Version 3.4



8/21/2013



DecoderPro3® Version 3.4

Revised 8/21/2013

DecoderPro®3 is a Java-based cross-platform application for model railroaders.

DecoderPro3[®] can run on any computer system that will run Java 1.6.0 or later, whether it is Macintosh, Windows, or Linux based. It does require that Java be installed on the computer. You can get Java as a free (but very large...) download at:

java.sun.com/getjava/

Note: All screen shots in this manual are from a Windows machine using the "Metal" User Interface option, Your screens may differ in some layout details, they will be essentially the same. All programming examples shown are with Digitrax PR3 (MS100 mode) connected to Digitrax Super Chief Radio Command Station. Most of the decoders in locomotive samples will be Digitrax, except for sound examples.

Note: This entire manual has been updated to correspond to JMRI[®] 3.4 DecoderPro3[®] only from the SHTML on line version.

Revisions							
Version	Revision Date	Editors	Major Revisions				
2.14.1	2/26/2012	Dale A. Tripp Bruce Shanks	Create DecoderPro 3® User's Guide				
3.0	8/4/2012	Dale A. Tripp Bruce Shanks	Update to version 3.0				
3.2	1/12/2013	Dale A. Tripp	Update to version 3.2				
3.4	8/21/2013	Dale A. Tripp	Update to version 3.4				

Table of Contents

DECODERPRO3® VERSION 3.4	II
REVISIONS	III
INSTALLING JMRI®	1
Preparing to Install JMRI®	1
Installing JMRI software	1
GETTING STARTED WITH DECODERPRO3®	2
What is DCC?	2
What DCC systems will DecoderPro3 [®] work with?	3
WHAT HARDWARE DO I NEED?	4
HOW DO I START THE DECODERPRO3® PROGRAM?	5
For First Time User	5
Previous user If you are updating and DecoderPro [®] has been installed previously, then proceed here:	9 9
HOW DO I SET UP MY PREFERENCES?	11
Connections Pane	13
Defaults Pane	15
File locations Pane	16
Start Up Pane	17
Display Panes GUI TAB Locale TAB Console TAB	19 19 20 20
Messages Panes	21

Roster Panes	21
Programmer TAB	21
Roster TAB	21
Throttle Pane	22
WiThrottle Pane	22
JSON Server Pane	23
Web Server Pane	23
	25
You must restart DecoderPro for preferences to take effect	24
·	
HOW DO I SET UP TO PROGRAM A DECODER?	25
HOW DOTSET UP TO PROGRAM A DECODER:	25
Adding New Locomotive	27
	27
THE BASIC PROGRAMMER	30
	20
The Roster Entry Pane	30
Programming Modes	33
Address Mode	34
Register Mode	34
Paged Mode	34
Direct Mode	34
Paris Dava	26
Basic Pane	36
DECODERPRO3® COMPREHENSIVE PROGRAMMER	40
Roster Entry Pane	40
Expanded Basic Pane	41
The Read and Write Buttons	41
	45
Motor Control Pane	44
The Motor Pane	45
Speed Control Pane	46
Use these suggestions for using the basic motor controls and programming them on the main.	47
The Speed Table Pane	48
Straight Line Speed Curve	49
Substitute for Quick Speed Matching	51
Switcher Speed Curve	51

Constant Ratio Curve	52
Logarithmic Speed Curve	52
Curve Shifted Left	53
Curve Shifted Right	53
Function Mapping Pane	54
Lighting and FX Functions Pane	55
Analog Controls Pane	58
Consisting Functions Pane	59
Advanced Features Pane	61
Sound FX Pane	62
Sound Levels Pane	65
Global CV Listing Pane	66
Decoder Locking	66
Manufacturer Specific Data Pane	67
Printing Decoder Data	69
DECODERPRO3® MAIN WINDOW	75
Main Window Overview	75
Menu bar	-
	75
File	75
New Roster Window	75
Import Roster	75
Import Roster Entry	76
Import Decoder File	76
Import Decoder URL	76
Export Roster Entry	77
Export Complete Roster	77
Close Window	77
Print Roster	78
Entry	78
Summary	78
Print Preview Roster 🚞	79
Entry	79
Summary Ouit Shuts down DecederDro2	79
Quit Shuts down DecoderPro3.	79

Edit	79
Cut	79
Сору	79
Paste	79
Duplicate Loco	79
Delete Loco	80
Preferences	80
Settings	81
Hide/Show Summary Pane Toggles the decoder information on/off, Part 4 of the main window	81
Show decoder summary pane	81
Hide decoder summary pane	82
Reset Window Sizes not available yet	82
Reset Column Widths Resets all of the columns to default settings if you have resized any of them.	82
Hide/Show Roster Images	82
Show Roster	82
Hide/Show Roster	83
Hide Roster Groups Pane	84
Programming	84
Programming Track	84
Programming on Main	85
Edit Only	85
Create Roster Group	85
Roster Group Table Association	87
Restoring Roster to include all Engines	88
Disassociation of Roster Entry to Group	88
Actions	88
Program	88
Labels and Media	88
Function Labels Pane	89
Roster Media Pane	91
New Throttle	95
Load Default Throttle Layout	95
JMRI® Throttle Window	96
Throttle Window Menu Bar	97
File	97
New Throttle	97
Open Throttle	97
Save Current Throttle	97
Save Current Throttle As	97
Open Throttles Layout	98
Save Throttles Layout	98
Load Default Throttles Layout	98
Save As Default Throttles Layout	98
Start WiThrottle	98
Edit	99

Frame Properties	99
Export Current Throttle Customization to roster	100
Throttle Preferences	101
View	101
Reset Function Buttons	102
Get all current throttle components in bounds	102
Switch Throttle frame view mode	102
Show/Hide Throttles list window	103
Power (track power control, if supported by your system)	104
Window	104
Help	104
Throttle Toolbar	104
Throttle Toolbar	106
Throttle Address Panel	107
Throttle Control Panel	107
Speed Control Panel	107
Slider from 0% to 100%	109
Speed steps	109
Slider 100% to 100% through 0%	109
Throttle Function Panel	110
The descriptions shown above are only a small part of what the Throttle Window can do. The	he author(s) of the Throttle
Window have created an extensive set of Help files to help you customize Throttle Window	rs to your way of
operating. To access Help, just open a New Throttle. Then, click on Help and select Window	v Help from the dropdown
box. There's lots of good stuff in there.	112
Loads Default Throttle Layout	112
Consisting Tool	112
DecoderPro Consisting Tool	112
Turnout Control	114
Power Control	115
Speedometer	115
Single CV Programmer	116
Start WiThrottle Server	117
Start Web Server	117
Recreate Roster Index	117
Recreate Decoder Index	117
Run Script	117
Manufacturer Specific Menu	117
Acela	117
CMRI	119
EasyDCC	122

Grapevine	122
LocoNet	123
NCE	132
OakTreeSystems	136
Powerline	136
QSI	136
RPS	137
SECSI	140
SPROG	140
тмсс	141
wangrow	141
XpressNet	142
Zimo	145
Main Window Tool Bar	146
DECODER PROGRAMMER COMMON ERROR MESSAGES	151
JMRI Error Codes	151

Installing JMRI®

Preparing to Install JMRI®

The JMRI software package includes:

- DecoderPro
- DecoderPro 3
- PanelPro
- SoundPro
- Operations is embedded in DecoderPro3[®] and PanelPro[®]

There are always two versions of the software available:

- Production Version: The current stable version that is fixed in design and for general use. If just starting, this is the version for you.
- Development Version: The version that is under development for testing and is used to validate new features and changes to existing features. If you are familiar with JMRI and want to help in the validation and testing process, then use this version.

Supported systems (check www.jmri.org/help/en/html/hardware/index.shtml).

Prior to installing JMRI, you must <u>www.jmri.org/download/index</u> the correct version for your computer system.

- Windows
- Mac OS X
- Linux

Installing JMRI software

After downloading the JMRI file, now install using the appropriate Installation guide:

- Windows Installation Guide www.jmri.org/install/WindowsNew
- Mac OS X Installation Guide www.jmri.org/install/MacOSX
- Linux Installation Guide
 - Ubuntu GNU/Linux www.jmri.org/install/Linux
 - Xubuntu www.jmri.org/install/Ubuntu
 - OpenSuSe linux http: www.jmri.org/install/OpenSUSE

Getting Started with DecoderPro3®

What is DCC?

In short, DCC is Digital Command Control, a system for operating model railroads in a more prototypical manner. Each locomotive contains a tiny, specialized controller. These controllers (decoders) accept digital commands over a network (the rails) addressed to them and interprets them to control the locomotive's speed, direction, lighting effects, sound, and other functions. Each decoder responds only to those commands addressed to it. Not every decoder will have functions beyond basic throttle commands available. Although there are NMRA[®] standards for the format of communication (allowing the decoders from different manufacturers to work on the same railroad), beyond that there is considerable variety in the functions supported and the implementation of those functions.

Just like any other controller, decoders must be programmed by the user to reach their full potential. While they come with basic "default" programs, most users will want to customize the decoder address, motor control, lights, sound, and other functions to meet their specific needs. You do so by editing **CV**s, or **Configuration Variables**, in the decoder. Some CVs use values ranging from 0 to 255, others use their space in the decoder's memory as a bank of 8 on/off switches. While this lets you do a lot with very little memory, it can get very complex for those of us that are not on speaking terms with binary code.

Decoder Pro attempts to help overcome the inevitable complexity of this system by providing a clear, usable, user friendly open source software solution for programming these on-board decoders. Programming panel designs are written in **XML**, (a close relative of HTML) and can be modified or even created from scratch by users with even a passing familiarity with the format without previous XML experience.

What DCC systems will DecoderPro3® work with?

Decoder Pro3[®] will work with the following DCC systems:

- Atlas
- Bachrus
- C/MRI
- CTI Electronics Acela
- CVP Products Easy DCC
- DCC Specialties
- Digitrax (Loconet)
 - Digitrax PR3 interface
 - o RR-CirKits LocoBuffer-USB
 - LocoBuffer-II (LocoBuffer)
 - o MS100 interface
- ESU
- Fleischmann
- Hornby
- Lenz
- Lionel TMCC
- Maple Systems
- Marklin
- MERG CBUS
- NCE
- Oak Tree Systems
- Pro Trak Grapevine
- QSI Solutions
- PI Engineering RailDriver
- Roco
- SPROG
- SRCP
- Uhlenbrock
- Wangrow
- X10
- Zimo
- ZTC Controls

Depending on the specifics of your system and computer, some type of hardware interface may be required. www.jmri.org/help/en/html/hardware/index

What hardware do I need?

You will need a means to connect between your computer and the track on which the locomotive rests, that will take serial instructions and generate DCC packets on the rails. At a minimum, a command station/booster (your DCC system will probably suffice), an additional hardware interface to send commands from your computer to the command station (this could be as simple as a serial cable), and a programming track set up according to the manufacturer's instructions.

For some systems, you will also need an additional hardware interface to send the commands from your computer to the command station, and from there on to the decoder in the locomotive. For a Digitrax system, for example, you will need either the **PR3 programmer** or a **LocoBuffer**. The **PR1** device from Digitrax is a standalone programmer and is not usable with this software.

For those who do not have any DCC hardware yet and are considering purchasing a DCC locomotive and want to use Decoder Pro to program it consider the SPROG II USB. It has all the electronics in one package with enough output to run a locomotive. It comes complete with the USB cable, power supply, instructions and JMRI on disk. All you need in addition is the test track.

You will also need, of course, some locomotives with the decoders installed which you can program.

How do I start the DecoderPro3® program?

If you are a first time user with no entries in the roster or preferences perform these step using the wizard.

For First Time User

or totally new Install. Once you have downloaded the JMRI software and installed it, simply open the program in the usual manner for your operating system. An icon for DecoderPro3[®] should be installed on your Desktop.



DecoderPro3[®] may be opened by double click on the Desktop icon and the DecoderPro3[®] initial screen as shown below will be displayed on completion of startup for a brand new install with no settings stored in your computer.

First time install start screen

🔀 Decoder Pro Wizard	🔳 🗖 🔀
1	Welcome to JMRI StartUp Wizard
A star was	Welcome to JMRIs' Decoder Pro3
JMRI	This little wizard will help to guide you through setting up Decoder Pro3 for the first time
	< Back Next > Cancel

Press Next button starts the wizard..

🔀 Decoder Pro Wizard	
	Set the Default Language and Owner Select your language English (United States) Finder in the default owner for all your loco roster entries If you are part of group or club, where different people will be accessing Decoder Pro, then you can leave this blank Default Owner
	<back next=""> Cancel</back>

Press the Next button to continue

🔀 Decoder Pro Wizard					
Villian .	Select your D System manufacturer:	CC Connection			
		(none selected)	-		
First select the manufacturer of your DCC system	System connection:	(none selected) None Atlas Bachrus C/MRI CTI Electronics Digitrax DCC Specialties			
connection being used. Finally select the serial port or enter in the IP address of the device	Settings:				
			< Back	Next >	Cancel

Select your system and other options for your system will be shown.

	Select your E System manufacturer:	Digitrax			
JMRI	System connection:	LocoNet PR3	-	1	
First select the manufacturer of your DCC system	Settings: Serial port: Command station type:	(none selected) LocoNet LocoBuffer-USB LocoNet PR2 LocoNet PR3		programmer	-
ollowed by the type of onnection being used. inally select the serial port r enter in the IP address of ie device	Connection Prefix Connection Name	LocoNet Simulator LocoNet Server LocoNetOverTcp LbServer LocoNet LocoBuffer-II		nection Settings	

Select your system connection.

🔀 Decoder Pro Wizard				
Tuba _{lina}	Select your E System manufacturer:		etion	
JMRI	System connection: Settings:	LocoNet PR3	-	
First select the manufacturer of your DCC system	Serial port:		Communications Port (COM4)	-
Followed by the type of connection being used. Finally select the serial port or enter in the IP address of the device	Command station type:		DCS100 (Chief)	-
	Connection Prefix		PR3 standalone programmer	-
	Connection Name		DCS100 (Chief) DCS200 DCS50 (Zephyr) DCS51 (Zephyr Xtra)	5
			DESST (Zephyr Atta) — DB150 (Empire Builder) Intellibox LocoBuffer (PS)	ncel

Select your Serial port and Command station type.

	Select your DCC Co	nnection	
	System manufacturer:	rax 💌	
JMRI	System connection:	PR3	
First select the manufacturer of your DCC system	Settings: Serial port:	Communications Port (COM4)	
ollowed by the type of onnection being used.	Command station type: Connection Prefix	DCS100 (Chief) L	
Finally select the serial port or enter in the IP address of the device	Connection Name	LocoNet	

Connection Prefix and Connection Name, at this time leave as default. Press the Next button

🔀 Decoder Pro Wizard	
	Finish and Connect
JARK	Configuration is now all complete, press finish below to connect to your system and start using Decoder Pro3 If at any time you need to change your settings, you can find the preference setting under the Edit Menu
	< Back Finish Cancel

Press the Finish button

DecoderPro3[®] main window is displayed with instructions for Getting Started

ile Edit Settings Action	s LocoNet Window Help				
	dentify 🕜 Help	Off off	Programming Mode	Paged Mode	•
Getting Started	The same sector of the same sect	Then either select your decoder from the list or choose "Read type from decoder". Once Selected, click on "Open Programmer" to then begin programming your decoder.	Support of the set of the se		In the next screen enter in the basic Information of the loco to create your first roster entry.
- 1	Anne and the second second second	2	·		and the second
	ID; Road Name: Road Number: Manufacturer: Owner: Model: DCC Address: Decoder Family: Decoder Model: Filename:			Program Program Cabels &	Program

You may want to set up the other preferences at this time, if so go to <u>Preferences</u> screen will come up that allows you to set up the system for your particular configuration.

Previous user

If you are updating and DecoderPro® has been installed previously, then proceed here:

Once you have downloaded the JMRI software and installed it, simply open the program in the usual manner for your operating system. An icon for DecoderPro3[®] should be installed on your Desktop.



DecoderPro3[®] may be opened by double click on the Desktop icon and the DecoderPro3[®] initial screen as shown below will be displayed on completion of startup with no roster entries.

Help New Loco 😥 Identify New T	low Help Mrottle	Programming Mode Paged Mode	Active Roster Group All Entries
	Mrottle	Programming Mode Paged Mode 💌	Active Roster Group All Entries
D DCC Address			
	con Decoder Modei	Road Name Road Number Manutacturer	Model Owner Date Modified
Ros Mar DC Deco	ID: Road Name: ad Name: mifacturer: Owner: Model: C. Address: oder Family: oder Model: Filename:		Programming Track Programming On Main Edit Only Program Thogsam Thogsam Thogsam Throttle

DecoderPro3 will open showing your roster entries if you already have established a roster of locomotives.

e Edit Settings	Actions LocoNet	Window Help								
New Loco	Adentify	Help New Thrott	B		(C) off		Programming Mode	aged Mode		
ID-	DCC Address	lcon	Decoder Model	Road Name	Read Number	Manufacturer	Model	Owner	Date Modified	
2-8-8-2-1792	1792	and hereit.	P2k N USRA 2-8-8-2	Santa Fe	17.92	Life Like	USRA 2-8-8-2	Triap	Oct 18, 2011 2:20:14 A	M
4Tur+1000	1000	III III	2 function decoder (36-552)	Industrial	1000	Bachmann	44 Ton Switcher	Tripp	Sep 27, 2011 2 35 29	AM
AC-12-4275	4275	STATISTICS.	DZ125P8	Southern Pacific	4225	internountain	AC-12 4-8-8-4 Cab Forward	Tripp	Oct 4, 2011 12:55:06 A	M
4C-12-4278	4278	And a second	DZ125P8	Southern Pacific	4278	Intermountain	AC-12	Tripp	Oct 4, 2011 1:14 34 AM	1
C-12-4292	4292	STATUS	SDN144PS	Southern Pacific	4293	Intermountain	AC-12 4-9-9-4 Cab Forward	Tripp	Oct 4, 2011 2 24 33 AM	1
Acela-2003	2003		2 function decoder (36-552)	AMTRAN	2003	BaCHMAN	Aceta	Tripp	Oct 17, 2011 11 55 21	PM
323-7-6390	6390	No. of Concession, Name	DN163A0	Santa Fe	6390	Atlas	823-7	Tripp.	Sep 27, 2011 2:13:43	AM
323-7-7412	7412	Martin Co.	DIN163AD	Santa Fe	7412	Attas			Sep 27, 2011 2:34 49.	
3iaBoy-40	40	ALC: NOT THE OWNER.	Amean Big Boy of Challenger	undec	40	Atheam	4-S-S-4 Etg Etgy	Tripp	Sep 27, 2011 4, 39:07	AM .
3igBoy-4024	4024	and the second second	Atheam Big Boy or Challenger	Uniori Pacific	4024	Atheam	4-8-8-4 Big Boy	Tripp	Sep 27, 2011 3:41:34	AM
044-9-4926	4926	Concession of the local division of the loca	DN163K1B	BNSF	4925	Kato	C44-9	Tripp	Sep 27, 2011 7:49:48	PM
Shallenger-3985	3995		Atheam Big Boy of Challenger	Union Pacific	3985	Alheam	4-6-6-4 Challenger	Tripp	Sep 28, 2011 2 06 59	AM
DD40X-6932	5932	(THERE ARE A	A function decoder (36-550)	Union Pacific	6932	Bachmann	DD40X	Tripp	Sep 28, 2011 6:01:14	AM
5-8A-6018F	8018	and strength of the local division of the	DN163K0A	Southern Pacific	6010	Kato	E-8A	Tripp	Sep 28, 2011 4:24:03	AM
E 8A 8018R	8106	Contraction of the	DN163K0A	Southern Pacific	6048	Kato	E-8A	Tripp	Sep 28, 2011 4 20 26.	AM
544AC-5719	5719	and the second se	DZ125IN	BNSF	5719	FoxValleV	ES44AC	Tripp	Sep 27, 2011 1:47:55	AM
E844AC-5738	5719	Construction of the	D/2125IN	BNSE	5738	Fox Valley	EB44AC	Tripp	Sep 27, 2011 1:46:45	AM.
		ID: Road Name: Road Namber: Masufacturer; Owner: Model: DCC Address; Decuder Family: Decuder Family: Decuder Model: Filiname:						O Pr	rogramming Track rogramming On Main dli Ondy Protpatro Ream da Mantaa 77	ujteos

It may take a while for this screen to come up, especially on older and slower computers. Remember that you are essentially running the program on a Java emulator over your native operating system software. New computers can do this fairly quickly, but older ones will feel like they're taking forever. Be patient - it will come up eventually! Even on older computers, once the program is up the response time is quite good.

If this is the first time you have run the program after you installed the software, the <u>Preferences</u> screen will come up automatically to allow you to set up the system for your particular configuration. Also if you change your system configuration, or if you have your laptop away from the railroad, but you want to play with JMRI there is a simulator mode you may want to try. So click next, and we'll have a look at preferences.

DecoderPro3 may be opened from DecoderPro Roster Menu

File Edit	Tools	Roster	Panels Operation	ns	LocoNet	Debug	Window	Help
1	D	Roster					e JMRI proj	ject
			ry ntry Entry Entry	g 1.3 Tr	ecoderPro LocoNet P 7.0_25 (en ack) Program t	R3 on C(_US) ammer	DM4	
		Roster	Groups	•	-			
			Complete Roster Profiling					

How do I set up my preferences?

From the Edit menu in DecoderPro3 select **Preferences** option:

lie	Edit	Settings	Actions Loc
	Gul		Darase
	Colo	/	Identify
Г	Pasi	e	DCC Addres
2-8	Dupl	icate Loco	1
44	Dele	te Loco	1
AC		The same set	4.
AC	Pref	erences	4:
AC	-12-42	292	4:

(This window may open automatically the first time you run the program.)

As a first time user the most important information is the **Connections** screen where you describe how the computer will talk to the command station. Most of rest you can leave at the initial or "default" settings until you find a need to change things to suit your fancy.

Most importantly, you must click the Save button to finalize your settings and then re-start the program to have them take effect.

The Preferences window provides access to the basic configuration information to connect your computer to your DCC system. You will be using that system to actually program and operate trains equipped with DCC decoders. An important concept to keep in mind is that JMRI is nothing more than a very smart throttle. If you can do something with your throttle you can probably do it faster and easier with JMRI. However, if your system can't do what you want, either because your system is not connected properly (it's broken) or the system manufacturer did not incorporate that capability, then JMRI will not be able to do it either. In the latter case JMRI will probably give you an error message or have the command "greyed out" to help you identify why it can't accomplish your request.

The window is split into two panes, on the left side is a list of preference groups that may be set. Clicking on one of the items opens the options that may be set in the right side pane. No selection have been made

Preferences		
Window Help		
Connections Defaults File Locations Start Up Display Messages Roster	LocoNet System manufacturer: Digitrax System connection: LocoNet PR3	
Throttle WiThrottle JSON Server Web Server	Settings: Serial port: Communications Port (COM4) Command station type: DCS100 (Chief) Connection Prefix Connection Name LocoNet Additional Connection Settings	
Save	Disable Connection	1

Connections	Allows you to select the system connection that you are using for
	controlling DCC and the connection to your computer. This is the only
	required preferences to define your DCC system. The rest of the
	features are used to customize your specific system.
Defaults	Shows system default settings
File Locations	Set default location for saving User files and Script Files
Start Up	Allows you to set Actions, Buttons, Files and Scripts that run at Start Up
Display	Allows you to select your computer display mode
Messages	Set default actions for system message when displayed
Roster	Allows you to set your default Programmer and roster location
Throttle	Allows you to set up you Throttle preferences
Wi Throttle	Allows you to set up a Wi Throttle settings
JSON Server	The JMRI JSON Servlet provides web access to lists and values for
	numerous JMRI-defined entities, in the modern JSON format.
Web Server	Sets up the Decoder Pro [®] miniServer

Now we will set up preferences for the JMRI environment with your command station.

I am using a Digitrax Super Chief Command Station (radio) interfaced to the computer via loconet, PR3 (MS100 mode) and USB port. I keep master roster on the System Drive.

Connections Pane

(TABS are configured to the system your selected)

Now select Connections and connection options display in right pane. After saved and restarted, the TAB will read LocoNet. This the set up for Digitrax Chief System with PR3 interface.

LocoNet 🕂			
System manufacture	ar;		
	Digitr	ax 🔻	
System connection:			
-jerem semiesnem	L. Contractor		
	LocoNet	PR3	
Settings:			
	Serial port:	Communications Port (COM4)	-
	Command station type:		•
	Connection Prefix	L	-
	Connection Name	LocoNet	
	Additional Connection S	attinge	

System manufacturer:	Drop-down list with manufacturer of yo	n all the supported DCC manufacturers, select the our system.
System connection:		n all of the supported DCC system interfaces supported by hat you selected, select the interface that you are using.
Settings:	Serial Port:	Drop-down list to select the serial port to which your DCC interface is connected. If you do not know, check your system hardware configuration manual. A second drop- down list may include a selection if there are more than one possibility. Possibility Drop-down list to select the serial port to which your DCC interface is connected. If you do not know, check your system hardware configuration manual. A second drop-down list may include a selection if there are more than one possibility
	Command station type:	Drop-down list to select the command station type that JMRI will be using to send your DCC commands.
	Connection prefix	Include the prefix for your connection, in the case shown the "L" is default
	Connection name	Should default to the connection used

Additional Connection Settings, if checked:



Disable Connection

This option will disable all the connection settings.

Defaults Pane



Shows the default settings which will depend upon the system used.

