

# Tip: 39970 Functions used with Intellibox, ECoS, Märklin CS1/CS2 and Interfacing with TrainController Software

Date: 29-10-2008, Revised 17-04-09 Revised 31-12-09 Link 20-09-2018, Update 23-08-2019



Hi All,

I like to run my trains on friends layouts that use different control equipment as stated in the title and decided I would like to maximize the functions that would run with each piece of equipment when using the Catenary Maintenance Car.

Märklin's 39970 Catenary Maintenance Car has 2 decoders, controlling a total of 14 functions, 10 functions via the MFX decoder and 4 functions via the FX decoder. This proved to be a challenge to get most functions working using an Intellibox, ECoS and Märklin's CS1/CS2 control equipment interfacing with RR&Co software.

## The Locomotive Changes

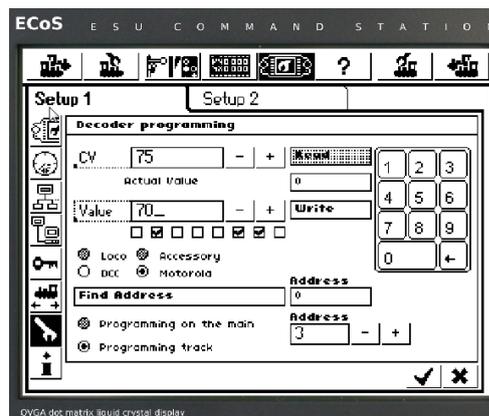
The default addresses are **70** (changeable) for the MFX decoder that controls the locomotive and sound functions, **71** for the FX decoder (address cannot be changed) that controls the platform and pantograph movements. To be able to obtain the most functions using the Intellibox (IB) and ECoS I decided to use the locomotives secondary address which would allow me to address 4 more functions (F5-F8) on the IB and ECoS.

**Primary address**, I programmed CV 1 = 69

**Secondary address**, I programmed CV 75 = 70 (must be consecutive to the primary address)

After programming the above CV's using the ECoS on the programming track, I could obtain the following functions as shown in the table below.

	Functions Available			
Address	IB (5.8)	IB (7.0)	ECoS	CS1/2
69	F0,F2-F4	F0,F2-F8	F0,F2-F8	F0,F2-F10
70	F5-F8			
71	F1-F4	F1-F4	F1-F4	F1-F4
28	F1-F4	F1-F4	F1-F4	F1-F4



Please note address 28 above was caused by default address 71 failing.

[Please refer to Strange Bits Log Part 3](#)

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### The Intellibox Changes (20-09-2018)

Use link below to the Uhlenbrock web site, follow the links to “Service > FAQ > Märklin Systems > [http://www.uhlenbrock.de/de\\_DE/service/faq/maersys/INDEX.HTM](http://www.uhlenbrock.de/de_DE/service/faq/maersys/INDEX.HTM)

Then choose link(s) below

[Am Märklin Turmtriebwagen 39970 lässt sich die Adresse 71 mit der Intelli-Box nicht steuern](#)  
or

[On the Märklin Turmtriebwagen 39970 the address 71 with the Intelli-Box cannot be controlled](#)

This document explains that the timing of the Intellibox settings needs adjusting and the following Special Options should be changed so the FX address **71** functions will work.

Special Option **902 = 16** (Default = 12)

Special Option **914 = 40** (Default = 18)

Special Option **902 = 12** (Default = 12) This Special option 902 was changed back to the default because it caused other items not to function, see [Strange Bits Log](#) (page 25) for reasons.

### Intellibox I Settings



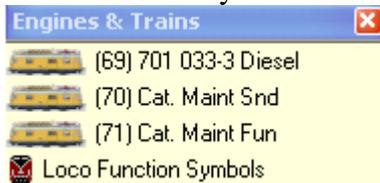
For the Intellibox settings for the locomotive address 69, 70, 71 all loco settings set to Moto. new \*

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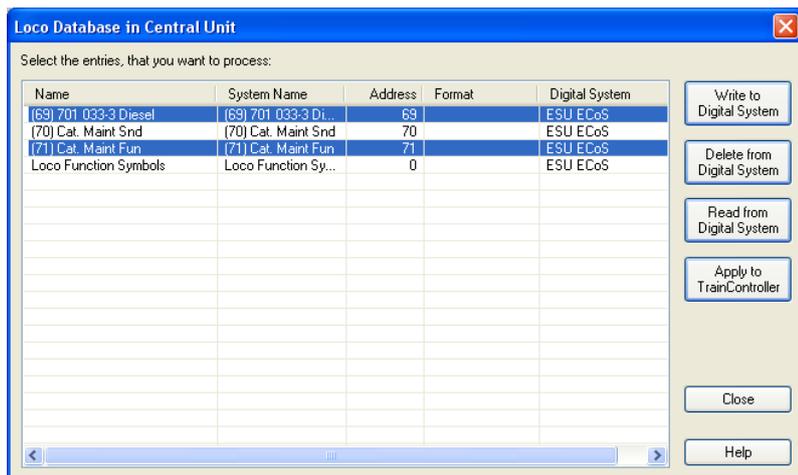
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## ECoS/CS1 Setup

First I defined my new locomotive entries in RR&Co without any functions being defined.

