

# The Skagit Valley & Whidbey NMRA Clinic



## Wednesday, December 11, 2013

Meeting at 7:00 at Summer Hill [165 SW 6th Avenue, Oak Harbor] 2nd floor meeting room.

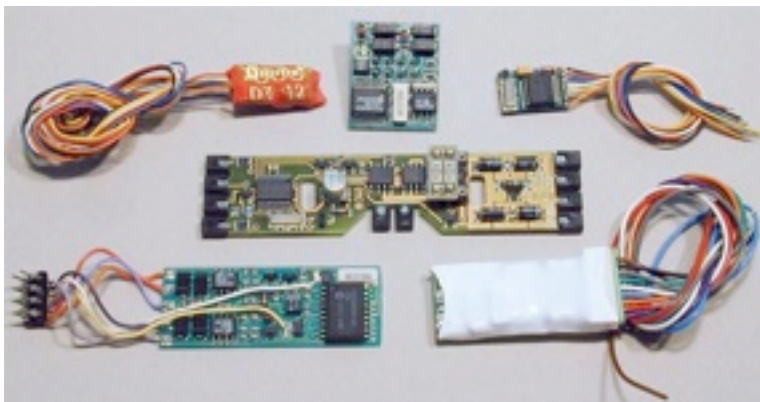
### Everything DCC


By Ted Becker

It isn't possible to cover "Everything DCC" because even Ted doesn't know it all and there isn't enough time. What he will try to do is answer a few of your questions and point you toward some useful tools and information, especially DecoderPro software, how to install and use it.



If there are any particular DCC questions you have or think the group might have, please feel free to email him at [rail.bird@att.net](mailto:rail.bird@att.net) and he will try to include them in the program or answer them individually.



The Skagit Valley & Whidbey NMRA Clinic						
Model Railroad Calendar for December 2013						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
			Clinic at 7:00 @ Summer Hill			
15	16	17	18	19	20	21
						Model Train Festival at WSHM in Tacoma
22	23	24	25	26	27	28
						
29	30	31				

### Further information about events:

Dec 21 - 31: 18th Annual Model Train Festival at the Washington State History Museum, 1911 Pacific Avenue in Tacoma. 10 am to 5 pm every day except open until 1 pm on Christmas Eve and closed on Christmas Day. Multiple modular layouts in N, HO, O, and G, Kitsap Live Steamers exhibition, Playmobil display, Operation Lifesaver booth, train play areas for the little ones. Visit the largest permanent model train layout in WA state, built and operated by the Puget Sound Model Railroad Engineers (PSMRE) on the fifth floor. Enjoy the excellent history museum exhibits. Info:- [www.washingtonhistory.org](http://www.washingtonhistory.org) or call Mark Sylvester at 253-798-5891. Museum entrance fees are \$8 / 7 / 6 for adults, seniors, student or military, respectively. Children 5 and under are free.

It is still not too early to start thinking about attending the **The NMRA 2015 National Convention** in Portland, Oregon, August 23 - 29, 2015. It is right in our backyard and if you have not attended a national convention, you should at least once, especially with it being so close! They have their website up at [www.nmra2015portland.org/](http://www.nmra2015portland.org/)



### Trackside Model Railroading™

**Trackside Model Railroading:** A new online model railroad magazine! This is a well designed, clean look magazine that wants to highlight photographs of layouts as well as how-tos and information from the 1:1 scale models as well as models and product announcements. The November issue has a feature story on Chuck Ricketts' On30 layout in Olympia that some of you may have seen during the annual Olympia Open Houses. It has a "cover" price of \$1.89. To check out the emag, download their Free Premiere issue at: <http://www.tracksidemodelrailroading.com/preview..html>

From Susan: "Destination America (a Discovery channel show) has a new series called **Railroad Alaska**. It is about the Alaska railroad and the previews look pretty good. Thought some of you might be interested."

# November's Clinic:

From the 4th Div. Grab Iron

Tom Buckingham/ Photos by Al Frasch

Rich Blake started the meeting to a new record in attendance—43. This month's feature Clinic was by Al Carter. Al had just returned from a Seattle to Australia repositioning cruise with his wife Nona. His comment: "hot, humid and fabulous!"

