UARC ATV Repeater Gets Checked Out

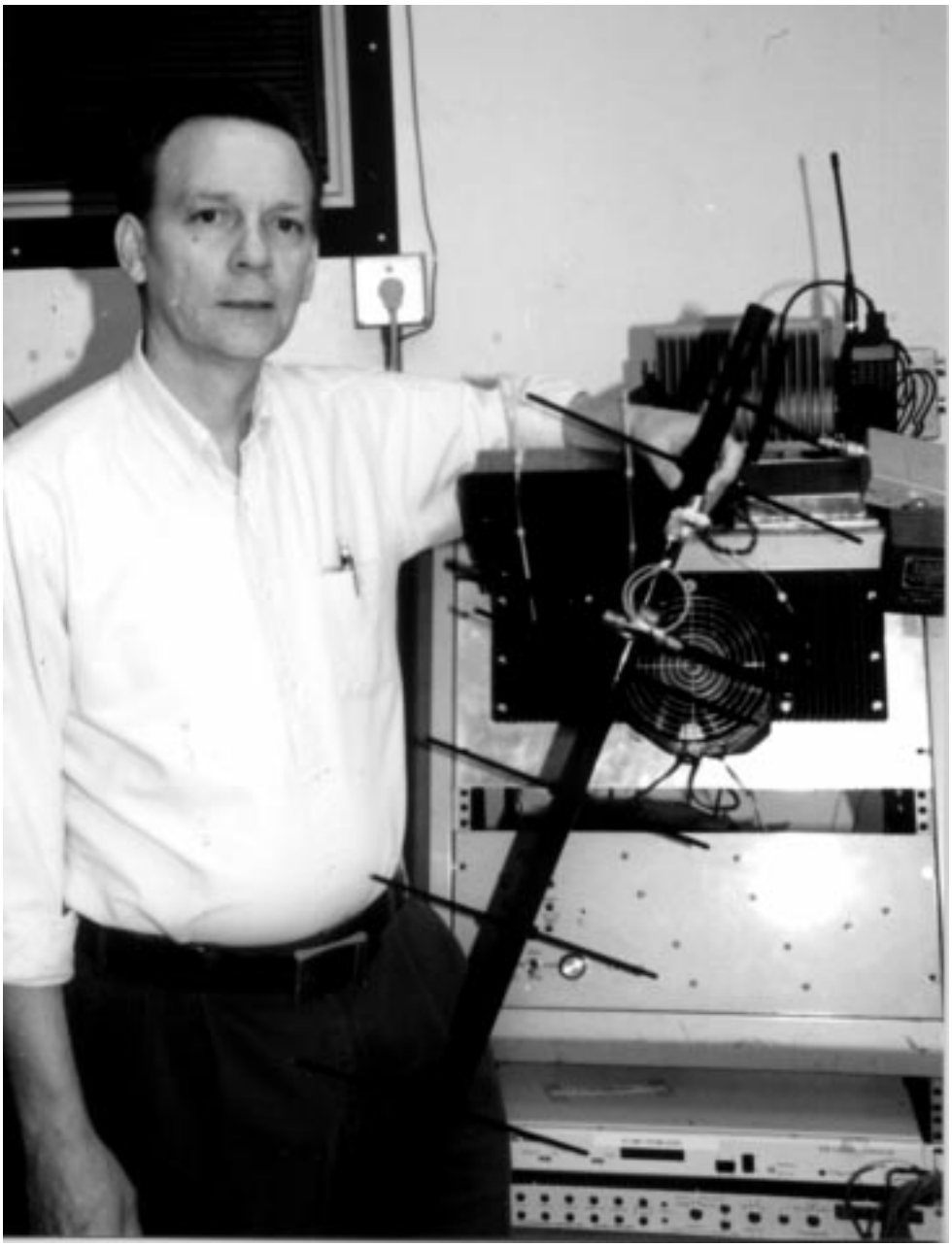

Photo: Ron Speirs, KC7MYS

Dale Jarvis, WB7FID, holding a 10 element antenna, stands next to the ATV repeater rack containing both the visual and aural transmitters for the ATV repeater, video processors, gen-lok, ID'er, vestigial sideband filter, isolators, and power supplies.

Volume XLIII Issue 3, March 1999

The MICROVOLT

Periodicals Postage Paid

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U.A.R.C.
c/o Russell Smith
2684 Kenwood Street
Salt Lake City, UT 84106

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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*" 2684 Kenwood Street, Salt Lake City, UT 84106

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.

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, KD7ZDZ, 2684 Kenwood Street, Salt Lake City, UT 84106 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.

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. 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 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. ❑

UARC 1999 Board - Partial Listing

President: Gary Openshaw, KC7AWU	484-3407
Exec VP: Maurine Strektenfinger, KC7HOZ	254-1536
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

❑

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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 ISP, for the donation of this Web-Page service. ❑

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

The Microvolt

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

Volume XLIII, Issue 3 March 1999

Photo: Steve Perry, N7SWP

QST From the Prez

UARC has some activities which you need to put on your calendar.

The support to the UARC meetings has been marvelous. We invite everyone to attend on the first Thursday of every month, (Except July and August). Thanks to those who are supporting the meetings.

Scout-O-Rama is May 1st. Eugene Christensen, KC7CSE has been asked to be in charge of the Amateur Radio part of it for UARC. He could certainly use some help. Please contact him if you are interested.

June 25th and 26th will be Field Day. Joel Neal, KC7UBP has been asked to chair the Field Day committee. Also, he could use some help. Please contact him.

Steak Fry is July 17th at the Spruces. Members get a really great deal so be sure to renew your UARC membership.

We will be having work parties at Scott's Hill. Right now we need donations to insulate and sheetrock the building. Please contact Bruce Bergen, KI7OM.

Help is needed for the Club Station to be manned and run. Also there are a couple of antennas to be put up.

We still could use some people for the Sunday Night Net. Please contact Maurine Strektenfinger, K7HOZ.

I listened to the UARC Information Net last Sunday evening, plus received several telephone calls as to why the club did not tape the UARC meetings. It takes a lot of time to set up and do each month. All we need is people to help.

Thanks to all those who do what they do.

Thank you. and 73.
Gary Openshaw, KC7AWU ❑

Photo: Ron Speirs, KC7MYS

Dale Jarvis, WB7FID, a moving force behind UARC's ATV repeater.

