



## Royal Ambassador Pit Stop Car Construction

One of the most popular activities at the 2008 National Royal Ambassador Race during the Southern Baptist Convention in Indianapolis was the RA Pit Stop Challenge. This exciting activity is a great addition to an RA Racer competition or any evangelistic RA event. It can also be a stand-alone event. Of course hosting an RA Pit Stop Challenge does require a car. There are probably as many ways to build a mock RA racecar as there are RA leaders. A complete set of designs and photos of a prototype car are provided here. In fact, the design of this car was modified after the attached photos were taken, so there are slight changes in the plans provided here. This document shows you one way to do it, not the only way.

Constructing a mock RA racecar can be a great project for the RAs of your church or association. And once you do, hosting an event will be a blast for your RAs.

The attached plans and photos will allow you to scale up the drawings to full-size plans. The materials used to construct the sample car cost approximately \$350.

### Constructing RA Pit Stop Car

#### Materials List:

- 1/2 sheet of 1/2-inch plywood BC grade- (the car cut-out is 2-feet tall by 8-feet long)
- 7- 8-foot 2x4s
- 2- Trailer hub assemblies – 5 lug (Northern Tool #57205)
- 2- Tire/wheel assemblies – 5 lugs - 20.5 x 4.80 x 12 (Northern Tool #121671)
- 4- 3-inch hinges
- 4- 3/4-inch threaded rod for axles 9” long
- 8- 3/4-inch nuts, washers
- 1- Bathtub drain
- 1lb 2 1/2-inch drywall screws
- 1lb 1 5/8-inch drywall screws
- Wood glue

Review the detailed drawing. To get a full-size version of the car cutout, copy the contents of each square onto a 3” square. This will give you a drawing that is 2-feet high by 8-feet long that you can transfer to a 2-foot by 8-foot piece of 1/2-inch plywood and cut out using a jigsaw.

**Note:** The drawings do not exactly copy the 2x4 rear support frame for the car. The drawings represent a much easier way to cut the diagonal removable braces that will also allow it to be set up and taken down quickly.





## Royal Ambassador Pit Stop Challenge Overview

The Royal Ambassador Pit Stop Challenge is a great addition to an RA Racer competition or any evangelistic RA event. It can also be a stand-alone event. The RA Pit Stop Challenge does require a considerable amount of planning because of the specific items needed for the event. The mock RA racecar is the biggest challenge. A complete set of designs and photos of a prototype car are included here. Constructing a mock RA racecar can be a great project for the RAs of your church or association.

The following information will help you after you have your car and tools ready to go.

### Materials:

- RA race car (large plywood car cut out)
- Two tires and lugs (attached to the car)
- Five-gallon bucket
- Plastic container with pouring spout (for holding water and pouring it out)
- Stopwatch
- Clipboard/Pen
- Wrench for removing lugs (if a compression wrench is used, add compressor, and electricity – consider using battery-powered tools)
- Registration/score sheets
- Table and chairs
- First-aid kit
- Clean up equipment for spilled water
- Plastic sheeting to protect flooring from spilled water if used indoors

### Competitive goal:

Contestants are timed during the removal of the tires from the hubs, switching of the tires on the car, reattaching the tires back on the hubs, and pouring water through the car's nozzle and into the five-gallon bucket to simulate fueling the racecar during the pit stop. When the time stops, the water is poured back into the pouring can and the bucket returned to the back of the car. The individual or team with the fastest time wins.

### Preplanning suggestions:

- Set up the car and the support pieces.
- Place the bucket behind the car at the rear where the pipe will drain into the bucket.
- Place the support pieces and the car at a safe distance if electricity is used.
- Consider battery-powered tools for safety and ease of use.
- Determine the rules and timing for competition.
- Leaders may want to start lug nuts, or allow contestants to turn nuts on threads slightly before timing begins to prevent stripping.
- Determine the safety considerations.
- Determine how teams will function during the competition.
- Determine tie-breaking activity if a tie occurs.
- Determine roles for adult leadership needed for registering, timing, recording, posting, and judging.
- Determine which awards will be used (certificates, trophies, prizes).

