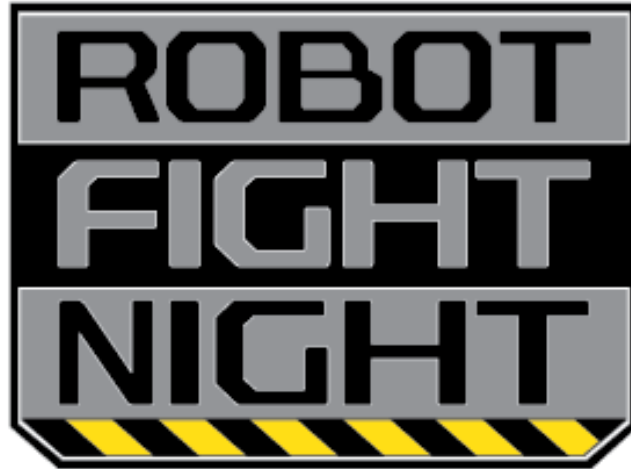




SEASON 5 (2020)

HANDBOOK

VER 1.4

Foreword

Greetings to competitors and spectators alike, and welcome to another exciting edition of the famed AndyMark Fight Night. This robot combat tournament is intended to pit creativity and craftsmanship against ...other stuff.

This format for a robot started as a way to use parts and motors that we're familiar with while still making the fights not terrifyingly dangerous. Using our parts and building to a traditional battle bots weight class would likely have us all at more than 30lbs and fighting over mill time and costs significantly higher than desired. With cardboard as the main chassis material allows for simple, low cost builds that are also straightforward to fix. Plastic weapons allow for strong, simple to make devices that, intentionally, outclass the chassis they endeavor to destroy.

The first goal of this tournament is to have fun, both building and un-building the robots. One of the biggest metrics of this is a simplified building experience and even fights where both robots have a fighting chance (pun intended). The looseness, or should I say freedom in the rule book is to allow for a wide variety of robot designs and easily accessible materials. This obviously creates a contradiction between design freedom and close matchups. To this end we hope that each builder can come to an understanding of how to build a robot that will compete on an even keel with others and is fun.

For all the seriousness that many of us take towards competitions; I challenge, no dare, everyone reading this to put that same level of effort into having fun with this build and finding joy in the endeavor and not the conquest.

For any questions, specific or existential surrounding these rules or their interpretations please feel free to reach out (fightnight@andymark.com) for a conversation and/or questions answered.

Enjoy and Good Luck
Danny - Founder

TL,DR: if you're parsing punctuation, you're doing it wrong!

And now, the following ruleset is from our Fabulous Tournament Director, Nick



General Rules

- G01: Don't be a rules lawyering jerk:** Before proceeding any further, did you read the foreword? No? Go read it. Now, think about what rule you're going to lawyer. Is there a gray area? Cool, here's a gold star. Don't go and build a robot like Blade Roller from Season 2. Looking at you Nathan. Read as: build your freakin' CHASSIS out of CARDBOARD.

The spirit of Fight Night is to build cool stuff. There are areas of the rulebook that have intentional allowances for interpretation. There are some that are obviously extremely rigid, most of which are safety rules. If you have a question about legality or a possible hole in the rules, please send it to us via the Q&A Form ([available here](#)). If what you ask is legal, you'll get a private response. If it's illegal, we'll post an anonymous public response. Don't wait until the tournament to demonstrate a loophole you may have found, and publicly calling other people out on robot legality issues is generally counter productive.

- G02: No full court shots:** A ROBOT whose BUMPERS are fully contained by their SECTOR may not cause POWER CELLS to travel into or through their opponent's SECTOR.

This Handbook is intended to prevent you from building things illegally early in the process, and is not intended to be a means for inspection before fights. As like Season 4, where we had the 'No Launching HATCH PANELS' rule, treat most of the General and ROBOT Rules as 'build season' rules where penalties are intended to be a deterrent, but we hope not to have to apply any of them on Fight Night.

- G03: FIRST Logo On Bumpers is Cool:** You may display the FIRST logo on your bumpers... should you choose... if that's what you want to do.
- G04: Safe practices always:** The desired death, destruction and mayhem is of the robots, not the people. There were new specific safety rules baked into the Season 4 handbook, and some further clarification in the Season 5 handbook. While none of them are direct results from incidents in prior seasons, they are preventative measures to be taken seriously.
- G05: Have fun!:** While this may be one of the most prestigious combat robotics tournaments to win, it's important to remember that we're all here to have fun while breaking each other's toys.

ROBOT Rules

- R01: ROBOTS can't be too big:** ROBOTS in STARTING CONFIGURATION must not exceed a maximum of 75 DIMENSIONAL POINTS, which are derived from the following formula:

$$ROBOT \text{ FRAME PERIMETER} + \frac{ROBOT \text{ HEIGHT}}{2} = DIMENSIONAL \text{ POINTS}$$

ROBOTS may expand to any size after the beginning of a MATCH.

ROBOTS are to be declared what their ROBOT FRAME PERIMETER, and ROBOT HEIGHT are during pre-tournament inspection. To determine ROBOT FRAME PERIMETER, inspectors will measure the longest outer perimeter of the complete ROBOT as viewed from an approximately horizontal plane above the ROBOT in STARTING CONFIGURATION with a flexible tape measure, pulled reasonably tight around the ROBOT.

Example 1: A cube-shaped robot with 10" long faces is the following:
(10" Length + 10" Width + 10" Length + 10" Width + 10" Height = 45 Points)

Example 2: A cylinder shaped robot that is 15" in dia. and 12" tall is the following:
(~47" Circumference + 12" Height = 53 Points)

This method of size governing has been created to allow more design freedom, as well allowing some more breathing room to package components inside the ROBOT.

- R02: The ROBOT must have a CHASSIS constructed primarily of CARDBOARD:** The ROBOT must have a chassis that comprises the structural body of the ROBOT. All WEAPONS and POWERTRAIN ASSEMBLIES must be mounted either directly to the CHASSIS, or indirectly via the ROBOT's WEAPON. No two ACTIVE COMPONENTS may be connected to each other by anything other than CARDBOARD. ACTIVE COMPONENTS include: motors, servos, actuators, POWERTRAIN ASSEMBLIES, springs, air cylinders.

The spirit of this rule should be obvious - design/build a CARDBOARD chassis, and add mechanisms to it. It is not intended to allow loopholes such as using cable ties to fasten two POWERTRAIN ASSEMBLIES together with a token peice of CARDBOARD between.

This rule is not intended disallow a gearbox assembly to be built, with motor(s) attached, and then installed on a robot. It does however disallow multiple gearboxes to be connected together via anything other than CARDBOARD.

- R03: ROBOTS can't be too heavy:** ROBOTS may not exceed 30lbs in weight in any STARTING CONFIGURATION.

ROBOTS will be weighed prior to the start of the tournament in each STARTING CONFIGURATION, should they have multiple. ROBOTS must be reweighed should teams choose to add items to their robot in between fights.

R04: BRACKETS are cool: For Season 5, teams may utilize individual non cardboard BRACKETS however they please on their ROBOT.

BRACKETS may:

- Structurally and/or mechanically fasten sections of CHASSIS together
- Mechanically fasten up to one face of a POWERTRAIN ASSEMBLY to one face of the CHASSIS
- Support bearings or other motion components, such as bearings for your drivetrain

BRACKETS may not:

- Exceed the size of a 3x3x2" rectangular volume
- Be utilized as the damaging components of a WEAPON
- Be utilized primarily as armor, instead of joining chassis sections
- Be installed within 2" of each other in any direction
- Be individually installed within ½" of a POWERTRAIN ASSEMBLY
- Be structurally fastened to another individual BRACKET by anything other than CARDBOARD
- Be utilized to structurally and/or mechanically fasten POWERTRAIN ASSEMBLIES to each other

It should be noted that BRACKETS used on or near the outside faces of a ROBOT will invite much scrutiny during inspection as to whether or not they are primarily serving as armor.

