

Special Events Car Project

By

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Poway, CA

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SPECIAL EVENTS CAR



Designed By:

Built By:

Artist and Paintings By:

Russell W. Green

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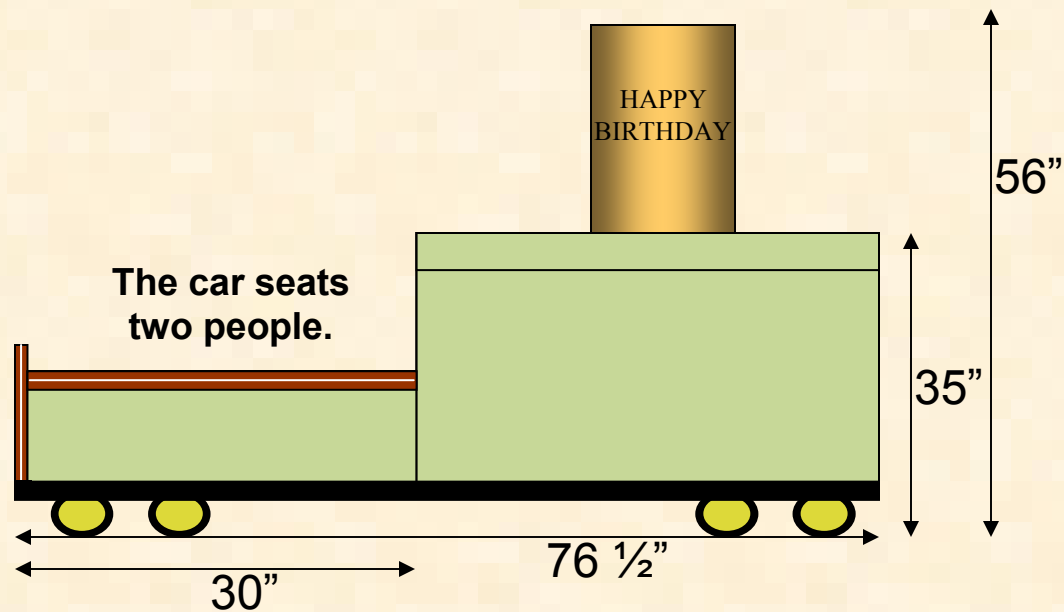
Diana Smith & Friends

Dedication

This car is for all those who give there time and effort towards Special Event activities at the Goat Hill Junction and Mackerel Flats Railroad.



SPECIAL EVENTS CAR



The top removable plaque depicts the days event.

The box portion of the car is used for storage and contains the cars electronics

The Special Events Car features

- 1. Interactive voice: Children push buttons for animal and other sounds.**
- 2. Interactive lights: Push buttons to change light speeds and light configurations.**
- 3. Theme oriented: Plaques placed on top of the car display event specific themes such as: Birthday Parties, 4th of July, Christmas, etc. The car itself is painted with murals depicting circus and carnival events.**
- 4. Audio System: The car contains a CD/AM/FM Radio, MP3 player and FM transmitter for use as an announcing system. Those who come for private parties may use their own MP3 players and music selections if desired.**

The Special Events Car features Cont:

- 5. Electrical features:** The car has approximately 350 LED lights using 18 different electronic circuits connected by over 400 feet of wire.
- 6. Marker Lights:** The car has front and rear marker lights. The rear lights form a “Smiley” face that winks.
- 7. Patriotic:** Two American Flags are proudly displayed from the cars top.
- 8. Functionality:** The car has a bench seating for two and is designed to operate at the 'end' of the train much like a caboose.
- 9. Training:** The car is self contained (including 12V battery and charging system) and requires about 60 minutes of training on it’s functionality. Training time may be reduced if operators are familiar with MP3 player functionality.

Car Design

The design evolved from defining a 'theme' for the car.

In this case, a circus and carnival theme was selected. A rendition of what it might look like was then made for each side of the main body of the car and that which would be put under the seating area.



Electronic Design

The electronic circuitry highlights the images and characters painted on the car and supports monitoring & control functions of the circuits, 12V DC battery and its charging system.



Construction



- The Frame -

Note added weight (two 50 pound plates) to center of frame. This is done to lower the center of gravity and is necessary because of the cars height.

Construction



-The Box -

Framed, allowing for double wall construction that will protect the wire runs and circuits embedded in the sides of the car.

Construction



Adding the seat frame and measuring carefully so that the paintings and seat will have proper clearance.

Construction



Completing the basic construction and beginning to build the interior (battery box and charger shown here).

Construction



The top is constructed and shown here with holes drilled and waiting for the chase lighting LEDs to be installed after painting.