### Before the competition begins:

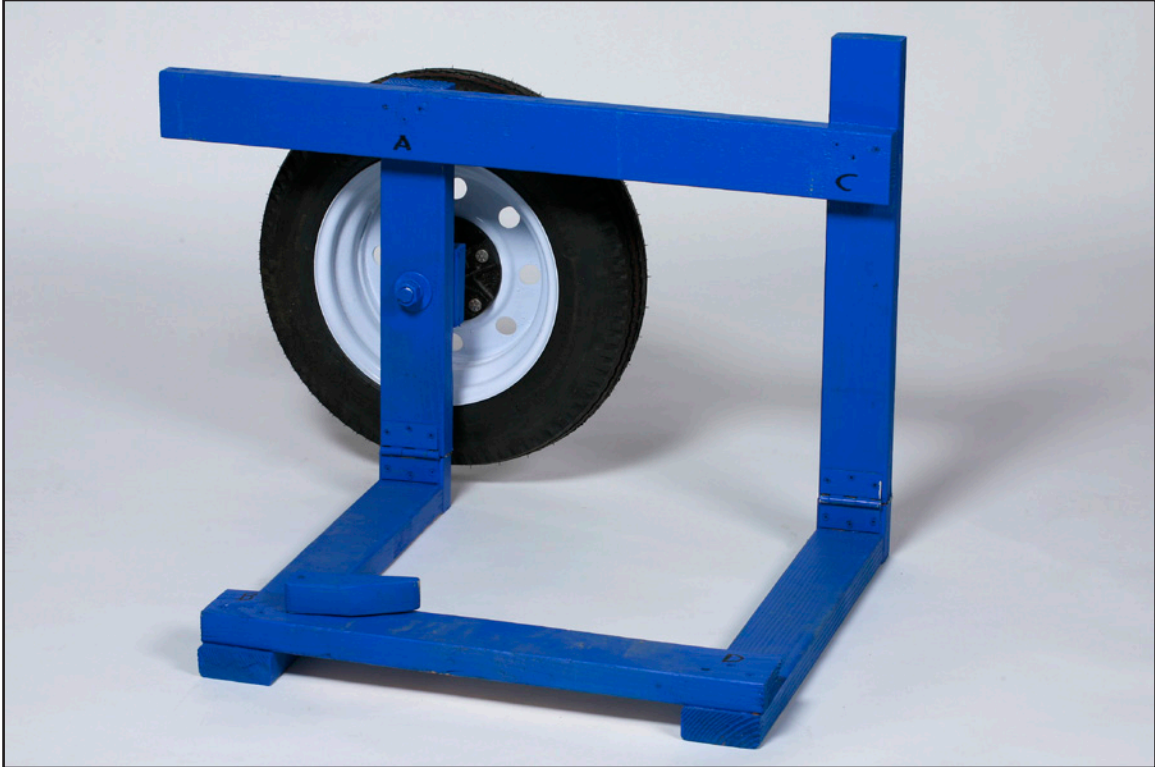
- Orient contestants to the procedure from start to finish.
- Communicate safety considerations in doing the activity.
