ECA Newsletter

Happy Holidays

Introduction

Winter is poking its head around the corner. It's almost holiday season again and time for the special holiday issue of the ECA Newsletter. Every year we try to bring out the holiday spirit in several ways. First we tryto lighten up the newsletter a bit by including some holiday stories and articles. Then we include some projects that can fill some of the cold winter evenings. Last but not by any means least, we include the invitation to the ECA Christmas Party which has been a great time for all at Bandanna's BBQ on Veteran's Memorial Parkway near Cave Springs. We also try to make the newsletter more festive by adding some decorations to the pages. We hope you like it.

As of the last couple of years, we have been operating a Traveler's Assistance Net during the winter storm warnings. The plan is to continue that this year as well. I would recommend that if you have FRS or GMRS capability (license for GMRS) that you incorporate that into the monitoring during the nets as well as the national VHF calling frequency (146.52 MHz). Any asset for communication can be useful to assist travelers in severe winter storm conditions. We are amateur radio operators but that does not limit our operations to the amateur bands, it opens our horizons and puts otherwise unavailable assets at our disposal.

With the predictions of a strong El Nino this winter it may be a colder and stormier than normal (…whatever "normal" is…) winter so be prepared and have your winter go kits stocked up and ready for bad weather. Remember that when we put out a notice for a Traveler's Assistance Net, we need you to sign up for times to keep the nets running so pick a time slot and do it remembering that it could be you out there trying to figure out how to get home safely.

We are looking for meeting programs and newsletter articles so if you have a subject to talk about, let our president know – I'm sure we can set you up with some time in one of the meetings. Remember to stay safe out there during these winter months and have some happy holidays.

Remember that our nets are according to the following schedule:

Regional Emergency Management Net – every Monday night at 1900 hrs on DEM-VHF-1 repeater.

ARES® Net – 2000 hrs on the 145.490(-) CTCSS 141.3 Hz repeater

ARES Traveler's Assistance Net – As required in the event of a winter storm warning issued by the National Weather Service.

Our meetings are on the second Thursday of the month at 1900 hrs at the County EOC on TR Hughes Blvd near Tom Ginnever behind the County Police building. All are welcome to attend our meetings and all radio amateurs are welcome to check in to our ARES® nets.

EMCOMM and You
St. Charles County ARES® Simulated Emergency Test 2023

Introduction:

St. Charles County ARES® has had an influx of new members over the last two years and many are working toward the completion of the Missouri Section ARES Skills Workbook. The Simulated Emergency Test is an excellent opportunity to learn on the job as ARES exercises with very likely scenario-based situations for the volunteers to respond to. SET 2023 was called "Operation Aware" because it emphasized what ARES volunteers can do in the County Emergency Operations Center (EOC) to provide Situational Awareness (SA) for professional responders and to provide a better Common Operating Picture (COP) for responding agencies. Also, the skills workbook has specific training required for various ICS forms like the ICS-205 (Radio Communications Plan) and ICS-214 (Activity Log) which were both employed in the exercise.

Simulation Scenario:

"Operation Aware" involved a series of severe thunderstorms which passed from southwest to northeast through St. Charles County. A tornado was reported which caused significant damage to businesses involving professional responders from fire districts. Jeff (KB3HF) served as the dispatch center and several volunteers served as net control operators (NCOs) and loggers for the exercise.

Phase 1 of the exercise involved training new amateurs on the Net Control Station (NCS) under the pressure of a very real sounding simulated event as the spotters in the field reported severe weather events to the NCO at the County Emergency Operations Center (EOC). Tactical call-signs were used to designate the operators by geographical areas.

NCO and Loggers in EOC Radio Room

Phase 2 involved passing traffic in the form of windshield damage assessment reports (DARs) from various locations in the field. The repeater was damaged by lightning in the simulation so all units had to recheck on a simplex net on the county ARES ground

frequency (HVTAC7). There were eight DARs passed from spotters in the field to the NCO. These DARs provide information on areas affected by the storms, the type of damage, lifelines, access routes, assessment targets (businesses or homes affected), help needed and other information related to a response to the area. Phase 2 also included the demobilization of the field units.

The NCO in the EOC passed information to the simulated Dispatch Center (KB3HF) to pass to the professional responders at the various locations affected by the first wave of the storm.

