



# **USA Trains J1e Hudson**

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)

## Overview

The USA Hudson is one of the most sound ready locomotives available. The reed switches for whistle, bell and chuff are already installed in the locomotive. The chuff reed switch is used jointly by the smoke unit and the sound system. The volume switch, access jack, speaker and battery all have mountings designed specifically for them.

The sound switch controls whether power reaches the sound board or not. When it is off, no track power reaches the sound board. If the system is on when you turn the sound switch off, the sound system will still play to it's normal shutdown. It will not come back on with track power until the switch is moved back to the on position.

## Prior to Powering up

Because of the all metal construction a little extra care is needed to avoid electrical problems. After you finish your installation you should make the following checks with an ohm meter. Perform the test twice, once with the negative meter terminal to ground (terminal 16) and once with the positive meter terminal to ground. These checks are made with no power going to the engine.

1. TERMINAL 16 TO TERMINAL 1 - 100 OHMS OR MORE.
2. TERMINAL 16 TO TERMINAL 2 - 100 OHMS OR MORE.
3. TERMINAL 16 TO THE METAL FRAME -100 OHMS OR MORE.
4. TERMINAL 16 TO THE METAL BOILER -100 OHMS OR MORE.

If any of these measurements are below 100 ohms, there is a wiring problem. Check for any circuit components of any boards touching any of the metal engine parts. Problems can be caused by the smoke unit board shorting to the boiler, but this will not surface until you attach the boiler – which contains the smoker – to the frame of the locomotive.

## **Problems that have been reported**

The speaker wires should pass through a small hole formed by a notch in the rim of the speaker cavity and the cover plate. If the speaker wire insulation is pinched through due to improper alignment you will not get any sound. If the metal body is electrically connected to the positive rail the amplifier will be damaged.

The installed axle rotation reed switch and magnets may not be working properly. Unless you bought the locomotive with sound installed these have not been tested. Some may give fewer than 4 closures per revolution and the closures may not occur regularly.

We have modified the software since the original release to compensate for some of these variations but the functioning of the reed switches, particularly the axle rotation reed switch, should be checked with an ohm meter if the sound system is responding like there is speed variation but the locomotive is running smoothly (which it usually does).