- Communicate when the timing begins and ends.
- If teams are used, communicate how they will function.



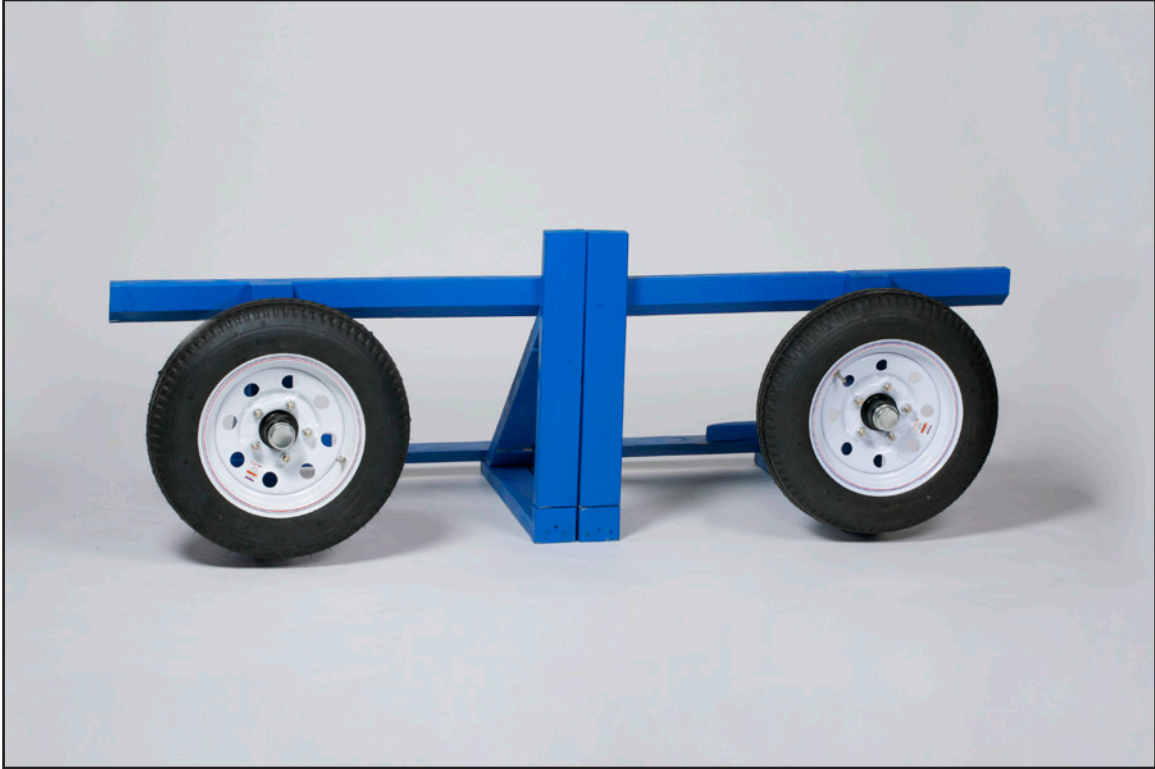
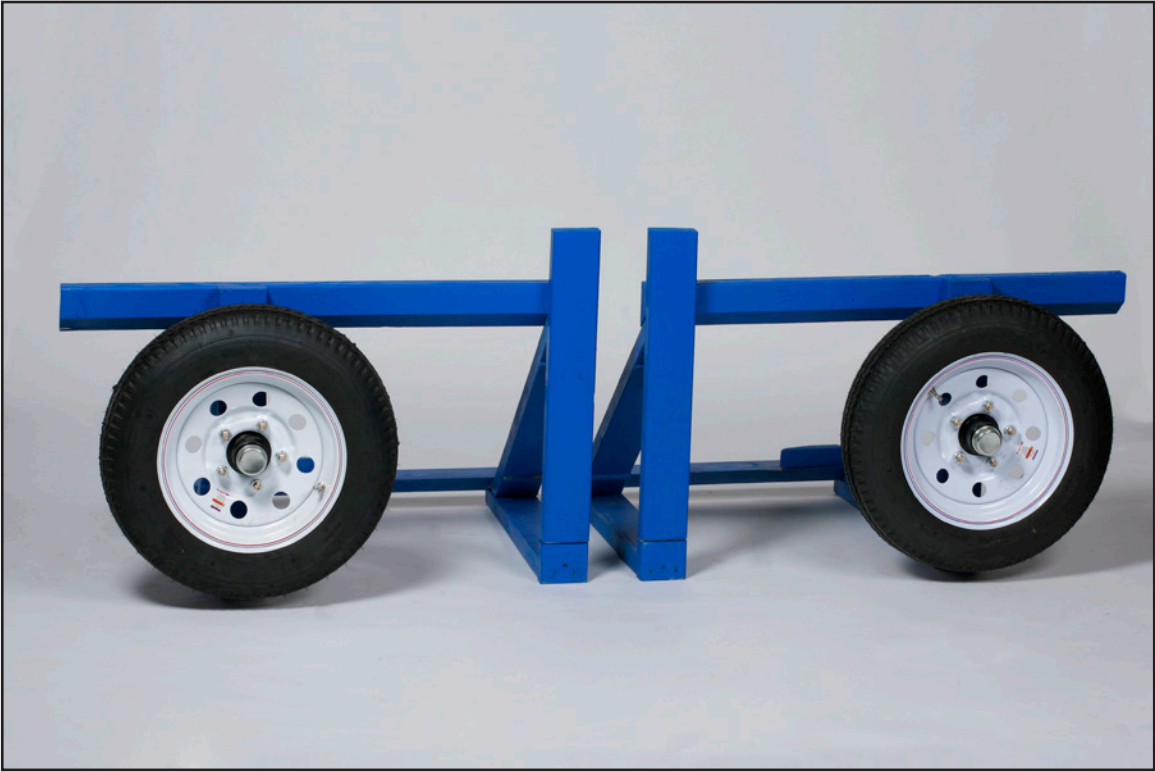
**During the competition:**