Construction



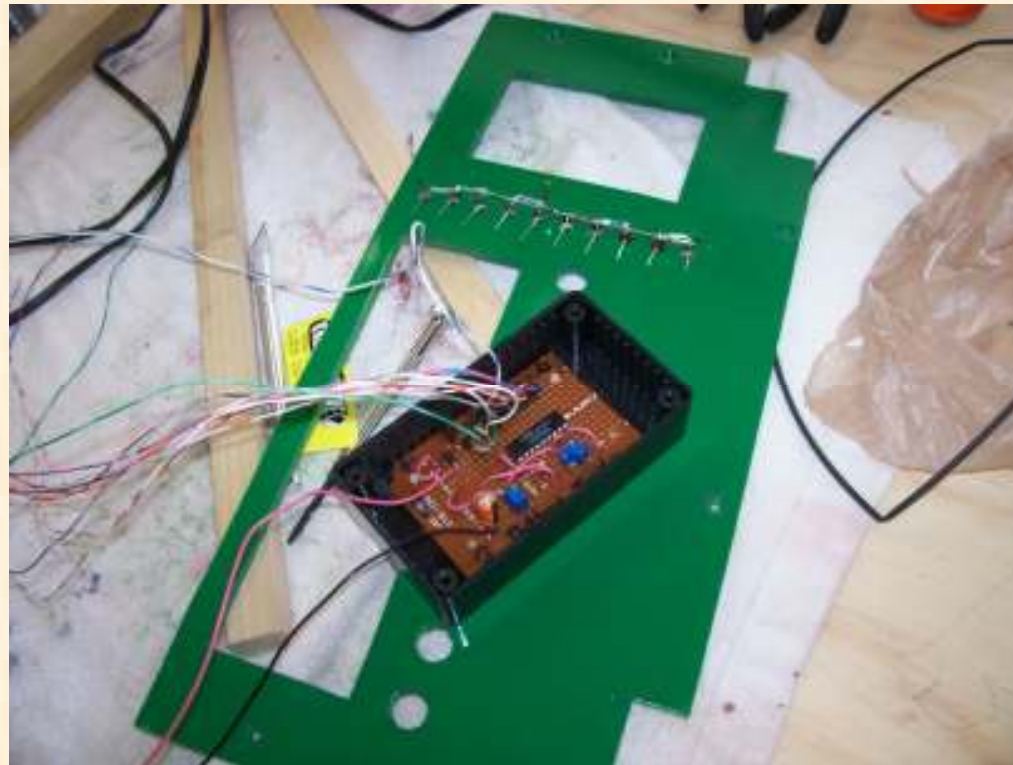
Primed and sketched, the drawings on the sides of the car are now observed by Diana for perspective, modifications and changes in addition to determining how to include the frame in the car design.

Construction



Scooby evaluating the construction techniques!

Construction & Electronics



The battery monitoring circuit fits into a small plastic electronic box and ready to be hooked up to the LED lighting system which is part of the control panel that operates the cars electronics.

Construction & Painting



The car primed and fitted and the initial painting put upon the car. One of the blank plaques that will be painted for a 'specific event' can be seen inserted in the top of the car. Note the holes in the boarder for the chase lighting systems.

Light Placement



Once the sides were painted, then putting holes in the figures within the painting were necessary so that the LED lights could be installed.

Circuit & Light Configurations



These images illustrate how the backs of the sides for the car were routed out (left image) to hold the circuit boards, the holes drilled for the LED's and the wires from the LED's that will eventually be hardwired to the circuit board. In this case, a 16 LED light sequence was designed for the Ferris wheel (right). The holes next to the outer edge of the Ferris wheel is for the sequencing and timing function buttons used to operate and control the Ferris wheel lights.

Wiring Organization



Keeping the wiring neat and organized is extremely important. Connectors are used to connect the electronics of each side to the main circuit buss located at the back of the box. There are a total of 18 Individual circuits used for voice, lights and monitoring of the car.

Main Frame Construction



Building of the main frame begins with terminal blocks that connect the LED Lights and circuits and the power supply sources to the circuits embedded into the sides of the car.

Electronic Wiring Layout



This illustrates how the wiring circuits and wiring harnesses were designed and installed within the main compartment of the car. In this picture the control panel is installed in the foreground.

