

# **Overview of JMRI**

Presented by Scott Henry DCC by Design

For Pr. William Model Railroad Club 21 January 2014

#### **ГРСЕ by Design**

# Agenda

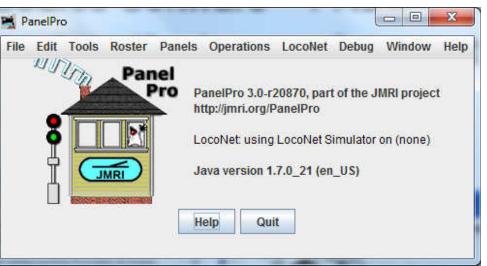
- Getting Started
- Introduction to JMRI Software
- Key Features
  - Decoder Pro
  - Decoder Pro 3
  - Panel Pro
  - Operations
  - Loco Net Tools

# Introduction to JMRI

• JMRI – Java Model Railroad Interface



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## System Requirements

• JMRI

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- Open Source Software = FREE!!
- Web site: http://jmri.sourceforge.net
- Features shown from version 2.4 and upwards
- Ver. 2.4 requires
  - Windows XP or Newer
  - Java Runtime Environment (JRE) 1.6 or higher
    - JRE is free from <a href="http://www.java.com">http://www.java.com</a>
- LocoBuffer USB for Digitrax Systems
  - I sell

### Decoder Pro

- Used to Program Decoders
  - Mainly Locomotives
  - Some Stationary Decoders
    - Digitrax DS54 (old)
    - Team Digital Products
  - Configure all features
    - Address

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- Sound level
- Factory Reset
- Saves Settings for fleet



# **Basic Programming**

New Locomotive

Jesign

- Read Type from Decoder
- Browse to find
   Decoder
- Existing Locomotive
  - From Roster

🚟 Service Mod	e (Programming Track) Programmer S	etup 💶 🗖 🔀
File Roster		
	Page mode programming	
Use locomotive set	ings for: <pre><none -="" loco="" new=""></none></pre>	▼ Ident
Decoder installed:	<ul> <li>NMRA</li> <li>Atlas</li> <li>Broadway Limited Imports, LLC</li> <li>Bachmann Trains</li> <li>CML Systems</li> <li>CT Elektronik</li> <li>CVP Products</li> <li>Digitrax</li> <li>Electronic Solutions Ulm GmbH</li> <li>Haber and Koenig Electronics GmbH</li> <li>Hornby</li> <li>Kuehn</li> <li>Lenz</li> <li>MERG</li> <li>MBRG</li> <li>Massoth Elektronik, GmbH</li> <li>MRC</li> <li>Massoth Elektronik, GmbH</li> <li>North Coast Engineering</li> <li>New York Byano Limited</li> <li>QSIndustries</li> </ul>	Read type from decoder
Programmer format	: Comprehensive	•
	,	Open Programmer
	idle	

## **Basic Programming**

• Screen

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- Basic Tab
  - Address
    - 2 Digit
    - 4 Digit
  - Analog Operation
- Button Basics
  - Read
  - Write

🗮 Program <new loco=""> in</new>	Service Mode (Programmi	ing Track)	
File Reset			
Roster Entry Function Labels	Basic		
Read changes on sheet	<ul> <li>2 digit addressing</li> <li>4 digit addressing</li> <li>Active DCC Address:</li> <li>3</li> <li>Analog (DC) Operation On</li> <li>Write changes on sheet</li> </ul>	Tead full sheet	Write full sheet
Read changes on all sheets	Write changes on all sheets	Read all sheets	Write all sheets
			White all sheets
	Page mode programming	Set	
	idle		

## **Basic Mode Programming**

• Roster Entry Tab

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- Locomotive Info
- Decoder Info
- Owner Info

💐 Program <new loco=""> in</new>	n Service Mode (Programming Track)	
File Reset		
Roster Entry Function Labels	Basic	
ID:	<new loco=""></new>	
Road Name:		
Road Number:		
Manufacturer:		
Owner:		
Model:		
DCC Address:		
Comment:		
Decoder Family:	Series 3 with FX3, silent, readback	
Decoder Model:	DN163K1B	<u> </u>
Decoder Comme	nt: This is filled in automatically by your earlier s	elections
Filename:		
Filehanie;	Save to Roster Reset to defaults	
Read changes on all sheets	Write changes on all sheets Read all sheets Write	all sheets
	Page mode programming	
	idle	

## **Comprehensive Mode**

• Full Feature Mode

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- Basic, plus the following:
  - Basic Speed Control
  - Speed Table Tab
  - Function Map Tab
  - Lights Tab
  - Sound
  - Decoder Specific

