



# THE OHM TOWN NEWS

*Voice of the Bridgerland Amateur Radio Club*

>>>>>>> <http://www.barconline.org> <<<<<<<

## June, July, August Summer 2014

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## PRESIDENT'S MESSAGE

It's June and there is a real cool event at the end of the month.

The Bridgerland Amateur Radio Club will be participating in the [American Radio Relay League \(ARRL\) 2014 Field Day](#) event on Saturday June 28<sup>th</sup> and Sunday June 29<sup>th</sup>. Field Day is an annual amateur radio exercise, encouraging emergency communications preparedness among amateur radio operators. It is typically the largest single emergency preparedness exercise in the country, with over 35,000 operators participating each year. Field Day is part educational event, part operating event, part public relations event. But most of all, we have a fun and enjoyable time operating the radios. Anyone can attend and participate, licensed or not, club member or not. You can operate a radio (with a control operator present) in making contacts to other amateur radio operators. You could try logging the radio contacts on a computer. We use this opportunity to let everyone try HF. We will have several radios setup, including one radio for digital mode, (PSK, RTTY, etc.) and one for Morse Code (CW).

Our location for Field Day will be at the Swan Flat Road area approximately 25 miles East of Logan on Highway 89 (just past the UDOT Maintenance Shed near mile marker 490), turn left at Swan Flat Road and go one-half mile. We will be in an area that is west of the Swan Flat Road. This is the same area where we had Field Day last year. Swan Flats area is open camping so there will be a few of us that will go up early in the week to claim our field day spot. Others are welcome who would like to arrive early for some radio camping. We should have a radio set up to use so we can enjoy the airwaves with less manmade interference than in the valley.

So here is the Field Day schedule, June 27, 28, and 29:

### *Friday*

*Noon* – Those that can, arrive at site to help set up antennas until about 6 PM. It takes about 4 to 6 people to set up the antennas.

### *Saturday*

*Morning* – Setup remaining antennas and radios. Check everything; radios, antennas, computers & logging software, etc.

*Noon* – Contest starts. Anybody who wants to can get on the air, help with logging contacts, or just enjoy what goes on at BARC Field Day. Contest lasts for 24 hours.

*Noon until 4 PM* – The BARC Ladies' activity.

*3 PM* – Bunny Hunt. We will have a short class. The bunny will be hidden and anyone who would like to can try to find it. Hunters don't even need a license to participate.

*6 to 7 PM* – Pot Luck Dinner. Club provides sloppy joes, hotdogs, and drinks. Please bring a pot-luck food item to share (make sure to bring plenty to share--there are a lot of mouths to feed) and your own chair, plates, cups, utensils.

### *Sunday*

*Noon* – Contest ends. Start taking down antennas, put stuff away, and clean up the camp site.

Come on up, bring your family, camp chair, mosquito repellent, and water (no water at the site); stay as long as you can (there are plenty of us camping out in tents and RVs), and enjoy the good food and the fun of Field Day. See you there!

73,  
Cordell  
KE7IK



# UPCOMING 2014 ACTIVITIES

**19** June, 8:00 PM - RACES VHF Net 147.18 Snowbird 147.20 IRLP 146.72 Mt. Logan

**26-28** June — Radio Rocket Recovery in Green River (Guy Hatch)

**27** June — Wasatch Back Relay ([more info](#)) (Tyler Griffiths)

**28-29** June — Field Day (in place of regular June club meeting) (Ted McArthur)

**28-29** June — Bike MS ([more info](#))

**9** July, 7:30 PM - ARRL Rocky Mountain Division Net IRLP Node: 9871

**19** July, 8:00 AM — RACES HF Net 3920 KHz

**26** July — Rotary Ride Around Wellsvilles (RAW) (New for BARC) (Tyler & Jared) ([info](#))

**8-10** Aug — ARRL Rocky Mountain Division Convention (Albuquerque, NM)  
(for more info: [www.dukecityhamfest.org](http://www.dukecityhamfest.org))