Al's clinic was on building hydrocal structures. Al feels that there is a stigma about hydrocal structures that is not deserved. There are any number of sources for excellent hydrocal structures and in Al's opinion the finished kit is oftentimes more realistic that it's wood or plastic counterpart, especially stone and brickwork. It is easy to get good sharp details. Hydrocal is also easily kitbashed. On the negative side hydrocal is more easily breakable and does have significant weight—particularly if you are intending to use one or several in a module! (Plaster, like plaster of Paris, is much like hydrocal but is softer.)

The tools one needs to work with hydrocal are 220 grit sandpaper and a flat surface to mount it on; flat files, sanding sticks and emery boards; a scribing tool and/or a dull hobby knife; bar clamps; weights; a small square, steel straight edges—both 6- and 12-inch lengths; yellow carpenter's glue or epoxy; 1/4" square stripwood for corner bracing, spray primer; and spackle.

When beginning construction dry fit the pieces first. It will most likely be necessary to remove "flashing"; use your flat files to make the edges straight and flat. Cut corner braces or gussets and test fit one more time before beginning the gluing process. Have your bar clamps ready, glue one corner together and add strip wood for strength. Next, add the other walls and strip wood. Finally use your bar clamps to hold it firmly together, making sure the structure is square.

Once the structure is complete you will need to fix the joints. Mix a small amount of hydrocal or use joint compound. Mist the joint carefully. Apply the mixture with a small spatula. When the mixture is semi-dry, carve in the stone or brick lines at the corners.

Next, add the mortar. Several methods work—use a light grey paint, use slightly diluted joint compound or use your underlying



primer color as the mortar color. Finally

drybrush

on the color of the bricks.

If by chance you break a piece, don't pull your hair out (not an option I have). First check with the manufacturer. Many replace parts at no charge. If that is not an option use yellow glue sparingly and brace the back side thoroughly.

There are different schools of thought on priming before painting. CC Crow and Downtown Deco recommend priming first, while others do not. Al showed two test pieces that he had done. On each he had primed half of the piece and left the other half unprimed. It was difficult to see any difference in the two. If you do prime, Al suggested using

Wal-Mart's "Color Place" primer. It is about \$.96 per can.

There are several sources of hydrocal kits and many of the sources have online help and tutorials:

Downtown Deco

[www.downtowndeco.com/](http://www.downtowndeco.com/)

C.C. Crow [www.cccrow.com/](http://www.cccrow.com/)

Guts, Gravel & Glory

Morse Productions

[morseproductionsproducts.blogspot.com/](http://morseproductionsproducts.blogspot.com/);

Thomas Yorke [trevorcreek.tripod.com/](http://trevorcreek.tripod.com/)

Cibolo Crossing; Motrak Models

[www.facebook.com/pages/Motrak-](http://www.facebook.com/pages/Motrak-Models/134023453307135)

[Models/134023453307135](http://www.facebook.com/pages/Motrak-Models/134023453307135)

Railroad Kits (Ed Fulasz) [www.railroadkits.com/](http://www.railroadkits.com/)

South River Model Works

[www.southrivermodelworks.com/](http://www.southrivermodelworks.com/)

Other sources include: Mike McNamara

[mainecentral.blogspot.com/2011/03/hydrocal-structure-kits.html](http://mainecentral.blogspot.com/2011/03/hydrocal-structure-kits.html)

and Dioramas Plus [www.dioramasplus.com/site/](http://www.dioramasplus.com/site/)

A very informative clinic by Al and one that will encourage me to dig out some as yet unbuilt Ed Fulasz hydrocal kits!

Finally, Bob Erley had a couple of interesting items to share. First he showed us a Proto 87 turnout that he had constructed and automated. And then he showed us his HO scale locomotive that runs on an RC battery. He says he gets about 30-45 minutes out of each battery. The best part is there are no reverse loops or shorts. And it is all run by his wireless Digitrax system. He was even willing to run the train across the floor for us! Thanks, Bob.