Featured Member of the Month

Featured this month is Dale Jarvis WB7FID. In 1967, while a student at Dixie College, in St. George, Dale met another student who had been a very active ham for many years. That student had a lot of experience in many different areas of ham radio and Dale was very impressed by how many things there were to experience in the hobby.

Shortly after that first year at Dixie, Dale served a mission for the LDS church in Uruguay and again was really fascinated by the few hams that he met there. On two different holidays, Dale and his companion visited a Urugauyan ham who made a contact on the HF radio bands for them to talk to their respective families. The companion was able to talk with his family but on both occasions propagation closed down between the US and Uruguay before Dale was able to contact his family. Upon returning home he went back to Dixie College where he received his Associates degree and then continued his education at BYU where he obtained his Bachelors degree in Electronic Engineering Technology.

Dale was initially licensed as a Novice while at Dixie College and now has his extra class license. When first licensed at Dixie College His first major project was building a 5 band CW transmitter for use on the Novice bands.

While a student during the mid 1970's, Dale was a member of the very active BYU Ham Radio Club. Experienced student club members taught him more detail about the multiple facets of amateur radio, many of which he now enjoys. During college in the '70's Dale built the first prototype Utah county autopatch for the UARC 146.76 2M repeater. In the early days of slow scan TV, (SSTV) he built his own slow scan monitor from scratch. He also built an amateur TV fast scan repeater in the mid 70s and had it operating up on Point of the Mountain through the mid '90's Read about it at: http://uugate.ampr.utah.edu/utah_atv/wb7fid_a.htm. . Dale is now working on part of a new ATV repeater (http://uugate.ampr.utah.edu/utah_atv/newfid2) for UARC to be installed on Farnsworth peak, the location of the 146.62 repeater. He is also fascinated by moonbounce, amateur radio satellite communication, and enjoys the 160 Meter band. A little known part of his life, at least in the Ham community, is his passion for playing the cello and teaching children to play the cello and violin.

He has been the UARC host for the Utah county side of the 146.76 repeater autopatch with the phone line in his home interfacing to the link from Lake Mountain. Dale along with Clint Turner, KA7OEI, are the ATV repeater engineers.

Dale, we wish you the best of luck in your many endeavors and thanks so much for helping out with the autopatch on the 146.76 repeater.

73 N7HVF, Linda Reeder ❑

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. Leave your name, telephone number and a short message on the answering machine if no one answers and your call will be returned. ❑

A Blast From the Past

I thought it might be of interest to put this meeting of November 10, 1930, into a time line perspective. The Stock Market Crash of October 1929 had occurred a year before, in October of 1929, and the beginnings of The Great Depression, which would reach it's depths in about two years time, was already very much apparent. John Bowman was Salt Lake City Mayor, Utah had a Democrat in the statehouse with George H. Dern, the president of the LDS Church was Heber J. Grant, and the U.S. President was Herbert Hoover.

The meeting location, 726 Hawthorn Avenue, has since been demolished and replaced with an apartment complex. Hawthorn Avenue is a short (narrow by Salt Lake City standards) street just east of Trolley Square and approached from 8th East. I would imagine that the home at 726 was very much like the other homes of that era which are still extant on Hawthorn.

Alan, K7OPT ❑

November 20, 1930.

The regular meeting of the Utah Amateur Radio Club was held at 726 Hawthorne Ave., with fourteen members and non members present, President Carman in Chair.

The reading of the minutes of the last meeting were read and approved.

Mr. Irvine next presented his talk on the Dynatron Oscillator. The preface stressed the importance of accurate frequency measurement, and explained the disadvantage of frequency meters as ordinarily used in the past by amateurs pointing out their lack of accuracy. This eliminated the ordinary induction type of frequency meter where a flash or neon lamp is used as a resonance indicator, and the 1929 heterodyne meter which up to the present time has been the most accurate meter available to most amateurs. This brought the subject down to the 1930 frequency meters exemplified by the Dynatron Oscillator, the action of which was explained in detail, and its accuracy of frequency measurement to within 0.1% was brought out.

The talk was followed by a general discussion.

Mr. Irvine expects information later relative to the use of the dynatron oscillator as a power oscillator which he will present at a later date.

The secretary was instructed to write the R. C. A. for copies of their Radiotron Technical Bulletin.

Mr. Lambert then presented his talk on Amplifiers, explaining the action of radio tubes when used for audio amplification. The voltage transfer of the tubes was explained when using either resistance or transformer coupled amplification withthe percentage gain in well designed amplifiers. A specific case was calculated as applied to the speech amplifier of a phone transmitter.

A short recess was taken for tasty refreshments.

Proceedings were afterward resumed with the initiation of five candidates, Mr. Carter being the first to receive the mysteries of Hamdom. The next victim was Mr. Lambert who was followed by Mr. Roth, Mr. Shurtluff and Mr. Chamberlain each in turn.

The following papers were assigned for the next meeting: Resonance, Mr. Giles; Continuation of the Dynatron Discussion, Mr Irvine; and NO-PA, Mr. Green.

It was suggested, and seemed to have the hearty approval of all, that all questions relating to the talks be postponed until the speaker had finished.

The next meeting will be held at 8pm Dec. 4 at 1323 East Sixth South.

Receipts $1.00

Adjourned.

W D Green-W6DWH
Secy-Treas.

Get Your Membership Renewal Extended - Free -

I'm excited to announce that the UARC Board has approved an offer to all members of a free one month extension on their membership for each new member, or lapsed membership (must be 12 months or more lapsed), they are successful in getting to become members of the club. What this means is that if you have friends or acquaintances who are not UARC members, you will be able to get a month's extension on your own membership for each one who joins.

It is hoped that this offer will provide some small incentive for each member to go out of the way to invite new members into the club. Simply have the new member mention and note your name as the recruiter when they join and Russ, KC7ZDZ, our Secretary, will see that your membership is extended a month for each.

Bruce, KI7OM ❑

What UARC Does For Its Members

Every month we meet together, visiting with old friends and making new ones. Even though we come from all walks of life and backgrounds, every person there has one common interest that brings us together: Amateur Radio. Some of the best friends I will ever have, I met through UARC and Amateur Radio. Also at our monthly meetings we bring in people who motivate us to try new things and to help us understand this hobby and all its many facets. If you haven't been to a meeting lately, you should try it. But this is only one thing that our Club does for us.

