



CAMP TADMA CUB MOBILE RACES



INVITATION:

You are invited to participate in the Camp Tadma Cub mobile Derby. Please review the cub mobile building and operating instructions and other information about the race. Plan now. Start looking for parts and build your racer ahead of time.

LOCATION:

Mark Greer Scout Reservation- Camp Tadma, 166 Bishop Rd. Bozrah, CT.

REGISTRATION:

Registration begins at 11:00AM and ends at 12:45. Cub Scouts must register the car they will be driving. After start of race (time trials- see below), no car changes can be made.

CAR INSPECTION:

Cars will be inspected for safety related issues (i.e. brake function, back rest height, steering limitation). Safety rules will be strictly enforced!

FEES:

See on line Registration for Fees: Each car is charged an entrance Fee.
Only 3 Cub Scouts at a time may race the Car, 1 Driver and 2 Pushers.
You may switch out Drivers and Pushers during the race.
Maximum of 6 Cubs Scouts per Car.

TIME TRIALS:

Time trials are conducted when it is necessary to determine which Cub out of a den or pack will drive the car in the actual race. For instance, if a cub mobile is built by six boys as a den project, each boy can drive the car down the race course. The boy with the fastest time will then drive the car in the actual races.

RACING: - Once each car has an established driver, we will run double elimination races.

This is a NON-Rank Competition...all Cubs race on the same level...! Meaning, we will not be having races for individual rank groups as is done with the Pinewood Derby.

Breakfast and Lunch is available the day of the Race. Ticket can be purchased at the Wakenah Lodge.

HELPFUL HINTS:

PLEASE FOLLOW THESE INSTRUCTIONS CAREFULLY,

- Garage sales and second hand stores are a great place to buy hard hats, wheels, and maybe seatbelts.
- Old wagon wheels, tricycle wheels and similar wheels can be used.
- An old leather belt cut in half, each cut end fastened to the car, makes a good seatbelt.
- The steering rope can be fastened to the front 2X4 cross-piece as close to possible to the wheel. Then the rope is between the boys foot and wheel and the foot won't slip and rub the wheel.
- Long bolts will work as axles if they fit the hole and can be U-bolted in place.
- Use big washers between the wheel and wooden cross piece.
- If you use a "double levered" or "2-handled brake lever" (the illustration shows a single lever only on one side of the frame), please fasten the connection handle on the underside of the lever because too many have been pulled off.
- On the front of the car, you can make the steering cross-piece adjustable for short or long legged kids by drilling extra holes

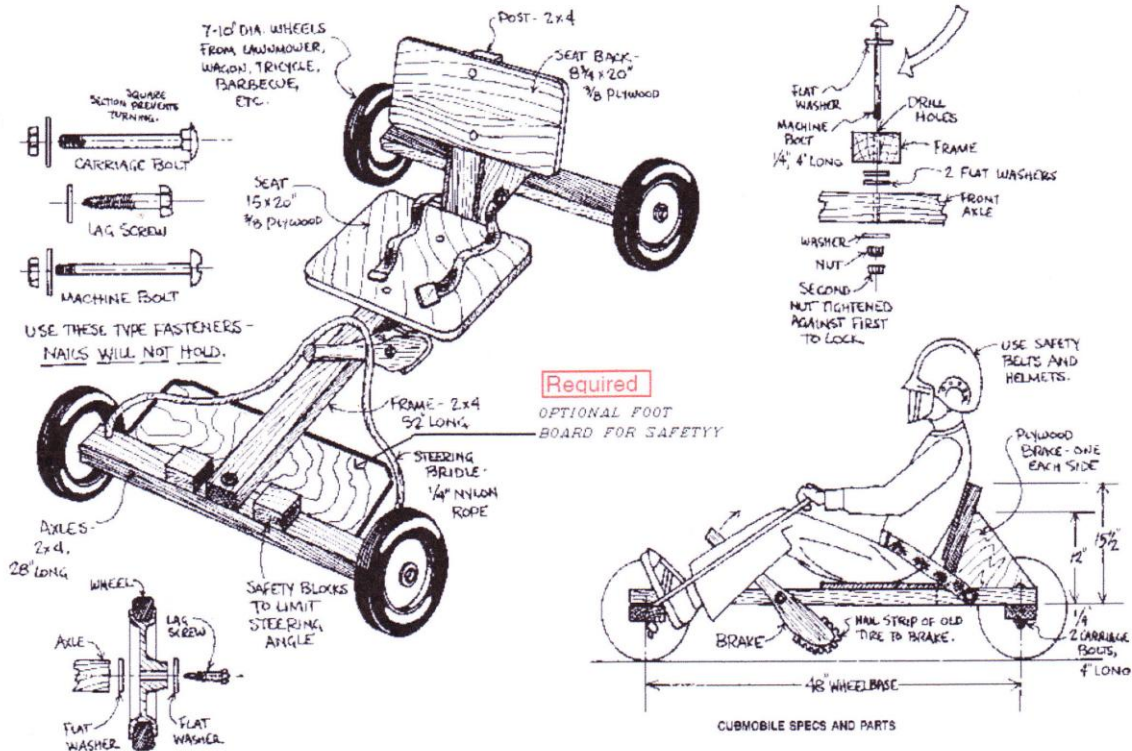
**BUILDING AND OPERATING INSTRUCTIONS:****SOME OF THESE RULES AND BUILDING INSTRUCTIONS MAY VARY TO WHAT IS IN THE BEAR BOOK, BUT THESE ARE THE RULES WE WILL FOLLOW...**

