



# PAWA Lines

## Portland Amateur Wireless Association Newsletter

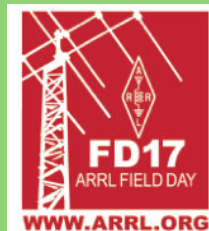
### Portland Amateur Wireless Association Repeaters

**Falmouth: 146.730MHz (-600KHz) (T 100.0Hz)**

**Scarborough: 444.100MHz (+5MHz) (T 82.5Hz)**

### Portland Amateur Wireless Association Board of Directors

President	Bryce Rumery	K1GAX	<a href="mailto:K1GAX@juno.com">K1GAX@juno.com</a>
Vice President	John Bogner	W1JLB	<a href="mailto:JBogner1@maine.rr.com">JBogner1@maine.rr.com</a>
Secretary	Tim Mitchell	KB1YBS	<a href="mailto:mitchell@smoms.com">mitchell@smoms.com</a>
Treasurer	Jack Ney	KC1UX	<a href="mailto:KC1UX@maine.rr.com">KC1UX@maine.rr.com</a>
Chief Operator	Ross Drivas	KB1OND	<a href="mailto:rmdkb1ond@yahoo.com">rmdkb1ond@yahoo.com</a>
Member at Large	Steve Mitchell	KB1YBT	<a href="mailto:SJMitchell@maine.rr.com">SJMitchell@maine.rr.com</a>
Member at Large	Jason Cote	W1WDW	<a href="mailto:W1WDW@jcwebdesign.com">W1WDW@jcwebdesign.com</a>



### Field Day 2017

Planning for this year's ARRL Field Day



### Upcoming Events

Take a look at some upcoming events.



### Public Service Events

Sign up for our upcoming public service events.



## On The Web

Please visit us on the web! We have pages on Twitter, Facebook and the world wide web. Check out our addresses at the top of the newsletter's first page, follow us on Twitter, and like our page on Facebook to stay up to date on club activities

## President's Message

June's meeting is the last before we break for the summer (July and August). We still have a lot going on over the summer months. We have two public service events coming up. The first is the L.L. Bean 10K run on July 4th in Freeport. This is a quick event. It starts at 7:30 AM and ends around 10:00 AM at the latest. It gives you a chance to do a public service event and still have time for those BBQs and other July 4th events. The second is the Beach to Beacon 10K run in Cape Elizabeth on Saturday, August 5th. It begins for hams at 6:00 AM and ends around 11 AM or before.

We also have an exam session on Thursday, July 27th at the Legion Hall in South Portland. Good time to upgrade that license

Of course, there is Field Day on June 24th and 25th at Turkey Hill Farm in Cape Elizabeth.

Excepting the exam session in July we will need operators for the public service events and Field Day.

Of course, for Field Day we will have our traditional BBQ. The fare is hot dogs. If you do want something other than hot dogs, bring what you want with you and we will cook it for you. Remember to bring a side dish or desert to share with you fellow members! The BBQ is free for PAWA members and \$ 10.00 for non PAWA members.

Sign up sheets for the public service events and Field Day will be available at the June meeting.

Hope to see a good turn out for all our summer events!

73, Bryce, K1GAX

President

## Treasurer's Report

May 2017	
Beginning Balance	\$2094.71
Income	\$50.00
Expenses	\$0.00
Ending Balance	\$2144.71

Thanks,

73, Jack

## June Trivia Question

**What company introduced the first synthesized handheld radio to the USA?**

*Go to the last page of this newsletter for the answer.*

### UPCOMING EVENTS:

#### ✱ Next meeting:

Wednesday, June 6th 2017 - 7pm

Stuart Morrill American Legion Post #35

#### ✱ June ARRL Contests:

10-12 [June VHF](#)

18 [Kids Day](#)

24-25 [Field Day](#)



## N1AKP's Equipment

I am told by Meghan Wakefield that Peter Eastman, N1AKP is ready to get rid of all his stuff from the house and want to give PAWA members first Dibs on the equipment.

