Q&A - Hosting the Rumble in the Roads

Based on questions posed to us by the Boba Bots, FRC Team 253.

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19 July 2021

Legal

What kind of contracts will give us (the event hosts) legal protection?

The Rumble in the Roads is a product of Intentional Innovation Foundation, a Virginia 501(c)(3) nonprofit organization that is also the operating sponsor for FRC 2363 Triple Helix Robotics. IIF carries Directors & Officers insurance which protects our key personnel from personal liability related to their involvement in the organization.

The contracts we sign associated with the Rumble are primarily related to equipment we are renting, including the FRC playing field, power distribution gear, AV gear, etc.

One key agreement we sign is FIRST Chesapeake's offseason event guidelines, which delineates our scope of responsibility related to the playing field.
Off Season 2019 Guidelines

Beginning this year, there is a new agreement that offseason events must sign with FIRST.
https://www.firstinspires.org/resource-library/frc/off-season-events

We don't sign any formal agreement with our venue, but we are required to show proof of insurance.

Do you have an example of the waivers that you had teams sign?

We haven't had any liability waivers for teams or individuals involved in the event. We will likely take another look at this before running an event in 2022.

How do we ensure that we're following the information protection, youth protection, and most importantly, COVID guidelines?

Did you also get event insurance?

Yes, we have liability coverage that covers special events.

Field/Materials

Is there a list of event materials that was used for your event that we can reference?

The FIRST Chesapeake offseason event guideline document includes a list of consumables that we are responsible for buying ourselves.
Off Season 2019 Guidelines

Here's a rough list of materials we bring to the event.

	Durables	**Consumables**
From the Triple Helix workshop	• Ref uniform shirts and flags • HDMI capture cards • Wireless mics, chargers, and wireless reciever • Radios and chargers • Wireless AP • Flight case containing a TV and netbook, used as a ranking display • Laptops and chargers • GoPro box • Pole and base for mounting GoPro • Fire tablet and charger, used as a point-of-sale computer	• Prior year t-shirts for sale • All safety glasses • All gaffers tape • All game pieces

	● Cable ramps ● Extension cords ● Elims bracket whiteboard poster	
From elsewhere in Menchville High School	Sound equipment borrowed from the music program including: ● Speakers ● Portable sound unit (amp & mixer) ● Sound board ● Direct Injection box ● Headset mics, chargers, and wireless mic receiver	
From our STEM Gym (practice facility)	● Wooden mockup game elements for practice field ● Certain sections of wooden field border for practice field ● Chalk line ● 100 FT measuring tape ● Carpet cutter ● Power drills, impact drivers, bits ● Vacuum ● Extension cords	● Carpet sections for practice field ● Zip ties ● Carpet seam tape ● All gaffers tape ● All game pieces
From the school system	● Folding tables ● Pallet containing stanchions, tarps, and event signage	
From event coordinators	Cash box Credit card reader	Marketing materials ordered for the event (shirts, stickers) Printed materials including: ● Team registration packets ● Pit team number signs ● Volunteer name tags, check-in sheet ● Large event maps ● Resources and handouts for info kiosk ● Prestamped preaddressed envelopes for call-to-action

How does the borrowing of a field work, and who should we contact to borrow a field?

The only organizations that we're aware of offering fields to offseason events are:

- FIRST Headquarters in NH
- AndyMark in IN

- 13 district organizations

Sometimes multiple organizations have joined up to pay for transportation of a single field to support multiple offseason events.

What is the process of getting the insurance for field rental done?

We give the insurance requirements to our insurer and they provide a quote.

If we borrow a field from FIRST, how much would it typically cost (shipping, insurance, etc)?

We don't have any experience borrowing the field from FIRST.

In our first two years of our event (2014-2015), we rented a field from AndyMark. The total cost at that time was approximately $1700 and this included the field perimeter, game-specific elements and FMS, game pieces, transportation to and from Kokomo, and an FTA to oversee the field and represent AndyMark. Modern costs for this service are in the range $3000-7000. https://www.andymark.com/products/frc-field-for-off-season-events

From 2016 onwards, we borrowed a field from our district organization. FIRST Chesapeake provides the field to us at $0 rental cost. The price we pay ($1750 in 2016, up to $2500 in 2019) is equal to our share of the total cost of transporting the field around to ALL of the offseason events who share the field that year.

Can we pick up the rented field rather than having it shipped?

This would be up to the organization you are renting/borrowing the field from. You would likely need a 24-26 FT box truck to pick up the field.

Would it be fine using a wooden field to conduct an unofficial FIRST offseason competition?

This has definitely been done successfully and would be totally appropriate for an event focused on having fun and learning skills (rather than one focused on raising money or competing for clout). Some downsides are:

- It is a ton of work to build a wooden field.
- Lumber is very expensive (even outside of years where the lumber market did something really wacky).



- You will need to create your own systems for networking robots, scorekeeping, applying fouls, etc.
- There is a considerable benefit from giving more team members and event volunteers the opportunity to interact with the official playing field.

What's the best method for protecting school gym floors?