File locations Pane

Set
Set

User File Locations	Select the location for your user files on your system
Jython Script Location	Set the location of Jython Script files

Start Up Pane



AB V	Add File <u>s</u> hat you want to load at startup	Upen Xook (ts
	Add <u>S</u> cripts o load at tartup	Open Iministry Locki, it: Iministry Iministry Atheam, F30PH 450,ami Iministry Atheam, GP31-3501,ami Iministry Atheam, GP31-3501,ami Iministry Atheam, GP31-3528,ami Iministry

You may add as many items as you want to open on start up. Example of Actions

Actions	Buttons	Files	Scripts	5
	Sele	ect any a	ictions yo	ou'd like to have happen when the program starts.
		Re	emove	Load Default Throttle Layout
		Re	emove	Load Default Throttle Layout

Remove

Removes the item from the Start Up sequence. All of the panes are of the same format.

Display Panes

GUI TAB



	Metal
	C Windows Classic
elect your preferred appearance for buttons, menus, etc.	CDEMotif
	C Windows
	C Nimbus
Select font size in points	select font size
Use non-standard release event for mous	se click?

Locale TAB

UI Locale Conso	Select your preferred language for me	source buttons ats
	English (United States)	enus, nutrons, etc.
	English (United States) Finnish (Finland)	6
	Icelandic	
	Czech	
	English (Malta) Slovenian (Slovenia)	
	Slovak (Slovakia)	
	Italian	*

Drop-down list to select your location and language

Console TAB

GUI	Locale	Console	
		Select	your preferred appearance for the JMRI System Console
		Co	nsole color scheme
	Se	lect font styl	e Monospaced 💌 12 💌 points 🖪 /
		Selec	f text wrapping style Wrap text at end of last word 💌

Display settings for the JMRI system console.

Messages Panes

TABS and selections can be used to set how and when messages are displayed.

Roster Panes

Programmer TAB

This pane is used to set the preferred decoder programmer.

rogrammer	"A	vanced"	contains	l DecoderPr everything. al starting p		nmer form	at.	
				Advanced	-			
				ihow empty	take			

Roster TAB

You may set the default location of the locomotive roster and the default owner's name.

ogrammer	Roster	<u> </u>	and second second sec		and the second second second		
		Select a new defaul	t location for	your locom	otive roste	0	
	1	Roster info location:	C:\Digitrax\	Set	Reset		

Throttle Pane

Select throttle startup conditions, shown are defaults, but you may change the settings.

}		
{ Use exten	ded throttle	
Save th	rottles when saving throttle windows layout	
Useros	ster image as background	
Doi	not scale image	
Search	roster info when address entered	
Automa	atic load of throttle window preferences when linked to roster	
1 III III III III III III III III III I	are throute frame position	
Hide un	defined roster function buttons	
🗧 🔲 Enable	button icons when available	
Enable	throttle toolbar	
👌 🖂 Clean ti	hrottle on window close	
> For new pr	eferences to be fully applied, all throttles windows must be closed and reopened.	
Reset		Apply

WiThrottle Pane

This pane allows WiThottle users to customize the setup.

Stop	Use eStop 10 Seconds until eStop
unction	Buttons E2 always momentary
letwork	Use fixed port # Automatic
llowed (Controls I Track Power I Turnouts I Routes I Consists DCC Brand-Specific
	For new preferences to be applied, all throttles must be closed and reopened.

JSON Server Pane

The JMRI JSON Servlet provides web access to lists and values for numerous JMRI-defined entities, in the modern JSON format.

Server		
	2056 Port Number	
JSON		
>	15 Heartbeat Interval	
) 7		
3		
2		
E		

Web Server Pane

Use this pane to setup MiniServer if you are using it.

Ajax is now in use for smoother image refresh and clicking. For older browser you may want to unselect Ajax.

	Railroad Name My JMRI Railroad		-
	Rancoad Name My JMRI Ranroad		
	Rebuild inde	ex.html?	
	12080	Port#	
Frame Server -			
	1 Click Delay 5 R	efresh Delay 🕜 Use Ajax?	
	JMRI Mini Web Server		
	DecoderPro		
	LocoNet Simulator		
	Preferences WiThrottle	Disallowed Frames	
	Change Signal Head Icons		

Before you exit the preferences, click on <u>Save</u> button to save all your selections.

You must restart DecoderPro for preferences to take effect

How do I set up to program a decoder?

Prior to using the programmer you need to have completed the previous section (Getting Started), have your computer connected to your command station/booster with the required interface device for your DCC system, you are now ready to actually program a decoder that has been installed in your locomotive.

On your initial opening DecoderPro3, the main page will be displayed: (After preferences are set) The list of locomotives programmed by DecoderPro3 will be blank until you add a locomotive. From then on when it is opened a list of all the locomotives whose decoders you have previously programmed in DecoderPro3 or classic DecoderPro will be listed.

DecoderPro3 provides access to the JMRI tools required to program DCC decoders. If you are an advanced user, using PanelPro to run your layout, then you may start PanelPro and then from the File menu start DecoderPro3. If you already have roster entries and you want to start programming in **Comprehensive Programmer**, double-click on the roster entry.

DecoderPro3 by its self may program DCC decoders and also use the other JMRI tools to manually operte your trains from the computer interface. These include throttle control and power control of your layout if your DCC system allows them..

The DecoderPro3 window is divided into five main section from top to bottom.

CI New Loco	S Identify	Help New Throt	10 2 ·			C) CH	Progra	inming Mode	Paged Mode =	
ID /	DCC Address	lcan	Decoder Model	Read Name	Road Number	Manufacturer	Model	Owner	Date Modified	Protocol
S44AC-5738	5719		DZ125IN	BNSF	5738	Fox Valley	EB44AC	Tripp	Bep 27, 2011 1:46 45 AM	
40PH-342	342		DN163K0D	AMTRAK	342	Kato	F-40PH		Oct 18, 2011 12 59 41 AM	
7A-300-A	300		DN163K0B	Santa Fe	300	Kato:	F-7A F-7A	Tripp	Aug 18, 2013 11 19:38 PM	
7A-300-B	300		DN163K0B	Santa Fe	300	Kato Kato	F+78	Tripp	Aug 18, 2013 11:21 35 PM	
7B-300-C 7B-300-D	300		DN163K0B DN163K0B	Santa Fe Santa Fe	300	Kato	F-78		Sep 28, 2011 4 46 31 AM	
	300				300	Kato	F-7B		Aug 18, 2013 11:22:03 PM	
78-300-E 78-300-F	300		DN163K0B DN163K0B	Santa Fe	3008	Kato	F-7B		Aug 18, 2013 11 22 21 PM Aug 4, 2012 2:39 13 AM	
P45-100	100		N FP45	E.c.	100	Alheam	FP45		Aug 18, 2013 11 31 03 PM	
P45-105	105		N FP45	3	105	Alheam	FP45		Aug 18, 2013 11 31 18 PM	
Hicado-0	105		Basit CS		100	Kato	Mikado		Aug 18, 2013 11 31 18 PM	
32BWH-508	506		N12AB	AMTRAK	506	Altas	P32BWH		Aug 18, 2013 11:32 55 PM	
SD-40-2-5026	5026		DN163K1B	Santa Fe	5026	Kato	SD-40-2		Aug 18, 2013 11 29:43 PM	
SD-40-2-5020	6340		DN163K1B	BNSF	6340	Kato	SD-40-2 Shoot nose		Aug 18, 2013 11 30:07 PM	
SD70MAC-9959	9959		DN163K1B	BNSF	9959	Kato	SD70MAC		Aug 18, 2013 11:32:08 PM	
Seth - Allas GP38	3520		DH163	Santa Fe	3520	Allas	GP-38		Mar 8, 2012 3:57:17 PM	
Seth-Atlas MP15DC	630		Dual Mode	AMTRAK	530	Attas	MP15DC	Seth	Mar 8, 2012 4:10:15 PM	
Zeptivr 9900	9900		DN143IP	Burtington	9900	CanCars	Zepher	Tripp	Aug 18, 2013 11:18:03 PM	
289/191 0 300	3300		Dist 4 Str.	pounington	10000	Tonnoors	(Zppno)	TUDE	Pag 16, 2013 (1110.031 M	DOG Cong
		ID: Road Name: Road Number; Manufacturer; Owner;			4				 Programming Tr Programming Or EditOnly 	
		Modek DCC Address: Decoder Family: Decoder Modek							Progra	m

- 1. The Menu Bar.
- 2. The Tool Bar

3. **The Roster Table** a list of all the decoders in your roster that are part of the active roster group. To set-up a roster group in addition to the default group of **All Entries** see **Settings for Roster groups.**.

- 4. The Decoder Information Area. Show information about any selected locomotive in the roster list.
- 5. A status bar that reports information about DecoderPro3 operation including errors.

ID DCC Address		loon	Decoder Model	Road	
S44AC-5738 5719			DZ125IN	BNSF	
F40PH-342			DN163K0D	AMTRAK	
F7A-300-A	A-300-A 300		DN163K0B	Santa Fe	
F7A-300-B 30		Program	DN163K0R	Santa Fe	
F7B-300-C	300	Programmer type +	Programming Track	Santa Fe	
7B-300-D 300		Labels and Media	Programming On Main	Santa Fe	
F7B-300-E	300	Lapers and media	Contraction of the second seco	Santa Fe	
F7B-300-F	300	Throttle	🔍 Edit	Santa Fe	
FP45-100	100	Duplicate	N FP45 Santa		
FP45-105	105		N FP45	Santa Fe	
Mikado-O	0	Delete	Basic CS	KATO	
P32BWH-506		man in the	12A0	AMIRAK	

Anywhere in the roster table you may right-click and a context menu will be displayed.

Context Menu (Right click)

At this time a new user will have no entries in the Roster list of locomotives. If you are updating program and have a Roster installed the Roster list will be populated as shown. We can now add a locomotive to the list.

Adding New Locomotive

On the Tool Bar is an icon labeled **New Loco**, click on the icon and the **Create New Loco** window opens. Place a locomotive (with the decoder installed) on the Programming Track (Service Mode), click on Read type from decoder button (mid right side)

🗮 Create New Loco	
File Roster	
Programming Mode	Paged Mode
Decoder installed:	
P 🗂 NMRA	A
🗣 🗂 ANE Model Co, Ltd	
🖙 🗂 Arnold - Rivarossi	
🗢 🗂 Atlas	
🗢 🗂 Broadway Limited Imports, LLC	
🖙 🗂 Bachmann Trains	=
🖙 🗂 CML Systems	
🗢 🗂 CT Elektronik	
🗢 🗂 CVP Products	
🗢 🗂 DCC Concepts	
🗢 🗂 Digitrax	
🗢 🗂 Electronic Solutions Ulm GmbH	
🗢 🗂 Fleischmann	
🗢 🗂 GFB Designs	
🗢 🗂 Haber and Koenig Electronics GmbH	<u>í</u>
🗢 🗂 Harman-DIY	
🗢 🗂 Harman DCC	
🗢 🗂 Hornby	
🗢 🗂 Kato	
🗠 🗂 Kuehn	
🗢 🛄 Lenz	*
Read type from decoder	All O Matched Only
	Deser Commission Draws
idle	Open Comprehensive Programmer

The screen below several possible decoders will probably be highlighted. This happens because the decoders are electrically the same but are packaged differently to fit the locomotives that they are used in. If you know which decoder is in use, then select that one. If not, in most cases any of the highlighted decoders will work, and you should select the one with the least letters at the end, since letters are often used to denote locomotive specific variations. Note all of the Tsunami decoders are using the same hardware in different configurations.
Create New Loo	:0		
File Roster			
	Programming Mode	Direct Byte	-
	TSU-750 DROW K-Class TSU-750 SP Cab Forward TSU-1000 Light Steam TSU-1000 Medium Steam TSU-1000 Medium Steam TSU-1000 Light Steam TSU-1000 Light Steam TSU-1000 Medium Steam TSU-1000 DRGW C-Class TSU-1000 DRGW C-Class TSU-1000 DRGW K-Class TSU-1000 DRGW K-Class TSU-1000 SP Cab Forwa TSU-1000 SP Cab Forwa TSU-1000 Southern Steam TSU-4664N Challenger Tsunami Steam Genesis OE Bigboy 4-8-8-4 MT-4 4-8-2 N Challenger Tsunami Steam Intermountai HO SP AC12	t Steam am s Steam s Steam rd Steam m DEM	Read type from decoder
	Service Mode (programming to)	rack) CEdit (Only
Programmer forma	t: Comprehensive		•
	jūt	en Programme	er
Aultinle possible De	coders detected - Manually s	elect from bia	blighted Decoders or Family

Note that we have selected a decoder, which is highlighted. Also the **Open Programmer** button is activated to allow us to enter the programmer and the Pr**ogrammer format** may be set to **Basic** or **Comprehensive** using drop down list. As a beginner you may select **Basic**, or if experienced select **Comprehensive**.

I know that this decoder is Athern FP-45 factory installed decoder in nscale. So I will select that decoder.

Create New Loco	
File Roster	
Progra	mming Mode Paged Mode 🔹
Decoder installed:	Create Basic Roster Entry
 MP15AC SD45-2 SD60I SD70ACe SD70M-2 N FP45 N FP45 N F59PHI Tsunami Diesel Intermountai HO ES44AC HO ES44DC HO FT HO F3 	Roster Id <new loco=""> Use 2 digit address (primary address) Use 4 digit address (extended address) Active DCC Address: 100 Analog (DC) Operation Alternate Power Source Enabled</new>
HO F7 HO F9 HO FP7 HO SD40-2W	Read Write Save
lle	Open Comprehensive Programmer

Click on the **Open Programmer** button and the **Roster Entry** Pane will open for the Selected Programmer. The programmer is opened.

The Basic Programmer

The Roster Entry Pane

The Basic Programmer uses only the required screens to set up the decoder for DCC operation and creating a Roster entry and uses only the first two TABs. The first action in programming a locomotive with DecoderPro3[®] is to fill out the roster entry screen.

A **roster** is a database of all locomotives that your installation of DecoderPro3® has programmed. All of this information will be contained in the list on the DecoderPro3 main page. It includes the information seen in the screen below:

🖀 Program <new loco=""> in Serv</new>	vice Mode (Programming Track)	
File Reset Window Help Roster Entry Basic	routette	
ID: Road Name: Road Number: Manufacturer: Owner: Model: DCC Address: Throttle Speed Limit (% Comment:	6): 100- 100- Tripp 100- 100	
Decoder Family: Decoder Model: Decoder Comment:	4 Tsunami Diesel Genesis OEn. FP45	
Filename: Date Modified:	Added Automatically from ID Save to Roster Reset to defaults	
Read changes on all sheets	Write changes on all sheets Read all sheets	s Write all sheets
	Programming Mode Direct Byte	
	idle	

Most of these fields are self-explanatory. However, note that the first field (**ID**) becomes the file name in the Roster for the locomotive you are programming. Set up a schema to identify your locomotive to its decoder

program. I.e. Mfr, Loco Type, and Address (Kato_SD40-2_5645). Spaces in the ID field will be changed to underscores (_) when the file is written. In a club environment, often the ID begins with the owner's name, or member number. This way the Roster (which is sorted alphabetically) will keep all of an owner's locomotives listed together. This is not as necessary with DecoderPro3 as it is in the classic DecoderPro®, because it is now possible to sort the information on the opening screen using any of the columns by clicking on the column heading. DecoderPro3 also allows you to categorize roster entries into Groups, so you could have a separate group for each member.

We'll get to Groups and all the other neat stuff that can be done with DecoderPro3 in a while. I just thought I'd give you peek behind the curtain, and give you a chance to mentally thank the JMRI developers for all their work on DecoderPro3. Of course a message to that effect posted to the JMRI Yahoo group would also be warmly received.

The DCC address will be filled in automatically when we get to programming the address. The Decoder Family and Model are entered automatically from the Selection page we just used to get here.

The **Decoder Comment** field is a good place to add the date you purchased the locomotive, price, or any other information you might feel is important to record.

Save to Roster

The button stores the current decoder information to your computer hard drive and folder where your roster file is located. The default storage is the same directory where the program is installed.

The Reset to Defaults button can be used to return the Roster file to the condition of a new file for the type and version of the decoder listed in the roster entry. It does NOT change the values in the roster file on your hard disk, unless you specifically save it after using this reset button. It also is not written to the decoder until you specifically select a write operation. It was included in DecoderPro so that if you get hopelessly confused in proceeding screen to screen entering variables, you can return to the decoder manufacturers baseline default set and start again.

Most decoders will activate the **Reset Menu** (next to the File menu at the top of the page). This will reset the decoder to the manufacturers default settings for all the CVs, or just some of them if the manufacturer has several reset routines. It does this by writing directly to a CV in the decoder, if the decoder has that feature, CV8 in the case of Digitrax. All decoders may not support reset and how they work is manufacturer and decoder dependent.

One decoder with a lengthy list of reset routines is the QSI Revolution decoder, which enables a drop-down list of options for resetting the decoder as shown below:

🚆 Program <new locu=""> in Se File: Reset: Window: Help</new>	rvice Mode (Programming Track)
Roster Entry Basic	Reset opens the Factory
ID: Road Name: Road Number:	<new dialog="" licity="" options<="" reset="" td="" the="" with=""></new>
Manufacturer: Owner: Model:	Caution: Factory Reset
DCC Address:	Reset System Sound Control
Throttle Speed Limit Comment:	(%): Reset System Sound Control Reset Individual Sounds Reset Function Output Mappings
The QSI Revolution offers Dationg list of Decoder Comment: options	Reset QSI Feature Control
Filename: Date Modified:	
	Save to Roster Reset to defaults
Read changes on all sheets	Write changes on all sheets Read all sheets Write all sheets
	Programming Mode Direct Byte
	idle

You will note that the decoder address is shown but grayed out (or blank if this is a new locomotive in the roster). This field is automatically filled in by the program and is determined from the address entered using the **Basic** tab which we will get to shortly. This address is used with the **Ident** function on the start page if you wish to recall a locomotive that is already in your roster.

The Programming mode can be changed by clicking on the drop down box

	Save to Roster	Reset to de	efaults		
Read changes on all sheets	Write changes on all sheets		Read	all sheets	Write all sheets
	Programming Mode	Direct Byte			
	id	Paged Mode Register Mo			
		Direct Byte			
		Address Mo	de		

There are options for several **programming modes**. JMRI now selects the best mode for you. It determines this from the command station type you are using and the decoder model you are attempting to program. Usually this will be OK. If you find that you are having a problem with programming you may try a different mode.

For most newer decoders, stay with **Paged mode** or whichever Direct mode your Command Station supports. Your decoder documentation should let you know if programming in some other mode is necessary... but if you are having problems, experiment. If a mode is not supported for the selected decoder and system, that option will be grayed out. For this decoder I will use Direct Bye Mode.

When you make your selection, the programming mode should now display to the left of the in the dropdown box.

Programming Modes

	Save to Roster	Reset to de	efaults		
Read changes on all sheets	Write changes on all sheets		Read	all sheets	Write all sheets
	Programming Mode	Direct Byte			
	id	Paged Mod Register Mo			
		Direct Byte	And in case of a		
		Address Mo	ode		

Some brief comments on Programming Modes

Address Mode is an outdated programming method that is included here for the sake of full compliance with the NMRA DCC standard.

Register Mode is an expanded form of Address Mode, and is still used by some older and/or lower end decoders, particularly some from MRC and Wangrow. It is inherently limited in its ability to access all CVs in a decoder.

Paged Mode is an expansion of Register mode that gives full access to all decoder CVs.

Direct Mode is another method, not yet supported by all decoders, that allows full access. There are two ways of implementing Direct Mode. The radio button(s) for the Direct Mode method(s) your command station supports will be activated.

If you experience difficulty programming a decoder in Paged Mode, try Direct Mode, then Register Mode, and finally Address Mode. The EasyDCC AD4 Accessory Decoder can only be programmed in Direct Mode.

Below is a Basic Programming Roster setup for Athearn FP-45 locomotive in n scale with OEM decoder (Tsunami 750) decoder. Note in the status at the bottom of pane indicates that the file has been saved.

📽 Program <new loco=""> in Serv File Reset Window Help</new>	ice Mode (Programming Track)
Roster Entry Basic	
ID:	Atheam FP-45-100
Road Name:	Santa Fe
Road Number:	100
Manufacturec	Atheam
Owner:	Tripp
Model:	FP-45
DCC Address:	Contraction of the second s
Throttle Speed Limit (%): 100
Comment:	Factory installed sound decoder
Decoder Family: Decoder Model: Decoder Comment:	4 Tsunami Diesel Genesis OEM FP45
Filename: Date Modified:	1 Jul 27, 2012 5:05:52 PM
	Save to Roster Reset to defaults
Read changes on all sheets	Write changes on all sheets Read all sheets Write all sheets
	Programming Mode Direct Byte
(F	loster file Athearn_FP_45_100.xml saved OK

Now that we have the Roster information all in order, we can continue with programming the decoder.

Now it's time to click on the **Save to Roster** button to save this data. Note that there will be brief message in status bar at the bottom of the screen that roster has been saved.

Let's move on to the Basic Programmer.

Basic Pane

You may have noticed that at the top of the window are two tabs: **Roster Entry** and **Basic**. We have completed the **Roster Entry** pane of the Program window, now, click on the **Basic** tab to change panes to continue with programming your decoder. The **Basic** pane will be displayed and look similar to the following illustration: Many panes in the programmer contain decoder dependent features, as a result what you see may not exactly agree with what you see here. Only those variables that your decoder can implement will be shown.

Below is a screen for OEM decoder that is used in the **Athearn FP-45** locomotive. Shown in factory settings, which is normally address 3

📲 Program <new loco=""> in Serv</new>	rice Mode (Programming Trac	:k)	
File Reset Window Help			
Roster Entry Basic			
	 One byte (short) address Two byte (extended) addr Active DCC Address: 3 DC) Operation Alternate Power 	ess Source Enabled	
Read changes on sheet	Write changes on sheet	Read full sheet	Write full sheet
Read changes on all sheets	Write changes on all sheets	Read all sheets	Write all sheets
	Programming Mode Direct B	yte 🔻	
1. I P	Roster file Athearn_FP_45_100.	xml saved OK	

You will see three options you can change, highlighted in yellow:

- 1. The decoder address (should be unique among your locomotives, unless you are operating sevral as a set) often the locomotive number is used.
- 2. Two radio buttons that let you toggle between 2 digit (one byte, "Normal") or 4 digit (two byte, "Extended") addressing
- 3. Analog operation (enables the decoder to run under regular DC voltage/analog control) Enable Analog Operation with caution, as some decoders will jump to full speed resulting in a "Runaway locomotive" if they are enabled for Analog Operation and encounter power spikes on a DCC digital signal. They seem to get confused, and revert to Analog operation and use the full track voltage DCC power to take off and GO! There is no stopping them without removing layout power. Very disturbing to your operating mates, but better than running into them at full tilt.

To enable Analog (old style DC, some vendors refer to this as dual mode) Operation select the appropriate entry from the drop-down list.

The yellow highlighting indicates these options are "probable" settings and have not been confirmed from the decoder. Settings that have been changed by the user and have not been written back to the decoder appear in a orange color. You will see examples of this throughout the manual.

To read the actual settings for these options (and IF your system and installed decoder will allow read back of decoder values), click on the **Read full sheet** button. The individual settings will turn red while they are in the process of being read (clever, eh?), and will turn white once the values have been read successfully from the decoder. Once again, Decoder Pro must play "Twenty Questions" to get this information, and sometimes even has to ask a couple of times.

Be patient, especially with older computers. At the very bottom of the pane (where it says "idle") you will see a running account of exactly what DecoderPro is doing, for example, the specific CV being read.

Again, the Read full sheet button and Read all sheets buttons functions are dependent on your command station. If your system does not have the capability to read CVs, then these buttons will not be available.

If you wish to change the address of the locomotive, type in the new address. To turn on or off 4 digit addressing, select the desired radio button. Be sure that the address type agrees with the number of characters in the address.

When you are finished, click on Write full sheet button to write the new values in the decoder.

Writing usually takes much less time than reading, because the value can be sent directly. As the write operation proceeds, the data will change from yellow to white. If there is difficulty writing to the decoder, the data will change to red. The software will automatically keep trying until the write operation is successful. In some instances the system will "time-out" after a certain number of tries without an acknowledgement from the

decoder. This does not necessarily mean that the values have not been written, just that the program has not received an acknowledgement. This can be due to the locomotive moving and getting on dirty track so that it can't pulse back or possibly because the command station or decoder cannot read back. Try moving the loco and try again. If it is a command station or decoder read-back issue, try the loco on the mainline and see if the programming was successful.

To finish this "basic" programming of a decoder, click once more on the **Roster Entry** tab, You will see that the address field has now been filled in, so you can now click on the **Save to roster** button. Your new decoder settings have now been written not only to the decoder, but also saved to a computer file where they may be recalled in the future.

I have programmed the address for this locomotive and clicked on the **Write full sheet** button to send the address to the command station to program the decoder. Note that the status line keeps you updated as to what is writing and should finish with OK, which is good or an error message which usually means the write was not completed. All the entries are now in white color as they match the decoder.



Now that we have entered the Roster data and set the desired address, let's return to DecoderPro3 Main window by closing the Programming window.