# The Miscellaneous Information Pages

The Skagit Valley & Whidbey Clinic is looking for a volunteer to take over the monthly newsletter starting with the January 2014 edition. The job requires a familiarity with sending email attachments, saving documents in the PDF format, fairly simple editing and either Photoshop or equivalent photo manipulation skills. Oh, and one should be a decent writer/author, however, as evidenced by the outgoing editor, one doesn't have to be super accomplished at any of these things. Interested? Please contact Susan Gonzales ([fishnutztoo@Frontier.com](mailto:fishnutztoo@Frontier.com)), Rich Blake ([slugsmasher@oakharbor.net](mailto:slugsmasher@oakharbor.net)) or me ([afrasch@whidbey.com](mailto:afrasch@whidbey.com)). Thank You.

## SWAP TABLE

The Skagit Valley & Whidbey Swap Meet Table is back! Bring what you want to sell (price well marked) or give away! Please arrive by 6:30 to set up or 6:40 to buy.

## Pre-Clinic Dinner

We will once again get together for a Pre-Clinic dinner at the San Remo Mediterranean Grill in Oak Harbor [421 NE Midway Blvd] at about 5:15. They have an area reserved for the Skagit Valley & Whidbey Clinic. If you like Italian food, pizza or even Greek - come and enjoy the informal get together!

## A Big Thank You from Mandy and Quinn

Mandy and Quinn would like to thank the club members for allowing them to bring their train items for the estate sale. It was a great success and they really appreciated the opportunity. Anyone wishing to purchase left over items can contact Susan or Phil Gonzales for further information.

## Thank you

Thanks for reading the newsletter for the past few years. My first newsletter was the January 2008 edition and the *Skagit Valley & Whidbey NMRA Clinic* has grown quite a bit in the 6 years and about 60 newsletters since then. We went from meetings where an attendance of 12 was pushing the Mt. Erie Fire Hall to capacity, over to the Dugwalla Bay Community hall which could handle the 20 to 25 people we had coming, but, oh, that airplane noise, and then moving further south into Oak Harbor at the Summer Hill Retirement facility. There we are having groups in the 30's regularly. I would hope that some of that increase in attendance is due to the information which has been included in the monthly newsletter which at this time goes out via email to 102 people and snail mail to 3 others.

As much as I have enjoyed the editing and 'publishing' of the newsletter, this edition should be my last. This is due to my taking a position with the national OPSIG group as Back Issues Manager and New Member Packet "sender outer." This will take even more time from my surprisingly full schedule - those of you that are retired know how busy one gets - how in the heck did we get anything done when we worked at a job???

I will still be at the clinics and at any layout that has operations - can't get rid of me that easy! To those who have contributed 'stuff' for the newsletters, thanks! Please continue to send your layout photos and other great information to the new newsletter editor. And for those who I bugged to 'please send me that d\*mn promo material for the front page' - thanks for getting me the information. I hope everyone has enjoyed our little free publication and that it may continue under the 'new management' to be a terrific tool to help promote what they rightly say is the "World's Greatest Hobby."

See you at the clinics,  
Al Frasch

Jack Tingstad will have his **13th Annual Open House** in Coupeville for any interested in dropping by. Also, Jack has a display (until Dec. 2) at the Coupeville Library for National Model Railroad Month.

(picture by Rich Thom)



**MODEL RAILROAD OPEN HOUSE**



Saturday & Sunday  
Nov. 30 & Dec. 1  
10AM to 4PM




**508 Broadway in Coupeville**  
A donation of food for the local Food Bank, please


# 40<sup>th</sup>

## ANNUAL MODEL RAILROAD SHOW

January 18 - 20, 2014

**A NORTHWEST FAMILY TRADITION!**  
Don't miss dozens of model railroad layouts, displays and activities for guests of all ages.