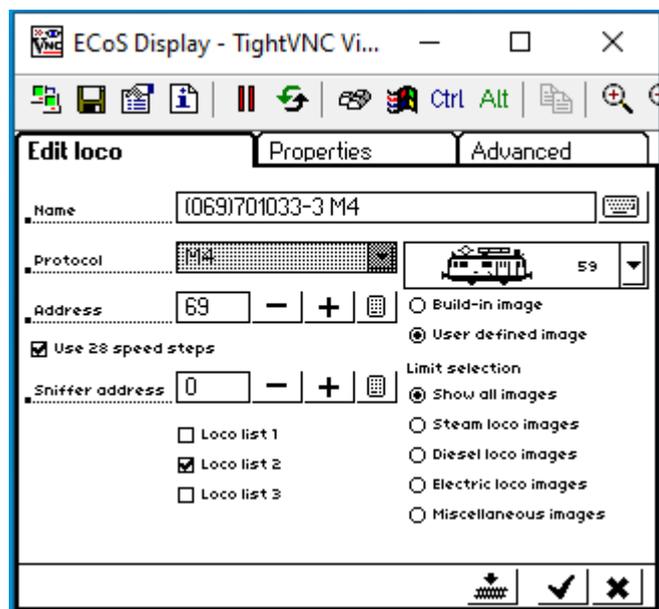


Under **Train** menu (see right) You will see the last item “Loco Database in Central Unit” Click this option and the following window will appear.



Using the **Ctrl** key, select the entries you want, then click “Write to Digital System” This method allows you to have consistent descriptions for your engines in RR&Co and your ECoS/CS1 control equipment. On the ECoS/CS1 select the engine, edit the engine and define all functions required.

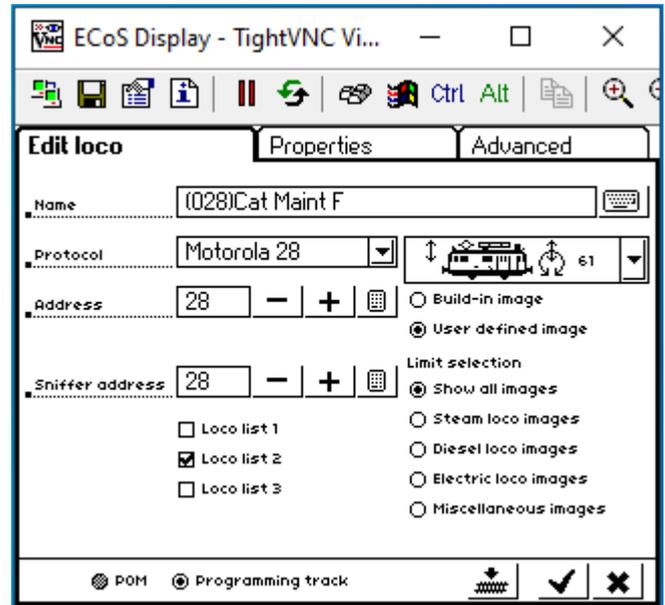
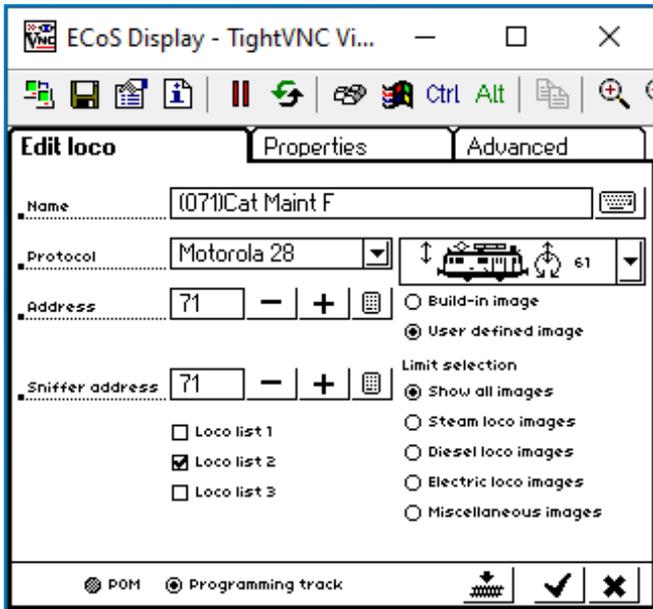
## MFx (Main) Decoder Address Settings