For further information contact Meghan Wakefield by email to [meghanmae@gmail.com](mailto:meghanmae@gmail.com)

## July Exam Session

The next exam session sponsored by the PAWA is on Thursday, July 27, 2017 at 6:00 PM at the Stuart Morrill American Legion Post #35, 413 Broadway in South Portland.

Doors open for exams at 5:30 PM, exams begin promptly at 6:00 PM and doors close for exams at 6:15 PM. Exams for all classes will be given.

Candidates, remember to bring the following for the exam session:

*The exam fee (\$ 15.00 cash; sorry, no checks accepted; exact change appreciated)*

*One piece of positive identification (picture ID) or two pieces of non-picture identification*

For the Technician exam:

*Your Social Security Number*

For upgrades (General and Extra):

*The original and a copy of your current license*

*Your FCC Registration Number (FRN)*

*The original and a copy of any CSEs claimed*

**Please note that if you do not have the above, you may not be able to test!**

If you are an ARRL VE and wish to serve at this session, please let John, W1JLB know that you will be there ([jbogner1@maine.rr.com](mailto:jbogner1@maine.rr.com)).

Hope to see you there!

## Secretary's Report

Meeting Minutes of May 3rd 2017

### Board Meeting

The board meeting was convened by Bryce, K1GAX, at 6:35PM.

It was noted the club VHF repeater is working well and remains in good condition.

It was noted that we had several successful exam participants at exams on the day of hamfest, and that one has become an associate member of the club. Recall we offer a one-year free associate membership to all new hams.

Jack Ney, Treasurer, KC1UX, reported on hamfest earnings. They were \$305.00 inclusive of donations. The board approved placing the \$20 donation into the trailer fund.

The board agreed that going forward board meetings would begin at 6:30 vs. 6:00. This timing worked for convenience and for being able to appropriately address club business.

Bryce, K1GAX, adjourned the meeting at 6:52.

### General Membership Meeting

The general membership meeting was called to order at 7:14 by Bryce.

Motions were made and unanimously accepted for acceptance of Secretary's report, Treasurer's report, and Chief Operator's report as delivered in the newsletter.

There being no new business, the meeting was adjourned at 7:15.

Adam Epstein, meteorologist from WGME, delivered a fascinating and entertaining program on weather events and impacts, with particular focus on Maine. The club thanks Adam for his willingness to come and share!

Respectfully submitted,

Steve, KB1YBT, Acting Secretary

## Chief Operator's Report

### Balloons and Amateur radio

Many amateur groups send weather balloons into near space (100,000 feet or so) and get some incredible pictures. The pictures from these balloons rival some of the early sounding rocket flights of the 50's done by NASA and NACA, NASA's predecessor. There are a variety of web sites on the internet detailing payload construction - radio used, tracking equipment (GPS, APRS). Many of the more formalized balloon launches are planned, and the launch schedule is given months in advanced to allow hams and other interested parties an opportunity to participate on line and sometimes even help track and chase the balloon. Amateur Radio High Altitude Ballooning is one such site [www.arhab.org](http://www.arhab.org). Mission schedules and results are posted here.

These weather balloons are launched with the eventual aim being to recover the payload, usually a camera along with other sensors in order to get a visual ideas of what near space 100,000 feet over our heads look like. One picture is worth a thousand words. Like the radiosonde balloon packages that NOAA launches every day at their station here in Gray, the balloons are partially filled and as they rise up the gas inside expands the balloon to the point that the balloon breaks. This can sometimes be at or over 100,000 feet. The telemetry continues to provide location data as the balloon's payload descends into thicker air where a parachute slows it's landing into hopefully a safe recovery.

Interestingly a parachute isn't the only way to retrieve a payload. Some experimenters in North Carolina from the NC Near Space group decided to try a \$10 foam glider from Walmart. First they tried a test flight with the glider.. <https://sites.google.com/a/ncnearspace.org/home/missions/nsl-39>. As you can see, even at this point, they weren't novices - this was flight 39.