Edit Settings	Actions LocoNet	Window Help									
New Loco	S Identify	Help New T	rottle	Monitor LocoNet			On	Progr	amming Mode	Direct Byte Mode 🔫	
ID	DCC Address	lean		Decoder Model	Road Name	Road Number	Manufacturer	Model	Owner	Date Modified	Protocol
aBoy-40	40	and the second	Athea	n Big Boy or Challenger	under	40	Atheam	4-8-3-4 Big Boy	Tripp	Aug 18: 2013 11:23:48 PM	DCC Shert
igBoy-4024	4024	and the second s	Athea	n Big Boy or Challenger	Union Pacific	4024	Atheam	4-8-8-4 Big Boy	Tripp	Sep 27, 2011 3:41:34 AM	DCC Long
44-9-4925	4926		DN16	3K1B	BNSF	4926	Kato	C44-9	Tripp	Sep 27, 2011 7:49 48 PM	DCC Long
hallenger-3985	3985	the second second	Athea	n Big Boy or Challenger	Union Pacific	3985	Atheam	4-6-6-4 Challenger	Tripp	Aug 18, 2013 11:24:43 PM	
D40X-8932	6932	(Sectored Sectored Se	4 fund	tion decoder (36-550)	Union Pacific	6932	Bachmann	DD40X	Tripp	Aug 16, 2013 11:27:30 PM	DCC Long
84-6018F	6018	Statement of the local division in	DN16	3K0A	Southern Pacific	6018	Kato	E-8A	Tripp	Aug 18, 2013 11:28:23 PM	
8A-E018R	6018	an one of the lot	DN16	ЭКОА	Southern Pacific	6046	Kate	E-8A	Tripp	Sep 28, 2011 4:20:26 AM	DCC Long
S44AC-5719	5716		DZ12	SIN	BNSF	5719	Fox Valley	ES44AC	Tripp	Sep 27, 2011 1 47:56 AM	DCC Long
S44AC-5738	5719		DZ12	SIN	ENSF	5738	Fox Valley	ES44AC	Tripp	Sep 27, 2011 1 46 45 AM	DCC Long
I0PH-342	342		DN15	3K0D	AMTRAK	342	Kato	F-40PH	Tripp	Oct 18, 2011 12:59:41 AM	DCC Long
A-300-A	300		DN16		Santa Fe	300	Kate	F-7A	Tripp	Aug 18, 2013 11:19:38 PM	
7A-300-B	300		DN16	3K0B	Santa Fe	300	Kato	F-7A	Tripp	Aug 18, 2013 11:21:35 PM	DCC Long
7B-300-C	300	La constant	DN16	3K08	Santa Fe	300	Kato	F-78	Tripp	Sep 28, 2011 4 46 31 AM	DCC Long
78-300-D	300	Land Land	DN16	3K08	Santa Fe	300	Kato	F-78	Tripp	Aug 18, 2013 11 22:03 PM	DCC Long
78-300-E	300	the second second	DN16	3KDB	Santa Fe	300	Kate	F-7B	Tripp	Aug 18, 2013 11:22 21 PM	DCC Long
78-300-F	300		DhH 6		Santa Fe	100B	Kato	F-79	Tripp	Aug 4, 2012 2:39:13 AM	
45-100	100		NFP		Santa Fe	100	Atheam	FF45	Tripp	Aug 18, 2013 11-31 03 FM	
P45-105	105		IN FP4	5	Santa Fé	105	Atheam	FP45	Tripp	Aug 10, 2013 11:31:18 PM	DCC Short
	Las and	ID:	FP45-100							Programming Tr	ack
-	-	Road Name: Road Number: Manufacturer: Owner:	Santa Fe 100 Atheam Tripp							 Programming Or Editonly 	Main
SinesA		Model: DCC Address: Decoder Family: Decoder Model:	FP45 100	Diesel Genesis OEM						Progra	10
		Filename:	FP45_10							Labots & Media	Thrott

Notice that we now have a list of all the locomotives programmed so far that is in our roster.

What we've done so far is what is available in the Basic mode of programming in DecoderPro3. Which i basically puts the Locomotive in the roster and assigns an address. A good place to start for new folks or at a club programing locomotives. It's hard to go wrong, but you can change the loco address and add it the roster, which are the two most often needed actions with programming.

The classic DecoderPro offered a number of modes, most of which were often redundant and confusing showing how the user could edit the underlying file to make special application programming modes. The Comprehensive Programmer was the most popular for a long time until Advanced came along with added features. So now they've been combined in DecoderPro3. Thus the Comprehensive Programmer with added advanced features is the only other programmer that DecoderPro3 offers.

Since we've already covered **Basic**, let's explore the DecoderPro3 Comprehensive Programmer!

At the bottom of the window is the **Labels & Media** and **Throttle** buttons. Use these buttons to set up the Icon photos for your roster entries and to set-up the Function Labels on the software throttle included in JMRI[®]. Go to those pages and take a look.

DecoderPro3® Comprehensive Programmer

Roster Entry Pane

The **Comprehensive Programmer** begins the same way as the **Basic Programmer**, with a **Programmer Setup Pane** and a **Roster** Pane. The content are identical, so they will not be repeated here.

Just be sure that you select the **Comprehensive Programmer** in the DecoderPro3 **Preferences**, **Roster** pane, Program TAB, then select locomotive you wish to program from the DecoderPro3 main screen from the roster list, now press the **Program** button.

Edit Settings	Actions LocoNet	Window Help								
New Loco	S Identify	Help New Th	mottle Monitor LocoNet			Oor	Program	naning Mode	Direct Byte Mode 💌	
D	DCC Address	lcan	Decoder Model	Read Name	Road Number	Manufacturer	Model	Owner	Date Modified	Protocol
-8A-6018F	6018	and some spins for	DN163K0A	Southern Pacific	6046	Kato	E-8A	Tripp	Sep 28, 2011 4 20:26 AM	DCC Long
S44AC-5719	5719		DZ125IN	BNSF	5719	FoxValley	ES44AC	Tripp	Sep 27, 2011 1:47:56 AM	DCC Long
844AC-5738	5719		D2125IN	BNSF	5738	FoxValley	ES44AC	Tripp	Sep 27, 2011 1 48 45 AM	DCC Long
10PH-342	342		DN163K0D	AMTRAK.	342	Kato	F-40PH	Tripp	Oct 18, 2011 12:59:41 AM	DCC Long
/A-300-A	300		DN163K0B	Santa Fe	300	Kato	F-7A	Tripp	Aug 16, 2013 11 19 38 PM	DOC Long
7A-300-B	300		DN163K0B	Santa Fe	300	Kato	F-7A	Tripp	Aug 18, 2013 11:21:35 PM	DCC Long
7B-300-C	300		DN163K0B	Santa Fe	300	Kato	F-78	Tripp	Sep 28, 2011 4:46 31 AM	DCC Long
78-300-D	300	Contraction of the local division of the loc	DN163K08	Santa Fe	300	Kato	F-78	Tripp	Aug 18, 2013 11:22:03 PM	DCC Long
B-300-E	300		DN163K08	Santa Fe	300	Kato	F-78	Tripp	Aug 18, 2013 11:22:21 PM	DCC Long
B-300-F	300	and the second second	DN153K0B	Santa Fe	3008	Kato	F-78	Tripp	Aug 4, 2012 2:39:13 AM	DCC Long
45-100	100		N FP45	Santa Fe	100	Atheam	FP45	Tripp	Aug 18, 2013 11:31:03 PM	DCC Shart
46-105	1.05		NFP45	Santa Fe	105	Atheam	FP45	Tripp	Aug 18, 2013 11:31:18 PM	
kado-0	0	ACT DISC.	Basic CS	KATO	1	Kato	Mikado	Tripp	Aug 16, 2013 11:17 26 PM	DCC Shert
2BWH-506	506		N12A0	AMTRAK	506	Atlas	P32BWH	Tripp	Aug 18, 2013 11:32 55 PM	DCC Long
2-40-2-5026	5026		DN153K1B	Santa Fe	5026	Kato	SD-40-2	Tripp	Aug 18, 2013 11:29 43 PM	DCC Long
3-40-2-5340	6340	and the second s	DNI163K1B	BNSF	6340	Kato	SD-48-2 Shoot nose	Tripp	Aug 16, 2013 11:30:07 PM	DCC Long
D70MAC-9959	9959	THURSDAY.	DN163K1B	BNSF	9959	Kato	SD70MAC	Tripp	Aug 18, 2013 11:32:08 PM	
eth - Atlas OP38	3520		DH153	Santa Fe	3520	Attas	OP-38	Seth	Mar 8, 2012 3:57:17 PM	DCC Long
Banah	3 2	ID: Road Name: Road Number: Manufacturer: Owner: Model: DCC Address;	FP45-100 Santa Fe 100 Attream Tripp FP45 100						Programming Tr Programming Or EditOnly Progra	Main
		Decoder Family: Decoder Model: Filename:	Tsunami Diasel Genesis OEM N/FP45 FP45_100.xml						Labets & Media	Throt

We have programmed the Athearn FP-45 in the Basic Programmer, it is on the roster list and has been addressed. If we want to add the extra features of the decoder, we will select the locomotive from the roster list then, set preferences for Comprehensive Program then click the **Program** button.

The Programmer window will open as shown below. All programmers, Basic and Comprehensive, open to the Roster Entry pane, which will be similar to that shown below for the FP-45.

The programmer opens with the roster entry page filled in because we selected the loco from the roster panel in the previous screen.. Note that there are now a whole lot more TABs at the top of the page, allowing us to open many panes to program more features. The number of TABS will depend upon the decoder being programmed. This Tsunami Sound Programming has several TABS that are unique to sound decoders.

📕 FP45-100											
File Reset Wind	ow Help	-					_	_			
Analog Controls	Consist	Advanced	Sound	Sound Levels	CVs	Tsunami Ligh	ting Equal	izer Reverb	ASC		
Roster Entry	Function 1	abels	Roster Med	ia Basic	Motor	Basic Spe	ed Control	Speed Table	Functi	on Map	Lights
		Comment Decoder I Decoder I	nber: urer: ;peed Limit ; Family: Model: Comment:	(%): 100	Diesel Ge Diright Ge	nesis OEM	ns				
<u>.</u>	Read	l changes on	all sheets	Write chan	ges on al	sheets F	lead all sheet	s Write all	sheets		
				1	-	irect Byte Mod	•				

Note that the **Roster** pane is essentially unchanged from the **Basic** programmer, but the window has a LOT more options in the **Tabs** at the top. If you are unsure how to handle the **Roster** information, go back to that section in the **Basic Programmer**. If you're ready to move on to bigger and better things, let's go to the next tab.

Expanded Basic Pane

One of the first things you will notice about the expanded **Basic** Pane in the **Comprehensive Programmer** is that there are a lot more options than you found in the **Basic Programmer**. Now use the Read full sheet button to read the values that the locomotive is programmed to. Now you can determine if you want to change any values.



Select 2 or 4 digit addressing radio button to select which mode of addressing you wish to be active

You can enter locomotive addresses in both the **Primary address** and/or the **Extended address**. The address of a decoder is the prefix for the code it responds to. This is how you are able to run multiple locomotives on a single line and keep all their speeds and functions independent. Decoders originally could have only a two digit address... after all, who could possibly need more than 100 locomotives? Some lower-end command stations and decoders still use only two digit addressing. Newer decoders can have up to a four digit address. The "**Addressing Mode**" option lets you choose between two and four digit addresses. The addresses themselves are input into the appropriate text boxes. The "**Extended Addressing**" check box turns on and off the 4 digit address mode. This allows you to have two different addresses stored in a decoder, and toggle between the two.

Normal direction of motion: Set the **Locomotive direction**: **normal** or **reverse** from the drop-down list. The option for **Normal direction of movement** is important for people who model railroads like the NS, who ran diesel locomotives long hood forward, or for the person who occasionally makes a mistake and hooks the decoder up in reverse. It lets you change the direction defined in the decoder as "forward" (no disassembling and rewiring).

Speed Steps: Unless your command station or decoder can only handle 14 speed steps, choose the 28/128 setting. If your decoder offers 128 speed step operation, you'll find you get much finer control of your locomotives by using the **128 speed steps** setting. You choose between 128 or 28 with your throttle, when the locomotive is ready to roll on the track.

Analog operation (enables the decoder to run under regular DC voltage/analog

control) Enable Analog Operation with caution, as some decoders will jump to full speed resulting in a "Runaway locomotive" if they are enabled for Analog Operation and encounter power spikes on a DCC digital signal. They seem to get confused, and revert to Analog operation and use the full track voltage DCC power to take off and GO! There is no stopping them without removing layout power. Very disturbing to your operating mates, but better than running into them at full tilt.

To enable Analog (old style DC, some vendors refer to this as dual mode) Operation select the appropriate entry from the drop-down list.

User ID #1" and **User ID #2** (off to the right} there are two CVs that have nothing to do with any function of the decoder. They simply provide you with a method of electronically marking your equipment. Use these CVs, even though you may have custom-painted equipment for your own free-lanced railroad - it provides one more way to identify your decoders if they are removed from the loco.

The Read and Write Buttons

At the bottom of all the programmer panes you will find three rows of buttons, as shown :

			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Concernance and	- 20 - 20 20 2 2 2 2 2 2 2 2 2 2 2 2 2 2		
	Read changes on sheet	Write changes on sheet	Read full sheet	Write full sheet			
	Read changes on all sheets	Write changes on all sheets	Read all sheets	Write all sheets	S		
Direct byte mode programming Set							
		idle					

The top row operates **ONLY** on the currently visible pane. These buttons are:

- 1. **Read changes on sheet** an "Oops!" button that lets you recover data from the decoder if you've changed it accidentally on the computer (and don't remember what the values were!), but only if you haven't written it yet.
- 2. Write changes on sheet faster than writing all the data on the sheet, and ideal for tweaking changes in Ops mode, programming on the main track.
- 3. **Read full sheet** read all data in this pane from the decoder. Note this may take a great deal of time, depending upon the speed of your computer and the controller station in use.
- 4. Write full sheet writes all data in this pane to the decoder.

The second row of buttons performs essentially the same functions, but on the **entire range** of CVs for the decoder. This allows you to read all CVs, for example, or to make a series of changes across several panes, and when done then write them all to the decoder. Again, you have the option of reading/writing only the changed data, or all data.

Below the two rows of buttons is a text line that shows what the current **programming mode** setting, and a **Set...** button that allows you to change it without exiting the programmer. **Go to Programming Modes** for further information.

Finally, the bottom line of the pane is a status bar that tells you exactly what the system is doing. It shows **idle** in these screen shots because the system was not actively programming decoders when they were made.

Now let's go to the Motor TAB.

#### **Motor Control Pane**

**Motor** control is divided into three separate panes. The **Motor Control pane** deals with CV's for simulating locomotive weight or inertia. The **Basic Speed Control pane** deals with basic motor control CV's and the third **Speed Table pane** covers those dealing with the **Speed Table** method of controlling the motor. These last two methods of motor control are mutually exclusive. The selection is made with a radio button at the top of each of those two panes. The default selection is **Basic Speed Control**.

### **The Motor Pane**

ile Reset Wind	low Help									
Analog Controls	Consist Advance	ced Sound	Sound Level	Is CVs	Tsunami Lighting	Equalizer	Reverb	ASC		
Roster Entry	Function Labels	Roster Media	Basic	Motor	Basic Speed Control	Speed	Table	Function Map		
				eleration F						
	Read changes on		Dec IF Cutout (0-12	eleration F 27 or 128-2	tate 0	Write fulls	theat			
	Read changes on	sheet Wr	Dec	eleration F 27 or 128-2 n sheet	tate 0	Write full s	sheet			

The contents of the Motor pane will vary significantly between different brands and models of decoders. In the case of the decoder shown in the illustration:

Acceleration Rate and Deceleration Rate help simulate a locomotive under load - but don't use them unless you have very clean track, because an interruption of power can make a locomotive stop and cycle through the acceleration curve again! On the latest Tsunami Diesel sound decoders the firmware has been changed. The decoder now returns to the last speed setting before the power interruption but it has no knowledge of where it was in the acceleration curve. So if you have been in the habit of using lots of momentum and setting speed to maximum to get the sound of a notch 8 motor, be aware that if the loco loses power for just an instant from a dirt spot on the rails, it will resume at the top speed step and appear to be running away.

High deceleration rates can make station stops and switching realistic, but very challenging!

**Back EMF** or **Speed stabilization** is implemented differently by each manufacturer. See your decoder documentation for the best ways to implement these variables, and be prepared to do a lot of experimenting! However they do it and whatever they call it, you should find it in this pane.

### **Speed Control Pane**

The **Speed Control pane** looks very complicated, but it can be one of the most significant in improving the performance of your locomotive fleet. Remember if you use **Speed Table** TAB this TAB is not used.

🚟 Athearn FP-4	5-100										
File Reset Wind	low Help		_				-				
Analog Controls	Consist	Advanced	Sound	Sound Lev	els CV	s   1	sunami Lighting	Equalizer	Revert	ASC	
Roster Entry	Function La	abels Ro	ster Media	Basic	Motor	Bi	asic Speed Contro	ol Speed	Table	Function	Мар
		Start		is button to O Use Star turn off, use 255) 0	t Voltage	Vsta	rt)	=			
	Read cha	nges on she	et Wri	ite changes	on sheet	F	Read full sheet	Write full	sheet		
R	ead changes	s on all sheet	ts Wri	te changes (	on all shee	ts	Read all sheet	s Write	all sheets	s	
			Prog	ramming Mo	de Direct	Byte	-				
					ок						

Let's look first at the top of the pane: You now have the option of using Basic Speed Control (this pane) or Speed Table to control your locomotive's speed. Use the tabs at the top of the screen to select the method you wish to use and then click the button in the top center for the page to select that method of speed control. Whichever one you select last with the button will be the method used for speed control.

Now back to Basic Speed Control Pane. We see the **Start Voltage (0-255)** slider to set the start voltage. What appears in the body of this panel is dependent on what is available from your decoder manufacturer. Most have something similar to what is shown, but the Soundtraxx Tsunami series is very limited. We'll show you a way around this limitation when we get to the Speed Table screen.

Three important CVs are programmed in this pane Vstart, Vmid and Vhigh. They work together to make a very basic three point speed table. On some decoders these settings may be labeled differently and all three may not be available. Decoder Pro will show the correct options for your selected decoder.

Possible setting that can appear on this TAB.

**Vstart (Start Voltage)** is the voltage at the first speed step. If your locomotive didn't start moving until there were three volts on the track with analog power, this lets you set up the decoder to give it 2.99 volts right away, so it will start moving when you advance your DCC throttle.

Vhigh (Top Voltage, Max Voltage, Maximum Voltage) is the maximum amount of power the locomotive will get from the decoder. If your locomotive looks like Chuck Yeager's X-1 at full throttle, then you can trim the top speed down to a more reasonable scale level. A similar looking limit can be set on the Roster Entry screen, but it only apples to JMRI Throttles.

Vmid (Mid Voltage, Midpoint Voltage) lets you configure the slope between Vstart and Vhigh a bit, so that if your locomotive reaches full speed at 5 volts, you can stretch out the lower end of the curve to get more fine control in a useful speed range.

If you are having problems with unpredictable speeds with your locomotives, check these settings. Sometimes, one or more of these settings have been changed accidentally (usually due to an error in programming CV's with a throttle), leading to very odd speed performance. In particular, if the **Vmid** is lower than **Vstart** or higher than **Vhigh**, results can be highly unpredictable. Decoder Pro will not let you make this mistake.

**Forward Trim** and **Reverse Trim** allow you to compensate for differences in the forward speed and reverse speed of the locomotive. Most model locomotives do not run at exactly the same speed forward and backward due to the motor mechanics and the gear train to the wheels.

The settings for these controls are not as intuitive as you might think. A setting of 0 in these CVs turns them off. However, a setting of 128 in either of them will have no visible effect! To make the forward and reverse trim effective, raise the value above 128 to increase speed, and lower it below 128 to decrease speed in this pane. The Forward and Reverse Trim does not work the same for all decoders, with variations between manufacturers.

#### Use these suggestions for using the basic motor controls and programming them on the main.

Unless you want to get into some precision speed matching, you probably won't need to use the **Speed Tables** you'll see on the **Speed Table pane**- you'll be able to accomplish much of what you want using just **Kick start**, and **Start Volts**, **Mid Volts**, and **Max Volts** if they are available in this pane... but how to do this?

Start with the **Kick start** value, and **Programming on the main** rather than the programming track. Set the locomotive to be programmed on throttle step 1. If it moves at all, don't changes the **Kick start** value. If it doesn't move, slowly step up the throttle until it does. Then, turn the throttle down. If the locomotive stops at the same setting it started, you won't need to set the **Kick start** value. However, if it continues to run at a slower speed than it would start, then increase the **Kick start** value until it will start and run at its slowest possible speed.

Now, if the locomotive isn't running at throttle step 1, increase the **Start Volts** value (and write it) without changing the throttle until the locomotive barely crawls... you can usually get this down to a speed of a tie a minute or so if you like! Remember, you are doing this in "**ops mode**", so you can make these changes while the locomotive is actually running. Don't forget to write the value changes to the decoder - they won't take effect unless you do.

Now, set the top speed of the locomotive. Run the throttle up to full, and lower the **Max Volts** value (and write it) until the locomotive runs at the maximum speed you want it to reach, but don't forget that adding a train will slow it down!

Finally, set the **Mid Volts** value about half-way between **Start Volts** and **Max Volts**. Setting it above or below the median of the **Start Volts** and **Max Volts** values will give you a crude, three point speed table.

There are no hard and fast rules for the exact numbers to use. Even identical locomotives with identical decoders will need different numbers, due to variances in motors and drive trains. Experiment with the settings - Decoder Pro makes it easy!

Note: Not all decoders will have Start, Mid and Max Volts, but will have some version of this which will be displayed by Decoder Pro for the specific decoder.

If you select **Speed Table** all of the settings in this pane are ignored.

### **The Speed Table Pane**

The **Speed Table** allows you to fine-tune the throttle response of your locomotive. You might opt to match all of your locomotives so they run at the same speed for the same throttle setting, or you might want to set the table up so that your locomotive runs at the actual scale speed indicated by the throttle. Or maybe you have someone in your operating group that likes to switch the yard at Mach 2.5, and you want to slow them down a bit. There are a lot of ways to use this feature. (This feature may vary by manufacturer and decoder series) Some decoders may only have preset curves that you can select.

You now have the option of using **Speed Table** (this pane) which if selected and written to the decoder will replace the **Basic Speed Control** to set your locomotive's speed control mode. Whichever one you select last and write to your decoder will be the method used for speed control. To select the use of **speed tables**, the **Use Table** radio button is selected at the top of the pane, and in the case of Soundtraxx and QSI decoders, the drop down selection box must be used. See the discussion at the end of this section for an example.

The default speed table for most decoders is a straight line from zero on the left to maximum on the right. The below the table duplicates that in the table.



#### Straight Line Speed Curve

As you can see, you have both numbers and sliders to work with. Changing either a number or slider will make the other change to match it. If you are CV inquisitive, you can use the tool tip to advantage. By hovering over any of the sliders, the tool tip will reveal the CV to which you are pointing.

The **Match ends** button will also result in a straight-line graph, but you can offset the beginning and end by any amount you wish. The first and last steps are used to set to minimum and maximum values for the straight line. The function will then draw a straight line between those two end points. Below is an example of the result.



Now if you've used DecoderPro in the past, you're probably wondering what those little boxes at the bottom of each slider are used for. Well, they're difficult to explain, but easy to use. They basically allow you to set a slider to control every slider in columns to its left as well as to its right. If you click two of the boxes and then move one of those sliders you'll see that they are linked to the sliders between them. Points to the right never are higher than the slider being moved, and the points to the left are never lower that the slider being moved. This "always increasing left to right" is normally the way the sliders worked, but now the ones in between the check are linked. If the slider is lowered and then raised the straight line is drawn between the column checked to the right and the column that the slider is controlling. It's difficult to describe, but try it and you'll see.

What could that possibly be used for, you ask? Well, many decoders (like the Soundtraxx Tsunami in this example) do not support V-start, V-mid and V-max. So, if you are trying to use the simplified method of speed matching locos, these decoders won't support it. Well now you have a way. Check the left-hand, right-hand and middle columns. Set the left-hand column to V-start, the right-hand to V-max and then slide the middle slider up and down until you get the V-mid that you want. Now all you have to do is write this speed table to the loco and you've accomplished what you wanted to do, but the decoder manufacturer didn't provide for.



#### Substitute for Quick Speed Matching

If you want to set up a loco for switching you can set a start speed that is the same for the first portion of the throttle revolution and lower the top speed for use in the yard as shown below:



#### Switcher Speed Curve

if you don't desire a strait-line response curve there are other options available. The Constant ratio curve gives you a response that increases slowly in the low end and rapidly at high throttle. This function will also draw the curve between preset end points.



#### **Constant Ratio Curve**

The **Log curve** reverses this response, giving you a logarithmic response curve with high acceleration at low speeds, but topping out quickly. It will also draw the curve between preset end points.



#### Logarithmic Speed Curve

The **Shift left** button moves the entire speed table to the left one space with each click on the button. The example below shows a linear 0-255 speed table that has been **shifted left** three times.



#### **Curve Shifted Left**

The **Shifted right** button move the entire speed table to the right one space with each click on the button. The example below shows a linear 0-255 speed table that has been **Shifted right** three times.



#### **Curve Shifted Right**

Of course, you can enter the numbers individually or move the sliders one at a time to create your own fully customized speed table. To aid you with setting the individual values, the slider value is shown at the top of each slider. Also, by hovering the mouse at a slider column the number of the CV being entered will be revealed.

One very important thing to remember: No matter how pretty your speed table looks, it has absolutely no effect on the locomotive unless you write it to the decoder!

And this point is especially pertinent with the QSI and Soundtraxx Tsunami decoders, because they have a separate drop down box like the QSI box below. They require that you select the **user defined** speed table entry in this box or your table will not be written to the decoder. Interestingly, Tsunami puts the selection at the bottom of the list making it very easy to miss.



### **Function Mapping Pane**

Some decoders allow you to change the function assigned to each set of output wires (or pads). Multiple choices for function assignments are shown by several check boxes. This is more common in decoders with more than four functions, and in sound decoders.

Some of the new sound decoders may have up to 28 functions, and your throttle may have a limited function capability. So, here's your opportunity to pick which ones you can operate from your throttle.

