

# **Doin' the Derby**

## **Planning and Running a Successful Pinewood Derby**

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# Pinewood Derby Goals

- Creative competition for the boys
- Fun for the family
- Eliminate problems before they can start

# Creative Competition

- Boys create a fun and cool car (and hopefully fast too)
- Satisfaction and enjoyment of creation
- Learn about:
  - woodworking
  - basic mechanics
  - friction
  - physics



# Creative Competition

- Learn the value of following rules and specifications
- Learn the value of how "the little things" can make a big difference
- Reward for hard work on things that matter



# Fun for the Family

- Participate in the creative process
- Involved in the event
- Sibling / Adult races



# Eliminate Problems Before They Can Start

- Have a plan and work it
- Clear, unambiguous rules
- Fair and complete inspection
- Organized volunteers & suppliers
- Be ready for situations

# Plan For Success

- Set Pack schedule at summer planning meeting
  - Kit distribution
  - Workshops
  - Pack Derby
- District race date should be scheduled by late spring of previous year to allow Packs to set their schedules
- Set dates to avoid scheduling problems (holidays, spring break, other events)

# Clear Rules Rule!

- Use rules with clear specifications and expectations
  - Avoid wording that can be misinterpreted or "creatively reinterpreted"
  - Arguments or perceived "unfairness" can ruin an event, even for those not involved



# Clear Rules Rule!

- Pack rules should be consistent with District rules
  - Event-specific details can vary
- Use Pack car specifications that are identical to District
  - some Pack-specific variances may be OK, such as requiring BSA block
    - as long as they don't affect performance

# Clear Rules Rule!

- Enforce rules completely and objectively
  - have good scales, rulers, gauges
  - Scale and caliper prices have dropped greatly
  - Check size, weight, wheels on all cars
- Deal with infractions firmly but politely and fairly
  - Making one boy or family unhappy can be better than making many unhappy
  - Give opportunity to rectify prior to acceptance

# Rumblings Over Rules

- Older Rule:
  - "In order to qualify for racing, a car must be made with the entire Official Pinewood Derby Kit as supplied, including wheels, axles, and wood block."



- Which of these qualifies as using the "entire kit"?
- Big arguments from parents & others

# Rumblings Over Rules

- Box Rule: "Weight: not over 5 ounces"
- Seems clear, but...
  - Cars were built to 5.049 ounces, assuming the judges or scale would "round down"
  - Parents would argue that it's "the same as 5 ounces"
  - Boys who followed the rules correctly were at a disadvantage

# It's the Boy's Car

- The car should be designed and built by the boy, with assistance from the parent and/or leader
  - Not the other way around
- Try not to let a parent(s) take over the activity
- If parents, siblings , and others want to build a car, great!
  - just don't let them take away the boy's experience
- Hold races for siblings & adults too

# Help the Boys Build Their Best

- Allow time for car building along with other family activities
- Schedule a design workshop prior to building
- Hold workshops & work days
- If your Pack needs help, see if you can partner with other Packs on workshops

# Workshops

- Very useful for families without access to tools
- Try to hold at least two workshops
  - Pack 242: 5-6 workshops in 5-6 weeks
  - Workshops may get more popular & busier closer to race day
- Leave enough time for paint, wood putty, etc. to dry

# Workshops

- Have the boys do as much as practical
- Discourage parents from "taking over" car
- Scouting rule: Cubs are not to handle power tools
  - Adults handle power tools, but boys can watch
- Provide personal protective equipment
- Go over safety rules first



# But Weight, There's More!

- Rules allow a weight of up to 5 ounces
  - but 99.9% of cars will need added weight to hit 5 ounces
- Weight can fine-tune center of gravity for maximum performance
- In general: placing weight farther to back is better
  - up to a point...



