

# AARC OVER

*Keeping  
Austin  
Wireless*



## AARC

*for  
100  
Years!*



© Can Stock Photo / hbas

## Bulletin of the Austin Amateur Radio Club

ISSN 1067-0262

### In This Issue

Everyone Needs a “Helping Hand” Sometimes  
*(build one of these useful tools)*  
Ham Radio Test Results  
Main article (continued)  
Meeting info  
Upcoming Exams / Calendar of Events

2  
3  
4-5  
6  
“

Over the WWaves...  
Just for Fun  
Upcoming Meetings / Periodic Events  
*Meeting Minutes (none for December)*  
Club Info:  
Repeaters / Officers / Contact info

7  
8  
9  
-  
10  
“

### January, 2020

# Everyone Needs a Helping Hand Sometimes

By Michael Skurka, K5MSK

Editor, AARCOVER + Website

The first things that popped into my mind when I wrote that title were songs about “Help” - including a couple of Beatles’ songs (“With A Little Help From My Friends” and “Help!”), “Help Is On The Way” by Rise Against, and “Helping Hand” by Foghat, and (most appropriately named) “Helping Hands” by Quiet Riot. (Yes. I listen to almost anything. But I digress.) This article is a how-to for building your own set of helping hands - a popular tool for holding things in position when you don’t have enough hands of your own.

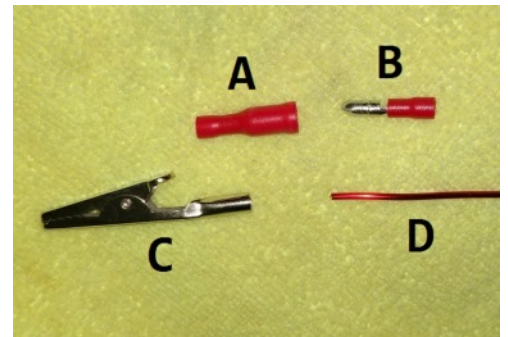


© Can Stock Photo / aquir

Yeah, sure. You could go to Amazon.com and order the *QuadHands Workbench Helping Hands Soldering Third Hand Vise* (<https://amzn.com/B01MTWLF2Q>) - “only” about \$45 at time of publication. What?! \$45.00?! Ouch. Yeah. They are nice and pretty, professionally assembled, and might even come with a warranty, too. But I have some spare parts that look a lot like what they used to assemble that thing. And it sure isn’t going to cost me \$45 USD!

I scavenged up my parts and I figure I’m going to use about \$2.00 worth, and that estimate may even be a little high. Okay... Here’s the [Parts List](#) and a picture is worth a thousand words:

2 (or more) sets of Bullet Connectors (“A” male+ “B” female)  
2 (or more) Alligator clips (“C”)  
about 6 to 8” of 14- to 10-gauge wire for each “hand” (“D”)  
Two-part epoxy (i.e. J.B. Weld or any generic; not shown)  
1”x6” board - Length to *your* needs. I used 1”x6”x8” (approximate; not shown here; can use other materials for the base. More on this later)



I used 14 gauge wire because that’s the scrap I had in front of me. #12 or #10 might be better if you need stronger support. I don’t have massively big circuit boards that I work on, so #14 *should* be just fine.

## Tools needed:

A drill with a bit that is *slightly* larger than the wire.

Crimp tool or pliers (for the bullet connectors)

Soldering iron (preferred for best mechanical joints)

Before starting, be sure you use all the usual safety gear for each step. Safety glasses/goggles to protect your eyes. Gloves to hold sharp objects. Ventilation for mixing and using epoxy.

I’m going to describe my little, **two**-handed helping hand setup. You can definitely add more “hands” if you need more. They would probably be helpful if, for example, you’re holding a printed circuit board (PCB) with two or three hands and another hand is supporting a wire to be soldered to the PCB. Start with two and you can certainly add as many as you like (and as space permits)!

