

OFFICIAL PACK 17 PINWOOD DERBY EVENT RULES AND PROCEDURES

PRACTICE AND RACE DAYS

2019 Edition

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. SPECIAL NOTE TO ALL CONCERNED

Some notes on Sportsmanship

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

G-1. Qualification: All registered Pack 17 Tiger, Wolf Cub, Bear Cub, and Webelos Scouts may design, build and enter cars that are eligible to participate in the "Cub Scout Race" 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 Pack or Den meetings. Additional kits may be purchased from the Scout Hut at the Scout Headquarters in Atlanta. (Kits may be purchased elsewhere if they are of the exact type manufactured by the BSA as specified above.) **NO WHEELS, AXLES OR BODY PARTS MAY BE USED.** Decorations of any type that do not enhance the speed of the car may be added.

G-3. Competitor Categories: Cub Scouts will compete with others in the same Cub Scout Den. The first and second place winners in each Den will move on to the finals, plus the Race and Pack 17 Officials reserve the right to advance additional cars to the finals based on fastest elapsed times. These scouts will then compete for the Pack 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 17 Pinewood Derby Races. You can't run last years cars.

G-6. Single Entry per Person: Only one car may be registered and raced by a scout 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 one half hour before the scheduled Den's race time.

G-8. Failure to Pass Inspection: The Inspection Committee shall disqualify cars that 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 inspection can be modified on-site in the pit area and be presented again for inspection, provided they do so by the scheduled start time of their den heat.

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

G-10. Car Design Rules Interpretation: Interpretation of the rules described in G1 through G-11, and T-1 through 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: Racecars shall be constructed for this event from the parts contained in the Official Grand Prix Pinewood Derby Kit. Materials from the kit may be supplemented but not replaced.

T-2. Weight: Racecars 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. It must be obvious to the judges that the wheels, and the nails from the kit are being used. The wheels cannot be modified to alter their diameter or width.

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 racetrack. Adequate clearance is the responsibility of the racecar 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: Wheel treatment is encouraged to true up wheels and reduce friction. Wheel treatment must not substantially reduce the diameter of the wheels or the width of the surface. Some of the original "tread marks" on the wheel face must remain intact, i.e. apparent to the inspector.

T-7. Unacceptable Construction: The following may NOT be used in conjunction with the wheels or axles: washers, inserts, sleeves, bearings or continuous axles (both wheels on same axle).

T-8. Gravity Powered: The racecar 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 may not foul the track.* **NO LUBRICATION IS ALLOWED INSIDE OF THE CHURCH.** In the interest of fairness there will be no lubrications after the start of racing.

III. CONDUCT OF THE RACES

Competition will consist of a heat race for each Den on Sunday, February 22, 2009 and a series of heat races and a final race at the Pack Meeting on Monday, February 23, 2009. Track officials are responsible for the proper conduct of the races.

C-1. Inspection Gages: The Registration area will have the official scale and length box. That check-in equipment will be the official equipment for the race. 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: NO LUBRICATION IS ALLOWED INSIDE OF THE CHURCH. Once the cars have been inspected and officially entered, the scout cannot add lubrication. Lubrication inside the church will result in an automatic disqualification and your car will be impounded.

C-3. Car Handling Responsibility: Scouts shall be responsible to present their own cars at the Inspection Area, and at the starting line for staging. Scouts will stage their cars on the track under the supervision of the Starter.

C-4. Lane Assignment/Race Procedures: To equalize differences among track lanes, each heat will consist of a number of races equal to a multiple of the number of cars running in that heat.

- a.) Lane assignment is based on a mathematical algorithm, which has all cars run in all lanes.
- b.) From each den, the top three cars will advance to race in the Finals based on total elapsed time of the car in all lanes
- c.) An additional 4 cars will advance to the Finals. These will be the 4 cars with the lowest total elapsed time that are not in the top three of their den.

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 disqualified 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.

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.

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 area" and present himself, with his car, to the starting area. If the Cub does not respond, his name 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. 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-12. The Race Area: Only race officials may enter the track area. This rule will be strictly enforced.

C-13. Rewards and Recognition: The most important values in Pinewood Derby competition are parent/son participation, good sportsmanship, learning how to follow rules and applying science to a real world challenge and having fun. The Awards Committee is responsible for recognizing and encouraging these qualities in addition to traditional racing awards. Racers will be recognized as follows:

- a) Awards will be presented to the first and second place finishers in each Rank Category (Tiger, Wolf, Bear, Webelo I and Webelo II Scouts).
- b) Second and third place finishers will receive awards.
- c) A trophy will be awarded for the first place winner of the final race.
- d) Additional awards may be given at the discretion of the Pinewood Derby Committee

IV. THE RACING ENVIRONMENT

R-1. 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.

R-2. Track Slope: The track slope shall decrease from approximately 30 degrees at the starting line to approximately 0 degrees at the finish line.

R-3. 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.

R-4. 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.

R-5. 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. Note: depending on working conditions, electronic sensors may or may not be used. In the event that the sensors are not adequately operable, judges will be used as detailed below.

R-6. Finish Line Judging: Impartial Finish Line Judges shall be at station to observe each heat, on each track. The finish line sensor determines heat finish judging. The result of the finish line sensor 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. Racing Results: Competition shall be head-to-head multiple-elimination competition. The result of each heat will be printed and displayed after each heat. Den Leaders or their designate, are responsible to assure that all race results for their den are recorded accurately.

R-9. Finish Line Electronics Sensitivity: Track Finish Line Electronics, if used, must trigger correctly if a lead pencil is passed $\frac{3}{4}$ (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 3 inches above the track.

V. 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 emphasizes the ideas of sportsmanship, learning and having fun above winning.

Sportsmanship: Two things the Pinewood Derby requires each participant to learn are the craft skills necessary to build a car, and 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. Each scout 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 and scout, 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.