military personnel - all services
Patients in VA Hospitals - all services

MARS is "Official"

The Military Affiliate Radio System (MARS) is an official Department of Defense and Department of the Army sponsored communications system. Therefore, it has official status, is assigned missions and functions, and authorized the use of assigned military radio frequencies. The US Air Force and US Navy/Marine Corps also have an active MARS organization. Although each Armed Service maintains a separate MARS program, individual stations often provide communications as a joint effort and operate nets with MARS members of all services.

In the United States, Army MARS is organized by state, with a volunteer State Director organizing the program in each state. Mr. Dave Raab, N7VDV is the Utah Army MARS State Director. In line with the primary mission of emergency communications, the Utah organization works closely with the Utah National Guard to plan for civilian emergencies. This involves both HF operations primarily between National Guard Armories that have been equipped with Kenwood TS-450/AT radios, and building a VHF network of voice and packet repeaters that will eventually span the entire state. Utah has about 100 Army MARS members at this time.

Utah Army MARS members have worked alongside National Guard military personnel during exercises in the field at Camp Williams, aboard UH-60 Blackhawk helicopters to get to mountaintop repeater sites, and during the Chemical Stockpile Emergency Preparedness Program (CSEPP) exercises to prepare for any emergency involving the chemical arms being destroyed in Tooele. The Department of Defense has designated the Army National Guard as the 'first responder' when DoD is asked to provide assistance in a civilian disaster, in addition to the Guard's role as a state agency that can be called up by the governor.

MARS members provide reports to the Pentagon about local conditions during a disaster. These reports, called Essential Elements of Information (EEI) may provide planning information for DoD and Federal assistance.

Army MARS is directed and managed by the Department of the Army through the United States Army Signal Command and is a world-wide organization. It is comprised of both military and civilian personnel. In fact, the majority are civilian volunteers. Each volunteer Army MARS member is required to hold a valid Amateur Radio license from the Federal Communications Commission. These volunteers are under no service obligation, but must meet a 12-hour per calendar quarter minimum participation requirement. A volunteer may resign from Army MARS at any time without difficulty or prejudice by simply submitting a written resignation.

MARS History - A Service to the Nation

In November, 1925, the Army Amateur Radio System (AARS) was initiated by a few dedicated pioneers in the United States Army Signal Corps. This organization continued until the United States entry into World War II, at which time radio amateurs were denied the use of the air. Therefore, the activities of AARS, as it was known, were suspended until 1946 when, once again, AARS was allowed to go back on the air. During the years 1925 through 1942, the AARS functioned more or less as an extra curricular activity of the U. S. Army Signal Corps, its scope being necessarily limited by the meager budget of the pre-World War II depression years. The best available figures indicate that as of the 7th of December, 1941, there were approximately 60,000 FCC licensed Amateurs within the United States and its possessions.

Some 5600 of those Amateurs were members of the AARS. About 20% of the pre-World War II AARS members eventually reached the service of their country either in the Army or in a civilian capacity. The U. S. Army recognized the great importance of reactivating the AARS to train vitally needed communications personnel at a relatively inexpensive direct cost to the U. S. government. Therefore, in 1946, the AARS was reactivated and functioned as such until the creation of the Military Amateur Radio System in 1948, later renamed the Military Affiliate Radio System (MARS).

Originally, MARS was available in the U. S. Army and the U. S. Air Force. In early 1963, the Navy-Marine Corps MARS was established. MARS has grown in all of the services throughout the world. They rely on our civilian and military MARS members to be available in case of emergency or disaster to provide communications support. The military services have never had adequate communications resources to fulfill all of our requirements. Therefore, they need all of the support MARS can provide. Amateur Radio has made its mark in American history. Each year provides new evidence of the important role Amateur Radio plays in the service of the nation.

Join Army MARS and You - - -

1. Add to the enjoyment of your Amateur Radio hobby through the expanded horizon of Army MARS. Because military frequencies are used, MARS operators use both HF and VHF assigned frequencies without regard to the FCC license limitations.

2. Become part of the Army MARS world-wide communications system in being and operationally ready. There are Army MARS stations in Japan, Korea, Panama, the Virgin Islands, Puerto Rico, Germany, and, of course, each of the United States.