We use thin, inexpensive tarps to cover the entire gym floor. This is definitely not the best option.

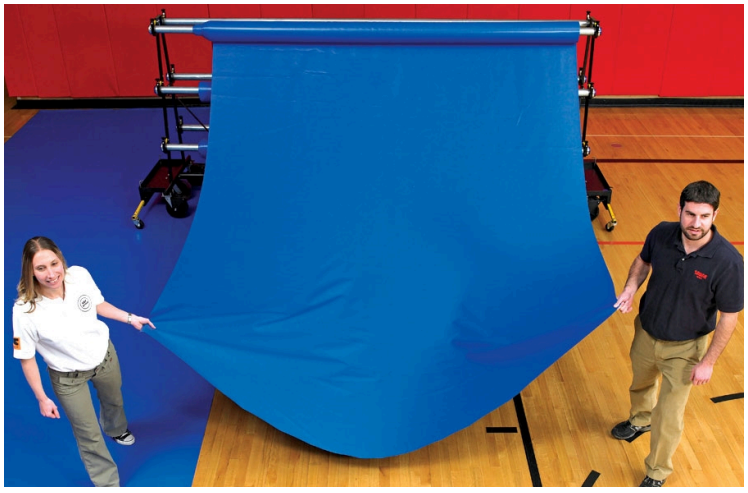


Tempered hardboard (aka high density fiberboard, aka Masonite) is the best way to cover the floor. This material comes in 4x8 FT sheets and is very heavy. Pairs of high school students can typically carry only 2 sheets at a time. FIRST Chesapeake provides us just enough of this

material to cover the area underneath the FRC playing field. The material is packed in the same PODS as the playing field and is provided to us for free.



The next best option would be a heavy (20-30 oz) plastic tarp. Some (well funded) schools own these. We have attempted to rent or borrow a set of covers like this with no luck for several years.



We've also considered using a cardboard based floor protection product (e.g. Ram Board, SupaBord). This may provide more protection than a tarp. It is more intended to be a disposable one-time-use product.



Misc

What kind of power generator did you need?

Rumble in the Roads rents a “19-29 kVA class” generator from a local tool rental company. This generator comes on a single axle trailer and typically has a pintle-type hitch.



We also rent the following power distribution equipment:

- **Cable tails**, female camlock. These connect to the generator and provide a 2nd location to connect a 100A feeder cable. You will need to get the rental company to show you how to install them, this is not something their customers normally do. We use QTY 1 set of 5.



- Banded 5-wire **feeder cables**, male camlock x female camlock, 100A 240V, 50 FT LG. These are the main three-phase cables that connect the generator to the power pagodas. Since each of the 5 wires have individual connectors, it is easy to connect them wrong, so you will need to pay close attention to the wire colors at both ends of the cable. We use QTY 2.



- **Distribution panel**, 200A, female camlock. These are the “power pagodas” that distribute 100A 3-phase power to multiple 20A 3-phase circuits. We use QTY 2.



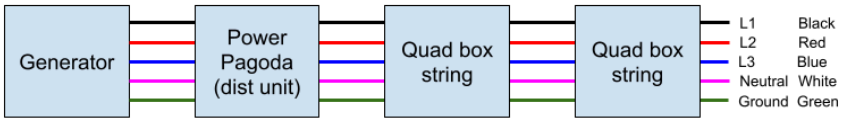
- **Extension cable**, 12/5 20A, twist lock, 50 FT LG. These are 3-phase extension cords that you can put between the power pagoda and the quad box strings. You can connect several of these cords in series if needed. We use QTY 4.

- GFCI **quad box string**, 20A, 50 FT LG w/ 20' spacing between quad boxes. These are the strings of three outlet boxes that get 3-phase power from the pagodas, and serve it to the pits as 110VAC single-phase power. Each of the three quad boxes can serve up to 4 pits. You can connect several of these strings in series, but together they will share the same 20A circuit at the power pagoda. We use QTY 5.

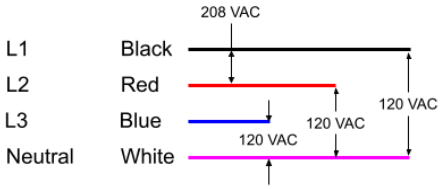


Here is a diagram showing how these pieces connect.

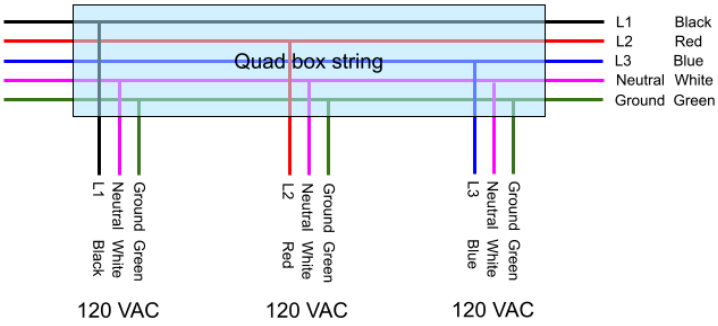
The generator creates 3 sinusoidal waves of current; each wave is offset ⅓ of a cycle from one another; these 3 phases are designated L1, L2, and L3. There is also a neutral and a ground, both at 0 volts; these 2 lines are bonded together at the machine.