R05: ROBOT CHASSIS Fastening: In addition to the CARDBOARD, or BRACKETS, ROBOT CHASSIS sections may be fastened together using tape, glue, epoxy, screws, fasteners, cable ties. While lamination of CARDBOARD is allowed, this provision for adhesives and tapes does not allow for said materials to significantly alter the structural integrity of the CARDBOARD.

Examples of significantly altering the CARDBOARD include but are not limited to:

- Creating an 'epoxy slurry' of ground up CARDBOARD and epoxy
- Injecting epoxy or glue into the gaps in corrugated CARDBOARD.
- Wrapping the majority of the ROBOT in tape
- Spraying the majority of the ROBOT with Flex Seal
- Dipping the majority of the ROBOT in epoxy or glue
- Building the majority of your frame out of fasteners

Acceptable practices include but are not limited to:

- Laminating sections of CARDBOARD together with more CARDBOARD than glue
- Joining sections of CARDBOARD together with modest amounts of glue, fasteners, tape

Note: This rule is not intended to prevent you from fixing your damaged ROBOT after a fight with significant amounts of tape, glue, etc.

- R06: WEAPONS made of PLASTIC:** The damaging components of WEAPONS may only be constructed from any long-chain polymer homogenous plastics, as well as Euroboard / Alupalite sign board materials. WEAPONS and WEAPON powertrains may also include metal axles, fasteners, hubs, plates, etc. These metal components may not be used as the damaging components of your WEAPON.

Fasteners used to overly enhance a weapons destructive ability (such as sharp bolts, or excessive fasteners to increase weapon weight) are not allowed. We understand this is a gray area, please see Rule G01. Non-homogenous plastics (such as Corian, looking at you Nathan,) are not to be used and are not within the intended spirit and desired level of destruction of Fight Night

- R07: Plastic WEAPONS must be active:** Plastic WEAPONS for Robot Fight Night must be active in nature. They must have their own dedicated actuators to power it, and must obviously be designed to cause significant damage, incapacitation or disablement via their own actuators. Mechanisms or structures powered by your drivetrain (such as non-moving wedges, knives, or other armor), or intended to primarily cause damage, incapacitation or disablement via drivetrain propulsion, are not considered WEAPONS, and would have to be constructed of CARDBOARD.
- R08: WEAPONS can't be too scary or unsafe:** The damaging components of WEAPONS may not include obvious or intentional liquids, fire, explosives, radio jamming, untethered projectiles or entanglement devices.

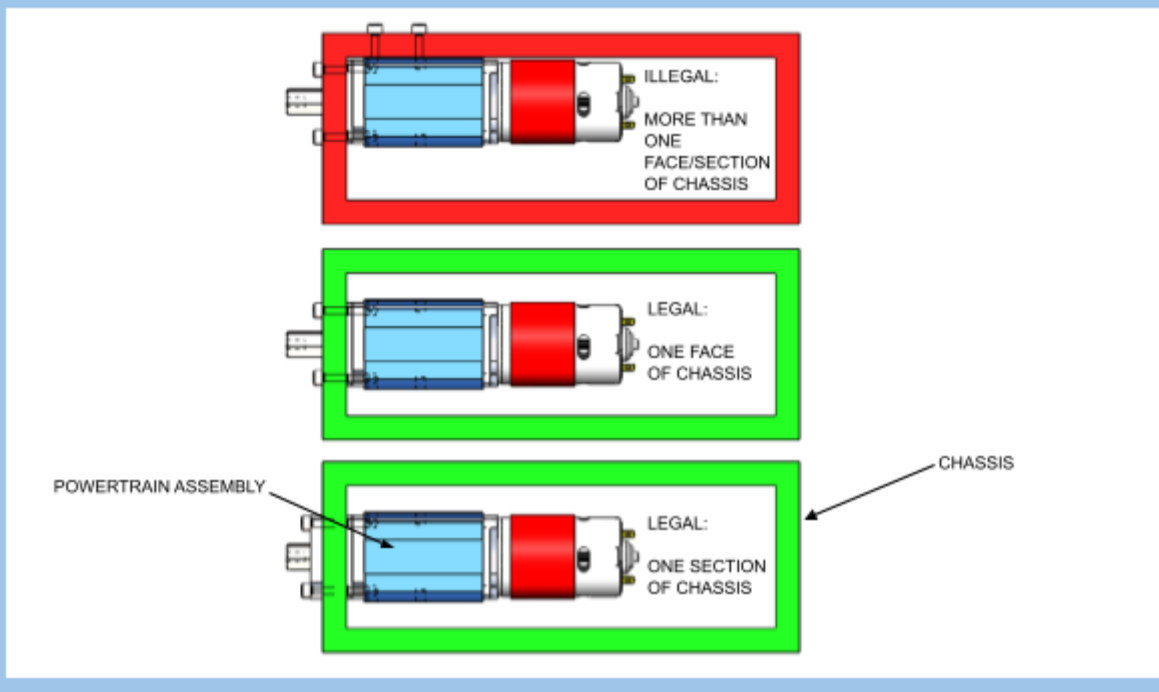
WEAPONS that pose a significant threat of severely damaging or piercing the ARENA floor or walls will invite extra scrutiny during the inspection process. The TOURNAMENT DIRECTOR reserves the right to disallow usage of WEAPONS deemed too unsafe for Fight Night.

- R09: Usual ROBOT power transmission and drivetrain stuff is cool:** Gears, bearings, metal axles, sprockets, chain, hubs, belts, wheels, gearboxes, casters, sliders etc are all legal components to use, so long as they aren't used as robot structure, nor damaging components of weapons, but are used only to provide or enable motion to your ROBOT's mechanisms. No, you don't have to make wheels out of cardboard. Stop that, stop it right now.

R10: Don't use your BATTERIES, POWERTRAIN ASSEMBLIES or ACTUATORS as structure: The ROBOT batteries, POWERTRAIN ASSEMBLIES or ACTUATORS may not be mechanically fastened to either more than one individual section or face of the ROBOT CHASSIS. The ROBOT must remain structurally intact and structurally unchanged if the batteries or ACTUATORS are removed.

Batteries may be installed behind removable sections of the ROBOT CHASSIS. This rule is not intended to outlaw burying your batteries inside your robot, just to ensure they are not holding your robot together.

Below depicts some legal and illegal scenarios of how POWERTRAIN ASSEMBLIES could be mechanically fastened to ROBOT CHASSIS.

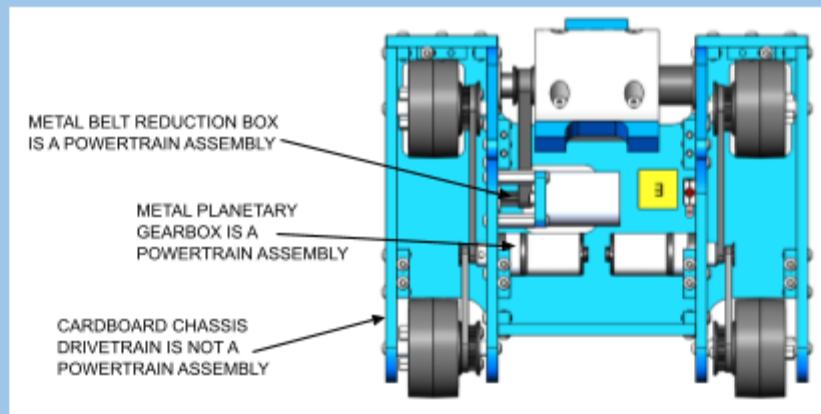


- R11: POWERTRAIN ASSEMBLIES can't be too big:** POWERTRAIN ASSEMBLIES not comprised of CARDBOARD (such as metal or plastic belt reduction boxes, spur gearboxes, planetary gearboxes, winches, bevel boxes, etc) with the exception of their motor(s) and external or cantilevered output shaft(s), may not exceed the size of a 6x6x3" rectangular volume.