- If time allows, give all contestants/teams one practice round.
- If the competitive process becomes less challenging, consider additional tasks (roll tire to a predetermined location and roll it back before reattaching it to hub).
- Be consistent – if rules need to change, make sure all contestants have opportunity to compete fairly.
- Post times for all to see, and recognize all contestants as well as winners.

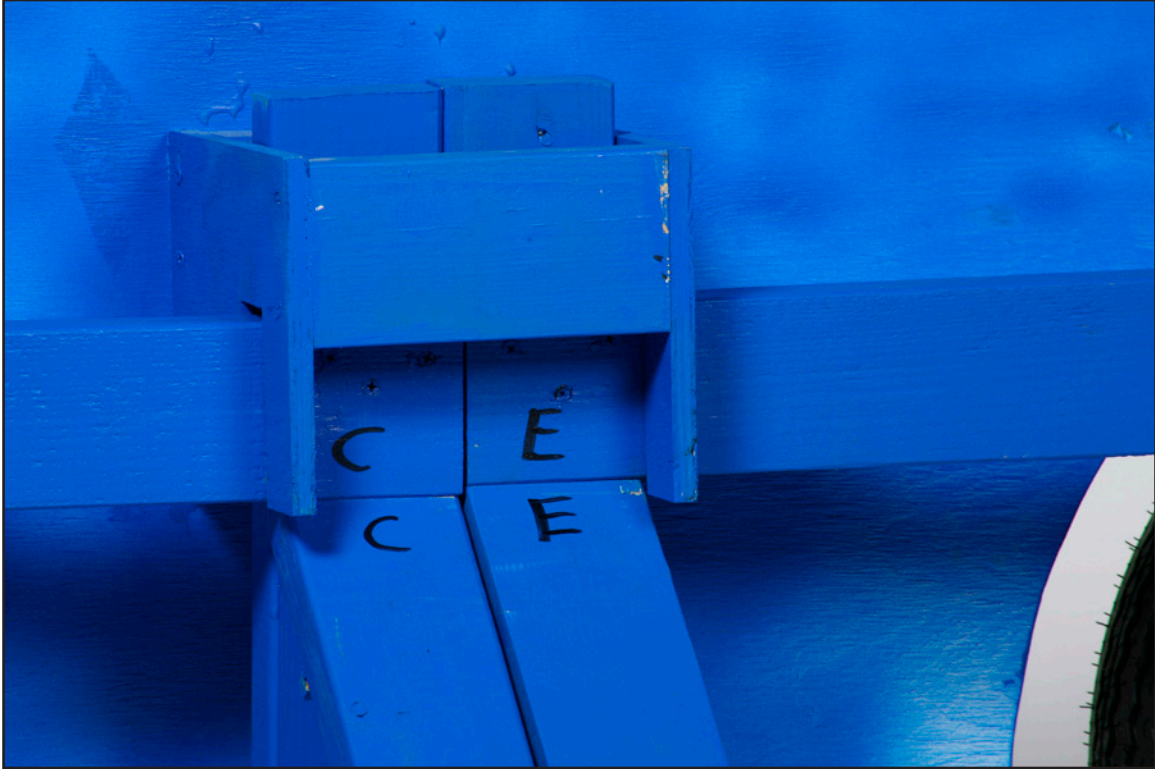
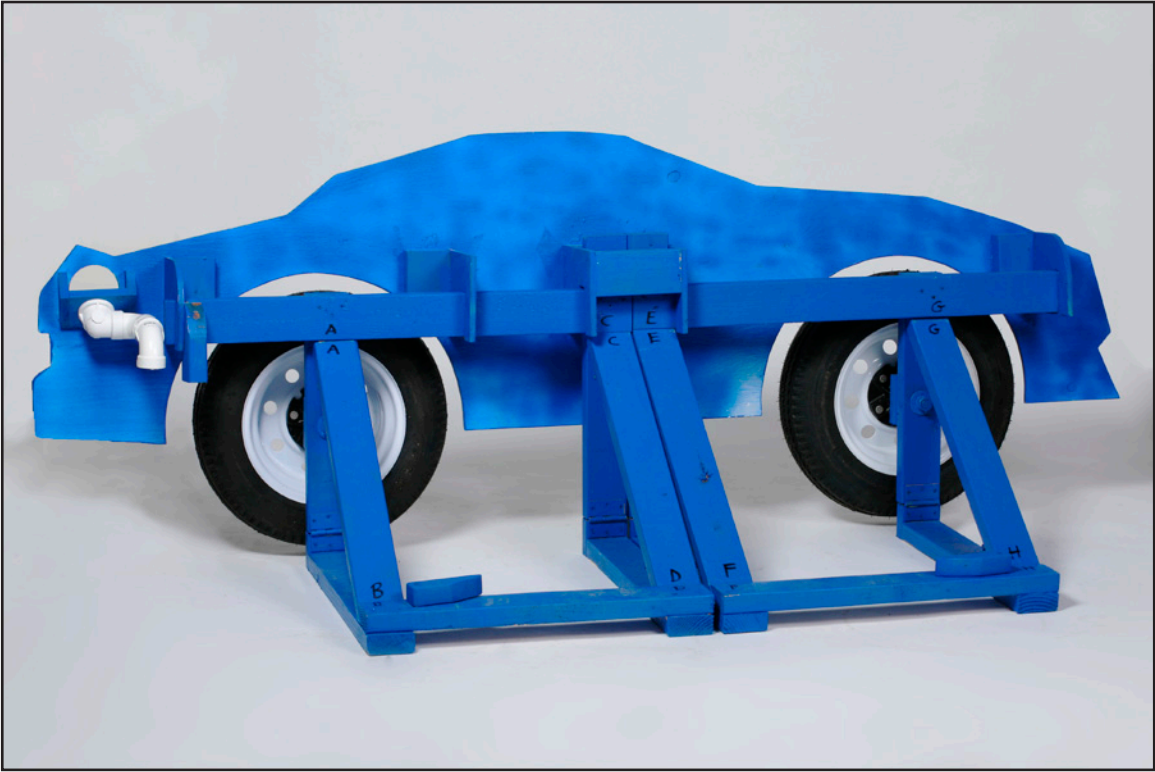


