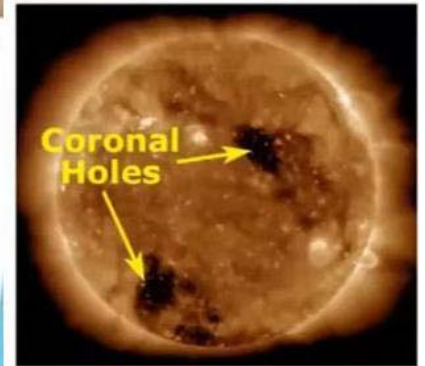
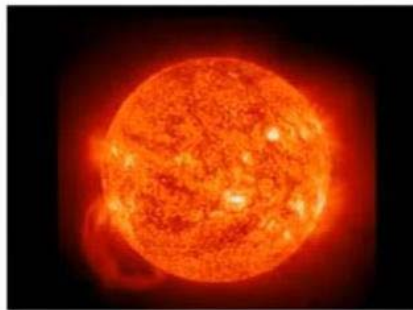


The *Microvolt*

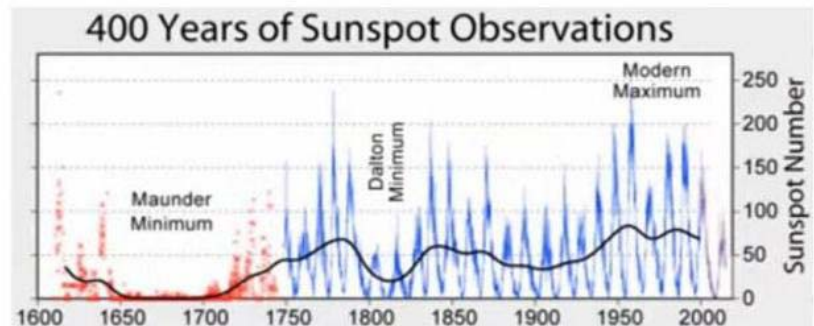
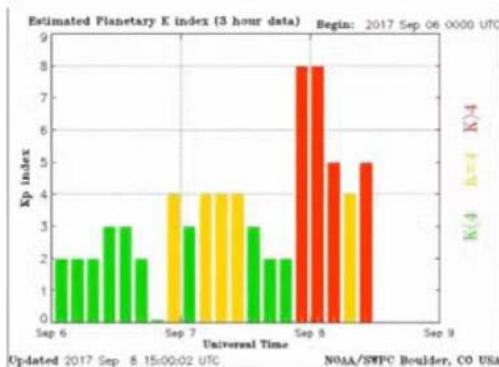
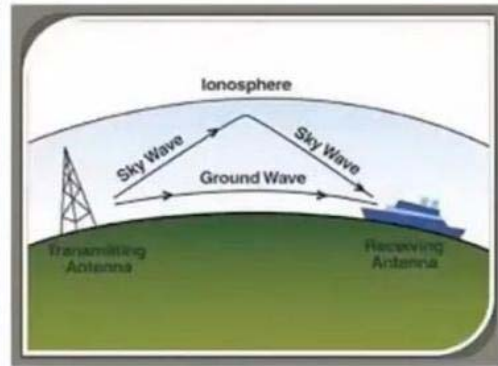
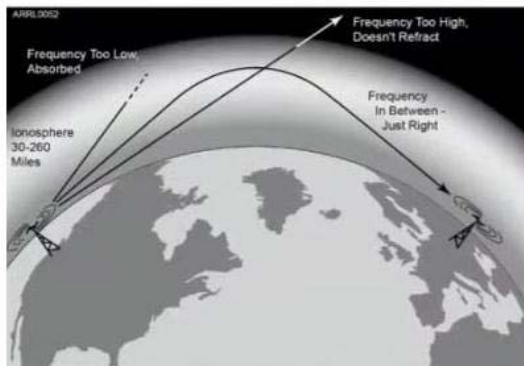
March 2021

The Sun

- ▶ 93 million miles from Earth
- ▶ 1,300,000 Earths could fit inside
- ▶ Makes up 99.86% of the solar system mass



zoom



Prologue

Publication: *The Microvolt* (USPS 075-430) is the official publication of the Utah Amateur Radio Club, Incorporated, 632 S. University Street, Salt Lake City, UT 84102-3213. It is published monthly except August. Subscription is included with club membership at \$20 per year. Single copy price is \$1.50. Periodicals postage paid at Salt Lake City, Utah. Postmaster: send address corrections to *The Microvolt*, c/o Tom Kamlowksy, 4137 Clover Lane, Salt Lake City, UT, 84124-2711.