**21** Aug, 8:00 PM - RACES VHF Net 147.18 Snowbird 147.20 IRLP 146.72 Mt. Logan

**4** September — Pot Luck Dinner/BARC Club Meeting (Thursday before LOTOJA)

**6** September — LOTOJA Bicycle Race ([more info](#)) (Tyler & Ted)

For updated calendar information see the [barconline.org/calendar](http://barconline.org/calendar)

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## Local Radio Nets:

The **Weekly BARC net** is for BARC members and anyone else that would like to check in, held **every Tuesday night at 9:00 p.m.** local time on the Mt Logan BARC Repeater and Linked Systems (146.720)

The **BARC Ladies Net** is every **2nd and 4th Tuesday at 8:00 p.m.** on the BARC Repeater and Linked Systems (146.720). All licensed lady amateur radio operators are welcome to check in.

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**BARC Club Meetings** are normally on the 2nd Saturday of the month at 10:00 A.M. on the 3rd floor of the Cache County Sheriffs Complex on 200 North and 1225 West, Logan, Utah.

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**ARES Meetings** are usually held on the Third Wednesday of each month at 7 P.M. at the Cache County Sheriffs Complex. Contact Tyler Griffiths for more information.

# A Look at “Dayton”

I will give you a "first-timers" brief look at the five day (two days flying and three days walking) extravaganza most simply refer to as "Dayton."

We stayed in SLC on Wed night. Set the alarm for 3:00 am. Got up and headed for airport - which was barely waking up. Got through security and found McDonalds for some much needed nourishment. Found gate C3 and waited ---- boarded and slept for an hour and found ourselves in Minn-StPaul airport for 2 hrs. Boarded a CRJ (Canada Regional Jet) for Cincinnati.

My two traveling partners were Tyler (N7UWX) and Bill (WA7KMF). Bill was designated team leader and did a great job at the Enterprise rental counter -- got a Suburban and we were on our way -- in rush-hour traffic to Dayton.

Got settled in at a Springhill Suites about 20 miles from Dayton where we joined up with Ted (AC7II). Drove to Dayton to Hamfest site and "Chicago Bob" joined our invincible team.

Friday and Saturday were spent following Ted, Tyler, Bill, and Bob around the biggest "flea market" I have ever seen. (Only second one I have been to). Bob and crew were great at finding the good deals on certain items that are needed at home to add to their ham equipment and shacks and repeaters. That was all outside and covered about three city blocks of much failing asphalt parking lots. If you watch national weather you know there was a major storm cell over this area. A small tornado did damage a distance from Dayton and we had rain on and off both days. You can only imagine the piles and piles and bins and boxes of parts and pieces and stuff and things that hams and others were trying to peddle. Most was junk to me!! But I was impressed as Tyler came back on Saturday with a neat assembly he called a repeater. Cool item.

The inside portion of Dayton was in an old hockey arena and five connected buildings, also old and "not-well-maintained" facilities.

All major vendors and hundreds of small vendors had stacks and stacks of radios, antennas, cables, and you name it and it was for sale by someone. I saw a lot of real cool stuff and found myself getting into the buying mode. Way fun time. I am coming home with a few treasures.

All in all, Dayton was fun and very educational for me. I really enjoyed associating with Ted, Tyler, Bill, and Bob. A great time. Something to look forward to for another year.

Theo. K7TWT  
[Theo@Tec-electric.com](mailto:Theo@Tec-electric.com)

# TX7G

Marquesas Islands DXpedition  
October 18-26, 2014



## Marquesas Islands DXpedition 2014

Jared ([N7SMI](#)) and Grant ([KZ1W](#)) are happy to announce the TX7G (call sign requested) amateur radio [DXpedition](#) to the Marquesas Islands. We will be on the air October 18-26, 2014 - including during the CQ WW DX SSB contest (Zone 31). Our [location](#) will be Hatiheu Village on the North shore of the island of Nuku Hiva.

### Bands and Modes

The team will operate high power SSB and RTTY (seeking a CW op) into vertical antennas directly on the beach - 80-10 meters. The location provides an ocean-front path to N. America, Asia, and Europe. We will focus on low bands and favoring difficult propagation paths to provide as many amateurs the opportunity to get Marquesas in their log as possible. Marquesas is currently #70 on the Club Log most wanted list (#45 for Europe).