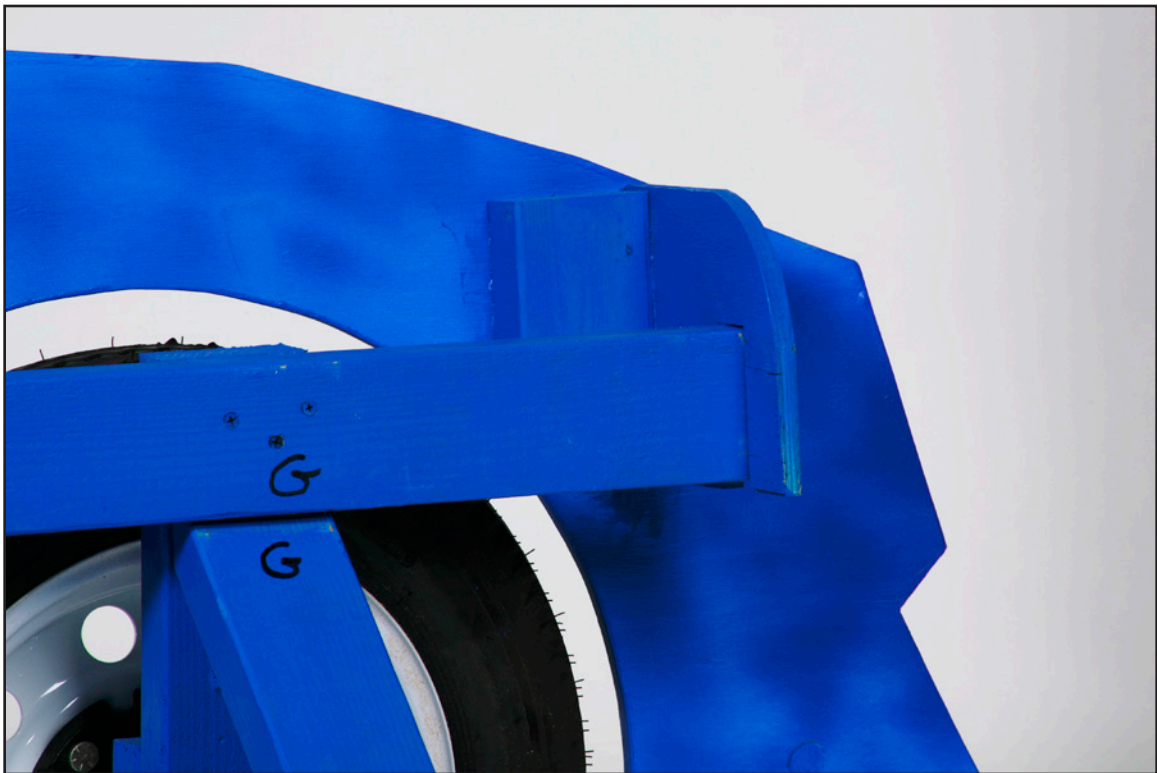
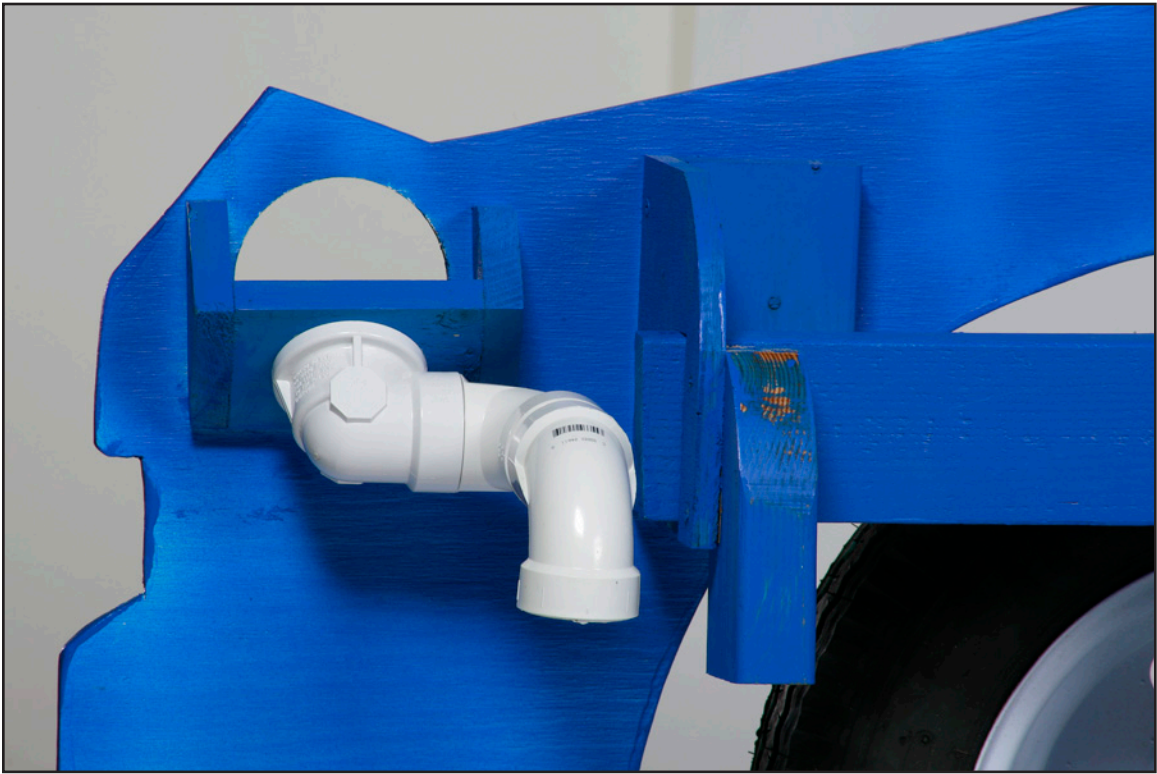