3. Increase your communications skills and capabilities. Learn more about your hobby. Extension courses in communications-electronics subjects are free to all Army MARS members.

4. Operate and experiment on specially assigned military radio frequencies in voice and digital modes of communications.

5. Join a group of dedicated fellow radio amateurs participating in meaningful public service.

6. Affiliate with the United States Army and become part of the professional military communications family.

Eligibility to Join MARS

The applicant must:

be 17 years of age or older.

be a United States citizen or resident alien.

hold an Amateur Radio station license issued

by the Federal Communications Commission. Amateurs with any class of license are accepted.

in addition to these prerequisites, MARS has certain eligibility and participation requirements such as maintaining a minimum of 12 hours participation time each calendar quarter and keeping MARS officials updated on the status of station and changes of address.

When You Join MARS

You are issued a MARS station license and Army MARS call sign. The station license expires on the same date as your FCC Amateur Radio station license or when revoked for any reason. To retain MARS membership, you are required to submit a request for renewal as soon as you have received your renewed Amateur Radio station license. The request for renewal must be submitted within 60 days of the MARS station license expiration. In addition, you are provided a manual on MARS communications operation procedures, message forms, logs, and other material needed for operation of your station. The manual, being U. S. Army property, must be returned when you leave the Army MARS program.

What are Army MARS Frequencies and Call Signs

Frequencies used in the Army MARS program are those assigned by the Joint Frequency Panel from US. government frequencies allotted to the military services. Frequencies are assigned to MARS throughout the High Frequency (HF) spectrum and selected frequencies in the VHF band. Because the Amateur's equipment is limited to operation in the Amateur bands, minor modifications are needed to work the MARS frequencies. Many MARS frequencies lie close to the Amateur bands but never inside the Amateur frequencies.

Army MARS call signs have a prefix AAR, AAT, or AAV followed by a number corresponding with the Federal Emergency Management Agency (FEMA) regions 1 through 10. Here in Utah, we are in FEMA region 8 so each call sign will have an 8 as the only number. The Army MARS call sign is completed by the addition of a two-letter suffix.

Examples: AAR8AB, AAT8CD, AAV8DE, ... Certain calls have been put aside as "Billet" calls. These calls with the prefixes AAA or AAM are to identify individuals holding staff positions in the Army MARS program.

How to Join Army MARS

You may join Army MARS by contacting
Bruce Bergen, KI7OM/AAR8JD
At 943-1365 or care of this newsletter

From articles by
Lorraine S. Matthew/N4ZCF/AAA9PR
Army MARS Public Relations Coordinator

As adapted and edited for the Microvolt by
Steve Carver N7VVW/AAR8EI

Steve, N7VVW ❑

That First Antenna

Gerry Crenshaw, WD4BIS, Garland, Texas

An antenna for your station is probably your best investment after you have a purchased a radio. But how do you choose an antenna , What are these letters after the gain number? What's the difference between dBd and dBi? What's the difference between a beam and an Omni directional antenna? Should you buy or build an antenna?

Choosing an Antenna

Your first consideration for an antenna is space. Take a good look at the area you plan to put that first antenna and have a good idea of how large an antenna you can accommodate. Look for power lines or other obstructions prior to picking an antenna. For those of us in urban areas, you need to be aware of antenna restrictions or height restrictions. For those of us in the Garland (Texas) area, the restriction is 35 feet. As I interpret this ordinance, that's from the ground to the top of the antenna.

Antenna Gain

It is not enough simply to buy the antenna with the highest gain number, but an understanding of how

manufactures define gain in an antenna is important. There are two references used by most manufactures when defining antenna gain: dBd and dBi. Gain referenced to a dipole is listed as dBd. Gain referenced to an isotropic source is listed as dBi. What is an isotropic source you might ask? If you pick an imaginary point in space and from that point all of your power is transmitted equally in all directions in all thee dimensions, that is an isotropic source. Gain referenced to this point is dBi. When gain figures are listed as dBd, they are using a ½ wave dipole cut for the center frequency of the band of interest as the reference. To convert from dBi to dBd subtract 2.2 from the dBi value. Be careful when looking at a catalog. I was looking through a Cushcraft catalog as I was writing this and some antennas are listed dBd and some are listed dBi on the same page.

