**Radio Rally Getting Started Guide**

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Our first-ever Radio Rally event was held on November 16, 2019 and participants had a lot of fun with it, as did we. If you haven’t already, please read the provided document “Radio Rally Instructions” first so you know how the event works. That was what we emailed out to registered participants a few days before the event. This getting-started guide provides some tips for putting on an event such as this. We’ll describe the way we did it, and also include some recommendations as to what we’d do differently next time, but of course you are free to come up with other ideas and to plan your own event any way you like.

# Promotion

As a 1-page advertisement for the event we published a flyer similar to the provided document “Radio Rally Flyer”, which is set up for you to fill in details of your own event. We also got on some local radio nets and talked up the event, although having never done this before we were cautious not to over-promote it and get a bigger crowd than we could handle. We didn’t originally stipulate a limit to the number of teams (see below) so it was open-ended but we lucked out and ended up with a good number of people and teams. The revised Flyer document lets you specify how many teams you’re willing to accommodate.

# Teams

It would be possible to do this kind of event with people travelling individually, but we think it worked a lot better with teams of two or three. The teams could be larger if you have more participants, but we advise against having more than about 8 teams because it makes communication more taxing (see Communication, below) and gets harder to plan out the routes to avoid having teams get bunched up at one checkpoint. That’s not necessarily bad, and there will definitely be times when more than one team arrives at a given checkpoint, but it’s better if you can keep them spread out as much as possible. It’s easiest if you limit the number of teams to no more than the number of checkpoints you have, so that at the start they all get dispatched to different places. We left it open-ended when we advertised the first event, but in the future we’d stipulate up front that the event is limited to (for example) up to 8 teams. That keeps things manageable and it also encourages people to register sooner so you know how many to expect.

It worked really well to have some non-licensed people on the teams, to involve spouses and kids plus aspiring hams who aren’t licensed yet. Most people arrived as a team but we had two who arrived individually and we teamed them up, which worked out well because one was non-licensed (and they won!). However we’d advise trying to team up people via email before the event rather than leaving it to chance.

# Checkpoints

With each checkpoint location we tried to satisfy the following criteria:

1. Within range of the event repeater using a basic handheld transceiver inside a vehicle
2. Safe, publicly-accessible place to park out of traffic
3. Interesting stuff to find

Keeping things with a limited range of the repeater had the advantage of keeping the driving times with reason, and also made it easer to plan a different route for each team because it wasn’t too arduous to traverse the checkpoints in any arbitrary order. With a larger course that would require mobile rigs you’d have a lot more driving time, and would need to route teams in a more efficient way that makes it harder to avoid having some of them drive in the same sequence. It’s okay if two teams arrive at a given checkpoint at the same time, but we don’t want them stuck together one checkpoint after another. Also keep in mind that the driving is probably the least fun part of this event, at least in this format, so a compact course is good.

Good locations for checkpoints include parks, playgrounds, gas stations, convenience stores and the like. We would have used our public library and possibly the bank, but they were both closed at the time of the event. We avoided private property, which would have worked okay if we’d gotten permission from the landowner but that takes more time and the public spaces worked out well.

# Questions

Coming up with good questions is by far the most time-consuming, challenging, and most fun part of planning the event. It’s important to have a range of difficulty, so that some questions are fairly easy and others are tough. That spreads out the scoring and it’s the most fun for participants if everybody can get some of the questions but no one (or almost no one) gets them all right.

Multiple-choice questions are very practical, because they can be scored quickly using an answer key. Participants also like multiple-choice questions because they can take a guess if they can’t figure out a question or if they’re not quite sure. We put the possible answers with fill-in bubbles right under the questions (see the provided “Sample Questions” document), but you could also use a separate answer sheet as many multiple choice tests do.

To make an answer key we just took an answer sheet and cut a hole around the bubble for each correct answer. An easy way to do this is to fold the paper at the bubble and use a paper punch, or take two snips with scissors to make a V giving you a square hole. Then you can just lay it over a team’s answer sheet and verify a mark in every hole, after first double-checking that they didn’t fill more than one bubble for any question (sometimes they do and then cross them out).

The style in which questions are worded is important. If you expect people to look around and find something, you can’t simply make that thing one of the answers or it tends to give it away too easily. Instead, most of our questions asked about some indirect aspect of an item such as its color, the direction it was facing, what kind of animal it was, how many parts it had etc. We also made many of the questions riddles, so instead of simply asking them *Where is the bike pump?*, we phrased the question *I breathe but I am not alive, and I make people go away by giving them something they already have. What color am I?* Most teams got that one, and we didn’t try to make the riddles so devilishly hard that people would get frustrated or wouldn’t be able to solve them if they were looking at the item.

We tried to make each question lead to something so unique that it would be pretty clear when one has found the right thing. But it’s important to tell participants up front that they might find other things that seem to fit a given question, that could lead to other “correct” answers. While such answers aren’t necessarily wrong, the team only scores a point for coming up with the expected answer to each question. This avoids any long debates about whether some alternative answer should be considered valid, and it adds an element of chance to the game but it’s fair because everyone has the same chances.

