

# Pack 34 Pinewood Derby Race Rules – 2007

Houston, Texas

**RACE DATE:** January 27, 2007      **RACE TIME:** 9:00 a.m. to 12:00 p.m.      **PLACE:** St. Mark's Hauser Hall

**CHECK IN :** Official Check-in: Friday, January 26, 6:30p.m.-9:00 p.m. This is the official time to enter cars.  
(Back-up Check-in: Saturday, January 27, 7:30a.m.-9:00 a.m. *This is a back-up in case of scheduling conflicts or family emergencies that prevented entering cars on Friday night.*)

*Note: The following rules are based on the Sam Houston Area Council's rules.<sup>1</sup> Packs and Districts are encouraged to adopt these rules as minimum standards to enable any Entrant's car to be eligible for Council race events.*

## Introduction

The Pinewood Derby has been a Cub Scout tradition since 1953. It was created as a wholesome, constructive activity that would foster a closer parent-son relationship and promote craftsmanship and good sportsmanship through competition. This is one of Cub Scouting's most memorable activities. The boys not only keep the cars for years to come, but if working closely with mom or dad is an enjoyable experience, you have a chance to create memories that will last a lifetime. So have fun with this! The Scout should build his own car, with guidance and coaching from an adult—not the other way around. Tiger Cubs will need more help, of course, but give each boy a chance to actually design and craft his own car. Use tools safely, and if power tools are involved, it's okay for the adult to do that part. Use safety glasses when cutting and sanding, and use a dust mask when sanding, spray painting, and applying dry lubricant (such as graphite). It's all part of the workshop experience!

## I. REGISTRATION AND ELIGIBILITY

- a. Races are open to all Pack 34 Cubs, siblings and parents.
- b. Entrants will be expected to complete a separate registration form for each car entered. The registration form includes a Photography Release (covering pictures taken of cars and general event pictures) which should be signed by a parent or guardian. Entrants are encouraged to complete registration information in advance using an approved form circulated in advance or downloaded from the "www.Pack34Houston.org" website.
- c. Each car entered must have been predominantly crafted by the individual entrant or parent/child team **within the last 12 months**. Cars may not be recycled from prior year's races. Entry of a car that has been purchased from a third-party or made-to-order by a third party is strictly prohibited and, upon discovery, subject to immediate disqualification. Using a purchased block of wood that has been pre-cut, such as those available at hobby shops, is acceptable for Tiger Cubs, but older boys should start with the standard block of wood.
- d. An Entrant may enter **only one** car in his or her Division. Additional cars in excess of this limit may be entered in Friends & Family, Modified or Unlimited Divisions so long as the entrant does not exceed the 1-car limit in any of these Divisions.
- e. Each car entered will be assigned a unique registration number based on pre-assigned numbers provided by the Pack Registrar.



<sup>1</sup> The primary differences between these and the SHAC 2004 Rules (from <http://www.derbycentral.com/SHAC%202004%20PWD%20Rules%204-1-04.pdf>) are:

- A) General rewording such as changing "Council" to "Pack"
- B) In addition to Divisions by Cub Rank (Tiger, Wolf, etc.), the District has three additional Divisions:
  - "Friends & Family" (reserved for entries by siblings, friends, and visitors under 16 years old, and for additional cars entered by an individual Cub Scout in excess of his Rank entry allowance),
  - "Modified" (reserved for entries by family members, guests, and visitors age 16 and older, and
  - "Unlimited" (reserved for cars designed to exploit the more liberal compliance requirements of this Division, for cars that do not fit in any other Division, or for cars that are being run for experimental or testing purposes). Cars in the Unlimited Division race for time only and do not compete for awards, ranking, or badges.
- C) Additional local rules and clarifications are shown in blue.

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- f. After passing inspection, each car will be quarantined in a pre-race Paddock area and may not be removed or handled by the Entrant until after its timing runs have been completed without prior arrangement or specific permission from the Paddock Manager.
- g. All cars competing for awards must satisfy the Construction Rules as set out in Section II herein.