This rule is intended to govern individual powertrain assemblies like planetary gearboxes, contained drive assemblies, etc. It is not intended to govern the size of a remotely driven mechanism, such as a gearbox mounted to a robot with a chain driving a lifter, with only CARDBOARD between the gearbox and the lifter.

For 2020, we're clarifying what we mean by our previously poor definition of gearbox. We specifically mean non-cardboard self-contained devices for transmitting motion, to better capture the motion transfer devices teams use.

Example, a single planetary gearbox body cannot exceed the size of a 6x6x3" rectangular volume. When used in a drive system, such as a simple 4WD chassis made of CARDBOARD, the gearbox body size is governed; but the entire drive system can be any size (provided it still fits within the allotted DIMENSIONAL POINTS):



- R12: No CNC Machining the CHASSIS:** CARDBOARD ROBOT CHASSIS components may not be manufactured with CNC machining or cutting equipment. Part of the spirit of AndyMark Fight Night is to get people into the shop building cool stuff with their hands. Making parts with the help of printed templates (from a paper printer) is acceptable. Cutting nonfunctional vinyl graphics with a computer controlled cutting machine is fine too.

You'll note that for Season 5, we're specifically restricting CNC machining for CHASSIS components. This means that teams are now free to use CNC equipment to create BRACKETS, WEAPON components, etc. We realize that we previously created an equity differential between teams; however we still want to retain one of the pillars of Fight Night - to get into the shop and make something cool the old-fashioned way.

- R13: ACTUATORS by points:** For mechanisms that provide propulsion, damage, self righting, or other strategic uses, ROBOTS are limited to 24 ACTUATOR POINTS for Season 5. Teams may use any combination (from the below table) of ACTUATORS so long as the ROBOT's total ACTUATOR POINTS do not exceed 24 points. Actuators that provide no strategic advantage (I.E. a Non Functional Decoration, cooling fans, etc) are limited to be equal to or less than the power of a NeveRest motor. Expect ACTUATORS claimed to provide no strategic advantage to invite extra scrutiny during inspection.

ACTUATOR POINTS ALLOCATIONS		
ACTUATOR TYPE	MAX RATED WATTAGE @12V	POINTS PER
Unlisted Brushed DC Motors (ex, Cordless Drill)	400	14
RedLine (am-3775, am-3775a) 775Pro	363	12
CIM, MiniCIM Motor	337	12
Pneumatics (any system)	LOL	12
Banebots RS-775	246	12
NEO550 Brushless Motor	279	12
Banebots 550	190	8
9015 Motor	134	8
Unlisted Brushed DC Motors (ex, Cordless drill)	150	8
NeveRest, REV Hex HD	14	4
AM775 Motor (am-2194 or similar)	43	4
Servos (Equivalent to AndyMark offerings)	10-40 (@6V)	2
Denso Throttle Motor (From FRC KOP)	20	2
Unlisted Small Brushed DC Motors	10	2

In order to compete with unlisted brushed DC motors, you must present manufacturer's documentation showing maximum rated wattage. For all unlisted motors from 11-150W, a value of 8 points has been assigned. For all unlisted motors from 151-400W, a value of 14 points has been assigned. Motors that exceed 400W @ 12V are not legal for competition.

- R14: Stock motor modifications are Limited:** The armature, the casing, the permanent magnets, and the output shaft must be present and assembled together such that the motor retains its original performance characteristics to consider it a legal MOTOR.
- R15: Not too much powuh, now:** System voltage of ROBOTS is limited to 28V max, as governed by the manufacturer's ratings of batteries.

R16: Specific Batteries Only: Due to the lack of allowance for static battery-protection materials, the only allowable battery chemistries for Season 5 are:

- NiMH
- Ni-Cd
- Alkaline Cells
- Li-Ion (specifically within unmodified COTS powertool battery casings)

Look, batteries of all types are scary in a combat robotics environment. We're drawing a line in the sand with Li-Fe batteries specifically, but expect all batteries and their installation locations to be inspected during weigh-in. Custom packs built from NI-MH cells for example are legal, but will be carefully inspected to ensure their safety.

R17: BYOCS - Bring Your Own Control System: The ARENA is dumb. It has no control system. Use what you want; so long as it does not cause interference with other ROBOTS or ARENA control hardware.

R18: No Season 1 or 2 ROBOTS: ROBOTS built for AndyMark Fight Night Seasons 1 or 2 are not eligible to compete in Season 5. These robots were constructed with Balsa wood and may end up being stronger than robots from Season 3 and later. Reused Season 3 and 4 robots such that they still meet the season 5 rules are allowed.

R19: Keep spindown times low: The ROBOT must dissipate all of its kinetic energy within 60 seconds of disablement / power being removed etc.

R20: Wireless control only: ROBOTS must be controlled wirelessly and may not be tethered to any controls outside the ARENA.

R21: Gotta stop your bot: ROBOTS must be able to be deactivated (and dissipate all kinetic energy) via their wireless controls outside the arena and without direct human intervention to the robot.

R22: 3D Printed Parts are Cool, mostly: ROBOTS may utilize plastic 3D printed parts for BRACKETS, ACTUATOR mounts and POWERTRAIN ASSEMBLY components provided they conform to all other rules governing said components. 3D printed components may not be used as plastic for WEAPONS.

R23: Spring-powered weapons are fine: ROBOTS may utilize spring-potential devices such as springs, surgical tubing, elastic bands, bungee cords, bent polycarbonate, gas springs, etc to store potential energy to power a WEAPON.



Safety Rules

- S01: ROBOTs can't live forever:** All ROBOTs must have a manually operated master kill switch or switches installed, or up to two removable link(s). These switches or links must:
- Shut off main weapon and drive power
 - Be quickly and easily accessible. Having to remove armor panels etc. to access the switch is not acceptable, however the switch may be operated directly via the use of a tool (such as a hex key).
 - If using a removable link, it must be a separate device from the batteries.

If you choose to use a removable link, it must be a separate device from the battery or batteries. Keeping this as a separate device ensures that power can still be cut in the event of a battery fire or meltdown situation. This device or these device(s) must cut all power when removed.

- S02: Gotta have a failsafe:** All ROBOTS must have a failsafe for weapon and drive. When the drivetrain and weapon are powered and the radio transmitter is then turned off, both the drive and WEAPON must quickly come to a stop and remain motionless.

Many RC control systems (such as the AndyMark Cheap and Dirty RC system) will failsafe (meaning it turns all channels to zero throttle,) a few seconds after power on the transmitter is turned off. Typically, an external failsafe device is not needed.

- S03: No controlled explosions:** Internal combustion engines are NOT allowed.
- S04: Not too much pressure:** ROBOTS may not contain pneumatic systems with pressures above 120psi.
- S05: Unprotected batteries are bad:** While there are no direct provisions to armor your batteries with plastics or metals, you must make attempts to protect your batteries within your CHASSIS or under your WEAPON in some manner. ROBOTs with obviously exposed unprotected batteries are not safe and will not be allowed to compete.
- S06: Damaged batteries are bad:** Batteries that have been damaged to the point where either individual cells are visible, or cells have obviously taken damage are not allowed to be used in MATCHES.
- S07: ROBOTs still have to be reasonably safe:** The Fight Night Committee reserves the right to disqualify, at any time, any robot that poses a threat to anything other than the arena surface or its opponent(s). If you have a questionable design, please send an email to fightnight@andymark.com before proceeding.

- S08: WEAPONS gotta be safe:** ROBOT WEAPONS, that could harm a person outside the arena to a reasonably astute observer, must have either a mechanical locking device or be easily removed in case of accidental activation. WEAPONS must be locked out at all times except in the ARENA.

The intent of this rule is to ensure that any dangerous weapon system (such as a flat bar spinner) cannot activate under any circumstances outside of the ARENA.

