



2021 Racer's Packet

Gravity Gran Prix

Welcome to Soap Box Derby Racing. We think you'll find that this is a fun, cheap, and safe way to build and race your own car.

This is your packet of materials for the Gravity Gran Prix. In addition to this cover sheet and checklist, it contains the following materials:

Rules

Inspection Form (which you should take to the race)

Race procedures card with map, which you should take to the race for reference

Driver's Checklist 2021

- Registrations, Inspection, Weigh-In** Saturday, Sep. 4, 2:00 pm 500 E 100 S
*Take procedures card (included in this packet) to track, follow instructions on it
Once you are issued a badge you are cleared to race.*
- Driver's Meeting** 2:45 pm Registration table
Must attend to race
- Race** 3:00 pm Top of the track
Line up cars behind the ramp, follow instructions of Pit Steward
- Awards** After the race

We have tried to streamline this event as much as possible. There is no entrance fee or pre-registration. Cars are electronically timed so they can run in any order—no need to conform to brackets. After each heat drivers will be towed to the top of the hill and should get right in line to race again.

Each driver is issued a badge with a number. That number is how the results are tracked, so please wear it in a conspicuous place at all times.



Payson Gravity Gran Prix 2021 Official Rules

Gravity Gran Prix

Eligibility and Registration

The 2021 Li'l Rascals Gran Prix will be held Saturday, September 4, 2021, at 3:00 pm. The race is run just west of Peteetneet School on 100 South. There is no fee to race.

Registration is the day of the race at 2:00 pm at 500 E 100 S (SE corner of Peteetneet). It includes an inspection and weigh-in. Every driver will be issued a unique number upon registering. A driver is not cleared to race until he or she has been issued a badge.

Competitors are divided into three standard classes and a Masters class. Age of the participant in the standard classes is at the discretion of the parent or participant, but suggested guidelines are:

Colt class: 9-13 years; Mustang class: 13-17 years; Stallion class: 18 years and older.

Information on the Masters Class is in a separate section below. Participants in this class must be 14 years old or older. Specifications are basically the same except that any wheel can be used.

A single car may compete in multiple classes (in the case of multiple children in one family, for example) provided it meets the weight requirements for each class in which it is competing. (All ballast must be bolted or otherwise securely fastened.)

Drivers' Meeting will be at 2:45 pm, followed by the flag ceremony. The first racers will leave the ramp at 3:00 sharp.

The race is open to everyone, regardless of age or gender. Non-residents of Payson City are welcome to participate. Sponsors are allowed and company names, logos, etc. may be displayed on the cars.

General Information

Racers are to be completely gravity powered. No starting or propulsion devices of any kind are allowed. Driver must be in a seated position. No head-first configurations are allowed. Reclining to any degree is an acceptable configuration as long as driver visibility is not impaired.

Some hints and guidelines for building soap box derby cars are available on the internet. Tips and links are available at Leany.com. Be aware, however, that this event is in no way affiliated with The All-American Soap Box Derby and rules and specifications for those events do not necessarily apply.

Any questions, comments, or requests for clarification should be directed to Frank Leany at 358-1028 or by e-mail at fleany@gmail.com.

Vehicle Specifications

	Minimum	Maximum
Track width (outside of tires)*	24 inches	36 inches
Vehicle height	3" ground clearance	60 inches
Seating surface height	(3" ground clearance)	16" above road surface
Total vehicle length	60 inches	96 inches
Wheelbase	45 inches	72 inches
Vehicle Weight		
Colt (8-12 yrs)**	- none -	275 lbs. with driver
Mustang (13-17 yrs)	- none -	340 lbs. with driver
Stallion (18+ yrs)	- none -	400 lbs. with driver

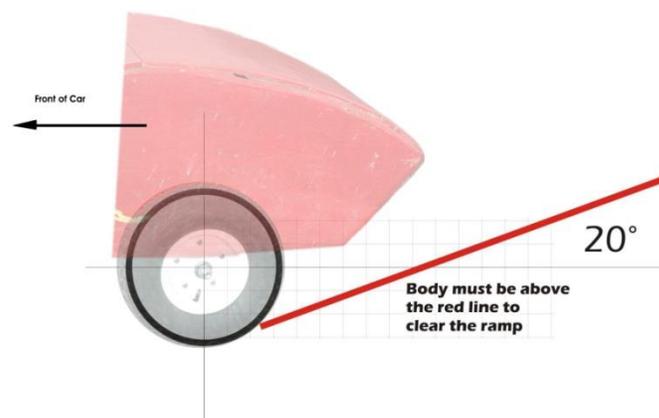
*Width of body cannot project beyond maximum width

**Colt class racers will be started lower on the ramp to reduce their speed

All weight must be bolted or otherwise securely attached. No loose ballast is permitted.