### II. CONSTRUCTION RULES

Note: Scale and size/clearance templates used at the Race Check-in table will be the ONLY official devices for determining eligibility of cars. If you think your weight and measurements may exceed the following measures, make adjustments to your car before race day. NO ILLEGAL CARS WILL BE ALLOWED.

#### a. Dimensions and General Specifications *(applies to all Divisions without exception)*

1. Maximum LENGTH, including any attachments to the car body, shall not exceed 7".



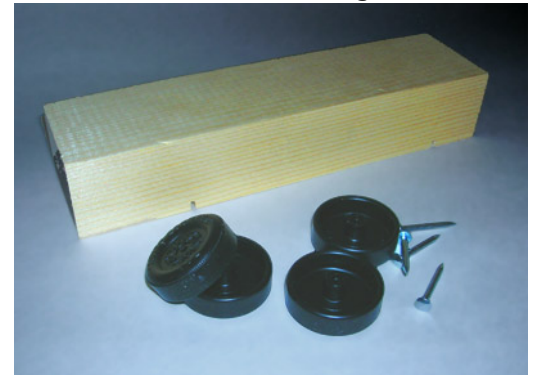
2. Maximum WIDTH overall, including wheels and axles, shall not exceed 2 ¾".
3. Maximum HEIGHT overall, including any attachments to the car body, shall not exceed 4" so that car will pass under overhead portion of timing apparatus.
4. Minimum width between wheels shall not be less than 1 ¾".
5. Throughout the 1 ¾" wide center area of the car positioned above the center guide strip or rails, the minimum distance between the bottom of the car and the plane of wheel contact with the track surface shall be 3/8". This clearance distance also applies to any protrusions or weights extending from the bottom of the car in this area.
6. Wheelbase may be modified provided that the car's overall length, including wheels and any accessories or extensions from the body, does not exceed 7".
7. The car must be free-wheeling with no starting device or other propulsion.
8. No hazardous materials may be used. Propellant, incendiary or explosive materials are absolutely prohibited.
9. Note: Races may be optically timed. A sharply pointed car may be subject to a slight timing disadvantage because, at the moment it crosses or trips the sensor, its point may not exactly align with the central location of the sensor used to record the finish time in that car's lane. Similarly, a pointed-car design may not align well with the release gate or pin, which may be rounded.
10. The cars are released by leaning the front of the car against a pin about the diameter or a pencil that sticks up about 1-1/2". See photo, similar to Pack 34's track, on page 5. No part of the car may extend past (closer to the finish line than) the starting pin.
11. The body of the car may be made from more materials than just pine wood. Weights and decorations of any type are allowable, although some part of the original block of wood should be used.

#### b. Weight and Appearance *(applies to all Divisions with exceptions as noted)*

1. Weight shall not exceed 5.0 ounces. The readings of the Official Race Scale(s) will be considered final. Cars may be hollowed out and built up to the maximum weight by the addition of other materials or objects provided that such are securely built into the body or attached securely enough to prevent falling off or becoming separated from the car during normal race activity.

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2. Only B.S.A. Official Pinewood Derby Kits nos. 1622, 17006, 17003, 17007, 7610 or the "Stock Car Kit Special Edition" may be used. (*Pinecar and other partially-finished or pre-shaped construction kits may be used for Tiger Rank and Unlimited Division entries only.*)
3. Mercury shall not be used. It is a health hazard. [Lead is discouraged though not prohibited.](#)
4. Details such as steering wheel, driver, spoiler, exhaust pipes, roll bars, decals, painting, and other interior and exterior detail are permitted as long as they cannot become separated from the car during normal race activity and as long as the car, together with any detail attachments, still satisfies length, width, clearance, and weight specifications.
5. Cars with wet paint or wet glue will not be accepted.
6. After a car passes inspection, its registration number will be attached using a small adhesive-backed label or sticker that shall be located on the rear portion of the car for easy visibility in identifying the car and indicating its proper direction of travel.