### Recent News

June 19

Plans for Marquesas are coming together quickly. Airfare and accommodations are in place. Licensing is in process. Our equipment list and weight spreadsheets (we have very strict weight restrictions) are taking form. We're grateful to [Mediterraneo DX Club](#) and [Nippon DX Association](#) for their generous sponsorships.



# To help support the Marquesas Islands DXpedition 2014,

the BARC Club is considering offering a sponsorship of \$400. Jared Smith (N7SMI) is a member of our club and is the Team Leader of the TX7G Marquesas DXpedition 2014. The Board has all voted in favor of this proposal, but we feel that this would require a vote from the club membership. To get this vote we would like to take the vote of Members at the two June main events, Field Day and the Rocket Recovery. We will have Board Members at both locations to take the vote. The Field Day vote would be taken at the Saturday Dinner. If you will not be in attendance at one of these events on Saturday June 28th, please send in your vote via mail no later than July 5th. There is a sponsorship web page at <http://tx7g.com/sponsors> with more information available at <http://tx7g.com/marquesas> and several other links on these pages.

Vote for the Proposed Sponsorship of \$400 to assist  
with the Marquesas Islands DXpedition 2014

Vote:

\_\_\_\_\_ YES                      \_\_\_\_\_ NO

**Important Instructions:** If you are unable to attend one of the above meetings and wish to vote you may mail this ballot to any club officer in time to be in their hands before the meeting time noted above, or, you may seal the ballot in an envelope and send it with someone to be handed to a club officer at the meeting. If you need help, please contact any club officer. You need to be a current member of BARC to vote.

*Ballot can also be mailed to **BARC P.O. Box 111 Providence Utah 84332**. It must reach the post office box by July 5 th. Send in your ballot or come in person. If mailed please put your name on the mailing envelope only.*

# The ARRL Letter for June 5, 2014

## A Century of Amateur Radio and the ARRL

A VHF-and-above ham license had been discussed and debated for years. When the FCC changed the Amateur Radio license structure on July 1, 1951, it established the Technician class license. It required passing a Morse code test of 5 WPM; the written exam was the same as the General class test.

The purpose of the Technician license was to allow electronics-minded people to get on the air easily to experiment on 220 MHz and higher frequencies, at a time when major advances were taking place on those amateur bands. As it turned out, the number of experimenters in the Technician ranks was fairly small; most Technician licensees wanted to be communicators. The FCC responded to this fact by progressively granting additional operating privileges to Techs.

In 1955, Technicians got privileges on 6 meters; in 1959, they obtained privileges on 145 to 147 MHz; in 1972, 145 to 148 MHz; in 1978, *all* privileges above 50 MHz, and in 1987, a small subband for 10 meter SSB. In 2000, Technicians who had passed a 5 WPM code test were allowed to operate CW on the Novice segments of 80, 40, and 15 meters, and to use all modes on 10 meters.

Experimentation and advances in the state of the Amateur Radio art on VHF-and-above remained, for the most part, the domain of higher-class licensees, although a fair percentage of Technicians contributed too.

As communicators, Technician licensees have proven to be a great asset to Amateur Radio during disasters and emergencies, for which the VHF/UHF bands have become primary. The proliferation of mobile stations on VHF and above also has played an important role in providing public service and emergency communication support.

As the FCC intended, both Technician and Novice licensees spurred the growth of Amateur Radio in the US. In 1950 there were about 90,000 hams; by 1956, there were more than 140,000; by 1963, more than 250,000, and today there are some 723,000 licensees.