Did you know that UARC supports 3 repeaters ? The 146.620, 146.760 (with two autopatchs) , and the 449.100. We build them, install them, and maintain them. That is **work**! We have a few very dedicated members who climb mountains and towers in good weather and bad just so the rest of us can talk. It takes lots of time and money. We are also building a new repeater on Scott's Hill above Guardsman Pass. This repeater will be linked to 146.620 , and as a result we will get into the Uintas and Wyoming. We still have much work to do on Scott's hill, and would love your help.

We have just finished our Club Station, where our members can enjoy operating the radios and learn more about the hobby. This club station has been a dream of UARC since it started way back in the 1920's. This was also a very expensive project.

If you have ever been to Field Day, you know what fun it is. We go to a mountain top and set up stations , antennas, and tents; then spend 24 straight hours contesting to see how many contacts we can make. We get dirty and sunburned, and have the greatest time. All we need to do is bring something for the pot luck dinner, and UARC provides the meat for a wonderful Saturday Dinner. Great friendships are also made there.

We don't want to forget the Steak Fry in July. What a wonderful day in the Spruces. For only $2.00 per member, we get a 12 oz. steak broiled to perfection with all the trimmings...including desert !!!

Then there is the MICROVOLT!!! Every month except August, we get a great magazine. It's filled with great articles of interest to everyone. Much time, effort and money goes into the writing, printing and mailing of our newsletter.

It takes many people to make UARC run smoothly, and they donate a tremendous amount of time and effort so that we can enjoy all the benefits of it. Our Club is only as good as the people who make up its membership. I guess that makes it a great Club.

CUL - Maurine, K7HOZ ❑

March Meeting: Computers in Amateur Radio

Some people have said we're not getting enough new people into amateur radio because the interest of today's young people is in computers. Well, we can't argue that there is a lot of interest in computers, but there's no reason the two have to be mutually exclusive. Computers and amateur radio can actually complement each other quite well.

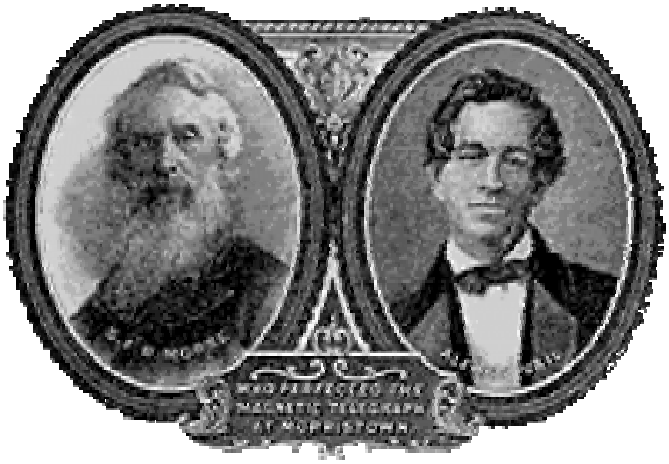
The next meeting of the Utah Amateur Radio Club will be held on Thursday, March 4, at 7:30 p.m., and the speaker will be a familiar figure to many in the club: Tom Schaefer, NY4I, UARC's president in 1998. Tom will show us some of the many ways a computer can be used in the ham shack.

A computer can look up the callsigns of people we work and show their locations on a map, keep our logs, aim our beams, and tell us when the next pass of our favorite satellite is coming over. It can reprogram our radios, get e-mail on the air, and let us know where the latest DX find has been located.

Tom will show us many of these tricks and tell us how to get the software to perform them for our own home computers. In particular, he we look in some detail at APRS, the Automatic Position Reporting System, and logging software. APRS is a growing facet of the hobby that allows hams to use packet radio to pinpoint the locations of other amateur stations on a map. Logging software can be particularly valuable for the DX hound or the contester. It isn't quite to the point where you can just turn it loose to work the contest while you watch TV, but it's getting close!

Of course, the meeting will have all the customary features. Fred, the book lady, will be there with all the latest ARRL publications. There will be a chance (often disillusioning) to have "eyeball QSO's," with some of the folks you have worked on the air. And, the famous "Dime Lime" or "Meeting After the Meeting" allows a chance to check out the most popular kinds of pizza. Don't miss the fun! Gordon, K7HFV ❑

What Is the Morse Code? Part 2



Samuel F. B. Morse and Alfred Vail - whose code are we really using and why is the Morse name attached to what we as Hams use even today?

In the last installment we looked at the two "Morse"codes that came into common wire and radio use: the American Morse Code and the Continental or International Code. Now let us examine some of the earlier code evolution.

If you had to learn the *original* Morse Code, you wouldn't find it much of a chore. It only had ten characters: the digits 0 through 9. And it only had dots --no dashes. But, then, Morse never intended that anyone would need to learn to copy the code by ear. Samuel Morse's original idea for the telegraph was quite different from the system that finally found common usage.

Rather than a *sounder*, Morse envisioned the receiving apparatus to be a *recorder*, a device which wrote the dots and dashes on paper tape. In fact it is ironic that most of the time Morse spent developing the telegraph was used to perfect the recorder, the component that was soon abandoned.

Morse apparently decided that it was practical to count up to five dots in a row, but more than that became lengthy or error-prone. So his code for the numbers 1 through 5 was simply the corresponding number of dots. For six through zero, those five codes were repeated, but with a slightly longer space appended to the end. This code was devised in about 1835. The slight timing difference between, say, a 1 and a 5, would likely have made this code very difficult to copy accurately.

But how do you get letters from numbers? That was done with a code book. Morse assigned numbers to all the words in the dictionary. Numbers were also assigned to the individual letters so that proper names, foreign words, and other combinations not in the dictionary could be sent. Morse spent years working on the code book, although it was never used in practice except for demonstrations.

This original code is sometimes called the "double translation" code, because of the two steps required to decode it. The first was to translate the recorder dots to numbers, and the second to translate the numbers to words.

In 1837 Morse was joined by a co-developer, Alfred Vail. Vail was fascinated by Morse's work and started doing his own experiments in New Jersey while Morse continued his work in New York. It was actually Vail who devised the idea of varying key closure times to produce different signaling elements. His code for characters really consisted of five elements: the dot, the dash, a longer dash, a really long dash, and an internal (i.e. within a letter) space. With these elements he assigned combinations to directly represent the letters of the alphabet. Vail's original code, devised in 1838, had several duplicated sequences, requiring the operator to figure out which letter was intended by context. G and J, for example, were both .. . and were indistinguishable.