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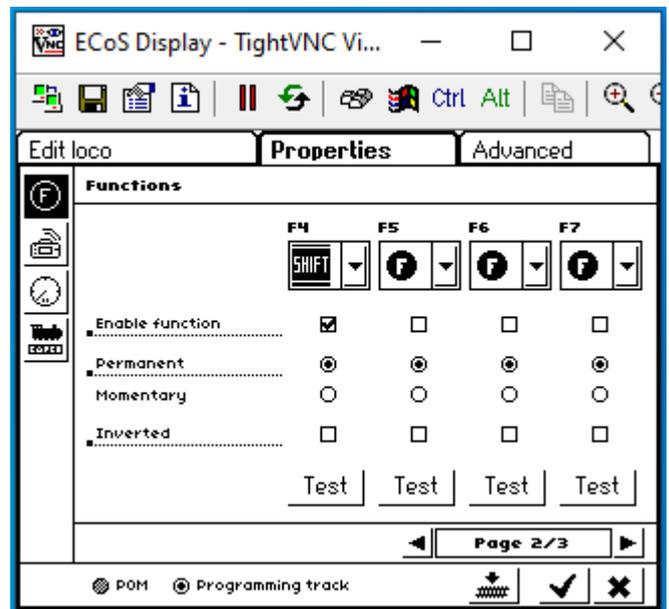
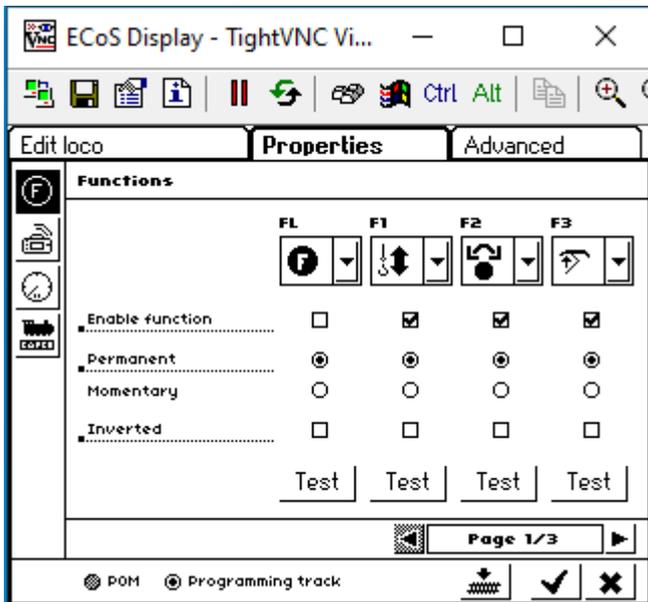
## FX (Fixed) Decoder Address Settings



Motorola Address 71 failed and is now set for Motorola address 28. See [Strange Bits Log Part 3](#) for decoder address failure.

Please note if you have FX 71 address failure your new address may be different from mine.

## FX (Fixed) Decoder Functions



Please note the F4 (SHIFT) function is a manual initialization of the Piezo motors.

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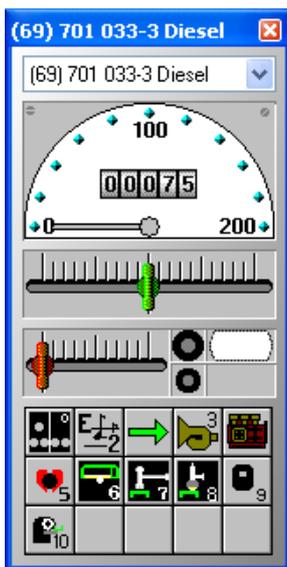
## CS2/CS3 Setup

The CS2/3 will operate the Engine as a normal MFX/FX Loco.

## RR&Co Setup

This section was very involved and took some time to setup, but for those people who have the Märklin 39970 Catenary Maintenance Car and using RR&Co **I will supply all relevant files and the method used** to have this up and running in just a few minutes on your layout, so read on if I have your interest.