Joe Speroni, AH0A, has compiled ham radio licensing [statistics](#) from June 1997 to the present. -- *Al Brogdon, W1AB*



ARRL Life Member Jim Pickett, K5LAD, got his Technician ticket not long after his Novice, holding both licenses simultaneously. The FCC cancelled his Tech license after he upgraded to General. Some Novices who had trouble passing the 13 WPM Morse test got Technician licenses to "hold" their call signs beyond the 1-year Novice term. [From K5LAD - 50+ Years of Ham Radio Memories]

### Nevada Governor Declares June as "Nevada Amateur Radio Month:

"Nevada Governor Brian Sandoval has declared June "Nevada Amateur Radio Month." In a May 12 gubernatorial proclamation, Sandoval noted Nevada's sesquicentennial and the ARRL centennial this year and cited the public service participation of Nevada's nearly 7000 radio amateurs. "Silver State hams demonstrate their creative, technological, and emergency operational prowess in public view all across Nevada during the annual Field Day," the governor added.

### 2014 ARRL Rocky Mountain Division Convention

Registration (online and mail-in) is now open for the 2014 ARRL Rocky Mountain Division Convention, taking place about two months from now in Albuquerque, New Mexico on August 8-10. The Division Convention is being held in conjunction with the Albuquerque Duke City Hamfest.

Here is a taste of what awaits hams and their families from across the Division (CO, NM, UT, and WY) at the event:

--- Three days of amateur radio activities, learning, and enjoyment, all situated within the comfortable 188-room Hotel Albuquerque, located a short walk from the city's historic Old Town.

--- An outstanding lineup of guest speakers: Mike Corey K11U (ARRL Emergency Preparedness Manager...and DXer...and contesteer), Riley Hollingsworth K4ZDH (retired FCC special counsel), Bob Heil K9EID (owner of Heil Sound and co-host of HamNation), Rob Sherwood NC0B (RF engineer), and Dave Jorgensen WD5COV (contester and DXpeditioner)

--- Major exhibitors such as Yaesu, FlexRadio Systems, The DZ Company, Southwest Antennas and Accessories, HamRadioSchool.com, Ham Crazy, Wired Communications, RT Systems, Arrow Antennas, and more

--- Numerous technical and non-technical forums covering relevant and developing aspects of amateur radio

--- Delicious onsite meals featuring guest speakers and prizes

--- Prizes, prizes, and more prizes

--- Onsite special event station, competitions, QSL card checking, amateur radio license exams, midnight Wouff Hong ceremony, a near-space balloon launch, specialized modes demos, Rocky Mountain Division awards presentation, and more.

--- Plus many attractions around the Albuquerque and Santa Fe areas for the whole family to enjoy

Visit the 2014 ARRL Rocky Mountain Division Convention website at [www.DukeCityHamfest.org](http://www.DukeCityHamfest.org) for further details, easy online registration, and hotel reservation info.

Attention Ham Club members: Attending the Division Convention is a great club-building activity. Rally your friends in the club for a fun carpool or caravan ride to Albuquerque to enjoy a great ham radio weekend.

Vice-Director Dwayne Allen WY7FD and I look forward to seeing you at the 2014 ARRL Rocky Mountain Division Convention on August 8-10. 73!

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ARRL Rocky Mountain Division  
Director: Brian P Mileschosky, N5ZGT  
[n5zgt@arrl.org](mailto:n5zgt@arrl.org)

## **The ARRL Letter for June 12, 2014 FCC Okays Changes to Amateur Radio Exam Credit, Test Administration, Emission Type Rules**

In a wide-ranging *Report and Order (R&O)* released June 9 that takes various proceedings into consideration, the FCC has revised the Amateur Service Part 97 rules to grant credit for written examination elements 3 (General) and 4 (Amateur Extra) to holders of "expired licenses that required passage of those elements." The FCC will require former licensees -- those falling outside the 2-year grace period -- to pass Element 2 (Technician) in order to be relicensed, however. The Commission declined to give examination credit to the holder of an expired *Certificate of Successful Completion of Examination (CSCE)* or to extend its validity to the holder's lifetime.

"Our decision to grant credit for written examination Elements 3 and 4 for expired licenses that required passage [of those elements] will provide some relief for former General, Advanced, and Amateur Extra class licensees," the FCC said, "and is consistent with how we treat expired pre-1987 Technician class licensees who want to reenter the Amateur Service." Pre-1987 Techs can get Element 3 credit, since the Technician and General class



written examinations in that era were identical. The Commission said current rules and procedures that apply to expired pre-1987 Technician licenses "are sufficient to verify that an individual is a former licensee under our new rules."

