



***CADES COVE DISTRICT***

***PINEWOOD DERBY***

***2023***

## Cades Cove District 2023 Pinewood Derby Rules

**Overall:** All cars must be built for the current Pinewood Derby Racing Season. **NO PREVIOUS SEASON REPEATS or REPAINTS.** In order to race, the youth must be a registered Cub Scout for 2023.

Cars must be built, tuned, and aligned with the racer, adult supervision is encouraged. Remember this is supposed to be a fun project with your Scout. Cars may not be sent to third party facilities for tuning or other performance enhancements.

### **Body:**

The main body structure must be made of wood. Cars that were purchased completed may not be used. Any wood other than **PINE** may not be used. If the builder lacks the resources to cut out a car from a stock block of wood, attendance at a workshop (den/pack) is strongly encouraged. 3D printed overlays are allowed, but it must be affixed to a main body structure that is made of pine wood. The 3D printed overlay must also allow the finished car to meet the car specs listed below.

The Pinewood Derby kits that are available for purchase from Michaels, Hobby Lobby, etc. may be used as long as they have the holographic BSA sticker saying "BSA Approved". Pinecar, Awana, and any other Pinewood Derby kits may not be used.



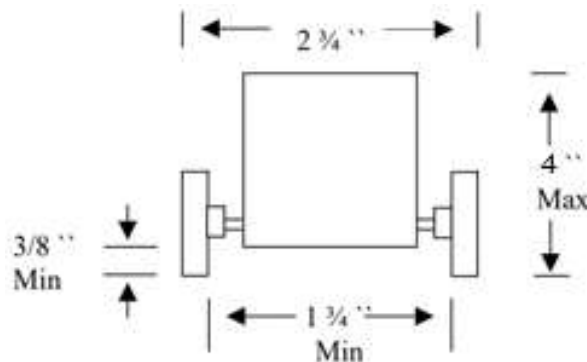
### **Car Specs:**

- A. Width** - Not to exceed 2 ¾ inches
- B. Length** - Not to exceed 7 inches
- C. Weight** - Not to exceed 5.0 ounces (scale is accurate to 1/10 ounce)
- D. Height** - Not to exceed 4 inches
- E. Clearances** -

**Center Rail Width:** Must clear center guide rails, typical no less than 1 ¾ inches min.

**Bottom:** No less than 3/8 inches from track surface between center rails.

**Other:** Fender flairs (wood or plastic) with less clearance are acceptable as long as the center rail width clearance is maintained. Weights are preferred to be inset in the body or on top of the car to aid in a safe stop at the end of the track. No part of the car or attachment to any car, which is metal, pointed, sharp, and/or jagged, may be capable of contacting any part of the track.



- F. Wheelbase** - All cars must have at least a standard wheel base (4 3/8 inches) but no less than 4", with the two rear wheels being positioned directly across the body from one another and the two front wheels being positioned directly across the body from one another. **NO EXTENDED WHEEL BASES WILL BE ALLOWED.**
- G. Front End Height** - Depending upon the track, the front of the car may rest against a short starting pin. Therefore, the front bottom of the car which rests on the pin is no higher than 1" above the track.
- H. Width** - The front end must be at least 1/2 inch wide in the middle.
- I. No part of the car body, wheels or attachments may protrude in front of the starting peg.**

The car design may be enhanced by the addition of other stable materials such as plastic or metal. Any additions must be firmly attached and meet Car Spec Requirements.

The following items are **PROHIBITED:**

- A. Springs
- B. Starting devices or propellants
- C. Electronic or lighting devices that interfere with race electronics (these can only be used before and/or after the race to show off the car).
- D. Liquids, wet paint, oil, sticky substance or powders of any kind (other than axle lubrication)
- E. Glass or excessively fragile parts
- F. Bearings, bushings, washers, sleeves, hubcaps or inserts attached to or in contact with axles or wheels (**This includes Air Guides**).
- G. Loose objects on the car
- H. Magnets

### **Wheels:**

Use ONLY Official BSA Pinewood Derby Wheels, like the one pictured below (colored Official BSA wheels are also acceptable). All other wheels will not be allowed.