(continued on page 4)

# HAM RADIO TEST RESULTS

**AARC would like to congratulate the following individuals on their accomplishments!**

The following are the results of the ARRL VE test session held on December 7th, 2019 at Bethany United Methodist Church:

## Technician Class Licenses Processed

John M. Duke, Jr. KI5HMH  
William J. Nabholz, III. KI5HMJ

Clinton E. Leysath KI5HMI  
Matthew O. Nash KI5HMG

## General Class Licenses Processed

Ethan R. Bakkedahl KI6DUT  
Adam M. Schmackpfeffer KI5HMK

Charles D. Gahagan KI5HHB  
John T. Williams KI5GVG

Timothy B. McCanlies KI5HHC

## Extra Class Licenses Processed

Jamal M. Amadon KI5GVI

Jimmy D. Earl WB5MET

## *Examiners Participating in this Test Session*

Milt Cram W8NUE  
Ted Iglehart KF5END

Sam Downs KI5GPZ  
Joe Makeever W5HS

Gene Hinkle K5PA  
Jim Matthews KG5QFD

Please visit [http://www.austinsummerfest.org/VEC/ARRL\\_1st\\_Sat\\_Exams.html](http://www.austinsummerfest.org/VEC/ARRL_1st_Sat_Exams.html) for details and list of scheduled exams.

[Note: The ARRL VE sessions are moving in January. See the link for details. -Editor]

TNX ES 73 DE W5HS

Joe

12/22/2019

The South Austin W5YI VE team heartily congratulates the following people who earned new or upgraded amateur radio licenses at our November 16th 2019 session:

## Amateur Extra Class

Edward D. Reilly, III, KB3GLZ

George Smith, KL7GRL (Exp.)

Brian Christiansen (NEW)

## General Class

Eric Dreher, K5EPD

Claire Ireton, KI5HHJ

## Technician Class (New)

Heather Walters  
Sasank Mallampati

Steven Bynum  
Jason Hoekstra

## *Examiners Participating in this Test Session*

Craig Bean, AC5KW  
David Glosson, N5DPG

Sam Mihalik, KM5MY  
David Dyer, AG5OS

Our next two amateur radio exam sessions will start at 2 PM on January 18, 2020 and February 15, 2020 in Fleck Hall, room 118 on the campus of St. Edward's University. All sessions are walk-in and the exam fee is \$14 (cash or check).

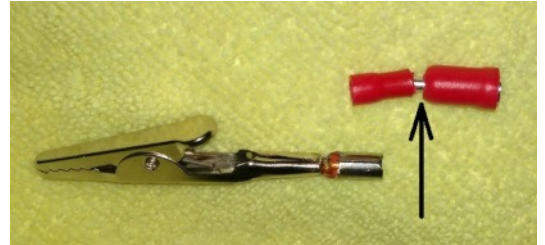
For additional information regarding our amateur radio examination sessions, please contact Craig, AC5KW at (512) 474-6443 or by e-mail to [craigmb5 /at/ gmail.com](mailto:craigmb5@atgmail.com)



## Everyone Needs A Helping Hand Sometimes (continued)

Start by prepping your base (1"x6" board). Drill two holes in the board. I set mine a little off center "vertically" and maybe an inch from left and right sides. Do NOT drill all the way through the board! When you add epoxy, you don't want it leaking out the bottom! Set the board to the side for now.

Now, let's start working with the bullet connectors. Remove the plastic insulation from the connectors. It's very easy to remove from the male connector. On the female connector, I used a rotary tool and cut around the insulation in the middle. It's then easy to remove the connector from the insulation. You might be able to pry it out, but be careful you don't bend it. Insert the smaller end into the alligator clip, crimp down a bit, and then solder it in. The solder gives it a good mechanical connection.



Crimp the male connector onto one piece of wire. Solder it in place.

Why didn't I just solder the alligator clip directly onto the wire? It would surely be a better mechanical connection. Well I'll tell you why. I do expect the #14 wire to break someday. Rather than tossing the whole "hand" and building another, or desoldering and recycling it, I only have to build the wire side, with the male connector. Also, having the bullet connector pair lets me to rotate the alligator clip 360° without putting stress on the wire. Okay... Do I want to get fancy? How? Well, I've got this expandable braided sleeving for wiring harnesses. It would look pretty nice. The photo at right shows what the sleeving looks like, stretched over my finger. And the next photo shows it on the wire/alligator clip assembly. Looks nice. But I don't really *need* it, so I left it off - this time!



