

Replace LTI 4-8-4 smoke unit w/ Gilbert smoke unit

Bringing back the smoke and 'choo-choo'

American Flyer 4-8-4 Northern Smoke Unit Conversion

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Photos by the author

American Flyer collectors have always loved the Union Pacific 4-8-4 (Challenger) that Gilbert produced for the American Flyer train line. The engine was present in the line from when A.C. Gilbert acquired the name in the 1930's up until the company finally went under in the mid-1960's.

EXCITED FOR NEW MODEL

I was especially excited when Lionel announced they were reproducing this engine for their S gauge line! I ordered one of the first models.

After waiting many months for the engine to arrive, I was disappointed with the smoke unit's Choo-Choo

sound and the amount of smoke that it produced. The Choo-Choo sound was actually more like "squeak-squeak," and the smoke barely rolled out of the smokestack. The Railsound system sounded great and works fine.

LIONEL'S FIX

I contacted Lionel and asked them what could be done to correct this. They wrote a very nice letter back, stating they were aware of the problem, and they were working on a solution. In the May/June 2007 issue of the *S Gaugian* there was an article about how to correct the issues. This is done by changing out the existing gasket on the smoke unit. This May 2007 correction muffles the squeak so it cannot be heard over the Railsounds, but it did little to increase

smoke production, so I came up with my own solution.

After I disassembled the boiler the first time to make the Lionel correction, I thought the smoke unit looked fairly similar in shape to the original smoke units that Gilbert used in their smoking steam engines. I found an original Gilbert smoke unit. Comparing the two side-by-side, they looked nothing alike, but the mounting holes used to secure the unit to the chassis were identical. (Figure 1)

The following are step-by-step instructions, including parts that you will need (Figure 2); parts that will be replaced (Figure 3); and how to install an original Gilbert-made smoke unit into the chassis and boiler of the Lionel 4-8-4.

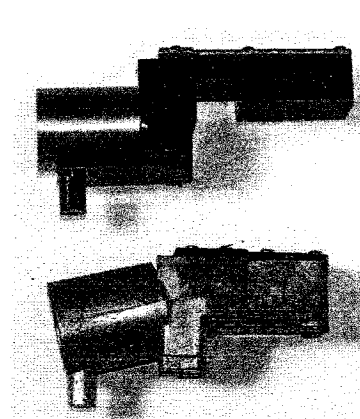


Figure 1. Lionel smoke unit (top)
Gilbert smoke unit (bottom)

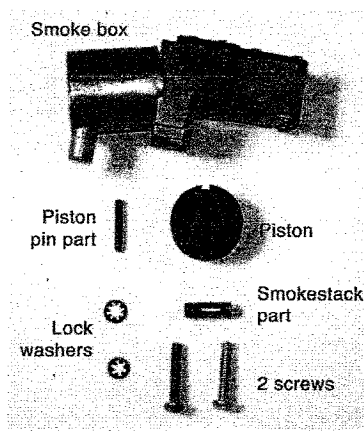


Figure 2. Gilbert parts (needed)

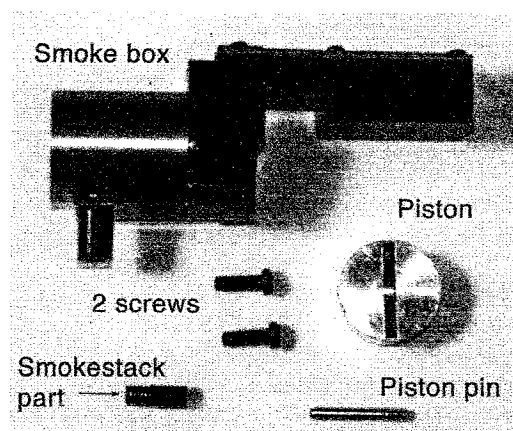


Figure 3. Lionel parts (replaced)

Step 1. Carefully remove the boiler shell from the chassis, exposing the smoke unit and electric motor used to propel the engine.

Step 2. Remove (un-solder) the wires from the existing smoke unit. These will be used to supply power to the re-installed Gilbert smoke unit.

Step 3. Remove the two screws securing the existing smoke unit to the chassis. These will not be used to install the new smoke unit.

Step 4. Remove the piston and push rod from the drive gear assembly. The piston will not be used; the push rod will be used.

Step 5. Remove the piston from the push rod by driving the piston pin from the piston. The piston pin will not be used.

Step 6. Install the Gilbert piston onto

the existing push rod by using the Gilbert piston pin.

Step 7. Install the piston push rod to the drive gear assembly by using the same hex head screw that was used to secure the push rod originally.

Step 8. Apply a small amount of oil into the Gilbert smoke unit cylinder and slide the piston into the cylinder.

Step 9. Install the Gilbert smoke unit onto the chassis using the two "new" pan head screws and lock washers using the same mounting holes in the chassis that held the Lionel-made smoke unit.

Step 10. Re-solder the wires to the tabs on the Gilbert smoke unit.

Step 11. Re-install the boiler shell on the chassis using the same method in reverse as was used to remove it.

Step 12. Install a new smokestack to the boiler shell and prepare to hear an

improvement in the Choo-Choo sound and the smoke development.

I rebuilt the original Gilbert smoke unit using a smoke element and wick assembly, part number XA14A208A (Figure 4). This, or one like it, can be found at many American Flyer parts dealers on the Internet or at local train meets. Also, I kept all the original Lionel parts, so in the future the engine could be returned to its original condition.

This is not a complicated conversion, and it will make your prized Lionel-built #48047 UP Northern steam loco "800" with Railsounds puff smoke and make Choo-Choo sounds just like the original made by the good old A.C. Gilbert Co. we all loved when we were kids! **S**

**Note: This fix voids the warranty on the locomotive.*