The Commission said that requiring applicants holding expired licenses to pass Element 2 in order to relicense "will address commenters' concerns about lost proficiency and knowledge, because a former licensee will have to demonstrate that he or she has retained knowledge of technical and regulatory matters." The FCC said the Element 2 requirement also would deter any attempts by someone with the same name as a former licensee to obtain a ham ticket without examination. In the past, the FCC has maintained that its procedures "provide ample notification and opportunity for license renewal" and that retesting did not impose an unreasonable burden.



### **Examination Administration**

The FCC pulled back from its own proposal to reduce from three to two the minimum number of volunteer examiners required to proctor an Amateur Radio examination session. The ARRL, the W5YI-VEC and "a clear majority of commenters" opposed the change, the FCC said. The FCC said it found commenters' arguments persuasive that the use of three VEs "results in higher accuracy and lower fraud that would be the case with two VEs." In a related matter, though, the Commission embraced the use of remote testing methods.

"Allowing VEs and VECs the option of administering examinations at locations remote from the VEs is warranted," the FCC said. The National Conference of Volunteer Examiner Coordinators (NCVEC) in 2002 endorsed experimental use of videoconferencing technology to conduct Amateur Radio testing in remote areas of Alaska. The Anchorage VEC has long pushed for the change, citing the expense to provide Amateur Radio test sessions to Alaska residents living in remote areas.

The FCC declined to address "the mechanics" of remote testing, which, it said, "will vary from location to location and session to session." The Commission said specific rules spelling out how to administer exam sessions remotely "could limit the flexibility of VEs and VECs." The FCC stressed the obligation on the part of VECs and VEs "to administer examinations responsibly" applies "in full" to remote testing.



The FCC amended the rules to provide that VEs administering examinations remotely be required to grade such examinations "at the earliest practical opportunity," rather than "immediately," as the rule for conventional exam sessions requires.

### **New Emissions Permitted**

Finally, the FCC has adopted an ARRL proposal to authorize certain Time Division Multiple Access (TDMA) emissions in the Amateur Service. The Wireless Telecommunications Bureau in 2013 granted an ARRL request for a temporary blanket waiver to permit radio amateurs to transmit emissions with designators FXD, FXE, and F7E, pending resolution of the rulemaking petition.

The FCC said it also would make "certain minor, non-substantive amendments" and corrections to the Amateur Service rules. The new rules become effective 30 days after their publication in *The Federal Register*. Read [more](#).

## **Amateur Radio Satellite Payloads Set to Launch into Orbit this Month**

Several CubeSats carrying Amateur Radio payloads are set to launch during June. These include two [FUNcube](#)

projects.

FUNcube-3, the transponder-only payload on the [QB50](#) precursor CubeSat, QB50P1, is scheduled for launch on June 19 from Russia, at a tentative launch time of 1911 UTC. Initial beacon signals from the main transceiver are expected to be AX.25 1200 bps BPSK packets on 145.815 MHz. FUNcube-3 will carry an inverting 400 mW SSB/CW transponder, with an uplink passband of 435.035-435.065 MHz (LSB) and a downlink passband of 145.935-145.965 MHz (USB).

The FUNcube team has received confirmation that [UKube-1](#), which will host FUNcube-2, will launch June 28 from Baikonur in Kazakhstan (June 29 is a back-up launch date), with a tentative launch time of 1558 UTC. According to information the FUNcube team has received, immediately after deployment and activation, UKube-1 will transmit a CW beacon, followed later by an AX.25, 1200 bps BPSK beacon. Both beacons will be on 145.840 MHz.

The FUNcube-2 payload, with its telemetry downlink for educational outreach, is expected to be tested later. The goal of the FUNcube project is to support science, technology, engineering, and mathematics (STEM) initiatives now underway in the US, the UK, and elsewhere. The target audience is primary and secondary school students.



Artist's conception of UKube-1 in orbit.