Deadline for submissions is the 24th of each month prior to publication. Submissions by email are preferred (k7hfv@arrl.net), but other means including diskettes and typewritten submissions can be mailed directly to: Gordon Smith, 632 University St., Salt Lake City, UT 84102-3213. Reprints are allowed with proper credits to *The Microvolt*, UARC, and authors. Changes in mailing address should be communicated to the Club Secretary: Tom Kamlowksy, 4137 Clover Lane, Salt Lake City, UT, 84124-2711.

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

Meetings: The club meets each month except July and August. The meetings are held on the second Thursday of the month at 7:30 PM in the University of Utah's Warnock Engineering Building, generally in room 1230 or 2230, sometimes in 2250 or 105.

Membership: Club membership is open to anyone interested in amateur radio; a current license is not required. Dues are \$20 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 \$20 may obtain a membership without a *Microvolt* subscription for \$12. Send dues to the Club Secretary: Tom Kamlowksy, WA7ZRG, 4137 Clover Lane, Salt Lake City, UT 84124-2711. Let the Secretary know if you prefer the electronic edition of *The Microvolt* instead of the printed version.

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 146.62- and 146.76- repeaters. 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-) is IRLP node 3352. Instructions for IRLP use are on the club website.

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

UARC 2021 Board

President: Morris Farmer, AD7SR	801 278-4966
Executive VP: Lonnie Oaks, K7LO	801 255-1225
Vice Pres: Bruce Fereday, KF7OZK	801 883-9428
Secretary: Tom Kamlowksy, WA7ZRG	801 505-9134
Treasurer: Chuck Johnson, WA7JOS	801 268-0153
<i>Microvolt</i> Editor: Gordon Smith, K7HFV	801 582-2438
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Program Chairperson: Robert Jelf, KG7OHV	385 252-7900
Program Chairperson: Mary Jelf, KG7QNG	385 347-7900
Imm. Past President: Clint Turner, KA7OEI	801 566-4497

Committee Chairpersons and Members

Bookseller: Rick Gregory, KG7GOW	801 582-7783
Historian: Ron Speirs, K7RLS	801 904-3587
Field Day Chair: (To be determined)	
License Trustee: Brett Sutherland, N7KG	801 298-5399
Repeater Engineer: Clint Turner, KA7OEI	801 566-4497
Autopatch Engineer: Gordon Smith, K7HFV	801 582-2438

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IRLP Information

For information on using the club's IRLP node on the 146.76 repeater, check <http://www.utaharc.org/irlp>. The prefix code required can be obtained from the Secretary. Please do not give this out to nonmembers of UARC.

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

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



For account information go to:

<http://www.xmission.com/>

Or call 801 539-0852



The Microvolt

The Official Publication of the Utah Amateur Radio Club, Salt Lake City, Utah
Volume 64, Issue 3, March, 2021

Latest News

March (on-line) Meeting: *Keeping Your Emergency Equipment Ready*

In the past year we have seen a pandemic, earthquake, and high winds in Utah. Events locally and nationally have disrupted critical infrastructure. There will likely never be an end to situations where normal communications are disrupted and amateur operators will have an opportunity to provide a solution to the void.

But, will we be ready? Can we look on the shelf where we keep our emergency gear and find it all ready to go? Or will the batteries be discharged, the antennas broken by playful children, and the memory sequence on our transceiver forgotten?

Our (on-line) meeting on March 11 will feature John Jacobs, W7DBO, who will be giving us a presentation on how to maintain readiness of our emergency equipment. John has been active in emergency preparedness. He is a third generation ham, the son of Larry Jacobs, W7ZBO, and the grandson of James Jacobs, W7DBO (SK). John's focus is on operating in the field and emergency communications. He will give us some tips and ideas on how to maintain our emergency readiness.