# But Weight, There's More!

- **Zinc:** easy, not very dense, can hang up on track if placed on bottom
- **Tungsten:** non-toxic but expensive
- **Lead:** inexpensive but potentially dangerous
  - Use gloves
  - After handling, wash hands thoroughly
  - Our method: drill hole in car, install lead, cover with wood putty

# Organize and Delegate

- Get help and volunteers for all those important tasks:
  - Car distribution and workshops
  - Event setup and decoration
  - Event registration and Inspection
  - Starting, timing, scoring
  - Repairs and "Pit Crew"

# Where To Race?

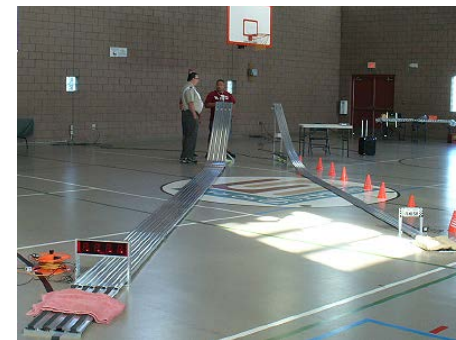
- Pinewood Derby can be a popular activity, especially in a public place
  - also a good publicity & recruiting tool
- Possible drawbacks with "offsite" location:
  - logistics
  - travel
  - potential complications
- Need a place that functions well for event
- Need "buy-in", cooperation, assistance from venue owner/operator

# Where To Race?

- Questions regarding venue:
  - Enough room for track, spectators, official areas, other activities?
  - Are there restrictions on concessions or refreshments?
  - Fees involved?
  - Infrastructure? (PA, video projector, music)
  - Convenient location for attendees?
  - Weather and comfort? (outdoor venues)

# Derby Venue Examples

- Pack 242: Pioneer Village History Museum
- Camelback District: Audubon Society
- Firebird District: Universal Technical Institute
- Lake Pleasant District: Community Center
- Salt River District: Automobile Dealership
- Other Districts & Packs: Gyms, Stake Centers



# Tracking Down a Track

- Two major track types: wood or metal
  - Both can work well if properly assembled and maintained
- Electronic finish line can be a big help
  - Reduces the uncertainty and anguish of "too close to call" finishes
  - Even a simple 1st / 2nd / 3rd finish gate system can be a big help
  - Cost can be a concern
  - Test it before the race, though!

# Tracking Down a Track

- Many Packs have a track (and timer)
  - Sometimes Packs share a track (and/or Derby)
- Districts: some own a track, others rent or use a Pack track
- Examples:
  - Camelback District uses Pack 100's track, timing, "video replay" system
  - Four Peaks District uses Pack 918's track & timing system



# Inspection

- Very important part of holding a fair race
- Most important areas of focus:
  - Weight
  - Wheels (and axles)
  - Length
  - Protruding past pin?



# Inspection

- Precision tools have become much less expensive
  - 0.01 ounce-accurate scales less than \$15
  - 0.001" accurate calipers less than \$15
  - "Go-No Go" gauges also available
- Compliance: polite but firm
  - Offer help to get car "in spec" for acceptance
  - Have spare parts on hand
    - especially spare wheels!

# Scoring and Timing

- Several effective methods of picking a winner:
  - Points By Place
  - Elapsed Time
  - Elimination
- All methods: make sure each car runs at least once in each lane used for that round
  - Preferably more

# Points By Place

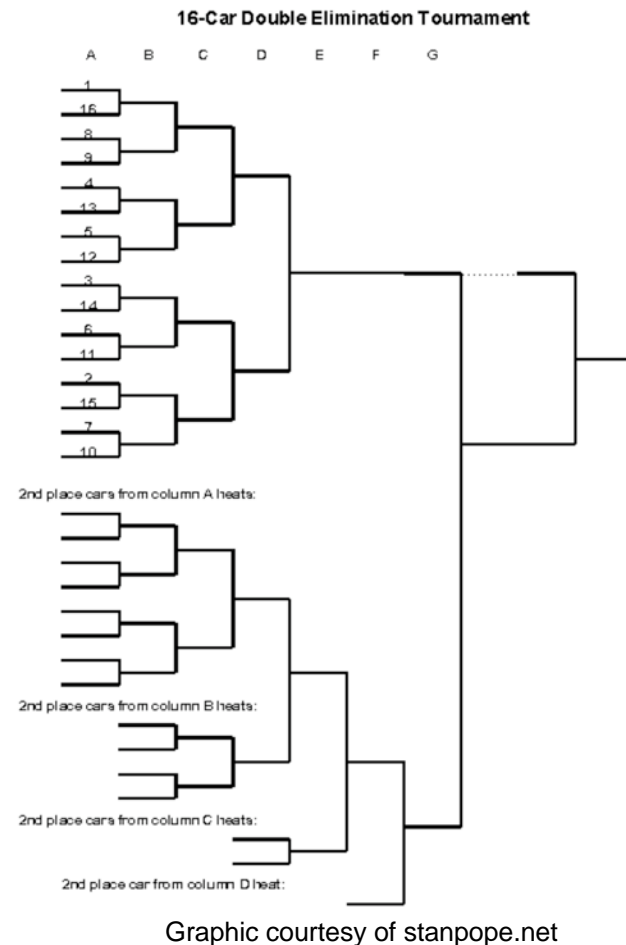
- Round-robin (everyone races same number of times per round)
- Assign points per place (1st, 2nd, 3rd)
- If practical, try have each car race against every other car in each lane
  - May not be practical for large groups or 2-lane tracks
- Online tools (spreadsheets, etc) can be a big help in scheduling and scoring

