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# Installing QS-3000 on Train America UCUB

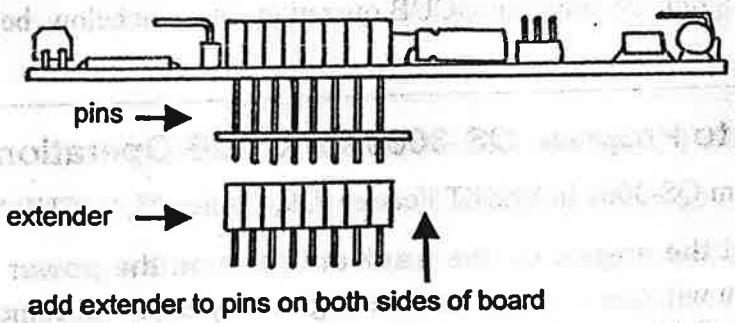
## Do Not Plug QS-3000 into UCUB Without First Adding Extenders

If you plug QS-3000 into UCUB without extenders, the QS-3000 board will touch the metal bracket on UCUB and short out, causing severe damage to the QS-3000 board.

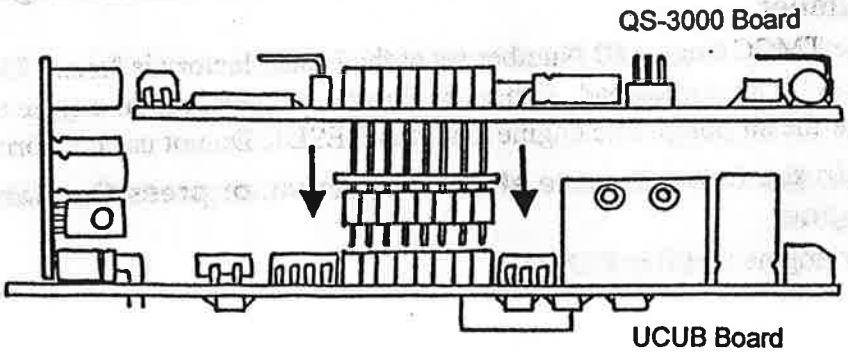
1. If the engine does not have a sound system, first install UCUB, following the UCUB installation instructions. Then plug QS-3000 into the UCUB board.
2. If the engine has MTH® ProtoSound®, remove the two original boards. Install UCUB, following the UCUB installation instructions. Then plug QS-3000 into the UCUB board.
3. If the engine has any other QSI designed sound system, remove the three original boards. Install UCUB, following the UCUB installation instructions. Then plug QS-3000 into the UCUB board.

## How to Install QS-3000 on UCUB

1. Plug the two extenders into the pins on both sides of the QS-3000 board:




2. Carefully line up the pins in the sockets on both sides of the UCUB board. Hold the center of the UCUB board firmly while pressing the pins into the sockets:



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# Operating QS-3000 with Train America UCUB

The Train America™ UCUB™ (Universal Command Upgrade Board) was designed for use with Lionel's® TMCC™ (Train Master Command Control). UCUB is not designed for conventional operation. QS-3000 can be programmed to work either in TMCC with UCUB or in conventional mode. Before QS-3000 will work with UCUB, it must be programmed for that system. The directions for programming QS-3000 to work with UCUB are given below.

## Set Up

1. Use a transformer that has a variable voltage output (like a ZW, Z-4000, or any standard Lionel transformer) to power the track. The variable voltage is necessary for programming QS-3000.
2. Connect the TMCC Command Base Station to the track. Check the green light to make sure it is on.
3. Do not use a PowerMaster while programming QS-3000. PowerMaster prevents QS-3000 from advancing through RESET Features. After QS-3000 is programmed, you can re-connect and use PowerMaster to run the engine using Command mode.
4. Adding QSI PowerGuard to the transformer, to protect the electronic boards from damaging spikes, is strongly recommended.
5. Program QS-3000 for UCUB operation, describe below, before operating the engine.

## How to Program QS-3000 for UCUB Operation

Program QS-3000 in RESET Feature #39, Choice #5, "UCUB." Here's how:

1. **Put the engine on the track and turn on the power**
   You will hear 3 "dings" and the engine air pumps will come on. The engine is in Reset. If you do not hear 3 "dings" when you first power up, turn the transformer off, wait 15 seconds, and turn on the power again. Leave the transformer throttle arm at the highest setting.
2. **Turn the throttle up using the red knob on Cab-1**
   **If the engine does not move, use Cab-1 to select the engine, using the TMCC Engine ID Number**
   The TMCC Engine ID Number set at the Lionel factory is "one." Using Cab-1, press ENG and then press "1" on the keypad. When the throttle is increased, the engine will move and you will continue to hear the air pump. The engine is still in RESET. Do not use the horn or bell button.
3. **Turn the Cab-1 throttle all the way down, or press the Cab-1 "DIR" button, to stop the engine.**
   The engine is still in RESET.