John maintains a web site at <http://w7dbo.net/> with discussions on various emergency preparedness topics and a Youtube channel at: <https://www.youtube.com/fieldradiopodcast> containing video about operating in the field.

To watch the meeting and even ask questions, go to:

<https://www.youtube.com/c/UtahAmateurRadioClub>.

You can start watching soon after 7 P.M. to make sure you have found the right place.

Except for July and August, UARC meetings are held on the second Thursday of each month at 7:30 P.M.

Our Cover

Our cover this month has some images from the February meeting presentation by Ron Wilcox, KF7ZN, about the wonders of the sun and how it affects our radio propagation. We hope that as we enter sunspot cycle 25 (counted from back in the 1600's) we will have more frequent openings on our higher HF bands.

Technician and General Classes

Our UARC President, Morris Farmer, AD7SR is starting classes in March for prospective Technician and General class operators. Classes seem to fill rapidly in recent months, so if you are interested, it would be wise to sign up soon. There is no charge for either class. Get in touch with Morris at <mailto:ad7sr@arrl.net> for more information.

“QSO Today” Virtual Ham Expo

Although many of the large national conventions have been canceled due to Corona virus danger, March 13 and 14 will be the dates for an on-line substitute. The “QSO Today” expo will include

speakers, panel discussions, kit-building workshops, and manufacturer's displays. One of the speakers will be ex-Utahan Ron Jones, K7RJ, whom many of us know. His talk will be about "3D Printer Basics."

A recent update announces that the keynote speaker will be David Minster, NA2AA, the recently appointed CEO of the American Radio Relay League (ARRL). The announcement says: "David will share his enthusiasm for advancing amateur radio, and he'll highlight ARRL initiatives to engage and inspire this current generation of hams."

One way of looking at an on-line "convention" is that one can save thousands of dollars since one doesn't have to worry about travel, food, and lodging! Early Bird tickets are just \$10 (to help cover the cost of this event), \$12.50 at the "door" and include entry for the live two-day period as well as the 30-day on-demand period.

Topics will include Software Defined Radio (SDR), Amateur Satellites, Using the Arduino, Learning to Solder, Propagation Predictions for Cycle 25, Underdog DXing, and Receiving Moonbounce with a Radio Telescope.

A recently announced feature is the availability of ARRL's lab engineers who will be available throughout the event to answer questions. "Attendees can come into the booth lounge (featuring the Expo's latest virtual meet-up and video technology), sit down at a virtual table, and ask ARRL Lab for tips about a project they're working on or suggestions to overcome a problem with a station installation, antenna, or a piece of gear."

For full details visit:

<https://www.qsotodayhamexpo.com/>.

Why Are You Transmitting?

We often hear someone popping onto one of the club's repeaters and transmitting a callsign... and

nothing else. We are left wondering "should we respond?" Was the operator looking for a QSO? Was he calling another station and had transmitter failure before he could get in his own call? Was he just testing – maybe he needed to key up just long enough to read the SWR bridge?

When your editor was first licensed it was required by FCC rules that an operator give not only his own callsign every ten minutes, but also the *reason* for his transmission. That might mean the callsign of the station he was calling or working, an announcement of code practice to begin, the fact that he was testing, maybe something like "Does anyone know how to get a Bau Feng into reverse mode?" or "CQ."

Announcing a purpose is no longer an FCC requirement, but, as a practical matter, it seems to me to be a sensible thing to do. It helps anyone listening know if they should respond.

Part of the problem may be a persistent superstition that one should never call CQ on VHF FM. Once upon a time, several decades ago, ARRL took that position, although even some of the headquarters staff did not agree with it. But that time was long ago. A quick look at a current edition of ARRL's *Operating Manual* will show that they are quite neutral on the issue.

There was, however, an important principle behind the thought that CQ should be avoided in the VHF world. On VHF FM, a *long* CQ is not necessary or appropriate. The typical CQ on HF voice, CW, or a digital mode, can be quite long, may be repeated many times over several minutes. That kind of CQ makes sense on HF where we don't have discreet channels. Many operators may be tuning across a band looking for activity and not run across the operating calling CQ for several minutes. Continuing to call CQ for some period has been referred to as "keeping your line in the water."