Now grab that board you put aside - and grab the two-part epoxy. Mix the epoxy according to the directions (usually equal parts of epoxy and hardener). It won't take a *lot* of epoxy - maybe about a pea size for each part. Combine both part well. Insert the assembled wire into the hole. Put some epoxy around each wire. Then, pull each wire out and use the tip of the wire to push a little epoxy into the hole, and re-insert the wire. This will help hold the wire firmly into the base. Then, dispose of any excess epoxy safely. Let the epoxy harden according to the instructions. Most epoxy will "set" in just a few minutes, but will usually take 24 to 48 hours to completely harden.

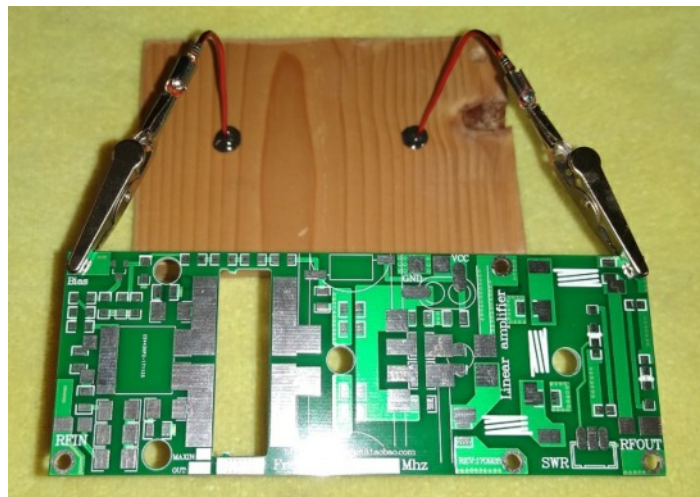


If one of my "hands" breaks from excessive bending, I can just drill a new hole and insert a new one, scavenging the alligator clip from the original. A few photos of the assembled "hands" are on the next page - bare and holding a PCB.

(continued on next page)



## Everyone Needs A Helping Hand Sometimes (continued)



It is very easy to flip a PCB over and adjust the “hands” to hold it exactly where you want it!

Total build time:

about 20 minutes

Real time because I was not organized (haha):

45 minutes

What are you waiting for? You won’t need to ask for help next time you need it. Just pull out your set of homebrew helping hands and you’re good to go!

And while I have your attention... I recently noticed another builder on YouTube using a small bottle for his soldering resin. COOL idea! So I found some of these bottles that work perfectly for me! They have a small diameter tip so the resin doesn’t gush out, and a silicone cover for the tip (see photo at right). The tip allows for fairly precise application of resin where I need it. I have found it very useful and don’t use disposable brushes or other applicators any more. YMMV ;)

Oops. I almost forgot! Another idea for base material: quick-dry cement, for a much heavier base! Use a small plastic container, a tuna can, or any size you find useful. Assemble the wires, connectors, and alligator clip as usual. Mix your cement according to the instructions and fill your container. Gently tap to help dislodge bubbles. Insert the wires into the cement, bending them and clipping them together to help hold them upright. In this case, 3 or 4 “hands” would be perfect to help each other stay upright! Let dry/harden. Done!

I hope you found this build and ideas helpful.

73 and **Happy New Year** to all!

DE K5MSK / Michael



## AARC Meeting Info

AARC Monthly Meeting  
Tuesday, January 7, 2020 / 7:00pm to 9:00pm

**Location:** Applied Research Labs  
10,000 Burnet Rd, Austin TX

### Meeting Topic

Panel discussion on the design and  
assembly of Amateur home stations

Solar Wx Summary, by Lew, W5IFQ

## Upcoming Amateur Exams: 2020

ARRL VE - Please visit  
[http://www.austinsummerfest.org/VEC/ARRL\\_1st\\_Sat\\_Exams.html](http://www.austinsummerfest.org/VEC/ARRL_1st_Sat_Exams.html)  
for details and list of scheduled exams.

For more info, contact:  
Joe Makeever, W5HS (512-345-0800)

W5YI VEC - January 18 and February 15  
2 p.m. In Room 118, Fleck Hall,  
St. Edwards University. \$14 fee.

