



## USA Trains Big Boy



Phoenix Sound Systems, Inc.  
3514 West Liberty Road  
Ann Arbor MI 48103  
[www.phoenixsound.com](http://www.phoenixsound.com)

phone: 800-651-2444  
fax: 734-662-0809  
e-mail: [phoenixsound@phoenixsound.com](mailto:phoenixsound@phoenixsound.com)

©2006-2008 Phoenix Sound Systems, Inc.

Dear Modeler,

Your USA Trains Big Boy is equipped with a Phoenix Sound System and a substantial amount of wiring associated with the smoke units, motor control and lighting. Many of you will want to install DCC Decoders or Remote Control Receivers. This supplement will help you sort out the wiring that will confront you when you lift off the top half of the boiler. Removing only 4 screws, located under the hatches on top of the boiler, will give you access to the internal wiring. There is no need to turn this monster over to get it apart. Several “Good Design” points go to USA Trains for this customer friendly feature !

We look forward to your feedback as always and we are committed to supporting you in getting the most fun out of this spectacular slice of American Railroad History.

With our Best Wishes,

Phoenix Sound Systems.

The components of the electrical system are summarized here and diagram 1 shows how these pieces are connected together.

### **Smoke units**

The fan motor speed on the smoke units is modulated by the rotation of the drivers so you get additional smoke and steam with each chuff.

### **Chuff Board**

This board allows the sound system and the smoke units to share the same wheel rotation reed switches. The chuff board controls the fan speed in coordination with the chuff sound.

### **Phoenix Sound 2K2 Board**

A lot of wires go to the sound board but the connections to other circuits are for power (terminals 1 and 2) and for sharing the chuff reed switches with the chuff interface board.

### **Switches board**

Contains the following user controls:

Motor: DCC(Delay)/Off/On(Full Power)

