



Pack 215
Pinewood Derby 2008
March 7, 2008



Event Schedule:

Weigh In:

Thursday, March 6, 2008 – West Jr High School Cafeteria
Time: 7pm - 9pm

Pinewood Derby:

Friday, March 7, 2008 - West Jr. High School
6 pm - Setup
7pm – 9pm Races!

Three Race Categories:

1. Cub Scout Race
2. Adult & Sibling Race - "Unlimited Race" -This will have no limitations with the exception of:
 - Safe for all participants (ie: no explosive devices like rocket engines).
 - Must not interfere with other cars race.

All Scouts are responsible for reading and understanding the rules contained in the following pages. If there are any questions, please contact Jim Piazza – james.piazza@hp.com – All changes are highlighted in RED

Car Specifications for Cub Scout Race – See Rule Details in the following sections:

- Must use the Car kit.
- Width: - 2-3/4" - Length - 7" - Weight - **Not over 5 Ounces**
 - **Nothing can extend beyond front of car which will protrude beyond starting gate**
- Width between wheels - 1-3/4"
 - No modifications to wheels – can sand minor burrs off. **See section T-6.**
- Bottom clearance between car and track - 3/8"

Award Categories:

Best Paint Job, Most Original Design, Sportiest Looking, Best Workmanship, Best Use of Imagination, Best Use of Legos, Most Unusual Car, Most Humorous Car, Fastest Looking Car, Most Realistic Looking Car, Smoothest Finish, Scoutiest Design, Strangest Shape, Most Futuristic, Most Patriotic, Funniest, Best Driver In the Car, Best Display of Scout Spirit, Most Unique, Judge's Favorite, Most Creative, Sportiest, Most Creative Use of Material, Best – I did it myself

Complete rules will be posted at www.pack215.org

Rules Summary: Details to be posted on Pack Web site (beginning on page 3)

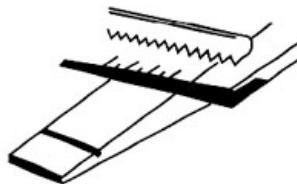
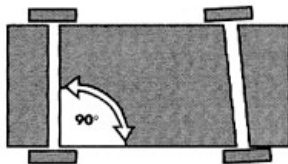
Wheel bearings, washers, and bushings are prohibited. The car shall not ride on springs. Only official Cub Scout Grand Prix Pinewood Derby wheels and axles are permitted. Only dry lubricant is permitted. Details, such as steering wheel and driver are permissible as long as these details do not exceed the maximum length, width and weight specifications. The car must be free-wheeling, with no starting devices.

Each car must pass inspection by the official inspection committee before it may compete. If, at registration., a car does not pass inspection, the owner will be informed of the reason for failure, and will be given time within the official weigh-in time period to make the adjustment. After final approval, cars will not be re-inspected unless the car is damaged in handling or in a race.

BUILDING INSTRUCTIONS

Check the grooves to ensure that each is at a perfect 90-degree angle to the car body. A car with untrue axles tends to steer to one side or the other, causing it to rub up against the side of the lane strip, slowing it down. You can check the groove angles by using a square, a protractor, or even a piece of paper.

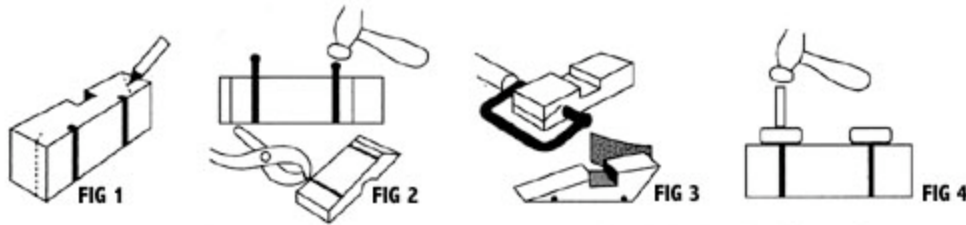
Lay square on block to check for squareness and alignment of slot. Use two hacksaw blades side by side to redress the slots. Use the edge of the square as a guide. See Section T-3 below.



NOTE: If the car design you chose has a narrow body, make sure the area where the axles are inserted into the body remains 1-3/4" wide, or wheels will not fit over the guide strips of the track.

PAINTING AND WHEEL ASSEMBLY Apply several coats of sanding sealer; then sand entire car with a fine-grade sandpaper. Give model at least two coats of fast drying paint, in your choice of color. When paint is completely dry sand with a fine sandpaper, apply a final coat of paint and allow to dry thoroughly. **TO FINISH**, rub entire car with a rubbing compound. Details such as windshield, driver, racing numbers, etc., should be added now. For a super finish apply a coat of auto wax and rub to a high gloss.