Example 1: A horizontal flat bar spinner could be considered locked out if:

- A locking device that prevents the weapon from spinning relative to the ROBOT is installed
- The weapon motor is obviously and unambiguously unplugged without having to cross the path of the WEAPON to unplug
- The weapon bar itself is quickly removed from the robot

Example 2: A vertical lifting mechanism could be considered locked out if:

- A locking device that prevents the weapon from moving relative to the ROBOT is installed
- The weapon motor is obviously and unambiguously unplugged without having to cross the path of the WEAPON to unplug
- The lifting mechanism has no external pinch points
- The lifting mechanism is not fast enough to cause an impact-based injury

Keep in mind that if you choose to design your robot to be able to remove the WEAPON, the process to either remove or install the WEAPON must take less than 10 seconds to help us keep the tournament on time.

This will be one of the most important aspects of the safety inspection. Be prepared to demonstrate your WEAPON lockout device or procedure, or to prove your WEAPON does not pose a threat to others outside of the ARENA. When in doubt, the safest options are to remove the WEAPON or have a physical lockout device.

We highly recommend that you reach out to fightnight@andymark.com ahead of time to verify that your WEAPON lockout procedure will be sufficient.

- S09: No WEAPONS in the PIT:** WEAPONS must remain locked out while ROBOTS are transported to and from the ARENA, but also while in the pit working area. WEAPONS may not be fully tested anywhere except for in the ARENA. If you need to test WEAPON powertrains, you must remove the dangerous components of the WEAPON prior to testing, or request to utilize the ARENA (between MATCHES or before the tournament begins).

- S10: Face Coverings Required:** For the 2020 Tournament, face coverings must be worn at all times within the competition and pit areas. Repeated violations of this rule will result in immediate disqualification and ejection from the tournament without a refund. A limited number of extra face coverings will be provided on site by Robot Fight Night Staff.



Tournament Rules

T01: MATCHES are 2 Minutes: Each MATCH will be up to two (2) minutes in length.

T02: Ranking Matches: The opening round of the tournament will consist of 3 ranking matches for each robot. Match-ups will be determined according to the following conditions:

RANKING MATCHES	
ROUND	DESCRIPTION
1	Opening round: grudge matches (brought to you by call-outs prior to the event, to be reviewed by the TOURNAMENT DIRECTOR), remaining matches are generated from the entire remaining pool of ROBOTS.
2	Matches are randomly generated from the entire pool of the current RANKINGS.
3	Final seeding: Matches are randomly generated from the top and bottom halves of the current RANKINGS. You will be randomly selected to fight another ROBOT in your half of the RANKINGS.

T03: Ranking Points: Throughout the Ranking Matches, ROBOTS seek to collect as many Ranking Points as possible in the quickest time possible:

RANKING POINTS ALLOCATIONS	
RANKING POINT TYPE	RP
Knockout	6
Technical Knockout	4
Judges Decision	1 Per Judge

T04: ROBOT Rankings: Throughout the Ranking Rounds, robots will be ranked according to:

TOURNAMENT RANKING		
ORDER SORT	CRITERIA	SORT TYPE
1st	Average Ranking Points	Highest to Lowest
2nd	Average Match Length*	Lowest To Highest
3rd	Fastest Knockout Time	Lowest to Highest
4th	Thumb War or Sudden Matchup	Competitors' Choice

*If a ROBOT loses a MATCH in any way, they earn a 2:00 Match Length for that MATCH.

T05: Winning with authority: ROBOTS will be awarded Knockout Ranking Points (6) if their opponent:

- Ejects, leaks, or spills their battery
- Catches fire (except for motor smoke)
- Has had its drive/propulsion systems removed from the robot (i.e. can no longer move)
- Concedes defeat
- Has been broken into several pieces that no longer resemble a ROBOT

T06: Definitely winning, but strategically: ROBOTS will be awarded Technical Knockout Ranking Points (4) if their opponent:

- Is unable to make meaningful translational movement for a 10 second period, meaning that a ROBOT is unable to move toward their opponent in a controlled and deliberate manner. This may be caused by a malfunctioning drive, getting stuck on debris in the ARENA, getting stuck on ARENA walls, getting stuck on/in ARENA hazards, etc.
- A majority of their robot gets thrown from the ARENA

We understand that the lines between a Knockout and Technical Knockout are not always obvious. The final determination of whether a match has ended due to a Knockout or a Technical Knockout will be made by the HEAD REFEREE and/or Tournament Director.

T07: Not always a knockout: Should a MATCH run the entire length without a Knockout or a Technical Knockout, the outcome of the MATCH will be determined by three judges. In this situation, ROBOTS earn one (1) Ranking Point per judge that determines they have won that MATCH. You do not have to win the MATCH to earn these ranking points. Judging criteria includes:

- Damage dealt
- Control of the MATCH
- Strategy
- How much money each team has given to the Judge(s).

T08: Elimination Matches: At the conclusion of the Ranking Rounds, the top 16 robots left standing will compete in a single elimination bracket to determine our CHAMPION. Standard bracketology, 1v16, 2v15 etc. Ranking points no longer apply. Matches are won via: Knockout, Technical Knockout, or a Majority Judges decision.

T09: Elimination Forfeits: If a ROBOT is not able to make call time, their opponent is declared the winner and advances. If neither robot can make call time, no-one wins and we're all sad (their next round opponent also gets a bye as well).

The Tournament Director has the authority to adjust or tweak the bracket if necessary, to have a good show for all while give the remaining competitors a reasonable tournament.

T10: Rumbles: These are just for fun exercises in destruction! Winners are crowned by 1) Last robot standing, 2) Fan Vote via applause-o-meter. The Tournament may use Rumbles to fill some of the gaps in the schedule and to allow for longer breaks in Elimination Matches. They are open signup and not capped on the number of robots per rumble.

T11: ROBOTS must start from rest: Each robot must begin the MATCH at 'rest' meaning it may not have any component of it's robot containing any kinetic energy at the start of the match.

VIOLATION: Offending ROBOT sits and does not move for 60 seconds.

Stored potential energy from deflection of robot parts, gravity, electrical energy, etc are not a violations of this rule.

T12: There's a 5-count on pins. ROBOTS may not pin (or otherwise hold) an opponent's ROBOT for more than five (5) seconds. A ROBOT will be considered pinned until the ROBOTS have separated by at least two (2) feet. The pinning ROBOT must then wait for at least five (5) seconds before attempting to pin the same ROBOT again. Pinning is transitive through other objects. If the pinned ROBOT chases the pinning ROBOT upon retreat, the pinning ROBOT will not be penalized, and the pin will be considered complete.

VIOLATION: Offending ROBOT sits and does not move for 15 seconds.

T13: The ARENA is sometimes cleaned: At the discretion of the TOURNAMENT DIRECTOR, the ARENA is periodically cleaned. Should teams feel that the ARENA is not cleaned to their satisfaction, they may get permission from the TOURNAMENT DIRECTOR to sweep the ARENA themselves. The debris is to be removed from the ARENA floor and not to be used strategically.

T14: Gotta keep moving: If during a portion of the elimination tournament, both robots from a MATCH are considered to be incapacitated and irreparable, their prospective opponent will get a bye and advance to their next round.

T15: You might like to know the ARENA: The ARENA will have a mostly flat floor, 11ft x 11ft with a 1ft wall. The ARENA is enclosed by a 12x12x4ft Battlebox for the safety of the humans.

T16: Pass Inspection: All robots must pass inspection prior to their MATCHES.

VIOLATION: Jeff hits your non-legal robot with a hammer of his choice once, as hard as he wants, you forfeit your MATCH, and your opponent may choose to spend 30 seconds damaging your non-legal robot in the ARENA with their own ROBOT.

T17: Red Goes First: ROBOTS assigned to the RED STARTING LOCATION in each MATCH must place and configure their ROBOT first. Then the ROBOT assigned to the BLUE STARTING LOCATION may place and configure their ROBOT. Once the ROBOT in the BLUE STARTING LOCATION have completed placement and configuration, the ROBOT in the RED STARTING LOCATION is given one opportunity to re-position or quickly reconfigure their ROBOT. Both ROBOTS must remain in this placement and configuration until the start of the MATCH

VIOLATION: Verbal warning and MATCH restart. If repeated or egregious, Offending ROBOT sits and does not move for 15 seconds.