But FM on VHF or UHF is different. If someone is interested in responding to a CQ, the person is probably monitoring a repeater or simplex channel. A simple “CQ this is K7LID” should be adequate.

I like to say that my reasons for recommending CQ are based on three C’s:

Clarity: Pretty much everyone knows the meaning of CQ, with, perhaps, the exception of the newcomer who read only the question pool after getting a *License Manual*. CQ certainly makes the intent a lot clearer than a naked call sign.

Conciseness: At just two syllables, It’s hard to imagine making your purpose extremely clear in a shorter speech.

Consistency: It doesn’t seem reasonable that CQ should be used in almost every two-way mode *except* for VHF FM where it must be avoided. Folks use it on HF voice, CW, and RTTY. Even operators on VHF and higher SSB and CW use it. Most packet radio modems default to “CQ” as the default destination for an (“un-proto”) one-way transmission. Why not bring VHF FM into harmony with the rest of ham radio?

CQ has a fine, respectable history dating back to the earliest days of radio communications. I don’t think there’s a good reason for FM-ers to turn their backs on it. We can at least guarantee that the folks that operate the UARC repeaters will not chastise you or tell you to avoid CQ.

ARRL May Subsidise Application Fee for New Young Licensees

FCC’s recent proposal to charge a \$35 fee for most application fees might cause a considerable hardship for young would-be hams. ARRL is examining a proposal to supply the FCC fee and reduce the VEC fee to \$5 in certain cases. The proposal would apply to those under 18 years old

who belong to an ARRL-affiliated 501(c)(3) organization. The proposal was sent to an ad-hoc committee to review and more fully develop the proposal.

Last year, in response to an act of Congress, the FCC proposed a rule change that would establish a \$50 fee to be charged for processing most license applications from amateurs and those attempting to get amateur licenses. It would apply to first licenses, renewals, callsign changes, and license upgrades. Changes of address and/or email addresses would be exempt from the fee.

ARRL suggested that the fee was excessive because FCC processing of most amateur applications was done by computers and required little human attention. The FCC agreed to the extent of reducing the fee in the proposal to \$35. It appears now that they are planning to go ahead as proposed, although the final wording and effective date have not been announced.

Winter Yellowstone VHF Radio Rally (Thanks to ARRL News)

Wyoming and southern Montana hams belonging to the north Yellowstone Amateur Radio Club and Park County Amateur Radio Emergency Service (ARES®) took to the wilderness in late January during heavy snow to take part in an emergency preparedness exercise. The groups have about 15 members in all; many more bison and elk roam the roads than do hams.

The critical winter duty for North Yellowstone radio amateurs is deployment to remote locations of winter emergencies. To train for these responses, the members devised the “VHF Radio Relay,” a radio scavenger hunt designed to get members out to remote road locations where winter emergencies may require radio communications support. The group uses the Eagle’s Nest repeater located at 8,000 feet on Electric Peak southwest of Gardiner, Montana —

the north entrance to Yellowstone National Park. The repeater covers the northern one-third of the vast park and southern half of Park County, Montana.

Participants rigorously observed COVID-19 precautions. Participating hams received two pages of instructions. The first contained directions for completing their call-out assignment and listed 15 locations that required hams to deploy to the far reaches of the radio coverage area. The second page consisted of a map. Only three roads are in the area, and conditions on one dirt road are typically difficult. Each route had five locations along the way to the terminal checkpoint. The 15 widely spaced locations guaranteed that no operator could visit all of them.

Each location was assigned a tactical call sign, and communicators had to use GPS to verify that they were in their precise positions. At all locations, hams radioed net control to have their location verified before moving to the next location.

On two roads, an interpretive sign stood at the last check-in point. Participating hams had to call in from the sign and were given instructions on how to find a code word hidden on the sign to verify their location — for example, the seventh word in the third paragraph — and relay it to net control. Each participant had a different code word.