	Reprogram <new loco=""> in Service Mode (Programming Track)</new>
	File Reset
	Speed Table         Function Map         Lights         Analog Controls         Consist         Advanced         Sound         Sound Levels         CVs         Digitrax           Roster Entry         Function Labels         Basic         Motor         Basic Speed Control
	ID: <new loco=""></new>
	Road Name:
• F	Road Number:
Ι.	Manufacturer:
) -	Owner:
	Model:
	Comment:
	¥
	<b>▼</b>
	Decoder Family: Series 3 with FX3, silent, readback Decoder Model: DN163A0
	Decoder Comment:
	Filename:
	Save to Roster Reset to defaults
	Read changes on all sheets Write changes on all sheets Read all sheets Write all sheets
	Direct bit mode programmingSet
	idle

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## Decoder Pro 3

- New Opening Interface
- Same Programming Panels

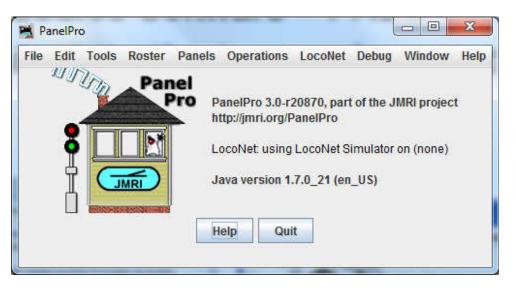
	Loco 🔍 Identify 🕜	Help		Unknown Program	nming Mode Page	1 Mode 💌	
Roster Group 4	ID	DCC Address	lcon	Decoder Model	Road Name	Road Number	
All Entries	AMTK-05 P42 Genesis	5		DN163K0A	Amtrak	05	Kato
HO Locor	AMTK-52 P42 Genesis	52		DN163K0A	Amtrak	52	Kato
N Locom	Brad CNW GP-9 1720	1720		DH163L0	1		1
Contraction of Contraction	Brad GP9 UP 349	349		DN163			1
199	Brad Proto 1000 F3 Units	4056		DH123	CNW	4056	Life-Like
1000	CN 6253 SD40-2	6253		Synch Diesel Sound 1806 - N Scale KATO SD40-2	CN	6253	Kato
1997	CR-4103 SD80MAC	4103		DN163K2	Conrail	4103	Kato
100	CR-4103 SD80MAC N Scale	4103		DN163K2	CR	4103	Kato
1000	CR-5555 SD60M	5555		DN163A1	Conrail	5555	Atlas
100	CR-8146 GP38-2	8146		Synch Diesel Sound 1812 - N Scale Atlas Short Board Dropin	Conrail	8146	Atlas
and a	CR-8673 SD50	8673		Synch Diesel Sound 1812 - N Scale Atlas Short Board Dropin	Conrail	8673	Atlas
(and	NS-1642 SD40-2 N Scale	1642		DN163K1B	NS	1642	Kato
ciero	NS-3013 GP40	3		Synch Diesel Sound 1812 - N Scale Atlas Short Board Dropin	NS	3013	Atlas
the second	NS-3223 (SD40-2 H)	3223		DN163K1A	NS	3223	Kato
	NS-3223 SD-40-2 H	3223		DN163K1A	Norfolk Southern	3223	Kato
+ 0.	NS-4805 D8-40B	3		DN16340	Norfolk Southern	4805	Atlas
							•
		ID:	Brad (	GP9 UP 349	P	rogramming Track	t
		Road Name:			P	rogramming On M	ain
		Road Number:					
		Manufacturer:			U E	dit Only	
		Owner:					
		Model:	0.40			Program	
		DCC Address:	349			riogram	
		Decoder Family:		s 3 with FX3, silent, readback		1	
		Decoder Model: Filename:	DN16	3 GP9 UP 349.xml	La	ibels & Media	Throttle

## Panel Pro

- Create Layout Control Panels on Computer
  - Dispatcher

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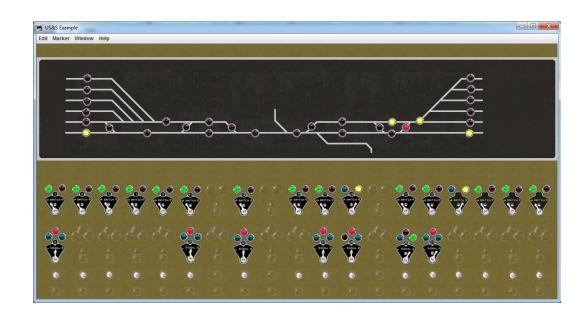
- Yardmaster
- Create Automation for Layout
  - Route Control
  - Signal Control
  - Interlocks



