Tohpendel District

OFFICIAL PINEWOOD DERBY RULES

March 23, 2013 – Car Weigh-in begins at 7:30 AM, Race Starts at 9:00 AM

Length, Width and Clearance

a) The maximum overall width (including wheels and axles) shall not exceed 2-3/4 inches.

b) The minimum width between the wheels shall be 1-3/4 inches so the car will clear the center guide strip on the track.

c) The minimum clearance between the bottom of the car and the track surface shall be 3/8 inch so the car will clear the center guide strip on the track.

d) The maximum overall length shall not exceed 7 inches.

e) The wheel-base (distance between the front and rear axles) may not be changed from the kit body distance of 4-1/4 inches.

Weight and Appearance

a) Weight shall not exceed 5 ounces. The reading of the official scale will be considered final. The car may be hollowed out and built up to the maximum weight by the addition of wood or metal only, provided the material is securely built into the body or firmly affixed to it. No liquids or loose materials of any kind are permitted in or on the car.

b) Details such as steering wheel, driver, spoiler, decals, painting and interior details are permissible as long as these details do not exceed the maximum length, width or weight specifications.

c) Cars with wet paint will not be accepted.

Wheels and Axles

a) Axles and wheels shall be only as provided in the Official Grand Prix Pinewood Derby Kit.

b) Wheels may be lightly sanded to smooth out molding imperfections on the tread area. This light sanding is the only modification allowed. Beveling, tapering, thin sanding, wafering or lathe turning of the wheels is prohibited.

c) Axles may not be altered in any way except for polishing.

d) Wheel bearings, washers, bushings, and hub caps are prohibited.

e) The car shall not ride on any type of springs.

f) The car must be free-wheeling, with no starting device or other type of propulsion.

Lubrication

a) Only graphite or powdered Teflon "white lube" will be allowed for lubricating the wheels.

b) Lubrication is messy! On race day all lubrication must be done at the "lube" station.

Ground Rules and Competition

a) The race is open to all Cub Scouts who placed in the top 3 in their respective age group at the pack level.

b) Each scout may enter only one car in the competition. Several cars may be constructed but only one may be registered and raced.

c) The car must have been built during the current year (the school year in which the Derby is held). Cars that have competed in a previous Derby are not permitted.

d) Competition will consist of 6 on 6 races. Each car will race 6 times, once in each lane. The average speed for each car, based on all six races, will determine the final standings at both the rank level and overall.

e) If a car jumps the track, the race will be run again. If the same car jumps the track a second time, that car will automatically lose that race.

f) If a car leaves its lane and interferes with another car, the race will be run again. If the same car leaves its lane a second time and interferes with another car, the interfering car will automatically lose that race.

g) If a car becomes damaged and can be repaired in a reasonable amount of time (a few minutes), the race will be run again. If not, the damaged car will automatically lose that race.

h) Only race officials and scouts participating in the current race may enter the track area. This rule will be strictly enforced.

Inspection and Registration

a) Each car must pass a technical inspection before it may compete. Technical inspection and registration of cars occurs on race day.

b) The Inspection Committee shall disqualify cars which do not meet these rules. If a car does not pass inspection, the owner will be informed of the reason his car did not pass (too long, too heavy, altered wheel base, or the like). Cars which fail the initial inspection may be modified for final inspection and registration.

c) To enter the race, cars must have passed inspection and be registered by the Final Inspection Deadline

d) No cars may be altered in any way after it has been registered. Damage repair shall be allowed during the Derby only if it does not delay the race, but no modifications shall be

allowed.

e) After passing inspection, no car shall be re-inspected unless repaired after damage in handling or in a race.

f) Ungentlemanly or unsportsmanlike conduct by any participant or spectator will be grounds for expulsion from the competition and/or the race area.

Rewards and Recognition

a) 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.

b) Every participating Scout will receive a Pinewood Derby patch.

c) Trophies will be awarded to the first, second and third-place finishers in each division.

Guidelines & Sportsmanship Notes

The Pinewood Derby is a parent-son project. Please feel free to give guidance and minimal assistance to your Scout as he builds his Pinewood Derby car. This is a chance for your son to be part of a team (he and you), and to enjoy the spirit of friendly competition with his peers. Also for your Cub Scout to enjoy the satisfaction of building his own car from the kit provided.