Their flight # 49 also featured a glider, which came back from 115,000 feet. The link includes a YouTube video of the flight - <https://sites.google.com/a/ncnearspace.org/home/missions/nsl-49>

The recovery of the camera and equipment being the goal in high altitude ballooning, the less distances traveled to the recovery site, the easier it is. There is, however, another amateur ballooning facet of the hobby that has recently "taken flight" - pico ballooning. With pico ballooning ultra-light payloads -sometimes consisting of just a GPS or an APRS unit and a micro transmitter are combined with one or more mylarized party balloons to fly some incredible distances at very little cost. The aluminized party balloons don't have the lift capacity of the high altitude weather balloons and since they resist expansion, they can settle into 30,000-40,000 altitude range, getting carried by the prevailing winds in that locality.

WSPR, the Weak Signal Propagation Reporter is one of the modes used to communicate. It's a robust, low powered, slow signaling protocol that combined with worldwide receiving/reporting stations make it a natural companion to a pico balloon flight. Some pico balloon flights have circumnavigated the globe. <http://hackaday.com/2015/07/05/pico-space-balloon-circumnavigates-the-globe-twice> (Don't be put off by the hackaday site name, they are using it in the original sense of a hack being something that is being used in a manner for which it wasn't intended - not in the malevolent PC/software sense)

I think a trip to Gray to view a NOAA balloon launch this summer would be a great way to start thinking of some of the possibilities...

Other items of interest-

This Saturday, June 3rd the club antenna trailer goes to the garage for a tire/ hub/rim evaluation. There should be enough time to get that squared away before Field Day June 24-25th.

Speaking of Field Day we should get a small work party together to check out coax connections on our coax inventory. We had a few connectors fail continuity checks and we should get those replaced prior to Field Day. The easiest place to do that would be at the Legion. I have some crimp type PL259 fittings and also some solder types to contribute to the event.

Speaking of work parties, the same day we check the coax, we might want to take an hour or so and resurrect the club antenna, this time possibly in an off center fed dipole. The coax there needs a new PL259 connector, and possibly replacement of the coax itself. Once that configuration is set up, perhaps a club member with an antenna analyzer could test the antenna for 40, 20 and 15 meters. If that is not possible, we always have SWR meters.

73

Ross KB1OND

## Mobile Installations

### Bryce Rumery - K1GAX

It's Spring and often, our attentions are drawn to mobile radio installations. One might think that a mobile installation might be as easy as mounting a radio under the dash, plugging it in to a power source, attaching an antenna and operating. It's not quite as easy as that. There is some planning to be done before the installation. Planning that will make your installation much easier and your operating more enjoyable.

First, consider the power for the radio. It's not just a matter of plugging in the power cord to an unused tap on the fuse block of the vehicle or, even worse, plugging in the rig to the cigarette lighter jack on the dashboard. Just tapping the fuse block or plugging the radio into a cigarette lighter jack may introduce noise from the vehicle or worse yet may not provide sufficient current to operate the radio at higher power levels.

Auto manufacturers and mobile radio install shops all recommend running the power line directly to the battery of the vehicle. This may seem like a difficult task, but it's really not that hard. Unless you have a "loaded" vehicle, there is usually an unused hole or two in the firewall of the vehicle. They are usually covered with a rubber plug and can easily be cut through to run your wires. One thing I have found that most vehicles have an interior hood release cable that runs from the inside of the hood latch. You might be able to run your cables through this hole (beside the hood release cable) and out to the battery. If you can't find a hole, I might recommend visiting a shop that installs mobile sound equipment. They will usually be more than happy to drill a hole in the dashboard for you and install a grommet in the hole for a small fee (or perhaps for free). One other thing to consider is to use wire that is the same or greater gauge as the power line to the radio. It must be sufficient to carry the current load of the radio.

Once the cable has been installed, consider fusing the power line. Of course, most radios have a fused line(s) already (near the radio). Most auto manufacturers recommend also fusing both the positive and negative lines near the battery. This protects the power line as well as the radio. In putting in the fuses in the line, be sure to install fuses that will carry the load. That is, use fuses that are the same value as the fuse(s) that are installed in the line to the radio.

