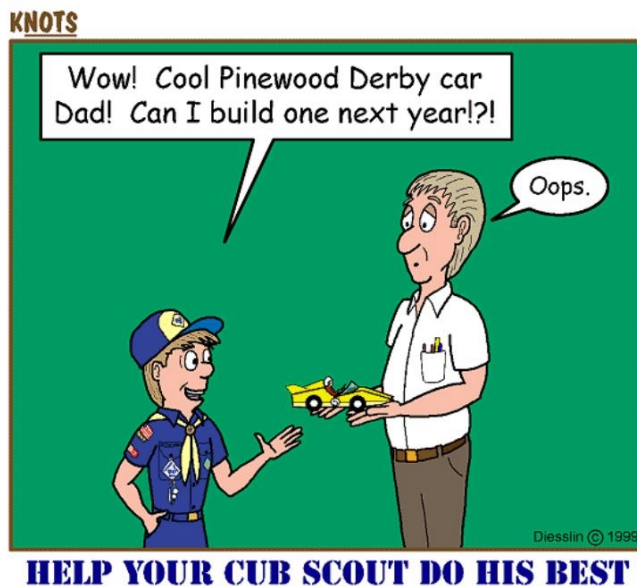


Pack 167 – 2002/2003 Pinewood Derby Rules and Information

The pinewood derby is a special time for most Scouts *and* adults. Some of my most cherished memories are in spending time with my sons while they worked on their cars, helping when necessary, and then in the end sharing the joy of their car racing. These are memories that I will always cherish, and I hope that you, too, will be building memories to cherish.

The pinewood derby is a time for scouts to learn about the design process, about using tools, about planning and preparation, and having fun in the process. It is also a time for a parent/guardian and their scout to spend time together developing treasured memories. When the car is all done, we then have a race to *have more fun!* But remember, the pinewood derby is *not* about racing. That is just the icing on the cake. So don't be too competitive. Have fun, relax, and enjoy. And please, let your scout do most of the work. Otherwise he is not learning.



I don't know where to start!

For those of you who have never built a car, don't have the tools, the skills, etc., don't panic. There is help available. We want to see your scout succeed so that you can have memories to cherish. And so each year we have a help night where we will get your scout started, helping to cut and shape his car, place his wheels, etc. You will only have to help with the finishing touches, but that won't be so hard. You can find the details later in this packet. We would recommend **not** painting your cars before coming to help night.

I want to build a car too!

For those of you that would like to build and race your own car but are not scouts, we do have open and outlaw classes that race as well. Open and outlaw classes are open to parents/guardians and siblings of scouts. This provides a chance for everyone in the family to have fun too and share in the joy with their scout. They love to cheer your car on as much as you do theirs. It is also a great way to teach your scouts how to build a car. Kits are available from the Cubmaster or the Scout office for \$3.00 each.

But watch out for...!

All pinewood derby cars entered in the race **must** be built out of the official BSA pinewood derby kit (**not** the kits and/or parts available in hobby stores) and have been built since last September. Otherwise these cars will be disqualified from winning, something we sure would hate to do. There are other rules too, so be sure to check them all out and follow them before you build the car.

What's new since last year?

- ☑ "OUTLAW CLASS" added for anyone who wants to walk on the wild side. Anything goes (OK, almost anything). Outlaw Class has two basic rules – don't interfere with another racer and don't damage the track. Outlaw Class is available to Pack 167 scouts and anyone related them.
- ☑ Each scout can give their car a name to be used during the race.
- ☑ The preset groove must be visible on the bottom of the car. If covered over, material will be removed to confirm placement of the axles into the groove.
- ☑ Axle slots may not be filled (e.g. with epoxy or wood putty) and then drilled out to straighten the axle slots.

