



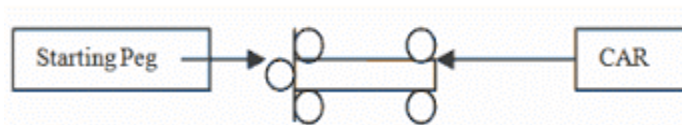
# Pinewood Derby – Rules

## I. - Eligibility – Registration

- All Cub Scouts from the pack
- **6 Divisions**
  - **Lions**
  - **Tigers**
  - **Wolf**
  - **Bears**
  - **Webelos I**
  - **Webelos II**
- *Good sportsmanship is expected at all times by everyone present at the race*
  - *Cars must have been constructed this year.*

## II. - Body Specifications

- **Width** – not to exceed 2  $\frac{3}{4}$  inches (7cm)
- **Length** – not to exceed 7 inches (17.8cm)
- **Height** – must have clearance under Finishing Gate – not to exceed 6  $\frac{1}{2}$  inches
- **Weight** – not to exceed 5.0 ounces – **143.4 grams measured on Official Race Scale**
  - *Overweight cars may be reduced to 5.0 ounces (143.4grams) or below before they can officially be entered, at the Race Day Check in.*
- **Center Rail Clearance** – Cars must clear the center rail which is 1  $\frac{5}{8}$  inches wide by  $\frac{1}{4}$  inch tall along the entire length of the car.
- **Wheelbase** – Can be extended. Standard wheelbase is 4  $\frac{3}{8}$  inches from center of front axle to center of back axle. Any wheelbase can be used. **Wheels must be directly across from one another.**
  - *Axle holes may be drilled into body of car as long as the specs are met.*
- **The main body structure must be made of pinewood**
- **Body design** may be enhanced by adding other stable materials such as plastic, metal or details. All additions must be firmly attached and conform to size specifications. No loose materials will be allowed on the cars.
- **No part of the car's body, wheels, or attachments can extend beyond the starting peg on the track what so ever.** Additionally the wheels may not extend beyond the rear of the car or past the front of the car – the length is not to exceed 7 inches.



## III. – Prohibited Items that can NOT be used

- *Magnets, springs or suspension systems of any type.*



- Starting devices, finish line devices, propellants, or propulsion systems
- Wet paint, or Sticky substances
- Glass or excessively fragile parts
- Electronic or lighting devices (if lights are on the car they must be turned off)
- Bearings (except in Pro-Bearing Division)
- No use of Guide Pins or such devices
- Axles and wheels attached to any device that mechanically alters rotation or spin.

#### **IV – Wheels**

- **Only Official BSA Wheels are allowed** (either new style & old style) **all markings must be intact on inside and outside of wheel.** You may use the Official BSA Colored wheels
- **Outer wheel surface may be sanded, shaved, lathed or polished to remove any imperfections, true roundness, remove mold castings and burrs, but must not be reshaped in any way to minimize tread contact or alter aerodynamics.**
  - **The fluting** (small decorative dots) **must be visible around the entire circumference.**
  - **The tread / contact surface must remain flat and parallel to the bore.**
  - **The width of the tread must not be less than 7.5mm**
  - **No removing or reducing the letters or spokes or drilling additional holes.**
- **The following wheel modifications are NOT Allowed**
  - No Rounding of the wheel treads – they must remain flat.
  - No Grooving, H-cutting, V-cutting, Crowing, Tapering or Dishing
  - No Altering the wheel profile
  - No Drilling sidewalls
  - No Filling of any wheel surface with any type of material
- **Officials will remove wheel(s) if lettering is not completely visible**
- **Coning the hubs, truing the inside edge of the wheel, and removing the outer hub step down is allowed.**
- **Wheel Bore treatment is allowed including polishing, sanding and / or tapping.**
  - Wheel bores may not be filled and re-drilled
- **There must be at least four wheels on the car, however it is not required that all four wheels make contact with the track surface – one wheel may be lifted from the track surface.**
  - Each wheel must be mounted on an axle, on the outside of the car, on the side of the car.
  - Wheels may not be greater than 10 degree of an angle from the body of the car
  - Each wheel must be attached by an axle - no guide pins allowed
  - Wheels must be installed directly across from one another
  - Wheels may NOT be reversed - wheels must be run in standard position
  - Non-Dominant / Lifted wheels must meet wheel specifications