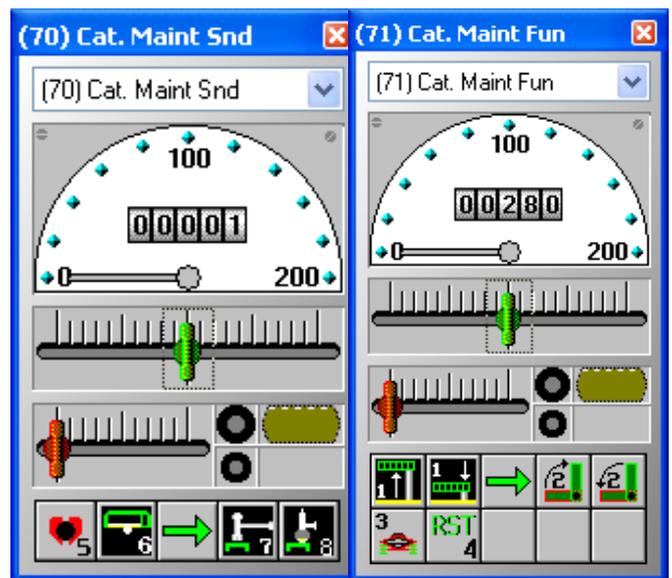
My aim was to have imbedded macros for the functions, so I only had to push one function button to raise/lower the platform and also rotate the platform CW/CCW. Below are the engine windows.



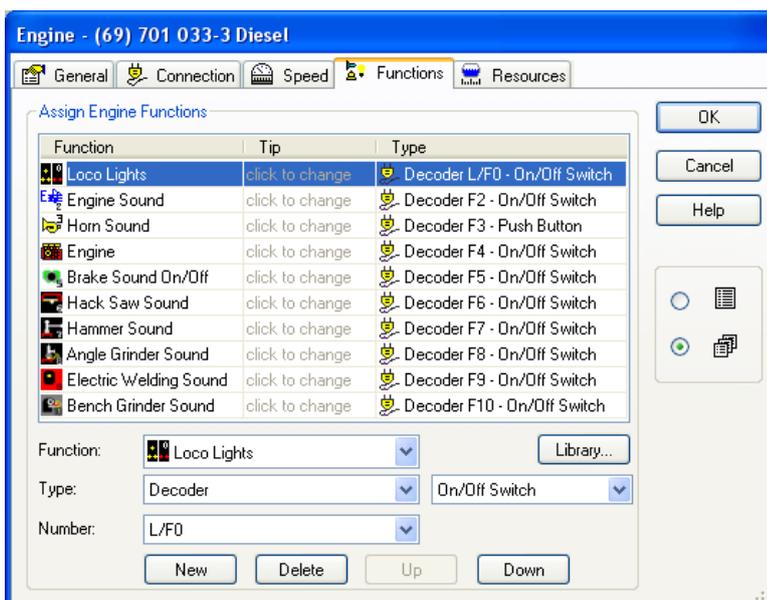
Left window is for locomotive control, lights and sounds (refer to table above for functions that will work) Find and play some sounds.

Middle window is used with the Intellibox for sound functions F5-F8

Right window is used for platform raise/lower/rotate and the raise/lower of the pantograph. The "RST" is a reset button for the platform Piezo motors.



## Assigning Engine Functions Address 69



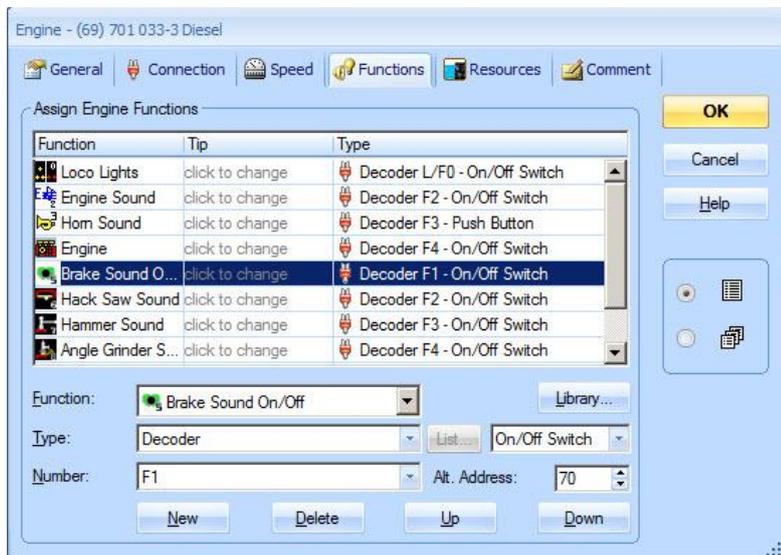
Looking at the functions defined you will notice I have defined a unique icon for each function. Click the Library button to see available Icons.

