



THE OHM TOWN NEWS

Voice of the Bridgerland Amateur Radio Club

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

September 2016

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PRESIDENT'S MESSAGE

The Dayton Hamvention is moving on after 52 years at the Hara Arena in Trotwood OH. The Hamvention had to relocate following the sudden announcement on July 29th that the Hara Arena would close its doors at the end of August 2016. The Wampler family, who owns the Hara Arena, worked for years to overcome its financial problems, lighten its tax burden and place it on a more sustainable path, but was unable bring the arena back on a better financial footing. The Dayton Amateur Radio Association (DARA) and Hamvention had been working on a contingency plan in the event HARA would become unavailable, so on August 1 it was announced that Hamvention would relocate to the Greene County Fairgrounds, a 32-acre fairgrounds space in Xenia OH. The Greene County Agricultural Society, Greene County Convention & Visitors Bureau as well as the city of Xenia had been working with Hamvention to quickly make the venue available. Michael Kalter, Official Spokesperson and CFO of Hamvention, states that Hamvention attracts attendees from all 50 states and 60 countries worldwide each year with an estimated attendance of approximately 25,000.

The month of September is recognized as [National Preparedness Month \(NPM\)](#) which serves as a reminder that we all must take action to prepare, now and throughout the year, for the types of emergencies that could affect us. Sponsored by the Federal Emergency Management Agency (FEMA) within the Department of Homeland Security, National Preparedness Month encourages Americans to take steps to prepare for emergencies in their homes, businesses, schools, and communities. FEMA's Ready Campaign, the correlating public education outreach campaign, disseminates information to help the general public prepare for and respond to emergencies, including natural disasters and potential terrorist attacks

Since September 11, 2001, the US Government has taken steps to encourage all citizens to make their own survival preparations. September was chosen as National Preparedness Month, as the tragedies of September 11, 2001 highlighted to the nation the importance of being prepared. Also September has been chosen partly because of the peak of the Atlantic hurricane season is in mid-September.

[America's PrepareAthon!](#) takes a Whole Community approach to disaster preparedness with resources to help individuals understand which disasters could happen in their community, know what to do to be safe and mitigate damage, and help their community do the same.

NOAA's [Weather-Ready Nation](#) also has weather related information for preparedness. Another article by the [USGS](#) has a listing of many natural hazards that can cause damage to the places where we might live.



A disaster can happen at any time, often with little to no warning. The mass destruction could leave your area cutoff from the outside world for days. It may take emergency rescuers a day or up to a week before they are able to get to your area depending upon the severity of the disaster. Being ready for any disaster is important to surviving and recovering from a disaster. Having an emergency plan and a disaster survival supply kit will help you/your family through almost every kind of crisis, whether natural or caused by humans. However, each type of event requires different kinds of preparation and action.

73,
Cordell
KE7IK

UPCOMING 2016 ACTIVITIES

- 08 Sep, 6-9 PM—BARC Pot Luck Fall Social & LOTOJA Mtg @** the Stake Center Pavilion located at 360 E 450 N Providence, UT. This is the club meeting for September. There is construction in the area so it is best to go down Highway 165 to the new stoplight by the new High School (2600 South), turn East and go around the new High School and then go back North to get to where the Stake Center/Pavilion is located.
- 10 Sep, LOTOJA** — bicycle race — Kevin & Tyler ([More Info Here](#) or [Here](#))
- 14 Sep, 7:30 PM - ARRL Rocky Mountain Division Net** 147.200/IRLP Node:9871
- 17 Sep, 8:00 AM — RACES HF Net** 3920 KHz
- 17 Sep, Top of Utah Marathon** — Laurie ([More info here](#) or [Here](#))
- 21 Sep, 7:00 PM — Cache County ARES meeting** at the Sheriff's Office
- 23-24 Sep, The Bear 100** — Ted and Cordell ([More Info Here](#))
- 24 Sep, Bike The Bear** — ([More Info Here](#))
- 6 October, 7:00 PM — ARRL VEC License Test Session @** USU Engineering Building Room 302, Logan, UT ([More Info Here](#))
- 8 Oct, Swaptoberfest (Club Mtg for October)** — Bill Neville ([More Info Here](#))
- 12 Oct, 7:30 PM — ARRL Rocky Mountain Division Net** 147.200/IRLP Node:9871
- 14-15 October — JOTA** ([More Info Here](#))
- 19 Oct, 7:00 PM — Cache County ARES meeting** at the Sheriff's Office
- 20 Oct, 8:00 PM - RACES VHF Net** 147.180 Snowbird 147.20 IRLP 146.72 Mt. Logan
- 22 Oct, 8:00 AM - One Day Ham Class Tech** USU Eng Bld, Rm 302, Logan ([Info](#))
- 8 Dec, 6:30 PM — BARC Christmas Party/Club Meeting @** The Bluebird

For more calendar information see the barconline.org/calendar

Local Radio Nets:

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.