PACK 167 – 2002/2003 Pinewood Derby Schedule

ST. STEPHENS EPISCOPAL CHURCH

CAR PREPARATION

- BUILD YOUR CAR, FOLLOWING THE KITS DIRECTIONS AND PACK 167'S PINEWOOD DERBY RULES.
- **DO NOT PUT ANY NUMBERS ON YOUR CAR! THEY WILL BE ASSIGNED AT CHECK-IN!**
- BRING YOUR NUMBERS TO CHECK-IN SINCE THEY WILL BE NEEDED.
- Car kits and replacement parts are available from the Cubmaster, Shane Cooper, at a nominal cost (scooper@vertisinc.com).

TUESDAY, 14 JANUARY 2003

HELP NIGHT

6:30 PM - 8:30 PM Need help in building a car because you lack the necessary tools, knowledge, or skill? Come to our help night where volunteers will be glad to assist the Cub Scouts.

FRIDAY, 24 JANUARY 2003

TRIAL RUNS / TRIAL WEIGH-INS / LAST MINUTE HELP / CHECK-IN

6:30 PM - 8:30 PM Pre Check-In Inspection and Trial Runs. Come try your cars on the track, check/adjust their weight, and get any last minute help. You may run your car as many times as you like until 8:30.

SATURDAY, 25 JANUARY 2003

CHECK-IN AND RACE DAY

To help make the check-in run smooth, if at all possible please adhere to the check-in schedule below. If a family has more than one scout in the pack, they can check all their cars in at the same time. Note that race times for the scouts are *approximate*, although they will not start before their designated time.

| CHECK-IN | | 8:30-10:30 |
|--------------------|-------------------------|------------|
| 8:30 AM - 9:30 AM | Tigers / Wolves / Bears | |
| 9:30 AM - 10:30 AM | Webelos | |
| 8:30 AM - 10:30 AM | Open/Outlaw Classes | |

| RACE TIMES | | 12:00-4:00 |
|--------------------|-----------------------------|------------|
| 12:00 PM - 1:00 PM | Outlaw Class | |
| 1:00 PM - 2:00 PM | Open Class | |
| 2:00 PM - 3:00 PM | Tiger Cubs / Wolves / Bears | |
| 3:00 PM - 4:00 PM | Webelos | |

FOOD WILL BE AVAILABLE AT REASONABLE PRICES FROM 12 pm – 4 pm

CHECK-IN RULES

1. You may attempt to check-in as many times as you like during the check-in period (8:30 AM - 10:30 AM).
2. When you are satisfied with your car (including weight adjustment) and it has completed all the check-in points successfully, it will be given a number and placed in a holding area. You will not be allowed to handle your car after this point. Maximum allowed weight on the Pack scale is 5.000 oz.
3. If your car has not successfully completed check-in by the end of the check-in period it cannot qualify for the district race nor win an award from the Pack race. However, you can still race your car if it is ready by race time.

OPEN / OUTLAW CLASS RACE

Pack 167 leaders, parents/guardians of scouts, and scout's siblings can build and race their own pinewood derby car in the open class. Any scout leader or relative of a Pack 167 scout can race in the outlaw class. Kits are available from the Cubmaster, Shane Cooper (scooper@vertisinc.com) at a cost of \$3.50 each.

DISTRICT RACE

The Cubmaster will retain the **top 2 fastest cars at each scouting level** so they can be entered in the District Race, which will be held during the Scout Show in April (a total of 8 cars). The second place cars are held as alternates in case any first place car is disqualified at the District Race for any reason. ***During check-in at the district race, the Cubmaster will perform any minor modifications necessary to bring a car within specification, including but not limited to altering the weight. These modifications are purely at his discretion.*** Note that the cars must not weight more than 5.000 oz. on the scale used by the district race, which may vary slightly from our scale.

The Cubmaster will also retain the **“Most Awesome” cars at each level** so that one from the Open Class and one from the Cub Scouts can be entered in the District contest, also during the Scout show. Since we can only have one Cub Scout entry at the district level, at our Blue and Gold ceremony in February/March the scouts will select one of the four retained by the Cubmaster to represent our Pack.