Beam Antennas Vs OmniDirectional Antennas

The omni directional antenna puts your signal into the air in all directions with about the same signal strength. The beam antenna forces the signal to travel in a single direction A good choice for that first antenna would be an omnidirectional. They are usually not to large, easy to construct, easy to mount and give good coverage. This type of antenna will get you on the air quickly and easily.

The beam type of antenna has some hidden pitfalls. Yes it has more gain but is larger, harder to mount, comes in a box with a hundred loose parts and you will need some kind of rotator to get the best use out of a beam. Remember that a beam or Yagi antenna is very directional by design, you will need some kind of steering device to get the best use out of this kind of antenna. If you can't reach you local repeater with an omni, then go to a beam.

For those of us who want to use packet radio, an omni is a good choice here. With an omni, other stations can digipeat (Digital Repeat) through you. If you have a beam up and the station wanting to digipeat through you is to the back or side of your antenna, it might make for poor retransmittal of the data.

Buying or Building That First Antenna

Antennas are mostly just wire. For a first construction project, this is what most of us attempt first. Dimensions and detailed construction drawings for antennas such as 1/4 wave ground planes, dipoles or a vertical can be found in almost any amateur radio publication.

Building an antenna is usually a rewarding experience. Making that first contact on an antenna you built makes all the cutting, measuring, drilling and soldering worthwhile. There are several beam antennas that can be built such as a quadyagi, that can be built for a few dollars out of lumber and wire that have excellent performance. Larger beam antennas as found in the ARRL Handbook require specific sizes of aluminum tubing and the dimensions are usually very specific, down to the 64th of an inch, and should be attempted only after some experience has been acquired building other antennas.

That first antenna is going to be the benchmark to which you reference all other antennas you might try. Remember that if you hear the other stations you can probably talk to them. Mount the antenna with care and please be careful. Something else to remember is that although an antenna is a thing of beauty to us, it might not be to your neighbors. Think about starting off small and working up to something else larger after they have gotten used to the idea of having an amateur radio operator in the neighborhood.

73 and GL Gerry WD4BIS

Portable Antennas and Such

Long ago, shortly after the last of the dinosaurs left the planet, but before the invention of MTV, a brand of ham radio called QRP was born. Actually, I had the pleasure of seeing it emerge into a more mainstream part of the hobby, and of being personally afflicted by the QRP bug. That led to some interesting outdoor hamming, and outdoor QRP hamming requires antennas that are effective and reasonably portable.

At the risk of being misunderstood, QRP is more popular than most people imagine. The problem is that a lot of hams are running QRP and don't know it. They are putting 100 watts into their feedline, but not much of it is getting to where it can do any good. The enemies here are losses, and radiated energy going off in the wrong direction. A quick look at each....

The ground losses of a vertical antenna can be modeled as a resistor in series with the base of the antenna. For a 40 meter mobile whip, mounted on the bumper of a car, that resistor can be up around 10 ohms. However, the feed point impedance of the

antenna is somewhere in that same ballpark, with a bunch of capacitive reactance. So even if you get a perfect, lossless match to the antenna, half your power is going to vanish into that loss resistor, and there isn't a whole lot you can do about it. And harsh reality is even less attractive than what I've described. You have to add in some other losses we haven't even discussed.

So much for losses.... on to energy going off in the wrong direction.

There is a hole in the ionosphere, and it is directly over your head. The higher your transmitting frequency, the bigger the hole. If you're radiating most of your power nearly vertically, a lot of it is escaping through the hole. Only that part below a critical angle, related to frequency, will be bent back to Earth. On 80 meters, this isn't too much of a problem, because even directly vertical energy is usually returned. By the time you are at 20 meters, however, the hole is pretty big, so you need a low angle of radiation. By the time you get up to 2 meters, the hole covers the entire sky, so, no skip.

For working DX, the big benefit of a beam is that it pulls your angle of radiation down. The forward gain and F/B are great, but that low angle of radiation is very important in working the far away weak ones.

For reasons that I don't understand at this point, one of the effects of a poor ground on a vertical antenna is loss of low angle radiation. So for that case, a lossy ground gives you a double whammy.

