

2011

Gravity Gran Prix

Eligibility and Registration

The 2011 Salem City Gravity Gran Prix will be held Wednesday, August 10, 2011, at 6:00 pm. The race is run just west of Knoll Park on 300 South. Inspection and weigh-in begins at 5:00. Flag ceremony will take place at 5:50 and the first racers will leave the ramp at 6:00 sharp.

PARTICIPANTS MUST BE REGISTERED BY MONDAY, AUGUST 8, 2011 in order to race.

Registration is through Salem City offices. Registration fee is \$15 per driver. Every car must have a unique number given upon registering. You may use any number you choose as long as it isn't being used by a car that is already registered.

Competitors are divided into three weight classes. Suggested ages for the classes are:

Colt class: 8-12 years; Mustang class: 13-17 years; Stallion class: 18 years and older.

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.)

The race is open to everyone, regardless of age or gender. Non-residents of Salem 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.

A preliminary inspection will be held July 29th at 6:00 pm at the Knoll Park parking lot. Plan to attend this inspection to avoid any surprises or disqualifications on race day. If you cannot attend, contact Frank Leany to make arrangements to have your car inspected well before race day.

Any questions, comments, or requests for clarification should be directed to Frank Leany at 423-8588 or by e-mail at fleany@gmail.com. (include the words "Derby" or "Gravity Gran Prix" in the subject to avoid being deleted as spam).

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	72 inches	96 inches
Wheelbase	48 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

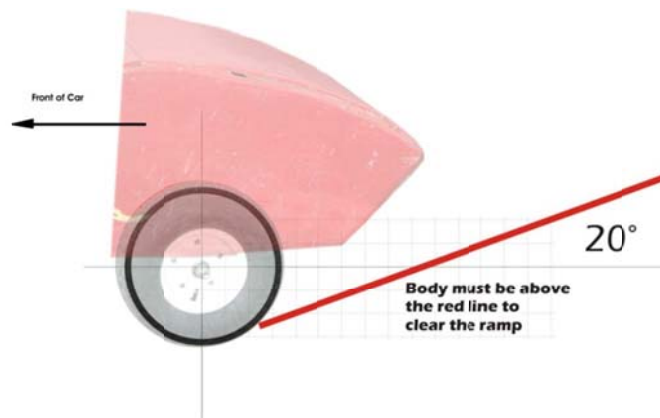
*Width of body cannot project beyond maximum width

**Colt class racers will be started below the ramp to reduce their top 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. The furthest forward point of the car must be no higher than 12" so the starting gate will contact. 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.

To share ideas and techniques for build a derby car, we will hold a clinic Saturday, June 11 at 10:00 am, at 205 E 800 S, Salem. Visit Derby.Leany.com for more details and other clinics.

Wheels

This is a spec wheel event. All racers must run the specified wheels. Wheels are Harbor Freight no. 36054-0VGA, 13" diameter pneumatic tires with integral bearings. 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.

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 on July 29 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.

No rope pull steering is allowed. 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.

Safety

All drivers must wear an approved helmet (DOT, Snell, etc.). Bicycle helmets are not allowed. Cars should have full bodies including floors 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

A preliminary inspection will be held at 6:00 pm Friday, July 29, 2011, in the parking lot by the pond. The purpose of this inspection is to give the participants time to apply any modifications that may be required. Helmets will also be inspected. No one will be allowed to race with a helmet that is not Snell or DOT approved.

At this inspection each racer will be given a blank leader board card (unless he already has one). This card is to track your position during the race. Take this home and decorate it with your car number and name and the paint scheme of your car so that it's easily identified with you. Be sure to pick up your card after the race.

Final inspection will be performed at 5:00 on race day. Winning cars in each heat may be inspected after the heat to ensure that they conform to the rules.

Race procedures

PARTICIPANTS MUST BE REGISTERED BY MONDAY, AUGUST 8, 2011 in order to race.