Throughout the exercise, NCOs were changed to provide training to more than one operator on the logging software (QLOG5), damage assessment database (written by N0PNP and KB3HF) and operating as the NCO.

Field units were provided with a briefing package, exercise timeline and tactical traffic to pass. DARs were provided to each field team to read back to the NCO to test accuracy of the reporting.

Exercise Objectives/Skills Exercised:

Objectives:
1. Demonstrate the ability of amateur radio volunteers to provide situational awareness (SA) information to professional responders
2. Demonstrate how better SA contributes to a better Common Operating Picture (COP) at the EOC
3. Practice windshield damage assessment in a full-scale scenario
4. Practice EOC activation
5. Practice orderly information transfer on a directed net
6. Passing traffic at copiable speeds
7. Use of phonetics as required – especially where copy is difficult
8. Seamless transition from a repeater-based net to a simplex net

Skills Exercised:
1. Directed Net operation with NCO and participants
    a. NCO net operations
    b. Fielded unit operating procedures
    c. Logging traffic
2. Windshield Damage Assessment
    a. Passing traffic at copiable speeds
    b. Logging of the DARs on the Damage Assessment Database
3. EOC Activation
4. Operating a simplex net/operating on a simplex net

5. Filling out ICS-205, 214 sheets
6. Sending/Receiving messages via Winlink
7. Deployment of Go-Kits (mobile radio, power and antenna)

Sixteen total volunteers participated in the exercise including the Section Emergency Coordinator, District C Emergency Coordinator (also St. Charles County EC), Army MARS and the St. Charles County Regional Emergency Management.

Lessons Learned:

1. It is OK to use common abbreviations when logging tactical traffic rather than to write down or type every letter of every word.
2. Some traffic passed was a bit fast for easy copy but very few repeats were necessary
3. New Melle spotters were a bit scratchy into the simplex net (operating at 40 watts) but most locations were copiable. Here use of standard phonetics was necessary to properly copy the traffic.
4. Remember that with tactical call-signs, it is still necessary to ID regularly with your FCC call-sign.

5. If passing formal traffic like DARs, inform the NCO that the formal traffic is coming so that they can have the database pulled up and be ready to copy.
6. The DARs were broken up by sections on the report form which made the job of the logger easier.
7. Field units had a tendency to read back the control numbers on their sheets. Field units do not assign DAR control numbers, those are assigned by the database.
8. Good transition from the repeater-based net to the simplex net. The transition was seamless with a quick re-check and the net was back to passing traffic.

Objectives Met:

All objectives of the exercise were met with several lessons learned on what to do better next time and what went well in this scenario-based exercise. There was a hot-wash after the exercise where all lessons learned and objectives met were discussed. The first two objectives (although they were the objectives the exercise was based on) became less important in the exercise than the passing of tactical traffic and formal DAR traffic, especially with

new NCOs and several new amateurs that have not exercised in this way in the past. The emphasis became accurate logging under a high stress situation which is critically important for the preservation of life and property and the use of the information for purposes of informing professional responders of damage and for the use of formal damage assessment for disaster declaration purposes.

Conclusion:

For many years St. Charles County ARES has had a good working relationship with St. Charles County Regional Emergency Management and that was borne out in this exercise.

- DE N0PNP

We need articles for the ECA newsletter. Please send any articles to william.a.grimsbo@charter.net. If you need some help pulling together an article, let us know and we can help. Text (.txt) and Document (.doc or .docx) files are fine.

Technical Articles

Station Monitor RF Tap (-30dB)

The Station Monitor tap is built around a transmission line transformer that allows RF voltage to be tapped off at a safe and useable voltage level to an oscilloscope. The sampler is suitable for from 1 watt to 100 watts in all modes.

The primary consists of a single pass through the T44-2 core of a piece of 18 AWG enameled copper wire. The number of turns in the secondary is determined by the formula:

$$Rt = 100*N*SQRT(Ps/Po)$$

and so,

$$N = (Rt/100)*SQRT(Po/Ps)$$

So, if Rt is 50 ohms and Ps/Po = .0001

$$N = 32 \text{ turns}$$

The secondary should be one layer around the core. I used a Amidon T44-2 core and 30 AWG enameled wire for the secondary since it was the largest wire gage that allowed a single layer on that size core. I used a 50 ohm carbon or metal film resistor for the termination. This allows use of just a 50 ohm coaxial feed-line from the sample port to the scope without needing a terminating resistor at the scope.