CUB SCOUT / OPEN CLASS CONSTRUCTION RULES

- WHO IS ELIGIBLE:** The Cub Scout Pinewood Derby race is open to all registered Cub Scouts in Pack 167. The Open Class race is open to the parents, guardians, and siblings of Cub Scouts in Pack 167.
- BUILD DATE:** All pinewood derby cars entered by Cub Scouts in the Pack 167 Pinewood Derby shall not have started construction before 01 September 2002. All pinewood derby cars entered in the Open Class of the Pack 167 Pinewood Derby shall not have started construction before 01 September 1997. Cars that previously won awards anywhere are ineligible for entry in the Pack 167 Pinewood Derby.
- SUPPORT:** Cars are to have been built by the entrant with adult supervision and limited help as appropriate for their age.
- CAR NUMBER:** The number decals provided with each kit shall NOT be put on the cars. Instead they should be brought to check in so that an assigned number can be placed on the car.
- KITS:** Cars shall be built using the Official Pinewood Derby Kit authorized by the Boy Scouts of America. Each registered Cub Scout of Pack 167 will be given a kit. Open and outlaw class entries can purchase a kit from either the Cubmaster (scooper@vertisinc.com) or any Scout store or Scout office.
- Use of any other kit or parts from those kits, such as those advertised in various magazines (including Boy's Life) or sold in hobby stores, shall cause disqualification from all awards.*
- REQUIRED PARTS:** Each pinewood derby car shall be built using **all** the parts supplied in the official kit (wood block for body of car, 4 nails for axles, and 4 plastic wheels).
- SIZE:** A completed car shall fit completely inside the official sizing box and meet these specifications:
- | | |
|---|--|
| Height: | Not to exceed 3 ³ / ₄ inches overall |
| Length: | Not to exceed 7 inches overall |
| Width: | Not to exceed 2 ³ / ₄ inches including wheels and axles |
| Wheelbase: | Not modified from original BSA kit (i.e. approx. 4 ¹ / ₂ inches) |
| Wheel Track (width between wheel hubs): | Not modified from original BSA kit (i.e. approx. 1 ³ / ₄ inches excluding wheels and axle nails) |
| Clearance: | Not less than ³ / ₈ inches. |
- WEIGHT:** A completed car shall not exceed 5.000 ounces (141.75 grams) as measured on the official Pack 167 scale.

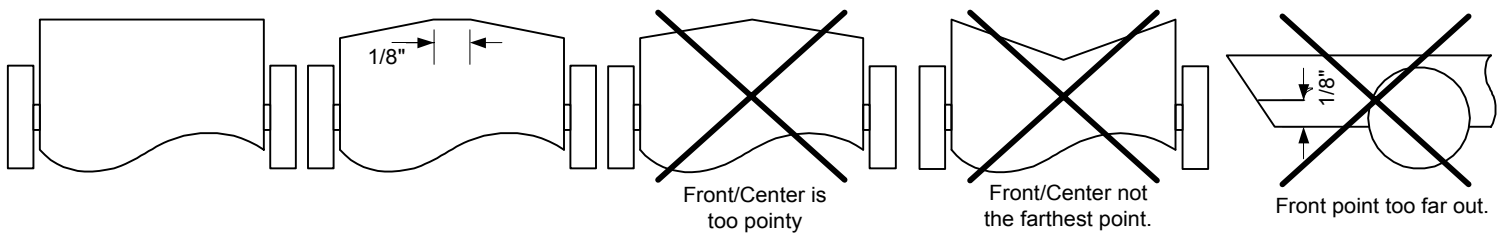
BODY:

You may remove material from the block of wood to give it the shape you want, including hollowing it out for decorative purposes or for the purpose of adding weight, with the following restrictions:

1. You must use the original grooves for the axles (see “AXLES” below). You cannot create and use your own. The original axle slots shall not be filled (e.g. with glue or epoxy) and then re-drilled with a drill press to straighten them. You may straighten the original axle groove **by hand** with a carpenter’s square or similar device and two hacksaw blades layed side-by-side. (For more detail, see the instruction sheet provided with your BSA kit.)
2. The original wheelbase of the car shall be maintained by a continuous uncut section of wood between the two axle grooves.
3. The front-center of the car body (front being defined as the end that goes down the track first) must be the farthest point in the length of the body. This point must be within $\frac{1}{8}$ ” of the bottom of the car and must have at least a $\frac{1}{8}$ ” wide flat section to allow for proper mounting in the starting gate. See figure below.

