

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

**G-1. Qualification:** All registered Pack 214 Tiger, Cub, and Webelos Scouts may design, build and enter cars that are eligible to participate in the Pinewood Derby car race.

**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 by the den leader. Additional kits may be purchased from the Scout Shop.

**G-3. Competitor Categories:** All Tiger Cubs, Cub Scouts, and Webelos Scouts that are registered with Pack 214 may enter the Pinewood Derby. 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 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 the prior years Pinewood Derby 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 shall occur between 10:00 a.m. and 1:00 p.m. on Race Day in the Troop 39 Eagles Nest.

**G-8. Late Registration and Inspection:** All cars must be inspected and weighed before the 1:00 p.m. deadline. Cars MAY NOT be registered after 1:00 p.m. 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 and re-inspected up until the 1:00 p.m. deadline.

**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 in the Staging area by the Pinewood Derby Race Committee until the start of racing.

**G-11. 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.

**G12. 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 Shop. 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: to obtain a scaled weight prior to registration, the U.S. Post Office has been very helpful in the past to allow Scouts to have their cars weighed at the post office.

**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. The nails **MUST** be placed 4 and 3/8 inches apart which is the standard wheel base. It must be obvious to the judges that the wheels and the nails from the kit are being used. The new colored wheels obtained from the Scout Shop may be substituted.

**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. 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 (hub and tread smoothing and polishing) **may not result in substantial removal of mass** or 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.

**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 wheels. *Lubricants may not foul the track.* Lubricants must be applied before registration and impound.

### **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. Inspection Gages:** The race-day "Pit Stop" area will have the official scale and clearance box. That check-in equipment will be the official equipment for the race. (The same 5 oz. Master 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:** Lubricants must be applied before registration and impound.

**C-3. Car Handling Responsibility:** Cars will be staged on the track starting gate by the "Starter Team."

**C-4. Lane Assignment:** The race management software will randomly assign lanes during heat racing. In the event of a run-off, each of the four cars will cycle through each lane.

**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 or the finish line timer, then the race will be called normally. If the car leaves its lane and interferes with another car or the finish line timer, the race will be re-staged and re-run. If the same car again leaves its lane and interferes with another car or the finish line timer, 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. The scout is allowed three minutes to fix the car. The car must meet all rules standards. The Officials will run the heat again. If the car cannot be fixed in three minutes, it loses the heat. If this loss is the car's first and the scout can fix the car before the start, it may run in its next scheduled heat.

**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:** The race management software will display the next den after the previous den has completed all heat racing. The general order of racing is Tiger, Wolf, Bear, Webelos I, Webelos II, and Pack Finals.

**C-11. Den Champion and Runner Up:** The top two finishers from each den will advance to the Pack Finals, to be run at the conclusion of the Den heat racing.

**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. 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 ribbon.
- c) Prizes will be awarded for the first, second and third place finishers in each Den.
- d) Prizes will be awarded for the first- thru fourth-place finishers overall in Pack 214.
- e) There will prizes awarded for first, second and third best design for each den as voted on by the Scouts.

#### **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 32 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 aluminum 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 approximately 1 inch above the track surface and approximately centered in each lane. The starting gate shall trigger a single start switch to signal the electronic timer that the race has begun.

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**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. A light bridge shall be positioned over the finish line sensors to provide the light necessary to trip the sensors as the car passes.

**R-6. Finish Line Judging:** Finish Line Judges shall be stationed 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 multiple-elimination competition. The result of each heat will be displayed on a screen via a projector in the racing venue. The Racemaster shall keep a hardcopy of all den heat results and pack final results.

**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.

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

***"Gentlemen, Start Your Engines!"***