If you are interested in helping at the Pacific Science Center show, the 4th Division's major fundraiser of the year, contact Jeff Moorman  
206-367-2377 kb7rr@arri.net

## Videos of the Month

**Trains** magazine has created a logo to follow the UP4014 restoration <http://trn.trains.com/bigboy> and you can keep up via some of these short videos from Union Pacific on their progress towards the day when the Big Boy will be towed to Cheyenne to finish the restoration. Some of the newest ones are:  
<http://t.co/5yTylutQsr>  
<http://t.co/IAbUwfKie0>  
<http://t.co/54x3ksrWEZ>  
<http://t.co/mKk5plyTC3>  
<http://t.co/nlJmS8BBHU>



Each month I would like to list a few YouTube or other Train related video finds - so if you have some contributions, please let me know and I will list them here!

Al Carter dropped by Performance R/C in Burlington and says.... "Suzy is now starting to carry the True Color paint line, replacing the Floquil/Polly Scale railroad colors. She has not ordered the whole line in, but rather is bringing in colors as the old stock is sold off.... noticed about 10 colors in the rack so far."  
 If not familiar with this brand, check their website at: [www.trucolorpaint.com/](http://www.trucolorpaint.com/)

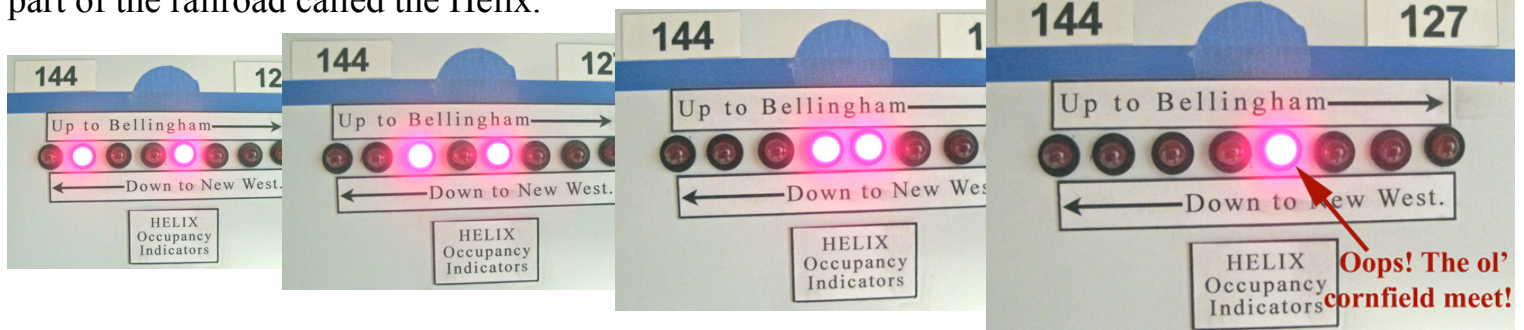


## Local Layout Progress

Jim Tartas has been working on his layout up on Fidalgo Island and, as can be seen from these three pictures, has the room very well finished with all track and much of the scenery in place. If you are up in that area, just drop Jim a note to see if you can stop by and take a look for yourself.



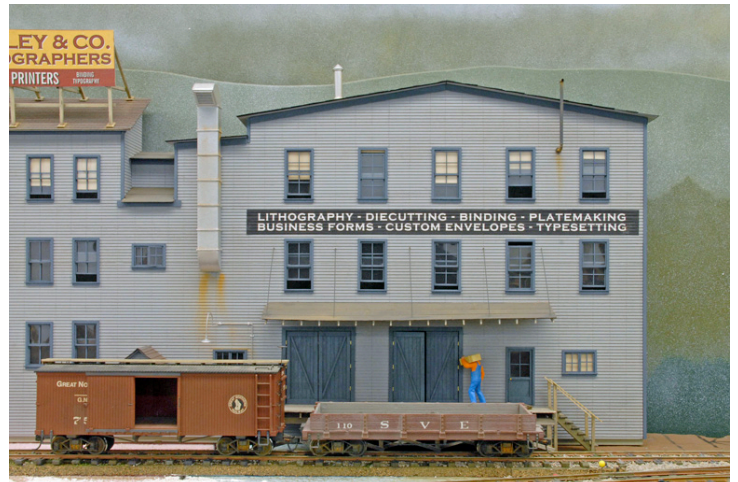
Meanwhile, on the *Pilchuck Division of the BNSF* layout in Freeland, the Signal Crew (aka Jon Wilbert and Al Frasch, mostly Jon!) has installed occupancy LEDs on the Dispatcher Board to keep the Dispatcher aware of what is going on in that hidden part of the railroad called the Helix.