Final inspection and weigh-in are at 5:00 the day of the race. Take your signed inspection sheet and leader board card to the recorder who will issue you a name badge certifying you're allowed to race. Drivers meeting is at 5:40. Flag ceremony will take place at 5:50 and the first racers will leave the ramp at 6:00 sharp.

Cars will be towed up the hill after each race. Park your car behind the ramp. Follow the instructions of the race steward who will ensure that you are lined up for your next race.

Drivers must keep hands and arms inside the body at all times. Any actions that appear to be pushing or propelling the car could result in disqualification from the heat. Any car that leaves its lane during the race may be subject to disqualification. Crowding or other unsportsmanlike driving is not allowed.

Racing will be double elimination in heats of 2 cars each with 3 places being awarded in each class. In addition, a People's Choice Award will be given to the car that the spectators vote as their favorite.

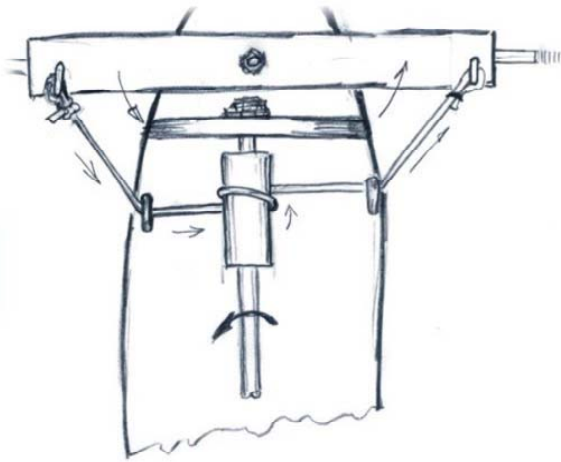
The format of the race may change as conditions and participation warrant.

Parade and Car Show

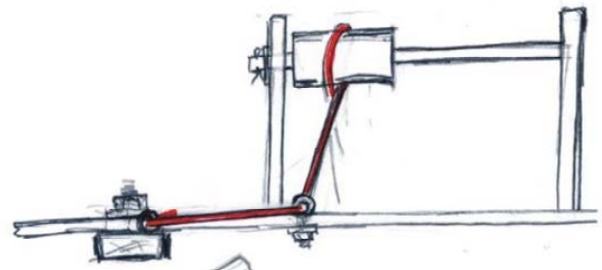
Racers are invited to participate in the parade on Saturday. We will have more information the week before the race. At the end of the parade we set up the cars in the park for display during the festivities. Your car doesn't have to be in the parade to be displayed.

Driver's Checklist

- Registration and Entry Fee** Due Friday, July 30 5:00 pm City Offices, 423-2770
- Preliminary Inspection** Friday, July 30 6:00 pm Knoll Park Parking Lot
- Leader Board Card** At Preliminary Inspection
- Inspection & Weigh In, get badge** Wednesday, Aug. 10 5:00 pm Derby Hill, 300 S
- Driver's Meeting** 5:40 pm
- Race—Line up cars at top of track, follow instructions of pit steward**
- Awards (Take Leader Board Card)** After the race
- Parade** Saturday, August 13 10:00 am
- Display of Cars in the Park** Saturday, after parade, in the park by Car Show