This makes it clearer how much of a simplification Gerke later made when he reduced the number of character elements from five to just two: dots and dashes. The use of the same symbol for I and J doesn't seem so bad either compared to Vail's four duplications.

Vail apparently had a sense of what would later become known as communications theory. In November and December of 1837, he visited the print shop of Louis Vogt and looked at type drawers to see which letters were used most frequently. He then assigned shorter code sequences to the most commonly used characters. Thus, the code gained reasonable speed efficiency.

Not much is recorded about Vail's code development in the next several years. For some reason he made major changes and by 1843, the code was barely recognizable as having descended from the 1838 version. The final code, tabulated in 1844, was more efficient than the 1838 version, but only slightly so. One major improvement was that the duplications were eliminated. Now every letter had a distinct symbol.

Morse was apparently unaware of this whole line of development, even when the code that would bear his name reached its final form. Six years after Vail had undertaken code development, Morse was still refining his codebooks.

Apparently Morse was hungry for the spotlight and systematically avoided giving credit to Vail for his accomplishments. Vail not only made major improvements to the telegraph to make it practical, but also convinced his father, Judge Stephen Vail, to provide Morse with much needed funding. According to Vail's widow, it was only on his deathbed that Morse admitted how much Vail had contributed saying,

"The one thing I want to do now is justice to Alfred Vail."

Morse was often angry that Vail's improvements were as major as they were, and this may have been the reason Vail waited so long to tell Morse about the dot/dash code. As was the case with other Vail contributions, Morse first opposed the idea violently, but later adopted it and claimed it as his own.

The idea that code could be copied by ear was apparently an accidental discovery rather than a stroke of genius. Operators, who spent many hours using the equipment, discovered they could distinguish the letters just by listening to the recorder mechanism. Morse was much opposed to this practice and threatened to fire any employee caught copying directly by ear. The ever-practical Vail, however, saw it as a step forward.

Morse wasn't the only one with reservations. Some administrators of telegraph systems were worried that the accuracy could not be guaranteed. With time, however, operators demonstrated they could copy code just as well by ear as by reading the recorder tape, and they could do it a great deal faster. Eventually telegraph companies and railroads changed their policies and the sounder replaced the recorder as the standard receiving device.

We may sometimes think that amateur radio is the only thing keeping telegraphy alive in the 90's, but that is not quite the case. There are some hobbyists who still engage in American Morse telegraphy using sounders and wirelines. They use Bell 103 modems (which have the nice property of passing everything from DC up to 300 baud) to connect up their keys to remote sounders. They have conference bridges available, so they can even have roundtables. They publish papers on how to learn "real Morse" for the operator who knows only the International Code. Statements such as "There is only *one* Morse Code" abound.

Some amateurs use American Morse on the air, as well. (The FCC has indicated informally that this practice is acceptable as long as they identify in International.) Some of the retired telegraph operators have a net where they can go back and forth just as they did when the telegraph was a primary means of wire communications.

So isn't it this an interesting situation? We have two codes, both called the "Morse Code" in one context or another, but one was invented by Alfred Vail and the other pioneered by Frederick Gerke.

Gordon, K7HFV ❑

UARC News

Steak-Fry Date Set

UARC's annual Steak-Fry, one of the biggest events of the year, has been scheduled for 1999. It will be on Saturday, July 17, at The Spruces campground in Big Cottonwood Canyon. This is the same site that has been used for the last several years. Prices and schedules have not yet been announced, but, typically, the event starts with a swap meet at about 2 p.m., and dinner begins about 5 p.m.

It may seem a little early to be thinking about going up a canyon to find cooler weather, but this is a good time to mark the date on your calendar. If you were planning to do anything else this summer, there may still be time to move all other activities and make room for this all-important one.

The other big summer activity, Field Day, will take place on the weekend of June 26 and 27. (Field Day, a national contest, is always on the fourth Saturday of June and the following Sunday.)

Gordon, K7HFV

UARC Gets a New Historian

Ron Speirs, KC7MYS, has agreed to serve as the club historian. Those who attended either of the last two UARC Field Days may have had the chance to see

some of Ron's great photography. Both years he was able to process the color slides on site and have a slide show Saturday night using slides taken the same day.

We hope to take advantage of Ron's talent for photos to keep in the archives and to enhance *The Microvolt*. Ron will have a chance to record events at the meetings, events such as Steak-Fry and Field Day, and even, perhaps, photos of speakers for upcoming meetings.

Our thanks to Ron for taking this important position!

Gordon, K7HFV

The NEW WB7FID ATV repeater
Why isn't the new repeater on the air by now?!?

We have been making progress: A recent Space Shuttle mission (the first one to the new Space Station) was carried in the Salt Lake City area on ATV. The frequency is 426.25 MHz (Cable Channel 58) and the polarization is Horizontal. The approximate coordinates of the transmitter are 5600 South and 900 West. We are using the WB7FID ATV repeater transmitting equipment (it seemed like a good opportunity to give it a thorough testing) and will move the transmitter to the mountain as soon as we can...

Well, I'm glad you asked that... We can blame at least part of it on ATV... that's Advanced TV, or the Digital TV broadcasting that you might have heard about...

As is the case with almost all other television markets, the major high-power stations are trying to decide how to best implement Digital TV. Since the analog system and the digital system will co-exist for a number of years, new, parallel facilities must be built to support the digital broadcasting.

Contrary to what one might think, not all broadcasters are happy with the thought of having to spend millions of dollars of their own money in order to do this federally mandated upgrade, so one of the strategies is to consolidate transmitting sites among the various broadcasters in a geographical area.

It is this planning and reorganization that is largely responsible for the delay. Plans are not yet etched in cement and in the interim, since we are their guest on the site, we are more than willing to work with them to facilitate this change. In the meantime, we are staying out of the way, yet reminding them that we are still here.

Unlike some unfortunate amateur radio groups elsewhere, it is not so much a matter of if we'll have a permanent home when all is said and done, but more along the lines of exactly where we'll be on the site.