I enclosed the transformer in a diecast aluminum enclosure with SO-239 connectors for the high power pass-through and a BNC connector for the sample port.

The gray stuff on the torroid is some epoxy to hold the turns in place. The trace of the tap over frequency is flat at about -32 to -34 dB according to my Nano-VNA and the trace of the pass-through is also flat. The measured VSWR of the pass-through is 1:1 all of the way up to VHF where the highest it gets is 1.2:1. The transformer, of course, will not couple effectively that high and is essentially useable through the HF bands from 1.8 to 30 MHz.

I tested it with a 4 watt radio getting about 3 watts in or through, the tap gave me 3 mW out. Looks like about -30 dB to me. This was built for use with an oscilloscope as a station monitor. The scope used should have a bandwidth of 30 to 50 MHz but would work with a 15 MHz scope on the lower bands. The schematic is shown below. The sample port can go directly into the scope using 50 ohm feedline since the 50 ohm termination is built in to the tap.

32 turns
secondary

T44-2

In — Out

Rt — 50 ohm carbon film

Sample Port
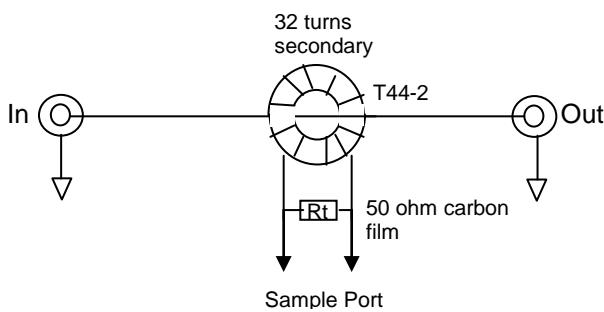
The final package looks like the photo below.

The enclosure is 2" x 2" x 1" and the tap fits nicely inside. I used a bit of hot-melt on the torroid to keep it from moving around and stressing the 30 AWG wire – the wire is a bit touchy. It didn't seem to make any difference from a functional perspective.

If you want a station monitor and have a 30 to 50 MHz bandwidth scope, this little tap is perfect for the HF bands. It actually doesn't look too bad either. Have fun building it. The hardest part is winding the torroid. Take your time and do it right with nice and tight. The total of 32 turns will fit on the T44-2 core. It will take roughly 30 inches of 30 AWG enameled wire but I'd cut a little extra – hate to have to solder in the coil. Have fun building. This is a 2 hour or so project with not too high a skill level so good for a snowy evening.

- 73 DE N0PNP

Paging and Alerting – The Same Thing?

Some of you may know that I have been working with a local church on a security alerting system which consists of a radio transceiver and several scanners with tone decoders (essentially cheap

Plectrons®). The system is designed to transmit certain tone pairs which are decoded for five different alerts. These alert types are displayed on a backlit LCD and a LED blinks to indicate an alert has been set.

The encoder is a unit that uses a Programmable Interface Controller (PIC) microcontroller to send specific tone pairs for the different alerts. The encoder board has audio filtering for the tones since the tones coming out of the PIC are really nasty looking with MANY harmonics (square wave output). Four RC filters are used to reduce the harmonics to a reasonable level. The sine wave is still not perfect but much closer to a real-looking sine wave. The audio is then amplified to drive a microphone input to the radio. I used a UHF Motorola Maxtrac which has a PTT input and a flat audio input which does not filter the incoming audio. The encoder tones are between 2.5 and 3 KHz deviation which is more than enough to trip the decoders even if some noise is present in the receive audio. There is no fancy Fourier filtering in either the encoder or the decoders. Jeff (KB3HF) gave me some ideas on how to improve the performance of the decoders using a 3x sample and average filtering technique which has worked very effectively. I have constructed seven of the decoder units and two encoders. My

intention is to build one more encoder to use as a test set for the units.

The decoder is much like the paging decoders we built as kits back about ten years ago. Who'd have thought they could be used for a security alerting system? The differences are that these decoders have a display and they output different sonalert sequences for the different alerting types. As an example, the intruder alert is a solid tone, the fire alert is an alternating tone, the lockdown alert is a dit-dit-dah tone sequence and the evacuate alert is a long tone, short gap sequence. This was done so that teachers and officers of the church would know the tone sequence and not have to see the alert display to know what to do. There is a tone pair for the church bell as well (between Sunday school and church services) if they choose to use that function. The church bell does not light the flashing LED and has a unique telephone type sound. It runs for 15 seconds then resets and goes back to normal operation. The decoder uses a PIC as well to perform all of the functions in the decoder. This is a bit of a twist on an article I published in the Volume 23, Issue 5 newsletter a year ago.