# Elapsed Time

- Lowest cumulative time wins (across heats)
- Needs an electronic finish line, timing system, software (some \$\$ outlay to start)
- Greatly reduces scoring disputes if properly managed
- Not affected by "who races who"
- Can display "real time" info
- Can generate result tables, reports

# Elimination

- Good for larger groups
- Good for 2-lane tracks
- Single, Double, Triple
- Drawback: some cars eliminated early
- Builds towards a "champ round" in each rank
- Online tools available for brackets, scheduling
  - One source: <http://printyourbrackets.com>



# Keep Things Moving

- Set a good check-in time
  - early enough not to be rushed
  - allow for car repairs/fixes
- Plan out race durations based on number of boys & heats
- Keep heats moving smoothly - have boys and cars organized
- Try not to have too few heats per boy
  - (all that work for only two or three runs?)
- but not too many heats
  - (when will this ever end...?)

# How Long Is This Gonna Take?

- Typical heat: 40 - 55 second cycle (start to start)
- Boy-set vs. official-set: not much difference in time
- Includes car retrieval, racer interview
- Can do 20-25 heats in 30 min (allowing time for introductions, possible delays, etc.)





# How Long Is This Gonna Take?

- Four Peaks District: 45 minutes per rank
  - 8-20 racers per rank, 2 runs per lane, 4 lanes
  - Still a few minutes between ranks for breaks
  - Finals ran a bit late (offered 3 runs per lane)
- Next rank checks in while current rank races

# Awards and Recognition

- Trophies
- "Goodie Bags"
- Car Photos
- T-Shirts
- Dog Tags / Medals
  - Can be worn w/uniform after event



# Is Everybody Happy?

- Provide activities for boys and families
  - Keeps kids busy and happy between races
  - Good for siblings

Four Peaks - Brick Derby



Camelback - Nature Displays & Lego



Firebird - Hot Rod Show



Thunderbird - Twinkie Cars

# Is Everybody Happy?

- Other "value-added" activities:
  - Interviews of racers
  - Event photographer
  - Refreshments!



# Spread the Word

- Place info in local newspapers, media
- Invite families and friends
- Invite families that might be interested in Scouting
- Invite local media
  - Newspaper
  - TV



# Be Creative (and Thrifty)!

- Checkerboard tablecloth = great decor
- "Up-cycling" older donated trophies
- Set up photo area for trophy presentations and other awards

# Pinewood Derby and Cub Scout Adventures

- Pinewood Derby activities can apply to new Cub Adventures
- Bears:
  - Baloo the Builder (all)\*
- Webelos:
  - Build It (1 - 4)\*
  - Engineer (2)\*
- \*if built from plans developed by boy

# The Next Levels...?

- Some Districts have an annual Pinewood Derby
  - but not all
  - some consolidated or cancelled
- No Council Derby since 2011
  - ...maybe in future?



# District Derby Issues

- Dropping participation numbers
  - Four Peaks: 50% drop in 5 years :(
- Lack of volunteers & leaders
  - Burnout, terming out of Cubs, too many other activities
- Disputes regarding rules & places
  - Addressed thru good rules & inspection

# Improving District Turnout

- Visiting Packs to promote Pack & District Derbies
  - Show championship trophy
  - Hand out flyers
  - Sign up onsite
- Roundtable
- Website
- Committee / Commissioners

# Questions?



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