When this capability is present, the check boxes as shown in the window below are active and allow you to choose to which function key on the throttle each output responds.

	ndow Help										
Analog Controls	s Consist	Advanced S	Sound	Sound Levels	CVs	Tsunami	Lighting	Equaliz	er Reverb	ASC	
Roster Entry	Function L	abels Roste	er Media	Basic	Motor	Basic Sp	eed Contr	ol S	ipeed Table	Functi	on Map
Description Forward Headling Reverse Headling Function Function Function Function Function Function Function Function Function Function	1 Whit ght F0(F)	2 3 e Yellow FX5	4 /	e input	0	utput wire	or operati	on	What ha	-) Brakes	hen
	Read ch	nanges on sheet	w	rite changes or	n sheet	Read ful	l sheet	Write	full sheet	1	
		es on all sheets	1	rite changes on			d all sheet	1.	Vrite all sheet		

If a checkbox is dimmed that indicates that no changes in function assignments are possible. Not all decoders allow you to remap the functions and others have very limited functions. Only remap functions if you are sure you know what you are doing.

### **Lighting and FX Functions Pane**

This pane provides for control of some of the most "gee-whiz" functions on the decoder. While fine-tuning the motor is important, and speed tables help add to the realism of operation, everyone notices the lights - especially when they change intensity, flicker, flash, or fade. They attract even more attention when, for example, the ditch lights that were steadily shining as the locomotive approached the crossing suddenly begin flashing alternately, then return to a steady glow; or when a locomotive pulls into a siding, stops, and dims its headlight for the approaching train. All these effects are possible with the right decoder and proper set-up, and set-up is what DecderPro is all about.

Every Manufacturer and decoder family handles the lighting in a unique manner, so there are many versions of this pane.

Program Kato C44-9W-4926 in Service	Mode (Programn	ning Track)				
e Reset Window Help						
ights Analog Controls Consist Adv Roster Entry Basic	Motor	Sound Levels CV Basic Speed C	in a substant of the	Sp	eed Table	Function Map
Lamp keep-alive voltage FX rate adjust Ditch light hold-over time	0					ents of this page ge drastically with the
Forward light FOF effect generated Forward light FOF behavior			phase A	-	deco	der Mfr lighting bilies
Reverse light FOR effect generated Reverse light FOR behavior			phase A	-		
Function 1 effect generated Function 1 behavior		f lead , ON with function ON	phase A	•		
Function 2 effect generated Function 2 behavior		f lead , ON with function ON	phase A	-		
Function 3 effect generated Function 3 behavior		f lead , ON with function ON	phase A	•		
Function 4 effect generated Function 4 behavior		f lead , ON with function ON	phase A	•		
Read changes	on sheet W	rite changes on sheet	Read full sl	neet	Write full sheet	
Read changes on	all sheets W	rite changes on all sh	ets Read a	I sheets	Write all sh	eets
	Direct	byte mode programm	ing Set			
		idle				

The specific effects available differ widely between manufacturers, and even between different "families" of decoders from the same maker. The above example is from a Digitrax FX decoder. Some of the advanced features you will see in many decoders (though they may go by different but similar names)

The **Lamp keep-alive voltage** determines how dark a light gets between "full on" moments. This can let you adjust effects to give the impression of, for example, a marker light that also has a rotary beacon in the same housing. Play with this value and see what kind of results you get for your specific decoder.

**FX rate adjust** controls how fast an FX effect operates. The higher the number, the slower the frequency of flash or "rotation" of the effect. This can be used to set subtle differences between locomotives. As you can see from

the panel above, there are twin alternating strobe lights on the engines. If you vary the setting for the **FX Rate** slightly, the locomotives flash at slightly different rates. This keeps MU units from looking <u>too</u> coordinated!

**Ditch light hold-over time** CV establishes how long the ditch light effect (alternating flashing) stays activated after you hit the **F2** function key. Since the **F2** key is non-latching (think of it as a momentary contact switch) that normally turns off when it is released. By raising the value of this CV you can make them stay on for up to 30 seconds from a single momentary activation.

🗃 Program Kato C44-9W-4926 in Service Mode	(Programming Track)	
File Reset Window Help		
Lights Analog Controls Consist Advanced Roster Entry Basic Mo		peed Table Function Map
Lamp keep-alive voltage 0 FX rate adjust 0 Ditch light hold-over time 0		Many options may be offered depending upon the decoder
Forward light FOF effect generated Norma	al function of lead 👻	
Rando	alfunction of lead	
Reverse light FOR effect generated Reverse light FOR behavior <mark>Single</mark>	pulse strobe	These are the choices for each lighting effect
Function 1 effect generated Rotary Function 1 behavior		
Function 2 effect generated Norma	al function of lead	
Function 2 behavior	rd direction, ON with function ON, phase A	<ul> <li>land these are all the choices for timing and setup for each of the</li> </ul>
Function 3 effect generated Norm	al function of lead 🔹	choices above
Function 3 behavior	ard direction, ON with function ON, phase A	Better have your manual available
Function 4 effect generated Norma	al function of lead	
Function 4 behavior	ard direction, ON with function ON, phase A	
Read changes on sh	eet Write changes on sheet Read full sheet	Write full sheet
Read changes on all she	ets Write changes on all sheets Read all sheets	Write all sheets
	Direct byte mode programming Set	
	īdle	

Sound decoders , such as the Tsunami in our OEM FP-45, have an extremely complicated Lighting program pane.

FP45-100										
File Reset Window	r Help			_					_	
Analog Controls	Consist Advanced	Sound	Sound Levels	CVs	Tsunami Lighting	Equalizer	Reverb	ASC		
Roster Entry	Function Labels	Roster Med	ia Basic	Motor	Basic Speed C	Control	Speed Table		Function Map	Lights
			LIGHTING	EFFECTS	AND CONTROLS					
Headlight	t F0(f) Effect Selection	Dyno-light		-	FX5 Eff	lect Selection	n Dyno-light		•	
Headlight	F0(f) Phase Selection	Use phase	A (normal)		FX5 Pha	ase Selection	n Use phase	A (nor	mal) 💌	
Headlight FO(f)	Grade Crossing Logic	disabled •			FX5 Grade C	rossing Logi	c disabled	-		
Headlig	ght FO(f) Rule 17 Mode	Disabled (H	eadlight mappin	(g) 🔫	FX5	Rule 17 Mod	e Disabled (I	X5 ma	pping)	
Hea	adlight FO(f) Light Type	LED	-		E	X5 Light Type	e <mark>LED</mark>		-	
Backup Light	F0(r) Effect Selection	Dyno-light	_	-	FX6 Eff	lect Selection	n Dyno-light		-	
Backup Light	F0(r) Phase Selection	Use phase	A (normal)	T.	FX6 Pha	ase Selection	n Use phase	A (nor	mal) 💌	
Backup Light F0(r)	Grade Crossing Logic	disabled •	-		FX6 Grade C	rossing Logi	c disabled	-		
Backup Lig	pht FO(r) Rule 17 Mode	Disabled (B	ackup Light ma	pping) 💌	FX6	Rule 17 Mod	e Disabled (I	X6 ma	pping)	-
Backup	Light F0(r) Light Type	LED	-		E	X6 Light Type	e LED		-	
		Gra	Hyperlight Flas de Crossing Hol							
	Read chang	es on sheet	Write cha	nges on s	heet Read full	sheet	Write full sh	eet		
	Read changes o	n all sheets	Write cha	nges on a	Il sheets Read	all sheets	Write al	sheet	5	
			Programmin	g Mode	Direct Byte Mode 🔻	-				
				O	4					

Note that some of the lighting functions can be tied to a sound function which is unique to sound decoders. Sound decoders have many more functions than normal motor control decoders.

The other lighting effects are highly variable between decoders. Check your specific decoder documentation for what the decoder is supposed to be capable of doing, and have fun playing with them. They are the most visually satisfying of all the capabilities of the decoders!

Even if the function and effect are available, you may have to add the lighting to your locomotive in order to be able to use that function, such as adding ditch lights, beacons, etc.

### **Analog Controls Pane**

As discussed in the **Expanded Basic Pane**, some decoders allow operation on Analog or Conventional DC layouts. At the discretion of the manufacturer, some of the non-motor responses may be changeable by setting CV's in the decoder. This pane is where you would set these values. Typical would be whether any of the various functions (such as lights and bell) would be on or off when in DC mode. Consult your decoders manual for options available.

Some decoders are Analog Controls panes are simple and others such as the FP-45 are complicated.

File Reset Wind	ow Help												
Analog Controls	Consist	Advanced	Sound	Sound Le	vels	CVs	Tsunami	Lighting	Equalizer	Reverb	ASC		
Roster Entry	Functi	on Labels	Roster	r Media	Basi	c	Motor	Basi	c Speed Com	rol	Speed 1	Table	Function Map
	ource Conve r Start Volta		nalog powe		e cuable	u	Analog Analog Analog Analog	Mode Fu   Mode Fu   Mode Fu   Mode Fu	nction Statu Inction Statu Inction Statu Inction Statu Inction Statu Inction Statu	s - F4 📃 s - F5 🛄 s - F6 🛄 s - F7 🛄	Analog M Analog M	lode Fun lode Fun	inction Status - F9 inction Status - F10 inction Status - F11 inction Status - F12
-		Read chan	ges on she	et Wi	rite chan	nges o	n sheet	Read fu	ull sheet	Write ful	sheet	ŀ	
	R	ead changes	on all sheet	s Wr	ite chan	ges o	n all sheets	Rea	nd all sheets	Write	e all shee	ts	
				Prog	grammin	g Mod	le Direct B	yte 🗖	-				

#### **Consisting Functions Pane**

Consisting is a means to have two or more locomotives respond to orders from the command station, and do it together in unison. There are a number of terms used to describe consisting, and the manufacturers don't agree what those terms should be. The NMRA has adopted terminology, so that is what will be used in this discussion.

Address Consisting. You merely set the address of every locomotive to be the same, and we can use the Basic Programmer pane to do this. Then a DCC instruction sent to a locomotive with address XX will cause all the locomotives with address XX to respond. It works well for locomotives that are always run together, and is portable from one layout to the other. The disadvantage is that it's a pain to keep re-addressing your locomotives if you don't always run them together.

So, the NMRA came up with two additional means of consisting. One is set up in, and remembered by the command station, and the other is set in the decoders.

The NMRA calls the command station based system Basic Consisting. The command station keeps a list of all the locos in the consist. When an action is needed the command station sends an individual packet to every locomotive in the consist, which causes them to then act together. Since this method is command station based the consist is not portable to another system. Also, since it does not need to be programmed into the decoders, DecoderPro doesn't need to deal with it.

The NMRA calls the decoder based system Advanced Consisting. To implement this system the decoder has to have a special memory space (CV19) which is used to store a consist address. This type of consisting is portable between layouts, since the information that the loco is part of a consist, and the address information for that consist is carried in the decoder. The disadvantage is that once the locomotive is assigned to a consist it will only respond to the consist address. If you forget to "break" the consist at the end of an operation, you will be

puzzled as to why your locomotive won't respond to requests for motion, even though it will respond to some of the lighting functions.

DecoderPro utilizes the Consisting Pane to set up NMRA Advanced Consists and the response of the locomotive to function requests sent to the consist address.

Program Kato C44-9W-4926 in Servi e Reset Window Help	in the proof	anning transf	
· · · · · · · · · · · · · · · · · · ·	Advanced Sou	und Sound Levels CVs Dig	jitrax
Roster Entry Basic	Motor	Basic Speed Control	Speed Table Function Map
if your loco won't respond to it's own address, try reading this to see if the loco thinks it in a consist. Set to zero and write it, to remove loco from consist.	Vill decod Advanced Advanced Advanced Advanced Advanced Advanced Advanced	Advanced Consist address Advanced Consist direction forward ler respond to function requests at a Consist Function 0 Override No Consist Function 1 Override No Consist Function 3 Override No Consist Function 3 Override No Consist Function 5 Override No Consist Function 6 Override No Consist Function 7 Override No Consist Function 7 Override No Consist Function 8 Override	
Read chan	res on sheet	Write changes on sheet Re	ead full sheet Write full sheet
Read changes	-	Write changes on all sheets	Read all sheets Write all sheets
	D	Direct byte mode programming	Set
		idle	

The Advanced Consist Address is for **EPF** (**Extended Packet Format**, as defined by the NMRA Recommended Practices for DCC). If the consist address is **any value other than zero**, the locomotive is considered to be in a consist and will only respond to instructions sent to the consist address. Thus we set a short address here to create a multiple engine group that will all respond to the same address. Think of it as an MU specific locomotive address. Since the address is in the same range as non-consisted locomotives with short addresses, we need to be sure the address is unique on the layout. A way of doing this is to use higher end of the short address range

starting from 127 and going down. Most folks working with single locomotives with short addresses tend to be using the manufacturer's default of 3, or other low values, typically for their logging locomotives.

This Pane also allows one to instruct the decoder what effects are to be active when the locomotive is in part of a consist, assuming the decoder is capable of responding appropriately. As an example, this allows you to specify if the headlights and other lighting functions are to be always off if the locomotive is in the middle, or tail end. This can be handy if only the "B" unit has sound. You can set it's lights to be off in a consist, but it can sound it's horn even though it's in the consist.

If you've had your locomotives on another layout and ran them together, but can't get them to run separately on your home system, check this to see if it's consist address has been set.

#### **Advanced Features Pane**

The **Advanced Features** pane covers CVs that don't fall readily into one of the other categories, and more importantly are not generally part of the NMRA DCC standard. This is a bit like the Netscape/Microsoft Browser Wars, areas where the manufacturer is pushing the envelope. In this case, the CV here controls the Transponding feature of newer Digitrax decoders, which allows them to report their location and engine number back to the Loconet.

There may be one or several of these panes, depending on how complex the decoder programming is and the style of the person who wrote the definition file for your particular decoder.

🗮 F7A-300-A									
File Reset W	indow Help								
Speed Table	Function Map	Lights	Analog Controls	Consist	Advanced	CVs	Digitra	300	
Roster Entr	y Fu	nction Labe	ls Roste	er Media	Basic	Mo	otor	Basic Spe	ed Control
	Read chan	jes on shee		ges on shee			1	frite full sheet	
	Read changes o	n all sheet	s Write chang	les on all she	eets Rea	d all sh	eets	Write all sheet	IS
			Programming	Mode Dire	ct Byte 💌				
				idle					2.

This is the Simple Advanced pane for Digitrax decoder.

The Complex Advanced pane used with the Tsunami OEM of the FP-45 decoder.

📕 Athearn FP-	15-100												
File Reset Wi	ndow Help		-				-	-	-				
Function Map	Analog Controls	Consist	Advanced	Sound	Sound Levels	CVs	Tsunami Lighting	g Equalizer	Reverb	ASC			
Roster E	ntry	Function	Labels		Roster Media		Basic	Motor	1	Basic S	peed Control	Speed Table	
Packet Time Out	Value (0-255) <mark>0</mark>	Functi	CV CV ion Group 2 ar F11 Brakin F1	Clear (CVC od 3 Excha g Rate (0. 1 Braking S	able Normal oper CLR) Normal oper Inge Exchange G 127) D	ation oup 2 (	E5-F8) and Group 3 ( braking rate (incr	reases braking	-	1-	Moto Motor Control	Motor Kp Coefficient (0-255) Motor Ki Coefficient (0-255) Motor Control Intensity (0-255) or Control Sample Period (0-31) Sample Aperture Time (0-255)	) 20 ) 265 ) 15
			Read c	hanges on	sheet Writ	e chang	es on sheet R	lead full sheet	Write	e full sheet	a la		
			Read chang	es on all s	heets Write	chang	es on all sheets	Read all she	ets V	Vrite all sh	ieets		
					Progra	amming	Mode Direct Byte	-					
							idle						

#### **Sound FX Pane**

This pane will only be displayed for Sound decoders.

Several manufacturers now offer decoders that include sound functions. This pane is designed to control those CVs. The screen shot below is from a programmer for Tsunami OEM FP-45 sound decoder. There are also steam sound decoders available.

These sounds can be coordinated with the mechanism of the locomotive, and appropriate sounds can be triggered from the function keys of the throttle. Others can be set to be triggered at startup or to run in the background.

This pane allows for the selection of sound effects from sound decoders, and the **Sound Levels Pane** allows for setting the loudness levels of those sounds when they play back.

🗮 Athearn FP-45-	100					
File Reset Windo	w Help					
Analog Controls	Consist	Advanced	Sound	Sound Levels	CVs	Tsunami Lighting Equalizer Reverb ASC
Roster Entry	Function	Labels	Roster Me	dia Basic	Motor	Basic Speed Control Speed Table Function Map
Auto Engine Sta	rt Enable	Prime mover :	starts up w	hen track is pow	red on	1 🔻
Auto Air Compress	or Enable	Turns on and	off automa	tically with engin	e sound	d 🔻 Bell Ring Rate
Auto Radiator Fa	an Enable	Turns on and	off automa	tically with engin	e sound	
Dynamic Brake	Override	Turning on Dy	namic Bra	kes forces engine	e RPMs t	to drop to ite 👻 Quiet Mode Timeout Period
Engine RPM	Interlock	Interlock is di	sabled			
Engine No	otch Rate	Engine RPM in	creases e	very 7 speed ste	ps	-
		Leslie RS3L	-	>		Option in drop-down
Alternate Airho Analog Horn Contr			<b>•</b>	Sounds Ava	ailable	list for a selected
Analog Hotti Contra	0110-20071					sound
	Read	d changes on	sheet	Write changes	on sheet	Read full sheet Write full sheet
	Read cha	anges on all sl	heets	Write changes of	on all she	neets Read all sheets Write all sheets
				Programming Mo	de Direc	ect Byte 💌
					idle	

For specific function options, see your decoder documentation and the programmer for the specific decoder. Sometimes (depending on the volunteer that wrote the decoder definition file) there are "tool tips" that appear if you hover over a selection entry box.

Here are is a sampling of sound functions on some other decoders:

#### Athearn N Scale Big Boy and Challenger


## Digitrax F40PH

Horn Selector	Standard Horn 💌
Peak Speed for Auto coupler/brake on dir change	0
Notching Mode	Automatic 🗾 🔻
Sound Time Out	No 🔫

### **Sound Levels Pane**

Here are the controls for the relative volume levels and timing nuances of the sound decoder. Again, this is an example of one implementation. See your decoder documentation and the specific decoder programmer for details applicable to your equipment. Above all, don't be afraid to play with these settings and those in the **Sound** pane until you get sound you like. It's much easier to do here than it is to try to program these using a throttle! And even easier, if you are using the **Ops Mode option** to program the unit when it's running on the track. If you "write changes" after doing your selection change, you'll get instant feedback of how the sound has changed.

Athearn FP-45	-100				
File Reset Wind	low Help				
Analog Controls	Consist Advanced Sound	d Sound Levels CVs Ts	unami Lighting 🛛 E	qualizer Reverb ASC	
Roster Entry	Function Labels Roster I	Media Basic Motor	Basic Speed Com	trol Speed Table Fun	ction Map
192 Use Set Altern ty betwee	slider to volume level	Airhorn Volume 25 Bell Volume 28 Engine Exhaust Volume 00 Dynamic Brake Volume 80 Radiator Fans Volume 40	<ul> <li>125</li> <li>80</li> <li>128</li> <li>64</li> <li>128</li> </ul>	Air Compressor Volume	
	Read changes on sheet	Write changes on sheet	Read full sheet	Write full sheet	
	Read changes on all sheets	Write changes on all sheets	Read all shee	ts Write all sheets	
		Programming Mode Direct By	te 🔻		
		idle			

## **Global CV Listing Pane**

For the hard-core programmer, this pane is a listing of the raw CV data by CV number, with data in decimal format. You may change data by typing new numbers into the **Values** window. **State** shows the validity of the data, whether it was taken **From file** (the decoder information saved in the **Roster**), **Edited**, **Read** directly from the decoder, **Stored** to the decoder or if the status is **Unknown**. Note the **scroll bar** on the right side of the listings. You may scroll up or down to access all of the CV listings.

#### **Decoder Locking**

You tried to read a CV value and get "Error 308, No Acknowledgement from Decoder", well the decoder may be locked. CV 15 and 16 deal with locking, if your manufacturer implements this feature (and manufacturers have slight differences as to how they implement it). If the decoder is locked, then you will not be able to read data from it or write to it. To unlock the decoder, you must enter a value into CV15 (the only CV that can be written when the decoder is locked), that is equal to the value that is currently in CV16. Now I hear you thinking "but I can't read CV16 to know what to put into CV15". Well, you'll have to try all possible values, which isn't that hard since it can only have 8 possible values 0 thru 7. After each write, try to read CV16. It's the fastest read since it can only have 8 possible values. If JMRI responds with the no-ack error, then try the next value. If it returns the value in CV16, you've unlocked the decoder and you're in. If you have unsuccessfully tried all the 8 possibilities, then check your layout connection and the loco's wheels for poor connections and try again. Now you say, "I've looked thru the list several times and CV 15 doesn't appear". That's on purpose, to minimize inadvertent locking by a Write All Sheets. You will have to use the Single CV Programmer to write CV15. It can be found in the Tools menu on the Main Page, under Programmers.

If you have more than one decoder in your locomotive, you probably have a decoder locking scheme implemented to be able to access each one individually for programming.

You may **Read** or **Write** individual CVs using the buttons in their row. On this page, a **Read sheet** or **Write sheet** operation is the same as a **Read all** or **Write all**. Again, a reminder: you can only read CVs if your command station has that capability.



One thing to keep in mind about the **CV** listing on this pane - anything you can do here you can do from one of the other panes in Decoder Pro, without having to know the **CV** number or how to compile the values to get the desired effect. This pane is meant for advanced users of DCC used to crunching the numbers themselves. Those new to DCC can safely ignore this panel without losing any capability at all.

## Manufacturer Specific Data Pane

This pane in the **Comprehensive Programmer** provides programming for functions that are specific to an individual manufacturer, but outside the realm of the DCC standard. While items like **Transponding** may eventually find a place in the NMRA DCC standard, and are therefore in the advanced pane, these items are obviously beyond that category. This pane will be manufacturer dependent and decoder family dependent

🚟 Program Kato C44-9W-650 in Service Mode (Programming Track)	
File Reset Window Help	
Lights Analog Controls Consist Advanced Sound Sound Levels CVs Digitrax	
Roster Entry Basic Motor Basic Speed Control Speed Table	Function Map
This pane is showing additional settings specific to Digitrax         Advanced consist droop compensation for speed stabilization         Speed Compensation Control         Split field motor         Normal DC motor         Vstart/Vmid/Vull in 128 step mode         Short-cir cuit protection         Switching speed enabled by F6         Switching speed enabled by F6         Disabled         Torque compensation         Decoder Lock Feature         Enabled	
Decoder Lock ID number       0         Read changes on sheet       Write changes on sheet       Read full sheet         Read changes on all sheets       Write changes on all sheets       Read all sheets	
Direct byte mode programming Set	
Programmer error: Timeout talking to command station (306	

PLOB	ram «new loco» in	Service M	ode (Program	ming Track)			S. Wicropi	ione Califools [2]		
Re	set Window Help	-				-			_	
ights	Analog Controls	Consist		Sound Sound Lev	els CVs	Equalizer Rev				
	Roster Entry		Basic	Motor	1	Basic Speed Contr	0	Speed Table		Function Map
	setttings that	t three pai	nes are used to	manufacturer depend o accommodate them et out your manual.	ent 🧾					
					AUTOR	MATIC SOUND CON	TROL			
			Automat	ic Grade Crossing Hor	Enable 🔲	Automatic Gra	de Crossing Horn En	able (Analog Mode) 🔲		
				Automatic Horn Signa	Enable 🔲	Auto	matic Horn Signal En			
				Automatic Be				able (Analog Mode)		
			A	utomatic Brake Squea	Enable	Autom	atic Brake Squeal En	able (Analog Mode)		
					r the Automa Bell- 15 Bell- 19 Bell- 4 Orad	Off Set Point	sensitivity			
				d - Karina and Kart	Mahila - La		Devel Still street	MAN SHE SHE		
				ad changes on sheet	write cha	nges on sheet	Read full sheet	Write full sheet	-	
			-	and a state of the state	Inchia cha	many on all about	Danad all advector	Minister will adversely		
			-	anges on all sheets		nges on all sheets ode programming	Read all sheets	Write all sheets		

These items will, by definition, vary greatly between manufacturers. Once again, your best resource is the documentation for the specific decoder you are programming and this pane in the programmer for that decoder.

## **Printing Decoder Data**

**Print Data:** DecoderPro provides the capability to print out a full list of the decoder CV data or selected data. To print, select the **File** menu of any Comprehensive Programmer Pane, then select the Print or Print Preview options.

• Print all..., Preview all... Displays Select Items to Print dialog box

📓 Select Items to Pi	rint 📃 🗖 🔀
	e items that you ppear in the print out
E Funct	tion List
🔲 Basic	2
🛄 Motor	r.
🔤 Basic	: Speed Control
Speed	d Table
🗔 Funct	tion Map
🛄 Lights	s
🗔 Analo	og Controls
Consi	ist
🗌 Advar	nced
Sound	d
Sound	d Levels
CVs	
🖂 Digitri	ax
Selec	:t All
Cancel	Okay

Select each or all of the decoder items that you want to print

Click the **OKay** button to print then the Print dialog for your computer system is displayed.

• Print CVs..., Preview CVs... Displays Select Items to Print Dialog box or Preview screen

These printouts show the variables by name in each category that is selected.(as shown on the DecoderPro panes) along with their CV number and Value. Use as a handy reference for the future. You may print these as PDF documents and save them on your computer for reference or future printing.

Print preview will look like it's about to print the list, and ask for which printer to use. Don't panic!, that's only to get the preview to work. Go ahead and select the printer and you'll only get the preview.

**Import Data:** You may import the list from another computer in the PR1 file format. Thus, the Export and Import capability allows you to take the data from one computer system to another.

Export Data: you may export the list as one of several file types :

- CSV file... (Comma separated variables)
- PR1DOS file...

• PR1WIN file...