Zach Bush (KF0FXJ) got me a 3D printed enclosure for one of the encoders, the other is in a watch case I found at ReStore and repurposed.

The encoder puts out a PTT* signal which is active low that keys up the Maxtrac through one of the programmable inputs on the 16 pin connector on the back of the transceiver. An LED lights up on the

encoder when the PTT is engaged and turns off when the PTT signal is not present. The other LED on the encoder is a power indication. The primary and backup encoders are identical in function and only different in appearance.

Decoder Test Set

As you can see from the photo below, the transmitter and encoder fit nicely in a pine box I built for it with a vertical dipole homebrew antenna attached to the side of the box near the back. The transmitter has a 10 watt output which runs through a 6 dB attenuator to the 2.17 dB gain dipole which means the output is around 3 watts ERP which is well below the maximum 5 watts ERP allowed by the FCC rules.

Unfortunately, that attenuator also affects the receive side of the transceiver. Fortunately, the distances for the communication are not more than about 100 yards so the impact should be minimal.

I didn't want to adjust the transmit power level down at the transceiver because at around 2.5 watts, sometimes the Maxtracs that are designed to run at 25 watts output will become spurious at the lower power levels.

This project was tough. It involved a lot of troubleshooting to resolve issues with false triggering or no triggering of the decoder – most of which was due to static in the receive signal since I was holding the PTT engaged for too long prior to sending the tones.

With that resolved, the system seems to be working very reliably. Each decoder comes with a Uniden BC-350X scanner (or some similar scanner), the encoder, power supply and antenna are all in a candy striped wood box to protect it. Candy striping is a universal indicator of emergency equipment and that's how the security team wanted the boxes painted. I am not a cabinet builder by any distant stretch of the imagination but I managed to get them built and painted. Below are the pine board software prototypes I used for development of the system. They allowed me to easily modify the software and test it using actual hardware. This helped me find a number of issues and resolve them before committing to actual hardware.

This project has kept me busy for almost two months – most of it building the decoders and the various boxes for them. The software development cycle was a few months more working on it as I had time. I will be installing and testing the system in the church shortly. No doubt, it will prove to be interesting. I have also constructed a manual for this system that has all of the technical details, tone pairs selected, hardware schematics and board layouts, software source code, etc. (55 pages in all). Essentially everything needed to construct the system from scratch. All programming was done in PIC Basic Pro Version 3.

Return to TOC

This newsletter is way too serious sometimes so here is a story from another publication with a few perhaps comical comments…

Tax Money Well Spent? Hmm…

According to University College London:

"Matter and antimatter are collections of particles which form particle pairs with the same mass but opposite electric charge. For example, an electron (negative charge) and a positron (positive charge), or a proton (positive) and an antiproton (negative).

When matter and antimatter collide, the particles destroy each other, with a huge energy release. Depending on the colliding particles, not only is there a great energy release, but new, different particles may also be produced (such as neutrinos and various flavours *(with a British accent)* of quark *(No, not the curious-*

looking little guy from Star Trek Deep Space 9). These new particles will have a lower mass than those in the original collision, due to the law of conservation of energy and Einstein's very famous equation $E=mc^2$ *(It's called SPECIAL RELATIVITY! Hello…)* – some of the energy goes into heat and light, some into forming the new particles.

Antimatter is all around us – for example bananas emit antimatter *(I thought some of them tasted funny)*. This is because they contain a particular type of potassium (called potassium-40) which undergoes radioactive decay releasing a positron every 75 minutes *(Not the most productive little buggers are they?)*. But this positron is very quickly annihilated by a passing electron *(I hate those lollygagging electrons)*.

In fact, trying to artificially make and keep antimatter is a difficult and expensive business. Particle accelerators, like the Large Hadron Collider at CERN in Geneva, smash particles together in order to create antimatter – but it costs billions of pounds *(even more billions of dollars)* to make tiny amounts which are very difficult to keep for any length of time because they are quickly destroyed in a collision with their matter counterpart *(Yeah, it's not like you can keep them in a glass jar in the fridge or something)*.

