



A Series of How-To Articles For DCS Operators

TIPS & TECHNIQUES

ARTICLE 4

Smoke Level & Labor/Drift

The following series of DCS tips & techniques has been created in the hopes that it will add to your enjoyment of the M.T.H. Digital Command System.

In these brief articles we'll try to point out and clarify DCS features that will make your Proto-Sound 2.0 (and TMCC) locomotives more fun, more realistic, and more interesting to operate. If you haven't yet tried DCS, we hope these articles will entice you to visit a DCS Demo Center, pickup up a handheld controller, and see what you're missing!

DCS

*Simply The Best
Way To Run A
Railroad*





ARTICLE 4

Smoke Level & Labor/Drift

M.T.H. locomotives — One-gauge, O gauge, and now HO gauge — are known for having the best smoke in model railroading. At times, however, the smoke has been known to overpower our layout rooms! With DCS, you now have the ability to customize the smoke output from your smoking PS2 engines and also to mimic the way real engines behave. The DCS handheld allows you to adjust the smoke volume in several ways.

From the DCS Remote, you can

- Turn smoke on or off completely-
- Adjust smoke volume to light, moderate, or heavy
- Program an engine to smoke more when it's under load and less when it's not

No other model locomotives offer the degree of control over smoke output that you have with a PS2 engine under DCS control.

As you read further, remember that to make any of these smoke adjustments, you must have your engine powered up in DCS mode and selected on the screen of the DCS handheld.

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HOW TO DO IT

A. Adjusting smoke levels

Turning smoke on or off

- Although all smoking M.T.H. PS2 engines have a **Smoke ON/OFF** switch on the bottom of the engine, this switch is ignored when the engine is running in DCS command mode. Instead, a simple press of key #1, **Smoke**, on the DCS Remote accomplishes this function. Pressing **Smoke** the first time turns smoke on and pressing it a second time turns smoke off.

Setting The Smoke Volume

Through the DCS Control Menu, you can set the smoke volume steamers and diesels. Changing the smoke level is easy:

Menu key: Press the MENU key while your locomotive is started or standing still.

Scroll and select CONTROL: Scroll the thumbwheel to CONTROL select the Control menu.

Scroll and select SMOKE VOLUME: Scroll to SMOKE VOLUME and press the thumbwheel to select the Smoke Volume.





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Edit the Smoke Volume: The DCS Remote will display Soft Keys 1, 2 and 3 labeled **MIN** for minimum, **MED** for medium, and **MAX** for maximum smoke output. Select the desired smoke level by pressing one of the soft keys and then press the thumbwheel to confirm. You will be returned to the CONTROL menu.

Press the MENU key twice when you're done: This returns you to the Engine screen so you can continue running trains. Your locomotive is now customized to your preference.



If your engine is running, after a moment or two you'll see the smoke level adjust to its new setting.

B. Customizing smoke and sound output

Changing smoke and sounds to simulate prototypical operations

Real engines work harder when pulling heavy loads up grades and work less hard when running downhill. You can simulate these and other hauling scenarios with all your PS2 engines through the DCS Remote's keypad.

Directly below the MENU key is a rocker switch with arrows pointing up and down. The upper end of the switch is labeled LABOR REV UP and the bottom is labeled DRIFT REV DN. Pressing these keys will modify the sound and smoke characteristics of the PS2 engine currently displayed on the DCS Remote's LCD screen. *NOTE that pressing these keys overrides the automatic Proto Chuff feature and turns it off for the engine you're running — more on this in the next section below.*

Pressing **LABOR REV UP** while a PS2 engine is running will cause a diesel engine to rev up, an electric engine's cooling fans to speed up, or a steam engine to switch to labored chuffing sounds — without changing the engine's speed. This will give the impression of the engine working harder. At the same time, smoke output (for smoking PS2 locomotives) will also increase.

Conversely, pressing **DRIFT REV DN** while a PS2 engine is running will decrease the level of diesel engine revolutions, slow down an electric engine's cooling fans, or shift steam engine sounds to a relaxed "drift" chuff — again without changing the engine's speed. This will give the impression of the engine working easier. At the same time, smoke output will also decrease.

For diesel or electric engines, the sound and smoke change will become more pronounced each time the switch is pressed until the end of the range of 8 levels of engine or fan revolutions is reached. The new sound level will remain as set until it is changed up or down by a press of either end of the rocker switch.

For steam engines, the sound and smoke change will remain in effect only as long as one end of the rocker switch is depressed. Upon release, the sound and smoke levels will return to their original settings. Steam engines have 3 levels of chuff and smoke volume. The highest rate is obtained by depressing **LABOR REV UP** and the lowest rate is obtained by pressing **DRIFT REV DN**. The middle rate is the "normal" rate when neither is depressed.

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Proto Chuff As described in “DCS Tips & Techniques #3: Fine Tuning Sounds,” Proto Chuff automatically makes an engine sound like it’s laboring harder as it accelerates up to higher speed, and working easier when it’s coasting down to a lower speed, with appropriate changes in smoke level. One thing to remember is that PS2 engines have Proto Chuff turned on (AUTO) by default from the factory. Pressing either LABOR REV UP or DRIFT REV DN gives you manual control of sound and smoke level, and will cause Proto Chuff to be turned off.

To turn Proto Chuff back on, do the following:

Menu key: Press the MENU key while your locomotive is started up in DCS mode and either running or standing still.

Scroll and select SOUND: Scroll the thumbwheel to SOUND and press the thumbwheel to select the Control menu.

Scroll and select PROTO CHUFF: In the Sound menu, scroll to PROTO CHUFF and press the thumbwheel to select

Use soft key S1 or S2 to turn Proto Chuff on or off: Press S2 (AUTO) to turn on the feature or S1 for OFF.

Press the thumbwheel to lock in your choice. This returns you to the Sound menu.

Press the MENU key twice to go back to running trains.

We encourage you to experiment with adjusting your PS2 engines to simulate different hauling scenarios, and we hope this and every edition of *DCS Tips & Techniques* will add to the fun of running your layout.





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SMOKE TIPS:

Don't add fluid to a smoking engine! One of the most frequent mistakes made with M.T.H. engines is adding smoke fluid while the smoke unit is powered up. Always ensure that you **turn off smoke** using key #1, SMOKE, on the DCS Remote before adding smoke fluid. If you're operating in conventional mode, simply power down the engine. *If smoke is on while adding fluid, the smoke fan may blow fluid inside the engine, potentially damaging the electronics.*

Do blow down the smokestack. It is common for bubbles to form in the smoke or diesel exhaust stack when adding fluid. Blowing gently down the stack after adding fluid will clear any bubbles and prevent them from blocking smoke output. If you've recently added fluid and your engine is not smoking, a puff down the stack may solve the problem.

Remember to add smoke fluid. When running at high smoke levels, smoke fluid is consumed at a faster rate. Be sure that your smoking PS2 engines always have adequate smoke fluid. Allowing the smoke unit to run dry with smoke turned on can burn the wick inside the smoke unit, leading to poor smoke output.