For more info, contact:  
Craig, AC5KW [at] ARRL.net

## 2020 - Calendar of Events

### Jan 10-11 – Radio Fiesta 2020

Schertz Civic Center. Official ARRL Hamfest.  
Tables and tickets are being sold now through Eventbrite.  
<https://www.eventbrite.com/e/sarc-radio-fiesta-tickets-64629584828>  
<http://w5sc.org/radio-fiesta/>

### Jan 17-18 – Cowtown Hamfest

ARRL North Texas Section Convention and Our 12th Year  
Forest Hill Civic And Convention Center  
6901 Wichita Street, Forest Hill, Texas 76140  
Talk-in 146.94 Tone 110.9  
<http://www.cowtownhamfest.com/>

### Jan 19-25 – Quartzfest - annual HAM Radio RV'ers Boon-docking event

7 miles south of Quartzsite Arizona - on US 95 at La Paz  
Valley Road. Quartzfest Organizer: Kris - KR1SS  
kristynweed@gmail.com  
<http://www.quartzfest.org>

### Jan 25-26 – Winter Field Day

2020 @ 1:00 pm - January 26, 2020 @ 1:00 pm  
Winter Field Day runs for 24 hours during the last full  
weekend in January from 1900 UTC (1pm CST) Saturday to  
1900 UTC (1pm CST) Sunday. For 2020, the dates are Janu-  
ary 25th and 26th. Station set-up may commence no  
earlier than 1900 UTC (1pm CST) on Friday, January 24th.

### Feb 1 – 29th Annual Lou Withrow Austin/South Central Texas SkyWarn Basic & Advanced Training Session

9am - 4pm; Basic & Advanced Training  
ACC Eastview Campus, Building 8500  
3400 Webberville Rd, Austin TX 78702  
Hosted by Troy Kimmel, KE5BCK  
<http://www.la.utexas.edu/users/kimmel/skywarn.html>  
Any questions- tkimmel@austin.utexas.edu

### Mar 6-7 – Greater Houston Hamfest (Rosenberg)

Hosting the ARRL Texas State Convention 2020. Greater  
Houston HamFest will be our 19th year. Location: Fort  
Bend County Fairgrounds, 4200 Highway 36, Rosenberg,  
Texas. Friday March 06, 2020 12 pm to 8 pm - Vendor Set-  
up Only / Saturday March 07, 2020 Setup - 6AM - 8AM;  
Main event - 8AM - 2PM  
Talk In 146.94 Tone 167.9  
[http://houstonhamfest.org/pdf/ghh\\_2020\\_flyer.pdf](http://houstonhamfest.org/pdf/ghh_2020_flyer.pdf)  
<http://www.houstonhamfest.org/>  
HamFest Hotline 401-584-GHHF (4443)  
713-502-5896 and/or 713-569-8799

### Mar 21 – Annual WCARC Swapfest (NOTE! Change in venue!!)

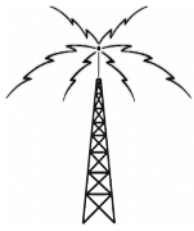
St. Richard's Episcopal Church, 1420 E. Palm Valley Blvd.,  
Round Rock, TX 78664.  
8am-Noon. Big parking lot for Tailgating also. You could  
bring your trailer there, if you wanted. Stay tuned for de-  
tails: <http://wcarc.com/index.php/events>

### May 2-3 – 2020 Texas MS 150 (Note: NOT IN APRIL)

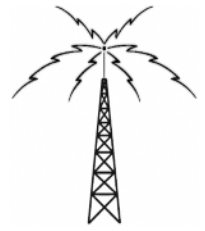
Formally the BP MS 150. Please Note Other Major Changes  
for 2020:  
Austin has been ADDED as a START location.  
The ride will start from Austin AND Houston.  
Saturday Night overnight is still in La Grange.  
Kyle Field at Texas A&M is the New Finish Location on SUN-  
DAY. Volunteer Sign-up is ready to Go!  
Please see the following NEW website for additional infor-  
mation: <http://texasms150hams.org/>

More info & events listed in the [SwapNet Newsletter!](#)  
Visit <http://austinhams.org/swapnet>





# Over the WWWaves...



(Note: Titles added by Editor. All links verified prior to publication.)

## Satellite Viewer, plus Highlights (interactive)

This worked on my desktop. Didn't work on my phone. [Confirmed good on Google Chrome. -Editor]

<https://www.youtube.com/watch?v=dJNGi-bt9NM>

(DE K5FNI, Rick)

## The Times Poles, They Are A Changing!

Interesting that they didn't mention if the south magnetic pole is on the same sort of march. I guess this is from our northern-hemisphere-centric society. [Title words paraphrased from a Bob Dylan song, but the poles are changing! -Editor]

<https://amp.cnn.com/cnn/2019/12/18/world/magnetic-north-pole-drift-scn-trnd/>

(DE K5FNI, Rick)

## New Amateur Radio Website In Texas

A new site has been launched by a Texas ham, KK5JIM. It is an always free forum site for licensees to exchange information, form private and public groups, discuss and announce events, and sell or trade ham gear. Check out the blog with many ham-related posts. The webmaster is very responsive and open to suggestions for the site.