#### **PGF by Design**

### Examples

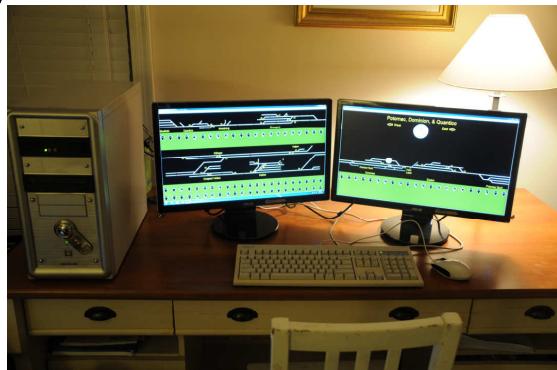
- Union Switch & Signal
  - Amber Lights are Occupancy
  - Red on Track Plan is Interlocks
  - First row of switches is for Turnouts
  - Second row of switches is for Signals



#### JPG by Design

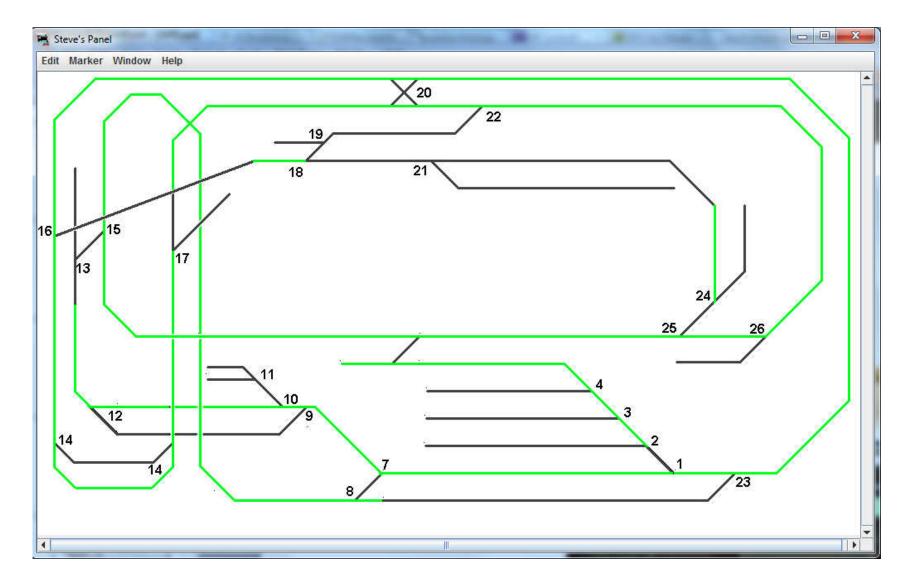
### Examples

- PD&Q Dispatcher
  - Simpler Format
  - Turnouts Control
  - Occupancy Display
  - Signal Automation (Future)



#### Layout Example

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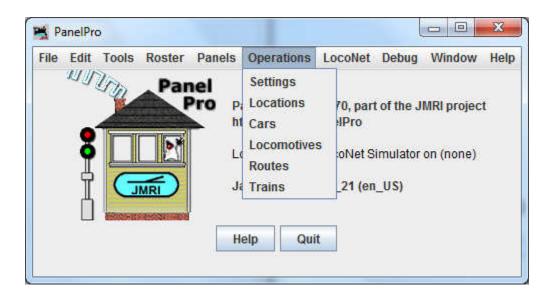


## Operations

- Embedded in PanelPro
  - Almost another program
  - Generates lists for Train
     Crews and Yardmaster
- Major Steps

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- Identify Locations & Tracks
  - Staging, Spurs, Yards, etc.
- Enter Locomotives & Cars
  - YardBoss Software can be Used
- Generate Routes to be Use
- Generate Trains and Schedule
- Print Lists



### Examples

Train Manifests

**PGF by Design** 

- For Train Crew
- Provides:
  - Locomotive & Caboose Numbers
  - Stops
  - Scheduled time
  - Cars to Pick Up
  - Cars to Set Out

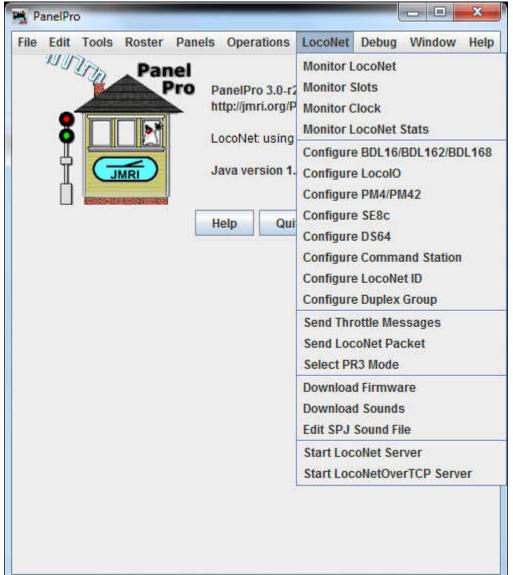
- Switch Lists
  - For Yardmaster
  - Provides:
    - List of trains stopping at location
    - Scheduled time
    - Cars to be picked up
    - Cars to be set out