Pre-lubricate axles and wheels using, dry powdered lubricant. Do not use regular oil or silicone spray, since it may soften the plastic. Slide wheels over axles, then gently tap them into the car body grooves with a 1/4" dowel or similar object to within 1/32" of car body. (See Figure 4). Make sure wheels turn freely.



Performance Tips:

Friction DOWN, Speed UP

Your pinewood car moves from the pull of gravity and is slowed down from friction. Friction acts like brakes. Reduce friction and your car goes faster. Increase friction and your car slows down.

Friction DOWN, Speed UP It's as simple as that. Finding the sources of friction and finding ways to reduce it is the tricky part. Here are some ways to reduce friction and increase speed...

What is friction? Friction is caused when two surfaces rub together. The rougher the surface, the more friction there is between those two surfaces and the slower your car goes. Read on to see how to reduce friction...

Lubrication

How to reduce friction? An easy way to reduce friction in your pine car is to lubricate the two surfaces. This is an essential part of pinewood derby racing. Purchase a tube of graphite and sprinkle a little on the axles near the wheel. Spin the wheel so the graphite works in. You will immediately notice a significant improvement in the wheel speed as you turn it after applying graphite.

Making your pine car go straight

This can be tricky. Roll your car along the kitchen floor. If it veers to the right or left too much, the axles are crooked. Just like steering a car, you need to adjust the steering on your Derby Car. To do this, you must adjust one or more of the axles so the car rolls straight. You can do this by re-drilling the axle holes and re-inserting the axles.

Wheel imperfections can also make your car veer left or right. Once again, lathed wheels will remove mold imperfections so each wheel rolls perfectly straight.

For more tips, Google "Pinewood Derby" – you'll find lots of advice.

I. GENERAL RULES: (For all Race Events, except “Unlimited Race”)

G-1. Qualification: All registered Pack 215 Tiger, Cub, and Webelos Scouts may design, build and enter cars that are eligible to participate in the "Cub Scout Race" event. Parents or guardians of Cub Scouts registered in Pack 215 may design, build and enter cars that are eligible to participate in the "Adult/Sibling Race - Unlimited" event.

G-2. Essential Materials: All cars entered shall be constructed from the "Official Grand Prix Pinewood Derby Kit" (referred to below as the kit) as distributed at the January Pack meeting. Additional kits may be purchased from the Pack or Scout Store, or hobby shops.

G-3. Competitor Categories: (see breakdown attached) All Tiger Cubs, Cub Scouts, and Webelos Scouts that are registered within Pack 215, and Parents or guardians with registered sons may enter this Pinewood Derby and associated races. Cub Scouts will compete with others in the same Cub Scout Den. The first place winners in each Den will move on to the finals.

G-4. Attendance: The Cub Scout MUST enter his own car. This means that the Cub Scout must be present at "Inspection and Registration" to enter his car into competition.

G-5. "New Work": Construction of ALL entries MUST have begun AFTER last year's Pack 215 Pinewood Derby Races.

G-6. Single Entry per Person: Only one car may be registered by any person in the Pinewood Derby.

G-7. Inspection and Registration: Each car must pass a technical inspection before it may compete. Technical inspection and registration of cars occurs on at the weigh-in, as noted on the front page of this document.

G-8. Failure to Pass Inspection: The Inspection Committee shall disqualify cars which do not meet the rules as described herein. If a car does not pass inspection, the owner will be informed of the reason his car did not pass. Cars which fail the initial inspection may be taken home or repaired onsite for modifications and brought back no later than 9:00pm the night of the weigh-in for final inspection and registration.

G-9. Impound: No car may be altered in any way after it has been registered. After a car passes registration, it will be stored by the Pinewood Derby Race Committee until race day.

G-10. Car Design Rules Interpretation: Interpretation of the rules described in G1 through G-9, and T-1 thru T-9 are at the sole discretion of the Inspection Committee Judges present during the Registration and Inspection process.

G11. Race-Day Rules Interpretation: On Race-Day, the Cub Scout must make all questions of rules interpretations and procedures to the Pinewood Derby Chairman or Race Officials promptly. Decisions of Race Officials on questions of rules interpretations and procedure may be appealed to the Pinewood Derby Chairman. All decisions of the Pinewood Derby Chairman are final. Decisions of Race Officials on questions of fact (i.e. the result of a specific race) may not be appealed beyond the Trackmaster and/or Finish Line Judges. **Note:** Unsportsmanlike conduct by any participant or spectator will be grounds for expulsion from the competition and/or the race area.