All lettering and numbering, both inside and outside, must remain complete and be visible. The fluting (outside tread surface serrated edge) and other BSA markings on the outside wheel area must remain visible. Outer wheel tread surface may be lightly sanded, shaved or polished to remove surface imperfections and mod casting burrs, but must not be reshaped in any way in an attempt to lighten the wheel, minimize tread contact or alter aerodynamics. Tread surface must be flat and parallel to the wheel bore. Coning the hubs and truing the inside tread edge is allowed. Tread width may not be less than 0.295 inches. You may add material such as glue,

fingernail polish or tape, to the inside of the wheel to aid in balancing of the wheel, but **no material may be removed from the inside surfaces.**

Wheel bore treatment is allowed including polishing and/or tapping. Wheel bores may not be filled and re-drilled to alter bore diameter or to achieve better fit with the axle.

The following wheel modifications are **PROHIBITED:**

- A. Rounding of tread surface/wheel edges
- B. Grooving, H-cutting or V-cutting
- C. Altering of wheel profile
- D. Narrowing the tread surface, other than truing inside treads edge
- E. Drilling holes in the sidewalls
- F. Hollowing, sanding or otherwise removing or modifying material from inside the wheel
- G. Filling of any wheel surface with any type of material

All cars must have **four (4) wheels. All four (4) wheels must be installed in the provided axle slots or drilled axle holes and all four (4) wheels must touch the track surface. The car shall roll on the flat tread surface of all four (4) wheels from the official kit or official BSA wheels. NO lifted wheels and NO canted or angled wheels are allowed.** Each wheel must be mounted on an axle, on the outside of the car, in the vertical position. Each wheel must be attached directly to the wood car body by an axle and spin freely. No part of the wheel may overlap the center guide rail by more than 1/8 inch. The two rear wheels and the two front wheels must be positioned directly across the body from each other. **Staggered wheelbases and/or extended wheel bases are not allowed.**

**Please note:** There are after-market modified wheels that are lightened. This is usually done by turning the wheels on a lathe and removing material from the outside tread surface and/or inside of the wheel. These wheels are not allowed and easily recognized at inspection. Cars with these wheels **will not** be permitted to race.

No part of the car or any attachment to the car may be capable of coming into contact with the track other than the wheels.

#### **Axles:**

BSA nail type axels are required with an overall diameter of no less than .084 inches for each wheel. Some polishing and/or modification is allowed as long as overall diameter is not reduced below the .084 requirement.

Grooves are allowed, the depth of the grooves is not limited so long as the journal portion of the axle (the part of the wheel rides on) is no less than the stated minimum diameter.

Axles must not be connected to any device that mechanically alters rotation and spin. Axles must be mounted into the wood sections of the car. Drilled holes or slots can be used.

**Bent or canted axles are not allowed.**

Over-application of lubricant which results in excessive shedding onto the track is not allowed. Approved lubricants include but are not limited to graphite, Teflon, Nyoil and Krytox.

**Inspection:**

Each car must pass inspection before the start of the race to verify it meets these rules. **Any car not meeting the above rules will be disqualified.** Any adult or Scout may appeal the findings but the Pinewood Derby Chair (the person in charge of the District race) makes the final decision. After acceptance only race officials will handle the cars.

**Weights:**

Tungsten, Lead(Pb), steel, coins, just about anything has been used to get the weight of the car up to 5.0 ounces. Whichever weight you decide to use, the weight must be affixed to the car so that it meets the rules above. If you decide to use Lead(Pb), the drilling/removal of Lead(Pb) will **NOT** be allowed at the race venue or at check-in time due to the toxicity of the material. All Lead(Pb) must be completely sealed and safe from all possible contact with youth.

**Repairs:**

Any car damaged by the race may be repaired. The Cub Scout is in charge of making any repairs. Adult guidance is allowed and encouraged. Repairs can be done before the next heat that car races in starts. If a car cannot be repaired by that car's next heat, we will have to move on with the race without that car. If that car races immediately in the next heat, it will be up to the Pinewood Derby Chair (the person in charge of the District race) to set a reasonable repair time based on the repair needed.

**Behavior:**

Good Sportsmanship and behavior is expected by everyone. Anyone, **Scout or adult**, not following this rule may be asked to leave. We are here to have fun and encourage everyone to cheer and have a good time.