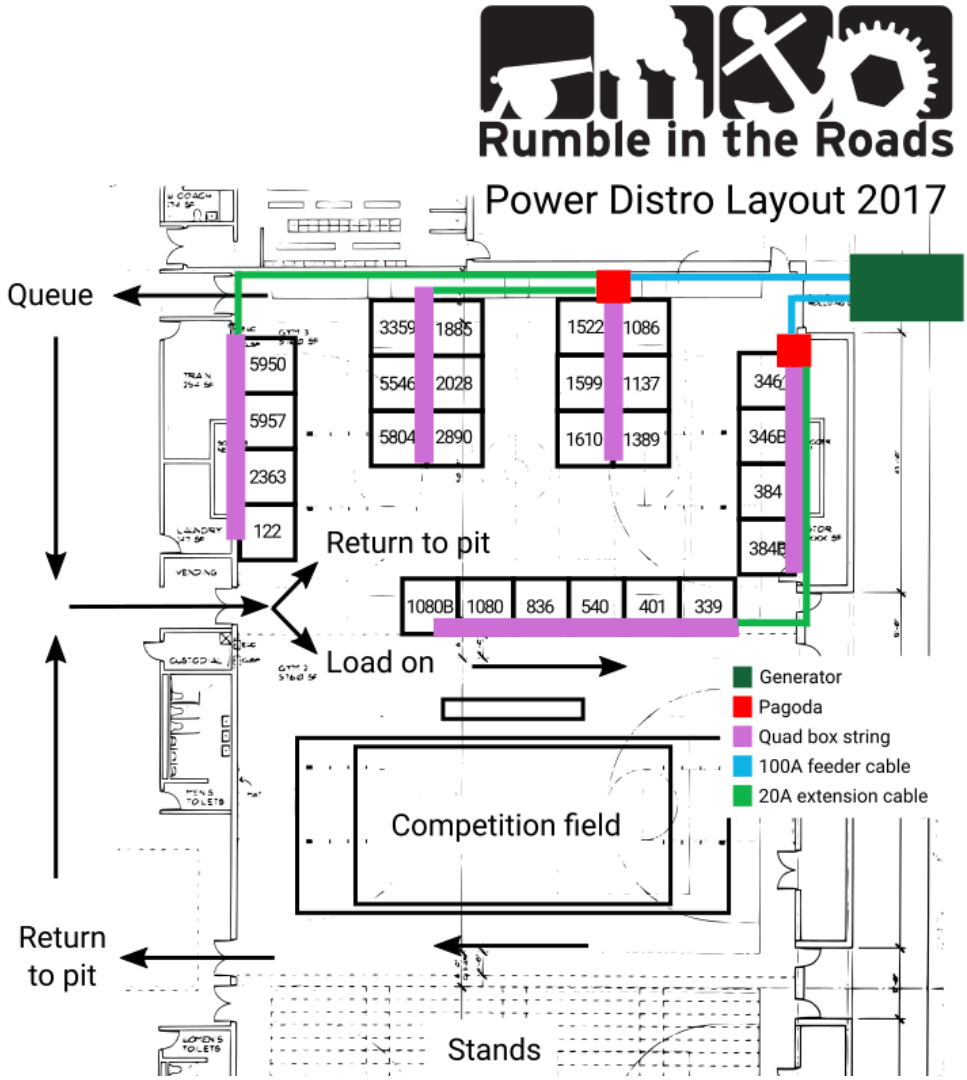
AC voltage is a *difference* between electrical potentials of sinusoidal waveforms. This difference is added by RMS addition....



Differences in internal wiring within the quad box string splits the 3 phases into separate circuits.



Here is how we have laid out this equipment at the Rumble:



How many volunteers have you had for your event, and how did you obtain those volunteers?

We typically assign 50-60 volunteer positions. About 10 of these are Key Volunteers.

We ask people to apply for positions that require a skill or some advance preparation. As part of that process, applicants have a chance to tell us about their goals of becoming a key volunteer (if applicable). We try to use our event to help people advance towards their goals as a volunteer. Over the long term, we use this information to try to build up a robust KV pipeline in FIRST Chesapeake, and to strengthen our local area's ability to independently run the FRC program.

We obtain low-preparation / walk-on volunteers from event sponsors, from local universities, and from people associated with our FRC teams (parents, siblings, friends, former mentors, sponsors, etc).

How did you recruit KEY volunteers (such as FTA members or judges)?

We build networks and cultivate friendships over many years of program participation. We also offer free places to stay overnight for key personnel who are traveling from out of town.

How can we have teams pay registration fees? Was it through PayPal? Did they send a check?

We have an online checkout option on our nonprofit organization's web store (http://store.iifound.org/) which is linked to our PayPal. Many school-based teams can't use this process however, and they usually ask us to send them an invoice which can be paid by check. Often these schools will need to register us as an approved vendor before they will pay us.