General Logistics Notes

Application

Teams are to apply to compete in Robot Fight Night Season 5 via [this form](#). Teams should be expected to give a detailed explanation of their ROBOT concept, some preliminary team information, and more. Teams will be chosen based on these applications, as well as prior tournament participation and pedigree.

Should we receive more entries than we have space for, teams entering multiple ROBOTS will be asked to choose one entry in order to give all teams an opportunity to compete.

The application window opens **03/20/2020**. The first round of applications will be reviewed, and invitations will be sent by **04/10/2020**. After that, applications will be reviewed and new invitations will be sent out every other Friday, up until either we are full, or **06/19/2020**, whichever comes first.

Registration

A ROBOT is considered registered once the team accepts an invitation to compete sent from the Fight Night Tournament Director, as well as pays a non-refundable entry fee of **\$25**. The deadline to accept and complete registration is **06/19/2020**

Q&A System

For 2020, we're tweaking how we handle accepting questions and publishing responses. Questions will be submitted via a Google Form ([available here](#)). The Fight Night Rules Committee will make a determination of legality and form a response. If you're cleared, you'll get a private response. If your proposed question, situation, design, etc is deemed illegal, then a team update (published every Friday, and appended to this document) will anonymously detail the question and response. The Q&A system will open on **03/23/2020** to give teams a chance... to actually read the manual.

Date and Schedule

We are still working to finalize the date for Fight Night but the following are the remaining possibilities:

- July 11th, 2020
- July 18th, 2020
- July 25th, 2020

A final event schedule will be released in the coming weeks, but we anticipate Fight Night load in to begin around 10AM and have the Final Match around 9PM, with the event complete by 10PM. The tournament is expected to be held in Kokomo, Indiana.

GLOSSARY

TERM	DEFINITION
ACTIVE COMPONENT	Motors, servos, actuators, POWERTRAIN ASSEMBLIES, elastic bands, bungee cords, surgical tubing, springs, air cylinders ,gas springs or any device capable of directly providing kinetic energy, torque or motion.
ACTUATOR	An individual motor or pneumatic cylinder.
ACTUATOR POINTS	Points assigned to an individual or type of actuator.
ARENA	The area in which ROBOTS play MATCHES.
BRACKET	Non-cardboard, non-fastener (resembling COTS items such as screws, bolts, nuts, small washers and standoffs), devices for connecting CARDBOARD frame sections together, to connect POWERTRAIN ASSEMBLIES to your chassis, or to support bearings.
CARDBOARD	A paper-based material from which robots are primarily constructed. The only legal forms of CARDBOARD include: chipboard, corrugated fiberboard, honeycomb/hexacomb board, shipping tubes, laminated paperboard, compressed paperboard
CHAMPION	The winning team/robot of the Elimination Tournament, also known as the biggest try-hard.
CHASSIS	The load bearing base frame of a ROBOT comprised primarily of CARDBOARD which structurally and functionally supports the WEAPON(s), CONTROL SYSTEM and all other components.
CONTROL SYSTEM	The electrical system that manages control signals and power throughout the ROBOT.
DIMENSIONAL POINTS	Points based on size and weight of a ROBOT.
IMMEDIATELY	At once; instantly; without any intervening time or space
MATCH	A two (2) minute period where ROBOTS fight in the ARENA
MATCH WIN	An award that causes advancement of a ROBOT based on their opponent's incapacitation, or judges decision

POWER TRAIN	
POWERTRAIN ASSEMBLY	A non-cardboard self-sufficient device for transmitting motion, such as metal or plastic belt reduction boxes, spur gearboxes, planetary gearboxes, winches, bevel boxes.
RANKINGS	The way that ROBOTS are characterized and scored against one another during and after the Ranking Matches
ROBOT	An electro-mechanical device comprised of at least a WEAPON, CHASSIS and a CONTROL SYSTEM with its primary purpose to deliver (ROBOT) death destruction and mayhem, that has passed inspection.
ROBOT FRAME PERIMETER	longest outer perimeter of the complete robot as viewed from an approximately horizontal plane above the ROBOT in STARTING CONFIGURATION measured with a flexible tape measure, pulled reasonably tight around the ROBOT.
ROBOT HEIGHT	The longest measurement of ROBOT components measured approximately perpendicular from the horizontal plane of the floor in STARTING CONFIGURATION
STARTING CONFIGURATION	The declared size and weight of which a ROBOT starts a MATCH in, based on it's inspected DIMENSIONAL POINTS.
TECH FOUL	A penalty of sitting still for 15 seconds. This may apply at the beginning of your next match, during your current match or in all matches you play.
WEAPON	The component or system of a ROBOT, to a reasonably astute observer, obviously intended to inflict significant damage or otherwise incapacitate another ROBOT via their dedicated ACTUATORS and plastic components

Team Update 01

Greetings teams! We've been excited to see lots of interest and applications come through for Robot Fight Night 2020! We hoped that this would serve as at least a minor distraction from the current COVID-19 pandemic. As there have been a few big swings in the Season 5 rulebook, we've had some good questions, but we've noted a couple updates we needed to push to the Handbook to clarify a few things, as well as fix a couple of contradictions missed when updating this manual from Season 4 to Season 5. Below are the rules updates for Team Update 01:

General Rules

No changes.

ROBOT Rules

R04: BRACKETS are cool: For Season 5, teams may utilize individual metal or plastic BRACKETS however they please on their ROBOT.

BRACKETS may:

- Structurally and/or mechanically fasten ~~connect~~ sections of CHASSIS together
- ~~Connect~~ Mechanically fasten up to one face of a POWERTRAIN ASSEMBLY to the one face of the CHASSIS
- Support bearings or other motion components, such as bearings for your drivetrain

BRACKETS may not:

- Exceed a size of 3x3x2"
- Be utilized as the damaging components of a WEAPON
- Be utilized primarily as armor, instead of joining chassis sections
- Be installed within 2" of each other in any direction
- Be individually installed within ½" of a POWERTRAIN ASSEMBLY
- Be structurally fastened to another individual BRACKET by anything other than CARDBOARD
- Be utilized to ~~connect~~ structurally and/or mechanically fasten POWERTRAIN ASSEMBLIES to each other

It should be noted that BRACKETS used on or near the outside faces of a ROBOT will invite much scrutiny during inspection as to whether or not they are primarily serving as armor.

R22: 3D Printed Parts are Cool, mostly: ROBOTS may utilize plastic 3D printed parts for brackets, motor mounts and power transmission components provided they conform to all other rules governing said components. 3D printed components may not be used as plastic for WEAPONS.

R23: Spring-powered weapons are fine: ROBOTS may utilize spring-potential devices such as springs, surgical tubing, elastic bands, bungee cords, bent polycarbonate, etc to store potential energy to power a WEAPON.

Safety Rules

No changes.

Tournament Rules

T16: Pass Inspection: All robots must pass inspection prior to their ~~first~~ MATCHES.

VIOLATION: Jeff hits your ~~ROBOT~~ non-legal robot with a hammer of his choice once, as hard as he wants, you forfeit your MATCH, and your opponent may choose to spend 30 seconds damaging your ~~ROBOT~~ non-legal robot in the ARENA with their own ROBOT.

Glossary

ACTIVE COMPONENT	Motors, servos, actuators, gearbox assemblies, motor and gearbox assemblies, POWERTRAIN ASSEMBLIES, elastic bands, bungee cords, surgical tubing, springs, air cylinders, or any device capable of directly providing kinetic energy, torque or motion.
BRACKET	Non-cardboard, non-fastener (resembling COTS items such as screws, bolts, nuts, small washers and standoffs), devices for connecting CARDBOARD frame sections together, to connect POWERTRAIN ASSEMBLIES to your chassis, or to support bearings.
CHASSIS	The load bearing base frame of a ROBOT comprised primarily of CARDBOARD which structurally and functionally supports the weight of the WEAPON(s), CONTROL SYSTEM and all other components.