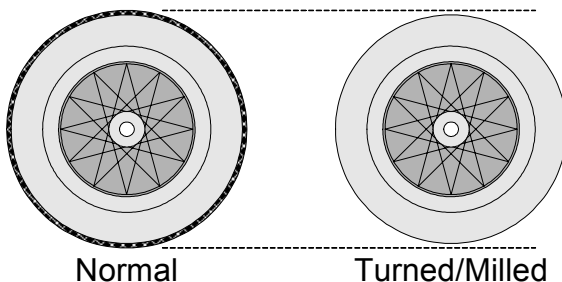
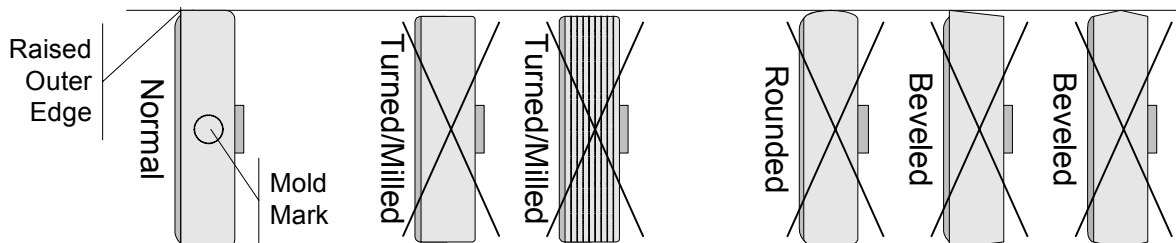
You may build up the body of the car with any fixed SOLID material including but not limited to wood or metal, with the following restrictions:

1. This material must be *securely* built into the body and not move. **No loose material of any kind is allowed inside or on the car.**
2. Weights or other material mounted to the bottom of the car may reduce clearance and violate the minimum clearance rule.



WHEELS:

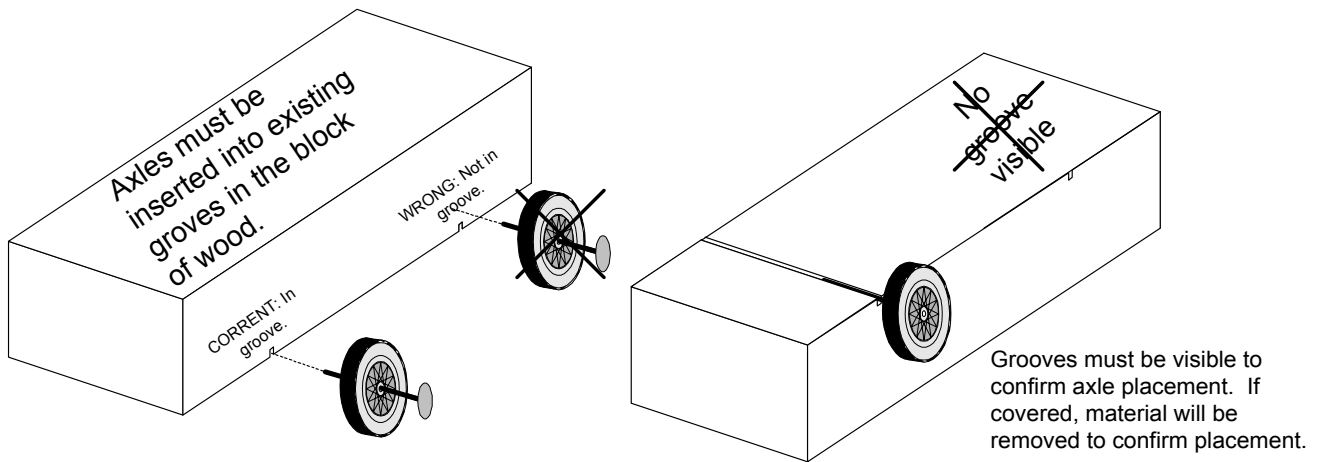
The wheels shall not be modified in any way except for lightly sanding **by hand** the mold mark on the surface of the wheel. **No rounding, beveling, milling, turning, or painting of the wheels is allowed!** This includes the use of Wheel Turning Mandrels sold by hobby stores. The inner wheel hub shall not be modified in any way. Cars do not have to have all four wheels in contact with a flat surface, **although an attempt must be made to get them all to touch.**