In the same way particles make up matter such as chemical elements – for example, hydrogen is composed of a proton and an electron – antiparticles make up antimatter – so a positron and antiproton make antihydrogen. In principle it is possible to have anti-anything - antihelium, antioxygen, anticarbon, antielephant, antiearth. We live in a predominantly matter universe

(Are you sure about that? Some antipoliticians would sure help things out – then again, who would clean up the tremendous release of Bu!!$#!t that would be created when they collide with a real politician?). But who knows what secrets a hypothetical antiuniverse might hold and what a collision between an elephant and an antielephant would produce!

Matter-antimatter collisions create different products depending on the starting particles. When electrons and positrons annihilate each other, they make gamma rays. Protons are composed of quarks (and antiprotons of antiquarks), so these collisions involve more-complicated particle interactions. Taken from Hofstätter 2012."

Editor's Thoughts:
The italicized parentheticals are mine.
So, if an elephant collides with an anitelephant, do you get a tremendous energy release and a whole bunch of weird-looking baby elephants? We may have to ponder that one for a while.

Also, I seem to remember that quarks are named "Truth" and "Beauty." If there are anit-quarks are they "Lies" and "Ugly"?

Maybe to solve our carbon footprint problem we need to create a bunch of anticarbon. I wonder how well antinatural gas will burn in my kitchen stove. I know antigas pills don't seem to be all that effective.

Don't you feel good now about how tax money is being spent – If you think it's just in England, think again. American universities spend billions on this stuff.

Christmas Party
ECA will have its annual Christmas party at Bandanna's on Veteran's Memorial Parkway by Cave Springs on 14 December (our normal meeting Thursday night) at 6:30 pm.
We look forward to seeing all of the membership in attendance. This is usually a great time so come on out!

ECA OFFICERS (2021-2022):

Following is the officers as of the July 2022 meeting:

- Bill Moss, KE0RXS as President
- Mark Hall, AE0ME as Vice President
- Jeff Young, KB3HF as Secretary/Treasurer
- Ken Humbertson, W0KAH as Director
- Wayne Garrison, KB0BZR as Director
- Wayne Ault, WD6EZQ as Past President Director

[Return to TOC](#)

Just a Note:

All of the long term predictions thus far indicate a cold and snowy winter (for all the good long term predictions are) so check your winter go-kits. Think about what to keep in the car in the event you are stuck on the highway for hours. Sometimes it happens even when we don't have that much snow – all it takes is one careless driver and we all know that they are not that rare. Do you keep your gas tank above the half-tank marker at all times in the winter? When the weather gets cold, I try to always have at least a half tank before leaving home. I also keep a shovel and boots in my trunk just in case. What about a spare jacket and gloves? Be ready, don't be sorry. If it looks bad on the highway, don't go out - seems simple enough doesn't it?

- Editor

Skills Training

From a skills training perspective, we had a great SET this year so I'll let it pass in this special issue. Just enjoy the projects and stories this time around.

[Return to TOC](#)

Items For Items For Sale

We have a few items for sale including the following:

- **Assembled Two-Tone decoders for the ARES® tones on the repeater – two fully assembled boards for $25 ea and one in a plastic box for $30.**
- TDoA DF'ing kits (Time Direction of Arrival) - $12. Two available
- Various meters and test equipment including frequency counters, capacitance and inductance meter, see below:
  - 50 MHz B&K Model 1801 Freq Meter for $25
  - Heathkit 2240 LC Bridge for $20
  - Heathkit IT-121 FET/Transistor Tester for $10 with the manual
  - RF Applications Model D-144 VHF Deviation Monitor with manual for $20
  - Antennas, power supplies, etc. for various prices depending on the unit
  - Small stereo amplifiers (10 to 15 Watts) for around $20
  - Two -10dB *TX RX Systems Inc.* Taps for station output monitoring with N connectors for IN/OUT and a BNC for the tap - $15 ea.
  - VHF Amplifiers, etc.
  - **-30 dB Taps for a station monitor – SO-239 connectors for IN and OUT and the sampler connector is a BNC - $35 ea. See details in this newsletter.**

I also have a 102 pin SMD PIC development kit if anyone is interested for **$50**. This kit is brand

new and is the EasyPIC V7 for the 102 pin SMD PICs. That's less than half the price if ordered directly from Mikroelektronika. Software tools and library examples are free online and compilers for PIC Basic and C are available online.