4. **Go to RESET Feature #39**

   **a. *Use the transformer throttle arm, not the Cab-1 throttle or "DIR" button.* Move the transformer throttle arm up to a high setting, then down to a low setting, to move through the RESET Features**

   Since the UCUB circuit board stops operating at about 6.5 volts, the engine will RESET back to the beginning if the throttle is turned too low. Mark the lower throttle position on the transformer throttle to avoid interrupting the power.

   **b. Stop when you reach RESET Feature #39. Leave the transformer throttle up**

   **c. *Use the Cab-1 horn button, not the transformer horn button.* Press the Cab-1 horn button repeatedly until you reach Choice 5**

   When you reach Choice 5, you will hear five "dings." QS-3000 is programmed for UCUB.

   **d. Turn the power off and back on to set the UCUB choice**

   The engine is now ready to run. Setting the UCUB Choice in RESET Feature #39 automatically sets the transformer for proper UCUB operation in RESET Feature #19.

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## How to Enter RESET and Program QS-3000

The TMCC system takes over or replaces the following QS-3000 Features: #0 Train Select and All Select, #1 Engine Select, #2 Train Number Set, #3 Train Number Clear, #5 Start-up Direction, #10 Coupler Operation, #25 Horn in Neutral, #40 Lock-out, #44 Engine Number, #45 Engine Number Clear, and #72 All De-Select.

*Note:* The Z-4000™ programming steps will not work with UCUB. Follow the instructions below instead.

1. **While running the engine in forward or reverse and at a very slow speed, press the Cab-1 horn button, release it; then immediately press the Cab-1 "DIR" button and release it**

   Listen for a "ding" three seconds later. The engine is in RESET.

2. ***Use the transformer throttle arm, not the Cab-1 throttle or "DIR" button.* Move the transformer throttle arm up to a high setting, then down to a low setting, to move through the RESET Features**
3. **After selecting a RESET Feature, leave the transformer throttle arm on all the way.**
4. ***Use the Cab-1 horn button, not the transformer horn button.* Press the Cab-1 horn button repeatedly until you reach the choice you want**
5. **To leave RESET, turn up the Cab-1 throttle**

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## How to Program QS-3000 Using SideKick II

1. **Set SideKick II to "Electronic"**
2. **Put the transformer throttle arm at a low voltage, but just above the 6.5 volt UCUB turn-off voltage**
3. **Use the SideKick II Boost Button to move easily and quickly through RESET Features**

   Stop at RESET Feature #39. Leave the transformer throttle at full voltage.

4. **Use the SideKick II Horn and Bell Buttons to select RESET Feature Choices instead of the Cab-1 Horn and Bell Buttons.**
5. **Turn the power off and back on to set the Feature choice**

## How to Enter Neutral

TMCC engines do not have a neutral state, but QS-3000 does. Neutral sounds and effects, like PFA (Passenger Freight Announcement), cab chatter, steam injector, pop-off, coal shoveling, and fuel filling, can still be heard with QS-3000. Because couplers are operated through the TMCC system, coupler sounds are missing from QS-3000 and UCUB.

1. ***Use the Cab-1 throttle or "DIR" button, not the transformer throttle arm.*** **To enter Neutral, turn off the power to the motor with the Cab-1 throttle or "DIR" button**
   Do not use the transformer throttle. The track power needs to remain at full voltage.
2. **Listen for an air release "pssht" in about 1.5 second**
   You are now in neutral.
3. **Use the Cab-1 horn and bell buttons to run the neutral sounds and effects normally**
   Do not use the transformer horn or bell buttons.
4. **To leave Neutral, turn up the Cab-1 throttle**
   The engine motors will engage, and the engine will leave neutral and move out.

## Special PFA Instructions

QS-3000 is programmed for a special PFA when used with UCUB. Do not program QS-3000 to a different PFA Choice.

If you want the engine to move out in the same direction at the end of PFA, use the Cab-1 throttle to enter neutral (Step 1 of "How to Enter Neutral"), instead of the Cab-1 direction button.