AXLES:

The nail axles shall be placed ***through the wheels*** and ***into the preset grooves*** in the block of wood, both provided in the BSA approved kit, *without any other parts being used in this assembly*. The preset groove *shall* be visible. If not, material will be removed during check-in to confirm the placement of the axles into the grooves. Beyond the outer edge of the wood no other material may touch the axle, excluding paint of the same type and color as that used on the body of the car. ***No other body, wheels or axles of any kind are allowed, nor are other parts related to the wheel/axles assembly allowed including but not limited to the use of washers, bushings, wheel bearings or springs.***

Nail axles may have any rough edges removed and can be polished, but they cannot be plated nor modified in any other way (***this includes being bent***).



Lubricants:

No fluids may be used for any purpose anywhere on the car. Axles and wheels may be lubricated with DRY LUBRICANT (such as the graphite or white Teflon lubricants available from the scout office).

SPARE PARTS:

If any parts need to be replaced due to damage (wheels, nail axle, body), the Cubmaster has spare parts available at a nominal charge.

ASK ASK ASK

If you don't understand any of the rules specified within this document...ASK! The Pack 167 Pinewood Derby Race Director can be reached by e-mail at griffith@alumni.utexas.net, or you contact any other Pack 167 adult leader.

Building Instructions and Guidelines:

Although there is no right or wrong way to build a car, we have developed some general guidelines to help you. Some of these are taken from the instructions that come with the car, while others are based on personal experience. Please use these as a *reference*, but feel free to deviate from them as necessary. The only exception...please, let the scout do most of the work unless a safety hazard (such as in cutting out the car) or if there is a chance of damaging the car beyond repair (such as installing the axles). Parents and other adults are encouraged to supervise and teach.

| Who | Action |
|--------------------|---|
| Scout/Adult | Check the alignment of the grooves to ensure that each is a perfect 90-degree angle to the car body. Adjust if necessary using two hacksaw blades side-by-side. |
| Adult | Lay car body on one side, then gently drive the axles into the grooves within ¼” of the axle head. Remove the axles with a pair of pliers. Repeat on other side. The purpose of this is to make it easier to insert the axles later without damaging the car. |
| Scout | Choose your favorite design, and then mark the block of wood accordingly with a pencil. |
| Adult | Plan for where to add weight to the car (most cars need added weight). A section of wood can be removed from the bottom to add flat lead weights (using wood tools or a rotary tool); holes can be drilled to add round lead weights, etc. Cut/drill/chisel away wood to make room for weights. |
| Scout and/or Adult | Cut out the design by hand or by using a power saw. If doing by hand, the Scout should do as much of the work as possible. Adults generally should use the power tools. |
| Scout | Sand the block of wood until smooth. Start with a heavy gauge sandpaper and then get finer. |
| Scout | Wipe down the car with a wet rag and let dry <i>thoroughly</i> . |
| Scout | If painting, apply several coats of sanding sealer, and when finished, sand the entire care with fine-grade sandpaper. |
| Scout | Color car if desired (markers, crayons, paint, etc.). If painting, give car at least two coats of fast-drying paint in your choice of color. Paint can be applied by brush or by spray can. |
| Scout/Adult | Add any desired details, such as decals, steering wheels, etc. Also add any weights not already added. |
| Scout/Adult | <i>Optional (recommended):</i> Polish the axles with very fine sandpaper, steel wool, or other polish material. |
| Scout/Adult | Pre-lubricate the axles and wheels using a <i>dry</i> powdered lubricate. <i>Do not use regular oil or silicone spray.</i> Careful. This is MESSY. |
| Scout | Slide wheels over axles, then gently tap them the axles into the car body grooves with a ¼” dowel or similar object to within 1/32nd" of car body. Make sure the wheels turn freely. |
| Scout/Adult | Make any adjustments to the wheels/axles desired to get the car to roll how you wish. You do not need to have all 4 wheels touching the track surface at the same time. However axles cannot be bent nor inserted into the block of wood at an angle. |
| Scout/Adult | Once you have adjusted everything the way you want it, consider adding glue to the axles to ensure they won't move or come out during the race (hot glue or epoxy are good choices). |
| Scout/Adult | Be prepared to make adjustments to the weight on check-in day. |
| Scout/Adult | <i><u>DO NOT PUT ANY NUMBERS ON THE CAR! These will be assigned and added on registration day. DO BRING NUMBERS TO REGISTRATION!</u></i> |