Cars may be made of any material. Any metal frame elements that extend beyond the wheels must be properly blunted with a cross bar to prevent piercing in the event of a crash. Sheet metal on the body is okay. Axles and components may be steel.

Road clearance must be no less than 3". To clear the ramp the ends of the car must be above a line 20° degrees with horizontal from the wheel centerline. That equates to a rise of 6-1/2" at a point 18" behind (or in front of) the wheels. (4-3/8 at 12", 8-3/4 at 24")



Car must have 4 wheels and all four wheels must be in contact with the track at all times.

Cars will be towed up the ramp after each race, so a tow hook (eye bolt) should be provided for the tow strap. The hook must meet the clearance requirements outlined above.

Wheels

This is a spec wheel event. All racers must run the specified wheels. Wheels are Harbor Freight pneumatic tires 13" x 4" with integral bearing wheels. The Harbor Freight part numbers changes from time to time, but it is the wheel pictured below:



Wheels fit on a 5/8" axle. A 5/8" bolt 4-1/2" long is just the right size to go through the hub. Wheels must have some sort of locking arrangement on the nut such as a locknut or an additional nut.

Wheels may be trued, balanced, etc, but no material may be removed from the wheels other than that necessary to balance. Wheels may be lubricated, but no modifications to the bearings are allowed. Any tire pressure is allowed.

Masters Class

Cars in the Masters class are NOT subject to the spec wheel rule. They may use any wheel or bearing. They are subject to all other specs and safety requirements; Maximum weight is the same as for the Stallion Class. Participants in this class must be 14 years old or older.

Brakes

All vehicles must be equipped with brakes that contact the rear tires. Brakes must be able to completely stop the tire. The driver must be able to steer while braking. Braking tests will be conducted at the inspection to ensure that they are adequate. Cars without adequate brakes will not be allowed to race. Hand brakes are discouraged. Consideration will be made for those with physical limitations.

Steering

Steering must be positively controlled. Driver must be able to steer with one hand. Pivot axle steering must have limiters that prevent the car from turning a radius tighter than 15 feet. Careful consideration should be given to the steering ratio (angle of steering wheel turn to angle of front wheel pivot) to ensure that the steering is not too sensitive.

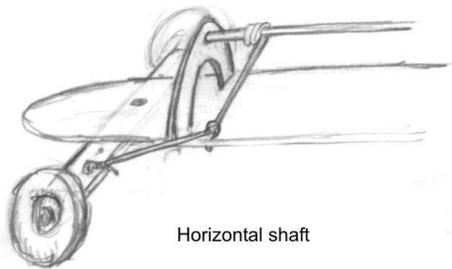
Attachment points for the steering must be positively secured along the axis of force of the cable. Screw in eyebolts will only be permitted into solid wood—not laminate or pressed wood.

Rope pull steering is allowed ONLY with a foot brake. Driver must demonstrate he can control the car while stopping. Foot steering is not allowed. Cable wind steering (a cable is wrapped around a cylinder that pulls on the axle as the shaft is turned) is recommended as an easy way to positively steer. Tiller steering is discouraged, especially if the car is equipped with a hand brake.

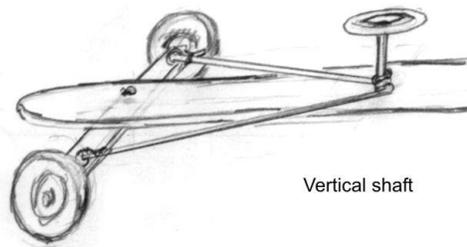
See attached detail for information on steering.