All are two columns, CV#, and Value in Decimal and Hexadecimal



Print Pre	VIEW.												
reviene Pe	IE Ne	xt Pa	ge	Page	1 of 2	Clos	e						
	FP45-10	5					-	-1-				September 5	80, 2011 11:23 PM
													Decoder
												R	TAT
													JMRI
	ID:			1	P45-10	5							
	File	ename:		1	P45 10	5.aml						1 1 1 1 1	
	Roa	i name	s .	3	anta F	•						- Reput	
	Roa	l numb	er:	1	L05							and the second	1
	Hany	afactu	rer.	1	thearn	ę.							
	Owne	sr;		3	ripp								
	Hode				P45								
		Addre	201		L05								
		oder H			FP45								
	Dece	oder F	amil	K: 3	'sunami	Diesel	. Genes	is (	OEH				
	<u> </u>	Val	ue	-	Valu	ie	3	Jalue		-	Val	ue	
	CV	Dec	Нен	ev	Dec H	іеж С	V De	e He	ж	CV	Dec	Нен	
	1.	105		42	0	00 5		9 6	1000	137	128	- CC- / -	
	2	0	00	43				18 7	1.00	139	128		
	3	0	00	44			C. 11	7 5		140	96		
	-4	0		45		Pro-		97 8		143		50	
100	7	64	40	45	15	10 8	12 14	16 9		153		01	
A	8 .	Lerve	SP-	47	100		2	15	ZB	150	56	380	man 1

The three images below are samples of the "**All**" printout from the SD40-2 that has been used as an example in many places in this manual. Click on the page to see a larger image in a new window.

		- 1 - December 26, 2003 12:50 F
	CP5964 SD40-2 See	
ID: Filenson:	CP5864_SD40-2_Sta	
Filenane:	CPSSSS_SUSV-2_SH	
Road name: Road number:	5904	
Hanufacturer:	Keto	10.000
Manufacturer: Model:	SD40-2 Snoot	Juni
Notel: DOC Address:	3864	
Comment:	MT Equipped, Pers	
Comment: Decoder Hodel:	DH14982	
Decoder Family:	Fremium FX with i	
IC.		
Field		Setting
Addressing Node		4 digit addressing
Primary Address		3
Long Address		3864
Normal direction	of motion.	forward
Speed steps		20/120
Analog conversion	mode	on
User Private ID #	1	0
User Private ID #	2	0
Manufacturer ID		0
Version ID		0
Version ID		0
	1	0
	-	0 Setting
ror.		
TOR. Field		Setting 0
ron Field Rick Start		Setting 0 0
FOR Field Kick Start Acceleration Bate	1	Setting 0
FOR Field Rick Start Acceleration Bate Deceleration Bate Static compensati stabilization	on for speed	<b>Setting</b> 0 0 0 128
FOR Field Rick Start Acceleration Rate Deceleration Rate Static compensati	on for speed	Setting 0 0
TOR Field Sick Start Acceleration Bate Deceleration Bate Static compensati stabilization Dynamic compensat stabilization	ion for speed	Setting 0 0 128 48
TOR Field Nick Start Acceleration Bate Deceleration Bate Static compensati stabilization Dynamic compensat stabilization Solo operation da	ion for speed tion for speed toop compensation	<b>Setting</b> 0 0 0 128
TOR Field Sick Start Acceleration Bate Deceleration Bate Static compensati stabilization Dynamic compensat stabilization	ion for speed tion for speed toop compensation	Setting 0 0 128 48
TOR Field Nick Start Acceleration Bate Deceleration Bate Static compensation stabilization Dynamic compensation stabilization Solo operation de for speed stabili	ion for speed tion for speed toop compensation	Setting 0 0 128 48
TOR Field Nick Start Acceleration Bate Deceleration Bate Static compensation stabilization Dynamic compensation stabilization Solo operation de for speed stabili	ion for speed tion for speed toop compensation	Setting 0 0 128 48
TOR Field Nick Start Acceleration Rate Deceleration Rate Static compensati stabilization Solo operation de for speed stabili HED CONTROL	ion for speed tion for speed toop compensation	Setting 0 0 128 43 6
TOR Field Nick Start Acceleration Rate Deceleration Rate Static compensation Stabilization Solo operation de for speed stabili HED CONTROL Field	ion for speed tion for speed toop compensation	Setting 0 0 128 43 6 Setting
TOR Field Nick Start Acceleration Rate Deceleration Rate Static compensation Synamic compensation stabilization Solo operation de for speed stabili Field Use Speed Table	ion for speed tion for speed toop compensation	Setting 0 0 128 43 6 Setting
TOR Field Nick Start Acceleration Rate Deceleration Rate Static compensation Synamic compensation stabilization Solo operation de for speed stabili Field Use Speed Table Start Volts	ion for speed tion for speed toop compensation	Setting 0 0 128 43 6 <b>Setting</b> Use Votart, Vmid, Vhigh 0
NOR Field Kick Start Acceleration Rate Deceleration Rate Static compensation stabilization Dynamic compensation stabilization Solo operation de for speed stabili EXE CONTROL Field Use Speed Table Start Volts Mid Volts	ion for speed tion for speed toop compensation	Setting 0 0 128 48 48 48 49 49 49 49 49 49 49 49 49 49 49 49 49
NOR Field Kick Start Acceleration Rate Deceleration Rate Static compensation stabilization Solo operation de for speed stabili Field Use Speed Table Start Volte Mid Volte Max Volte	ion for speed tion for speed toop compensation	Setting 0 0 128 48 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
NOR Field Kick Start Acceleration Rate Deceleration Rate Static compensation stabilization Solo operation de for speed stabili Field Use Speed Table Start Volte Mid Volte Max Volte Forward Trim	ion for speed tion for speed toop compensation	Setting 0 0 128 43 43 43 43 43 43 43 43 43 43 43 43 43



Fiel Digi	an i	Тгаларо	nding			<b>Settin</b> Off	×7					
5												
	- Viaŭ			Val			Vell		_	Val		
CV.	Dec		CV	Dec		CY	Dec		CV	Dec 154		
1	3	03 -	50	D	00	70	27	18 24	84 85	163	9A A3	
2	0	00	51	0	00	71 72	- 36 - 45	24 2D	85	163	A.S 'AD	
3	0	00	5.2	0	00	72	40 54	36	97	102	9.6	
4	0	00	55	120	80	1 M	- 63 - 63	36 37	86	1.91	an RF	
5	D	00	56	48	30	74 25	- 0.3 72	48	89	200	CB	
6	0	00	57	6		. 26	61	51	90	209	D1	
7	0	00	61	0	00	70	91 91	55	91	218	DA.	
	D	00	62	0	00	76	100	5.5	92	227	200. 201	
13	0	00	63		00	78	109	60	93	236	EC.	
17	207	CF	65 66	0	00	90	118	16	94	245	85	
1.9	2.4	18			00	81	127	76	95	D	00	
19	0	24	67	9	00	82	136	88	105	0	00	
29 49	38 0	26 00	68 69	18	12	83	145	91-	106	Ď		
GITRU Fiel	Lef	consist				Setti	•g					
oony stal	pensa) pilis:	ion for stion	speed			-						
8p1;	t fi	ald moto				Norma	DC r		on speed	comp	m941100	
Veta	tr t / m	es.d/wrul	1 in 12	8 step	mode	Enably	ud.					

## DecoderPro3® Main Window

### Main Window Overview

When you start Decoder Pro3[®], the Roster window is displayed. All of the JMRI functions can be accessed via the menu bar on the DecoderPro3[®] window.

CI New Loco	S Identify (	Help New Thro	me	2			O on	Progra	nuning Mode	Paged Mode	
ID/	DCC Address	lcan		der Model	Read Name	Road Number	Manufacturer	Model	Owner	Date Modified	Protocol
844AC-5738	5719		DZ125IN		BNSF	5738	Fox Valley	ES44AC	Tripp		DCC Long
40PH-342	342		DN163KDD		AMTRAK		Kato	F-40PH		Oct 18, 2011 12:59:41 AM	
7A-300-A	300		DN163K0B		Santa Fe		Kato:	F-7A		Aug 18, 2013 11 19:38 PM	
7A-300-B	300		DN163K0B		Santa Fe	300	Kato	F-7A		Aug 18, 2013 11:21 35 PM	
7B-300-C	300		DN163K0B		Santa Fe		Kadu	F+7B		Sep 28, 2011 4 46:31 AM	
78-300-D	300		DN163K0B		Santa Fe	300	Pato	F-78		Aug 18, 2013 11:22:03 PM	
78-300-E	300		DN163K0B		Santa Fe	300	Kato	F-78		Aug 18, 2013 11 22 21 PM	
7B-300-F	300		DN183K0B		Penta Fe		Kato	F-78		Aug 4, 2012 2:39:13 AM	
P45-100	100		NFP45	5	3 50	100	Atheam	FP45		Aug 18, 2013 11 31 03 PM	
P45-105	105		N FP45	-		105	Alheam	FP45		Aug 18, 2013 11 31 18 PM	
likado-0	0		Basit CS	-	Pento		Kato	Mikado		Aug 18, 2013 11 17 26 PM	
32BWH-506	506		N12A0		AMTRAK	506	Allas	P32BWH		Aug 18, 2013 11:32 55 PM	
SD-40-2-5026	5026		DN163K1B		Santa Fe	5026	Kato	SD-40-2		Aug 18, 2013 11 29 43 PM	
D-40-2-6340	6340		DN163K1B		BNSF	6340	Kato	SD-48-2 Shoot nose		Aug 18, 2013 11 30:07 PM	
D70MAC-9959	9959		DN163K1B		BNSF	9959	Kato	SD70MAC		Aug 18, 2013 11:32 08 PM	
ieth - Allas GP38	3520		DH163		Santa Fe	3520	Allas	GP-38		Mar 8, 2012 3,57:17 PM	
ieth-Atlas MP15DC	630		Dual Mode		AMTRAK	530	Attas	MP15DC		Mar 8, 2012 4:10:15 PM	
ephyr 9900	9900		DN143IP		Burlington	9900	CanCars	Zepher	Tripp	Aug 18, 2013 11:18:03 PM	DOC Long
		ID: Road Names: Road Namber; Manifacturer; Ovmer; Modek DCC Address; Decoder Family; Decoder Family; Decoder Modek Filename;			ł	•	5			Programming Ti Programming O EditOnly Progr. Labets & Media	n Main

#### Menu bar

Most of the DecoderPro3[®] functions can be accessed via the menu bar.



**File** 

#### New Roster Window

Another instance of DecoderPro3 Roster window is opened.

#### Import Roster

Imports Roster into DecoderPro3®

### Import Roster Entry

Open the **Open** dialog to allow you to select a Roster Entry to import.

Zepher_9900.xml	AC 12 4278.xml	Athearn FP
Zepher_9900.xml.bak	AC_12_4278.xml.bak	Athearn_FP_
44Ton_1000.xml	AC_12_4292.xml	B23 7_6390
44Ton_1000.xml.bak	AC_12_4292.xml.bak	B23 7 6390
AC_12_4275.xml	Acela_2003.xml	B23_7_7412
AC_12_4275.xml.bak	🗋 Acela_2003.xml.bak	B23_7_7412
•		
ile <u>N</u> ame:		
Files of Type: Omit archive fi	les	

Import Decoder File

Opens the Open dialog allowing you to select a Decoder File to import.

🔮 Open		X
Look (n:	JMRI	
decoders miniserve operations programm	s ners	systemfiles     P     throttle     throttle     Bachman_2_8_0_Consolidated.xml     G     decoderIndex.xml     U
resources		DecoderProConfig2.xml U DecoderProConfig3.xml U
File <u>N</u> ame: Files of <u>T</u> ype:	XML files	Open Cancel

Import Decoder URL

Input	
<b>?</b> URL to import:	
ок с	ancel

Export Roster Ei	ntrv		
FP45-105	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~ <u>~~~</u> ~~~	حملمه
F7A-300-A	300		D
F7A-300-B	300		D
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~

Exports .xml file for the selected locomotive on your roster.

Save				
Save (n: 🗖 .	JMRI	▼ a ĉ ⊂ 88		
decoders		📑 systemfiles 🚺 I		
miniserver 🔁		🗂 throttle		
operations programmers		Bachman_2_8_0_Consolidated.xml		
🗂 roster				
4				
File <u>N</u> ame:	F7_300_A.xml			
Files of Type:	Omit archive files	s		

Export Complete Roster

Save		
Save (n: 📑 I	Digitrax	
C Old roster File 01 roster.xml		
File <u>N</u> ame:	roster.xml	
Files of <u>Type</u> :	All Files	
		Save Cancel

Close Window

Greyed out if only one Roster Window has been opened. Allows you to close an extra Roster Window that is no longer needed.

.

Print Roster 🚞

Entry

Opens the Select Items to Print dialog



Printed page for selected Roster Entry.

4Ton-1000		-1-	August 3, 2012 2:15 AM
			Decoder Minis Pro
ID:	44Ton-1000		-
Filename:	44Ton 1000.xml		strengt on second
Road name:	Industrial		N. 1. 2
Road number:	1000		Allowed County
Manufacturer:	Bachmann		
Owner:	Tripp		
Model:	44 Ton Switcher	E	
DCC Address:	1000		
Decoder Model:	2 function deco	oder (36-552)	
Decoder Family:	E-Z Command dec	zoders	
ASIC			
Field		Setting	
Primary Address (CV1)	3	
Addressing Mode (CV29)	2 digit addressing	
Long Address (CV1	.7)	0	
Consist Address ((CV19)	a	
Analog conversion	mode (CV29)	On	

Summary

This printout may be many pages. You can print to pdf file using printer dialog.

coderPro Roster All Ent	ries -1-	September 29, 2011 1:28 AM
		Decoder
		Pro
		JMRI
ID:	Zephyr 9900	A Martin
Filename:	Zepher_9900.xml	
Road name:	Burlington	ALL THE TRACE
Road number:	9900	
Manufacturer:	ConCors	The second se
Owner:	Tripp	
Model:	Zepher	
DCC Address:	9900	
Comment:	Articulated unit with plug-in decoder	
Decoder Model:	DN143IP	
Decoder Family:	Series 3 with FX3, silent, readback	
ID:	44Ton-1000	
Filename:	44Ton_1000.xml	APPENDENCE OF THE PARTY OF
Road name:	Industrial	A DATE OF A
Road number	1000	All second as the second se

Print Preview Roster

Entry

Same as print except it uses the system printers Preview window.

Summary

Quit Shuts down DecoderPro3.

Edit

Cut

Сору

Paste

Duplicate Loco

Select the roster entry that you would like to duplicate. Enter a new name for the duplicate entry.

[Type text]



press OK and the duplicate is now added to the roster list. You may now edit or reprogram as required.



Delete Loco

Select the loco that you wish to delete in the roster list, select menu item.



Preferences

Preferences window is displayed.

Preferences			
Connections	LocoNet 🖶		
Defaults File Locations Start Up Display	System manufacturer:	Digitrax	
Messages	System connection:		
Roster Throttle WiThrottle		LocoNet PR3	
Web Server	Settings:		
	Serial port:	Communications Port (COM4)	-
	Command station type:	DCS100 (Chief)	-
	Connection Prefix	E.	
	Connection Name	LocoNet	
		Additional Connection Settings	
Save	Disable Connection		

Settings

Hide/Show Summary Pane

Toggles the decoder information on/off, Part 4 of the main window

Show decoder summary pane

TID-JUDIO Var	to me man	W- X - N	DN165K0B "	- WORM
F7B-300-D	300	and the second s	DN163K0B	Sant
E7B-300-E	300	in the second second	DN163K0B	Sant
7 100 5	looc l	1	DEM COLOD	است ما
		ID;	FP45-100	
		Road Name:	Santa Fe	
		Road Number:	100	
-		Manufacturer:	Athearn	
Sec. 4		Owner:	Tripp	
South State		Model:	FP45	
A 100 21 10	ALC: NO.	DCC Address:	100	
the first set of the set	the state of the s	Decoder Family:	Tsunami Diesel Genesis (OEM
		Decoder Model:	N FP45	
		Filename:	FP45_100.xml	
			A Complete A	

Hide decoder summary pane

4	Service Mode Programme		Operations Mode Program		 er Status: idle	19900	Cuncurs	Zer
1000	Seth-Atlas MP15DC Zenbyr 9900	530 9900	4	Dual Mode DN143IP	 AMTRAK Burlington	530 9900	Atlas ConCors	MP Zor
1000	Seth - Atlas GP38	3520		DH163	Santa Fe	3520	Atlas	GP-

Note the up and down arrows in the area above the summary pane. The down arrow will hide the summary pane and the up arrow will show the summary pane when clicked on.

Reset Window Sizes

not available yet

Reset Column Widths

Resets all of the columns to default settings if you have resized any of them.

Hide/Show Roster Images

Toggles the roster image in Part 4 of the main window to show or hide

Show Roster image.

F7B-300-E	300		DN163K0B
		()	DNACOVOD
		ID:	FP45-100
		Road Name:	Santa Fe
		Road Number:	100
		Manufacturer:	Athearn
Xe		Owner:	Tripp
al comes	- H 🔫 - H	Model:	FP45
Even and the second		DCC Address:	100
	accontentation and I	Decoder Family:	Tsunami Diesel Genesis OEM
		Decoder Model:	N FP45
		Filename:	FP45_100.xml
Service Mode Programmer Lo	coNet Is Online	Operations Mode Pro	grammer LocoNet Is Online Programme

Hide Roster image.

A	m nm	. A		m a a
1F40PH-342	342		~ <u>D</u> MT53K0D	AMITRA
F7A-300-A	300		DN163K0B	Santa Fe 🏅
F7A-300-B	300		DN163K0B	Santa Fe 🏼 🔍
F7B-300-C	300		DN163K0B	Santa Fe 🍐
* . 				
ID:	AC-12-4292			>
Road Name:	Southern Pacific			ڈ
Road Number:	4292			
Manufacturer:	Intermountain			
Owner:	Tripp			
Model:	AC-12 4-8-8-4 Cab For	ward		5
DCC Address:	4292			A
Decoder Family:	SFX Sound Decoders			7
Decoder Model:	SDN144PS			
Filename:	AC_12_4292.xml			1
Service Mode Progra	ammer LocoNet Is Online	Operations Mode Pr	rogrammer LocoNet Is Online	Programmer Status : idle

Hide/Show Roster Groups

Show Roster Groups Pane

Selected group Roster Entries will be displayed. Select All Entries to show complete Roster.

Note the arrows on the border of the Roster Table. Right arrow shows Roster Groups pane and Left arrow hides the Roster Groups pane.

ster Groups	1 ID	DCC Address	lcon	Decoder Model	Road Name
All Entries	F7A-300-A.	300		DN163K0B	Santa Fe
AMTRAK	F78 300-B	300		DN163K0B	Santa Fe
BNSF	F7B-300-C	300	لتستعصبها	DN163K0B	Santa Fe
Santa Fe	F7B-300-D	300	Lane and	DN163K0B	Santa Fe
Southern Pacific	F7B-300-E	300	Carence and	DN163K0B	Santa Fe
	F7B-300-F	300	Lane and	DN163K0B	Santa Fe
	FP45-100	100	1000	N FP45	Santa Fe
	FP45-105	105	Landson (N FP45	Santa Fe
	SD-40-2-5026	5026	to I a Restantion to Maria	DN163K1B	Santa Fe

Hide Roster Groups Pane.

ID	DCC Address	lcon	Decoder Model
2-8-8-2-1792	1792		P2k N USRA 2-8-8-2
44Ton-1000	1000	<u>mt÷m</u>	2 function decoder (36-59
AC-12-4275	4275	State Street State	DZ125PS
AC-12-4278	4278		DZ125PS
AC-12-4292	4292		SDN144PS
Acela-2003	2003		2 function decoder (36-55
Athearn FP-45-100	100	177 (- 177 a	FP45
B23-7-6390	6390	Anda Personality	DN163A0
B23-7-7412	7412	Contraction of the local diversion of the loc	DN163A0
BigBoy-40	40	C.C.C.	Athearn Big Boy or Chall
BigBoy-4024	4024	-	Athearn Big Boy or Chains
C44-9-4926	4926	رشيكما	DN163K1B
Challenger-3985	3985		👢 Athearn Big Boy or Chall
DD40X-6932	6932	Frank and the second	4 function decoder (36-5
E-8A-6018F	6018		DN163K0A
E-8A-6018R	6018		DN163K0A
ES44AC-5719	571.9		DZ125IN.
ES44AC-5738	5719	and the second sec	DZ125IN.
F40PH-342	342	Aug	DN163K0D
F7A-300-A	300		DN163K0B
F7A-300-B	300		DN163K0B
F7B-300-C	300		DN163K0B
*		M.	

Programming 💳

E

Programming Track

Selects the Service Mode (Programming Track)

Programming Trac	ck
Programming On I	Main
Edit Only	
Program	ų.
Labels & Media	Throttle
r LocoNet Is Online	Programmer

Programming on Main

Selects the Operations Mode (Program on Main)

Programming Trac	:k
Programming On I	Main
Edit Only	
Program	r
Labels & Media	Throttle

Edit Only

Selects Edit Mode that allows you to edit locomotive roster without changing the program

Programming Tra	ick
Programming On	Main
Edit Only	
Progra	n
Labels & Media	Throttle

Create Roster Group

Use Create Roster Group to define any other groups you wish. From the Settings menu Create Roster Group opens the **New Roster Group** dialog. This same **New Roster Group** dialog may be opened using the + button above.



Roster Group Table Association

Once the groups are named, then you "associate" the roster entries with their group. This can be done by using the **Table Association** selection. At the top of the table you select the group you wish the roster entries to be associated with, then the roster entries that you want to associate with that group.

Window Help					
	Sele	ct Roster Group: Santa Fe 💌			
ID /	Road Num.	Road Name	Manufact.	. Owner	Include
Zephyr 9900	9900	Burlington	ConCors		
44Ton-1000	1000	Industrial	Bachma	Tripp	
B23-7-6390	6390	Santa Fe	Atlas	Tripp	×
B23-7-7412	7412	Santa Fe	Atlas	Tripp	¥
BigBoy-40	40	undec	Athearn	Tripp	
BigBoy-4024	4024	Union Pacific	Athearn	Tripp	
C44-9-4926	4926	BNSF	Kato	Tripp	
Challenger-3985	3985	Union Pacific	Athearn	Tripp	
DD40X-6932	6932	Union Pacific	Bachma	Tripp	
E-8A-6018F	6018	Southern Pacific	Kato	Tripp	
E-8A-6018R	6046	Southern Pacific	Kato	Tripp	
ES44AC-5719	5719	BNSF	Fox Valley	Tripp	
ES44AC-5738	5738	BNSF	Fox Valley	Tripp	
F7A-300-A	300	Santa Fe	Kato	Tripp	V
F7A-300-B	300	Santa Fe	Kato	Tripp	V
F7B-300-C	300	Santa Fe	Kato	Tripp	4
F7B-300-D	300	Santa Fe	Kato	Tripp	¥
F7B-300-E	300	Santa Fe	Kato	Tripp	V
F7B-300-F	300	Santa Fe	Kato	Tripp	V
FP45-100	100	Santa Fe	Athearn	Tripp	V
FP45-105	105	Santa Fe	Athearn	Tripp	V
Mikado-O		KATO	Kato	Tripp	
P2k-1792	1792	Santa Fe	Life Like	Tripp	V
P32BWH-506	506	AMTRAK	Atlas	Tripp	
SD-40-2-5026	5026	Santa Fe	Kato	Tripp	¥
SD-40-2-6340	6340	BNSF	Kato	Tripp	
SD70MAC-9959	9959	BNSF	Kato	Tripp	

Select Roster Group: from drop down list the roster group that you want to add entries to.

The table shows all the engines in your roster.

In the right column, Include... select the entries that you wish to add to the Roster Group, click individually to select a single item, hold the shift key down to select a range of items, hold the CNTRL key down to randomly select items. Close the Table and the entries will be added to the group.

Once the associations have been made, then you can select the Active Roster Group. Once this is done then the Print and Print Summary actions will show only the roster entries associated with that group. As an example you could select the Group **Santa Fe** and only the roster entries in this Roster Group will be printed. The printout

does not currently show the active group in the header. The active group will also influence any drop down box which has a list of entries in it, such as Throttle, edit entry, copy, etc. Also, when adding a new roster entry it will automatically be associated with the currently active group, so it is good practice when finishing working with a group to return the active group to Global.

Restoring Roster to include all Engines

To return your roster to show all engines, **Select Roster Group** to All Entries, or Global. Then you may be certain that you are working with all engines in your roster.

Disassociation of Roster Entry to Group

To disassociate a roster entry to a Roster Group, open Roster Group Table and uncheck roster selection and save new Group by closing the Roster Group Table.

Actions

Program

Opens the Programmer that is setup in your preferences for the selected Roster Entry, **Comprehensive Programmer**, defaults to **Basic Programmer**

Labels and Media

Opens the Labels and Media window with two tabs allowing you to set these parameters for the selected roster entry in your roster. Select the **Function Labels** TAB to edit your throttle function labels. Select the **Roster Media** TAB to edit the icon for your roster selection.

Function Labels Pane

This pane is opened from the Labels & Media button the DecoderPro3 main window or from the Actions menu.

on shun
0 0 0
0 0 0
0
0
0
0
0
0
0
0
0

This pane is more than a scratch pad to keep track of what happens when function buttons are pushed. It also interacts with the **JMRI throttle**.

The **Function Labels** Tab makes settings for the Software Throttles within JMRI. Primarily the on-screen throttles, but some of the settings are mirrored on smart-phones (iPhone/Android) using the WiThrottle interface.

When you use the roster pull-down on the JMRI throttle to select a loco from your roster, the function buttons will be marked with the descriptions you have entered for those functions in this pane.

In this example, the Function keys on the Throttle will be labeled for the FP-45 with Tsunami OEM Sound decoder with sounds and lighting functions.