#### **V. – Axles**



- **Nail type axles but not limited to those found in the Official Pinewood Derby kit are to be used.**
- **Modifications to the Axles are allowed that include straightening, sanding, polishing, canting, grooving, beveling & tapering of axle head as long as the Diameter of the Axle is not reduced the Diameter may not be less than .084 inches (2.13mm).**
- **Axles can be mounted by drilling Axle holes or inserted into the slots on car.**

#### **VI – Lubrication**

- **Graphite or NyOil**

#### **VII. – Race Operations and Miscellaneous Rules**

- **All Cars MUST pass inspection before being allowed to race based on the rules and specification stated in I. through VI.**
  - *An approved inspected car will then be checked in and not be touched by anyone but the race officials. Until the cars are released by Race Officials.*
  - *All lubrication of wheels must take place prior to final inspection check in and before Final Race (see below)*
  - *Officials have the Right to Disqualify Any Car, which does not meet all of the stated rules and specifications. The Officials Decision is Final.*
    - *Appealing a decision – if a Race Official makes a ruling and you wish to appeal it – all Officials will be assembled and based on majority rule the decision will be upheld or overturned.*
- **Each car will race once in every lane (6 times)**
  - *Each race is timed with electronic equipment.*
  - *In the event the equipment fails, the race(s) will be re-run.*
  - *The slowest time will be dropped and the **average of the remaining 5 times will determine the results** for each racer – **Composite Time***
  - *In the event of a tie(s) a run-off will be run between any of the cars needed to fill the 6 slots for the finals race for each Division using the same method of running once in each lane and taking the average of the fastest 5 times.*
  - **Finals** - Prior to the “Finals” **Finalist cars will be allowed to be “re-lubricated”** – **at the Official Race Table Only** – under the supervision of the Race Officials. **No other modifications will be allowed**, except spinning of the wheels to work the lube in and cleaning lube from car and wheels.
    - *Final Races awards will be based on the average of 5 times in this Final Race – dropping the slowest time – composite time.*
    - *In the Event of a Tie a run-off as described above will be run*
  - **Additionally, Entries will be eligible to win design awards in the following categories (voted on by the present Cub Scouts) - one design award per car:**
    - **Best Workmanship**



- **Best Paint Job**
  - **Most Patriotic**
  - **Most Creative**
  - **Best Scouting Theme**
  - **Best Overall Design**
  - **Most Realistic Looking**
  - **Most Original Design**
  - **Best of Show** - will be voted on by a select panel of Judges
- ***During Races***
    - *If a car jumps the track and interferes with another car then the race will automatically have to be re-run.*
      - *If the same car jumps the track again, then it is disqualified (after interfering)*
    - *If a car jumps the track and does not interfere with another car, and finishes the race it will not be re-run.*
    - *If a car jumps the track and does not interfere with another car, but does not cross the finish line a time of 9.9999 seconds will be assigned to that car's race.*
    - *If an item affixed to a car falls off during a race, and in the opinion of the race official the car is still able to race, repairs will not be allowed.*
    - *If a car suffers a mechanical failure or is unable to finish, the individual will be allowed 3 minutes to make the repair under the supervision of a race official. No weight can be added to the car as part of the repair action. If the car is unfit to race after the 3 minute period, or becomes disabled after further racing, it will be disqualified and taken out of the race. No other modifications are allowed – such as re-lubing, only the repair to the item(s) can be performed.*
    - *Any car that is discovered to be illegal during the competition by a Race Official will be disqualified from competition.*