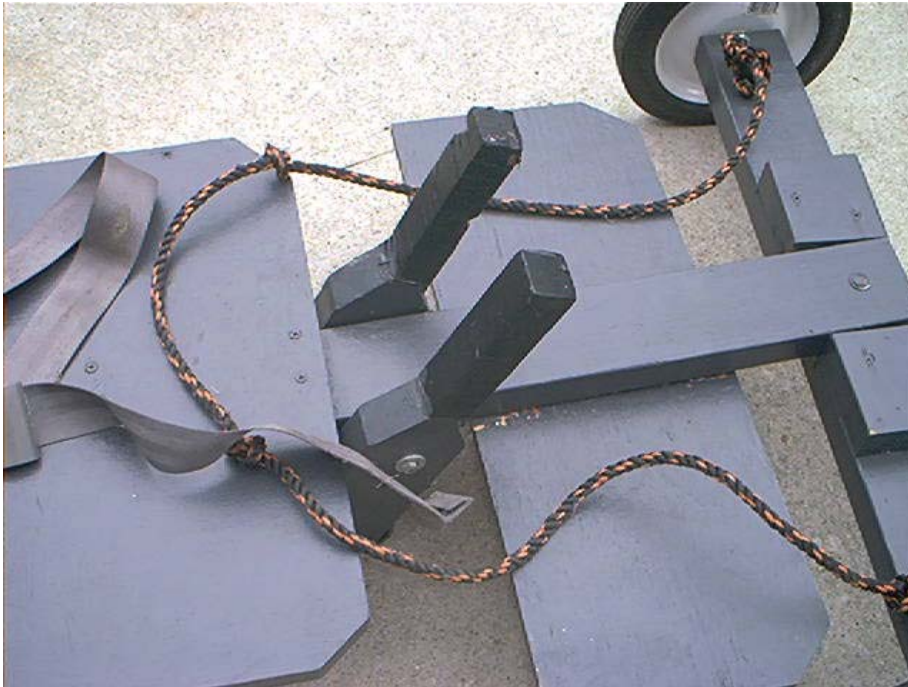


## North Star District Cubmobile Downhill Race Rules & Regulations

- 1) Participation
  - A) Racing is open to all registered Cub Scouts
  - B) Wear your uniform
  - C) It is recommended that all packs "test drive" their cars BEFORE race day to familiarize themselves with the steering and braking mechanism of the cubmobile. SAFETY FIRST! Please do not let your scout drive something that may get them hurt.
- 2) Cubmobile Construction
  - A) Build car as close as possible to the picture and photos.
  - B) ALL cars must pass a Pre-Race inspection prior to racing. Be sure to allow sufficient time for the inspection and to fix any issues brought up during the inspection.
  - C) PLEASE NOTE THAT THERE ARE SOME CHANGES THIS YEAR:
    - 1) SEAT BACKS MUST BE AT LEAST 3 INCHES TALLER THAN THE TALLEST SCOUT WHO WILL BE RACING
    - 2) The harness system must be a MINIMUM of a 3-point harness (a 4 or 5 point harness is strongly encouraged, but not mandatory)
  - D) Wheels
    - 1) Wheel diameter must not exceed 10"
    - 2) The outside circumference of the wheels may vary from 30 to 36 inches
    - 3) Tires with bearing will be allowed
    - 4) Axles should be lag type fastener -- however straight axles will be allowed if affixed correctly and in a safe manner.
  - E) Frame
    - 1) 2 x 4 construction grade lumber only. Not 4 x 4, 4 x 6, 6 x 6
    - 2) Maximum car length is 5'-0" (including wheels)
    - 3) Car width must be between 30" and 36" (outside of wheels)
    - 4) Wheel base may not exceed 4'-0" (center-to-center of wheels)
    - 5) Frame must be bolted together. Remaining items can be attached with screws as long as parts are held secured. NO nails.
    - 6) Use 3/8" plywood minimum
  - F) Steering Blocks
    - 1) Car must be equipped with steering "safety" blocks to limit turning radius
    - 2) Maximum gap between frame and block is 1/8" on both sides
  - G) Seat Belt
    - 1) See above change
    - 2) Car must be equipped with an adjustable 3-point harness at minimum securely fastened to the car frame. (a 4 or 5 point harness is suggested.)
  - H) Brake
    - 1) Car must be equipped with a rubber "drag" pad or equivalent.
    - 2) Brakes must stop car in a timely manner.