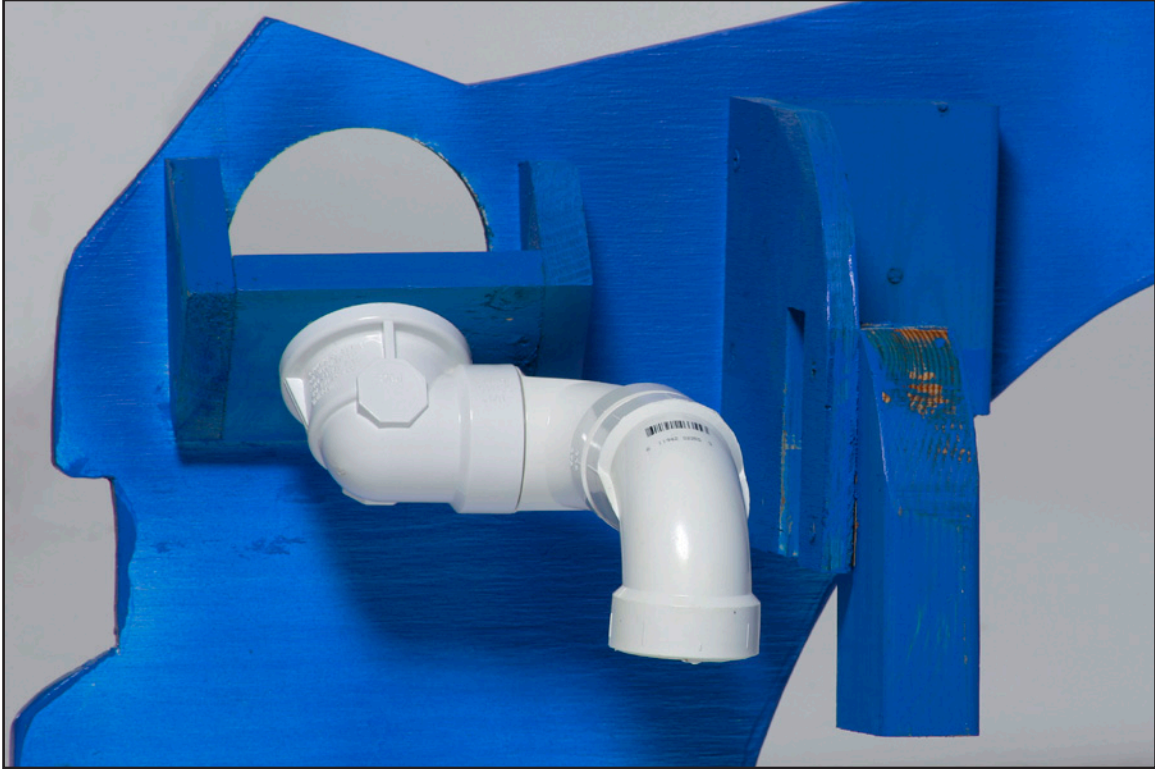
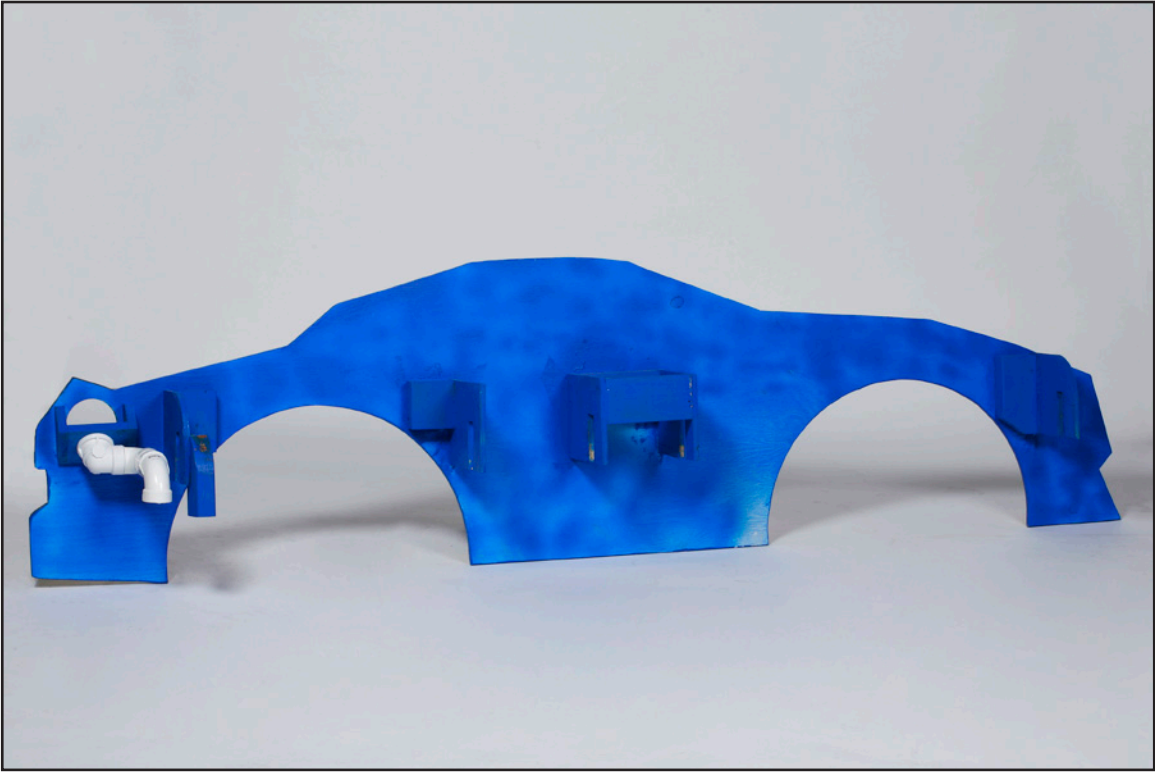