FUNcube-2 will provide a 400 mW inverting SSB/CW transponder, with an uplink passband of 435.080 to 435.060 MHz (LSB) and a downlink passband of 145.930-145.950 MHz (USB); beacon on 145.915 MHz.

Among other Amateur Radio payloads set to launch June 28:

[NanosatC-Br1](#): The first Brazilian CubeSat. ISIS U/V transceiver, with 1200 bps FM AX.25 UHF command uplink and a 9600 bps BPSK downlink on 145.865 MHz.

[ANTELSat](#) (Uruguay): The first Uruguayan satellite. 437.575 MHz 1200 bps AFSK, 2403.000 MHz 1 Mbit GFSK/MSK, 437.280 MHz CW.

- ESTELLE (University of Tartu, Estonia): UHF GMSK/BPSK downlinks up to 19k2 bps and a series of HDRT experiments, including 2.4GHz downlink using GFSK/BPSK at up to 1 Mbps, 5.8 GHz downlink using GFSK and BPSK at up to 10 Mbps and 10 GHz downlink at up to 10 Mbps.

- QB50p2 (Belgium): 435/145 MHz FM voice transponder; 145.880 MHz, 1200 bps BPSK; 145.840 MHz, 9600 bps FSK.

[SaudiSat-4](#) (Russia, Saudi Arabia): Ka band transponders

[UniSat-6](#) (Italy): 437.425 MHz 9600 bps GMSK.

[UNSA-SAT1](#) (Peru): Downlink 3.4 GHz, 230 kbps BPSK (first 3.4 GHz CubeSat)

[DX-1](#) (Russia): Uplink command and control, 144.975-145.025 MHz; downlink telemetry 434.975-435. -- Thanks to AMSAT News Service, AMSAT-UK

## Kids Day is Saturday, June 21!

[Kids Day](#) is Saturday, June 21 (the *incorrect* date appears on the ARRL wall calendar). Sponsored by the Boring (Oregon) Amateur Radio Club, Kids Day is the perfect way to introduce a young person to the magic of Amateur Radio by getting them on the air!

Open your doors, offer some hot dogs or pizza, and let the "little folks" take the Big Chair. Let them find stations they hear or work on a map, color in a map of states worked, or help them build something.

Kids Day takes place in January and June of each year, offering an opportunity for veteran hams to promote Amateur Radio to our youth. Share the excitement with your own youngsters or grandchildren -- or even with kids in the neighborhood. Take time to pass along the excitement of Amateur Radio to youngsters who could represent its future.

[More information](#), along with a free participation certificate you can fill out and print yourself, is available on the ARRL website.

### **Kids Day 2014 Essentials**

*Date:* Saturday, June 21, 1800-2359 UTC. Operate as much or as little as you like.

*Suggested exchange:* Call "CQ Kids Day." Exchange name, age, location, and favorite color. It's okay to work the same station again, if an operator has changed.

*Suggested frequencies:* 28.350 to 28.400 MHz; 24.960 to 24.980 MHz; 21.360 to 21.400 MHz; 18.140 to 18.145 MHz; 14.270 to 14.300 MHz; 7.270 to 7.290 MHz, and 3.740 to 3.940 MHz, as well 2 meter repeaters (with the permission of the repeater's sponsor).

**Observe [third-party rules](#) when making contacts with stations outside the US.**

Participants are encouraged to post their stories and photos to the [Kids Day Soapbox page](#).

## **First North America-to-South America Contact on 902 MHz Moonbounce Reported**

Some hams may not even realize that there *is* a ham band at 902 MHz, but [Bruce Halasz](#), PY2BS, in Embu, Brazil, reported on the [Moon-Net reflector](#) that after months of preparation and testing, he and Al Ward, W5LUA, in Allen, Texas, completed a two-way EME (Earth-Moon-Earth) -- or moonbounce -- contact on the band on June 8.

PY2BS said the main issues he had on his end involved reception, including "an in-band noise from another service" that he could not eliminate by filtering. "Fortunately," he said, "its bursts are spaced enough apart to allow [reception] from the moon-coming signals in between them."