# Timing

It’s important to set an overall time limit so that people can plan when the event will be over and they can go home. But you want it to be enough time so that people don’t feel rushed and aren’t tempted to drive unsafely. We drove our course to measure the driving time, and estimated how long teams might spend at each checkpoint to come up with an estimated total time. It’s hard to do that when you already know all the answers though! In the end we settled on 2 hours to complete 7 checkpoints, which means an average of 17 minutes per checkpoint including driving time. Most of ours were within a couple minutes drive of each other so teams had an average of about 15 minutes to spend at each checkpoint and answer 3 questions. It worked out okay although some teams cut it pretty close and one was a few minutes late getting back, so next time we might allow a little more time.

Consider how long people would enjoy doing this kind of activity, and also how long you’re willing to spend running it. We found that 2 hours of activity (from when teams are first dispatched to when they return) worked pretty well, and it would have been okay to allow up to about 2 ½ hours but we wouldn’t go longer than that. This limits you to about 8 checkpoints max, and fewer would be fine. Better to have a short, really fun event than to stretch it out to the point where it’s not fun anymore.

We gave a 30-minute warning over the radio before the deadline to report back to base and turn in answer sheets, so that teams can plan accordingly and decide whether to make some guesses and move on. We did have one team that came in late by a few minutes but we chose not to disqualify them. Remember, the only hard-and-fast rule is to Have Fun (safely and legally), so we think it’s best to be reasonably flexible about such things.

# Radio Communication

See the provided document “Radio Rally Net Script” for a script that can be used as-is or adapted for your event. It’s set up as a tactical directed net with a degree of formality, and the intention of this is not to take the fun out of things by being overly strict but to give all participants some experience working in a directed net. Experienced hams may have done this many times, but newbies gain valuable experience and confidence in net etiquette that they can apply in other situations. If anyone speaks out of turn or communicates in an unclear way (e.g. by not using good phonetics), the net controller should just gently encourage them toward the right behavior and only in a positive way. We saw this with non-hams and recently-licensed hams in our event, who started out a bit unsure of themselves and stumbled occasionally but by the time the event was over they were communicating efficiently and confidently.

Another very practical reason for using a directed net is the same reason it’s used for emergency situations – efficiency. If you have 8 teams travelling to 8 checkpoints, with two exchanges at each checkpoint (one when they arrive and one when they leave), that’s 128 exchanges that have to happen correctly for things to succeed. If you want to complete that in 2.5 hours that’s one exchange every 70 seconds on average, and you’ll get some bunched together one after another when things are hopping. Anytime there’s a lull you can slip in a bonus question so that’s even more traffic. Having a formal and efficient pattern of communication, in the manner of a directed net, is really necessary to make this work. Trading off between more than one net controller would also help, because keeping up this pace for 2-plus hours is fatiguing. You definitely don’t want to start making mistakes and sending people to the wrong place or giving them the wrong questions, or you’ll have some unhappy people (see Running the Game, below).

If you have a large event, especially if you want to scale it up to many more teams, consider splitting them onto different frequencies with different net controllers. We used a repeater because it was convenient but they don’t need to talk to each other, only to net control, so this should work fine on simplex if you can locate simplex station(s) near the middle of the course. It’s a good idea to keep the course compact enough that communication works with just a simple handheld transceiver, in order to appeal to people that may not have mobile rigs in their vehicles. We did radio tests beforehand from our farthest checkpoints to make sure that we could hit the repeater with just a handheld and a stubby antenna inside a vehicle.

# Running the Game

It adds an element of suspense when teams don’t know the order of their checkpoints ahead of time, or which questions they’re about to answer until after they arrive at a checkpoint and contact net control. It also adds work for setting up and running the event, but actually running the game is pretty simple if you have a good schedule that shows the order each team travels to checkpoints and which questions they must answer at each one.

See the provided document “Radio Rally Schedule” for a sample schedule that you can use as-is or modify for your event. It’s set up to handle up to 8 teams and 8 checkpoints, and you can add more spaces or just cross out or delete parts you don’t need if you have fewer than that. It assumes that you have provided the questions in a different numbered order for different teams as we did, so that when a team hears over the radio that another team is answering questions 4,5,6 at checkpoint Bravo, they won’t know whether they will get the same question numbers at that checkpoint. We did this simply by giving one question sheet to odd-numbered teams and a differently-sorted sheet to even-numbered teams, and that’s how the sample Radio Rally Schedule is set up. You can shuffle things anyway you like though, and feel free to randomize things in a different way.

The schedule also has a different checkpoint order for each team. The main reason is to prevent teams from getting bunched up together, since they’re all going in a different sequence. For an actual event you should look carefully at the sequences, to make sure each team is driving a reasonably efficient route. You can shuffle the order of checkpoints on any row without a problem, but try to make sure the first column has all different checkpoints if practical so that people are initially dispatched to different places. It’s not a big deal if two teams arrive in the same place at the same time, and it will definitely happen, but you wouldn’t want many teams all in the same spot.