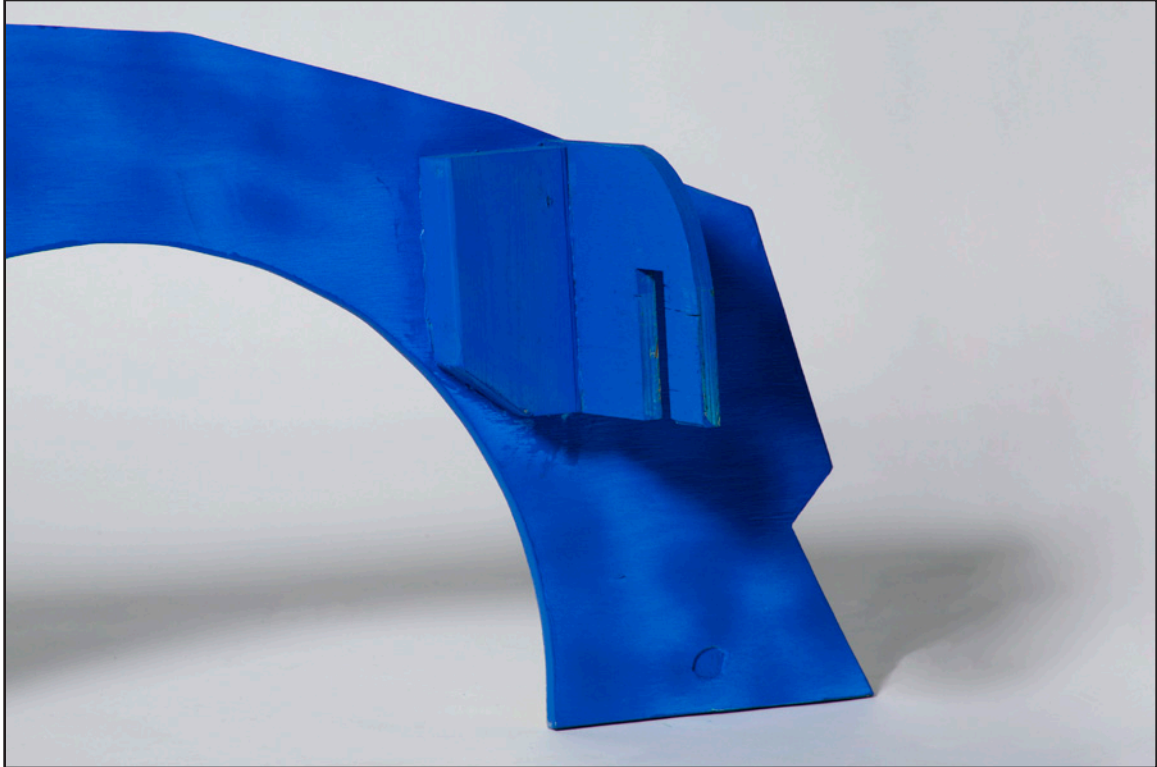








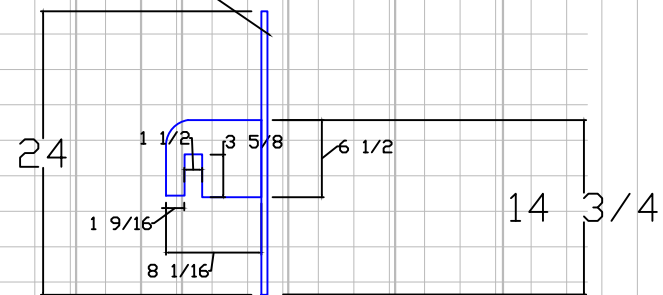
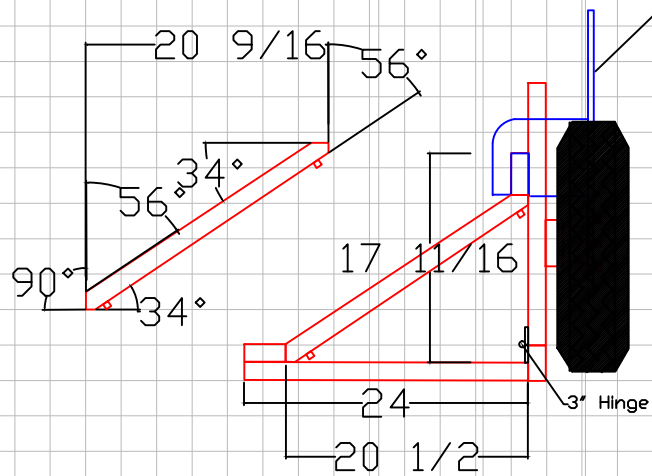