Soap Box Derby Steering Systems

Cable Wind Steering (recommended)

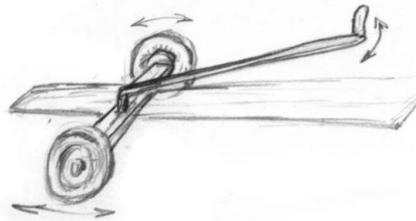


Horizontal shaft

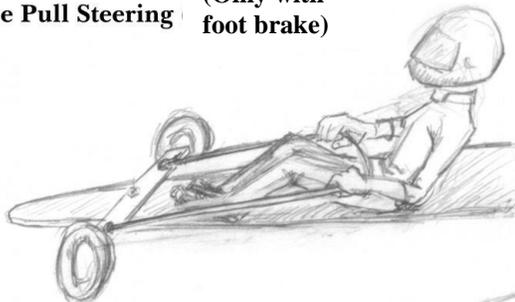


Vertical shaft

Tiller Steering (discouraged)



Rope Pull Steering (Only with foot brake)



Foot Steering (not allowed)



Safety

All drivers must wear an approved helmet (DOT, Snell, etc.). Bicycle helmets are not allowed. Cars will have full floors and should have some body structure to prevent the driver from accidentally contacting the pavement. The vehicle must not have any sharp projections, loose parts or edges that might pose a safety hazard. All ballast must be securely fastened and cannot move, accidentally or with driver intervention, during the race. Anything inside the cockpit that could injure the driver in the event of a crash should be padded. Seat belts are not required.

Care should be taken to ensure that the center of gravity of the vehicle is as low as possible. Maximum height of the seating surface is 16" above the road surface.

In order to maintain the safety of the event the race committee may impose additional requirements as conditions warrant.

Spirit of Fair Competition

The objective of this event is to provide fun for everyone regardless of resources. To that end the rules strive to provide maximum safety and fair competition with the fewest requirements possible.

As issues arise that are not specifically addressed in the rules the racing committee will pass judgment to maintain the spirit of the rules. If you have a question about whether something is appropriate, *ask*. A phone call now could prevent a disqualification at inspection time. As clarifications are made they will be applied universally to all participants.

Inspections

Final inspection will be performed at 2:00 pm on race day. Helmets will also be inspected. No one will be allowed to race with a helmet that is not Snell or DOT approved. Winning cars in each heat may be inspected after the heat to ensure that they conform to the rules.

Li'l Rascals Gravity Gran Prix

Derby Car Inspection

Car Number

- 1. Steering, turning radius >15'
- 2. Brakes
- 3. Body fully enclosed, seat ht. <16"
- 4. No starting devices
- 5. No sharp edges, protrusions, etc.
- 6. Spec Wheels, positively secured
- 7. Approved helmet
- 8. Other

Weight	Age (9-13)	Weight (275 max)
	Colt Driver	
	Age (13-17)	Weight (340 max)
Mustang Driver		
Stallion Driver		Weight (400 max)

Inspected by: _____ Date: _____

Waiver and Release of Liability

The undersigned does hereby release, waive, and forever discharge Payson City, its assigns, employees, agents or representatives from and against any and all liability for any harm, injury, damage, causes of action or costs and expenses of any nature for which Participant may have or which may hereafter accrue to the Participant, arising out of or related to any loss, damage, or injury, that may be sustained by Participant in conjunction with Participant's involvement in this activity.

Racing involves in inherent risks that may include death or injury. Participant has signed this Release in full recognition and appreciation of the dangers, hazards and risks involved with the Activity.

Participant certifies that she/he is physically fit and in good health and has not been advised otherwise by any qualified medical personnel. Participant is not aware of any health-related reasons or problems, which would preclude or restrict Participant's ability to take part in the Activity.

Colt	Driver Name	Signature of Responsible Party
Mustang	Driver Name	Signature of Responsible Party
Stallion	Driver Name	Signature of Responsible Party

Race Procedure

Unload cars on 500 E just before 100 S. Park your trucks and trailers on 500 E between 100 S and Utah Ave. Inspection and weigh in takes place there.

Registration is just around the corner on the SW corner of 500 E/100 S.



Once all inspections are complete and you are entered into the computer, you will be issued a badge. This badge is the indicator that you can race.

Drivers can race in any order without regard to class. After each heat cars will be towed to the top. Get back in line for your next race.

If you feel like you aren't getting as many races in as others, please say something to the Pit Steward and he will work you in.