In the meantime, we're still working on the new repeater... [Editors Note: See the cover photo]

Clint, KA7OEI

Club Station Update

UARC's club station will likely be the site of an open house sometime in March. The station's first contact was made last fall on 40-meter CW. Since then, it has been used for HF, APRS, and even for a Red Cross exercise. This has been possible due to many Saturdays of hard work running conduit and semi-rigid feedlines past four stories of the Red Cross building.

The station is the result of an agreement among UARC, Salt Lake County ARES, and the American Red Cross. It is expected to be used for training and casual operation in normal times, and for emergency communications in times of emergency. UARC is providing the equipment and the Red Cross provides space in their building on the corner of Fourth East and Fifth South in Salt Lake City.

Considerable additional work has taken place since the initial contact. One job still left, however, is to put up the (non-ham) antenna for the Red Cross's own communications. (This is one of the things we agreed to do in return for the space for the station.) If you would like to help with construction of the station, whether to mount antennas, make electrical runs, build furniture, or help with wiring the station itself, contact Alan Seyboldt, K7OPT, at 572-8112.

It is hoped that space in the building can be used, in addition to the club station, for classes, demonstrations, and small meetings. (Unfortunately, the space is not large enough for our regular monthly meetings.)

Gordon, K7HFV ❑

UARC and The Great Salt Lake Council And Jamobree On The Air - JOTA

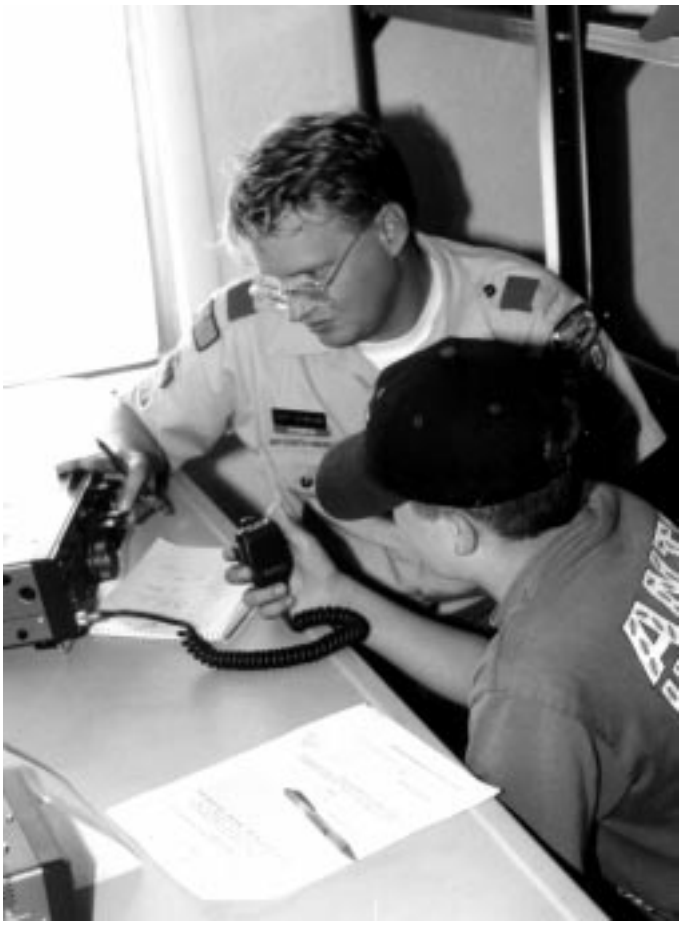


Photo: Bruce Bergen, KI7OM

Brett, KC7WRR, helps a Scout participating in the JOTA with a QSO out of Texas.

For the past forty-one years the third full weekend in October has been set aside by scouts and their leaders for JOTA – Jamboree on the Air. This is now the largest scout activity in the world. Each year approximately 400,000 Boy and Girl Scouts and Guides and thousands of Ham Radio operators gather on the airwaves to meet other scouts and learn about the world of amateur radio.

The event is organized by the World Scout Bureau in Geneva Switzerland (HB9S). On air activities start Saturday at 00:01 local time and complete at 23:59 on Sunday. 1998 marked the first organized JOTA event held in the Great Salt Lake Council (Salt Lake area). (The Davis County club has hosted JOTA activities for the past 2-3+ years.)

17 October, 1998 – Approximately 115 scouts and their leaders packed up their tents and sleeping bags and made their way to Camp Pine Canyon in Tooele County. Along with the scouts many volunteers from UARC came out to share their time, equipment and knowledge. I made the drive with members of my local troop. On arrival our troop checked in the Keith Bingham, KI7SL, the scout volunteer coordinating the arrival of the scouts. Conversations on the .62 repeater and Snowbird system could be heard coming from Keith's trailer. Bruce Bergen, KI7OM, Eugene McWherter, N7OVT, Jerry, W7SAR, Brett, KC7WRR, and others were busy setting up stations and making arrangements for the following day.

Later in the evening a campfire program with Bruce Bergen as the key speaker was attended by the all at the camp. Bruce shared some of his amateur radio experiences with us and related them to the Scouting values of service and preparedness. Throughout the remainder of the evening the scouts in my troop and I took turns talking with other scouts camped at the JOTA camp in Davis County via the Snowbird system or the Antelope Island repeater.

Photo: Bruce Bergen, KI7OM

Troop 194, with Larry Finch as Scoutmaster, enjoys a beautiful Fall day at the Pine Canyon Ranch facility of the GSLC.

By morning the quiet pasture that we had camped in was transformed into a true World Jamboree. Before the Radio Merit Badge class had even started rumors

Photo: Bruce Bergen, KI7OM

The Council Training Facility at Pine Canyon Ranch was really ideal for conducting both the JOTA activities and Radio Merit Badge instruction.

Were flying around camp of contacts in Australia, New Zealand, England, Pacific Islands, New Mexico, California and many other locations. One operator, John, KM5LO, from Richardson, Texas spent several hours talking with many of the scouts that stopped by the UARC HF station.

I sent my scouts off to the merit badge class and walked around listening to various CW and voice contacts going on around the camp. Two large HF stations were set up, two mobile 10 M and four or more 2M and some others that still have me puzzled. About mid morning I was approached by Brett Sutherland, KC7WRR, and invited to try out his 10M station. This was the first time I had been on the air using other than local 2M resources. In no time at all Brett had me talking with Mary, KC8KMS, in Akron, Ohio.