What do we do, the repeater's down!?

For the Net on 3/22 the Mt. Logan repeater went down for about 20 minutes, it has occasionally done this at other times . The reason, Complete power failure at the repeater site.

So, the question has come up, The repeater's down. Now what do we do?

The BARC Tuesday night net preamble says:

"The series of three tones you just heard indicates that a net or an emergency situation is in progress. Should you hear these tones, please stay on frequency and check in with net control. If you hear no traffic within a couple of minutes, call for the net control operator on this frequency or the 147.200 repeater."

But this scenario covers an emergency situation when the repeater is still up and working.

Our county ecom plan (<http://barconline.org/wp-content/uploads/Cache-County-ECOM-Plan-1-12-2016.pdf>) says:

Cache County Command and Monitoring Frequencies			
TACTICAL CALL	PRIMARY	BACKUP #1	BACKUP #2
Command #1	147.200+ (PL103.5) 220 un-link Mt Logan	146.640 s	146.640- (No PL)
Command #2	146.720- (PL103.5)	146.720 s	146.800- (PL 88.5)
EOC Intercom	147.520 s		

Again this is for an emergency situation.

So for a regular weekly scheduled net we should attempt to stay on the same frequency.

First option would be 146.720 simplex. With stations from outside the valley checking in by relay.

All stations on the net should monitor for distant stations that may not be heard by net control and relay those calls to net control

Other stations may be required to monitor the repeaters that are normally linked to our system to make an announcement on what is going on with the net and take checkins to relay to net control. Others may be required to monitor the input of the .72 system (146.120) and listen to stations that were not able to change to simplex.

So this is a good time to learn how to do 146.720 simplex with no PL tones on the fly with your equipment.

Elmer Night would be the perfect opportunity to get help if you are struggling with this option.

New Licenses and Upgrades

This summer BARC sponsored two license exam sessions. The first session was held on Thursday, June 2, 2016. Here are the results of the exams given at this session.

The following individuals earned a Technician License:

Jared Allred – KI7EZK	Zachary Griffiths – KI7EZQ
Adam Gilbert – KI7EZN	Hafin Painter – KI7EZM
Emileigh Griffiths – KI7EZP	Tracy Shupe – KI7EZO

The following upgraded to a General License:

Donald Asay – KF7MEA	Alan Redding – KG7YKP
John McEldowney – KG7LBY	

The following individual passed both the Technician and General Exams:

Wayne Crawford – KI7EZL

The following upgraded to an Extra License:

Ronald Malouf – KF7GXQ	Kimble Smith – KD7KOS
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The following individual passed the Technician, General and Extra Exams:

Jacob Adams – AF7EX

Here is a summary of the number of exams given and new licenses earned at this session:

Technician License Exams Given:	8	New Technician Licenses Earned:	6
General License Exams Given:	9	New General Licenses Earned:	4
Extra License Exams Given:	5	New Extra Licenses Earned:	3
Number of Exams Given:	22	Number of New Licenses Earned:	13
Number of People Served:	13		

The second exam session was held on Saturday, July 30, 2016. Here are the results of the exams given at this session.

The following individuals earned a Technician License:

Kai Hartley – KI7GIP	Allison Painter – KI7GIN
Kyle Hovey – KI7GIQ	Jenifer Painter – KI7GIO

The following upgraded to a General License:

Hafin Painter – KI7EZM

Here is a summary of the number of exams given and new licenses earned at this session:

Technician License Exams Given:	4	New Technician Licenses Earned:	4
General License Exams Given:	5	New General Licenses Earned:	1
Extra License Exams Given:	1	New Extra Licenses Earned:	0
Number of Exams Given:	10	Number of New Licenses Earned:	5
Number of People Served:	5		

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Welcome to the Bridgerland Amateur Radio Club to all those that earned their first Amateur Radio license on June 2nd or July 30th, and congratulations to all that earned a General or Extra license.