The F3 function for the Horn has been defined as a push button so the sound played is very short.

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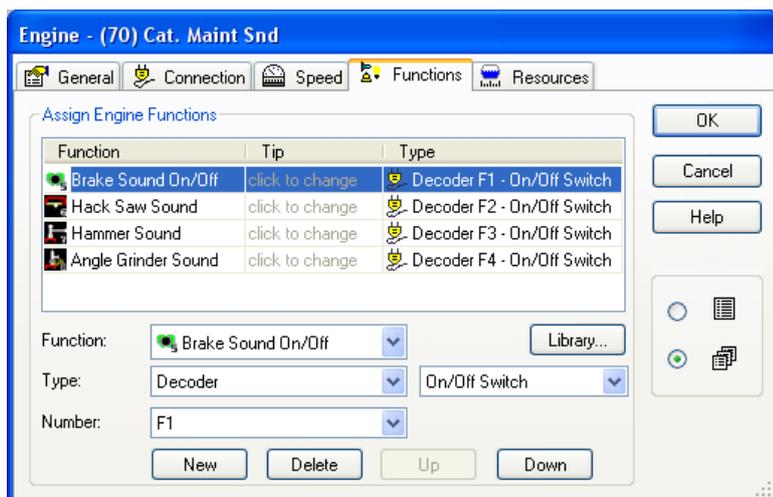
### Address 69 Using RR&Co revision 7.0 and above with the Intellibox as the controller



With the release of RR&Co software revision 7.0 a new feature was added to the locomotive functions (See Alt. Address bottom RH side of the form)

To get functions F5-F8, assign Decoder F1 to F4 respectively using "Alt. Address with a value of 70"

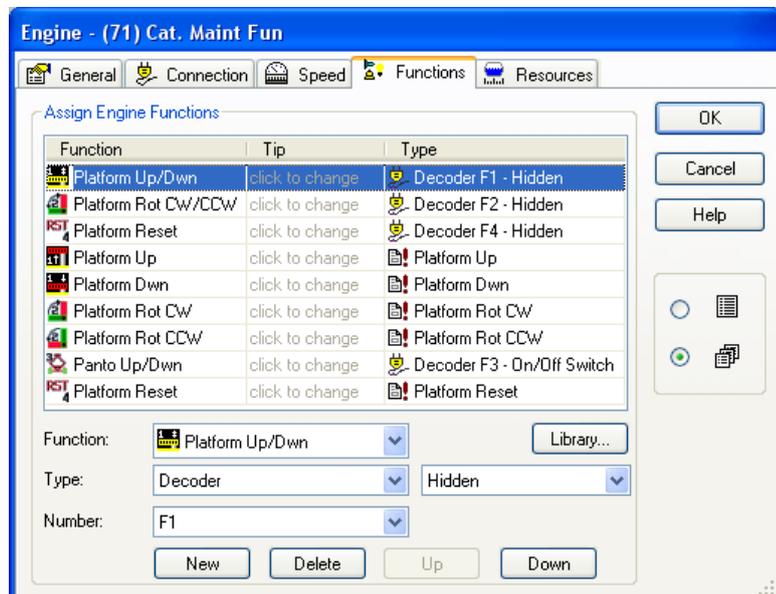
### Address 70



These functions have been defined to extend the range of functions when used with the Intellibox **F5-F8** and are not required if using the ECoS/CS1.

Defining a locomotive with address 70 is now only required for people using RR&Co revision 5.8