Locations were chosen so that hams needed to plan their route strategy — ideally before leaving the starting point, where odometer readings were recorded. Directions included a safety warning about bison and elk on the road, and bad driving conditions due to snow. All departed at 9 AM and were to be back at the starting point at 11:30 AM. A prize was awarded to the ham who visited the most locations with the lowest mileage. First place went to Doug MacCartney, K7GRZ, and second place to Reve Carberry, KX4LZ. Jim Halfpenny, K9YNP, served as net control. — *Thanks to Park County Emergency Coordinator and ARRL PIO Jim Halfpenny, K9YNP.*

Amateur Radio Can Provide Important Information After Earthquakes

The earthquake in the Salt Lake Valley in March of 2020 provided an example of post-earthquake situations where needed information is difficult to obtain. The magazine *Eos*, a publication of the American Geophysical Union (AGU) carried an article in its February 22 issue titled “Amateur Radio Operators Help Fill Earthquake Donut Holes.” The “donut holes” refer not to holes in the ground left by an earthquake, but to areas of land near an earthquake’s epicenter where information is not immediately available about whether the quake could be felt in that area or not. This information shortly after a quake is helpful to the U.S. Geological Survey (USGS). They refer to it as “Did You Feel It” (DYFI) reports.

People who were possibly in the area affected by a quake are asked to fill out a form describing the intensity of what they felt. Answers to questions such as “Did objects fall off shelves?” help determine the range and intensity of the shaking.

The problem is that a quake may very well isolate important areas from normal communications media such as telephone and internet as communications and power lines may have been damaged.

In recent events HF amateur radio was used to send information using Winlink to a distant portal that was still in service after a quake or other event that put normal local communications out of service. The article specifically mentions ARRL’s ARES organization and its capabilities demonstrated in recent hurricanes to send vital information to the outside world.

The article is available on-line at:
<https://eos.org/science-updates/amateur-radio-operators-help-fill-earthquake-donut-holes>.

Blast from the Past

Below is an image selected by UARC President, Morris Farmer, AD7SR, of pages from *The Microvolt* as they looked in May of 1967.

THE MICROVOLT

Volume XI Number 5 May, 1967

It is about MAY MEETING : HOMEBREW

Well, the time has come. With the advent of May comes not only spring flowers, but also the annual homebrew contest. The date is Thursday, May 4, and the festivities begin at 8:00 P.M. If you are nearing completion on some project, by all means put the finishing touches on and bring it along. If you have some homebrew that has been in the closet for five years, bring it along too. The only requirement is that it may not have been entered in a previous UARC homebrew contest. Even if you don't think your little jewel will win anything, or even if it isn't quite finished, bring it along. We would like to see what you have been doing, and we think others do too. And even if you've never built anything in your life, at least bring you along. The best and worst of local amateur construction projects will be on display, and the trip should be well worth your while. Also we hope to have a few short talks on some of the methods of homebrew from the experts. Such topics as "How to cut oval and pentagonal holes with the least tears and fewest bandages," and "How to tell from the smell whether it was the whole set of transistors or the power transformer that just went up in smoke" should be helpful to us all.

At this writing it appears that the entries will include a Tele-match, an S.W.R. Bridge, a transceiver Power Supply, a One-Kilowatt Linear Amplifier, a solid state six meter transmitter, a Vacuum Portable Antenna, an FET Six-Meter Converter, and a Two-meter Transceiver. (Your editor had been planning to enter his new knife-switch operated doorbell, but was advised against it.)

We expect this meeting to be one of the year's highlights, so we do hope you'll come, and preferably bring some homebrew. (A word of caution is in order here; it is hoped that entries will be built in cabinets or on chassis. Homebrew housed in bottles is not exceptable.) See you there?

HERE AND THERE

MEMBERSHIP (We don't have any): If you will think back with us for a moment, you will, perhaps, remember that several months ago, we instituted a club membership contest. A prize was to be given to the person who was responsible for the most new members joining the club. Members from last year were not eligible, and one had to get at least five to qualify. Remember? Well the time is upon us when the results must be announced. Are you holding your breath in anticipation that maybe you are the luck winner? Well, don't. If our records are correct, the fact is that nobody qualified. Nothing quite as exciting as keen competition is there? You still don't remember? Oh well. In any case if you know of an active ham or two, you might subtly mention that there is no better bargain in the world of hamdom today than membership in the Utah Amateur Radio Club, and show off a couple of Microvolts. Well, on second thought, maybe you'd better just mention the steak-fry, Field Day, the thrilling programs, and the fact that you're just not in unless you're a member. If your prospect is still wavering, pull out the statistics that show that nine out of ten doctors agree that UARC members have fewer cavities and more DX. If you still haven't swung the deal, you could always try: "Aw won't you please join? I've got a wife and kids that won't let me back in the house unless I get someone...." A tear or two falling on his hot final may help here. Well, we'll leave the method up to you, but if you will help us spread the word, it will be of benefit all the way around, even though it's too late to win a prize for your efforts.