OUTLAW CLASS CONSTRUCTION RULES

SUMMARY:

There are three basic rules:

- 1) Make sure your Outlaw Class car won't damage the track
- 2) When traveling down the track, do your best to ensure that your Outlaw Class car won't interfere with a car in another lane
- 3) Outlaw Class cars do not compete in District races and do not compete for the "Most Awesome" award.

The rest of the Outlaw Class construction rules are for guidance. Any race official may disqualify an Outlaw Class car for any reason. Appeals can be made to the Pack 167 Race Director whose decision is final.

WHO IS ELIGIBLE:

The Pack 167 Outlaw Class race is open to all registered leaders and scouts in Pack 167 and their relatives (parents, guardians, siblings, aunts, uncles, grandparents, cousins, etc.)

BUILD DATE:

All cars entered in the Outlaw Class of the Pack 167 Pinewood Derby shall have been built after 01 September 1997. Cars that previously won awards anywhere are ineligible for entry in the Pack 167 Pinewood Derby.

SUPPORT:

Cars are to have been built by the entrant with adult supervision and limited help as appropriate for their age.

CAR NUMBER:

The number decals provided with each kit shall NOT be put on the cars. Instead they should be brought to check in so that an assigned number can be placed on the car.

SIZE:

A completed car shall fit completely inside the official sizing box and meet these specifications:

| | |
|--------------|---|
| Height: | Not to exceed 3 ¾ inches overall |
| Length: | Not to exceed 7 inches overall |
| Width: | Not to exceed 2 ¾ inches including wheels and axles |
| Wheel Track: | Not less than 1 ¾ inches excluding wheels and axles |
| Clearance: | Not less than ⅜ inches. |

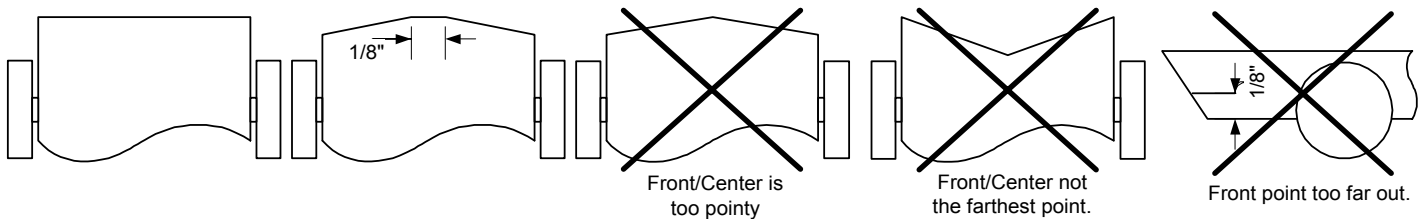
WEIGHT:

A completed car shall not exceed 1 pound (16 ounces) as measured on the official Pack 167 scale.