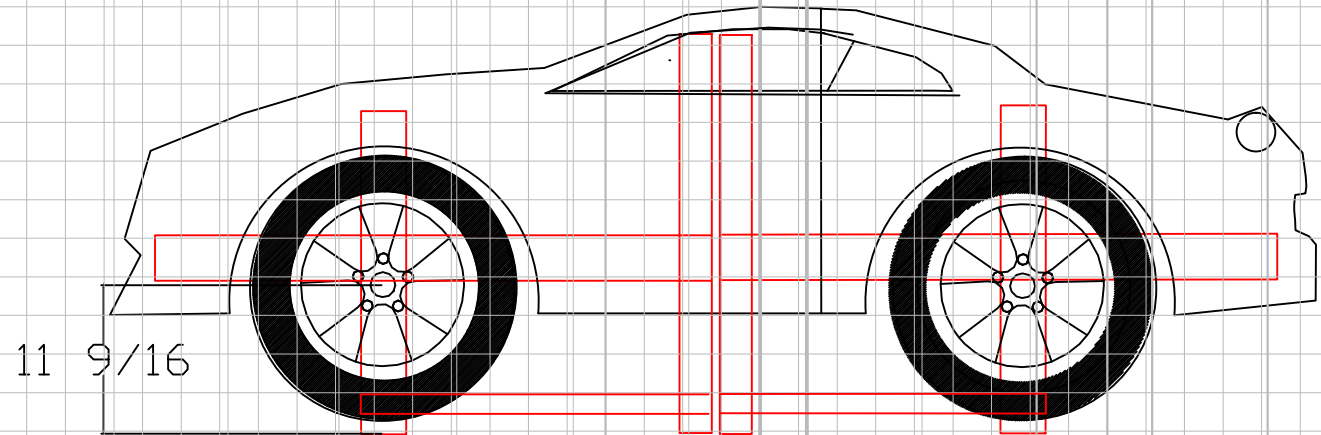
1 sq. = 3"

# Plywood Car cut-out

Side View

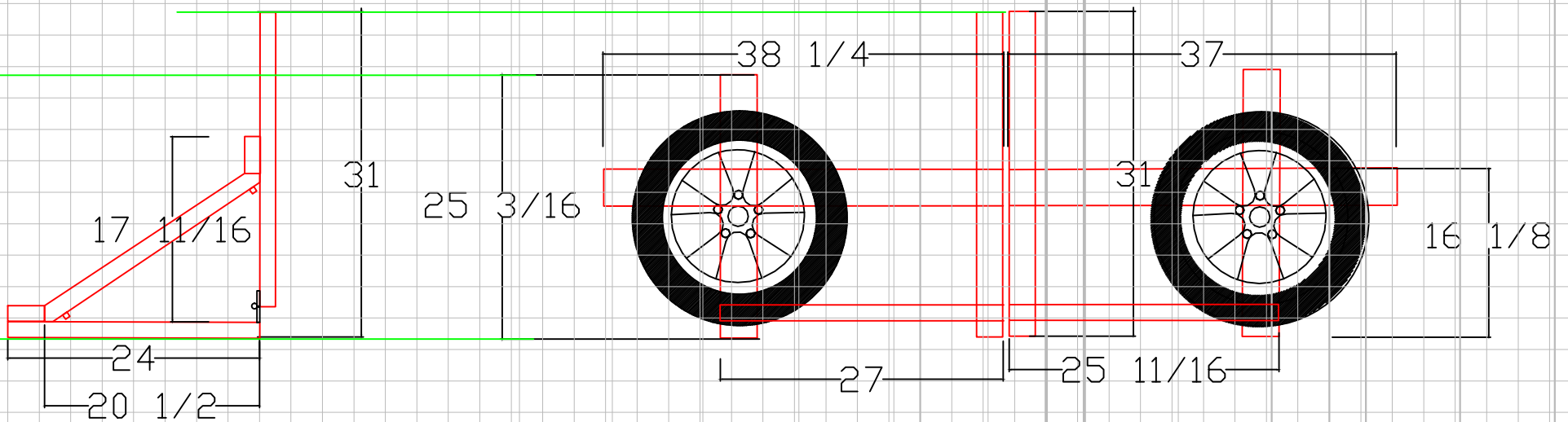


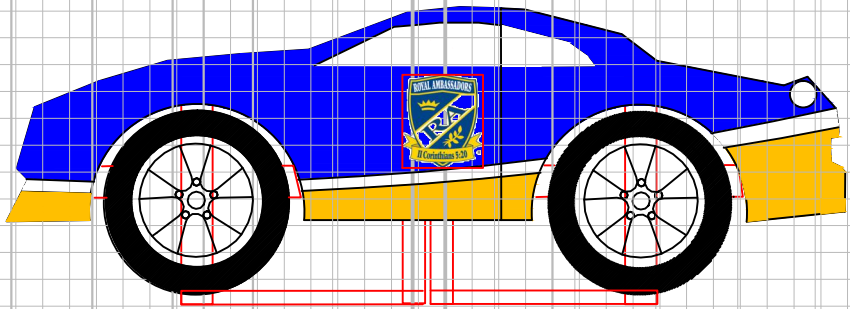
# Front View Assembled



1 sq. = 3"

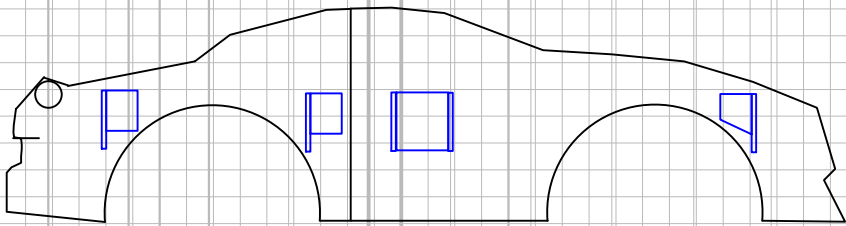
# Front View Framework





1 sq. = 3"

Back View of Car Cut-out



1 sq. = 3"