### c. **Wheels and Axles** (*applies to all Divisions except for Unlimited Division entries.*)

1. The only wheels and axles allowed are those included in **Official B.S.A. Pinewood Derby** Kits nos. 1622, 1622A, 7610, 17003, 17006, or 17007 or from the "Stock Car Kit Special Edition".
2. Wheel bearings, spacers or bushings are prohibited.
3. The car shall not ride on any type of springs.
4. Only the tread surface and width of a wheel may be altered. The tread surface may not be modified to produce any configuration other than flat and parallel with respect to the axis of the axle bore. The tread width may be altered only from the side facing the body of car and may not be less than .275". The wheel diameter may not be less than 1.150" nor greater than 1.200". Lightly sanding and/or polishing the tread of the wheel to remove imperfections and/or mold marks will not normally reduce the diameter below this minimum. Should it prove impossible to remove imperfections or true a wheel without reducing its diameter to less than the specified minimum dimension, another approved wheel should be substituted. [The part of the axle that touches the car body may not be radically reshaped or coned, but may be lightly sanded and/or polished.](#)
5. Materials, other than permanent paint decoration or lettering highlights, may not be removed or added to the wheels except as stated above or as in II.c.7. below.
6. The backside (wheel side) of the axle heads may be ground or filed to remove burs. Axle shaft diameter may not be less than .085" at any point that contacts or could contact the interior of the wheel's axle bore. Simple polishing of the axle should not reduce its diameter below this allowable level.
7. No wheel covers (i.e. hubcaps) are permitted unless their function is for decoration only and not to measurably alter the weight or performance of the wheel. Decorative wheel covers that hide the ends of the nail-axles must be removable for inspection purposes. In particular, no covers designed to provide a reservoir for lubrication materials may be employed

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### d. Lubrication (*applies to all Divisions without exception*)

1. Only dry powdered lubricants, such as graphite, may be used. Excessive lubrication is prohibited as it may damage equipment or floors.
2. All lubrication residue must be wiped clean from any external body or wheel part(s) prior to inspection.
3. Since dry lubricants are messy, all lubrication must be applied **outside** of the building.

### e. Check-in

1. Cars will be weighed and inspected for legality by the table judges. Cars may be test run on the track Friday evening if and when the track is assembled and available. The race committee will do their best to have the track ready for trial runs as early on Friday as possible. Final adding of graphite or Teflon powder to wheels should be done outside the building before final check-in. PLEASE DO NOT APPLY GRAPHITE OR TEFLON IN HAUSER HALL – IT MAKES A MESS OF THE FLOOR.
2. ONCE A CAR IS FULLY CHECKED-IN, IT WILL NOT BE ALLOWED TO LEAVE THE AREA UNTIL ALL RACES ARE COMPLETED ON SATURDAY. It is highly recommended that all participants come on Friday night to make sure their car is legal and will cross the finish line. You do not have to complete the check in process, but it is a great advantage to YOU to check out the car early.
3. NO TRIAL RUNS ON TRACK WILL BE ALLOWED ON SATURDAY MORNING. ABSOLUTELY NO EXCEPTIONS!!

## III. DIVISIONS, EVENTS, & AWARDS

- a. Pack 34 uses the traditional "Classic Downhill" Pinewood Derby race format.
- b. (*intentionally left blank*)
- c. For purposes of award presentations and ranking, separate Divisions are maintained for entrants as follows: Cub Rank (Tiger, Wolf, Bear, Webelos I, Webelos II), Friends & Family (reserved for entries by siblings, friends, and/or visitors under 16 years old, and Unlimited (reserved for entries by participants age 16 and older or for cars designed to exploit the more liberal compliance requirements of this Division, for cars that do not fit in any other Division, or for non-complying cars that are being run for experimental or testing purposes). Friends & Family and Unlimited may be combined at the discretion of the Race Committee. Cars in the Unlimited Division race for time only and do not compete for awards, ranking, or badges. **Each car may compete in only one Division.**
- d. (*intentionally left blank*)
- e. Awards will generally be given to Cubs by Rank and/or by standing overall among all Cub Rank divisions in each event. Race organizers reserve to right to limit, substitute, or withhold awards in categories, ranks, or divisions on the basis of too few entries. Generally there must be at least 3 more cars entered than awards granted in each award category.
- f. Awards in certain selected events and/or Divisions may be based on subjective criteria (beauty, creativity, originality, etc.) As such, they are not subject to review or challenge. The decision of the judges in such events is final.