<https://texashamradio.net/>

(DE K5MSK, Michael)

## Seen In The SwapNet Newsletter

- RSOISS on the International Space Station is sending SSTV images again, this time commemorating the memory of cosmonauts Alexei Leonov, Valery Bykovsky and Sigmund Jaehn.
- The QCX challenge is our monthly operating event to encourage operators to get on the air with their QCX (or other) radios and enjoy the pleasures and benefits of CW.
- Reversed Polarity Sunspots Appear on the Sun
- Space Weather Woman: <http://www.spaceweatherwoman.com/>
- Bravo Scott deMasi and David Godell for their work. (Assistant Scoutmasters help Scouts get trained to be amateur radio operators.)
- Coastal ChipWorks, developer of the TNC-X and TNC-Pi is closing business, <https://www.tnc-x.com/#Pi>

Read about these and more in the the SwapNet Newsletter. Download at <https://www.austinhams.org/swapnet>

[Editor]



---

## Reminder

There are no Meeting Minutes from December, 2019 as the AARC traditionally holds a Christmas Party instead.

## Ham Of The Year

Congratulations to **Lori Schmidt (KM5MQ)** who received the **Ham Of The Year** award, presented at the party!



---

Background image © [Can Stock Photo Inc.](#) / italianestro



# Just For Fun...



## Word Search

Can you find all the words listed below in this puzzle? The words are taken from articles, news, events, or *anywhere* in this newsletter. Can you find them in this newsletter?

H T Y T Z L R F R S T E P D Y  
C A S R E E Y O L R G D O M K  
P L C E T N T J A U B N L R X  
M B L N F A P N U T O O A E Z  
N A I U G Z S A E O U S R D E  
Q W G I I M T G W T F O I L T  
P G L N I H F R P S F I T O T  
B L L T E W R J A O H D Y S Q  
A P T L B T K E J U K A Q J B  
N E C O O T I E S D Q R D A C  
R N W O T W O C Y I I K L T Q  
A I R W A V E S F Z N L R I B  
Y T I S R E V I N U O A A Z D  
V X Y V F N A C L O W W A K I  
Z S R S H M J R N P H V Z A G

AIRWAVES  
ALLIGATOR  
BALLOON  
COOTIE  
COWTOWN

MAGNETIC  
POLARITY  
QUARTZFEST  
RADIOSONDE  
RESIN

SOLDER  
SWAPNET  
TRANSMITTER  
UNIVERSITY  
WINTER

## Action on the Airwaves

Looking for something new to do this new year?  
This is just a *sample* of the special events stations.  
Check out more [activities on the air!](#)

### 01/01/2020 | NCDXA 5th Annual Worked All RST Special Event

Jan 1-Feb 28, 0000Z-2359Z, KL7RST, Anchorage, AK. North Country DX Association (K7ICE). 14.250 14.075 7.190 7.050. QSL. J. Reisenauer, 2573 Old Georgetown Rd. W., Kershaw, SC 29067.  
<https://www.qrz.com/db/kl7rst>

### 01/02/2020 | 14th Annual Straight Key CW Event

Jan 2-Jan 31, 0000Z-2359Z, K3Y, various cities. SKCC - Straight Key Century Club. 21.050 14.050 7.055 3.550. Certificate & QSL. SKCC c/o Jeremy Downard, KD8VSQ, 511 W. Pottawatomie St., Tecumseh, MI 49286. K3Y/0 thru 9 plus KH6, KL7, KP4 and DX member stations in six WAC areas operating straight key, bug and cootie keys. QSL card confirms one QSO per area, up to 19 for all-area sweep. See URL for schedule, map, stats, etc. <http://www.skccgroup.com/k3y/>