## John White's *Skagit Valley Eastern Railroad* [SVE]

Since John White's layout has not been open at his house for his famous December Was'l event, John and I thought we should share some photographs of his layout that were taken by Rich Thom. If you have not seen his layout up on Fidalgo, it is a treat! It is an early 20th century On30 layout featuring Concrete, Oso and other areas in the general Snohomish, Skagit and Whatcom counties. He is VERY good at construction of structures and detailing locomotives and rolling stock as you will see below. So, enjoy the show! (The first 11 are of the Concrete area, the next 8 the Oso area, with the last being the area under construction going up the Whickersham & Chuckanut branch).











The SVE's Whickersham & Chuckanut branch includes modules by Dick Haines and Al Frasch.



# Skagit Valley and Whidbey NMRA Clinic

## Schedule for 2013/2014

Notes: All regular meetings are held at the Summer Hill Community in Oak Harbor from September through June on the dates shown starting at 7:00pm or as otherwise announced.

### NMRA Membership is encouraged

See [www.nmra.org](http://www.nmra.org)

DATE	TOPIC	PRESENTOR(S)
August 14, 2013	Summer BBQ at John Marshall's in Coupeville	
September 11, 2013	Tesoro Crude Rail Operations	Bob Gilbert
October 9, 2013	Mini-Clinics: Decals	John White
	Hemlock trees	Cliff Aaker
	Scratchbuilding with common materials (i.e. free)	Rich Blake
	Tortoise in a tight spot	Rich Thom
November 13, 2013	Hydrocal Structures	Al Carter
<b>December 11, 2013</b>	<b>All Things DCC/Decoder Pro</b>	<b>Ted Becker</b>
January 8, 2014	Be a Rock Star/Make and Take Rocks with a special presentation by Jim Tartas on Bragdon's Geodesic foam/resin method	
February 12, 2014	Scenery Clinic	Tom Hawkins
	Backdrop painting	Jack Tingstad
February 22, 2014	Operating Sessions hosted by: Al Frasch, Jack Tingstad, Phil Gonzales, Dick Haines, Tom Hawkins	
March 12, 2014	Prototype Steam Locomotives	Stathi Pappas
	CMO Mt. Rainier Scenic Railroad	
April 9, 2014	2 Views from Above/Structure Roofs/roof top detail	Al Carter
	Removable Mtns. w/Tunnels Construction Techniques	Norm Myers
May 14, 2014	Vehicle Lighting	Dr. Nick Muff
June 11, 2014	Air Brush Painting 101 (in Phil and Susan's backyard)	Rich Blake

### Volunteers or Press Ganged

NMRA Liaison and Reportage	Al Carter
Keeper of the Purse [aka the Bucket]	Iver Johnson
Layout Design Aficionado	Tom Hawkins
The DCC & Audio Visual Main Mann	John Mann
Newsletters and Announcement Flyers	Al Frasch
Refreshments	Phil Gonzales
Keeper of the Rolls[aka the Membership Roster]	Jon Wilbert
Clean-up Artists	- open -
The Tin Can Gaffers	Curt and Iver Johnson
Competition Shepherd	- open -
Program Organizer	Susan Gonzales
Clinic Chair	Rich Blake



## TOOLS FOR MODEL BUILDING AND SCRATCHBUILDING

Jack Burgess © 2013

### Basic Tools

Tweezers - Similar to the one I use (Stainless steel):

[www.grobetusa.com/tweezers\\_tongs/tweezers/pattern3.html](http://www.grobetusa.com/tweezers_tongs/tweezers/pattern3.html)

or

[www.ottofrei.com/store/product.php](http://www.ottofrei.com/store/product.php)

productid=7979&cat=0&page=1

Knives - Excel K18 Grip-On Non-Roll Soft Handle Knife

"Sprue cutter" - Search for "Cutting Tweezers"