BODY:

The front-center of the car body (front being defined as the end that goes down the track first) must be the farthest point in the length of the body. This point must be within ⅛" of the bottom of the car and must have at least a ⅛" wide flat section to allow for proper mounting in the starting gate. See figure below.

No loose material of any kind is allowed inside or on the car, including motors, stored energy devices, or other parts providing motive force other than potential energy due to gravity, etc.



Lubricants:

No fluids may be used for any purpose anywhere on the car. Axles and wheels may be lubricated with DRY LUBRICANT (such as the graphite or white Teflon lubricants available from the scout office). Cars shall not be re-lubricated after check-in.

COMMON CONCERNS

EXCESSIVE PARENTAL INVOLVEMENT: A common complaint is that some parents have done too much of the work on their Scout's cars. The Scouts are supposed to do the majority of the work themselves out of fairness, and so that they can learn. Due to the risk of damaging the car an adult can set the weight or attach the wheels.

If an adult wants to do more work on a car they are encouraged to build a car of their own. This is an excellent way to encourage your Scout and show him by example how to build it. It is impossible for the Pinewood Derby Committee to judge who has done the work on the cars. We can only trust the honesty of the Scouts, parents and leaders.

COMMON PROBLEMS FOUND DURING CHECK-IN

- 1. INCORRECT WEIGHT:** Often cars were weighed on scales that were less accurate, weight has been added in glue and stickers, or changes have occurred due to humidity and absorption of the wood. The person checking in the cars should expect to have to adjust the weight of the car.
- 2. BEVELING, SHAPING OR TURNING OF THE WHEELS:** The wheels of some of the cars in past years have been beveled, shaped, rounded or milled which is against the rules. The wheels are inspected at check-in and if they don't match the rules they must be replaced.
- 3. LOOSE MATERIAL:** Several cars had material that was loose inside or became loose. Any cars that have loose material either at check in or found during the race must have the loose material removed or fixed.
- 4. USE OF NON-OFFICIAL CAR KITS:** Only BSA approved kits and parts are allowed. Sometimes cars have been built using "Pinecar" Kits from hobby stores, or with special wheels and axles, all which are not allowed. They are easily identified, as the wheels, axles, and body are different from the official car kits. Replacement parts and/or kits are available from the Cubmaster or any Scout office.
- 5. INSUFFICIENT CLEARANCE:** Several cars had weights mounted directly on the bottom of the cars, reducing the clearance and causing the cars to drag on the track. Weights can be mounted on the bottom of the car provided the bottom is hollowed out and they are inserted into this hollow cavity.
- 6. SIZE VIOLATIONS:** Addition of weights or trim to the ends of the cars has caused some cars to exceed the maximum allowable length.

CHECK IN RULES

During the check in period, each car will be inspected to be compliant with all the rules specified above. Any car that fails the check in will be returned to the owner for modification.

At the owner's discretion, any car that successfully passes the inspection but has not yet been accepted into the race by the Pack (by being placed in the holding area) may be returned to the owner for additional modification such as weight adjustment. If returned it must once again pass a full inspection.

There are no limits to the number of times a car can be returned to an owner during check in, provided the check in is completed by the end of the check in period. If a car has not been given a number and moved to the holding area by the end of the check in period, it will be treated by the rules under LATE ENTRIES.

Once a car successfully completes the inspection and the owner is satisfied with it, the car will be given a number and placed in a holding area. Only authorized personnel will be allowed to handle once it is placed in the holding area. No lubrication of the car shall be allowed after the car has been placed in the holding area.

If a car is removed from the holding area for any reason, it must once again go through a complete inspection. The Pinewood Derby Race Director, at his or her discretion, can allow a car in the holding area to be removed if it is deemed necessary. As an example is a car that is accidentally dropped before the start of the race which needs to be repaired.

A race official will evaluate any discrepancies found during check-in against the intent of the rules. Appeal may be made to the Pinewood Derby Race Director whose decision is final. Remember that this is supposed to be simple and fun day, not competitive.

