



**Lone Star District
Circle Ten Council
Boy Scouts of America**

**2016 PINEWOOD DERBY
EVENT RULES AND PROCEDURES**

Table of Contents:

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

I. 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. We require that the scout cars be built this year and qualified for this race at the scout's Pace race. Cars built for previous derbies are not eligible.

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. You must also be able to appreciate and feel happy for someone else when they run a good race or build a neat car.

II. GENERAL RULES: (Applies to all Race Events)

G-1. Qualification: Registered Lone Star District Cub Scouts who finished 1st or 2nd in their rank during their Pack's Pinewood Derby race. A representative from each Pack will notify the District Pinewood Derby Chair of the Scouts that have qualified.

G-2. Essential Materials: All cars entered shall be constructed from the "Official Grand Prix Pinewood Derby Kit" (referred to below as the kit).

G-3. Competitor Categories: The qualified Cub Scouts will compete with others in the same rank – Tiger, Wolf, Bear, Webelos I, and Webelos II.

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 and the scout must be present at the starting line.

G-5. "New Work": The entrant must race the car that qualified in his Pack's races. He may not enter any car that previously has raced in any Pinewood or other Derby race besides this year's Pack Race.

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 will occur at the scheduled time.

G-8. Late Registration and Inspection: If a Cub Scout fails to register his car by the deadline, he may appeal to the Derby Committee for entry. All decisions by the Committee are final. No exceptions.

G-9. 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 modified to come into compliance with the rules and then re-submitted for final inspection and registration before the end of the official registration period.

G-10. 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 time.

G-11. Car Design Rules Interpretation: Interpretation of the rules described in G-1 through G-12, and T-1 thru T-9 are at the sole discretion of the Inspection Committee Judges present during the Registration and Inspection process.

G12. Car Marking and Identification: The official car number assigned by the Pinewood Derby Race Committee must be permanently marked, legible and plainly visible on the top, sides and/or rear of the car. Identification during the race will be based solely on car number and must not be marked with the scout's name.

G13. 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 Chief Officials. All decisions of the Pinewood Derby Chief Officials 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. A minimum of three Chief Officials must rule on any issue regarding disqualification from the race.

III. CUB SCOUT RACE CAR DESIGN STANDARDS

T-1. Material: Race cars shall be constructed from the parts contained in the Official BSA Grand Prix Pinewood Derby Kit. Materials from the kit may be supplemented but not replaced, except as noted under Wheels and Axles below.

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.

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. Wheels and axles from Official BSA Pinewood Derby Wheels and Axles Kits (Grand Prix) sold at BSA Scout Shops may be substituted for wheels and axles supplied in the Grand Prix Pinewood Derby Kit. The wheelbase (distance between the axles in the car body) must not be changed. The stock wheelbase for the BSA kit is 4 3/8 (4.375) inches.

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. Maximum **height** shall not exceed 4.75 inches in order for the car to safely pass under the electronic finish line. 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. Hobby grass, bark or other decorative material not securely fastened is not allowed and will not pass inspection. Cars generating loose debris on the track may be subject to disqualification.

T-6. 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 "V-shaped" or channeled "H-shaped" and the portion of the wheel surface that contacts the track must remain parallel to the axle.

T-7. Unacceptable Construction: The following may NOT be used in conjunction with the wheels or axles: hubcaps, washers, inserts, sleeves, bearings. No part of a car may break the plane of the starting line, i.e. no part of the car is allowed to extend past the vertical pin located at the center of the lane at the starting line.

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 wheels. *Lubricants must not foul the track.* There will be a lubrication table set up at the race. In the interest of fairness, once the car is registered, no additional lubricants will be allowed.

IV. CONDUCT OF THE RACES

Competition will consist of all Scout ranks running together in one run group. The N-perfect schedule is used to sequence each car through each lane of the track. The time is measured for the car to travel from the starting gate to the electronic finish line timer. The average time for all runs is used to determine a racer's overall standing. Track officials are responsible for the proper conduct of the races.