W5LUA has a 5 meter solid dish and was running about 400 W at the feed point. PY2BS used a 5.1 meter mesh dish with 180 W at the feed point. Both used very low noise FET preamplifiers. W5LUA and PY2BS exchanged reports on CW (549/559) and JT65C (-17dB/-18 dB).

"We've found out that [the] Faraday [effect] does exist at 902; [it] just rolls kinda slow," Halasz added. He said his 902 MHz setup is temporary, but he is interested in contacting other stations. -- *Thanks to Bart Jahnke, W9JJ*

## **AMSAT Confers OSCAR Number on LituanicaSAT-1**

[LituanicaSAT-1](#) now is OSCAR-78 (or LO-78), [AMSAT-NA](#) OSCAR Number Administrator Bill Tynan, W3XO, has announced. LituanicaSAT-1 has met all requirements for an OSCAR number. LituanicaSAT-1 Team Member Simon Kareiva, LY2EN, said it was his honor and pleasure to accept the designation on the team's behalf.

"Our team is focused to keep LO-78 operational for the benefit of Amateur Radio [for] as long as it is possible for a small CubeSat."

The LituanicaSAT-1 team has announced activation of its FM transponder. To find out if the transponder is working, monitor the beacon frequency of 437.275 MHz. If you do not hear the CW FM beacon, the transponder is operating; otherwise, it is off.

The transponder down link is approximately 435.1755 MHz ( $\pm 10$  kHz Doppler shift) down, and 145.950 MHz up, with a 67 Hz CTCSS access tone. -- *AMSAT News Service*

## A Century of Amateur Radio and the ARRL

Let's continue our stroll through ham radio in the early 1950s.

TVI was the major technical problem facing radio amateurs during the 1950s, and the ARRL led the fight. Articles appeared in *QST*, authored by George Grammer, W1DF; Phil Rand, W1DBM; and others. The League worked with TV manufacturers to reduce TVI problems in future TV designs. Hams started using low-pass filters at the output of their HF transmitters, and band-pass filters at the output of their VHF and UHF transmitters. Yet the TVI problem persisted for many years.

In addition to TVI, there was ITV -- interference *from* TV receivers, caused by strong radiation from the horizontal oscillators at 15.734 kHz and multiples thereof, well into the HF range. As you tuned across a lower HF band, there would be raspy "markers" every 15.7 kHz.

In the early 1950s, a few hams started working with amateur television (ATV), building complex equipment to generate NTSC video signals. They were successful, but usually there were only a few stations near enough to make contact -- sometimes only one other ATV-active ham. Although it was an excellent technical accomplishment, ATV never caught on in a big way in the 1950s.

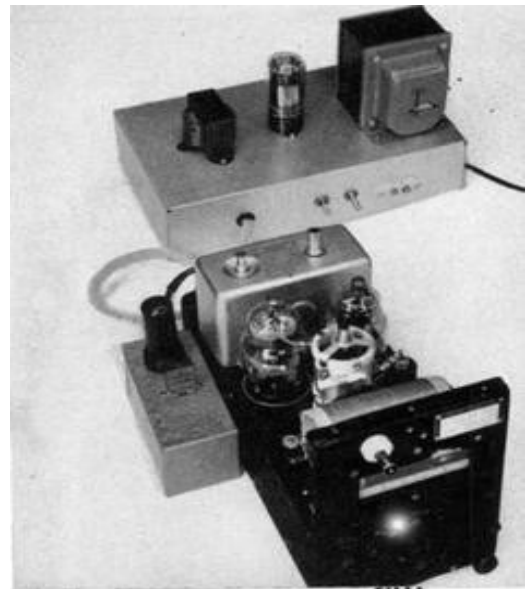
Military surplus equipment and its conversion to amateur use continued to be of considerable interest, with articles in *QST* detailing how such conversions could be made. New vacuum tubes that had been developed for military use during the WW II years found great utility in ham equipment, particularly the tubes developed for high-power HF and VHF/UHF transmitters.