### 01/08/2020 | 9th Annual Balloon Festival

Jan 8-Jan 12, 0000Z-2359Z, K7B, Lake Havasu City, AZ. London Bridge Amateur Radio Association. 18.145 14.263 7.195 3.905. Certificate. Garry F. Fisher K9WZB, 1850 Rainbow Ave S, Lake Havasu City, AZ 86403  
<http://www.lbara.org/>

### 01/19/2020 | Quartzfest 2020

Jan 19-Jan 25, 0700Z-1800Z, W7Q, Quartzite, AZ. Quartzfest. 7.275 +-10 khz 14.285 +- 10 khz 21.395 +- 10khz 28.415 +- 10khz. QSL. Gloria Luther, 7690 W Derry, Kirkland, AZ 86332. <https://quartzfest.org/>

### 01/25-26/2020 | Winter Field Day

Jan 25-Jan 26, 1900Z Saturday-1900Z Sunday. All bands \*except\* 12, 17, 30, and 60 meters. Initially sponsored in 2007 by SPAR - the Society for the Preservation of Amateur Radio. Now a group of operators who have banded together to form the Winter Field Day Association. Visit <https://www.winterfieldday.com/> for more info. Look for (local) participation as registered on the **locator map**: <https://winterfieldday.org/siteLocator.htm>

## This Month In Radio History

Source: <https://www.onthisday.com/literature/radio>

**1902-01-01** - Nathan Stubblefield makes 1st public demonstration of radio, Pennsylvania

**1903-01-18** - The first transatlantic radio transmission to originate in the United States is sent by a transmitter in Massachusetts

**1908-01-12** - A long-distance radio message is sent from the Eiffel Tower for the first time.

**1909-01-23** - 1st radio rescue at sea

**1928-01-30** - 1st radio telephone connection between Netherlands & US

**1930-01-30** - The world's first radiosonde is launched in Pavlovsk, USSR.

**1940-01-05** - FCC hears 1st transmission of FM radio with clear, static-free signal

**1965-01-27** - 1st ground station-to-aircraft radio communication via satellite

**1970-01-23** - Australia's 1st amateur radio satellite (Oscar 5) launched (California)

**1973-01-16** - USSR's Lunakhod 2 begins radio-controlled exploration of Moon



## Upcoming Meetings...

Jan	Feb	Austin Meetings/Happenings	Time	Address
7	4	AARC Meeting @ Applied Research Labs.	7:00pm	10000 Burnet Rd
28	25	Travis County ARES @ Applied Rsrch Labs	7:00pm	10000 Burnet Rd
20	18	CTDXCC Meeting @ Mimi's Café	6:30pm	10515 N Mopac Expwy
		Visit <a href="https://www.ctdxcc.org/meetings/">https://www.ctdxcc.org/meetings/</a> to confirm date/time (dinner @ 5:15pm)		NB Bldg O "the Big Room", Austin
-	-	CERT Meeting <b>no longer held</b>		

If your club is listed here and has incorrect time or dates, please let us know!

Email: editor [at] austinhams.org

## Periodic Events On-The-Air

Sun	7:00 p.m.	Travis Co. ARES net	147.360 MHz - (131.8)
Sun	1900-Wed 2359	Travis Co. ARES WinLink Wednesday	145.730 MHz
Sun	8:00 p.m.	Williamson Co. ARES net	146.640 MHz - (162.2)
Sun	9:00 p.m.	AARC SwapNet	146.940 MHz - (107.2)
Mon	7:30 p.m.	STX ARES Net	3.873 MHz
Tue	7:30 p.m.	Hays ARES net	147.100 MHz +
Tue	8:00 p.m.	Bastrop ARES Net	443.750 MHz + (114.8)
Wed	10:00 a.m.	Ham Social Brunch, Jim's	146.940 MHz - (107.2)
Thu	9:00 p.m.	2m SSB Net	144.250 MHz (USB)
Thu	11:00 a.m.	Lunch, Pokey Joe's 183&Great Hills	444.100 MHz+
Thu	11:45 a.m.	Lunch, Whataburger Oltorf & Burleson	146.940 - (107.2)
Fri	8:00 p.m.	6m SSB Net	50.230 (texasvhf.org/)
Sat	7:00-8:30 a.m.	Breakfast @ Waterloo Ice House	444.100 MHz +
Sat	9:00 a.m.	Chapter 67 QCWA QSO Net.	3.920 MHz LSB
Sat	7:00 p.m.	AARC Elmer Net	146.940 MHz - (107.2)
Daily	6:30 p.m.	Central Texas Traffic Net	147.140 MHz+

## THIS SPACE FOR "RENT" (aka *Call For Articles*)

For "Rent"? Sort of... Rather, do you have any news of interest to the AARCOVER readers. Have you run across some amateur radio related news items? How about links to homebrew projects or new equipment?