So, with all that under our belts, what do we do for something portable, efficient, and with a good angle of radiation? Here are some solutions, and where I've used them.

1. *The Humble Dipole*

All things considered, a dipole is quite a good antenna, for some circumstances. On 40, I made up a dipole, fed with 40 feet of RG174.

For the top, I used a lightweight wire that used to be available from Fair Radio. Its original use was for the "Mae West" emergency transmitters used in life rafts. The wire had to be strong, light, and stretch resistant. The "wire" is actually a fiber core, with some kind of phos bronze braid woven over it It is great for portable use.

I put clips on the end of the dipole, and marked points on the dipole where I could fold the ends back, and clip them to wire, forming a 30 meter dipole. For 20, I would fold the ends all the way back to the center. Of course, the drawback of this system is that you have to raise and lower the antenna every time you want to change bands.

For feedline, I used 40 feet of RG174. It is light, and the losses are still well within bounds.

On 40, I had many pleasant contacts with this arrangement.... leaning back against a tree at Scout Camp, watching the shadows and skip get longer on 40. With 5 watts CW, I had all the contacts I wanted with the dipole, and many of them were 1,000 miles or more.

2. *The Inverted L*

If you end feed a half wave, the impedance is very high, and the need for ground is minimal. Of course, you need a tuner, but you do gain some flexibility in frequency coverage.

One easy way to accomplish this is to lob one end of a halfwave up in a tree, inverted L fashion. The quarter wave away from the transmitter actually does most of the radiating, but you'll get a mix of horizontal and vertical radiation from this arrangement, and that is generally a plus.

You do need a ground with this system, but it doesn't have to be a big one. With 3 15 foot radials, I've had very good results. My rule of thumb is that you keep adding radials until grabbing the case of your rig does not change the SWR.

Since the feed point impedance is around 2,000 ohms, 10 ohms or so of ground loss are completely insignificant.

3. *The Telescoping Vertical*

More recently I've gotten into "doing" islands. Antelope Island is a short drive from my home, so I decided to buy a deep cycle battery and lug my 100 rig and tuner to the island for a little outing. I also decided that I wanted to work 20. My solution for this outing was to purchase 6 pieces of aluminum tubing, each 6 feet long from Texas Towers. Each piece nests inside the next large piece.

I cut 1 1/2" slits in one end of the five largest pieces,

and put a hose clamp around it. This lets you slide telescope the tower up, and lock each piece in place with the clamp. Total height of the extended antenna is 33.5 ft. For guy connections, I used small D rings, held in place with the ever popular hose clamps. I got a terrific deal on a big spool of parachute cord, and I use that for guy lines. A small plastic bottle insulates the base from ground, and a solder lug, riveted to the bottom of the antenna, serves as a connecting point

To operate, I set up the antenna, and lay out four 33 foot ground radials. I place my tuner at the base of the antenna, and hook the radials to chassis ground, and the base of the antenna to the "hot" lead. Tuneup is accomplished by setting the rig to AM, and doing a stretch between the mike cord and the base of the antenna.

On 20, this really "pops". I've worked some decent DX from Antelope Island, and I've had stateside island hunters at 14.260 ask if I was running "power". I've never tested it on 30, but it does model well on the computer, and on 40 it does a very respectable job.... much better than a trap vertical. On 17 meters and above, it develops a lot of wasted high angle radiation, so if I ever use up there, the plan is to not fully telescope the antenna.

So, if you see a guy at Scout Camp, or out on an Island, having a ball, it might be you, using one of these simple, effective antennas.

Denton Bramwell, K7OWJ ❑

May Meeting: Unraveling the Mysteries of FM

With the explosion of no-code Technician operators on the two-meter band, it may well be that FM is now the most heavily used mode in Amateur Radio. But FM has many characteristics that may seem strange to those experienced in AM or single sideband operation.

How do you tell the difference between low audio and a weak signal? Why does increasing power or improving an antenna sometimes seem to make no difference? When you have trouble hearing a station through a repeater, how do you tell whether the problem is the other station getting into the repeater, or you hearing the repeater?

Why are signals often uncopiable when the signal strength indicator on your radio reads full scale? What causes intermodulation? How far away from another FM channel must you operate to avoid interference?