If you have interest in any of these things, send an e-mail to william.a.grimsbo@charter.net and I will get back to you. If you have any items you would like to advertise for sale send in an e-mail and we will try to get them in the next newsletter. Please keep these things to radio or emergency-related items in keeping with the intent of the newsletter. Thanks.

Return to TOC

This area is for your material. If you have done something interesting in Amateur Radio or you have a DIY project, sketch up an article and some photos and we'll publish it in the ECA Newsletter. It can be Amateur Radio related, public safety related or just something useful to other folks. If you need help putting an article together, send an e-mail to william.a.grimsbo@charter.net.

Twas the night after the Sweepstakes Contest and all through the shack,

The rig was turned off the key was slack.

The antenna rotor had made its last turn,

The tubes in the linear have long ceased to burn.

I sat there relaxing and took off my specs,

Preparing to daydream of armchair DX,

When suddenly outside I heard such a sound I dashed to the door to see what was around

The moon shone down brightly and lighted the night – for sure propagation for the low bands was right.

I peered toward the roof where I heard all the racket,

And there was the ARRL guy in a red, fir-trimmed Jacket.

I stood there perplexed in a manner quite giddy.

Just who was this stranger – di di dah diddy?

He looked very much like an FCC guy, Who'd come to check up on some bad TVI.

I shouted to him " OM I QRZ?" " Hey you by the chimney, all dressed in RED!"

I suddenly knew when I heard the sleigh bells jimgle,

The guy on the roof was KRINGLE from the ARRL.

He had a sack full of ham gear, Which was a big load for his prancing reindeer.

Transmitters, receivers, for cabinets and racks, Some meters and scopes and a lot of coax.

He said not a word 'cause he'd finished his work. He picked up his sack, then he turned with a jerk.

As he leaped to his sleigh, he shouted with glee, And I knew in a moment he'd be QRT.

I heard him transmit as he flew o're the trees " CFO FOREVER to all, and to all SEVENTY THREE."

OK, there it is. You knew it was coming. Every holiday newsletter we have to put something from Santa in it. I hope you all enjoyed this issue. 73, and happy holidays.
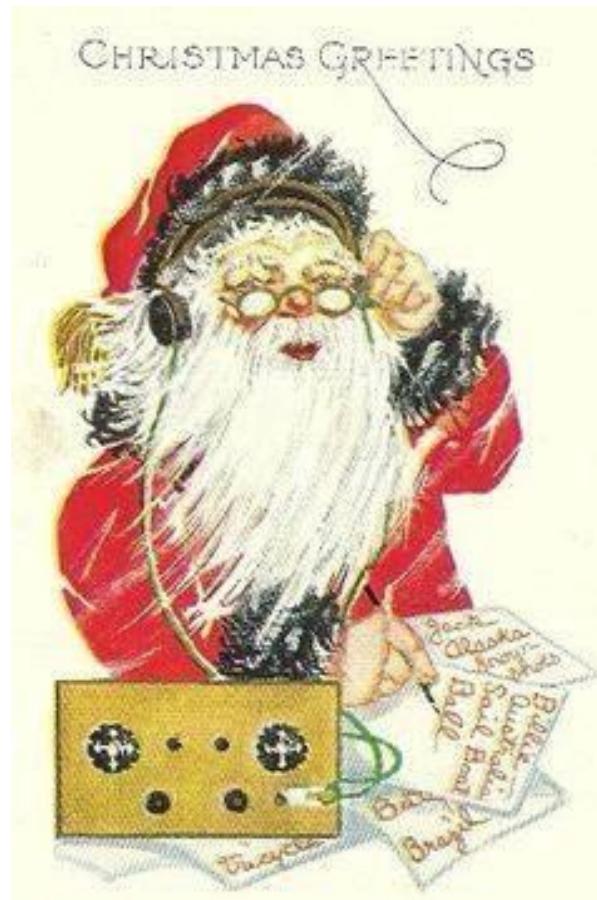
Interesting newsletter link. Remember to be cautious of all links. This one may be of interest. https://theradiosource.com/articles/news-2023-oct.htm

The officers of ECA wish all of the membership happy holidays. Be safe.

