

2010 Pack 55 Pinewood Derby Race Rules

1) REGISTRATION AND ELIBIGILITY

- a) Races are open to all Pack 55 Cubs and family members, including siblings, parents and grandparents. Participants may enter as many cars as desired.
- b) Pinewood Derby is an opportunity for boys and an adult to work together on a project. Boys should have done meaningful work in designing, constructing, and finishing the car.
- c) There is a separate division for cars constructed by adults. Cars constructed entirely or largely by adults should be entered in the "Friends and Family" division.
- d) A separate registration form is required 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. Descriptive information sufficient to identify each car must be completed on each form. Entrants are encouraged to complete registration information in advance using forms circulated in advance or downloaded from the "Pack55.org" website.
- e) At registration, please make a purely voluntary contribution of \$2 per car (maximum \$5 per family) toward the Pack's out of pocket costs of running this event. This contribution will help offset the cost of patches and prizes.
- f) Each car entered must have been built by the individual entrant or parent/child team entering the car. Entry of a car that has been purchased from a third-party or made-to-order by a third party is prohibited and, upon discovery, subject to immediate disqualification.
- g) An Entrant may enter as many cars as he or she wishes in his or her Division. Cars entered to place in timed events must, however, be newly made and not recycled from prior year's races.
- h) Each car entered will be assigned a unique registration number based on pre-assigned numbers provided by the Pack Registrar.
- i) After passing inspection, each car will be quarantined in a pre-race Paddock area and may not be removed until after its timing run has been completed.
- j) All cars competing for awards must satisfy the Construction Rules as set out in Section II herein.

2) CONSTRUCTION RULES

a) General Specifications

- i) LENGTH overall, including any attachments to the car body, shall not exceed 7".
- ii) WIDTH overall, including wheels and axles, shall not exceed 2 ¾".
- iii) HEIGHT overall, including any attachments to the car body, shall not exceed 4" so that car will pass under overhead portion of timing apparatus.
- iv) Width between wheels shall not be less than 1 ¾".
- v) 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.
- vi) 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".
- vii) The car must be free-wheeling with no starting device or other propulsion.
- viii) No hazardous materials may be used. Propellant, incendiary or explosive materials are prohibited.
- ix) 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.

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

- i) 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.
- ii) Cars should be entered in Demolition Derby only with the understanding that substantial damage to the car is quite likely. Most cars entered in the demolition derby will suffer damage.
- iii) 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.*)
- iv) Mercury shall not be used. It is a health hazard.
- v) 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.
- vi) Cars with wet paint or wet glue will not be accepted.
- vii) 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.*)

- i) 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".
- ii) Wheel bearings, spacers or bushings are prohibited.
- iii) The car shall not ride on any type of springs.
- iv) 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.
- v) 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.
- vi) 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.
- vii) 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

d) Lubrication

- i) Only dry powdered lubricants, such as graphite, may be used. Excessive lubrication is prohibited as it may damage equipment or floors.
- ii) All lubrication residue must be wiped clean from any external body or wheel part(s) prior to inspection.

3) DIVISIONS, EVENTS, & AWARDS

- a) All entries are expected to meet the entry requirements for participation in the “Classic Downhill” event. Participation in individual events, however, is optional.
- b) For purposes of award presentations and ranking, separate Divisions are maintained for entrants as follows: Cub Rank (Tiger, Wolf, Bear, Webelos), 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). Additional Divisions may be created 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.
- c) 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.
- d) In addition to Division rankings, the twelve fastest cars overall will be entered in a runoff. In the runoff, each car will race three times. The three times will be added together for a total. The car with the lowest overall time will be the winner. 1st, 2nd and 3rd place overall prizes will be awarded.
- e) 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.
- f) Awards based on objective criteria (elapsed time, proximity to target, etc.) may be challenged during the event only on the basis of measurement error or competing car or spectator interference.
- g) 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 Division place award and an overall place award(s) for the same car, or receiving multiple awards for the same car in different Events.

4) 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. Inspectors may 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. Entrants will be allowed to return to the end of the line for re-inspection purposes as long as registration remains open. If an Entrant’s car cannot be brought into compliance for its intended Division, Inspectors may re-classify the car for entry in the Unlimited Division as long as it meets basic construction rules set out in section II (a), II (b), and II (d).
- 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) All rules will be interpreted in consideration of the Scout Oath and Scout Law.

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

6) DEMOLITION DERBY

- a) General
 - i) Demolition Derby entries must satisfy the construction rules as specified in section II for Cub rank divisions.
 - ii) Demolition Derby entries are run against each other without regard to divisional classification.
 - iii) Demolition Derby entries are not required to participate in other events.
 - iv) Cars built for previous Pack 55 Pinewood Derby events may be entered in the Demolition Derby.
 - v) Demolition Derby entries will be run two-at-a time for purposes of determining the winner of each challenge pair.
 - vi) During and after each run, cars may not be touched or removed from the track until they have finished moving completely and have come fully to rest. The Demolition Derby Track is designed to be just wide enough so that in some cases cars can narrowly pass by each other and then collide in reverse as they come back down off the slope pairs.
 - vii) An entry must survive a challenge run in rolling condition sufficient to make it to the impact zone on a subsequent run in order to be considered in race worthy rolling condition and to participate in further challenges.
 - viii) Eliminated cars may be marked (typically with a spot of liquid paper on one of the wheels) so that they can be readily identified as having already been eliminated.
- b) Judging
 - i) If one car is disabled (i.e. no longer in race-worthy rolling condition) and unable to run again, it loses that challenge run and is eliminated from further competition.
 - ii) If both cars in a given challenge run are disabled, both are eliminated from further competition.
 - iii) If both entries survive a challenge run in race-worthy rolling condition, the car that comes to rest with at least one wheel in contact with the track (not counting wheels that have become completely separated from the car) shall be declared the winner and will advance to the next challenge round.
 - iv) If both cars survive a challenge run in race-worthy rolling condition and BOTH cars come to rest with at least one wheel in contact with the track, the car that came to rest closest to the marked midpoint of the track shall be deemed to be the winner.
 - v) If both cars survive a challenge in race-worthy rolling condition and BOTH cars are completely knocked off the track.(i.e. neither car comes to rest with at least one wheel touching the track),

the race shall be run again to determine a winner. Re-runs continue until a winner can be clearly determined by application of rules 1 - 4.

- vi) Winners of challenge pairs will be set aside until enough winners are available to run against each other in second, third, and further pairwise challenge runs in tournament-style elimination. The object at all times shall be to match up cars with similar collision “experience” so that cars that have been weakened in prior successful challenge runs are not put up against fresh cars.
- vii) Entries that have survived the greatest number of completed challenge runs (not counting re-runs required to determine winners of equal-outcome or inconclusive runs) will be ranked as 1st, 2nd, and 3rd place winners.
- viii) Special Awards, at the discretion of the judges, may be given for “most-destroyed,” “most spectacular collision” or the like. Special awards are in addition to awards for survivor rankings.