### Address 71



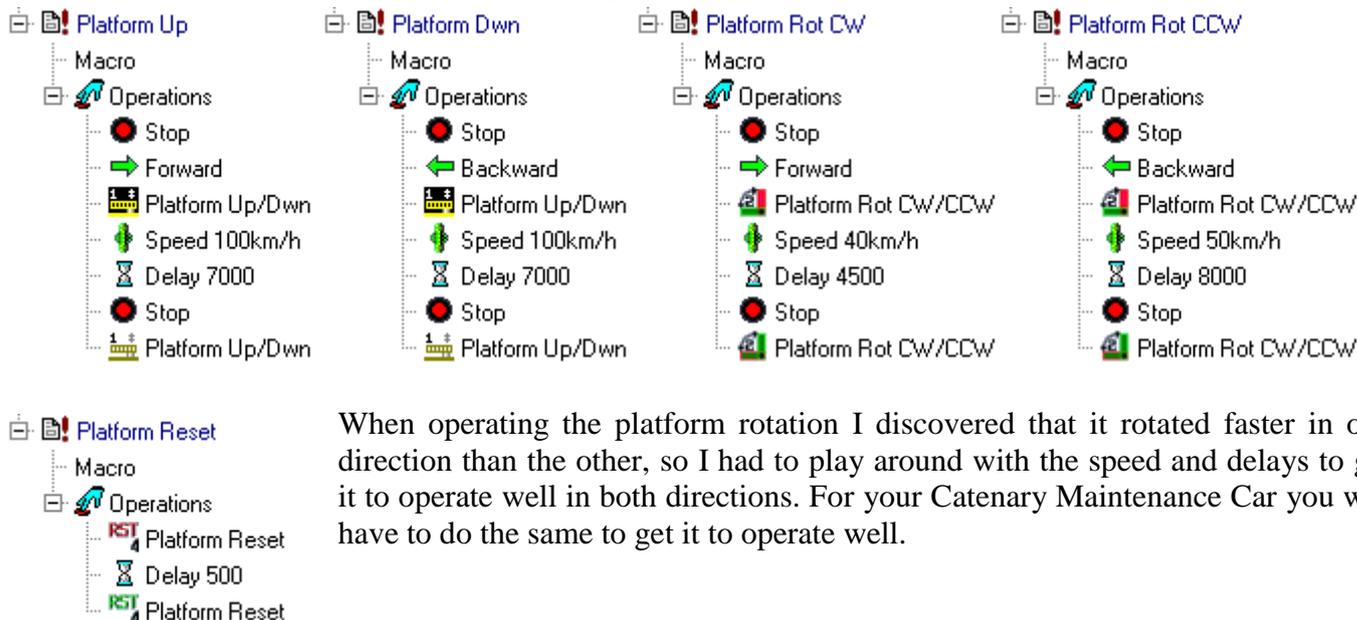
Here you can see I have hidden function keys, Macros imbedded as functions and also On/Off Switch.

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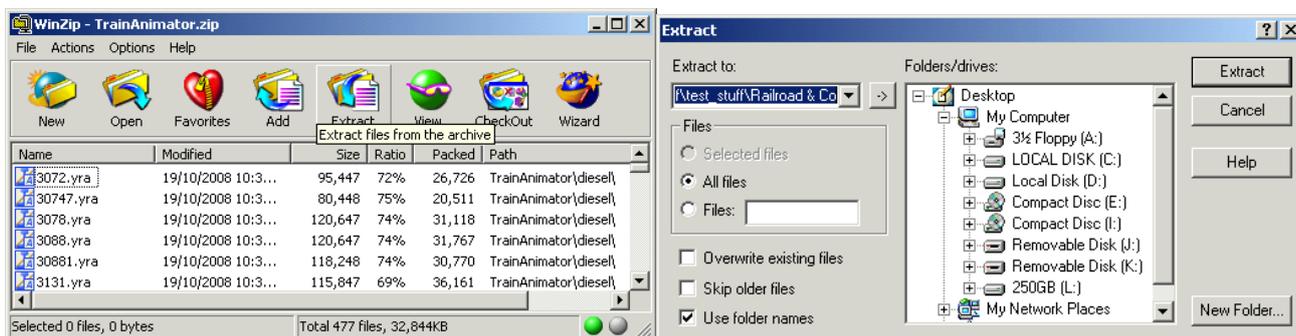
## Macros

Hardcopy look at the defined macros for completeness.



## Some easy steps to get this operating on your layout in just a few minutes

1. Copy [macro\\_39970.yrr](#) to your local disc under “C:\login\_name Documents\Railroad & Co\TrainController” Please note “login\_name” means your usual login name ie. Fred. Please check for the correct path to save these files.
2. Copy [TrainAnimator.zip](#), save it to your local disc under “C:\login\_name Documents\Railroad & Co\” Please note this path is different to the path in 1.
3. Double click **TrainAnimator.zip** a WinZip window will appear, click the extract button, and make sure the extract uses the folder names.