Pin Vise - Easy Lock Pin Vise - [www.modelexpo-online.com/product.asp?ITEMNO=MT1079](http://www.modelexpo-online.com/product.asp?ITEMNO=MT1079)

Tungsten Carbide Drills for use with drill press - (<http://drillcity.stores.yahoo.net/> )

Digital calipers - Mitutoyo 500-195-20 (from Amazon sellers)

### Other Tools

Pliers and cutters - Xuron pliers and cutters from Small Parts ([www.smallparts.com](http://www.smallparts.com) ). Some of my favorites:

Xuron 450 Tweezer Nose Pliers

Xuron 410 Micro Shear Flush Cutter

Xuron 489 Combination Tip Pliers (Round/flat tip)

Xuron 440 High Precision Scissor

Xuron 575 Micro-Bender

Jewelers Saw - Knew Concepts 3" Jewelers Saw ( [www.knewconcepts.com/index.php](http://www.knewconcepts.com/index.php) )

Mission Models Grab Handler ([www.missionmodels.com/product.php?productid=16462](http://www.missionmodels.com/product.php?productid=16462))

Waldon Punch and Die sets ([www.rollmodels.com](http://www.rollmodels.com) )

GRS Short Third Hand On Weighted Base ([www.ottofrei.com/GRS-Third-Hands-On-Weighted-Base.html](http://www.ottofrei.com/GRS-Third-Hands-On-Weighted-Base.html) )

Proxxon Precision Machine Vise ([www.proxxontools.com](http://www.proxxontools.com) )

Small drill bits - Drill Bit City (<http://drillcity.stores.yahoo.net/highspeedtools.html> )

Original Right Clamp ([www.coffmaneng.com](http://www.coffmaneng.com) )

### Soldering

Weller WES51 Soldering Station ([www.amazon.com](http://www.amazon.com) )

300 watt PBL Resistance Soldering machine ([www.p-b-l.com](http://www.p-b-l.com) )

Supersafe solder flux ([www.ccis.com/home/hn/](http://www.ccis.com/home/hn/) )

Refractory ceramic fiber soldering pad ([www.micromark.com](http://www.micromark.com) )

### Power Tools

Cameron Micro Drill Press Series 164 ([www.cameronmicrodrillpress.com](http://www.cameronmicrodrillpress.com) )

Proxxon Disc Sander Model TG125/E ([www.proxxontools.com](http://www.proxxontools.com) )

MicroLux Miniature Table Saw with Accuriser II Fence ([www.micromark.com](http://www.micromark.com) )

Proxxon Micro Bandsaw MBS/E ([www.proxxontools.com](http://www.proxxontools.com) )

### Sand Blasting

12"x18"x12" high storage box with acrylic view window, shop vacuum exhaust; article in February 2012 *RM*

"Pencil" sand blaster - ([www.cycloneblasters.com/pencil.htm](http://www.cycloneblasters.com/pencil.htm) )

### Painting

Air booth design based on the article "The Paint Shop spray booth" in the January 1988 *MR* by Andy Sperandio with Gordy Odegard

Wash bottles - Nalgene Vented Wash Bottle, Acetone, Part B003OBYXBE ([www.smallparts.com](http://www.smallparts.com) )

From Al Carter:

"Here is a handout that Jack Burgess prepared and handed out at the National Narrow Gauge Convention in Pasadena this August. Thought you might want to add it to the newsletter, as there is some good info on tools. Jack had a similar article in one of the M/R mags recently."

Dick Haines has developed a four page worksheet for setting DDE (see below for what that is) in your HO Tsunami sound decoders. This looks like a very detailed sequence for those of you wishing to get that exhaust to match what the speed and acceleration/deceleration indicate it should be in the real thing. Please forward any questions/comments to Dick.

Thank you Dick for sharing!!