TU1 Q&A Responses

For 2020, we're tweaking how we handle accepting questions and publishing responses. Questions will be submitted via a Google Form ([available here](#)). The Fight Night Rules Committee will make a determination of legality and form a response. If you're cleared, you'll get a private response. If your proposed question, situation, design, etc is deemed illegal, or is good advice for the crowd of builders, then a team update published every Friday, will anonymously detail the question and response. Below are this week's published questions and answers:

- *Q: Please define "performance characteristics" as it relates to R14. There are many characteristics of motors, I need to know which ones are considered "performance".*
 - A: The performance characteristics are stall torque, max power and free speed as per the original motor manufacturer's specifications and tolerances.
- *Q: Please define a removable link.*
 - A: As per the blue box in S01, it must be a separate device from the battery or batteries, that cuts all power when removed. Example, a looped XT60 or double powerpole connector that breaks the circuit between the battery or batteries and the rest of the robot's electronics.
- *Q: What will the floor and wall material mentioned in T15 be composed of?*
 - A: The ARENA floor is expected to be somewhat flat, consisting of panelling and fasteners. It may be polycarbonate sheets with seams, it may be lumber. There may be uneven seams and gaps between any of the panels. The ARENA wall consists of polycarbonate, fasteners and aluminum extrusions.
- *Q: Can ROBOTS have more than one WEAPON? The term is referred to as WEAPON, WEAPONS, and WEAPONS throughout the manual but the plural spellings seem only to refer to all the weapons in the competition.*
 - A: Yes. ROBOTS may have more than one WEAPON.
- *Q: Is the Shaper Origin considered a CNC since Wikipedia defines: "A CNC machine processes a piece of material (metal, plastic, wood, ceramic, or composite) to meet specifications by following a coded programmed instruction and ***without a manual operator***.*
 - A: For the purposes of this rulebook, a Shaper Origin is considered a full-fledged CNC machine, and may not be used to manufacture CARDBOARD ROBOT CHASSIS components.
- *Q: Is MDF legal since it can be weaker than cardboard and I don't want to spend hundreds on glue?*
 - A: No, MDF is not a legal CARDBOARD material for Season 5.
- *Q: Are servos ACTUATORS?*
 - A: Yes, provided they meet the requirements outlined in R13 (Equivalent to AndyMark offerings, with a max rated wattage of 10-40 @6V).



Team Update 02

Greetings teams! Sorry this update is late. It took a little while to get right. We're not really certain which day it is anymore. We mostly just know we're working for some days, and not for others. Also, invitations are coming; we're still working on our method to accept registration money.

General Rules

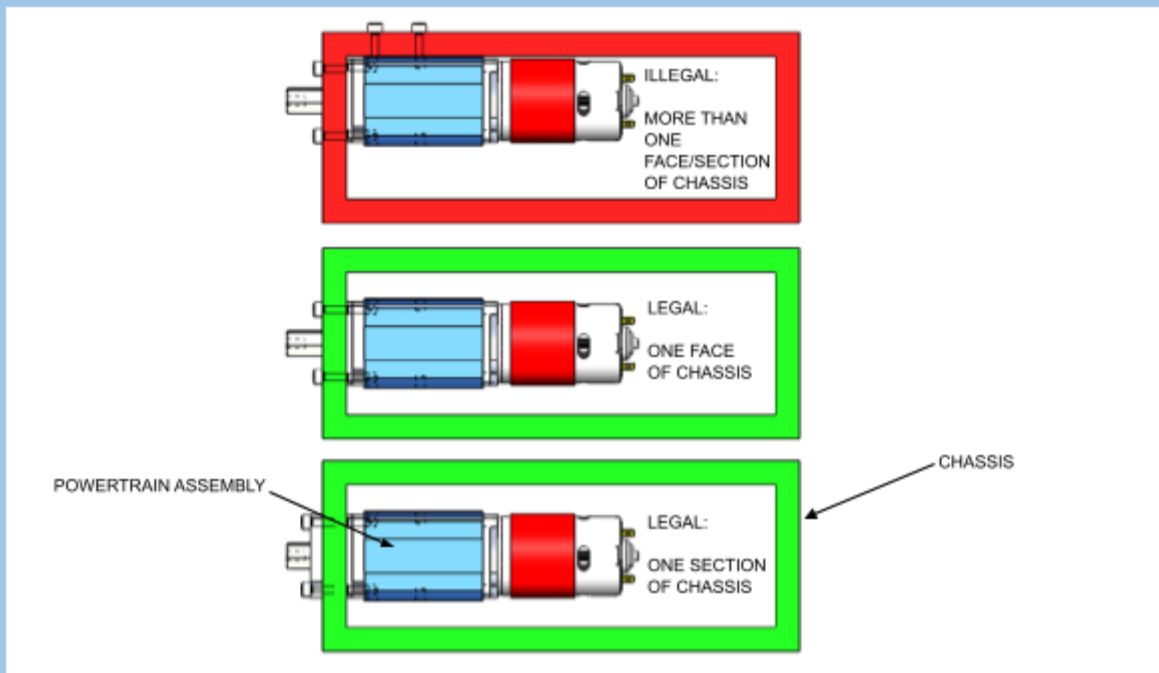
No changes.

ROBOT Rules

R10: Don't use your BATTERIES, POWERTRAIN ASSEMBLIES or ACTUATORS as structure: The ROBOT batteries, POWERTRAIN ASSEMBLIES or ACTUATORS ~~may not be used as a structural component.~~ **may not be mechanically fastened to either more than one individual section or face of the ROBOT CHASSIS.** The ROBOT must remain structurally intact and structurally unchanged if the batteries or ACTUATORS are removed.

Batteries may be installed behind removable sections of the ROBOT CHASSIS. This rule is not intended to outlaw burying your batteries inside your robot, just to ensure they are not holding your robot together.

Below depicts some legal and illegal scenarios of how POWERTRAIN ASSEMBLIES could be mechanically fastened to ROBOT CHASSIS.



R23: Spring-powered weapons are fine: ROBOTS may utilize spring-potential devices such as springs, surgical tubing, elastic bands, bungee cords, bent polycarbonate, **gas springs** etc to store potential energy to power a WEAPON.

Safety Rules

No changes.

Tournament Rules

T17: Red Goes First: ROBOTS assigned to the RED STARTING LOCATION in each MATCH must place and configure their ROBOT first. Then the ROBOT assigned to the BLUE STARTING LOCATION may place and configure their ROBOT. Once the ROBOT in the BLUE STARTING LOCATION have completed placement and configuration, the ROBOT in the RED STARTING LOCATION is given one opportunity to re-position or quickly reconfigure their ROBOT. Both ROBOTS must remain in this placement and configuration until the start of the MATCH

VOLATION: Verbal warning and MATCH restart. If repeated or egregious, Offending ROBOT sits and does not move for 15 seconds.

Glossary

ACTIVE COMPONENT	Motors, servos, actuators, POWERTRAIN ASSEMBLIES, elastic bands, bungee cords, surgical tubing, springs, air cylinders, gas springs or any device capable of directly providing kinetic energy, torque or motion.
------------------	--

TU2 Q&A Responses

No responses to publicly post.



Team Update 03

Greetings teams! We've put out our first round of acceptances to teams. Some details about this and timing are in this important update.

We've received many questions about if the 2020 tournament is still on. The answer is **tentatively yes**. We are closely monitoring the [State of Indiana's Back On Track plan](#), as well as closely following updates from the CDC. **We anticipate that the earliest we can safely hold this tournament is late July, or early August at the absolute earliest.** Because of the uncertainty of the tournament timeframe, we are not yet going to collect entry fees. We are still committed to holding this tournament, once it is safe to do so.

As of May 8th, 2020 we have accepted 26 robots into Season 5 of Robot Fight Night. We anticipate a capacity of around 32 teams, which means spots are still available. [Applications are still open!](#) If you were sitting on the fence about competing, or know someone who is thinking about applying, go ahead and do so! We still have some space.