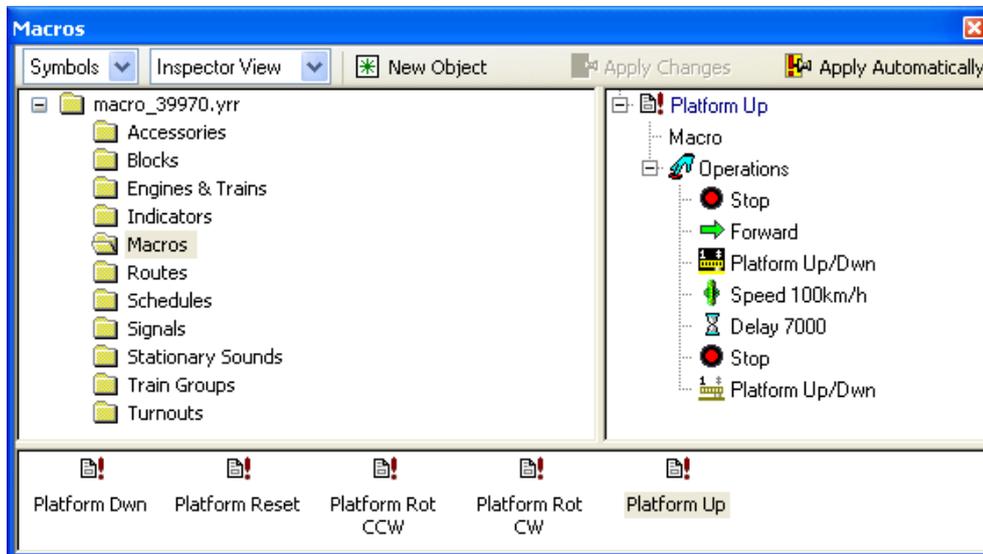


4. Open your usual TrainController program where you want the information to go to.
5. Open another TrainController program, Reply “Yes” to the warning, then “OK” to run the program Offline.
6. Click the Open Icon (Ctrl+O) in the second TrainController window, reply “No” to save changes, then select “macro\_39970.yrr” and click the Open button.
7. Resize both TrainController windows so they are next to each other.

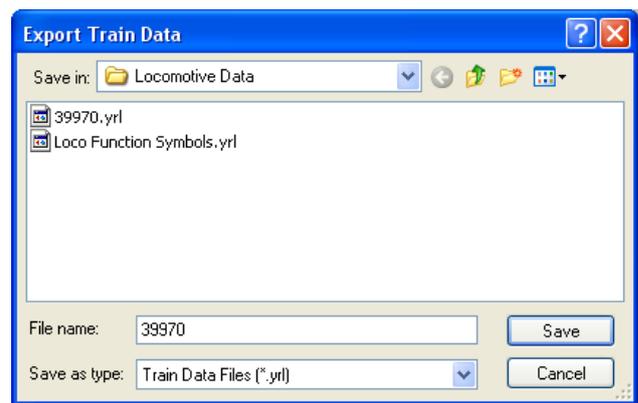
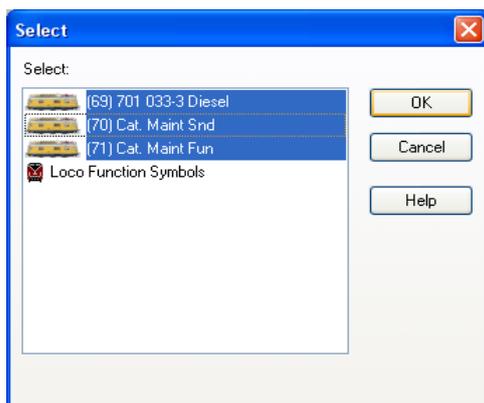
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8. In each TrainController window open a “New Explorer” window from the Window pull down menu. The example below shows “Macros” selected (make sure you do this in both Explorer windows) and displays the available Macros in the window where you opened “macro\_39970.yrr”.



9. Right mouse button click the macro “**Platform Up**” where all the macros are shown and select **copy**, then move to the other Explorer window, right mouse button click in the macro list area and select **paste**.
10. Repeat this process for the following macros, “Platform Dwn”, “Platform Rot CW”, “Platform Rot CCW” and “Platform Reset”.
11. Close both Explorer windows. In the TrainController window where “macro\_39970.yrr” is open, click the **Train** pull down menu and select **Export**. See example below. Hold down the **Ctrl** key and select the engines you can see highlighted. Hit the **OK** button.

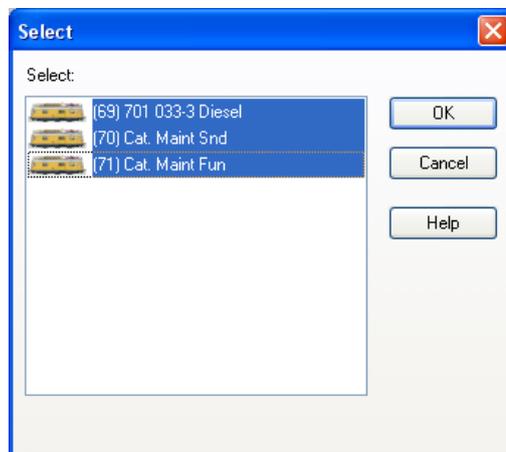
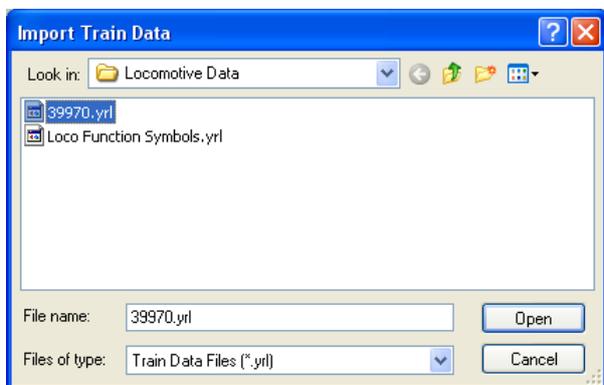