A special note to all parents and scouts: Together, please read the following article on sportsmanship. While everyone will be trying to win, it's always a good idea to start out by remembering the Cub Scout Motto, "Do Your Best," and some of the basic ideas behind good 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.

Pinewood Derby Tips

1. The boys and adult should make the car together as a project! It is not the intent that the parent shows the Scout the garage door then walks away; nor is it the intent that the boy plays video games while the adult cuts and sands. Parents should shape with the power tools and then direct the rest of the action while showing the boy each step in building a car.

2. Have fun! After all, this is what it is all about.

3. Know the rules. Being disqualified can be very embarrassing.

4. Safety first. Let’s not lose any fingers.

Design Tips

1. Have your son draw a design on paper then cut it out and use it as a template. I use the paper with the little squares on it to make it easier for him. Draw a side and top view on the paper by tracing around the block of wood.

2. Keep the car a full seven inches. It has to do with the physics of velocity and length of travel of the weights.

3. Use the full 2 3/4 inches (outside wheel to outside wheel) that the rules give you. This will allow the wheels to travel farther before hitting the center strip.

4. Leave a lot of wood in the back to put in the weights.

5. Use the groove closest to the end of the block of wood as the rear axle.

6. Do not make the front of the car pointed. It is hard to set up against the starting dowels.

7. Use your imagination. Be creative. Shape has the least to do with winning. A beaver driving a log or even a pickup truck is more interesting than a wedge and will be just as fast. The aerodynamics of a small block of wood doesn't mean much in thirty feet.

Lubrication

1. Use graphite only. Oil damages the paint and collects dust. I'm told that the graphite works better than the new white Teflon.

2. Break in the wheels by spinning them with lots of graphite.

3. Other than the good polishing of the axles, dump the axles and wheels in a zip lock bag with some graphite and shake them for a few days prior to the race. That way the wheel and the axles are as slick as can be.

It's Time To Go Straight!

1. Axles must be in straight front to back. That is square to the body. True the axles don't trust the slots!

2. After pressing in the axles, test the car for crooked wheels...roll it on the floor. If the wheels are on straight, the car should roll 8-10 feet in a fairly straight line. Should the car turn left or right, you need to tinker with the axle placement without removing them from the car body, until it rolls straight.

3. Do not put the axles in at the top of the groove. Put them in at the middle. This lifts the car of the track a bit more and reduces the chance of rubbing on the center strip.

4. Glue the axles in place. Nothing is worse than having the wheel fall off as you cross the finish line.

5. Once you match a wheel and axle together with graphite, keep them together. They wear into each other as a matched set.

Weigh In

1. Get the weight as close to the 5 ounce limit as possible. Add the last little bit of weight with lead tape from the golf shop. This can be trimmed with scissors at the last minute. Remember, the official scale may not weigh the same as yours.

2. Everyone has an opinion on where to put the weight. Some believe that the weight needs to be predominantly in the rear so that gravity can act upon the weight further up the incline and for a longer period of time. A car with more weight to the rear generally grabs more speed down the slope. Many suggest having the center of gravity at 1 to 1 1/2 inches in front of the rear wheels. But be careful not to put too much in the rear or you'll pop a wheelie.

3. What kind of weight? I think the melted lead is dangerous and unnecessary. Tubular weights can be sunk in the sides; flat weights, like those sold at hobby & council stores can be attached to the car bottom if it is carved in a bit. Incremental weights (with pre-marked grooves) are easier to snap off into the size you need. Some folks just use BB's, nuts & bolts, etc., but these must be glued so that they can not move. No movable weights or mercury are allowed.

4. Keep the weight low on the car and in the center (Left/Right of the car). Put the weight just in front or behind the rear wheels for less wheel chatter.

Race Day-Be Prepared

1. Have extra axles and wheels on hand. You never know when your car may be the one dropped by your son as he shows off his handiwork.

2. Have a derby tool kit handy. It should include superglue, sandpaper, a drill, extra screws for your weights, extra weights, and a small screwdriver. You may not use it, but it will make you the most popular person at the event.

3. Transport your car in a shoebox. Dropped cars are unfortunately a too common experience.

4. Add LOTS of graphite right before check in.

5. Explain to your son that running the car along the floor prior to the race will cause it to lose!