C-1. Inspection Gages: The race-day "Pit Stop" area will have the official scale and inspection gages. That check-in equipment will be the official equipment for the race. (The calibration weight used for scale calibration in pre-race check-in will also be available on race day. Please stress this fact to all Cub Scouts. They should be prepared to make adjustments to their cars if necessary.)

C-2. Race Day Lubrication: There will be a lubrication table set up at the race. In the interest of fairness, once the car is registered, no additional lubricants will be allowed. Reference rule T-9 for lubricant requirements.

C-3. Car Handling Responsibility: Scouts shall be responsible to present their own cars at the starting line for staging. Cars will be staged on the tracks by the "Starter Team." If, in the opinion of the Trackmaster, a scout's physical limitations prevent him from fully complying with this requirement, the scout may nominate an assistant of approximately the same age who serves subject to approval of the track chairman. In any case, the scout shall participate up to his limitations.

C-4. Lane Assignment: To equalize differences among track lanes, each heat will consist of a number of races equal to the number of lanes that are on the track. In each heat, each car will race in each track lane used for that heat. For example, a heat with three cars would consist of three races with each car rotating through lanes 1, 2, and 3.

C-5. 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 its lane and interferes with another car, the race will be re-staged and re-run. If the same car again leaves its 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.

C-6. 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-7. 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. Repairs must be completed within 5 minutes.

C-8 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 Scout.

C-9. 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-10. Call to Race: Competitors will be called by car number prior to each heat. When his car number is called, each Scout will retrieve his car from "the stage" and present himself, with his car, to the "Pit" area. If the Cub does not respond, his car number will be called a second and third time. If the Cub has not presented himself in time for his heat, he will be judged as placing last for that race heat. If no competitor is present, the track chairman may, *at his sole discretion*, defer the race heat in a manner that does not interfere with progress of the racing.

C-11. District Champion: The top five (5) times from all races will determine the district champions.

C-12. 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-13. The Race Area: Only race officials may enter the track area. This rule will be strictly enforced.

C-14. Design Competition: Each Pack will nominate one Scout from each rank and three at large Scouts for entry into for the Design Competition. The nomination criteria are up to each Pack. A representative from each Pack will notify the District Pinewood Derby Chair of the Scouts that have been nominated. Cars will be judged on originality and workmanship.

C-15. 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.

Awards will be given in Speed and Design Competitions.

Speed Awards

Races by Rank Tiger – Webelos II

1st – 3rd Place are awarded medals or small trophies.

District Championship

1st – 3rd Place Trophies

Design Awards

Judges will award 1st through 3rd place overall design awards. Followed by 1st, 2nd, and 3rd place Design Awards per Rank.

V. THE RACING ENVIRONMENT

The District races are planning to use Pack 909's equipment which consists of 42', 6 lane, Best Track, Champ timer, and Grand Prix Race Manager software. Other equipment may be substituted but will be similar to what is outlined below.

R-1. Track Length and Drop: The track shall have a racing surface (starting line to finish line distance) of approximately 36 feet with a drop of approximately 4 feet.

R-2. Track Slope: The track slope shall decrease from approximately 26 degrees at the starting line to approximately 0 degrees at the finish line.

R-3. Lanes: Each lane will consist of a straight, smooth 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.

R-4. Starting Mechanism: The "starting line" shall consist of vertical pins of approximately 1/4 inch diameter extending a minimum of 1 1/2 inches above the track surface and approximately centered in each lane.

R-5. Finish Line Sensor Location: The track has electronics called "finish line timer" that shall be in alignment with the corresponding starting line pin and be approximately centered in its lane. The finish line timer measures the time from start to finish for each car running in a heat.

R-6. 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.

R-7. 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.

R-8. The "Big Board": Competition shall be head-to-head best average time. 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.

R-9. 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.

R-10. Finish Line Clearance: Track Finish Line Electronics and other track accessories, if used, must be no closer than 4.75 inches above the track.