Once a car has passed check-in, it will be allowed to compete for pack-level awards regardless if discrepancies are found later. HOWEVER, the Pack 167 check-in does not guarantee eligibility for district-level and higher races. District and higher level races have their own rules and check-in procedures.

LATE ENTRIES:

Late entries are allowed under the following conditions:

1. MEDICAL/EMERGENCY - Under the condition that a car or cars were not checked in due to a Medical / Emergency of the party responsible for checking in a car, the car may be entered without penalty if it is weighed in before the start of the first heat.
2. UNEXCUSED REASONS - Late entries that are weighed in after the weigh period is over but before the start of the first heat will be accepted under the condition that the car will be disqualification from winning the race or the "most awesome" award. They can, however, race for fun.

RACE RULES

Pack 167 uses a Pinewood Derby track with an electronic timer that shows the race time of each car. Each car will be raced an equal number of times on each lane of the track, although not necessarily one right after the other. The exact number of runs will be based on the allotted time.

Races will be by group (Outlaw Class, Open Class, Tiger / Wolf / Bear, and Webelos). After all runs for a particular group, the top cars as based on their overall average time of the previous runs will be raced again to determine the first, second and third place winners based again on their overall average.

The Pack will retain the fastest two cars from each scout rank and from Open Class for entry into the District Pinewood Derby. The second place is held as a backup in case the first place car is disqualified for any reason. These will be returned to the owners after the District race. All other cars will be returned to their owners after the Pack race.

RACE PROBLEMS:

1. *INTERFERENCE*: If any car is interfered with during a run, such as being hit by someone or something, debris on the track, etc., that run will be repeated with the same cars in their same lanes.
2. *TIMER ERROR*: If a timer error occurs during a run, that run will be repeated with the same cars in the same lanes.
3. *FRONT ENDS*: Race officials reserve the right to modify a car's front end *after check in* to ensure fair starting (example: cut away or 'V' shaped front ends). If any modifications are made, car will undergo and must pass a re-check in.
4. *LOOSE MATERIAL*: If a car is found to have loose material during the race, the owner will have a chance to correct the problem. If any modifications are made, car will undergo and must pass a re-check in.

CAR REPAIR DURING THE RACE:

1. If car repairs are required during the race, the scout, parents or other adult advisor will be allowed to make repairs. All cars that are repaired during the race shall be re-weighed to confirm they met the 5.000 oz specification. Adding anything that was not on the car when originally qualified is prohibited, as is re-lubrication, and will result in disqualification. The only exception is a small amount of glue to hold a piece on.
2. If a car is damaged during the running of a race or hangs up on the track and does not complete the run, the car must be repaired within 5 minutes and the run repeated with the cars in the same lanes as the initial race. Cars that cannot be repaired in the specified time will be disqualified. A maximum of 3 car repairs per car will be allowed on race day. If a car requires more it will be disqualified. This is to encourage quality craftsmanship and to help limit delays to the race.
3. If a car is damaged after the end of a race run, the scout has until the beginning of the next race run to complete repairs.

Scout
Class

Car Name
Car#

Official BSA kit was not modified before 1 September 2002

Weight ≤ 5.000 oz for 5 seconds and acceptable to scout.

Wheels/Axles lubricated to scout's satisfaction.

Fits in metal box.

3/8" clearance on bottom.

Axles come from official BSA kit.

Wheels come from official BSA kit and have "BSA" stamped on the side.

Wheels show ridges on edge, and are not rounded, beveled, or milled.

Wheels are unmodified (e.g. have not been painted).

Axles slots are visible.

Axles are not bent and have been placed in the original axle slots.

Axles go through wheels into the block of wood without any other material used (i.e. washers, etc.).

No loose parts when car moved around and turned upside down.

All visible material securely fastened to car

Front of car has a 1/8" wide flat section.

Collect car number decals from scout.

Ask entrant which end goes down the track first. Put their assigned number on this end of the car.

Ask entrant for the name of their car.