Sincerely,

- Fight Night Rules Admissions Committee

General Rules

No changes.

ROBOT Rules

No changes.

Safety Rules

No changes.

Tournament Rules

No changes.

Glossary

No changes.

TU3 Q&A Responses

No responses to publicly post.



Team Update 04

Greetings teams! It's been a while since you've heard from us. We're sorry it's taken us a really long time to figure this out. Since you last heard from us, we've been hard at work to develop a comprehensive safety plan to hold a tournament in 2020, as well as hard at work to solidify plans for a space to host this tournament. But after all this, we finally have an exciting update to share about the status of the 2020 Robot Fight Night Tournament!

We have received approval to host our annual tournament on **Saturday, September 19th, 2020**. This tournament is going to look a little different - we're greatly limiting in-person spectator capacity, increasing our presence on streaming platforms, and changing locations. This year's tournament will be held at the AndyMark headquarters, in Kokomo Indiana. Details about schedule, facility layout and more will come in a future team update; but please note that the plan is to restrict accessible areas to the "far-east" warehouse section at the AndyMark facility, as well as the furthest eastern outdoor areas of the building. This means that teams will not have direct access to the machine shop, offices or main warehouse facilities during the tournament. We plan to have staff available to act as machinists to assist where possible, or to help fulfil last-minute AndyMark orders.

Should the situation in Indiana drastically change, please note that we reserve the right to further postpone or outright cancel the 2020 tournament, potentially with only a few days notice. Barring any unrecoverable outrageous costs, we plan to fully refund team registration fees in the event of a cancellation.

As part of our COVID-19 protocol for the 2020 Tournament, we are limiting the size of this event down from the hundreds of individuals attending to <200. This year, we are limiting team capacity to **32 robots**, and we are going to limit team roster size to **four team members per competing robot**. We understand that some teams have submitted rosters that exceed 4 members per robot, and that this will become a difficult decision between team members on who they will choose to attend the tournament. Please know that we are taking this restriction seriously, and are working to improve the quality of our online streaming presence, and are doing everything we can to ensure that all team members will have a front row seat to watch their robots succeed.

As of August 7th, 2020 we have accepted 27 robots into Season 5 of Robot Fight Night. We anticipate a capacity of around 32 teams, which means spots are still available. [Applications are still open!](#) If you were sitting on the fence about competing, or know someone who is thinking about applying, go ahead and do so! We still have some space.

We also need a 'hey, I'm still in!' from our current teams. We're planning to start accepting registration fees next week, but dropping a note to fightnight@andymark.com (or as a reply to this email) would be fantastic.

Sincerely,

- Fight Night ~~Rules Admissions~~ Competition Committee

COVID-19 Safety Protocol

Robot Fight Night is taking the health and safety of its competitors, volunteers and associates seriously. We absolutely do not want to be the cause of a new outbreak of COVID-19, nor do we want to be victims of one occurring as a result of the 2020 tournament. Taking inspiration from FIRST's tentative plans for in-person robotics events, NASCAR, and other recent combat robotics events, we plan to make the following modifications to the tournament and/or competition rulebook to ensure a safe and healthy tournament experience:

- Adhere to all AndyMark safety guidelines and protocols, including new COVID-19 related emergency procedures
- Contain all participants of the tournament to the "far east" warehouse, overhang area, grass outdoor area within the fence line
- Eliminate most non-volunteer and non-competitor spectators from attending the 2020 tournament
- Increase social media awareness and availability of a high quality online broadcast for spectators to watch
- Limit team capacity to 32 robots
- Limit team roster size to a maximum of 4 members per robot
- Require all participants to submit a complete proposed roster that includes contact information and living address for all competitors on the roster to be approved by Robot Fight Night Staff
- Disinfect all pit tables and competition arena areas prior to arrival of competitors on the competition day, as well as sanitization of the competition arena throughout the day.
- Maintain 6-10 feet of spacing in all directions between pit tables
- Increase the number of available tables to maintain one team per table
- Require the use of face masks at all times in the competition and pit areas. Violations of this mandate can be subject to disqualification and ejection from the tournament
- Provide extra face masks on site at the expense of Robot Fight Night
- Provide numerous hand sanitizing stations at the expense of Robot Fight Night
- Maintain good social distancing practices wherever possible
- If possible, perform non-contact temperature checks upon arrival of every person in attendance
- Limit paper handouts as much as possible, by posting graphical match schedules, as well as utilizing email blasts throughout the day to provide up to date information
- Utilize volunteer roles intelligently to limit contact spread (for example, requiring the Head Referee to be solely responsible for locking and unlocking the competition arena)

We believe that this protocol is a thorough approach to ensure we have a healthy tournament.

General Rules

No changes.

ROBOT Rules

R04: BRACKETS are cool: For Season 5, teams may utilize individual metal or plastic BRACKETS however they please on their ROBOT.

BRACKETS may:

- Structurally and/or mechanically fasten sections of CHASSIS together
- Mechanically fasten up to one face of a POWERTRAIN ASSEMBLY to one face of the CHASSIS
- Support bearings or other motion components, such as bearings for your drivetrain

BRACKETS may not:

- Exceed a the size of a 3x3x2" rectangular volume
- Be utilized as the damaging components of a WEAPON
- Be utilized primarily as armor, instead of joining chassis sections
- Be installed within 2" of each other in any direction
- Be individually installed within ½" of a POWERTRAIN ASSEMBLY
- Be structurally fastened to another individual BRACKET by anything other than CARDBOARD
- Be utilized to structurally and/or mechanically fasten POWERTRAIN ASSEMBLIES to each other

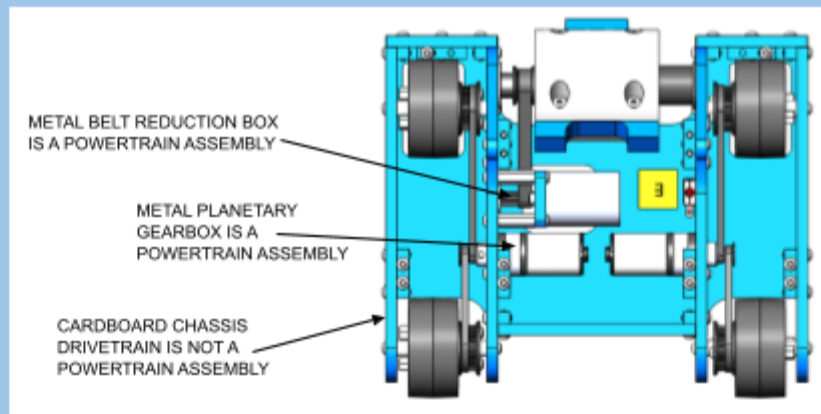
It should be noted that BRACKETS used on or near the outside faces of a ROBOT will invite much scrutiny during inspection as to whether or not they are primarily serving as armor.

- R11: POWERTRAIN ASSEMBLIES can't be too big:** POWERTRAIN ASSEMBLIES not comprised of CARDBOARD (such as metal or plastic belt reduction boxes, spur gearboxes, planetary gearboxes, winches, bevel boxes, etc) with the exception of their motor(s) and external or cantilevered output shaft(s), may not exceed a size of a 6x6x3" rectangular volume.

This rule is intended to govern individual powertrain assemblies like planetary gearboxes, contained drive assemblies, etc. It is not intended to govern the size of a remotely driven mechanism, such as a gearbox mounted to a robot with a chain driving a lifter, with only CARDBOARD between the gearbox and the lifter.

For 2020, we're clarifying what we mean by our previously poor definition of gearbox. We specifically mean non-cardboard self-contained devices for transmitting motion, to better capture the motion transfer devices teams use.

Example, a single planetary gearbox body cannot exceed a size of 6x6x3" rectangular volume. When used in a drive system, such as a simple 4WD chassis made of CARDBOARD, the gearbox body size is governed; but the entire drive system can be any size (provided it still fits within the allotted DIMENSIONAL POINTS):



Safety Rules

- S10: Face Coverings Required:** For the 2020 Tournament, face coverings must be worn at all times within the competition and pit areas. Repeated violations of this rule will result in immediate disqualification and ejection from the tournament without a refund. A limited number of extra face coverings will be provided on site by Robot Fight Night Staff.