Photo: Bruce Bergen, KI7OM

Jerry Wellman, W7SAR, enjoyed teaching one of the merit badge sections. Jerry, who writes a regular column for World Radio, is the recent recipient of a District Award of Merit..

As things started to wind down I caught up with the scouts from my troop. They had signed merit badge cards in hand and a spark in their eyes that told me the weekend was a success.

We packed up our camp and started the drive home. On the way back to Salt Lake we had one last QSO with a trucker in Las Vegas. When we cleared, the scout sat by me turned and asked "I want to get my license, what do I need to do?"

During the course of the weekend local ham operators helped over 80 scouts earn their Radio Merit Badge at the Pine Canyon Location alone. Executives from the Great Salt Lake Council are looking forward to another JOTA camp this fall. Mark your calendar for October 15-16 and be listening for scouts calling "CQ Jamboree."

Here are some of the international organizations who were on the air as part of JOTA.

HB9S – World Scout Bureau, Geneva Switzerland
K2BSA – Boy Scouts of America National Office, Dallas ,TX
PA6JAM – Scouting Nederland National Station, Sassenheim Netherlands
5Z4KSA – The Kenya Scout Assoc. Paxtu Station, Nyeri Kenya
VK1BP – The Scout Assn. Of Australia National Station, Canbera Australia
GB2GP – The Scout Assn., Gilwell Park, London UK
XE1ASM – Boy Scouts of Mexico
TF3JAM – Scouts of Iceland

I thought you might like to know the HF frequencies where many of this year's world wide JOTA activities will take place in October.

Band	SSB	CW
80 M	3.740 MHz	3.590 MHz
40 M	7.090 MHz	7.030 MHz
20 M	14.290 MHz	14.070 MHz
17 M	18.140 MHz	18.080 MHz
15 M	21.360 MHz	21.140 MHz
12 M	24.960 MHz	24.910 MHz

Ray Dahl – KC7YVP ❑

Other Club News

Saltlake Peaks Amateur Radio Club (SPARC) Elects New Officers

The SPARC met for the elections of new club officers on January 13th. Congratulations to our new president elect Phil Speckart (KD7CGC), our new Vice-president Rob Pectol (KK7AV), and our new Secretary Kevin Christensen (KD7CFW).

The Saltlake Peaks Amateur Radio Club is an organization begun by employees of L-3 Communications (formerly Sperry, Unisys, Lockheed, Loral, et al) located in Salt Lake City, Utah.

1999 SPARC Officers and Volunteers

Phil Speckart KD7CGC President
Rob Pectol KK7AV Vice President
Kevin Christensen KD7CFW Secretary/Treasurer
John Mabey W7CWK Education
J.D. Wallis KC7FOF Emergency
Ray Riding KC7FGT Projects & Hobbies
Wade Lake KA7NCW Radio Room & Repeater
Rick Donkin KA7MMM *The Signal* Editor & Internet
Sidney Nanayakkara N7RJS Publicity & Service

Rick, KA7MMM

Elko Amateur Radio Club Info Update

Club call sign: W7LKO ("Elko")

Monthly meeting: date/time varies, as announced in club newsletter. If you would like to attend, call the club president for information.

Weekly net: Wednesday, 1930 Pacific Time, on 449.75 MHz (down 5 MHz) in the Elko area and 146.91 MHz in the Battle Mountain area. Visitors and travelers are welcome to check in.

Primary repeaters: Elko 147.21 (PL 100.0) and 444.95 (PL 100.0), Carlin 146.800 (PL 100.0), Battle Mountain 146.91 (no PL), Wells 146.96 (PL 100). Note: the Wells repeater is down, pending reconstruction. Travelers and visitors are invited to make the widest possible use of our repeaters, which generally cover Interstate 80 from just west of Wendover to Winnemucca Nevada.

The 449.75 MHz machine in Elko, mentioned above, is a remote base used for special purposes. It is available as a general repeater, but travelers and visitors are encouraged to use one of the other machines, since they are more widely monitored.

Club President and contact person: Bill Hance, KD7CWA, phone 775-777-3344, e-mail: bhance@rabbitbrush.com

Club Secretary: Mike Barnecascel, KI6V, phone 775-738-8309, e-mail: ki6v@sierra.net

Newsletter Editor: Ron Russell, KG7OR, phone 775-738-7474, e-mail: russell@sierra.net.

The newsletter is sent directly to anyone who wants it via email, in MS Word format. Please send requests to the editor. The newsletter can also be copied from the club's web site, below.

Club web site: http://www.qsl.net/w7lko. Webmaster: Ron Barnes, N7OJV, e-mail: barnes@rabbitbrush.com.

Thanks for mentioning us in the UARC newsletter.

Ron, KG7OR

Eastern Idaho UHF Society HamFest and Computer Swapmeet

Date: Saturday, April 17, 1999
Location: Idaho Falls Elks Lodge, 640 East Elva

Advanced Registration
Tables -$5.00 (includes one admission)
Admission -$2.00

At the Door
Tables -$7.00 (includes one admission)
Admission -$3.00

Payments can be made to the Eastern Idaho UHF Society

C/O Jay Greenberg, Hamfest Chairman
2582 Granite Way
Idaho Falls, Idaho 83402
(208) 524-1388 Evenings/Weekends
(208) 526-7033 Weekdays
Email -wa4vrv@srv.net

Additional information available at the following URL:
http://www.srv.net/~wa4vrv/hamfest.htm

Jay, WA4VRV ❑

Tigger's Corner
(No Quiz this Month)

This month I wanted to give a refresher course on basic Ohm's Law theory. No doubt you've heard the terms used in Ohm's Law (Volts, Amps, and Ohms) but for a lot of people it's difficult for them to understand how these terms relate to each other, or exactly what the definition of each one really is.

In order to try to simplify an explanation of each, I'm going to be referring to an example of a water tank with a spigot and valve to help you understand these principles. Picture this:

We have a water tank (full of water), a spigot or nozzle attached to that tank, and a water valve in line with the spigot. The water in the tank exerts pressure on the valve, (more water height = more pressure). If we were to think of this pressure in electrical terms it would be our *electrical pressure* or *volts* we have available.

If the valve on the spigot is closed, no water flows, we have put so much *opposition to flow* in the line by closing the valve that water flow is completely stopped.