A big thank you to all the VEs and other club members that helped with each of these exam sessions.

There are three more exam sessions scheduled for 2016 as follows:

Thursday, October 6th at 7:00 pm.

Saturday, October 22nd at 3:00 pm. (This session will begin immediately following the 1 Day Technician class that is being taught that day.)

Saturday, December 3rd at 8:00 am.

Tell your friends and family members that would be interested in Amateur Radio about these test sessions and about the one day class.

Here are some other exams sessions being offered in the area

In Weber County

Wednesday, October 5th at 6:00 pm
Weber County Sheriff Office – Training Room
721 West 12th Street, Ogden UT

In Davis County

Wednesday, December 7th at 7:00 pm
Clearfield City Offices
55 South State Street, Clearfield UT

Richard Elwood
KE7GYD
VE Liaison

The ARRL Letter for August 11, 2016 Growth in New Amateur Radio Licensees Ahead of Last Year's

The ARRL Volunteer Examiner Coordinator (VEC) reports that 20,447 new US Amateur Radio licenses have been issued since January 1. That's nearly 1500 ahead of the number that had been issued by this time last year. At the present pace, the US is on track to exceed 30,000 new radio amateurs for the third straight year by the end of the year.

"While I am thrilled with this prospect, I'm also keenly aware that without some mentoring, these new hams' initial curiosity and enchantment may fade if they don't get on the air right away," said ARRL VEC Manager Maria Somma, AB1FM.

"Let's show these new hams what the magic is all about," she urged.

In addition, the ARRL VEC reports that upgrades are on track to reach nearly 11,000 by year's end.



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Amateur Radio Sleuthing Pins Down Source of Strange RF Interference

Police in Evanston, Illinois, contacted the ARRL Lab, after an apparent interference source began plaguing wireless vehicle key fobs, cell phones, and other wireless electronics. Key fob owners found they could not open or start their vehicles remotely until their vehicles were towed at least a block away, nor were they able to call for help on their cell phones when problems occurred. The police turned to ARRL for help after striking out with the FCC, which told them it considered key fob malfunctions a problem for automakers, although the interference was affecting not just key fobs but cell phones -- a licensed radio service. ARRL Lab EMC Specialist Mike Gruber, W1MG, feels the FCC should have paid more attention.



The 600 block of Dempster Avenue in Evanston, Illinois, was plagued by a strange radio interference problem. [Kermit Carlson, W9XA, photo]

"This situation is indicative of what can happen as a result of insufficient FCC enforcement, especially with regard to electrical noise and noncompliant consumer devices," Gruber said.

Evanston authorities worried that a serious situation could develop if someone were unable to call 911, putting public safety at risk. They also were concerned that the RFI could be intentional and indicate some nefarious or illegal activity. Given the seriousness of this situation, Gruber contacted Central Division Director Kermit Carlson, W9XA, to ask if he could look into the matter.

On June 2, Carlson met with an Evanston police officer, her sergeant, a local business owner, and the local alderman, and he quickly confirmed that the 600 block of Dempster Avenue in Evanston was plagued with an odd RFI problem. Carlson determined that the problem prevailed along a set of eight on-street parallel parking spots in the downtown commercial district of the North Chicago suburb.

Carlson employed a Radar Engineers 240A Noise Signature Receiver and UHF Yagi antenna to survey the affected block. Since key fobs typically operate at around 315 MHz and 433 MHz, he looked on both frequencies. The survey identified several noise sources in the affected block, but in particular a strong signal in the middle of the block. The interference source turned out to be a recently replaced neon sign switching-mode power supply, which was generating a substantial signal within the on-street parking area just across the sidewalk, between 8 and 40 feet from the sign.

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The problematic power supply interference also disabled Carlson's cell phone when he was within a few feet of the device. Carlson anticipated that further investigation would show that the harmful interference could disrupt licensed radio services in close proximity. The troublesome transformer was not replaced, but the building owner agreed to turn off the sign should problems arise.

Carlson called the Evanston case "a particularly alarming example of radio interference," especially since local authorities considered it a public safety matter. "This situation demonstrates the electromagnetic compatibility problems that are evolving in an atmosphere of noncompliant, unintentional RF-emitting devices," he said.

