

# Pinewood Derby Rules & Procedures

---

Pack 234 Pinewood Derby  
March 17, 2007

## Table of Contents:

- I. **GENERAL: (Applies to all Race Events)**  
*Rules about entering your car.*
- II. **CUB SCOUT RACE CAR DESIGN STANDARDS**  
*Rules about building your car.*
- III. **CONDUCT OF THE RACES**  
*Rules that will be used during the races*
- IV **THE RACING ENVIRONMENT**  
*Things you need to know about the track, timers, and scoring*
- V. **FAMILY RACE CAR DESIGN STANDARDS**  
*A race for Moms and Dads only*
- VI. **SPECIAL NOTE TO ALL CONCERNED**  
*Some notes on Sportsmanship*

## **I. GENERAL RULES:**

**Qualification:** All registered Pack 234 Tiger, Cub, and Webelos Scouts may design, build and enter cars that are eligible to participate in the "Cub Scout Race" event. Parents, guardians, siblings and family members of Cub Scouts registered in Pack 234 may design, build and enter cars that are eligible to participate in the "Family Race" event.

**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 December Pack meeting. Additional kits be purchased elsewhere if they are of the exact type manufactured by the BSA.

**Competitor Categories:** All Tiger Cubs, Cub Scouts, and Webelos Scouts that are registered with Pack 234, and associated family members may enter this Pinewood Derby.

**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.

**"New Work":** Construction of ALL entries MUST have begun AFTER last year's Pack 234 Pinewood Derby Races.

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

**Inspection and Registration:** Each car must pass a technical inspection before it may compete. Technical inspection and registration of cars occurs on Wednesday, March 14 at Anderson School, from 7:00-8:00pm.

**Impound:** Impound will occur with car registration on March 14. 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.

**Car Design Rules Interpretation:** Interpretation of the rules described in G1 through G-11, and T-1 thru T-9 are at the sole discretion of the Inspection Committee Judges present during the Registration and Inspection process.

**Race-Day Rules Interpretation:** 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.

**Please 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**

**Material:** Race cars shall be constructed for this event from the parts contained in the Official Grand Prix Pinewood Derby Kit as sold by the BSA. Materials from the kit may be supplemented but not replaced.

**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.

**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.

**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.

**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.

**Wheel Treatment:** Wheel treatment (hub and tread smoothing and polishing) may not result in substantial removal of mass nor in reducing the wheel width from the original kit wheels. 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.

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

**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.)

**Lubricants:** Only dry lubricants such as graphite or powdered teflon "white lube" will be allowed for lubricating the wheels. *Lubricants may not foul the track.* There will be a lubrication table set up at the race. In the interest of fairness, only one lubrication is allowed before the beginning of the first heat race and then once again before the beginning of the first race of the semi-finals and finals.

### **III. CONDUCT OF THE RACES**

Track officials are responsible for the proper conduct of the races.

**Inspection Gauges:** The race-day "Pit Stop" area will have the official scale and length box. That check-in equipment will be the official equipment for the race.

**Race Day Lubrication:** There will be a lubrication table set up at the race. In the interest of fairness, only one lubrication is allowed before the beginning of the first heat race and then once again before the beginning of the first race of the finals

**Car Handling Responsibility:** Cars will be staged on the tracks by the "Starter Team."

**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, that car will be judged last place, and the race will be re-staged and re-run without that car.

**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.

**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.

**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.

**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.

**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.

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

**Rewards and Recognition:** The most important values in Pinewood Derby competition are parent/son participation, good sportsmanship and learning how to follow rules. The Awards Committee is responsible for recognizing and encouraging these qualities in addition to traditional racing awards. Racers will be recognized as follows:

- a.) Every participating Scout will receive a Pinewood Derby patch and certificate.
- b.) Every car will be awarded a certificate and/or a ribbon for winning its own unique appearance category (Most Creative, Most Humorous, Most Colorful, Best Paint Job, and so on).
- c.) Trophies will be awarded for the First through Third-place finishers overall in Pack 234.