If we open the valve slightly (but not all the way) and allow some water to flow but oppose the full force of the water flow by not opening the valve all the way we have introduced an *opposition to flow* of water (some comes out, but slowly). The water can flow out , but only a a rate that the valve's *resistance* will allow. That's where we can say that *resistance = opposition to flow*. The electrical unit of resistance is called an ohm.

And finally we have current to deal with, The *current* can be equated to be the amount of water flowing down the pipe and out the nozzle. The maximum current of water is limited by the amount of pressure in the tank and the resistance to the water's flow (Ohms) which the valve places within the pipe.

Thus:

Volts = electrical pressure (the column of water)

Ohms = opposition to electrical flow (the valve)

Amps = how much, or the rate of water flowing out the nozzle (the current). This is determined by how high the pressure is, and it's ability to force water through the resistance of the valve.

You've probably figured this out by now, but all three of these terms are inextricably related to each other, and what's really neat about this is that you can always mathematically find and unknown value or quantity in this relationship if you know the other two values. As examples; if the pressure and opposition rates are known, you can find out what amount of current is flowing by dividing the pressure by the resistance:

Volts / Ohms = Amps

This tells you the rate or how much "water" is *flowing* in the pipe. Or, if the current (Amps) is known, and the opposition rate (ohms) is also known - but not the pressure (Volts), we can multiply: current X resistance or:

Amps X Ohms = Volts

allows us to determine our electrical pressure (Volts or Voltage).

Lastly we can also determine exactly how much opposition to flow (Ohms) we have by dividing our pressure (Volts) by our current (Amps) to find our resistance (Ohms) or:

Volts / Amps = Ohms

By the way *Ohms* is normally abbreviated using the Greek symbol Omega (Ω).

Now I hope you are too confused, because next issue we'll be doing some circuit analysis using these formulas, and I'll introduce you to some series / parallel circuits and have you doing this math all by yourself - with the answers elsewhere in the issue, of course, to check on how well you do.
See you next month.

John, KA7TGR ❑

Ogden Amateur Radio Club History

On July 12, 1982, Gordon Howes, KE7QV, and Lee Ernstrom, WA7HQD talked with Dr. W. G. Garner W7SU, at his home. The following is an excerpt of a story written by the hand of Dr, Garner which relates how the Ogden Amateur Radio Club was formed. His story marks OARC as one of the oldest organized Amateur Radio Clubs in Utah, perhaps in the nation.

In order to make the record more complete and perhaps better understood, it is necessary to delve in a bit of personal history and some of the early day history of the amateur and commercial radio activities, as I know them from personal experience, and early association with these arts and sciences in amateur and commercial fields.

As far back as I can clearly remember, it is difficult to relate to a time or era in which I was not deeply interested in the means of communication, other than by personal contact.

I learned the old Morse telegraph code at the grand old age of nine years (1911). I designed and built my own telegraph key and sounder the following year and communicated by telegraph over a land line strung on fence posts with a neighbor boy living four houses away. I read everything I could lay my hands on relative to the then rather new means of communication, "wireless telegraphy". Marconi's experiments and inventions in wireless communication intrigued me greatly. I then resolved that someday, somehow, I would have my own wireless receiver and transmitter, and become part of that wonderful means of communication in an amateur way. Many advances and discoveries were to take place in this new field, until my dreams of accomplishment in low power wireless communication could be realized.

Before high speed, reliable code communications could be achieved on a world wide basis, it was necessary for stations in the United States (most of them government owned and operated) to make drastic changes in characters (dots and dashes) of the code in use by such stations.

I am sure that most of you know or have heard of the great disaster, the sinking of the steamship "Titanic". This was at the time (1912) the largest and greatest passenger steamship ever built, "The Unsinkable Titanic". Its maiden voyage terminated by its sinking in the North Atlantic as a result of a collision with a gigantic iceberg.

All wireless stations in most of the world, except the United States, had adopted the International Morse Code as their means of communication. We stubbornly held on to the antiquated old Morse Code in our communication systems.(There are about thirteen letters that differ in their components, dots and dashes, of the two codes.) [Editor's Note: The exact number is 11. Gordon has provided more information Morse in his two part article but if you are interested in a side by side comparison go to: http://web.idirect.com/~rburnet/codes.html] This resulted in a considerable amount of confusion and somewhat hampered rescue operations when the Titanic went down. As a result of this experience, the United States did away with the old Morse Telegraph Code and adopted the International Morse Code in radio communications.

I applied for examination to qualify for an operator and station license in the late winter of 1914 and in early spring of 1915, I took and passed the examination and met the requirements for that license from the examining officer,"Mr. Redfern", Department of Commerce, Customs Office, Seattle Washington, and was issued the station call of 7EW, Evanston, Wyoming.

My first transmitter consisted of a Ford automobile spark coil, homemade spark gap, an old telegraph key and a six volt storage battery. The receiver was a homemade tuning coil with silicon detector, 1000 ohm Murdock receiver, and a homemade 23 plate variable condenser.

With this "sophisticated" home made equipment, I was able to hear a ship at sea communicating with two other amateurs (unlicensed) in the area. At the time, a transmitter that was deemed incapable of transmitting signals across state lines did not require a license from the Department of Commerce.

My next transmitter consisted of a 1/2 kW Thordarson transformer with a secondary voltage of 10,000 volts, a large fixed spark gap and a heavier key for forming coded characters in dots and dashes. The old tuning coil in the receiver was replaced with a new home made variable coupler with primary and secondary windings, a new 43 plate condenser from Sears and Roebuck and a new and improved crystal detector known as a "crystaloy" detector. This device was adjusted by simply rotating a disc instead of fishing with a "cats whisker" for a sensitive spot on in the silicon or galena detector.

About this time, Lee DeForest invented and

developed his first two element vacuum tube to replace the silicon and galena detectors then in use. This was followed by the addition of a third element called a grid that greatly increased the tubes detecting ability. DeForest tubes were prohibitive "cost wise" to the amateur fraternity, but in a few months the audiotron was produced for amateur use. This device was a cylindrical vacuum tube containing two elements for creating the electron stream, (one was a spare in case the other burned out). Three wires at one end protruded from the tube to form the connections for the double filament, and at the other end, two wires protruded for the grid and plate connections. These tubes cost about $5.00, a whopping sum for a young experimenter in those days (1916). With the addition of this new detection device (vacuum tube detector) and my 1/2 kW transmitter connected to a 40 foot two element antenna at about 30 feet off the ground, I was able to make one of the first interstate communications between an amateur in Wyoming and another in Utah. Myself in Evanston, 7EW, and Marvin S. Andelin, 6JT was the first Utah Amateur station with the power and capability of conducting interstate communications. I was happy to be a participant in the first Wyoming-Utah amateur radio contact.