A return visit to the area with calibrated antennas and equipment capable of measuring the radiated signal strength with quasi-peak detection is planned for later this year. Since the initial visit, several other instances of unexplained key fob malfunctions have been reported in the Greater Chicago area. -- *Thanks to Kermit Carlson, W9XA, and Mike Gruber, W1MG*



This Ventex Technology neon sign power supply was found to be a strong source of radio interference in the affected neighborhood of Evanston. [Kermit Carlson, W9XA, photo]

Amateur Radio Plays Critical Role in Mountain Rescue

Glenn Fowler, N5TDJ, of Allen, Texas, reported via Facebook that Amateur Radio served him well on August 4.



Ham radio reached help in this rugged terrain for a participant in a Jeep trip who had suffered an apparent heart attack. [Photo courtesy of Glenn Fowler, N5TDJ]

"We were on a treacherous Jeep trip up at about 13,000 feet with several other Jeeps in Colorado," he said in his post. "One person there from Texas had a heart attack. There was no cell phone service. I tried a few repeaters and the National Simplex Frequency and was amazed that no one was monitoring any of them. I kept trying and finally reached an ARES station on a Breckenridge linked repeater that took our GPS coordinates and dispatched an ambulance to meet us at the first place they could intercept the trail."

Fowler reports the individual who suffered the heart attack was hospitalized, "and, thankfully, he received lifesaving help from paramedics a lot sooner, due to ham radio."

An ARRL member, Fowler also belongs to the Plano Amateur Radio Club (K5PRK).

The ARRL Letter for August 25, 2016 Amateur Radio Volunteers Assisting in Italian Earthquake Response

Radio amateurs are taking part in the response to the 6.2 magnitude earthquake on August 24 in central Italy, International Amateur Radio Union Region 1 ([IARU-R1](#)) President Don Beattie, G3BJ, reports. IARU Region 1 Emergency Communications Coordinator Greg Mossop, G0DUB, has requested

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that 7060 kHz (LSB ± 10 kHz) be kept clear of non-emergency traffic, as well as any other center-of-activity ([COA](#)) frequencies that may be in use for emergency communication within Italy. (On 80 meters, the COA frequency is 3760 kHz). Other frequencies reported to be active include 7045, 3643, and 3580 kHz (PSK).

The earthquake claimed some 240 lives, although rescue operations are still under way. According to the IARU Region 1 website, Italian radio amateurs are active in the emergency response, and no outside assistance has been requested at this time.

According to Beattie, the Italian Amateur Radio volunteers are "following their planned response with their government" and that any requests for information on missing persons should be made via the Red Cross or other recognized relief organizations.

The worst loss of life was in the town of Amatrice, where more than 180 people died. Tremors in the aftermath of the initial quake were felt as far away as Rome. Survivors are staying in tents or otherwise out of doors. A reported 4300 people were said to be active in rescue operations in the region.

Louisiana Amateur Radio Emergency Service Volunteers Stand Down

Amateur Radio Emergency Service (ARES) volunteers responding to the Louisiana flood emergency stood down on August 20. Assistant Section Manager Matt Anderson, KD5KNZ, reported over the weekend that [Louisiana ARES](#) was in the process of deactivating from the recent flood response, and that there was no longer a need for additional volunteers. Anderson served as the Incident Point of Contact in Baton Rouge.

"Several amateurs will remain on site, reporting directly to the Red Cross as they begin to transfer to recovery operations," Anderson said. "We greatly appreciate all the assistance from ARRL HQ and the many Sections who provided support to the operation."



ARES volunteers in Louisiana deactivated after 6 days of operations in response to the flooding catastrophe, which also affected parts of Mississippi. ARES provided communication support to the Red Cross in five Louisiana parishes following the record flooding. At the height of the crisis, several shelters and Red Cross chapter offices were operating at full capacity, although the shelter population has diminished considerably.

Amateur Radio volunteers from Alabama, Arkansas, and Mississippi volunteered to serve at multiple Red Cross chapters and shelters throughout the affected area. With local and parish resources stretched to the limit, ham radio volunteers served as the communication link between Red Cross shelters and command centers, relaying information on the needs at each shelter back to Red Cross offices. Read [more](#).