🗮 Athearn FP-4	5-100
File Edit View	Power Window Help
4 -	
🗆 🗗 🖂	📑 Function Panel 🗖 🗹
-100%	BELL AIRHORN SHORT AIRHORN DYNAMIC BRAKE
	F5 F6 DIMMER MUTE
	RADIATOR FANS AIR COMPRESSOR
- 50%	BRAKE SQUEAL/RELEASE COUPLER CLANK F13
	F14 F15 * LIGHTS #
	Address Panel
Stop	100 Set
Forward	
O Reverse	M Bollies +
Idle	
STOP!	Dispatch Release Program

Using the checkboxes,	space holders and the radio	button to the right of each	function may be set to:
-----------------------	-----------------------------	-----------------------------	-------------------------

		Makes the function button "latching" or "non-latching". When the box is checked the function is "locked" or "latched".
	lock	Latched Function when pressed will stay on(down position) until pressed again i.e. Function button labeled "Bell" would ring until pressed again.
		Unlatched Function when pressed toggles on and then off. i.e. Function Button labeled "short horn", when pressed provides one blast of horn.
	off	Place holder for icon that is displayed on Function Button when it is in off state.
Ī	on	Place holder for icon that is displayed on Function Button when it is in on state.
	shunt	Sets "virtual" function key for software throttle. The "lock" option also needs to be set simultaneously with the "shunt" virtual function key activation. When this Function key is pressed the throttle speed slider on the software throttle changes to "center off" style for shunting, rather than the "full-range with separate direction key"
- 11		

You may drag and drop icons into the off or on space holder herer or in the Throttle Function pane properties.

You may also edit the function button text in the **JMRI Throttle** and save those changes to the selected Roster

entry. To use these changed entries in the future, make sure you click on the <u>Save to Roster</u> to save these values into the Roster entry that is in use.

Roster Media Pane

The Roster Media Pane is opened from the DecoderPro3 button in main window or from the Action menu, then select the Roster Media TAB.

The Roster Media Pane allows you to add a main image and an icon to the engines roster. The main image may be used for Throttle background image if selected in the Throttle preferences. The icon image is used in the Throttle list and various roster combo boxes.

The icon is the image that will appear in the Decoder Information part of the DecoderPro3 initial screen, once you have selected a locomotive from the list. The icon will also display in the icon column of the Locomotive Roster List.

Reset Window Help		
nction Labels Roster Media		
	Use this tab to add various medias to your ros	ster
Image to be used as an icon for Web ra	n image for this locomotive: that locomotive, head to the right: eference: Name to remove entry) (DO NOT CHANGE unless you	know what you're doing)
Na		Value
		*uiuo

Image to be used as main image for that roster: The large black box is the image holder. The image is placed into the image holder by following these instructions.

- 1. First you must find the image of the Locomotive and store it on your disk drive.
 - a. Sources
 - 1. Images downloaded from a website to your computer
 - 2. Photos taken with a digital camera or scanned from film
 - 3. Other sources, CD, DVD frames from videos etc. saved as an image to your computer
 - b. Format
 - 1. The GIF format is preferred with transparent background
 - 2. PNG with transparent background
 - 3. JPG

- 2. After storing image on your computer open the Roster Media Pane, then open Windows Explorer or File Manager for your system and drag and drop the image file into the large black box. You may also save the image to your Desktop and drag and drop to Roster Media from there. DO NOT try to drag and drop from a website.
- 3.

Roster images are stored in the <JMRI Preferences folder>/resources. When an image is updated or removed it is not removed from this folder.

FP45-105			
ie Reset Window Help			0.0.0.0.0.0.0.0.0
Baster Medla			
Use this tail to a	et vanoes nedas le your roster	Coltrain Gita	
Image to be used as maininage for this locamot	Sunsh-	Address GPS Folders	Kers A P III+
mage to be used as unicen for that locennities, insulte	terget		a maranesise fa
Web rekronce:		Mitcale Tengdatan	
ster custem attributes (delete Rame to (errows only)) Name	IO NOT CHANGE unless you know what you're cology Value	ALTRAK Module Logong	
COMP (C		Cherry Cooke	
		Photos and bushes Photos and bushes Photos and bushes Photos and photos Photos and photos Photos Photos Photos P	Drag
	Know to Router	Photos and busites Photos and busites Photos and busites Sorta he Busites Sorta he Busites Sorta he Roots Photos Photos Sorta he Sorta Sorta he Sorta he Sorta Sorta he Sorta he Sorta Sorta he Sorta he Sorta he	Drag and
	Save to Roster	Pincks and bushes Pincks motosurkes Pincain Maye Pincain Maye Pincain Maye Pincain Maye Pincain Maye Pincain Pinche Pinche Pinche Pinche Pinch	Drag and Drop
	Save to Roster		Drag and Drop
	Sever to Roader		Drag and Drop
	Save to Rodor		Drag and Drop

To remove either image from the Roster, Right click and click remove in the context that displays, however, it will not remove the image from the Resources folder.

Image to be used as icon for that roster, head to the right: similarly, there is a small black box which can be filled with a picture to be used as an icon for roster entry identification. The instructions are the also similar:

1. Next you must find the image of the Locomotive to use as an icon and store it on your disk drive.

[Type text]

- a. Sources
 - 1. Images downloaded from a website to your computer
 - 2. Photos taken with a digital camera or scanned from film
 - 3. Other sources, CD, DVD frames from videos etc. saved as an image to your computer
- b. Format
 - 1. The GIF format is preferred
 - 2. PNG with transparent background
 - 3. Do not use JPG.
- After storing icon image on your computer open the Roster Media Pane, the open Windows Explorer or File Manager for your system and drag and drop the image file into the small black box. You may also save the image to your Desktop and drag and drop to Roster Media from there. DO NOT try to drag and drop from a website.

To remove either image from the Roster, Right click and click remove in the context that displays, however, it will not remove the image from the Resources folder.

Web reference: You can copy the URL of the website where you located the images for reference

Save to Roster

After adding images to the image boxes for main image and icon, click on this button to store images in your Roster. Now the image will appear in your roster list in DecoderPro3.

	Actions LocoNet	Help New Th	rottle		Ø	OH	Programming	Mode Pa	gert Mode	
ID	DCC Address	lean	Decoder Model -	Road Name	Road Number	Manufacturer	Model	Owner	Date Modified	Fratocol
SD-40-2-5026	5028	a la farmina a fina a	DN163K1B	Santa Fe	5026	Kato	ISD-40-2	Tripp	Sep 27, 2011 7:35:26 PM	DCC Long
SD-40-2-6340	6340	and the second s	DN163K1B	BNSF	6340	Kato	SD-40-2 Shoot-nose	Tripp	Sep 29, 2011 1 41 32 AM	DOC Long
SD70MAC-9059	9959	and to the second	DN163K1B	BINSF	9959	Kato	SD70MAC	Tripp	Sep 27, 2011 8:02:09 PM	DOC Long
ES44AC-5719	5719	-	DZ125IN	BNSF	5719	Fix Valley	ES44AC	Tripp	Sep 27, 2011 1 47 56 AM	DCC Long
ES44AC-5738	571.9	and the second s	DZ125IN	BNSF	5738	Fux Valley	ES44AC	Tripp	Sep 27, 2011 1,46:45 AM	DCC Long
C-12-4275	4275	ALL ADDRESS	DZ125PS	Southern Pacific	4275	Intermountain	AC-12 4-8-8-4 Cab Forward	Tripp	Oct 4, 2011 12:55 86 AM	DCC Long
C-12-4278	4278	STALL MORE	DZ125PS	Southern Pacific	4279	Intermountain	AC-12	Tripp	Oct 4, 2011 1 14:34 AM	DCC Long
eth-Allas MP16D/C	530		Dual Mode	AMTRAK	530	Allas	MP16DC	Seth	Mar 8, 2012 4 10 15 PM	DCC Long
dhearn FP-45-100	100		FP45	Santa Fe	100	Atheam	FP-45	Tripp	Jul 27, 2012 5 25:27 PM	DCC Short
F45-100	1001		N FP45	Santa Fe	100	Athearts	FP45	Tripp	Wug 23, 2012 12:45:24 PM	DOC Shert
P45-105	105/	200	N FP45	Santa Fe	105	Atheam	FP45	Tripp	Sep 28, 2011 3 09.53 AM	DCC Short
932BWH-608	506	200	N12A0	AMTRAK	506	Alias	P32BWH	Tripp	Sep 27, 2011 4 59 27 AM	DCC Long
Barnet		ID: Road Name: Road Numbet: Manufacturer: Owner: Model: DCC Address: Decoder Family: Decoder Model:	FP45-100 Santa Fe 100 Atheam Tripo FP45 100 Tsunami Diesel Genesis OEM NLFP45						Programming Tr Programming Or Programming Or Edit Only Pregri Labels & Media	n Main

Links for icons in GIF and images of most Locomotives are listed below:

Rail Serve www.railserve.com/TrainGIFs/

Train GIF Railyard www.djcooley.com/info/gifs/loco/gifloco

Karl's RR Pages www.kls2.com/~karl/rr/consists/

ED Bindler Train GIF.s www.bluarcher.com

New Throttle

Load Default Throttle Layout

Opens the default throttle that is set in preferences

JMRI® Throttle Window

The JMRI[®] Throttle may be used on your computer screen to replace the vendor throttle that is furnished with your DCC system. One or several throttles may be in use at one time. The Throttle opens as a floating window that may be positioned anywhere on your desktop. Note the Title Bar contains the locomotive address information.

🔀 FP45-100	
File Edit View	Power Window Help
-	
×	E Function Panel
100%	BELL AIRHORN SHORT AIRHORN DYNAMIC BRAKE
	F5 F6 DIMMER MUTE
	RADIATOR FANS AIR COMPRESSOR
-50%	BRAKE SQUEAL/RELEASE COUPLER CLANK F13
30%	F14 F15 * LIGHTS #
	🗖 Address Panel 🛛 🖉
-Stop	100
Forward Reverse	
Idle	
STOP!	Dispatch Release Program

(Color shading added to show functional areas throttle panels)

The Throttle Window contains **Menu Bar**, **Toolbar** and three panels which may be enabled or disabled via check box in the View menu. Each panel has a title bar with windows controls to minimize, maximize and exit: : **Warning!!!** Be careful with the left hand (minimize) buttons. In Windows, if the little guy is clicked it will minimize the panel, which means it is no longer visible but the restore button is lost behind the rest of the panels. The way to easily get it back, is to go into the view menu, uncheck it there, then go back again and recheck it. You may also drag the panels out of the way to uncover the Maximize icon for a minimized panel.

Throttle Window Menu Bar



File

New Throttle...

Opens new copy of the throttle

Open Throttle

Look in:	throttle		· 6 6 6 8 8	
Atlas GP-3 Bachman FP45-100,: JMRI_Thro Kato_F40_	ottlePreference.	ni xmi	ePreferences.xml	
File <u>N</u> ame: Files of <u>T</u> ype:	XML files			

Select a saved throttle XML: file.

Save Current Throttle

Save a throttle file that has been opened and modified

Save Current Throttle As...



Opens the Save dialog to allow you to save the Throttle XML file in the location you select and using the name you specify

Open Throttles Layout...

Opens Throttle layout that you select.

Save Throttles Layout...

Save Throttles Layout to file in Throttle Folder

Load Default Throttles Layout

Load the default throttle layout from Throttle Folder

Save As Default Throttles Layout

Save as the default throttle layout from Throttle Folder

Start WiThrottle

This window controls the connection between WiFi throttles, e. g. an iPhone, iPod Touch, or Android Phone and **JMRI Preference** in the Wi/Throttle Pane.



Menu Bar

NiThrottle	Window Help
Start Serve	r WiThrottle v2.
Filter Contr	ols none
Preference	S

- WiThrottle
 - Start Server

Starts the server for the WiThrottle

• Filter Controls

Controls	Filter			
Window H	elp			
Turnouts	Routes			
		Select Turn	outs to be controlled by WiFi devices.	
	Syste	m Name	User Name	Include
Cancel				
Save				
			Include All Include None Inc	lude User Named

Set up Turnouts and Routes that can be controlled by DecoderPro3[®] for control by WiThrottle.

o Preferences...

Opens the WiThrottle Preferences Pane in preferences.

- Window
- Help

Edit

Frame Properties
📕 Edit Throttle Fram	é		X
Frame Title:			
	Address		
	Text		
Frame Title Components	s: Text Address		
	Address Text		
	Roster ID		
Frame Decorations:	Frame Bord	er Off	
ок		Cancel	

- **Frame Title:** Type the title of your choice for the Throttle frame. This is referred to below as "text".
- Frame Title Components: Select the text component desired. There are two components which can be in the title bar of the throttle "Text" and "Address" The selections allow either or both to be in the title (in the order they appear in the selection), or one can opt for the description in the locomotive Roster Entry
- Address -- Automatically display the address of whatever locomotive is selected. (default)
- **Text** -- Display the text that you enter in the field as the title at the top of this window
- **Text Address** -- Display the text you entered, followed by the selected address
- Address Text -- Display the selected address, followed by the text you entered
- **Roster ID** -- Display the selected roster ID
- (Note that if you enter text, it will not be visible unless one of the middle three modes is selected)
- **Frame Decorations**:
- This will remove the individual control bars for the separate panes of the throttle. This is advised for Windows users, as clicking the minimize buttons causes the restore button to be lost behind the rest of the panels. Recovery entails using the view menus to remove and then restore the panel in question.
- adds the edits
- aborts the operation

Export Current Throttle Customization to roster



Throttle Preferences

Select throttle startup conditions, shown are defaults, but you may change the settings.

/	Use extended throttle
	Save throttles when saving throttle windows layout
	🕑 Use roster image as background
	Do not scale image
	🗹 Search roster info when address entered
	Automatic load of throttle window preferences when linked to roster
	Ignore throute frame position
	Hide undefined roster function buttons
	Enable button icons when available
	Enable throttle toolbar
	Clean throttle on window close
	For new preferences to be fully applied, all throttles windows must be closed and reopened.
1	Reset

View

Allows you to select which of the three panels of the throttle are being shown. Place a check mark in each of the panels that your want to display.

- Address Panel
- Control Panel
- Function Panel

You may ask yourself, "Why would I want to turn off any of these panels?" As only one example, let's say we have an observation car at the rear of a passenger train. We could equip this car with a function only decoder to control:

- 1. Interior lights,
- 2. Rear marker lights, and
- 3. A rear Drum light.

We have no need for the speed control pane and only need three function buttons for this "Throttle". With a whole passenger train equipped like this, lots of screen space can be conserved by using the throttle set-up files to optimize the **Throttle** windows. Then you could turn off the lights in the kitchen and lower the lights in the dining area so the passengers can enjoy the sunset as they transit the Rockies enjoying the beautiful sunset sipping Cognac.... but I digress. You get the idea.

Reset Function Buttons

Resets all the Function buttons to the default settings, , , etc.

Get all current throttle components in bounds

Returns all the throttle panels to the throttle frame.

Switch Throttle frame view mode Toggles the Throttle frames on/off

Frames on.

Edit View	Power Window Help
. o* 🖾	Function Panel of D
100%	BELL ATPHOPN SHORT ATPHOPN DYNAMIC BRAKE
	FS F6 DINTER MUTE
	PADIATOP FANS AIR COMPRESSOR
50%	BRARZ SQUEAL/PELEASE COUFLEE CLANK F13
	F14 F15 * LIGHTS #
Stop	Address Panel of 12
Forward Haverse	100
Ide	
STOP	

Frames off



Show/Hide Throttles list window Toggles the Local JMRI throttles list window on or off

Opens the Local JMRI throttles Window displaying all the throttles that are in use on your program.

		Opens a new Thottle
Local JMRI throttles	8	Emergency stop for all Throttles under JMRI control
Brian	0	Track power control
	7	Opens the Throttles preferences window

Power (track power control, if supported by your system)

- Power On
- Power Off

Window

•

- Minimize
- Lists all open DecoderPro windows. If one of the windows is clicked it will be brought to the front so that you can minimize it to the system tray.

Help

- Window Help...
- General Help...
- License...
- Locations...
- Context
- System Console
- Upload Debugging Info...

Throttle Toolbar



The Throttle toolbar is enabled from the Throttles Preferences Pane

Use Throttles preferences window to set the desired preferences.

Thintles preferences		- IC X
✓ Use extended throttle		
Save throttles when saving throttle windows layout		
✓ Use roster image as background		
Do not scale image		
Search roster info when address entered		
✓ Automatic load of throttle window preferences when linked to roster		
🗹 Ignore throttle frame position		
Hide undefined roster function buttons		
Enable button icons when available		
Enable throttle toolbar		
Clean throttle on window close		
For new preferences to be fully applied, all throttles windows must be closed and reopened.		
Cancel	Apply	Save

When it is enabled, a Throttle Window can host a set of Throttles. You can browse through these throttles: Add a new Throttle in that Throttle Window. Once the number of Throttles in a Throttle Window is greater than one, Next and Previous Icons are enabled.

Throttle Toolbar



Open a new Throttle Window



Closes the current Throttle Window



Return to Previous running Locomotive.



Goes to previous throttle.



Goes to next throttle



Goes to next running locomotive



ssues an emergency stop command to all locomotives under JMRI control.



Controls track power on or off, if supported.



Switch to or revert from Edit Throttle mode.



Opens the Local JMRI Window

Throttle Address Panel

(green shading) facilitates setting the address of the locomotive you wish to control with the throttle.

🔲 Address Pa	nel		° 🛛
333			Set
<no loco="" selec<="" th=""><th>ted></th><th>-</th><th></th></no>	ted>	-	
Dispatch	Release	Pro	gram

Primary use is to identify the decoders address, and to dispatch or release the identified address. Locomotive address may be entered by one of two methods: typed into text box or use drop-down list to select locomotive from your roster. If you have added **Function labels**, to your Roster, the label text from the Roster will be displayed on the throttle function buttons.

Click on the send the address to your system to make this throttle active.

Dispatch

is used to dispatch the locomotive which releases the throttle for that address so that it can be acquired by another throttle

Release is used to release the address from your system.

Program

opens the **Programmer**for the locomotive selected in ops-mode (Programming on the Main) Only active when roster entry is used to select the address for the throttle.

Any of the buttons may be grayed out depending on the status of your system.

Control Panel (blue shading) contains the controls for applying power to the locomotive that is addressed and controlling speed

Throttle Control Panel

Speed Control Panel

Right Click in the Speed Control Panel space and context menu with Properties is displayed.

Properties Fla Finction BELL F5 Fla Fla Reverse Ide STOP!		
Click on Properties and Edi Edit Speed Communication Panel Display speed slider (from 0 to Display speed slider (from 0 to Display speed steps Display shunting speed slider (from 0 to	100) from -100 to 0 to 100)	 indow opens. Control Panel Properties may be set by right clicking on the Throttle Control Panel(Speed), the Edit Speed Control Panel dialog is displayed. This allows you to select either of the two slider or step speed control Display Speed Slider(from 0 to 100) displays the Throttle Control shown at the left Display Speed Steps displays the Throttle Control shown in the middle Display shunting speed slider(from 100 to 0 to 100) displays the Throttle control shown on the
OK	Cancel	 Track sider in real time Switch to continuous speed slider on function: F5 Enter the function from the Function Panel that you want to use. OK button Sets the selections Cancel button Cancels any settings



<u>Back</u>

Throttle Function Panel

The **Throttle Function Panel** allows you to select the decoder functions from F0 through F15 on first overlay and F16 through F28 on second overlay. Many new Sound decoders use up to 28 functions.. use the to toggle between the two overlays

Function Pan	iel	•	X
Fl	F2	F3	
F4	F5	F6	
F7	F8	F9	
F10	Fll	F12	
F13	F14	F15	
*	Light	#	

If you have entered **Function labels**, the label text will appear on the throttle Function buttons.

BELL AIRHORN SHORT AIRHORN DYNAMIC BRAKE F5 F6 DIMMER MUTE RADIATOR FANS AIR COMPRESSOR BRAKE SQUEAL/RELEASE COUPLER CLANK F13 F14 F15 * LIGHTS	Function Panel	• [*] 🗵
AIR COMPRESSOR BRAKE SQUEAL/RELEASE COUPLER CLANK F13 F14 F15 * LIGHTS	BELL AIRHORN	SHORT AIRHORN DYNAMIC BRAKE
F13 F14 F15 * LIGHTS	F5 F6	DIMMER MUTE RADIATOR FANS
	AIR COMPRESSOR BRA	AKE SQUEAL/RELEASE COUPLER CLANK
	F13 F14	F15 * LIGHTS
#		#

Another way to change the labels on the function buttons, is to right click on the button that you want to edit, the word **Properties.** Is displayed and when clicked on, an **Edit Function Button** dialog box will be displayed.

🛃 Edit Function	Button 🔀
Function Number:	1
Text:	F1
Font Size:	12
🗹 Lockable	
✓ Visible	
Function off icon:	Function on icon:
ок	Cancel

Edit Function Button allows you to edit the text displayed on the button and the function assigned.

Function Number: text box to set the function assigned to the button.

Warning!!! Make sure you do not assign the same function number to more than one button, otherwise, undesirable results may occur

Text: the text you want displayed on the button.

Font Size: Select the font size in points.

Lockable - locks the function when button is clicked. eg makes the button a push on / push off button.

Visible - makes the button visible. When unchecked the button will not show in the panel. To restore use the View menu and select Show All Function Buttons option.

Function off icon:

Drag and drop icon of your choice into the box. To remove icon right click and click on Remove.

Function on icon:

Drag and drop icon of your choice into the box. To remove icon right click and click on Remove.

OK button sets all the values edited.

Cancel button exits dialog without change.

You can use the **Save** button on the Address Panel to save the edited functions to your locomotives Roster entry.

The descriptions shown above are only a small part of what the Throttle Window can do. The author(s) of the Throttle Window have created an extensive set of Help files to help you customize Throttle Windows to your way of operating. To access Help, just open a New Throttle. Then, click on Help and select Window Help from the dropdown box. There's lots of good stuff in there.

Loads Default Throttle Layout

• •

Opens the default throttle that is set in preferences

. .

Consisting Tool

Three types of consists are used on DCC systems:

. ..

- A *basic* or *primary address consist*, where each locomotive is assigned the same address on the programming track, or on the main with **OpsMode Programming** (if supported by the command station and decoder).
- A *Command Station Assisted Consist* (CSAC) which builds the consist using a function of your command station. Command Station Assisted Consists go by the trade names listed below.

Manufacture	Trade Name	Usage Notes
Digitrax	Universal Consist	Limited to the number of slots supported by the system. Allows any address
Lenz	Double Header	Limited to 2 locomotives. Allows any address but 00 to be used
NCE	Old Style Consist	Limited to 8 locomotives. Allows any address but 00 to be used
EasyDCC	Standard Consist	Limited to 8 locomotives. Allows any address but 00 to be used

• A *Decoder Assisted Consist (*DAC), often referred to as Advanced Consist. The NMRA[®] has set aside CV19 as a dedicated location for consist addresses. If CV19 contains a value other than 0, the locomotive will respond to speed and direction instructions sent to the address in CV19. If CV19 contains zero then it will respond to speed and direction commands sent to the usual short or long decoder address. Since the consist address is a single CV, it is limited to the range of 1 to 127. If you add 128 to the consist address, the locomotive will run backwards (relative to it's normal direction of travel) in the consist. The DAC can be set up in the **Consisting** tab in the Comprehensive Programmer.

DecoderPro Consisting Tool

The consist tool provides a visual tool for manipulating the *Decoder Assisted Consists* and , on some command stations, *Command Station Assisted Consists*.

🚆 Consist Control			- • ×
Window Help			
Consist:	Advanced	Consist 🔘 Command Station Consis	a.
New Locomotive		Direction Normal add	reset
Address	Roster Entry	Direction Normal?	
Address	Roster Entry	Direction Normal?	
	Delete Thro	ottle Reverse	

The Advanced Consist and the Command Station Consist allow you to select either consisting mode if supported by your command station. If not supported the options will be grayed out.

Consist text box: type the consist ID assigned to the locomotives in the consist for **Decoder Assisted Consists**. For Command Station Consist, this is automatically filled in with the address of the lead locomotive in the consist.

New Locomotive text box : type in a new locomotive address or select from you roster using the drop-down list.

Clicking the adds button will add the locomotive to the consist and it will appear in the list area of the window.

Clicking the reset button will clear the information of the current locomotive.

The **Direction Normal ?** determines the direction of the locomotive travel as forwarded or reverse when the consist is traveling forward. Will be grayed out until the lead locomotive is selected.

DEL button removes the consist. The list of the consist will have a DEL button for each locomotive, allowing you to remove any locomotive from the consist.

Delete button --deletes the entire consist.

Throttle button --o pens a throttle for the consist.

Reverse button -- reverses the direction of the consist.

Turnout Control

📲 Turnout Control	
Window Help	
Turnout	
Thrown	Closed
Current State <unkno< td=""><td>wn></td></unkno<>	wn>
Feedback Mode <unkno< td=""><td>wn></td></unkno<>	wn>
Advanced Features	
Cab operation:	Normai
Pushbuttons:	Normal

Turnout Control

Turnout

Enter the accessory number or tunout system name for the accessory or turnout you wish to control. For example, entering 678 and by pressing

either the Thrown or closed, you should be able to change the state of accessory number 678 on the layout.

Another example, a valid turnout system name for NCE could be NT456. Then by pressing either the

Thrown or closed, you should be able to change the state of turnout or accessory number 456 on the layout

Another example, a valid turnout name could be IT123 which is internal turnout number 123. Pressing

either the <u>thrown</u> or <u>closed</u> will only change the state of the internal turnout and will not change a turnout on the layout.

current state: A turnout can have four states: <unknown>, <inconsistent>, <thrown> and <closed> feedback mode: some of the available feedback modes are: <DIRECT>, <ONE SENSOR>, <TWO SENSOR>, and <MONITORING>. A turnout using DIRECT mode does not have feedback from the layout. ONE SENSOR use one sensor on the layout to provide feedback on he state of the turnout. TWO SENSOR uses two sensors for feedback, one for closed and one for thrown. MONITORING gets feedback from the system by either listening to cab commands on the layout or polling the system for turnout status.