Once you have the power cable installed, consider the mounting of the radio. In years past, when cars were larger, there was a good amount of space under the dashboard for mounting radios. This is not the case today. It takes some planning to effectively mount a radio. The radio should be convenient to the driver of the vehicle so that they can see the radio as well as reach the controls without having to take their eyes off the road while driving (or, at least not for very long). Many mobile radios today have a detachable,

remote head for more convenient mounting. This is usually an option, but one worth considering. It allows the main body of the radio to be mounted under the seat and just the control head to be mounted on or under the dashboard. The control head of the radio is usually very light and may be mounted to the dashboard with Velcro. Short of that, the radio might be mounted on top of or on the side of the console between the seats. My best recommendation is to take the radio before you apply power to it and sit in the vehicle for a while and make a decision where to mount it. There is no one "pat" answer as to where to mount a radio. In my Ford Windstar, I built a console between the seats and have 4 radios mounted there (HF, 10m/6m/2m/70cm quad bander, 1¼ meter and commercial VHF high band). That was my solution. A little thinking and planning can go a long way. One place I don't recommend mounting a radio (or remote head) is on top of the dash. It may be ok during the cooler months, but during the summer, the radio is subject to the rays of the sun beating down on it, which may severely overheat things.

Well now, you have most of the job done. You now have to hook the radio to the sky (install the antenna). There are about a "kajillion" types of antennas and mounts out there to choose from and about as many places to mount one. I'm not going to cover everything here. It would just take too long and make the newsletter more of a magazine. I'll make a few observations. You really have a couple of antennas to choose from. The quarter wave and the 5/8th wave. The quarter wave will work just fine and is shorter than the 5/8th wave. The 5/8th wave offers more gain than the quarter wave, but is significantly longer. This may be a consideration for you if you frequent parking garages where you would have to put up with the longer antenna hitting the ceiling of the parking garage as you drive through it. As far as mounts, you have the mag-mount, the trunk lip mount, the hatch mount (for SUVs and mini-vans), the luggage rack mount, the through the glass mount and, of course, the hole mount (that involves drilling a hole in the vehicle). Probably the best place to mount an antenna is right in the

middle of the roof. It gives the most efficient ground plane possible and offers the most omnidirectional radiation pattern. Other mounting locations offer a compromise. Try to get the antenna as high as possible on the vehicle. On a trunk lip mount, hatch mount, luggage rack mount or mag-mount, remember you have to have a way to get the coax into the vehicle. Be sure that where ever you route the coax into the vehicle that it doesn't crimp the cable. This can change the impedance of the cable and may ultimately break the cable (with a door opening and closing on the cable). Be careful how you route the cable inside the vehicle, as well. For example, routing the cable from a mag-mount antenna on the roof into the vehicle through a door and then down to the floor of the vehicle may cause water leakage. Route the cable in at the top of the door and then down inside the door entering the vehicle at the bottom of the door. Any water traveling down the cable will be carried away at the bottom of the door and not into the vehicle. Once the cable is in the vehicle, make sure it is run through areas where it will not be stepped on or scuffed by passengers or cargo. Another note regarding the "through the glass" antennas. They don't always work well on tinted glass. The tinting in the glass has small metal particles in it and may effectively block RF passing through.

The last step is to tune the antenna. I recommend using an antenna analyzer for the job. These handy little devices will allow you to tune the antenna without putting much of a signal on the air and will immediately tell you the resonant point of the antenna. Antennas are something we all work with on a regular basis and investing in an antenna analyzer is recommended. Short of that, ask around on the air or at a club meeting to see who has one. You might be able to borrow it or get someone to bring it to your home (or visit theirs) for the tuning of your antenna. So there you have it. With a little planning, the installation of that new mobile rig in your vehicle can make your hamming more enjoyable as you drive along.

73, Bryce, K1GAX

# We Need Your Support!

**Jason Cote - W1WDW**

Back in May and June a small group of PAWA members including George NX1C, Ross KB1OND, Jack KC1UX, Mike N1GRO, Steve KB1YBT, Ariel KC1CCB and myself went out to the farm and got the trailer ready for field day. We noted some problems with the trailer that should really be corrected, including the condition on the hoist cables, trailer lights, wiring, tires and some other things. I compiled a list of needed items and the approximate costs associated with the work. We have not yet identified the costs specific to the tires and suspension as they are very old parts and replacements are not readily available. I would like to ask members of the club to see what they can contribute to offset the costs of supplies in a "trailer maintenance fund". The PAWA antenna trailer is a valuable club asset and we as a group are lucky to have it. It is in the club's best interest to continue to maintain the trailer especially as it is stored outdoor in the elements. Can you help us? Do you have ideas to contribute? Let us know! Thank you very much for your support.