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DX Engineering's Tim Duffy, K3LR: New Fairgrounds Venue "Perfect for Hamvention"

[DX Engineering](#) Chief Operating Officer Tim Duffy, K3LR, says he's enthusiastic about the new Dayton Hamvention® venue at the Greene County Fairgrounds in Xenia, Ohio -- both as a vendor and as an individual radio amateur. DX Engineering recently produced a short [video tour](#) of the new Hamvention location, which includes an interview with Hamvention spokesperson Mike Kalter, W8CI.

"I can tell you that I have been hearing from all over the world a sigh of relief after [people] see the video we did at the Fairgrounds," Duffy told ARRL. "The new venue is huge, and it is clean -- it will be perfect for Hamvention." Duffy said he likes the Greene County Fairgrounds so much that he thinks that Hamvention will be even better at its new site than it had been for the past 10 years or so at Hara Arena in Trotwood, Ohio.



Hamvention spokesman Mike Kalter, W8CI (left), chats on camera with DX Engineering COO Tim Duffy, K3LR. [DX Engineering video]

Duffy, who is also ARRL Western Pennsylvania Section Manager, encouraged the Amateur Radio community to support and encourage Hamvention's sponsor -- the Dayton Amateur Radio Association ([DARA](#)) as it makes the myriad arrangements for the big show. "This is a very tough job for an all-volunteer staff," he added.

In the approximately 8-minute video, Kalter, who is DARA's treasurer, said he was happy that Duffy, as a Hamvention vendor, could see the new venue firsthand. "We consider this a collabora-



Hamvention's new home: The Greene County Fairgrounds in Xenia, Ohio. [DX Engineering

tion," Kalter told Duffy. "We want everybody to be happy."

For his part, Duffy was enthusiastic about the size of the new site. "This place is so big!" he said. The Fairgrounds covers more than 100 acres, and Duffy said he checked out every building. He told Kalter that he was impressed to see DARA volunteers showing up at the new Hamvention site every day as they prepare for their Xenia debut in 2017.

"What I saw here today -- I think you're well on your way," Duffy told Kalter. "Things are on the right track."

Kalter expressed the hope that DARA will be able to take Hamvention to "a whole new level" at its new location.

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The ARRL Letter for September 1, 2016

Team USA Attending World Amateur Radio Direction Finding Championships

Fifteen top US on-foot hidden transmitter hunters have joined more than 400 other competitors representing 39 nations taking part in the 18th [World Amateur Radio Direction Finding \(ARDF\) Championships](#) in the Black Sea resort of Albena, Bulgaria. Competitors are divided into six [age categories](#) for males and five for females, in accordance with International Amateur Radio Union ([IARU](#)) rules for ARDF competition. Team USA includes nine men and six women from six states. Ranging in age from 26 to 74, they won their places on the team by their excellent performances in the [2016 USA ARDF Championships](#) in Texas and the [2015 USA ARDF Championships](#) in Colorado.



"This is the 10th time that the US has fielded a team for the World Championships, which take place in even-numbered years in various countries," said ARRL ARDF Coordinator Joe Moell, K0OV. "The [last time](#) that Bulgaria hosted was in 2006, when Team USA won its first World Championships medal." That year, Nadia Scharlau of North Carolina captured bronze in the 80 meter classic event, which required her to find four transmitters scattered within 2700 acres of forest.

Team USA picked up two medals in the optional ARDF World Cup competition, which precedes the World Championships. In the 80 meter classic competition, Vadim Afonkin, KB1RLI, of Newton, Massachusetts, placed third in the M40 category, capturing a bronze medal. The next day, Alla Mezhevaya of Rockford, Illinois, took the silver in the 2 meter classic competition in the W35 category. "We're off to a great start!" Moell allowed. Five Team USA members are participating in the 3 days of World Cup events.



Vadim Afonkin, KB1RLI, at an earlier ARDF event.

World Cup competitors get a day of rest on Saturday, September 3, as the remaining World Championships participants arrive. The following day is devoted to foxoring, the first official World Championships event. Participants in all events seek medals both as individuals and as members of national teams, which are limited to three participants per age/gender category from each country.

The World Championships continue with the sprint on Monday, September 5, and classic events on Tuesday and Thursday; Wednesday is set aside as a free day and cultural tour, offering a break between the classics. Banquets and medal award ceremonies follow each day's competition, and everyone goes home on Friday, September 9.

The [latest information](#) on how Team USA is faring in Bulgaria will be posted on Moell's "Homing In" website. The Bulgarian Federation of Radio Amateurs (BFRA) is hosting the event. Visit Moell's [Homing In](#) website for more information on ARDF.