## **IV. THE RACING ENVIRONMENT**

**Track Length and Drop:** The track shall have a racing surface (starting line to finish line distance) of approximately 28 feet with a drop of approximately 4 feet.

**Track Slope:** The track slope shall decrease from approximately 30 degrees at the starting line to approximately 0 degrees at the finish line.

**Lanes:** Each lane will consist of a straight, smooth wooden strip approximately 1-1/2 (1.50) inches, but certainly less than 1-3/4 (1.75) inches, wide and approximately 1/4 (0.25) inches, but certainly less than 3/8 (0.375) inches thick, centered on a smooth surface no less than 4 inches wide. Each race car shall straddle such a strip during its heats.

**Starting Mechanism:** The "starting line" shall consist of a vertical pins of approximately 1/4 inch diameter, extending approximately 1 inch above the track surface and approximately centered in the each lane.

**Finish Line Sensor Location:** The track has electronics called "finish line sensors" that shall be in alignment with the corresponding starting line pin and be approximately centered in its lane.

**Finish Line Judging:** Three impartial Finish Line Judges shall be at station to observe each heat, on each track. Heat finish judging is determined by the finish line sensor, but may be challenged by a majority rule of the Finish Line Judges. If the track's electronic finish line sensor's result is challenged by the Finish Line Judges, the race will be re-staged and re-run.

**Finish Line Judge Backup:** Finish Line Judges will temporarily excuse themselves if they know that one of the heat contestants is a son or relative. Backup Finish Line Judges shall be available in case a judge needs to be excused for any reason.

**The "Big Board":** Competition shall be head-to-head multiple-elimination competition. The result of each heat will be displayed on an event chart called the "Big Board." The Big Board will be located in the front of the auditorium.

**Finish Line Electronics Sensitivity:** Track Finish Line Electronics, if used, must trigger correctly if a lead pencil is passed 3/4 (0.75) inches above the track surface at a speed of 15 feet per second.

**Finish Line Clearance:** Track Finish Line Electronics and other track accessories, if used, must be no closer than 3 inches above the track.

## **V. FAMILY RACE CAR DESIGN STANDARDS**

The purpose of the Parents Race event is to have a little fun, to test our Pinewood Derby tracks, and to help finance this year's Pinewood Derby. It will also help us to 'bleed' off some of our nervous competitive anxiety allowing us to be calm and collected during the Scouts race! (right?)

All family members are encouraged to build their own cars. The family race will be held immediately following the Scout race. Any family member of a Cub Scout who is registered in Pack 234 may enter this race.

This race is meant to be non-competitive therefore no design standards will be enforced.

## **VI. SPECIAL NOTES TO ALL CONCERNED**

This project is a parent and son event, and is recommended as such by the National Boy Scouts of America. The Pinewood Derby Committee **STRONGLY SUGGESTS** that each parent emphasize this idea with your son. In all of the events, we require that the cars be built this year.

### **Sportsmanship:**

Two things the Pinewood Derby requires each participant to learn are 1) the craft skills necessary to build a car, and 2) the rules that must be followed. Even more important, though, is how we act and behave while participating in the Pinewood Derby or any other group activity. This is called sportsmanship.

The first thing to remember about sportsmanship is that everyone's skills are a little different. You may be good at something like singing or drawing, but not as good at something else like basketball or computers. Parents have different skill levels, too. This doesn't mean that you are a good person one time and not good another time. You can always be a good person, whether or not you have good car-building skills. Remember, you and your friends are individuals first and racers second. This idea is often called having respect for others.

The second thing to remember is to follow the rules. Without rules, there would be no Pinewood Derby. You will never know if you are really good at doing something unless you follow the rules. This is often called being honest.

The third thing to remember about good sportsmanship is that there are winners and losers in every competition. You accept this when you choose to compete. There may be times when you win and feel happy, and times when you lose and feel unhappy. Being a winner is easy, and losing is sometimes hard. If you win, you must not brag or gloat. If you lose, you must not feel jealous or bitter. To be a good sportsman, you must be able to say "I did my best" and be satisfied with the results.