These are questions that should be explored at a club meeting by a qualified person. Unfortunately, none was found who was willing to present such a program, so the Board had to settle for Gordon Smith, K7HFV, noting that, at least, he would speak free of charge. Gordon will say something about the FM mode (we don't dare speculate just what) at the next meeting, to be held May 7.

Gordon says that he considers himself qualified for the task having destroyed several models of FM radios, and having ":talked a lot on FM." He indicates that the program will be enhanced because he thinks he can borrow "one of those service thingies with all the pretty numbers that light up."

Gordon also indicates that he will be able to give "some demonstrations." Just what they will be and whether they will have some relation to the ostensible topic is unclear.

The Board recommends that everyone attend this meeting despite its expected quality. One member was quoted as saying that "If just one person such as Gordon can be helped by this these meetings, they are well worthwhile."

Gordon has indicated to us that one of the things he likes best about presenting UARC programs is the chance to write about himself in the third person.

Gordon, K7HFV ❑

Editors Note: One of the things this editor likes best about Gordon's writing is his subtle humor, sharp wit and his obvious command of the Kings English, ergo, the forgoing piece. . Gordon, your work is appreciated. ❑

Two Meter QSO in Progress

KA7NFF this is KJ6TL. Are 'u there Dennis?

This is KA7NFF. Hi Rich, how ya doin'?

Oh pretty gud I've been thinkin' 'bout goin' fishin'. ***M***

Really? Where ya goin'? ***MA***

I think I'll jus' go up to Strawberry. I hear the fish hav' been bitin' pretty gud. .***MAY***

This is KA7NFF fer id. Well you need any assistance on the lake? ***MAYD***

Sure Dennis, you know you 'r always welcome! ***MAYDA***

When 'u goin'? ***MAYDAY***

Probably next Tuesday. I've got the day off. This is KJ6TL back to 'u. .***MAYDAY! MAYDAY! MAYD***

Hey Rich did u hear a break?

No, but maybe we ought to leave a little space. This is KJ6TL. Oh I've got to tell you about last Saturday!

This is KA7NFF. Did your XYL finally upgrade?

Richard - KJ6TL ❑

The UARC Board Gets Silly

For those few who had the misfortune to be listening to '62 Thursday night, April 9, around 2130 local, the Board apologizes. This was a belated impromptu April Fools Joke. If you missed this command performance, asking a board member will likely get a flat denial of any involvement or responsibility.

Field Day Chairman Found

A most remarkable thing has happened: Someone has volunteered to be Field Day Chairman. Joel Neal, KC7UBP, has volunteered to fill this prestigious post and will be coordinating efforts to put together this year's Field Day entry one of the biggest events in UARC's yearly schedule.

Of course, Joel can't take care of the whole event singlehandedly. As chairman, he needs a committee to chair. So volunteers are still needed to help with all aspects of Field Day. We need people to operate, people to get the generator in top shape, people to help train others how to use the logging program, and people who are good at Dutch oven cooking. Even the most coveted job is still open: towing the portajohns to and from the site. There are many other enjoyable jobs still available more than space permits us to list. But, if you would like to help plan, prepare for, and/or execute this event, get in touch with Joel. His phone is 352-0322.

Field Day is a national contest to be held, this year, on the weekend of June 27 and 28. It is a contest when everyone takes to the outdoors, because the premium (in terms of contest points) goes to the groups operating portable and mobile stations.

UARC enters as a club each year and uses the event as a family outing as well as a chance to operate a good HF station. Traditionally (at least since 1992), UARC goes to an unimproved site near the Payson Lakes campground in the mountains above Payson Utah Participants start arriving as early as Thursday night before the Field Day weekend, and come and go until the last contact is made and the last antenna torn down, sometime on Sunday afternoon.

If you've never experienced a Field Day, give it a try! ❑

Utah Amateur Radio Examination Schedule for May

05/20/98 (Wed.) Provo
Contact: Steve Whitehead, NV7V
Phone: H 465-3983 B 225-5200

05/23/98 (Sat.) St George
Contact: John Hunt, K7XE
Phone: (435)674-9613

05/26/98* (Tue.) Salt Lake City
Contact: Eugene McWherter, N7OVT
Phone: H 484-635

*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 ❑