Caboperation: some turnouts can be locked. If the control button is grayed out, the lock feature is not available.

Pushbuttons: Shows state of Pushbuttons.

Power Control

Power Co	ntrol [
Connection	Window	Help
Layout power:	Diff	2
On		Off

Speedometer

🚟 Speedome	ter	
Window Hel	p	
Sensor	starts timers on) entry 🔘 exit 🔾
Sensor	stops timer 1 on	🖲 entry 🔾 exit 🍳
Sensor	stops timer 2 on) entry 🔾 exit 🔾
	istance 1 (scale feet): istance 2 (scale feet):	
	To metric units	Start
Timer 1 Spe	ed (scale MPH): T	ime (seconds):
Timer 2 Spe	ed (scale MPH): T	ime (seconds):

Three sensors are installed on your layout, sensor 1 and 2 for slow speeds, and sensor 1 and 3 used for higher speeds. The time to travel between the sensors is used with the distance to calculate the speed in English or Metric units

Enter the sensor number for each of the sensors in the **Sensor** text box. You can set to start or stop on the **entry** or **exit** of the block.

Enter the **Distance 1 (scale feet):** in text box, which is the distance between sensor 1 and 2.

Enter the **Distance 2 (scale feet):** in text box, which is the distance between sensor 1 and 3.

The **Start** button starts the speedometer. **To metric units** button converts output to metric values.

The **Timer 1 and 2 Speed(scale MPH):** and **Time (seconds)** is displayed.

Single CV Programmer

The **Simple Programmer** is opened from the **Main** Page of DecoderPro3[®] **Action** menu. The **Simple Programmer** allows you to read or write CV values in DCC decoders one at a time.

📸 Simple Program	mer 📃 🗖 🔀
Window Help	
Read CV	Write CV
CV Number: Value:	
 Paged Mode Direct Bit Direct Byte Register Mode Address Mode Ops Byte Mode Long address 	Value is: Decimal Hexadecimal

Prior to reading a CV value you should enter the CV Number (address) into the **CV Number** text box. If writing a CV value you should enter the CV Number and then a value in the **Value** text box. You may enter the value as Decimal or Hexadecimal depending upon the option selected in **Value is:** area.

On the left side of the window you can select the Programming Mode. Any mode not supported by your command station will be grayed out.

If you select the **Ops** mode, which programs on the main track, you need to enter the address of the decoder (locomotive) that you are programming. Your DCC system may require you to check the **Long address** check box if the address is a long address. Most DCC systems do not allow you to read on the main, if so, the **Read CV** button will be disabled.

Now that you have everything setup, you may read the current value in the decoder's memory from the CV by clicking on the **Read CV** button or write your new value to the CV by clicking on the **Write CV** button.

Start WiThrottle Server

Withroille	
MiThrottle Window Help	
Advertising WiThrottle Server: amdx4	
192.168.2.2:3798	Clients: 0
😣 🙂	v2.0
Device Name:	Address:

Start Web Server

📆 JMRI Mini Web Server	
Web server started at http://192.168.2.2:12080	Open in Browser

Recreate Roster Index

Recreates the Roster Index when adding new XML roster files.

Recreate Decoder Index

Used to update Decoder Index when new decoder files are added.

Run Script

Opens a dialog to allow you to select a script that will run within DecoderPro3[®].

Manufacturer Specific Menu

This menu is dependent upon the equiment you are using.

Acela

Command Monitor

Opens the <u>Communications Monitor Window</u> and automatically displays the information that is being sent and received on the communications link between your computer and your DCC system.

• Send Command

Opens the **Send Acela command** prompt, type in your command and click on **Send** button to execute the command.

• Configure Nodes

Opens the Configure Nodes window. This tool facilitates configuring the Acela network nodes.

Configure No	odes			
Window Help				
The Nodes in the	e Network			
T	he nodes: 00	0 01 02 03 04 05 06	07 08 09 10 11 12 1	3 14 15 16 17 18 19
		As Confi	gured: AC	
	As Polled:	Hardware Po	lling Double Check N	ot Supported Yet
		Node Addr	ess: 0 🔻	
		Node T	ype: Acela	
Specific Configu	iration Data fo	r a Given Node		
	The first	t node (node addre	ss 0) must be an Ac	ela Node.
	An Acela	node has no outpu	t circuits and no inp	ut circuits.
Unless you	have already d	lone this before, be	fore proceeding, ple	ase click on the Help Menu
at th	e top of the pa	ge and then read th	ne entries starting fr	om 'Windows Help'.
It really is t	ime well spen	t there are many	side effects of custo	mizing your configuration.
			Ĉ.	
Notes			•	
Notes				anna i
	To Add a n	new node, enter info	ormation and select	'Add Node',
	To Edit a	node, enter node a	ddress, then select '	Edit Node'.
To Delete a nod	e, enter node a	address, then selec	t 'Delete Node'. Bog	us padding just for the fun of it.
-			Illinguages	l num
	Add Nod	e Edit Node	Delete Node	Done

CMRI

CMRI Monitor

Opens the <u>Communications Monitor Window</u> and automatically displays the information that is being sent and received on the communications link between your computer and your DCC system.

• Send Command

Opens the **Send CMRI serial command** prompt. You may poll devices on the CMRI serial link, using the **Send poll** button. You can send a command to the device using the **Command:** text box and the **Send** button.

Send CMRI serial	command	
	Command:	
	Send	
UA: 0	Send poll	

Run Diagnostics

Provides a tool for testing your CMRI serial cards in the system using either an Output Test or a Wraparound Test.

📕 Run CMRI Diagi	nostic			
Window Help				
Test Type	Output Test	🔿 Wrap	around Test	
Test Set Up				
	lode(UA): 0 Test Only - 0)	_		
Wraparound Tes	t Only - In Car	d: 2	Filtering Dela	y: 0
Status	ase ensure te	et hardwar	o ie inetallod	
				ect Run below.
Select Test Type,				

Configure C/MRI Nodes

Tool the allows you to configure your C/MRI system Nodes.

Configure C/MRI Nod	95						-	IL	-JI
Window Help									
Node Address (UA) : 0	Node	Туре	:]	SMI	NI	1			•
Receiv	e Delay (DL)	: 0]					
Pulse Width	: 500	millis	ec	ond	s)				
Click on first bit of	Port Bit	- 1)	1 2	3	4	5	6	7
each 2-lead oscillating	Card 0 Port	A							
searchlight signal.	Card 0 Port	B							
	Card 0 Port	C							
No entry needed if no	Card 1 Port	A							
2-lead oscillating	Card 1 Port	B							
searchlight signals.	Card 1 Port	C [
Notes									
To Add a new node, ent	er informati	on an	ds	elec	a/I	Adl	IN	od	e.,
To Edit a node, enter n	ode address	, then	IS	elec	t'E	dit	No	de	5
To Delete a node, enter n	ode address	, ther	s	elec	t 'D	eli	ete	No	de
					_	_	_		

List Assignments

Opens List C/MRI Assignments window. This tool lets you check teh pin assignments of your C/MRI Nodes and print them.

👫 List C/MRI Assignments	
Window Help	
C/MRI Node	
Node: 💽 🔾 Show Input Bits	Show Output Bits
ERROR - no C/MRI nodes	s well Select this button to
Print	

Run CMRI Diagnostic window

Provides a tool for testing your CMRI serial cards in the system using either an Output Test or a Wraparound Test.

📑 Run CMRI Dia	gnostic			
Window Help				
Test Type	Output Test	🔿 Wrapa	around Test	
	Node(UA): 0 nt Test Only - Ot est Only - In Car	servation D	lelay: 2000	y: 0
Status P Select Test Type	lease ensure te e, enter Test Set Continue			ect Run below.

Configure C/MRI Nodes Window

Tool the allows you to configure your C/MRI system Nodes.

腾 Configure C/MRI Nod	95							E	
Window Help									
Node Address (UA) : 0	Node Ty	pe:	s	MI	NI	1			•
Receiv	e Delay (DL) :	0	-						
Pulse Width	: 500 (mi	llise	col	nd	s)				
Click on first bit of	Port Bit-	0	1	2	3	4	5	6	7
each 2-lead oscillating	Card 0 Port A								
searchlight signal.	Card 0 Port B								
	Card 0 Port C								-
No entry needed if no	Card 1 Port A								
2-lead oscillating	Card 1 Port B		a and						
searchlight signals.	Card 1 Port C		A.						
Notes	1				_				
To Add a new node, ent	er information	and	se	lec	t'l	Add	IN	od	e',
To Edit a node, enter n	ode address, ti	ien :	sel	ect	t'E	dit	NO	de	
To Delete a node, enter n	ode address, ti	en	sel	ect	t 'D	ele	ete	No	de
Add Node Edit 1	lode Dele	ete l	loc	ie	1	-	Do	one	

EasyDCC

Command Monitor

Opens the <u>Communications Monitor Window</u> and automatically displays the information that is being sent and received on the communications link between your computer and your DCC system.

• Send Command

Opens the Send EasyDcc command prompt, which is used to send commands using DecoderPro.

🞇 Send EasyDcc command	
Command:	
Send	

Grapevine

Communications Monitor

Opens the <u>Communications Monitor Window</u> and automatically displays the information that is being sent and received on the communications link between your computer and your DCC system.

Send Command

Opens **Send Grapevine serial command** prompt. Type **Command** and click the **Send** button to send the command via serial Bus. Type node **Address** and click on **Query Node** button to query the Grapevine serial bus node.

📑 Send Gr	apevine serial	command	
Window H	lelp		1
	Co	ommand:	
	Set Parity	Send	
Addre	ess: 0	Query Node	

Configure Nodes

Opens **Configure Nodes** window, which provides the tools for setting the Grapevine Serial Bus nodes.

Window	Help			
Node	Address: 1	Node Type:	2002 node, version 6 or la	ter 🔻
Notes				
	To Add a new n	ode, enter inforr	nation and select 'Add Node	e'.
			nation and select 'Add Node ess, then select 'Edit Node	

Node Table

Opens Grapevine Nodes window which displays a table of the nodes.

Window Help				
Address	Status =			
1		Add		
2		Add	1	
3		Add	1	
4		Add	1	
5		Add	1	

LocoNet

Monitor LocoNet

Opens the <u>Monitor LocoNet Window(Gerneric Communications Monitor Window)</u> and automatically displays the information that is being sent and received on the communications link between your computer and your DCC system.

Monitor Slots

Slots are used to control individual locomotive and consists. The display includes the decoder's speed step format, current speed and function settings, consist information and status. You may choose to show all slots or just the ones being actively used.

Windo	w Help																		
				Sho	w unused slots	Show	system s	lots estop	all										
Slot		Address	Speed	Status	Use		Consi	Throttle ID	Dir	FD	F1	F2	F3	F4	F5	F6	F7	F8	
1	E Stop	0	(estop) 1	28 step	Common	Free	none	44 33	F										1
2	E Stop	4275	(estop) 1	128 step	Idle	Free	none	44 33	R					V	×				
3	E Stop	100	(estop) 1	128 step	Idle	Free	none	44 33	R										
4	E Stop	1000	(estop) 1	128 step	Idle	Free	none	44 33	F	N									H
5	E Stop	200	(estop) 1	128 step	Idle	Free	none	44 33	F										
Б	E Stop	300	(estop) 1	128 step	Idle	Free	none	44 33	F										
7	E Stop	3000	(estop) 1	128 step	Idle	Free	none	44 33	F										
8	E Stop	2000	(estop) 1	128 step	Idle	Free	none	44 33	R										
9	E Stop	183	(estop) 1	128 step	Idle	Free	none	44 33	F			E		E	EI.				

The checkboxes at the top allow to select what slots are displayed.

Show unused slots

Show system slots

estop all

Executes an **Emergency Stop** for all locomotives.

The columns are:

Column	Displays	
Slot	The numb	per of the slot
Address	Locomoti	ve address the slot controls
Speed		nsisted locomotives and addresses that are at the top of a consist, this is nt speed setting. It is an internal value for consisted slots.
Decoder Type		at of the commands being sent to the decoder, typically, either 128 step b, though other values are possible.
Status	One of th	e four possible states:
	Free	Not reserved for any particular use, no contents
	Idle	Not reserved for any particular use, no contents
	Common	Not in use at the moment, but still contains valid data for the last decoder to use it.
	In Use	Currently controlling a decoder
Consisted		he consist status of the slot, whether it is not consisted, the top of a ncluded in a consist, etc.
Throttle ID	HEX value	chrottles have a fixed throttle ID. The DT400 has a fixed common leading and a user programmable second HEX value It is displayed as two mal bytes, see the Digitrax instructions for details.
Direction	Whether	the decoder is currently being commanded to go Forward or Reverse.
F0-F8	The curre	nt function settings

Monitor Clock

A Digitrax LocoNet can contain it's own fast clock timebase. This can be driven either by a DCS100/DCS200 command station, or by a separate fast clock module such as those made by Logic Rail Technologies. The **Monitor Clock** dialog allows you to control this feature.

🛤 Monitor Clack	X
Window Help	-
Day: 41 Time: 2	: 0 . 704
Rate: 4	
Read	1

Monitor LocoNet Stats

If active displays the statistics related to traffic on the LocoNet Monitor LocoNet Stats Window.

Configure BDL16/BDL168

Opens Configure BDL 16/BDL168 window

🚜 Configure BDL 16/BDL 168	
Window Help	_
Unit address: 1 Read fromBDL16	Write toBDL16
OpSw 01: Common rail wiring	
OpSw 03: Reverse polarity for detection	
OpSw 05: Enable transponding	
OpSw 06: Reserved (Unset if RX4 connected)	
OpSw 07: Reserved (Unset if RX4 connected)	
OpSw 09: Show unoccupied when power off	
OpSw 10: Section 16 used to sense power	
OpSw 11: Do not allow BDL 16 to be LocoNet ma	ister
OpSw 12: Do not allow BDL 16 to terminate Loco	Net
OpSw 13: Delay only 1/2 second at power up	
OpSw 19: High threshold sense (10kohms)	
OpSw 25: Drive LEDs from switch commands, r	iot occupancy
OpSw 26: Decode switch commands from Loco	Net
OpSw 36: Ignore GPON messages, only reply to	interrogate
OpSw 37: Long detection delay (BDL 168 only)	1
OpSw 38: Extra long detection delay (BDL 168 or	nly/)
OpSw 39: Transponder Tracking (BDL 168 only)	
OpSw 42: Turn off power-on interogate (BDL 16)	3 only)
OpSw 43: Anti-chatter filtering (BDL 168 only)	
OpSw 44: Anti-chatter filter sensitivity (BDL 168	only)
OpSw 40: Restore factory default, including add	
The BDL 16 should be in normal mode (Don't push th	te buttons on the BDL 16!)

Configure LocolO

Opens the <u>Configure LocolO</u> window.

W	indow Help								
Loc	olO address: 0x51/00	Probe	Rea	d All		Write A	I	Set address	
1	<none></none>		<none></none>	0x0	0x0	0x0	Capture	Read	Write
2	<none></none>		<none></none>	0x0	0x0	0x0	Capture	Read	Write
3	<none></none>		<none></none>	0x0	0x0	0x0	Capture	Read	Write
4	<none></none>		<none></none>	0x0	0x0	0x0	Capture	Read	Write
5	<none></none>		<none></none>	0x0	0x0	0x0	Capture	Read	Write
6	<none></none>		<none></none>	0x0	0x0	0x0	Capture	Read	Write
7	<none></none>		<none></none>	0x0	0x0	0x0	Capture	Read	Write
8	<none></none>		<none></none>	0x0	0x0	0x0	Capture	Read	Write
9	<none></none>		<none></none>	0x0	0x0	0x0	Capture	Read	Write
10	<none></none>		<none></none>	0x0	0x0	0x0	Capture	Read	Write
11	<none></none>		<none></none>	0x0	0x0	0x0	Capture	Read	Write
12	<none></none>		<none></none>	0x0	0x0	0x0	Capture	Read	Write
13	<none></none>		<none></none>	0x0	0x0	0x0	Capture	Read	Write
14	<none></none>		<none></none>	0x0	0x0	0x0	Capture	Read	Write
15	<none></none>		<none></none>	0x0	0x0	0x0	Capture	Read	Write
16	<none></none>		<none></none>	0x0	0x0	0x0	Capture	Read	Write

Configure PM4/PM42

Opens the Configure PM4/PM42 window.

ndow Help						_
Unit address: 1	Rea	d fromPM	4		Write toPM	14
c	urrent limit:	3 amps		•		
Section 1: Speed	Standard		•	Aut	oreversing	
Section 2: Speed	Standard		•	Aut	oreversing	
Section 3: Speed	Standard		•	Aut	oreversing	
Section 4: Speed	Standard		*	Aut	oreversing	

Configure SE8C

Opens the <u>Configure SE3C</u> window.

Configure SE8c		
Window Help		
Unit address: 1	Read fromSE8	Write toSE8
Reserved (OpSw 1)	
Two aspects (one	turnout address) per head	P. La Contraction of the second se
Cables 1-4 are	3 LEDs common anode	
Cables 5-8 are	3 LEDs common anode	Ŧ
4th	aspect is flashing yellow	-
Semaphore mode		
Pulsed switch out	outs	
Disable DS input		
Enable switch com	imand from loconet	
Disable local swite	h control	
Next switch comm	and sets signal address	
Next switch comm	and sets broadcast addre	SS
Next switch comm	and sets semaphore addr	ess
Restore factory de	fault, including address	
Show LED exercis	e pattern	
The SE8 should be in n	ormal mode (Don't push th	ne buttons on the SE8!

Configure DS64

Opens the <u>Configure DS64</u> window.

The DS64 programming tool lets you configure the internal options of a DS64 directly from your computer. Type the address of a DS64 board in the text field and click the Read from DS64 button.. The tool will read back the current state of the various options, and set the check boxes to correspond to their current values. You can then, if you wish, change the checkboxes and click Write to DS64 to make your changes permanent. Limitations

Because of the way the DS64 board works, this tool can't change the basic address of the unit.

At present, DS64 routes cannot be programmed by this tool. It's possible, but nobody has written the code for it yet because JMRI routes are more powerful and easier to use.

Configure Command Station

Opens the Configure Command Station window Configure LocoNet ID

Opens the **Configure LocoNet ID** dialog that allows you to Read or Set the LocoNet ID Value:

📑 Config	gure LocoN	et ID 📒	
Window	Help	-	
1	Query	Set	
	LocoNet II): 0 💌	

Configure Duplex Group

Provides dialog to configure duplex Radio system

findow Help		
Group Identity	Channel Scan	
	Duplex Group Name:	
	Duplex Group C	hannel:
	Duplex Group Pass	sword: 7977
	Duplex Grou	p ID:
	Found 0 UR	92 devices
Rea	ad Group Information	Set Group Information
	No UR92 found. Not	thing to configure.

Send Throttle Messages

Opens Throttle message prompt with limited capability to send messages to handheld throttle.

🛤 Send Throttle Mess	ages 🔳 🗖 🔀
Window Help	
	Send

Send LocoNet Packet

Opens the <u>Send LocoNet Packet</u> dialog that lets you directly command LocoNet devices.

🛗 Send Locol	let Packet		
Window Help	r		
Packet:		Send one packe	t:
Send			
		Send sequence	of packets:
	Send	packet	wait (msec)
1			
2			
3			
4			
Go			

LocoNet packets are sent in raw hexadecimal format, you may use the <u>Monitor Window</u> in the **Show Raw Data** option to monitor the packets.

The top section lets you send a single LocoNet packet. Type the hexadecimal numbers and click Send button, you should include the byte for the checksum at the end of the message.

The bottom section lets you enter from one to four packets that will be repeatedly sent in sequence, with the user-defined delays in between. Press Go button to start transmission sequence, and press again to stop the sequence.

Select PR3 Mode

Opens the Select PR3 Mode dialog.

🔀 Select PR3 Mode		
Window Help		
Set Programmer Mode	Set Interface Mode	Interface Mode

Download Firmware

Opens the <u>Firmware Downloader</u>.

ome Digitrax products can have new firmware downloaded to them. The firmware updates are distributed as .dml (Digitrax Mangled Firmware) files. They contain both the code itself, and various management information to make sure that it can be downloaded into the hardware it expects.

Window H	ala				
window H	elp				
	Se	lect Input file:			
	File format	: • 16 bit 0 24	l bit		
Bootloader V	ersion Num	nber: 1			
Manufacture	Number: 1				
Developer Nu	mber: 1				
Product Code	: 1				
Hardware Ve	rsion Numb	per: 1			
		O Don't cl	eck hardwa	re version	
					natch
		Require	hardware ve	ersion exact r	natch
Software Ver	sion Numb	Require Accept		ersion exact r	natch
Software Ver	sion Numb	Require Accept er:1	hardware ve	ersion exact r re versions	natch
Software Ver	sion Numb	 Require Accept er: Onn't cl 	hardware ve later hardwa neck softwar	ersion exact r re versions e version	
		 Require Accept er: Onn't cl 	hardware ve later hardwa neck softwar	ersion exact r re versions	
Delay (msec)	200	 Require Accept er: Don't cl Only over 	hardware ve later hardwa neck softwar erwrite earlie	ersion exact r re versions e version	
Delay (msec) Start of EEPR	200	 Require Accept er: Onn't cl 	hardware ve later hardwa neck softwar erwrite earlie	ersion exact r re versions e version	

To use this tool:

Click Select button and select the .dmf file you want to download.

Click Read file button to read the file into the program and verify its contents.

Only if instructed to by Digitrax, change the various values in the control fields (this is usually not needed Click Download button to load the firmware. This will take a little while.

Download Sounds

Select Input file:	
Read file	
Download	
	Read file

Digitrax sound decoders are loaded with "sound projects", stored in "Sound Project" (.spj) files. Those contain a number of "sound fragments" in .wav format, plus some additional control information.

The Decoder Sound Downloader tool lets you load a new .spj file into a Digitrax sound decoder via a Digitrax PR2 or PR3 interface. If you're using a PR3, it needs to be put into "Programmer mode" before trying to download, see the main <u>PR3 page</u>.

Digitrax provides sample sound project files at their Sound Depot (<u>http://www.digitrax.com/sounddepot.php</u>) web site. You can also find links to documentation and additional tools there.

JMRI also provides tools for <u>editing sound project files</u> to include new sounds and even to <u>change the sound</u> <u>logic</u>. When you first select the Download Sounds tool, it opens a dialog with most of the controls disabled:

(Click on any image on this page to see a larger version)

The status line at the bottom will walk you through the steps needed.

First, click "Select" and pick the .spj file you want to download.

Next, click "Read" to read the file (this is a separate step so you can just click "Read" multiple times if you're editing and saving new versions of the file).

If everything is OK, the file will be read into the program and verified, a version string from the file will be displayed, and the "Download" button will be enabled.

Click "Download" to start the download process. It will take a little while. The progress is described in the status line:

"Starting download; erase flash"

The first step is to erase the decoders memory so it can take new data. This will take up to about 30 seconds, depending on the specific decoder.

"Sending initialization message"

Set up the decoder to accept data after being erased. This should only take a fraction of a second. "Send SDF data"

Load the Sound Definition data into the decoder, which should only take a few seconds "Send WAV data"

The sound data is being downloaded. As each block is sent you'll get an update: "Send WAV data block 1", then 2, then 3, etc.

"Done"

The download completed OK.

If something goes wrong, the final status will be "Download aborted". The most common reason is that the PR2 couldn't handle the data that was being send, which is listed as "PR2 not ready". If this happens repeatedly, make sure that the serial port and cable that the PR2 is using as the control lea

Edit SPJ Sound File

Opens Sound File editing tool

🗮 Edit SPJ Sound	File 💶 🗖 🗙
Window Help	
Open File	Save File

Start LocoNet Server Starts the LocoNet server. Start LocoNet over TCP Server Opens the LocoNetOver Tcp Server dialog.

.ocoNetOverTcp	Server			×
Start Server at Ap	plication Startup	Port Number:	1,234	1
		1		2
Start Server	Stop Server	Save Settin	gs	
Server St	atus: Disabled Cl	ient Count: D		

LocoNetOverTcp) Server			×
Start Server at Ap	plication Startup	Port Number:	1,234	and the second s
Start Server	Stop Server	Save Settin	gs	ľ
Server St	atus: Disabled Cl	ient Count: D		

NCE

Command Monitor

Opens the <u>Communications Monitor Window</u> and automatically displays the information that is being sent and received on the communications link between your computer and your DCC system.

Send Command

Opens the **Send** prompt with a text box to enter the NCE Format command that you want to send.

🎇 Send NCE command	-02
Window Help	
Command:	
Send	
Binary	
	-

Send Macro

Opens the **Execute NCE Macro** Window which allows you to enter the Macro number to be executed. Clicking the **Send** button sends the macro.

📑 Execute N	ICE macro 🖃 🗖 🔀			
Macro:				
Reply:	unknown			
Send				

Edit Macro

This tool allows you to review, edit and save NCE style macros. It also allows you to backup and restore all the NCE command station macros to and from a file. The file format is identical to NCE, so you can restore a file that was generated by the NCE backup command. It is recommended that you set the baud rate at 9600 when using this tool.

Windo	w Help			
-		Macro	_	1
	Previous		Next	Empty Macro
Reply:	unknown	Get		NCE Turnout
1	empty		Add	Delete
2	empty		Add	Défeté
3	empty		Add	Delète
4	empty		Add	Délete
5	empty		Add	Delete
6	empty		Add	Défete
7	empty		Add	Delete
8	empty		Add	Délete
9	empty		Add	Delete
10	empty		Add	Link macro
		Save	Backup	Restore

Backup button

Click on the **Backup** button located on the bottom row. This will open the **Save** dialog. This will read the NCE command station memory and store the contents into the file you selected.

Restore button

Click the **Restore** button located on the bottom row. This will display the **Open** dialog, select the file you want to restore to the NCE command stations memory and click on **Open** button.