Tournament Rules

No changes.

Glossary

No changes.

TU4 Q&A Responses

No responses to publicly post.



Team Update 05

Greetings teams,

We've been encouraged to hear about how many of you are still interested in competing this year! We've loved hearing about all of your progress so far.

I wanted to post a gentle reminder. The core spirit of Fight Night is for fierce, but friendly competition. G05 states to **have fun!** While this may be one of the most prestigious combat robotics tournaments to win, it's important to remember that we're all here to have fun while breaking each other's toys. Some of the best moments of Fight Night occur just after a hard match where both teams are chatting and laughing about a match they just had, or when they're anticipating their next. The most magic occurs when we're all having fun, pushing each other to advance this little niche sport in friendly ways.

If you aren't having fun, or are taking the fun out of it for others, you're doing it wrong.

Sincerely,
-Nick

General Rules

G01: Don't be a rules lawyering jerk: Before proceeding any further, did you read the foreword? No? Go read it. Now, think about what rule you're going to lawyer. Is there a gray area? Cool, here's a gold star. Don't go and build a robot like Blade Roller from Season 2. Looking at you Nathan. Read as: build your freakin' CHASSIS out of CARDBOARD.

The spirit of Fight Night is to build cool stuff. There are areas of the rulebook that have intentional allowances for interpretation. There are some that are obviously extremely rigid, most of which are safety rules. If you have a question about legality or a possible hole in the rules, please send it to us via the Q&A Form ([available here](#)). If what you ask is legal, you'll get a private response. If it's illegal, we'll post an anonymous public response. Don't wait until the tournament to demonstrate a loophole you may have found, and publicly calling other people out on robot legality issues is generally counter productive.

ROBOT Rules

R01: ROBOTS can't be too big: ROBOTS in STARTING CONFIGURATION must not exceed a maximum of 75 DIMENSIONAL POINTS, which are derived from the following formula:

$$ROBOT \ FRAME \ PERIMETER + \frac{ROBOT \ HEIGHT}{2} = DIMENSIONAL \ POINTS$$

ROBOTS may expand to any size after the beginning of a MATCH.

ROBOTS are to be declared what their PERIMETER OF MAX FOOTPRINT ROBOT FRAME PERIMETER, and height ROBOT HEIGHT are during pre-tournament inspection. To determine PERIMETER OF MAX FOOTPRINT ROBOT FRAME PERIMETER, inspectors will ~~wrap a non-rigid tape measure around the largest section of the robot planar to the floor in STARTING CONFIGURATION~~ measure the longest outer perimeter of the complete robot as viewed from an approximately horizontal plane above the ROBOT in STARTING CONFIGURATION with a flexible tape measure, pulled reasonably tight around the ROBOT.

Example 1: A cube-shaped robot with 10" long faces is the following:
 (10" Length + 10" Width + 10" Length + 10" Width + 10" Height = 45 Points)

Example 2: A cylinder shaped robot that is 15" in dia. and 12" tall is the following:
 (~47" Circumference + 12" Height + = 53 Points)

This method of size governing has been created to allow more design freedom, as well allowing some more breathing room to package components inside the ROBOT.

Tournament Rules

No changes.

Glossary

ROBOT FRAME PERIMETER	longest outer perimeter of the complete robot as viewed from an approximately horizontal plane above the ROBOT in STARTING CONFIGURATION measured with a flexible tape measure, pulled reasonably tight around the ROBOT.
ROBOT HEIGHT	The longest measurement of ROBOT components measured approximately perpendicular from the horizontal plane of the floor in STARTING CONFIGURATION

TU5 Q&A Responses

- Q: Can a team retract a callout that has already been explicitly accepted once recognized by the tournament director? Is there precedence for call-outs and is that by the team making the call-out or the team accepting the call-out?
 - A: No. Once a team has accepted a call-out / challenge from another team, and is accepted by the Tournament Director, it cannot be retracted. Once a team has accepted a call-out / challenge from another team, they cannot accept additional call-outs / challenges from additional teams for the Tournament. According to T05, a team still retains the right to concede defeat, awarding their opponent 6 Ranking Points, and probably infinite bragging rights.



Team Update 06

Hi teams!

We're only a few days away from Fight Night 2020! We're very excited to see all of your robots on the 19th. We're in for an exciting day, and we're pumped to help lead the charge to bring competitive robotics back. This is a lengthy update, with a lot of information. Please read carefully!

It looks like we currently will have around 21 robots eligible to compete to be the Fight Night 2020 champions! This means that we'll need ~11 matches per round, which makes 33 qualification matches. We're going to run **5 minute cycle times** so things are going to move quickly. We'll then have an elimination tournament starting at 16 robots, unless we simply cannot fill a bracket that large because too many robots are broken. Please be ready for your matches, and we appreciate your flexibility with our schedule.

When you arrive on site, we are requiring you to participate in a non-contact temperature screening before entering the facility. We will have multiple volunteers completing screening during load in. You will not need your temperature checked again to re enter the building if you go out to your car, etc.

Please note that we are not providing lunch or drinks to teams. We are providing a lunchtime break to allow teams to either have food delivered, or to go pick up food. We ask that if you get food delivered, please meet your delivery driver outside. Inspection will be closed during this lunch period.

Also please note that we have a limit of **four people per robot**. We have made exceptions for legally required parents or chaperones for teams composed of students, but we ask that these teams keep to a maximum four people designated for robot work.

Schedule

Friday, September 18th 2020

Bonus Load in and Inspection availability: 6:00pm - 8:00pm

Saturday, September 19th, 2020

Volunteer Doors Open: 8:00 AM

Team Load In and Inspection Begins: 9:00AM

Inspection Closes, Lunch Break: 12:00PM

Opening Ceremonies, Matches Begin: 1:00PM

Tournament End: ~6:00PM

Teams Out of Building: 7:00PM

Payment and Fees

Each robot entry costs **\$25USD**. We are fairly flexible on payment methods, however our preferred method is through PayPal. You can send payments to fightnight@andymark.com through PayPal. **Please ensure you select "Sending to a friend" to help us avoid fees.** Please also add a note saying which team name(s) you are paying for. We can also accept checks and Venmo, if you need these methods please drop us a note at fightnight@andymark.com to coordinate. Payments are due before the end of the tournament.

Event Location and Map

The event is being held at 1900 E North Street, in Kokomo, Indiana zip code 46901, which is AndyMark's headquarters. **When arriving on site, please do not enter through the front door.** Please proceed to the most eastern part of the building. When facing east, between the corner of our building and the storage lockers to the right (shown as the largest no parking area on the below map) you will see an open fence gate into a grassy area. Parking is available anywhere on the paved area, except where no parking areas are designated on this map:



Robot Videos

We have a new opportunity this year! Since we're entirely streaming this year, we're focusing all our show efforts on our online presence. If you would like to have your robot shown in more detail on the stream, we would love for you to shoot a 2-3 minute (landscape orientation please!) video of your team talking about your robot! Anything from a brief explanation of how it works, how your control system works, or maybe how you built one particular piece of your robot. Maybe even some of the math behind your weapon energy, etc. Anything is good! We can use these short 2-3 minute videos between some matches to add some more educational flavour to the event. If you would like to submit a video, please send them to fightnight@andymark.com by 8PM Friday, September 18th, 2020.

Information and Confirmation Form

Teams, we need some final information from you! All teams are required to [complete this form](#). We need your final team name, robot name, robot description and team roster information. Please submit this form by Thursday, September 17th, by 9pm. **Completion of this form, as well as arranging payment serves as your confirmation of attendance to the event. If you are not attending, please email fightnight@andymark.com ASAP! We will assume you are not attending if this form is not completed by 9PM on September 17th.**

See you all Saturday!