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FO-29 Satellite Turns 20



It's been 20 years since the Fuji-OSCAR 29 ([FO-29](#)) satellite launched on August 17, 1996, from Tanegashima Space Center. Its 100-kHz-wide analog Mode V/U transponder continues to serve the Amateur Satellite community, although its packet BBS and digitaiker no longer function.

With an apogee of 1323 kilometers, FO-29 provides satellite operators with excellent DX opportunities every few months. Intercontinental contacts are regularly reported, including contacts between Japan and Alaska and between North America and Europe. While the theoretical maximum range at apogee is 7502 kilometers, the transponder's excellent sensitivity and solid 1 W downlink signal allow that

distance to be stretched when conditions are right. The longest distance covered via FO-29 was an unscheduled 7599.959 kilometer (approximately 4712 mile) [contact](#) on August 27, 2015, between Dave Swanson, KG5CCI, of Little Rock, Arkansas (on Shinnal Mountain in EM34), and Christophe Lucas, F4CQA, in Trouy, France (NJ17). Swanson answered F4CQA's CQ.

The 2015 K1N DXpedition to Navassa Island made 29 contacts during two passes of FO-29, activating that extremely rare DX entity on satellite for the first time since 1993, when Don Roland, VE1AOE, reported logging between 400 and 500 contacts as part of the W5IJU DXpedition to Navassa -- making the bulk of them on AO-13.

FO-29 remains the most widely used linear transponder satellite and an ideal starting point for beginners.

Uplink for the mode V/U (J) inverting linear transponder is from 145.900 to 146.000 MHz, SSB or CW. The downlink is 435.800 to 435.900 MHz. The CW beacon transmits on 435.795 MHz.

JARL offers an award for confirmed QSOs with 10 different stations via FO-29. -- *Thanks to AMSAT News Service*

Questions for The Technician Class License

1. (T1A10) What is the FCC Part 97 definition of an amateur station?
 - A. A station in the Amateur Radio Service consisting of the apparatus necessary for carrying on radio communications
 - B. A building where Amateur Radio receivers, transmitters, and RF power amplifiers are installed
 - C. Any radio station operated by a non-professional
 - D. Any radio station for hobby use
2. (T2A07) Which of the following is true when making a test transmission?
 - A. Station identification is not required if the transmission is less than 15 seconds
 - B. Station identification is not required if the transmission is less than 1 watt
 - C. Station identification is only required once an hour when the transmissions are for test purposes only
 - D. Station identification is required at least every ten minutes during the test and at the end of the test
3. (T3A07) What type of wave carries radio signals between transmitting and receiving stations?
 - A. Electromagnetic
 - B. Electrostatic
 - C. Surface acoustic
 - D. Magnetostrictive
4. (T4A07) How is a computer's sound card used when conducting digital communications using a computer?
 - A. The sound card communicates between the computer CPU and the video display
 - B. The sound card records the audio frequency for video display
 - C. The sound card provides audio to the microphone input and converts received audio to digital form
 - D. All of these choices are correct
5. (T5A05) What is the electrical term for the electromotive force (EMF) that causes electron flow?
 - A. Voltage
 - B. Ampere-hours
 - C. Capacitance
 - D. Inductance
6. (T6A03) What electrical parameter is controlled by a potentiometer?
 - A. Inductance
 - B. Resistance
 - C. Capacitance
 - D. Field strength
7. (T7A03) Which of the following is used to convert a radio signal from one frequency to another?
 - A. Phase splitter
 - B. Mixer
 - C. Inverter
 - D. Amplifier
8. (T8A03) Which type of voice mode is most often used for long-distance (weak signal) contacts on the VHF and UHF bands?
 - A. FM
 - B. DRM
 - C. SSB
 - D. PM
9. (T9A09) What is the approximate length, in inches, of a 6 meter 1/2-wavelength wire dipole antenna?
 - A. 6
 - B. 50
 - C. 112
 - D. 236
10. (T0A05) Why is it unwise to install a 20-ampere fuse in the place of a 5-ampere fuse?
 - A. The larger fuse would be likely to blow because it is rated for higher current
 - B. The power supply ripple would greatly increase
 - C. Excessive current could cause a fire
 - D. All of these choices are correct

(For answers to test questions see bottom of page [14](#))

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