12. In the “Export Train Data” form that pops up enter “**39970**” for the file name and hit the **Save** button.
13. Close the TrainController window where “**macro\_39970.yrr**” is open as you have finished copying all the required information. Say **No** to Save changes question. Also note your digital system may be switched off if you have the “Stop On Close” option set under “Setup Digital Systems”, just hit the “**GO**” button on your digital system before doing step 14.

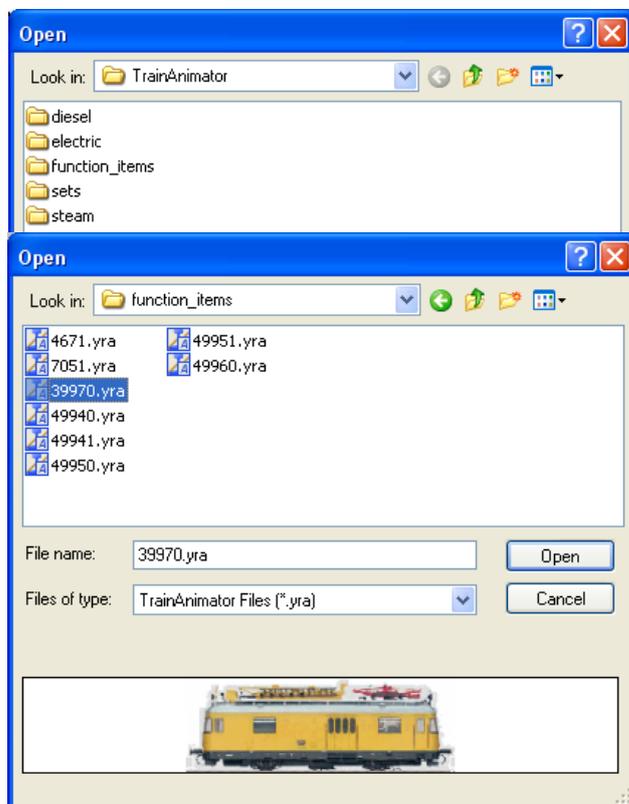
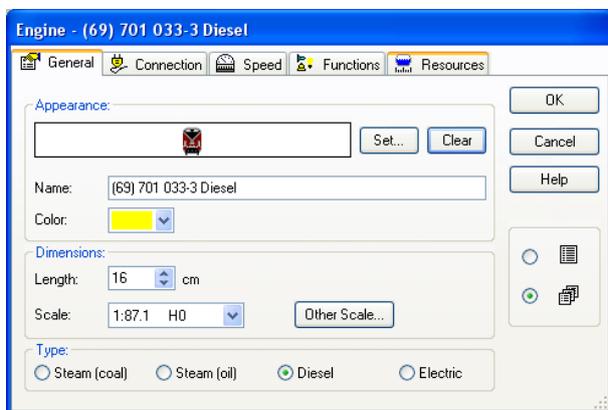
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14. In the original TrainController window which has your layout open, click the **Train** pull down menu and select **Import**. See left example below. Select the file “39970.yrl” and hit the **Open** button.



15. See example right. Hold down the **Ctrl** key and select the engines you can see highlighted. Hit the **OK** button. The new Engines will appear in the **Engines & Trains** window.
16. If the engine graphics are missing edit each new engine entry in turn, select the set button (left window) which will take you to the **TrainAnimator** directory, select the **functions\_items** directory, then **39970.yra** (please note, you must have completed step 2 for this to happen), the trains graphics will show at the bottom of the window. Hit the **Open** button and you will return to the Engine window at left, then hit the **OK** button. Now save your work.



I have tested my Easy Step Instructions and if you are able to follow them you will enjoy controlling the Catenary Maintenance Car when using RR&Co

31-01-2017

See [39970 Used in Schedules](#) for example usage.

23-08-2019

See [Strange Bits Log Part 3](#) for decoder address failure.

As always enjoy your hobby.