Sound System Installation



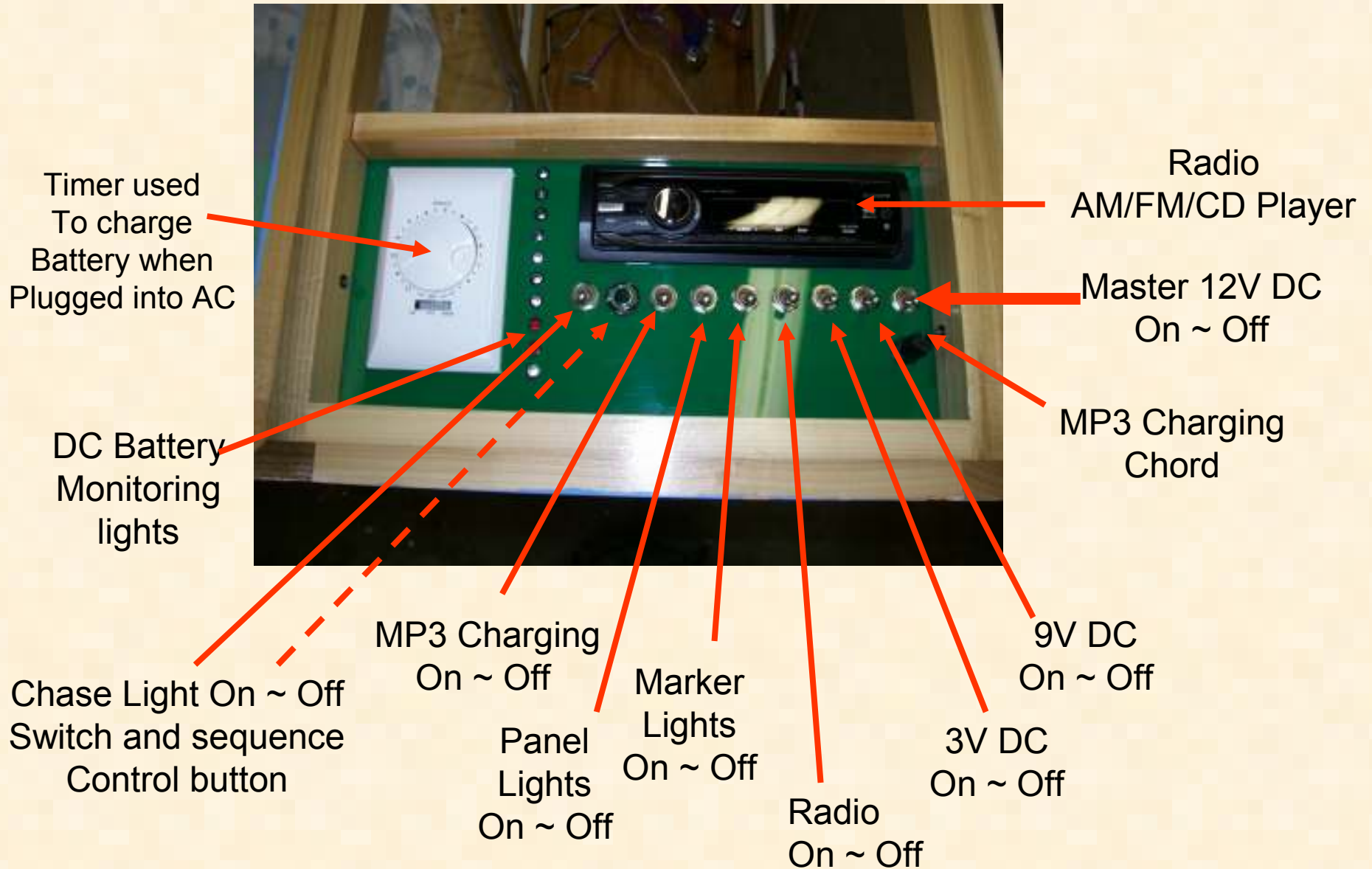
Adding the speakers and chase light wiring under the seat.

Control Panel & Plaque Holder



This illustrates the circuits control switches, AM/FM/CD radio and AC timer used with the battery charger. The MP3 player is shown next to the switches. The plaques that are used for the special events are stored to the right of the control panel in the slots shown.

Control Panel Layout



Examples of Display Plaques



The plaques are used for specific events. In these examples, they represent Christmas and birthdays. The plaques have different paintings on each side.

Seat & Wall Construction



The seat is fitted, and the inner walls added for the protection of the electronics.
The covered AC receptacle (middle-lower) contains the battery charger chord.

Finishing touches



The Purple Heart end plate was inlaid, cut and fitted as the final step.

Interactivity between child and car



The buttons by the dog and under the horse allow the children to push them and produce sounds that are associated with the animal. Light features also have this capability.

Details Make The Difference!



The End



A smiley face that 'winks' at you as it travels on down the road is a perfect marker light for the end of any train.