With the entry of the United States in World War I, all amateur stations were ordered to be closed down and completely dismantled. All amateur radio activity ceased in the United States until a few months following the close of World War I.

In the meantime, my family moved from Evanston, Wyoming to Ogden, Utah, (366 32nd Street) where in the early spring of 1918 I again applied to the Commerce Department for a new post-war amateur radio license and was issued the license and call letters 6OT for the Ogden address.

I was then serving my apprenticeship with the Lighthouse Electric Company under the supervision of George E. Wilson and Clair Ecklund, owners of the Lighthouse Electric Company. After the required period of service and the qualifying examinations, I was awarded my journeyman electricians ticket. While at the Lighthouse Electric Company (approximately 2470 Washington Blvd.), which at that time was located next door north of the old Washington Market, I received permission to install my radio equipment in a spare room above the store, and my antenna on the roof of their building. I applied for a license for this address and was issued the call 6OZ.

The transmitter power had been increased one full kilowatt with the addition of a Benwood rotary spark gap and a sophisticated four tube receiver. One stage untuned R.F. amplifier, a regenerative detector and two stages of audio amplification were all home assembled from available commercial parts. The sensitivity results attained with this receiver were remarkable. In sensitivity, it was almost equal to the later sophisticated multi-tube jobs, available at a cost of several hundred dollars. With this equipment, communications were conducted with amateur stations in most of the United States and the Territory of Hawaii. One reliable contact was Major Lawrence Matt on St.Catalina Island off the coast of California.

In 1920, I became well acquainted with Glen Quillian at 2264 Lincoln Avenue I had coached Glen in preparation for his radio license which he acquired in the summer of 1920. His call letters were 6AEZ. Since I had no permanent place to install my equipment, and Glen had no equipment, we built a cozy shack adjoining his fathers garage. I installed my equipment there and operated under the call, 6AEZ. I was chief operator and Quillian, the second operator.

There were a few other young men in Ogden, some of whom had equipment or were in the process of acquiring some. One who had recently ordered his equipment was Ralph Flygare who lived next door north of the old Weber Academy. Another was a young man named "Cook". I cannot recall his first name. He had a 1/4kW spark outfit at his fathers residence on 24th Street between Adams and Jefferson, north side. Another was named "Crawshaw". We called him "Chickey". He was closely associated with Cook. There was one other located on Riverdale Road near Roy. I don't recall his name or call letters.

In the spring of 1921, I suggested to Quillian that we call the known amateurs in the Ogden area together for the purpose of forming an active radio club, for the purpose of exchanging ideas and discussing progress and recent developments in the field of Amateur Radio communications. Quillian thought the idea was an excellent one and I personally contacted all the prospective members I knew. The meeting was called for a Saturday afternoon, about the middle of May, 1921. Those attending were:

W. Glen Garner
Glen Quillian
Ralph Flygare
Cook

"Chickey" Crawshaw
One other (forgot name)

As the founder and organizer, I was elected President, Glen Quillian, Vice President and Treasurer. No secretary or historian was elected at that time. The President was to assume the duties of Secretary. The name of the club, by unanimous vote, was to be "Ogden Amateur Radio Club". Meetings were to be held once a month, at some specified place and time. The time, preferably Saturday afternoon, since most were available then. Thus then and there the Ogden Amateur Radio Club was born and remained active for the next few years.

I went to work for the Redfield Electric Company in charge of their radio department. While there I designed and built the transmitter, antenna and other equipment for radio station KFUR, Ogdens first broadcast station, which in later years became KLO. At that time I became studio director and chief announcer for radio station KFWA , "Browning" brothers station on Hudson Ave, Ogden, which position I held until the station was sold to an Idaho firm and moved to Idaho Falls, Idaho.

Radio station and operator licenses held by Glen Garner cover a period of 67 years: 7EW, 6OZ, 6SI, 6ZAM, 7SU, Army 6SI, 7SU, NAVY N0SJH, Air Force AF7SU, AFA5EW.

I suppose this pretty well qualifies me as being the oldest continuously active Amateur Radio Operator in the State of Utah.

W. Glen Garner, W7SU ❑

Examination Schedule for March

03/03/99 (Wed.) Farmington
Marc Uhrey, AB7PL
Phone: (H) 771-0105 (B) 536-4782

03/10/99 (Wed.) Mantua
Niko Takahashi, AA7OL
Phone: (435) 753-9544

03/13/99 (Sat) Logan
Paul Hansen, WO7N
Phone: (H) (435) 753-4843 (W) (435) 787-8374

03/17/99 (Wed.) Provo
Steve Whitehead, NV7V
Phone: (H) 465-3983 (W) 225-5200

03/30/99* (Tues.) Salt Lake City
Contact: 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 ❑

Automotive Interference Solutions

While I was considering the article on automotive noise elimination from Industrial Communications Engineers, Ltd, published in the February 1999 edition of *The Microvolt*, I came across another excellent but much longer piece on the ARRL webpage. Authored by Michael Tracy, KC1SX, and Ed Hare, W1RFI, (an appropriate vanity call), the ARRL Laboratory Supervisor. *AUTOMOTIVE INTERFERENCE SOLUTIONS ARRL Technical Information Service Information on Automobile - Radio Interference,* the article provides a resource dealing with both ways or flavors of interference from the vehicle and interference to the vehicle.

Of particular usefulness is a listing of almost all auto manufacturer's technical service resources with addresses and phone numbers along with service bulletins if available. The information was originally compiled in 1992, published in 1995 and updated in 1998.

The Internet URL for the article is: http://www.arrl.org/tis/info/rfiauto.html

Note!: This information package provides introductory information only. Additional information on this subject and related topics can be found in the following ARRL publications:

The ARRL Handbook (#1735)
Radio Frequency Interference: How to Find it and Fix It (#3754)

Both of these are available at the UARC Bookstore - visit with Fred, KI7KM, at our monthly meeting or at our booth at the Utah VHF Society Swap Meet February 27.

Bruce, KI7OM ❑