II. CUB SCOUT RACE CAR DESIGN STANDARDS

T-1. Material: Race cars shall be constructed for this event from the parts contained in the Official Grand Prix Pinewood Derby Kit (referred to below as the kit) as sold by the Scout Service Center. Materials from the kit may be supplemented but not replaced.

T-2. Weight: Race cars may weigh no more than five (5) ounces (total weight) as determined on the official scales during the pre-race check-in. Note: The official scale will be available at the Weigh In – 1 day before the race.

T-3. Wheels and Axles: The car shall roll on the wheels from the kit. The wheels shall turn about the axle nails from the kit. The axle nails shall be firmly affixed to the wood of the car body, and **MUST** be placed in the original 'axle grooves' in the supplied wooden block. It must be obvious to the judges that the grooves, wheels, and the nails from the kit are being used. **If a new groove must be created due to misalignment, the other groove must be moved so that the distance between the axel grooves remain the same.**

T-4. Size: Race cars may be no longer than 7 inches, nor wider than 2-3/4 (2.75) inches, as determined by the official gages during the Registration and Inspection. Underside clearance of at least 3/8 (0.375) inches and inside wheel to wheel clearance of at least 1-3/4 (1.75) inches is recommended, so that the car will run on the race track. Adequate clearance is the responsibility of the race car builder.

T-5. Weights and Attachment: Weight may be added to the car and will be considered part of the car for purposes of all measurements. "Weight" is considered to be any material on the car that is not provided in the kit. All weight must be securely fastened to the car, e.g. by permanent glue, nails or screws,

but not by "sticky substances", e.g. tape, or tack spray. Weights shall be passive, i.e. non-moveable, non-magnetic, non-electric, non-sticky, etc.

T-6. Wheel Treatment: Some of the original "tread marks" on the wheel face must remain intact, i.e. apparent to the inspector. Wheels may not be machined to a beveled condition and the portion of the wheel surface that contacts the track must remain parallel to the axle. **Wheels can not be coated with any substance (axel only) -see T-9.**

T-7. Unacceptable Construction: The following may NOT be used in conjunction with the wheels or axles: hubcaps, washers, inserts, sleeves, bearings.

T-8. Gravity Powered: The race car may not be constructed or treated in such a way that the track's starting mechanism imparts momentum to the car. (For instance, this provision disqualifies cars with sticky substances on the front of the car and protrusions which may catch on the starting pin.)

T-9. Lubricants: Only dry lubricants such as graphite or powdered teflon "white lube" will be allowed for lubricating the wheel axle's. Lubricants may not foul the track.

III. CONDUCT OF THE RACES

Competition will consist of heat races within each Den, and a series of final heats at the Pack level. Track officials are responsible for the proper conduct of the races.

C-1. Lane Assignment: To equalize differences among track lanes, each heat will consist of a number of races equal to the number of cars running in that heat. For den heats, this will be the number of boys in each den. For Pack elimination heats, there will be six cars in each heat.

a.) In each heat, each car will race in each track lane used for that heat. For example, a Den heat with five cars would consist of five races with each car rotating through lanes 1, 2, 3, 4 and 5. The heat for a den with eight boys would have eight races, with two cars "sitting out" each race on a six lane track.

b.) From each heat, the top car will advance to race at the next level based on number of points earned. Points tracking will be done via computer race software. The overall winner for each Den, Pack semi-finals, and Pack final races will be the car with the highest number of points after the final race.

C-2. Car Leaves Lane : If, during a race heat, a car leaves its lane but proceeds down the track in a manner that does not interfere with its opponent, then the race will be called normally. If the car leaves it's lane and interferes with another car, the race will be re-staged and re-run. If the same car again leaves it's lane and interferes with another car, the race will be re-staged and re-run.

C-3. Car Leaves Track: If, during a race heat, a car leaves the track without interfering with its opponent, it shall be considered to have ended its heat at that point.

C-4. Car Repair (Without Fault): If, during the race, a wheel falls off or the car becomes otherwise damaged, then the SCOUT may, to the best of his ability perform repairs with the assistance of his adult partner or Pit Crewmember, and Race Official.

C-5 Car Repair (With Fault): If a car is damaged due to track fault, or damage caused by another car or person, then the Trackmaster, at his sole discretion, may allow additional repair assistance to the Cub.

C-6. No Finishers: If, during a race heat, no car reaches the finish line on the track, the car which went the farthest in its lane shall be declared as the heat winner.

C-7. Track Fault: If a car leaves its lane, at his sole discretion, the Trackmaster may inspect the track and, if a track fault is found which probably caused the initial violation, the Trackmaster may order the race heat to be rerun after the track is repaired.

C-8. The Race Area: Only race officials may enter the track area. This rule will be strictly enforced.

Race safe and have fun!!

Pack 215 Pinewood Derby Committee

Jim Piazza, Chair