Blast from the past (continued)

The Microvolt (USPS 075-430) is published monthly except August for \$20.00 per year or \$1.50 per issue by the Utah Amateur Radio Club, 632 S. University St., Salt Lake City, UT 84102-3213. Periodicals Postage Paid at Salt Lake City, Utah. POSTMASTER: Send address changes to *The Microvolt*, c/o Tom Kamlowsky, 4137 S Clover Lane, Salt Lake City, UT 84124-2711

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MORE HERE AND THERE

FIELD DAY: ARRL's Field Day contest will be coming up at the end of June and it is about time to be thinking about plans. Erv Greene, W7RDE, has cheerfully consented to be chairman of the club's effort. (Really, K Erv, we were just kidding about the you-know-what. It wasn't really loaded.) Erv deserves a tip of the hat and our help. Perhaps for the newcomers we should explain that Field Day is a national contest that the club enters every year. The competition for the trophy that is circulating among the Utah ~~radio~~ clubs is rather sharp. (Maybe circulating is the wrong word, since the thing has stayed right here so far.) The contest involves setting up a rig at a portable location (mountain tops have been the rage the last couple of years) and operating it in shifts for a solid twenty-four hours. You'll have a grand time if you're the camper-outer type, the contest-lover type, or both (in which case please call us right away).

From what we have heard so far, Wolf-Creek summit, last year's site is still a favorite for this year. If you don't like the idea ~~the~~ time to make yourself heard is now. If you have any suggestions on sites or anything else, or if you'd just plain like to help, give Erv a call. He's waiting for your call, so don't keep him up late.

HAMFEST: Each summer, the Council of Utah Amateur Radio Clubs (of which UARC is a member) holds a Utah Hamfest. Our own secretary-treasurer, Dennis Utley, is council president this year, and the secretary is Bryce Anderson, K7SAL, from the Utah Relay Club. The date for the hamfest has been tentatively set as ~~August 19~~ August 19 (it's a Saturday) so circle it on your calendar and keep it open. At this writing, some worrying is being done about a site for the hamfest, since all the likely prospects in the Salt Lake area (canyons, city parks, etc.) are all booked for that date. If you have any likely suggestions, drop a line to Dennis or Bryce. They would be more than happy to have it. Also, let's have your suggestions on prizes, activities, etc.

DX CLUB: DX'ers awake! Utah now has a bonafide DX club. With Jerry Peterson, W7LEB as president, the Utah DX Association is now a reality. The group has only been in existence about a month or so and already has a net in weekly operation, a lot of active members, and a lot of good ideas. It hopes to make DX working a cooperative effort, and give Utah, for the first time, a unified voice in DX matters. ARRL affiliation is contemplated, primary groups and publications overseas have been notified of the club's existence, and the net is already snagging some rare ones for the members (even the ones with low power) and giving the DX stations a chance for Utah contacts. The gang hopes to work closely with other clubs in the area, and we are happy to have them aboard. If you're a DX fiend, it might be worth your while getting in at the start of things. You can get full details on the net which meets every Monday night at 0400Z. (If you're a purist, that's really Tuesday morning in GMT. Also don't forget to correct for Daylight Savings Time.)

POSITIONS STILL OPEN: If you've been counting the typing errors above, it should be quite clear by now that we need help! We suspect we could put out a generallay (oboy) generally better paper if we got a few more people into the act. If you have some bright ideas for a feature article you'd like to do, go ahead, you have our blessing. If you have any suggestions about general format, type of material you'd like to see, new sections we should add, or just short tidbits about the month's happenings, we would like very much to hear from you. (The editor's adress, telephone number, library card code etc. are on the title page.) If you have access to a real good-looking typewriter (linotypes etc. also accepted) and especially if it includes a blonde secretary, this is also within our realm of interest. Any takers?