### Loco Net Tools

 5 Categories of Tools:

<mark>PG G by Design</mark>

- Monitoring
- Configuration
- Send Commands
- Sound Decoders
- LocoNet Server
- First Two Most Useful



### Monitor LocoNet

- Displays each command sent over LocoNet in plain English
  - Verify LocoBuffer is properly connected & receiving commands
  - Verify component(s) sending commands
  - Verify Automation is working correctly

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Monitor LocoNet				
Window Help				
Requesting Switch at LT7 () to Closed (output On). Requesting Switch at LT7 () to Closed (output Off). Requesting Switch at LT1 () to Closed (output On). Requesting Switch at LT1 () to Closed (output Off). Requesting Switch at LT2 () to Closed (output Off). Requesting Switch at LT2 () to Closed (output Off). Requesting Switch at LT3 () to Closed (output Off). Requesting Switch at LT3 () to Closed (output Off). Requesting Switch at LT3 () to Closed (output Off). Requesting Switch at LT4 () to Closed (output Off). Requesting Switch at LT4 () to Closed (output Off).				
Clear screen Freeze screen	🗌 Show raw data 🔲 Show tin	nestamps 🔲 Windo	ow always on Top 🔽	Auto scroll
Cho	oose log file Start logging	Stop logging		
Add Message				

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## **Monitor Slots**

- Command Station slots
  - Locomotive Address
  - Speed Setting
- Provides Emergency Stop (E Stop)
- Provide Means to release slots when full

	Show u	unused slots	Show system slots estop		estop all
lot		Address	Speed	Status	Use
0	E Stop	0	0	28 step	Free
120	E Stop	0	0	28 step	Free
121	E Stop	0	0	28 step	Free
122	E Stop	0	0	28 step	Free
123	E Stop	0	0	28 step	Free
124	E Stop	0	0	28 step	Free
125	E Stop	0	0	28 step	Free
126	E Stop	0	0	28 step	Free
127	E Stop	0	0	28 step	Free
127	E Stop	0	0	28 step	Free

## **Configure Group**

- Provides Means for Setting Ops Switches for Components
- DS64 as Example

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Window Help		
Unit address: 1	Read from DS64	Write to DS64
OpSw 01: Static Outpu	It Type (Pulse if off)	
OpSw 02: Pulse Timed	out 200ms	
OpSw 03: Pulse Timed	out 400ms	
OpSw 04: Pulse Timed	out 800ms	
OpSw 05: Pulse Timed	out 1600ms	
OpSw 06: Output Pow	er Management - Wait for	1st command
OpSw 07: Reset Funct	ions to Factory Default	
OpSw 08: Double norm	nal startup delay	
OpSw 09: Turn off stat	tic outputs after 16sec	
OpSw 10: DS64 accep	ts computer commands o	nly
OpSw 11: Routes work	k from input lines	
🔲 OpSw 12: Either input	high causes toggle	
🔲 Op Sw 13: All eight inp	uts send sensor message	s
OpSw 14: Switch com	mands from track only	
OpSw 15: Outputs ign	ore inputs	
OpSw 16: Disable rout	es	
OpSw 17: Output 1 is o	crossing gate	
OpSw 18: Output 2 is o	crossing gate	
OpSw 19: Output 3 is o	crossing gate	
OpSw 20: Output 4 is o	crossing gate	
OpSw 21: Send turnou	t sensor messages (gene	ral sensor messages if off)
The DS64 should be in nor	mal mode (Don't push the	buttons on the DS64!)



### Questions



template v1.0



## Back Up

- Requirements for JMRI
  - Hardware
  - Software

#### <mark>рер бу Design</mark>

# **Getting Started**

- Hardware
  - Programming Track
  - Command Station
  - Throttle

Can be one unit

Provided on CD-ROM

- Computer Interface
- Computer
- Software
  - JMRI Suite
  - JRE program

# Hardware

- Programming Track
  - Isolated

Free by Design

- Switchable
- Examples on CD-ROM
- Command Station
  - Readback capability
- Computer Interface
  - System Specific
  - Details on CD-ROM