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- g. Awards based on objective criteria (elapsed time) may be challenged during the event only on the basis of measurement error or competing car or spectator interference.
- h. No more than one place award per event shall be awarded to the same entrant for cars entered in any one Division. This does not preclude, however, an Entrant's receiving a Cub Rank place award and an overall place award for the same car.

### IV. INSPECTION AND DISPUTES

- a. Immediately after registration, each car will be weighed and inspected for rules compliance at one or more Inspection Stations.
- b. Each car must pass inspection before it can compete. Official inspectors have the right to disqualify any car that fails to comply with these rules. Entrants will be informed of the specific issues of non-compliance and given an opportunity to modify their car(s) to bring them into compliance and to resubmit their car(s) for re-inspection as long as registration remains open. If an Entrant's car cannot be brought into compliance for its intended Division, Inspectors may reclassify the car for entry in the Unlimited Division as long as it satisfies the compliance requirements for that Division.
- c. The owner of a car suffering mechanical problems which prevent it from completing an official timing run will be given the opportunity to repair the car and submit it for a new timing run. Repaired cars must be re-inspected prior to being re-run.
- d. Any car observed to be leaving visible marks on track or guide-strip surfaces or otherwise considered likely by Inspectors or Race organizers to cause damage to track or timing apparatus may be suspended from further race activity.
- e. Ungentlemanly or unsportsmanlike conduct by any participant or member of the audience will be grounds for expulsion from the competition and/or the race area.
- f. Any protest of a car's compliance with the Construction rules or of its Divisional classification must be filed with Race organizers before registration closes in order to allow time for reinspection *or re-classification, as appropriate.*
- g. All rules will be interpreted in consideration of the Scout Oath and Scout Law.
- h. Any participant or their guardian may appeal to the Race organizers for interpretation or clarification of these rules. Any decision by the Race organizers as to clarification or revised interpretation will be considered binding and final.
- i. *(intentionally left blank)*

### V. GENERAL RACE CONDITIONS

- a. Only designated Race Handlers are allowed to handle cars during timing runs used to determine time rankings.
- b. Proper positioning of any cars will be limited to correct direction and reasonable alignment of car to track.
- c. Cars may be timed on an "as-registered" basis in the order in which they clear inspection and imaging stations, irrespective of Divisional classification. To the extent possible, race results will



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be posted and updated continuously, or displayed electronically, as logged or recorded by race management information systems.

### d. RACING

Pack 34 currently has a six-lane track. Depending on the specific timing device(s) used, races will either be run based on lowest cumulative time or, if a "place" timer (1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, etc.) is used, using the grid of heats and rounds. In case of technical difficulties, judges will determine the places visually.

Each car will be run on each lane the same number of times as other cars, except for tie-breakers and finals. If necessary, cars may be run on each lane more than once. Ties will be broken by race-offs, as necessary. Cars that do not cross the finish line will be awarded 6th place with an asterisk to denote a DID NOT FINISH. A car with a DNF loses in a tie with another car without a DNF.

Heats in which car (s) leave their assigned lane (jumps track) and interfere with other cars will be re-run. Heats in which car (s) leave their assigned lane but do not interfere with other cars will NOT be re-run, unless it is determined by the Race Judges that a fault in the track caused the jump.

### e. AWARDS

First, Second and Third places will be awarded for each age group (Tiger, Wolf, Bear, Webelos I and Weblelos II) along with First, Second and Third place Overall Winners. Awards will be presented for several categories of aesthetics and design. Youngsters not associated with the racing will judge these categories. Girl Scouts have graciously performed this duty in the past, and we hope will do this year as well.

### f. VOLUNTEERS

Each Den and Patrol should provide volunteers for the various tasks. Only Webelos, Boy Scouts and Adult volunteers will be allowed in the race area. Scouts that misbehave will be removed from the race area.

Adults should not enter the race area to adjust or repair cars during the race without the authorization of the Race Chairman. Other event-related assignments such as working the food tables will need volunteers. Contact your den/patrol leader for more details.