- 3) Any car which no longer has good working brakes or has a problem with the braking system must have it repaired prior to racing.
  - 4) The use of a dual braking system as shown in the photos is encouraged as an added safety measure. (Not Required)
- I) Seat
    - 1) See above change
    - 2) Securely fastened to the frame (see pictures and photos)
    - 3) Build as close as possible
    - 4) A seat with a backrest is required
    - 5) The backrest MUST be at least 3" taller than the tallest scout who will be using the cubmobile to race
  - II) Floor Board
    - 1) A floor board to discourage the scouts from braking with their feet is required.
    - 2) The floor board should be positioned between the brakes and front axle.
    - 3) The floor board must not interfere with operation of brakes or steering
    - 4) Made from 3/8" plywood
    - 5) May be up to 10" long and 24" wide (see photos)
    - 6) No additional weighting to the cubmobile will be allowed as a means to increase speed
  - III) Additional Decorations
    - 1) Lightweight items such as flags may be attached to the cubmobile, as long as such items are secured.
    - 2) Be creative
    - 3) Decorations and paint schemes shall uphold and be in conformance with BSA values and traditions
  - IV) Additional Parts to Cubmobile -- Not allowed
    - 1) The use of an enclosure around the driver is not permitted as this increases the weight of the cubmobile.
- 3) Safety Equipment
    - A) Helmet
      - 1) bicycle type
    - B) Closed toe shoes
      - 1) NO sandals or bare feet will be allowed
      - 2) Shoes MUST be closed toe
      - 3) No Crocs or similar shoes allowed
    - C) Gloves- leather or rollerblading is recommended (not required).
    - D) Elbow pads and knee pads recommended (not required).
    - E) Full length pants ARE REQUIRED to be worn during this event.
    - F) Long sleeved shirts should be worn under the Cub Scout uniform shirt. (If it is not jacket weather)
  - 4) Behavior
    - A) Please, no disorderly or un-sportsmanlike conduct.
    - B) It is expected that all Scouts (and adults) will behave appropriately.
    - C) Cheering and words of encouragement are encouraged.
  - 5) Parent Participation is needed to make this event successful.  
Please help pull cars up the hill, and provide help along the racetrack.

*Photo of floorboard and Dual braking system*



Use a helmet and safety belt.


7"-10" DIA. WHEELS  
FROM LAWNMOWER,  
WAGON, TRICYCLE,  
BARBECUE, ETC.



CARRIAGE BOLT



LAG SCREW



MACHINE BOLT

USE THESE TYPE FASTENERS –  
NAILS WILL NOT HOLD

SEAT -  
15"x20" —  
3/8" PLYWOOD

SEAT BACK -  
8<sup>3</sup>/<sub>4</sub>" x 20"  
3<sup>3</sup>/<sub>8</sub>" PLYWOOD  
← 3 INCHES  
TALLER  
THAN  
TALLEST  
SCOUT

3 or 4 point harness

FRAME - 2"x4"  
52" LONG

STEERING BRIDLE -  
1/4" NYLON ROPE

SAFETY FLOOR BOARD

AXLES -  
2"x4",  
28" LONG

**SAFETY BLOCKS  
TO LIMIT  
STEERING ANGLE**

WHEEL

LAG  
SCREW

## AXLE

FLAT —  
WASHER

FLAT  
WASHER

3 INCHES TALLER  
THAN TALLEST SCOUT

PLYWOOD BRACE -  
ONE EACH SIDE

FLAT ^  
WASHER

## DRILL HOLES

MACHINE  
BOLT

 ← FRAME 2 FLAT WASHERS

4 FRONT AXLE

WASHER  
NUT

SECOND  
NUT TIGHTENED  
AGAINST FIRST  
TO LOCK

USE  
HELMETS AND  
SAFETY BELTS

**BRAKE**

NAIL STRIP OF OLD  
TIRE TO BRAKE

2 CARRIAGE  
BOLTS

12"

15 1/2"

48" WHEELBASE



## NEW ALTERNATE STEERING DESIGN

KEEP IN MIND: this illustration doesn't include the required

1) Floor Board (see previous page)

2) A 3 (4 or 5) point safety harness, and (see previous page)

3) High Seat-Back that is 3 inches taller than your tallest rider. (see previous page)

These should still be added to the cubmobile to pass safety standards.