Smoke: On/Off

Volume: Up/Down

Work Lights: On/Off

Access Jack

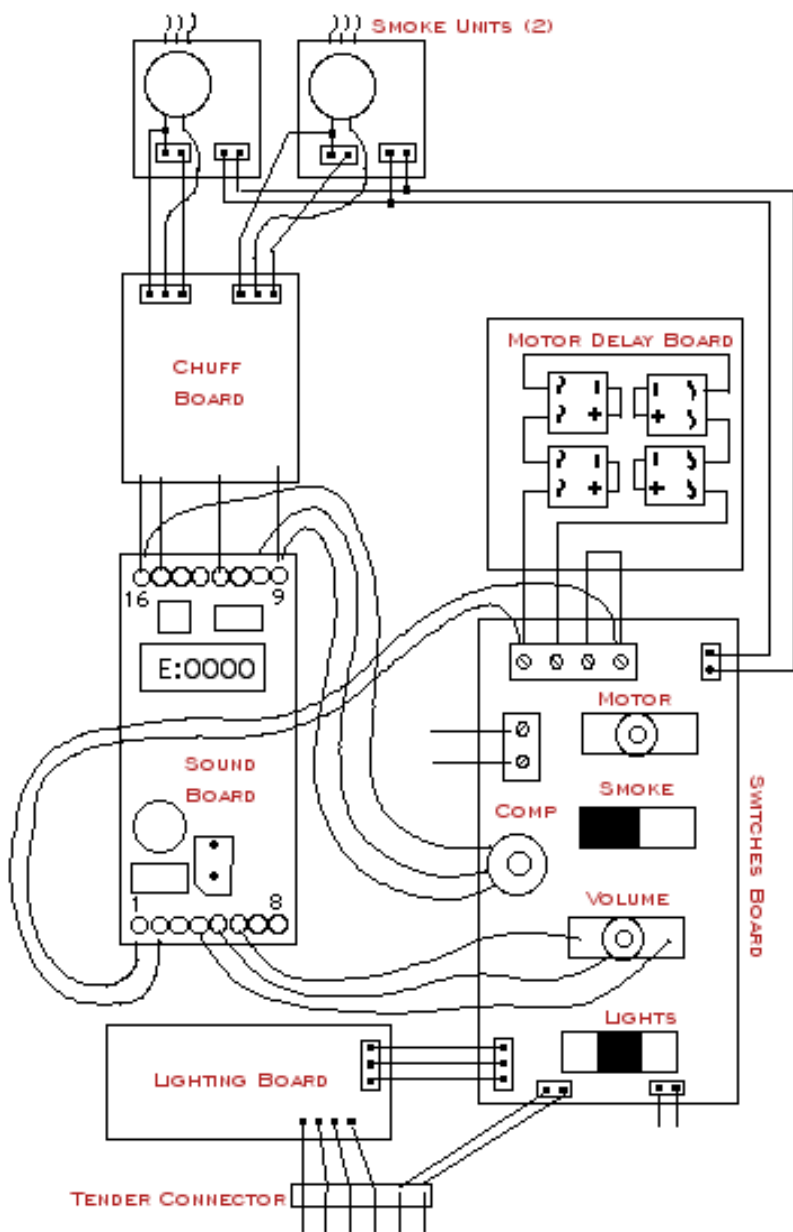
### **Lighting Board**

All the lights plug into this board. The board limits the track voltage to a safe value. The headlight is powered going forward and the tail light in the tender is powered going backward.

### **Motor Delay Board (Rectifiers)**

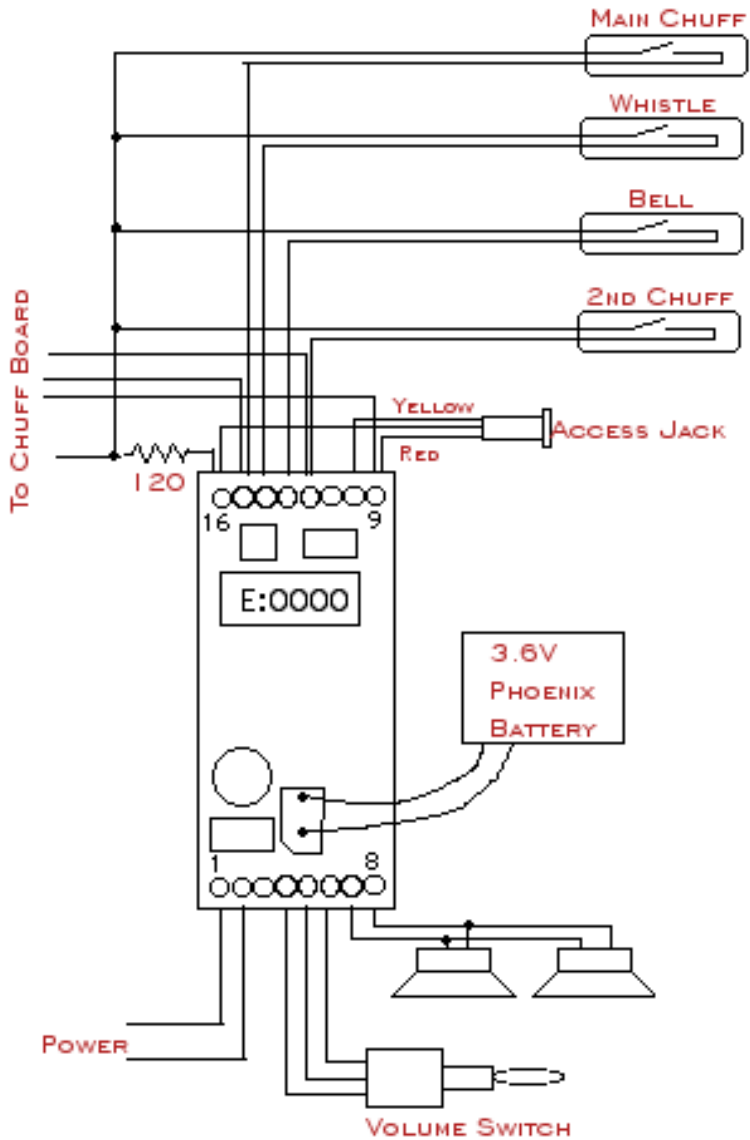
This is a string of Rectifiers that reduces the track voltage going to the motors by about 8 volts. This will allow the smoke units to get steam up before the locomotive moves. This board will also reduce top speed. If you switch the motor to On (Full), the motor is connected directly to the track and there is no motor delay. If you install a decoder or remote control receiver, disconnect the motor delay circuit and install your decoder or receiver in its place.

## Wiring between boards – other wiring not shown



November 2006

## Sound System Connections



November 2006

## Lighting and Motor Connections