Proofread your schedule very carefully and have more than one person check it, especially if you make any significant changes to the sample schedule provided. A mistake in the schedule means sending a team to the wrong (maybe duplicate) checkpoint or telling them to answer the wrong questions for their location, either of which will make people unhappy. Make sure every row in the schedule has all the checkpoints with none duplicated, and every checkpoint has the correct questions for that team. And make sure your question lists put the questions in the right checkpoint order for each team.

We recorded the time in/out for each team at each checkpoint, just so we could gauge how things were progressing and how well we estimated drive times etc. You could just put a check mark in the in/out boxes if you like, as the only thing that’s necessary is to know how far each team has progressed. We always had each team report their checkpoint location before giving them question numbers or their next checkpoint, to make doubly sure we knew where they were.

# Scoring and Prizes

As teams return to base you can use your answer key to tally up their score, making sure to add in any bonus points that were recorded on the schedule sheet. We ended up with two teams tied for first, so they split the prize. It was suggested that time of return to base could be used as a tie breaker or for a bonus point, but we’d advise against that because it would create an incentive to drive faster and we think safety is more important.

We offered a $100 cash prize to be donated to a charity chosen by the winning team, or in our case $50 each to two different charities since we had a tie. We think this worked a lot better than offering cash directly to the winners, which could make the competition more cut-throat and might conflict with FCC rules. We personally sponsored our event but we think it would be a reasonable use of radio club funds as long as the prizes are going to charity.

# Variations

All sorts of variations are possible, and here are just a few things we’ve thought of. Just keep it fun, safe and legal!

## FRS Radios

This was conceived as a ham radio event, but lower-powered FRS radios would work over short distances. This might be more practical with a group of kids for example.

## Boats

This could be fun in canoes or kayaks, with checkpoints spread around the perimeter of a lake. Just keep in mind that handheld radios will need some form of water protection, as well as a lanyard or float to keep them from sinking if inadvertently dropped overboard. It would appeal to a more limited set of people but if you have the right crowd then you might want to try it.

## Walking / Hiking

A walking / hiking event could work well if the distances are suited to participants’ abilities. It could be done in a downtown setting or a park where there are lots of interesting places within easy walking distance. Or in a wooded area more in the manner of an orienteering course, where people might be searching for particular plants or land features or whatever.

## Digital Modes

This could be a good training exercise in digital communication for EMCOMM groups, using software such as fldigi. Each team would need a laptop or tablet and a way to interface it to their radio, which can be done using trivial audio coupling (hold a mic up to the laptop speaker) for some digital protocols. The participants could exchange the same information with net control as they would using voice communication. We wouldn’t recommend using this for all the communication in the event, but it could be done on a limited basis such as sending in a digital photo from a certain location for a bonus point.

## Formal Traffic Handling

Handling formal traffic in the form of ARRL radiograms is a valuable skill for emergency communication. You could give each team an ARRL radiogram form, and as a bonus question read a radiogram that they must copy 100% correctly to earn a bonus point.

## Other Activities

We had participants answer questions in the form of riddles about something they could see, and that worked well and people enjoyed it. The multiple-choice questions were a good format because they didn’t take too much time to fill out or to score. But many other things are possible in the manner of a scavenger hunt such as collecting items, photos, signatures etc. Just be mindful of the time required to do the activities, and to score them afterward, so that things don’t get dragged out too long.

# Mission Briefing

Before sending your teams out, you should conduct a short mission briefing. Here’s a set of suggested talking points that you may want to cover:

* Welcome, thanks for coming, etc.
* Rule #1 (the only hard and fast rule): Have fun, safely and legally!
* Event will be coordinated over radio using a tactical directed net
	+ Contact net control with your tactical call sign, which is your team number
	+ Use your FCC call sign to end an exchange.
* Each team is encouraged to have the least-experienced member talk on the radio
* Welcome non-licensed operators!
	+ Use your licensed team member’s call sign
	+ Be sure to tell net control you’re non-licensed to score a bonus point
* Teams that are all licensed hams – one bonus point for recruiting a member of public to talk to the “scavenger hunt coordinator” (contact net control introduce them first)
* You will get a packet on your way out, with checkpoint map and list of questions
* Stay here until dispatched to your first checkpoint!
* We will start the net and read a preamble (stuff you already know so OK if you miss it) and call roll, dispatch to your first checkpoints
* Every team’s route is different to keep people spread out, but you will encounter other teams
* When you arrive at a checkpoint, check in with net control to get question numbers (different numbers for different teams)
* Mistakes are possible – call in and confirm location and question #s if things don’t seem right!
* Many questions are riddles – you might find other “right” answers, but only our answer scores a point. It’s just part of the game, and everyone has the same chances.
	+ After you return we’ll show you all the answers with photos
* Bonus questions
	+ May be announced at any time
	+ Could be general trivia or radio-related
	+ Start with a lengthy preamble - time to get back to your car, and to inform other listeners that it’s for event teams only
* Overall time limit, when to be back at base for scoring
* Drive safely and have fun!