SHOW CAR - TRANSPORATION MODELING
(Middle/Jr. High and High School)

OVERVIEW

Participants use engineering skills to design and fabricate a CO2-powered scale model of a vehicle that meets the current year's stated design theme.

The design theme for the 2010 RTC is a custom golf cart.

CHALLENGE

Participants are provided with an opportunity to explore and experience aspects of the automotive design and engineering process, including research, conceptualization, development of drawings, prototype and model construction, and testing.

TIME LIMITS

The entry must be completed during the current school year.

ATTIRE

Casual TSA attire as described in Competitive Events Attire is the minimum requirement.

PROCEDURE

Participants check in their entries at the time and place stated in the conference program.

REGULATIONS

Model

M1. The scale model must accurately reflect the annual design problem (see above).

M2. The body itself must be made from wood.

*Using pre-manufactured model car bodies is prohibited (including hoods, fenders, etc.). It is permissible to use pre-manufactured parts such as body strengtheners, fenders, plastic canopy, exhausts, air foils, head and tail lights, windshields, mirrors, and antennae. They may be attached to or enclosed within the vehicle and may be constructed from materials other than wood, excluding glass or liquids.

		MINIMUM	MAXIMUM
M3.	Body total width (including wheels).....	none.....	4"
M4.	Body height with wheels when raced (after non-fixed parts have been removed)...	none.....	…5"
M5.	Body mass (completed model without CO2).....	none.....	2 pounds

Cartridge hole

C1. The power plant hole must be at the farthest point at the rear of the car and must be drilled on center and parallel to the race surface to assure proper puncture of the CO2 cartridge. Additions to the rear of the car that obstruct the launch mechanism must be removed for the timed run or the vehicle is considered "unraceable" and receives no time points. A minimum of ⅛" thickness around the entire power plant hole must be maintained on the vehicle for safety.

C2.	Hole depth.....	2".....	2⅛"
C3.	Safety zone thickness.....	⅛"	
C4.	Chamber diameter.....	¾".....	13/16"
C5.	Lowest point of chamber diameter to race surface (with wheels)	1⅛".....	1⅝"

Eye Screws

ES1. Vehicles must have two (2) screw eyes per car that meet tolerances, no more. They must not make contact with the racing surface. The track string must pass through both screw eyelets, which are to be located on the centerline of the bottom of the car. Glue may be used to reinforce the screw eyes. It is the responsibility of the car designer/engineer to see that the eye screw holes are tightly closed to prevent the track string from slipping out. As with adjustments, this must be done prior to event check-in.

ES2.	Inside diameter.....	⅛".....	¼"
ES3.	Distance apart (at farthest points).....	5".....	none

Wheels

W1. Dimensions should be consistent with the scale of the body.

W2. Wheels must roll.

EVALUATION

Due to time constraints the Transportation Modeling/Show Car will not be raced during the RTC, but must meet the all minimum requirements above. Trophies will be awarded to the three (3) most aesthetically pleasing cars in each level.