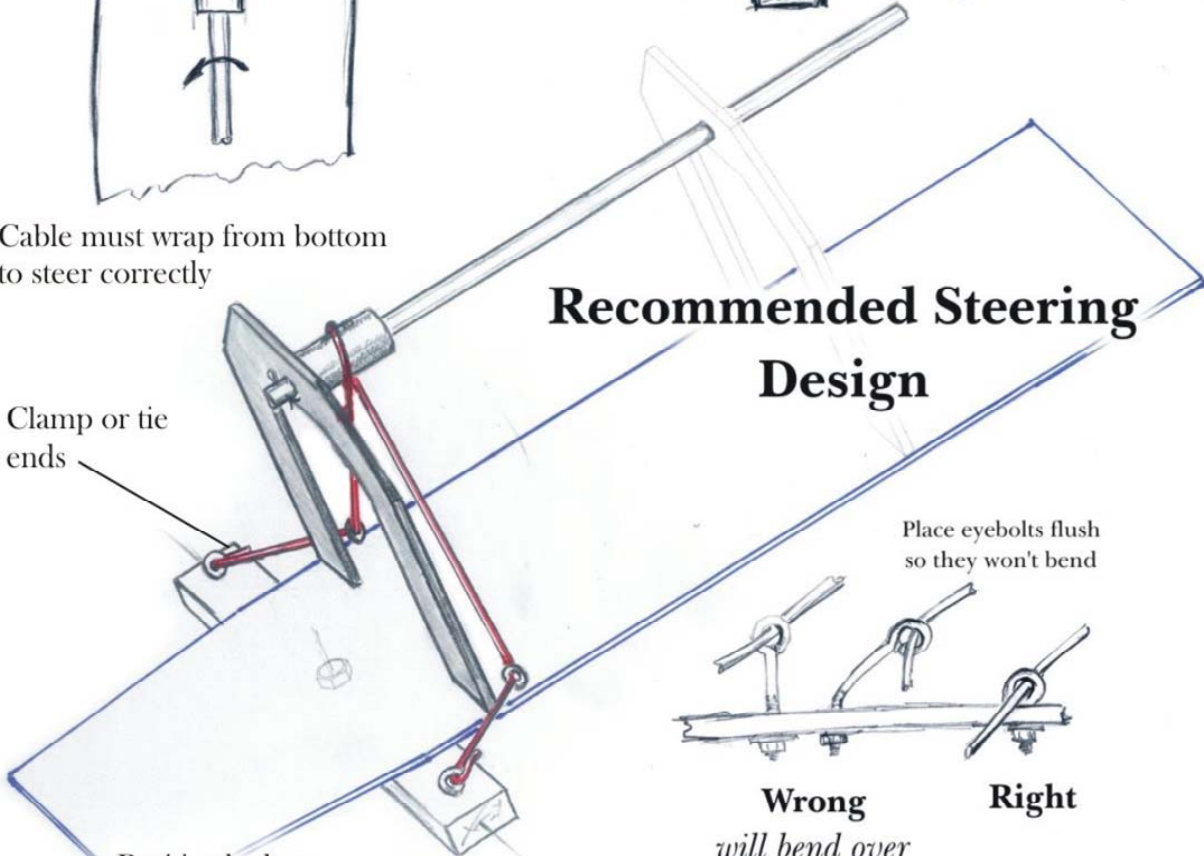


Cable must wrap from bottom to top to steer correctly



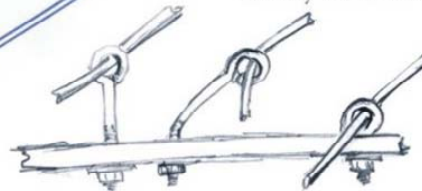
Recommended Steering Design

Clamp or tie ends



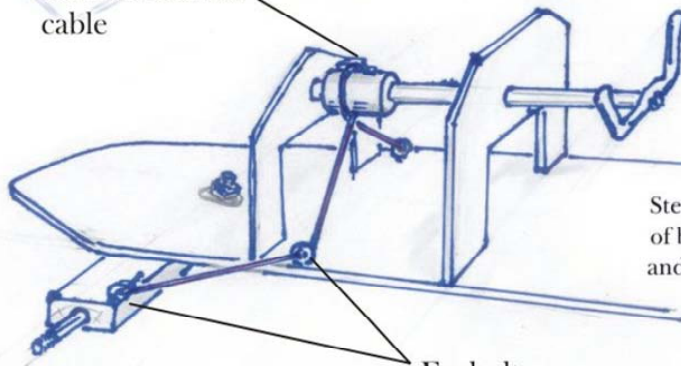
Positive lock on cable

Place eyebolts flush so they won't bend



Wrong
will bend over

Right



Steering wheel can be made of bicycle handlebars cut off and mounted perpendicular to the shaft.

Eyebolts