Net Control Roster

Week	NCO/Backup	Callsign
1	Paul Orf/Richard Tadlock	AD0YL/KF0JEJ
2	Ken Humbertson/Vince King	W0KAH/KD0JGB
3	Jim Combs/Jeff Young	KF0HFB/KB3HF
4	Zach Bush/Bill Grimsbo	KF0FXJ/N0PNP
5 (Floater)	Don Wier/Bill Grimsbo	KZ8E/N0PNP

The scheduled Net Control Operator is responsible for finding a replacement if he/she is unavailable for their scheduled net or paging. Any EMA volunteer interested in becoming a Net Control Operator on either the EMA Training Net or the ARES® Net should contact Bill Grimsbo (N0PNP) at william.a.grimsbo@charter.net.

Some things to remember:

NCOs - If someone does not open the net by 5 min after the designated time, one of the other NCOs are requested to open the net, take check-ins and handle any traffic as appropriate.

NCOs - If you are unavailable to run the net, please make arrangements – in advance – to have one of the other NCOs run the net in your place.

Membership - The net is a very important method of keeping involved with what is happening with the Association and ARES® - Please consider it part of your weekly calendar (i.e., check in and let us know you are still out there).

Calendars

October 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2 EM Net at 1900 ARES Net at 2000	3	4	5	6	7 **Simulated Emergency Test**
8	9 EM Net at 1900 ARES Net at 2000	10	11	12 ECA Meeting 1900 hrs	13	14
15	16 EM Net at 1900 ARES Net at 2000	17	18	19	20	21
22	23 EM Net at 1900 ARES Net at 2000	24	25	26	27	28 **Halloween Hamfest**
29	30 EM Net at 1900 ARES Net at 2000	HALLOWEEN 31	1	2	3	4

Notes:

1. All meeting locations are subject to change depending on room availability. Tune into nets for latest information.
2. DEM Net is on DEM-VHF-1
3. ARES Net is on 145.490(-) MHz. CTCSS: 141.3Hz

Return to TOC

November 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
29	30 EM Net at 1900 ARES Net at 2000	31	1	2	3	4
5	6 EM Net at 1900 ARES Net at 2000	7	8	9 ECA Meeting 1900 hrs	10	11
12	13 EM Net at 1900 ARES Net at 2000	14	15	16	17	18
19	20 EM Net at 1900 ARES Net at 2000	21	22	THANKSGIVING 23	24	25
26	27 EM Net at 1900 ARES Net at 2000	28	29	30	1	2

Notes:

1 All meeting locations are subject to change depending on availability. Tune into nets for latest information.
2 DEM Net is on DEM-VHF-1
3 ARES Net is on 145.490(-) MHz. CTCSS: 141.3Hz
4 Have a Safe and Happy Thanksgiving

Return to TOC

December 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
26	27 EM Net at 1900 ARES Net at 2000	28	29	30	1	2
3	4 EM Net at 1900 ARES Net at 2000	5	6	7	8	9
10	11 EM Net at 1900 ARES Net at 2000	12	13	14 ECA Meeting 1900 hrs	15	16
17	18 EM Net at 1900 ARES Net at 2000	19	20	21	22	23
25 EM Net at 1900 ARES Net at 2000	CHRISTMAS 26 Merry Christmas	27	28	29	30	New Year's Eve 31 HAPPY NEW YEAR

Notes:

1 All meeting locations are subject to change depending on availability. Tune into nets for latest information.
2 DEM Net is on DEM-VHF-1
3 ARES Net is on 145.490(-) MHz. CTCSS: 141.3Hz
4 Merry Christmas and Happy New Year to all

Return to TOC

January 2024

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2 EM Net at 1900 ARES Net at 2000	3	4	5	6	7
8	9 EM Net at 1900 ARES Net at 2000	10	11	12 ECA Meeting 1900 hrs	13	14
15	16 EM Net at 1900 ARES Net at 2000	17	18	19	20	21
22	23 EM Net at 1900 ARES Net at 2000	24	25	26	27	28
29	30 EM Net at 1900 ARES Net at 2000	31	1	2	3	4

Notes:

5 All meeting locations are subject to change depending on availability. Tune into nets for latest information.
6 DEM Net is on DEM-VHF-1
7 ARES Net is on 145.490(-) MHz. CTCSS: 141.3Hz
8 HAPPY NEW YEAR – MAY IT BE A HAPPY ONE!

Return to TOC