These surplus tubes were very inexpensive. One popular one was the 1625, the 12 V filament equivalent of the 807, a workhorse tube that was good for 75 W or so. They sold for 25¢ each, or four for \$1. The 813 was another popular tube for higher power, A pair could run 500 W input.

The ARRL continued the push to get more hams on the VHF/UHF bands. Ed Tilton, W1HDQ, wrote many articles about the VHF/UHF equipment he designed and built, including a 2 meter station for Novices. *QST* began publishing a box listing of states worked on 50 MHz (with maximum path lengths noted), and the first 50 MHz Worked All States (WAS) awards (48 states back then) were earned.

A new idea -- voice-operated transmit (VOX) -- appeared in the early 1950s, so phone operators could chat back and forth quickly, rather than taking turns transmitting long monologues. A few AM operators used VOX, but the idea was quickly put into use by SSB enthusiasts. The earliest VOX switches required the operator to use headphones, so the VOX would not be triggered by the receiver audio, but anti-VOX circuits were soon published in *QST* that would allow use of the station speaker.

Next week: A continuing look at Amateur Radio and its advances in the early 1950s. -- Al Brogdon, W1AB



An *ARRL Handbook* project showed how to convert a military surplus "command set" into a Novice transmitter for 80 meters.

## Questions for Technician Class License (from new pool effective July 1)

1. (T1D08) In which of the following circumstances may the control operator of an amateur station receive compensation for operating the station?
  - A. When engaging in communications on behalf of their employer
  - B. When the communication is incidental to classroom instruction at an educational institution
  - C. When re-broadcasting weather alerts during a RACES net
  - D. When notifying other amateur operators of the availability for sale or trade of apparatus
2. (T2B07) What could cause your FM signal to interfere with stations on nearby frequencies?
  - A. Microphone gain too high, causing over-deviation
  - B. SWR too high
  - C. Incorrect CTCSS Tone
  - D. All of these choices are correct
3. (T3C12) Which of the following bands may provide long distance communications during the peak of the sunspot cycle?
  - A. Six or ten meters
  - B. 23 centimeters
  - C. 70 centimeters or 1.25 meters
  - D. All of these choices are correct
4. (T4A02) How might a computer be used as part of an amateur radio station?
  - A. For logging contacts and contact information
  - B. For sending and/or receiving CW
  - C. For generating and decoding digital signals
  - D. All of these choices are correct
5. (T5C12) What is meant by the term impedance?
  - A. It is a measure of the opposition to AC current flow in a circuit
  - B. It is the inverse of resistance
  - C. It is a measure of the Q or Quality Factor of a component
  - D. It is a measure of the power handling capability of a component
6. (T6D12) Which of the following is a common reason to use shielded wire?
  - A. To decrease the resistance of DC power connections
  - B. To increase the current carrying capability of the wire
  - C. To prevent coupling of unwanted signals to or from the wire
  - D. To couple the wire to other signals
7. (T7C06) What does an SWR reading of 4:1 indicate?
  - A. Loss of -4dB
  - B. Good impedance match
  - C. Gain of +4dB
  - D. Impedance mismatch
8. (T8C03) What popular operating activity involves contacting as many stations as possible during a specified period of time?
  - A. Contesting
  - B. Net operations
  - C. Public service events
  - D. Simulated emergency exercises
9. (T9A06) What type of antennas are the quad, Yagi, and dish?
  - A. Non-resonant antennas
  - B. Loop antennas
  - C. Directional antennas
  - D. Isotropic antennas
10. (T0A07) Which of these precautions should be taken when installing devices for lightning protection in a coaxial cable feed line?
  - A. Include a parallel bypass switch for each protector so that it can be switched out of the circuit when running high power
  - B. Include a series switch in the ground line of each protector to prevent RF overload from inadvertently damaging the protector
  - C. Keep the ground wires from each protector separate and connected to station ground
  - D. Ground all of the protectors to a common plate which is in turn connected to an external ground

(For answers to test questions see page 14)



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Answers to questions on page 13: 1-B, 2-A, 3-A, 4-D, 5-A, 6-C, 7-D, 8-A 9-C, 10-D