1. A- Wheels must be equipped with only non-pneumatic tires and cannot exceed 12" in diameter.
1. B- Ball Bearings wheels are allowed.
 - **Most small engine wheels such as lawnmowers and bicycles do have some kind of ball bearings in the Wheels. So these are acceptable.**
1. C- Wheels are to be fastened to the frame with lag bolts; the use of metal rod axels is prohibited.
2. Car Frame is to be made from 2 X 4 construction lumber. All cars will have a seat and braced backrest so a boy can steer comfortably with his feet (seat and backrest can be plywood).
- 2a- A push-bar **MUST** be fastened to the back of the seat.
3. No additional weight can be built into the car by adding metal or using lumber heavier than the minimum 2 X 4's and plywood needed to construct the racer. Use 2 X 4's as shown in the drawing. Do not use (heavier) solid wood between the rear wheels and front wheels, for instance. We want to keep the cars as equal as possible, and weight is an added speed factor.
4. Steering is done with the feet placed on the front axle; also by holding a hand rope fastened to the front axle. **NO STEERING WHEELS ALLOWED**
5. Cars are to be equipped with a handbrake, its rubbing surface faced with a rubber material such as a strip of old tire. This, when dragged on the ground, will stop the car.
6. During the race, two 2 X 4 blocks are fastened **1/2"** from the center board, thus limiting turning radius. This is very important safety feature to prevent spinouts, over steering, curb jumping, etc., during the actual race. Adjustments will be made during inspection if needed.
7. Car length must be under 5'. Width must be at least 3', but no more than 4'.
8. 1/4" bolts are best to hold frame together, screws are a second choice. Nails may work loose.
- 9- Safety:
 - Each Cub Scout, while participating in a race, will wear protective head covering such as a football helmet, racing helmet or construction hard hat with a chin strap.
 - b. Cars will be equipped with an adequate safety belt securely fastened to the cars frame. An actual safety belt that clip locks must be used, Rope is not acceptable.
 - c. For the Scout's safety, they should wear long pants, a long sleeve shirt, and shoes that completely cover the feet, and a bike helmet.
10. Cars start with two scouts pushing the car and a driver, distance no farther than 10yard, and then the gravity of a hill will take over.
 - Those Scouts pushing the car at the start of the race must wear elbow, and knee pad protection. Gloves and head gear are optional, but should be considered.

Mohegan District, Connecticut Rivers Council



Cub Mobile Derby



- 4- 8" to 12" wheels
- 1- 2'X4' 3/8" or 1/2" plywood
- 2- 8' 2X4's
- 1- 2"X2" surveyor's stake
- 4 -3/8" X 6" lag screws (for wheels)
- 1- 3/8" X 4" hex bolt (for front axle)
- 1- 3/8" X 4" lag screw (for brake)
- 2- 5/16" X 4" carriage bolts (for rear axle)
- 13- 3/8" washers
- 1- 3/8" lock nut
- 2- 5/16" washers
- 2- 5/16" lock washers
- 2- 5/16" nuts
- 32- #6 X 1 1/2" wood screws
- 4- #6 X 2" wood screws
- 1- 6-7' 1/4" rope
- 1- seat belt (from salvage yard)
- 1- 2" X6" piece of rubber (from old tire)

- Power drill
- 3/8" and 5/16" wood bit
- Wrenches or socket set
- Screwdriver
- Tape measurer
- Wood glue
- Power or hand saw



How to Build a Cub mobile

Detailed Instructions:

1- Cut one 2 X 4 52" for main frame.

2- Cut two 2 X 4's 28" for axles.

3- Make an "X" on each end of each axle, and drill a hole at each "X" intersect, 6" deep using a hand electric drill (5/16" wood bit works well).

4- On front axle 2 X 4:

A. Drill a 5/16" hole on each end near the back for the rope.

B. Drill a 3/8" hole at center of 2 X 4.

C. Attach (2) 2 X 4 blocks to front axle, on either side, 2-1/8" from center hole, use glue and #6 X 2" screws. This will limit steering.

5- At front of main frame 2 X 4, drill a 3/8" hole (center 1-5/8" from front).

6- Attach front axle to frame using 3/8" X 4" hex bolt, 4 washers, and lock nut or 2 nuts. (Tighten enough to allow steering).

7- Align back axle 2 X 4 at right angle with back of main frame 2 X 4, clamp if possible. Drill (2)-5/16" holes through axle and main frame. Attach main frame to back axle using 2 carriage bolts, 2 washers, 2 lock washers, and 2 nuts. If this is to be a permanent attachment, glue also.

8- Cut out seat and back rest from plywood.

9- Cut one 2 X 4 12-14" in length for back rest support. (Bevel slightly about 5 degrees if possible)

10- Attach back rest support (bevel end down) to main frame using glue and 2 screws (#8...2-1/2") at an angle. Position of this support depends on size of boy, have scout sit on 2 X 4 frame to estimate position.

11- Cut out 2 triangular shaped pieces of plywood and attach to either side of backrest support and main frame with glue and screws (#6 1-1/2"). Drilling small pilot holes helps.

12- Attach seat and back rest using glue and screws (#6...1-1/2").

13- Cut 2 X 2 surveyor's stake to 14-16" at an angle, cover end with rubber using nails, drill a 3/8" hole through stake at location it will meet main frame.

14- Drill hole 5/16" into main frame at point to attach brake. Mount brake using 3/8" X 4" lag screw and washer to side of main frame.

15- Drill and attach seat belt with fasteners of choice.