## WORKSHEET to Set Dynamic Digital Exhaust (DDE) CVs in Steam Engines Only - For High-End Tsunami Decoders Only -

(See end note for overview of how DDE works)

By: Dick Haines

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This worksheet will help you set CVs using *Tsunami Sound System Decoders in Steam Engines only*. Note, some low-end decoders won't work. The basic sound effects produced are those of timbre and volume of the exhaust chuff sounds and side-rod clank that will vary in response to changes in load on the engine's motor, i.e., changes in throttle setting. In climbing a steep grade, for example, the chuff will become louder, deeper and powerful while side-rod clank will soften. When drifting downgrade the exhaust chuffs will become softer and almost hissing while side-rod sounds will become more noticeable as in real engines. Note: The larger the speaker the better effect.

It is always best to adjust one CV at a time and in small steps. **NEVER CHANGE SEVERAL CVs AT THE SAME TIME.** All following CV values (except CV<sub>131</sub> and CV<sub>135</sub>) are only suggested starting values and should be varied to obtain whatever effect is desired.

Date of CV adjustments: \_\_\_\_\_

Record Your Input Settings Here for **Engine No.** \_\_\_\_\_ **Type:** \_\_\_\_\_

Check here  
when done

Step 1. \_\_\_\_ Set CV<sub>131</sub> approx. 128 (Exhaust Volume)

Note: (range 0 – 255) Set to a mid-level setting to give DDE settings below room to change. Value of 128 is factory default.

Step 2 \_\_\_\_ Set CV<sub>135</sub> = 100 (Rod clank volume)

Note: (range = 0-255) Ditto above note. Value of 32 is default. Setting to 100 is better.

***General method to discover best sound effect is described in Steps 3A – 3C.***



Step 3A. ____ Set CV <sub>177</sub> = 1 (Throttle sensitivity) Increase throttle to speed 40 and allow engine to reach constant cruise speed. Now, change to new speed (up or down) fairly fast.	Note: range (1-255) Using 0 will disable DDE.
Step 3B. ____ Set CV <sub>177</sub> = 50 and bring engine to constant speed as before, then... change speeds (up or down) as before.	Note how exhaust volume sound changes.
Step 3C. ____ Try other settings for CV <sub>177</sub> until you obtain desired sound effect. -----	Notice how only a small throttle change will produce a large change in exhaust vol.  Be sure to record your final CV setting in Table 1 below.
Step 4 ____ Set CV 178= 250 (Load sensitivity)	Note: (range 0-255) Setting a value of 0 will disable DDE so don't do it.
Step 5 ____ Set CV 179 = 30 (Attack time constant)	Note (range 1 – 255) Higher settings give greater sensitivity (faster response) to throttle changes. Don't use too high a value.
Step 6 ____ Set CV <sub>180</sub> = 30 (use same value as CV <sub>179</sub> )	Note (range 1 – 255) Don't use too high a value.
Step 7 ____ Set CV <sub>181</sub> = 254 (Exhaust-low volume load)	Note: (range 0-255) Limits how much the volume will increase/decrease with change in throttle setting. Larger numbers produce more volume change.
Step 8 ____ Set CV <sub>182</sub> = 240 (Exhaust-high volume load)	Note: (range 0-255) Controls the rise in exhaust volume with throttle change.
Step 9 ____ Set CV <sub>183</sub> = 50 (Side rod clank-low volume limit)	Note: (range 0-255) Controls percentage of drop in side rod clank volume during deceleration. A 0 setting will yield no change.
Step 10 ____ Set CV <sub>184</sub> = 50 (Side rod clank-high volume limit)	Note: (range 0-255) Sets percentage of change in side rod clank volume. A 0 setting will yield no change.
Step 11 ____ Set CV <sub>185</sub> = 3 (Baseline frequency)	Note: (range 1-255) Changes the tone or timbre of exhaust chuff sound. Lower numbers produce deeper sounds. Use higher value if chuffs run into one another at high speeds. Experiment with different numbers over the full speed range planned for locomotive.