# Growing the Ranks vs. Growing the Enjoyment

**Dan Romanchik - KB6NU**

Because I teach amateur radio classes and publish a series of popular amateur radio license study guides ([www.kb6nu.com/study-guides/](http://www.kb6nu.com/study-guides/)), I often get kudos for "growing the ranks." In fact, Gordon West, WB6NOA, told me this just last week, when he stopped by the booth I was in at the Dayton Hamvention. I'm paraphrasing a little, but after telling me that he's heard good things about my study guides, he said something like, "You're doing good work in helping get more people into ham radio."

People say that as if this is—or should be—the ultimate goal of teaching a license class. While this

may be one of the goals, if that's your primary goal, I think that you're barking up the wrong tree.

In a way, creating more hams is selfish. If there are more licensed amateur radio operators, they say, then amateur radio will have more political clout with the FCC and with Congress, making it easier to pass legislation like the Amateur Radio Parity Act. While this may certainly help the new ham down the line, its main thrust is to reduce restrictions on those who are currently hams.

My goal in teaching amateur radio classes isn't to create more hams. Instead, my goal is to help more people have fun with ham radio. The first step in helping people have fun with ham radio is, of course, helping them get their license. I do that by publishing my study guides and teaching ham classes.

The next step, and I'm only really getting started on this right now, is to help people learn what they need to know to become better ham radio operators. That's why I got a little excited when I saw the article, "Making a Good hobby Better Through Post-Licensing Enrichment" by Tim Busch, N0CKR in the latest issue of Radio Waves, the ARRL's email newsletter for amateur radio instructors.

In the article, Tim describes several activities that his club encourages, including a "new ham net" and the Field Day GOTA station, but he also details a program of "mini classes" that will teach specific skills related to ham radio. These include:

- \* Programming Radios and Getting on the Air
- \* Soldering 101
- \* Multimeter 101
- \* Build and Use a Roll-Up J-Pole Antenna
- \* Build and Use a Satellite Antenna
- \* Foxhunts
  - \* Operating Digital Modes: IRLP, AllStar, D-Star, EchoLink, etc.
- \* Remote Operation
- \* Software-Defined Radios

- \* Transitioning from VHF/UHF to HF Operating
- \* Chasing Awards
- \* Learn CW
- \* Contesting

Tim writes, "Each class is intended to be no more than two hours at a sitting, so they can be held before a monthly club meeting. The variety of subject matter allows many club members to get involved in leading a topic. Materials kits are prepared in advance, so students walk away with practical items they can use at home."

I think this is a great set of classes, and I plan to try some of these in the fall. A couple of other topics that occur to me are:

- \* Power Supplies 101
- \* Mobile Operation 101
- \* ARRL 101
- \* RFI/TVI 101

Helping new hams—and old hams—have more fun with amateur radio is a lot more satisfying to me than just "growing the ranks." It would be nice to say that we have a million licensed radio amateurs in the U.S., but I think it would have to the hobby to say that a larger percentage of licensed hams were active and enjoying ham radio. I know that, for me, increasing the number of active, engaged hams would be more personally satisfying than simply creating a lot of new licensees.

**When he's not working on helping new hams, Dan operates CW on the HF bands and blogs about amateur radio at [KB6NU.com](http://KB6NU.com). If you have a good idea for a new ham "mini class," e-mail him at [cwgeek@kb6nu.com](mailto:cwgeek@kb6nu.com).**

## Trivia Question Answer

Q. What company introduced the first synthesized handheld radio to the USA?

**A. Henry Radio with the 2 meter Tempo S1 (later the S2 (1.25 meter) and S4 (70 centimeter)) built in Japan for Henry.**