1. **While the engine is running in forward or reverse, hold down the bell button for 3 seconds or more**
2. **Listen for a single "hoot" then release the bell button**
3. **Bring the engine to a stop with the DIR button**
   The announcement will run automatically.
4. **To leave PFA, throttle up with the Cab-1 throttle or boost button**

## Warranty

Train America Studios accepts all warranty issues regarding QS-3000 operated with Train America UCUB. Contact Train America Studios, 970 Windham Court, Suite #9, Youngstown, OH 44512, (330) 629-7625.

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# QS-3000

# Out of This World!

## With Sounds Never Heard Before in Model Engines!

## QS-3000 makes your engines run better and sound better than any new engine you can buy!

### Doppler Run-by!

Dazzle your friends by dropping the pitch of the engine sounds right in front of them as the train races by. It's the sound effect anyone who's seen a train remembers, and until now it's been missing from model engines.

### Coupler Slack Action!

Get maximum realism. As the engine moves out, hear the slack being pulled out in the couplers on a long line of cars.

### Engine Maintenance!

Use authentic railroad horn signals to hear the engine take on water, refuel, be lubricated, or shut down. All the while the engineer and fireman talk real railroad lingo to each other.

### Steam Cocks and Drift Chuff!

Listen to whooshing chuffs as the engine starts up and the engineer clears the steam chest of condensed water. Normal chuffing begins as the engine picks up speed. Now slow the locomotive and listen to gentle chuffing since less power is needed. That's realism!

### Turbo Diesel!

Enjoy the high whine of massive horsepower driving the engine. Turn Turbo Diesel on and off by remote control.

### New Passenger Sounds!

Check out the all-new "Central Limited" passenger announcement and authentic baggage loading sounds.

*and many more full, rich, authentic sounds!*

### QS-3000: It Doesn't Get Any Better Than This

| | MTH ProtoSound® | QS-2+ | QS-3000 |
|---|---|---|---|
| Doppler Run-by | | | X |
| Coupler Slack Action | | | X |
| Engine Maintenance | | | X |
| Steam Cocks | | | X |
| Drift Chuff | | | X |
| Turbo Diesel | | | X |
| Pull Cord (Emergency Stop) | | | X |
| Cab chatter | X | X | X |
| Passenger Station or Freight Announcement | X* | X | X |
| Coil Coupler Sounds | X | X | X |
| Adjust overall volume from transformer | | | X |
| RR Horn Signals operate sound effects | | | X |
| No blocks—select engines with transformer | | X | X |
| Works with Lionel's Cab-1 | | X | X |
| Set up for two *independent* working couplers | | X | X |
| Engineer's voice replaces "clinks" and "clanks" | | | X |
| Improves UCUB and TMCC Compatibility | | | X |

**included in recent ProtoSound engines only*

### Get Control of Your Engines!

**Use actual railroad long and short horn blast signals** to turn sound effects on by remote control. It's so easy, it's a hoot!

| Horn Signal | Real RR Meaning | QS-3000 Sound Effect |
|---|---|---|
| 1 long, 3 short | protect rear of train | Water Scoop or Filling |
| 2 short, 1 long | acknowledge stop | Fuel Loading |
| 1 short, 1 long | inspect brakes | Lubrication |
| 2 or 3 short | move forward or reverse | Coupler Slack Action |
| 4 short | ask for instructions | Engine Shut Down |

**Operate without blocks.** While all the other engines stay off, use the horn button to quickly select and run your QS-3000 engines. Forget about blocks!

**Program your engine with confidence.** The engineer's voice tells you the number and name of the feature you've entered. Counting "clinks" and "clanks" is history.

**Restore missing sounds and programming ability** on engines with Train America's UCUB™ by upgrading to QS-3000.

**Add Dual Couplers** to engines, *including ProtoSound™*

**Adjust the volume quickly** and easily from your transformer. Stop turning your engines upside down.

QS-3000 gives you all this, and more, while keeping the sounds and features on earlier QSI designed systems. Your 3-Rail transformer is all you need to run QS-3000!

**Take Advantage of Special Introductory Prices:**

*If your engine already comes with QSI designed sound, you want:*

**QS-3000 Top Board $109**

Converts ProtoSound engines and all QSI designed sound systems to full QS-3000 performance. Not just a chip change, but a new sound system with twice the memory and more audio power than any previous system.

*If your engine does not have sound yet, you want:*

**QS-3000 Complete System $199**

Includes the power supply, speaker, and battery. Ready to plug into engines that have QSI reverse units.

**Available Only From QSI and QSI Dealers**

QSI®

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