I've run out of prepared material and am interested in articles for publishing in this newsletter. Personal experiences are fantastic! Have you worked or played with a new technology - like the digital methods mentioned in this newsletter? Or maybe you're one of the more experienced operators in our community. What changes have you seen in amateur radio throughout the years?

You don't have to be a Pulitzer Prize winner to submit an article. I'll take anything, but would love to get articles that are at least two pages in length (single-spaced). Photos are great, too! Please remember, any submissions need to be free of copyrights. Creative Commons are okay, but I will need references to be able to publish them with attribution.

*Thanks & 73 DE K5MSK, Editor*

**Austin Amateur Radio Club, Inc.** / PO BOX 4739 / AUSTIN TX 78765-4739 / Web site: <http://www.austinhams.org>  
The Austin Amateur Radio Club, Inc. (AARC) has annual membership dues of \$20.00 per person or \$30.00 per family.

### **CLUB REPEATERS**

*AARC maintains the following repeaters:*

<b>Frequency (MHz)</b>	<b>PL Tone (Hz)</b>	<b>Use / Notes</b>
146.780 (-)	-	2m D-STAR repeater [W5KA C]
146.880 (-)	107.2	Analog/Digital Fusion (Yaesu)
146.940 (-)	107.2	Most popular, TCARES WxNet, SwapNet
224.800	-	-
440.650 (+5)	-	70cm D-STAR repeater [W5KA B]
444.100	-	-
444.200	107.2	-
1293.100 (-20)	-	23cm D-STAR repeater [W5KA A]
1248.200	-	23cm D-STAR DD (data, simplex/Reversible) [W5KA A]

*Persons using the repeaters are encouraged to join the club to help support these valuable resources.*

Note: **No** AARC repeater has **autopatch** capability any longer.

---

**The Austin Amateur Radio Club offers annual scholarships to licensees living in Travis, Williamson, Bastrop, Hays, Blanco, Caldwell, and Burnet counties.** Please see <http://austinhams.org/scholarships> for more information.

---

### **OFFICERS (Welcome to 2020!)**

President	Kerby Spruiell	KG5DLD	president [at] austinhams.org
Vice President	Lew Thompson	W5IFQ	vice-president [at] austinhams.org
Treasurer	Mark Jenkins	W5MPJ	treasurer [at] austinhams.org
Secretary	Joan Cox	KD4SRD	secretary [at] austinhams.org

### **Other Contacts**

Technical (Repeater Contact)	Roy Walker	WA5YZD	wa5yzd [at] arrl.net
ARRL Travis Co. Emer. Coord.	Michael Marks	KG5RXG	kg5rxg [at] arrl.net
TCARES PIO	Kerby Spruiell	KG5DLD	pio [at] austinhams.org
Editor, AARCOVER, website	Michael Skurka	K5MSK	editor [at] austinhams.org

\* Replace [at] with @ in email addresses.

---

**AARCOVER Information:** ISSN 1067-0262, CODEN AAOVE3. ©Austin Amateur Radio Club, Inc.

Published monthly by the Austin Amateur Radio Club, Inc.

Viewpoints expressed in the **AARCOVER** do not necessarily reflect those of the club, or of its members, directors, or officers. Material quoted from the ARRL Letter is supplied by the American Radio Relay League, Inc.

Members and other readers are encouraged to submit original material for publication. Contact the Editor, if mailed submissions are required. Email and/or electronic files are encouraged! Submissions may be edited for publication (for content and/or space). **Deadline is usually the 25th of each month**, but late articles may be considered for future publication. Material may be used in a later issue. Unless otherwise noted, permission is granted to reprint AARCOVER articles, provided you credit the original author and the **AARCOVER**. If material from the AARCOVER is included in another publication, a courtesy copy to the Editor is appreciated.



### **AARC Members:**

**For Changes in your ADDRESS, PHONE NUMBER or CALL SIGN**  
**Contact: Mark Jenkins, W5MPJ / treasurer [at] austinhams.org**  
**Mark handles all changes for membership information.**