Step 12 \_\_\_\_ Set CV186 = 240 (Control gain)

Note: (range 0-255) Controls size of change of basic chuff sound. Lower values produce minimal change, i.e., a strong, deep chuff regardless of locomotive speed. Larger values produce greater sensitivity to change.

Step 13 \_\_\_\_ Set CV187 = 254 (Filter damping)

Note: (range 200 – 255) This filter changes the overall tonal “shape” of exhaust chuff. You may need to listen carefully for the effect.

Step 14 \_\_\_\_ Set CV188 = 96 (Tracking coefficient)

If load compensation is disabled (CV188=0) then DDE will still sense the load on motor and will compare it to setting of CV188. For motor with 75% efficiency set CV188=96

Then (OPTIONAL)

Go to Step 15 to create a much wider variation in exhaust sound while running your locomotive over the layout with medium to heavy loads/ consist.

### **Special Procedure to Adjust DDE Tone, Timbre, and Volume for Grades and Loads**

Step 15 \_\_\_\_ Set CV212 = 0

(Load compensation)

Step 16 \_\_\_\_ Set CV188 = (initial) 100

(DDE Tracking coefficient) To adjust exhaust sound under no load conditions run locomotive with no cars on level track and gradually reduce value of CV188 = 100 setting until a drop in exhaust volume is heard (and also a possible reduction in bass tones).

Step 17 \_\_\_\_ Increase CV178 = 10 (+/-)

Couple locomotive to medium size/weight consist and run over layout to listen for exhaust sound changes to grade, speed, and load Increase value of CV178 from initial 10 until desired load-effect is heard.

### **Brief End Note on How DDE Works**

The DDE responds to changes in throttle changes by comparing the throttle setting to the current locomotive speed. The larger the difference between the two, the greater is the change in the exhaust and side rod sounds that will be heard. At constant speed both exhaust chuff volume and side rod clank will return to their normal values as set by the audio mixer (CV128) but when the locomotive accelerates exhaust chuffs will grow deeper and louder and rod clank volume will lessen. The opposite occurs during deceleration from a constant speed.



Table 1 - Use to Record your Trial and Final CV Settings

For Engine: \_\_\_\_\_

CV	Function	Default	Your trial settings				Your Final setting
			1	2	3	4	5
131	Exhaust volume	128	128	128	128	128	128
135	Rod clank volume	32	32	32	32	32	32
177	Throttle sensitivity	_____	_____	_____	_____	_____	_____
178	Load sensitivity	_____	_____	_____	_____	_____	_____
179	Attack time constant	_____	_____	_____	_____	_____	_____
180	Release time constant	_____	_____	_____	_____	_____	_____
181	Exhaust-low vol. load	_____	_____	_____	_____	_____	_____
182	Exhaust-high vol. load	_____	_____	_____	_____	_____	_____
183	Side rod clank-low vol. limit	_____	_____	_____	_____	_____	_____
184	Side rod clank-hi vol. limit	_____	_____	_____	_____	_____	_____
185	Baseline frequency	_____	_____	_____	_____	_____	_____
186	Control gain	_____	_____	_____	_____	_____	_____
187	Filter damping	_____	_____	_____	_____	_____	_____
188	Tracking coefficient	_____	_____	_____	_____	_____	_____

**Save the dates!!**



# PSX2014



NMRA Pacific Northwest Regional Convention

**June 18 - 21, 2014 • La Quinta Inn**

**1425 East 27th Street, Tacoma, WA**



## COME JOIN THE FUN!

Just \$59 with early registration until March 1st, 2014 • \$79 after March 1st  
(Children under 18 free when accompanied by a full adult registration.)

Not an NMRA member? - Attend and get a 6-month NMRA member Railpass for just \$10!

**See a multitude of area layouts up close and personal.**

**Tons of great clinics to attend on many different topics.**

**Modeling Contests • Meet fellow modelers & new friends.**

**Prototype tours include Mt. Rainier Scenic Railroad,  
Tacoma Rail & Snoqualmie Railroad Museum.**

(Must be registered to get on board. Seating on a first come, first served basis.)

**To register, visit us online at: [pnr2014.com](http://pnr2014.com)**