Get button

To review a macro, enter the number of the macro in the text box under the heading **Macro** and click the **Get** button. This will retrieve the macro from the command station's memory. If the the macro currently exists, **Reply:** will be macro found. If the macro does not exist, the **Reply:** will be macro empty. If there is a macro, the editor will show a list of accessories that the macro is programmed to activate.

Add button

Links The **Add** button will add an accessory's address

Delete button

The **Delete** button will remove an accessory's address

Link Macro button

this macro to another one.

Previous and Next buttons

Allow you to search the macros.

Save button

Saves macros to the NCE command station

Edit Consist

This tool allows you to review, edit and save NCE style consists. Also allows you to backup and restore all the NCE command station consists to and from a file.

Edit NCE Cor Tools Window							
	Previous	Previous		Consist 127 Next		Empty consist	
Status:	unknown		Get			Verify loco	
	Consist					🖌 Consist roster	
Locomotive	Roster	_	Address	Туре	Direction		
Lead		+		Long	33	Åďd	
Rear				Long	22	bbA	
Mid 1		1		Lang,	27	Add	
Mid 2		1		Long	77	Add	
Mid 3				Lang	27	Ådd	
Mid 4		-		Long	72	Atid	
Throttle	Clear		Save	Delele	Backup	Restore	

Backup button allows you to backup all of your consists to a file from the NCE command Station.

Restore button allows you restore consists from a file to the NCE command Station.

Get button is used to retrieve the consist from the command station's memory.

You may add a locomotive by entering the address and clicking the **??** button to set forward or reverse running. The **Type** button toggles between **Long** and **Short** address (remember that NCE allows both long and short addresses in the range below 128). Click the **Add** button and that locomotive will be added to the consist. Alternately, you may add a locomotive from your roster with the drop-down list, then click the **Add** button.

Consist roster enables saving and maintaining consist roster when checked.

Save and **Load** Button is displayed as a **Save** button when program has detected that a change has been made to a consist. When you select a consist to load from the consist menu, it becomes the **Load** button. **Clear** button removes all the locomotives from a consist.

DCC Packet Analyzer

The DCC packet analyzer entry is software to log data from a hardware device sold by NCE which allows the user to observe the packets on the NCE Command Bus, or alternatively directly from the track. The latter feature allows the device to look at track packets sent from any Command Station that conforms to the NMRA standard (such as Digitrax or Lenz). The input signal is interpreted and sent to JMRI through a serial interface. With it the user can see speed and function instructions being sent from the Command Station to the decoder

Monitor Clock

Opens the <u>NCE Clock Monitor</u> window. When the clock is running as clock master mode, the internal clock rate is adjusted to match time with the NCE command station clock. The goal is the minute should roll over at the same time for the internal clock and ProCab displays.

🔀 NCE clock monitor				
Window Help				
Internal Clock Status				
RUNNING 04:27:43 Ratio: 1.000:1				
NCE Clock Status				
Set Clock Values				
Time: 00	: 00 : 00	Set Ho	urs:Minutes	
Set Clock Ratio				
	Ratio: 1 :1	Set Ratio]	
Set Clock 12/24 Mode				
	24 Hour Format	Set 12/24 I	Mode	
Control and Commands		-		
Start NCE Clock	Stop NCE Clo	ock R	ead All Clock Settings	
Set Polling Speed				
Clock Interface Pollin	g Interval 5.0	Secs	Set Update Interval	
	_			

Show Cabs

Opens a window that displays the cabs currently on the system. This is handy for determining the cab number assigned to a throttle that doesn't have a display. Just use "Show Cabs" to display the cabs currently on the system. Then plug in the cab in question and use it again to see which one is added. If you have a standalone set-up bench it's even easier. Cycle the power to clear the command station memory. Then plug in the new cab and Show Cabs will display its number

Booster Programming

Booster Programming is stated to be only for NCE booster testing, and warns that the booster must be disconnected from the track before using.
OakTreeSystems

Communications Monitor

Opens the Communications Monitor Window and automatically displays the information that is being sent and received on the communications link between your computer and your DCC system.

Send Command

Opens the Send Oak Tree serial command prompt, which will allow you to type in a **Command:** then click on

Send poll Send You may also type in an Address: and poll the system by clicking on the .

📲 Send Oak Tree serial	command 📃 🗖 🔀
(Command:
	Send
Address: 0	Send poll

Powerline

Communications Monitor

Opens the Communications Monitor Window and automatically displays the information that is being sent and received on the communications link between your computer and your DCC system.

Send Command

Opens the Send power line device command prompt to allow you to type in a Command and it to the powerline device.

📽 Powerline: Command Generator	
Window Help	
Command:	
Interlock	
Send	

OSI

Command Monitor

Opens the Communications Monitor Window and automatically displays the information that is being sent and received on the communications link between your computer and your DCC system. Send Command

Opens the Send QSI command prompt to type in a Command: and click on

า	Send

📑 Send Q	SI command 🔳 🗖 🔀
Command:	
Send	

[Type text]

RPS

RPS Monitor

Opens the <u>Communications Monitor Window</u> and automatically displays the information that is being sent and received on the communications link between your computer and your DCC system.

RPS Receiver Control

Opens the <u>RPS Receiver Control</u> window, which will detect how many receivers it has and set up a table with the right number of rows.

📑 RPS Receiv	ver Control						
Window Help	p		_				
Receiver	X	Y	Z	LastTime	Active?	Min Time	Max Time
1	0	0	72	-1		0	99999
2	72	0	72	-1		0	99999
vs	ound: 0.0136	Number of	Receivers	: 2	Set Ash 2.1	▼ Set]
		Set Defau	lts S	itore I	.oad		

RPS Polling Control

Opens the <u>RPS Polling Control</u> window where you tell the RPS system which of your locomotives have RPS transmitters installed, and how often to talk to them.

📑 RPS Polling C	ontrol						
Window Help							
Roster N ID	Locom	Long	Polled	LastX	LastY	LastZ	Last Time
	O Use BSC Pol	0					
Poll	Use Direct P	oli Inte	rval 500	Stor	e New Defa	ult Values	
	O Use Throttle	Poll					

RPS Debugging Window

Opens the <u>RPS Debugger</u> window that lets you look at information as it moves throught the RPS system.

😹 RPS Debugger	
File Window Help	1
Time measurem	ents:
rt:	r-t:
r2:	r.t:
	ld:
Re X: Y: Z:	sults:
	Code:
From time	fields 🔻 Do Once

RPS Tracking Display

Opens the <u>RPS Tracking</u> frame that displays two types of things, the measured positions and paths of RPS transmitters and the *detection regions* used for RPS blocks and sensors.



RPS Sound Speed Monitor

Opens the <u>RPS Sound Speed Contro</u>l window that lets you monitor and control the speed of sound used by the RPS system.

📑 RPS Sound Speed C	Control	
Window Help	-	
	Current sound velocity:	01354
New s	ound velocity:	Set
Known Distance:	Transmitter ID;	Receiver Number:
Measured Spee	d: 🗌 Aut	to Set Damping: 10.

RPS Alignment Tool

Open the <u>RPS Alignment</u> window that allows you to align the sensors.

📲 RPS A	lignmen	ıt									
Window	Help										
Position:	70.1	21.2	2	Acquire	Reset	n:	Times:	1282	3818	5209	4677
Position:	25.6	14.1	2	Acquire	Reset	n:	Times:	4412	1334	1956	3362
Position:	32.2	4.2	2	Acquire	Reset] n: [Times:	4010	1119	2876	4177
Position:	14.2	47.4	2	Acquire	Reset	n:	Times:	5762	3634	1607	1340
Position:	70.1	21.2	7.5	Acquire	Reset	n:	Times:	1083	3765	5247	4216
Position:	25.6	14.1	7.5	Acquire	Reset	n:	Times:	4328	1091	2312	3333
Position:	32.2	4.2	7.5	Acquire	Reset] n:	Times:	3959	831	3165	4148
Position:	14.2	47.4	7.5	Acquire	Reset	n:	Times:	5741	3599	1509	1119
				Ash 2.1	• Vs: 0.0	01345	Calculate	1			
				х:				1			
				Y:				I			
				Z:				1			
				S:							

SECSI

Communications Monitor

Opens the <u>Communications Monitor Window</u> and automatically displays the information that is being sent and received on the communications link between your computer and your DCC system.

Send Command

The Send SECSI serial command prompt opens.

Send SECSI serial	command 🗐 🗖 🔀 Command:	Type the Command into the text box and click the Send button to send the command.
	Send	A polling Address : may be typed in the text box at the bottom of the prompt box and click on
Address: 0	Send poll	Send poll to poll the addresses on the communications link.

SPROG

Command Monitor

Opens the <u>Communications Monitor Window</u> and automatically displays the information that is being sent and received on the communications link between your computer and your DCC system.

Send Command

Opens the Send prompt with a text box to enter the **Command** message that will be sent to the DCC system when you click on the **Send** button.

📕 Send S	prog command	
Command	8	
Send		

Console

Opens the <u>Sprog Console</u> window that combines the communications monitor, Send Command and other features into a single user interface.

🛤 Sprog Console		
Window Help		
Command History		
cmd: " "		
	Clear screen Freeze screen Show raw data Show timestamps	_
	Choose log file Start logging Stop logging	
Add Message		
Send Command	Command: Send	
Speed Step Mode	or SPROG Throttle 😳 14 step 😳 28 step 😳 128 step	
Configuration	Current Limit (mA):	
Save/Load Configu	Save	

Get SPROG Firmware Version

Retrieves the SPROG firmware version and displays that information.

SPROG V3/V4 Firmware Update

Starts the SPROG Firmware Update wizard.



SPROG II Firmware Update

Starts the SPROG II Firmware Update Wizard (basically the same as above)

TMCC

TMCC Monitor

Opens the <u>Communications Monitor Window</u> and automatically displays the information that is being sent and received on the communications link between your computer and your DCC system.

Send Command

Opens the Send TMCC command prompt to send a command to the DCC system by typing in the **Command** text box and clicking the **Send** button to send the oommand.

wangrow

Command Monitor

Opens the <u>Communications Monitor Window</u> and automatically displays the information that is being sent and received on the communications link between your computer and your DCC system.

Send Command

Opens the NCE Command Generator, Whose binary commands are designed to work in a computer friendly mode.

Command format (cmd number) (data) (data) ...

Commands range from 0x80 to 0xBF

📸 Send NCE command 📃 🗖 🔀	Command: — type the command in the text box. Send button —sends the command to the DCC
Window Help	command station in the proper format.
Command: Send Binary	 Binary check box is checked for binary commands Text box at bottom of dialog can be used to override the number of bytes sent.

XpressNet

XpressNet Menu

XpressNet Monitor

Opens the <u>Communications Monitor Window</u> and automatically displays the information that is being sent and received on the communications link between your computer and your DCC system.

XpressNet System Information

XPressNet System Information Dialog

Click on the Get System Info to query the system (Lenz or other) for system information that will be displayed in

the dialog. Click on Close the dialog.

🔀 XPressNet System	Information 🔳 🗖 🔀
Window Help	
Command Station:	<unknown></unknown>
Software Version:	-1.0
Status:	Unknown
Interface:	
Hardware Version:	
Software Version:	
Get System Info	Close

Send XpressNet Command

Opens the Send XpressNet Packet prompt so that you can type in a Packet: and click on the send to transmit via XpressNet to your system.

📑 Send Xp	ressNet Packet	
Packet:		
Send		

Command Station Database Manager

Command Station Stack Monitor

Refresh

Click the **current** information.

LI101 Configuration Manager

Open the LI101 Configuration Utility Window.

腾 LI101 Configuratio	n Utility		- 🗆 🔀
	Xpressnet add	iress:	
	LI101 Speed Setting		
Read from LI101	Write to L1101	Reset to Factory Defaults	Close

LZ100 Configuration Manager

Open the <u>LV100 Configuration Manager</u> Window

Command Station Configuration:		
Command Station Start-up Mode: 📿 Auto 📿 Manual	Get Current Mode	Set Mode
Command Station Options: Reset 0	Command Station	

LZV100 Configuration Manager

Open the LZV100 Configuration Manager Window

Booster/Power Station Co	nfiguration:		
Tra	:k Voltage:	-	
	E-Line Status:	-	
RailCom Status:	RailCom Mode:		-
Write to Power Station	Reset to Factory Defaults	Clear Current	Selections
Command Station Configura	rtion: e: 〇 Auto 〇 Manual 🚺	Clear Current	Selections Set Mode

LV102 Configuration Manager Open the <u>LV102 Configuration Manager</u> Window.

Track Voltage:	
E-Line Status:	
RailCom Status: 🖉 RailCom Mode:	
Write to Power Station Reset to Factory Defaults Clear Curre	nt Selections

Zimo

Command Monitor

Opens the <u>Communications Monitor Window</u> and automatically displays the information that is being sent and received on the communications link between your computer and your DCC system.

Send Command

Opens the Send prompt with a text box to enter the Packet message that you want to sent.

📑 Send M	K-1 Packet	
Packet:		
Send		

Window

-	ΝЛ	in	im	ize
0	IVI	111	ш	ize.
•		••••		

o open windows listed

Help

- o Window Help...
- o General Help...
- o License...
- o Locations...
- o Context...
- o System Console...
- Upload Debugging Info...

About DecoderPro3



Main Window Tool Bar



Rew Loco	Opens the <u>create new loco</u> window
Identify	Attempts to Identify the locomotive if it is in the roster.
Identify	Dispays the Help file for the DecoderPro® window
New Throttle	Opens new <u>Throttle</u> or other buttons added by <u>preferences.</u>
Off	Controls Track power if your command station supports this feature.
Programming Mode Paged Mode 💌	Drop down list allows you to select Progamming Mode

Roster Table

The Roster Table in the main body of DecoderPro3[®] displays all of the locomotives in your roster or selected roster groups.

SORT by any column by clicking on the column header. Roster above is sorted by DCC addresses.

ID +	DCIC Address	lcon	Decoder Model	Road Name	Ruad Number	Manufasturer	Model	Ovmer	Date Medified	Prolucal
L35-300-D	200		Dis102100	Sauta Le	200	12.010	ALL D	stubb.	240 20, 2011 4.47 21 70h	Dec round
F78-300-C	300	and the second	DN163K0E	Santa Fe	300 OE	158/10	F-78	Tripp	Sep 28, 2011 4:46:31 AM	DCC Long
F7A-300-B	100		DM163K0B	Santa Fe	300	Katu	F-TA	Tripp	Sep 28, 2811 4 42:07 AM	DCC Long
7A-300-A	000		DM163K0B	Santa Fe	300	Misto	JF-7A	Tripp	Sep 28, 2011 4 41:29 AM	DCC Long
40P)+342	342		ON163K0D	AMTRAK	342	Kato	F-40PM	Tripp	Oct 18, 2011 12:59:41 AM	DCC Long
S44AC-5738	5719	100 Mar 100	DZ125(N	BNBF	5730	Fox Valley	ES44AC	Tripp	Sep 27 2011 1:46:45 AM	DCC Long
S44AC-5719	5719	Concession in the local division in the loca	D2125IN	BNSF	5719	Fox Valley	ES44AC	Tripp	Sep 27, 2011 1:47:55 AM	DCC Long
-84-6018R	60.18	and the second division of the	DN163K0A	Southern Pacific	6046	Kato	E-8A	Tripp	Sep 26, 2011 4:20:26 AM	DCC Long
E-8A-6018F	6018	and the second se	EN163K0A	Southern Pacific	8016	Rato	E-6A	Tripp	Sep 28, 2011 4 24:03 AM	DCC Long
D40X-6932	6932	Contraction of the	4 function decode: (36-550)	Union Pacific	6932	Bachmann	DD40%	Tripp	Sep 28, 2011 5:01 14 AM	DCC Long

Hide/show any column by right clicking anywhere in the Roster header and checking columns to be displayed and unchecking columns to hide.

and the second second second second	Ø Owner 245 Inta Ø Date Modified Ø Protocol		
DD40X-6932	Model	Forest Laboration	
E-8A-6018F	Manufacturer	TALL BOOM CONTRACT	
E-8A-6018R			1
ES44AC-5719	Road Number	Harter and Andrews	
ES44AC-5738	🗹 Road Name	1111	
F40PH-342	☑ Decoder Model	-	1
F7A-300-A	— 🗹 Icon		
F7A-300-B			1
F7B-300-C	DCC Address	10000	1
F7B-300-D	L C ID	lcon	-

With columns hidden.

Identify () ID DCC Address Icon Decoder Model	Help Off Decoder Model KOB KOB KOB	Road Nam Santa Fe Santa Fe Santa Fe Santa Fe	
DCC Address Icon	жи о 8К0В 8К0В 8К0В	Santa Fe Santa Fe Santa Fe	
lcon	3K0B 3K0B	Santa Fe	
lcon	вков	and the second	
10.97	1.2.5	Santa Fe	
Decoder Model	1 () () () () () () () () () (Santa Fe AMTRAK	
	BKOD		
Road Name	IIN	BNSF	
Doad Number	IIN	BNSF Southern Pag	
	BKOA		
E-8A-6018F Manufacturer		Southern Pad	
Model	ion decoder (36-550)	Union Pacific	
Owner			
Date Modified Protocol			
	Model Owner Date Modified Protocol	Road Number 3K0A Manufacturer 3K0A Model ion decoder (36-550) Owner Date Modified Protocol Image: State St	

Selecting Actions using Context menu (Right Click) on locomotive selected. Select the action you would like to perform.

Road Number: Manufacturer: Owner:	100 Athearn Tripp	Delete			
Road Name: Santa Fe		Duplicate			
DD40X-6932		Throttle	O Edit		
		Labels and Media			
					ode
E-8A-6018F	-	Programmer type +	Program	ming Track	
E-8A-6018R		Program	and the second state	DN163K0A	
ES44AC-5719		5719	191	DZ125IN	-
ES44AC-5738		5719		DZ125IN	-
F40PH-342		342		DN163K0D	-
F7A-300-A		300 1		DN163K0B	
F7A-300-B		300		DN163K0B	
F7B-300-C		300 💭 🔤	Contraction of the second	DN163K0B	-
ד 1D ד ק-טוטב-פרד	DOC.	Address	lcon	Dec	oder

Double Click on Selected locomotive and Programming Window will open.

Editing column of a Roster Entry in the table. Select locomotive then click on column that you want to edit. Type your change.

The following columns may be edited.

ID Col Road Name Road Number

- Manufacturer
- Model

Owner

Ę	Road Name	Road Number	Manufacte
Į	Santa Fe	300	Kato 🤰
ł	Santa Fe	300	Kato 🦒
ξ	Santa Fe	300	Kato 🕴
ζ.	Santa Fe	300	Kato 📢
7	Santa Fe	100	Athearn
ţ_	Santa Fe	105	Athearn 🤳
- Allowed	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	•

del	Road Name	Road Number	Manufacture
T	Santa Fe	300	Kato
ł	Santa Fe	300	Kato
)	Santa Fe	300	Kato
)	Santa Fe	300B	Kato
	Santa Fe	100	Athearn
	Santa Fe	105	Athearn
			Pro

Column sequence may be modified and Saved. Just Drag and Drop the column header to the desired position.

Column Width may be changed by grabbing the divider between the column until the double headed arrow shows and move the arrows to the desired column width.

You may use the same technique to resize panes or the main window.

Decoder Information Area

FP45-105 Mikadn-0 ID: Road Name: Road Number: Manufacturer: Owner: Model: DCC Address:	Tripp	Displays the information about the current decoder selected.
1112:55:06 Am	Tsunami Diesel Genesis OEM N FP45 FP45_100.xml	You may select the progamming mode: Programming Track Programming on Main
C Edit C	gram	 Edit Only allows you to edit the roster without programming the locomotive. Opens the <u>Default Programmer</u> for the selected decoder in the Roster List
Labels	& Media	Opens the Labels & Media Window for the selected roster member. Functions labels TAB opens the Function labels pane which allows you to label throttle function buttons
		Roster Media TAB opens the Roster Media pane which allows you to assign an image to the roster entry
Т	hrottle	Opens a <u>throttle</u> tool for the selected loco in the Roster List.

Status bar

Service Mode Programmer LnProgrammerManager Is Available Operations Mode Programmer LnProgrammerManager Is Available Programmer Status : Done Active Roster Group : All Entries

Displays message, so that you can determine the state of DecoderPro3 during operation.

BUZSIZ

Decoder Programmer Common Error Messages

Various things can go wrong when JMRI tries to work with your DCC command station to program a DCC decoder. This page lists the error message that can result, and describes what they mean.

JMRI Error Codes

301 — no locomotive detected

The command station has reported that it doesn't see a locomotive on the programming track.

This can happen if the locomotive isn't making good electrical contact or if there's a wiring fault in the locomotive.

302 — programmer busy

The command station has reported that it's busy doing something else, and can't do any programming right now. This usually means that some other part of the DCC system is doing a programming operation, e.g. a hand-held throttle.

Some DCC systems can't do ops-mode programming (programming on the main) while also using the service mode programming track, in which case they'll return this error message.

303 — requested not implemented in command station

This means that JMRI has requested the command station do something that it doesn't support.

This is not supposed to happen, as JMRI should disable programming modes that the command station can't provide. If you do see this message, please report the circumstances on the jmriusers mailing list.

304 — aborted by user

The user has requested that the read or write operation stop early.

This is considered an error, because the program doesn't know whether the decoder actually saw the operation complete or not.

305 — confirm failed

Some command stations allow you to "confirm" the content of a CV, rather which read the value from it. In general, this is faster than doing a complete read. If the value in the CV doesn't match the expected value, this message is issued. It's considered an error because if the values don't match, we know that we don't know the correct value for the CV contents.

306 — timeout talking to command station

The program did not hear back from the command station when it expected to.

This is by far the most common error message when people first start using JMRI. In that case, it usually means that the connection to the command station isn't correct. This could be a problem with the cable(s) making the connection, or a problem with how the preferences are set. Picking the wrong serial port is particularly common.

Once JMRI is working properly, this error may occasionally happen due to a transient error. DecoderPro generally will retry it successfully in that case.

307 — Unknown error

An error has happened, but JMRI doesn't know enough about it to be able to report more detail.

In general, JMRI is pretty good at deciphering what went wrong, and this message isn't very common. If you do see this message, please report the circumstances on the jmriusers mailing list.

308 — No acknowledge from locomotive

At the end of a CV read or write operation, the locomotive replies ("acknowledges") to the command station using a pulse of current.

If that pulse isn't seen, some command stations provide this error message. It could be due to poor electrical connections to the programming track or within the locomotive. It could also be that the decoder doesn't support readback.

Some decoders, particularly certain sound decoders, draw so much current that the reply pulse isn't detected by the command station. In that case, one of the various "programming boosters" may solve the problem.

309 — Short Circuit on Programming Track

The command station has reported seeing a short circuit on the programming track. That prevents programming operations.

Check the electrical connections to the programming track, and also within the locomotive.

Index

Α

Actions TAB, 17 Adding New Locomotive, 27

В

Basic Programmer, 30, 35, 40, 41, 59, 88 Basic tab, 32, 36 Buttons TAB, 17

С

Command station, 7, 14 Comprehensive, 25, 28, 39, 40, 41, 67, 69, 88, 112 Connection name, 14 connection options, 13 Connection prefix, 14 Connections, 12, 13 Connections Pane, 13 Console TAB, 20 CV, 31, 37, 44, 47, 49, 53, 57, 58, 61, 66, 67, 69, 70, 71, 112, 116, 151, 152

D

DCC, 2, 3, 4, 12, 14, 25, 31, 34, 37, 43, 46, 59, 60, 61, 67, 96, 112, 116, 117, 119, 122, 123, 132, 134, 136, 137, 140, 141, 142, 145, 147, 151
decoders, ii, 2, 4, 12, 25, 27, 31, 33, 34, 37, 40, 43, 44, 45, 46, 47, 48, 50, 54, 55, 56, 57, 58, 59, 61, 62, 63, 107, 116, 131, 152
Defaults Pane, 15
Delete, 26, 80, 133
Display Panes, 19
Duplicate, 26, 79

F

File locations Pane, 16 Files TAB, 18 First Time, 5

G

GUI TAB, 19

hardware, 4, 14, 129, 134

Install, 1, 5

. .

JSON Server, 13, 23

L

Н

L

J

Labels and Media, 26, 88 language, 20 load at startup, 18 location, 16, 20, 21, 61, 112

Μ

Messages Panes, 21 MinServer, 23

Ν

New Loco, 27 new user, 26

Ρ

PR3, ii, 3, 4, 13, 129, 131
preferences, 5, 9, 10, 11, 13, 24, 25, 40, 91, 95, 146, 152
programmer, 4, 21, 25, 28, 36, 39, 40, 41, 43, 44, 62, 63, 65, 66, 69, 151
Programmer TAB, 21
Programming Track, 26, 27, 84, 152

R

Read type, 27 roster, 5, 9, 10, 13, 21, 25, 26, 31, 32, 35, 39, 40, 77, 79, 80, 82, 85, 88, 91, 92, 93, 94, 107, 113, 117, 134, 146, 147 Roster, 10, 21, 25, 26, 29, 30, 31, 34, 35, 36, 38, 39, 40, 41, 47, 66, 75, 76, 77, 78, 79, 82, 83, 85, 87, 88, 91, 93, 94, 107, 117, 147, 149 Roster Entry, 29, 30, 36, 38, 40, 47, 76, 77, 78, 88, 149 Roster Panes, 21 Roster TAB, 21

Roster Table, 25, 83, 147		Throttle Pane, 22	
	S		U
Scripts TAB, 18 Service Mode, 27, 84		User File Locations, 16	
Settings, 14, 15, 25, 37, 81 start screen, 5			W
Start Up Pane, 17		Web Server Pane, 23	
System manufacturer, 14		WiThottle, 22	
		WiThrottle Pane, 22	
	т		

Throttle, 22, 26, 39, 91, 95, 96, 107, 110, 112, 124, 128, 146